Società Chimica Italiana

XXVIII Congresso Nazionale

MILANO, 26 - 30 Agosto 2024

SCI 2024

Chimica

ELEMENTI DI FUTURO

Atti del XXVIII Congresso

Allianz MiCo – Milano Convention Centre - Fiera Milano

Milano, 26-30 agosto 2024

Volume 1

ISBN:

Sommario

Volume 1

Messaggio di benvenuto del presidente

La Società Chimica Italiana vi dà il benvenuto al suo XXVIII Congresso Nazionale, SCI 2024 "Chimica Elementi di Futuro".

Il mondo della Chimica Italiana si incontra a Milano presso l'Allianz MiCo, uno dei più prestigiosi centri congressuali in Europa, per condividere sguardi e prospettive sui grandi temi della crescita sostenibile e del benessere equo e diffuso: economia circolare, preservazione dell'ambientale e dei beni culturali, mitigazione dei cambiamenti climatici, soluzioni energetiche, tutela della salute e guida della transizione verso l'economia e la società del futuro; per discutere insieme i veloci progressi della Chimica, le sue conquiste e le sue scoperte, i tanti volti di una Scienza che cambia in fretta, e che sempre più mostra la sua forza e la sua capacità di additare direzioni e soluzioni.

Si intrecceranno le voci di chi fa ricerca nei settori più sfidanti e di maggiore impatto, con quelle di chi insegna le nostre discipline; le parole di chi vive la chimica sul campo, nelle tante professioni a presidio della sicurezza e del benessere, e quelle di chi, nell'industria, contribuisce alla crescita economica del Paese e dell'Europa; e tantissime voci giovani, sguardi lunghi e percorsi di cambiamento, che raccontano il volto futuro della Chimica Italiana.

Voci autorevoli, visioni profonde, prospettive plurali, come è proprio di una comunità creativa, aperta ed inclusiva.

L'ultimo giorno poi, regalerà ai partecipanti le emozioni della connessione del linguaggio della nostra Scienza con diverse espressioni artistiche, esplorando contaminazioni insolite e ricche di sviluppi.

Non solo conferenze, ma anche una grandissima area aperta ad oltre quaranta espositori tra aziende produttrici, editori, progetti, istituzioni. Uno spazio largo di dialogo e di incontro.

La straordinaria ampiezza di partecipazione al Congresso SCI 2024 rappresenta la vitalità della Chimica Italiana, la sua voglia di mettersi in gioco, di raccontarsi fuori dai suoi recinti scientifici e professionali per portare il contributo sulle tematiche e nei contesti nei quali possiamo e dobbiamo essere determinanti.

Benvenuti, dunque, con l'augurio sincero che il Congresso Nazionale SCI 2024, costruito insieme con tanto impegno ed entusiasmo, diventi un'occasione di crescita e di consapevolezza per la Società Chimica Italiana e per la Chimica tutta nel nostro Paese; oltre che un momento speciale per stare bene insieme, sentirci comunità ed apprezzare i mille volti affascinanti e sorprendenti della nostra Scienza.

Con i migliori saluti,

Gianluca Maria ***Farinola***
Presidente Società Chimica Italiana

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ZEISS is an internationally leading technology enterprise operating in the fields of optics and optoelectronics. In the previous fiscal year, the ZEISS Group generated annual revenue totaling more than 10.1 billion euros (FY 2022/23) in the four ZEISS segments Industrial Quality & Research, Medical Technology, Consumer Markets and Semiconductor Manufacturing Technology.

For its customers, ZEISS develops, produces and distributes highly innovative solutions for industrial metrology and quality assurance, microscopy solutions for the life sciences and materials research, and medical technology solutions for diagnostics and treatment in ophthalmology and microsurgery. The name ZEISS is also synonymous with the world's leading lithography optics, which are used by the chip industry to manufacture semiconductor components.

With over 43,000 employees, ZEISS is active globally in almost 50 countries. 15% of revenues is invested in science and R&D. ZEISS believes that innovation and technology are the key to a sustainable future and solutions for global challenges

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ZEISS Microscopy is the world's only one-stop manufacturer of light, electron, X-ray and ion microscope systems and offers solutions for correlative microscopy. The portfolio comprises of products and services for life sciences, materials and industrial research, as well as education and clinical practice.

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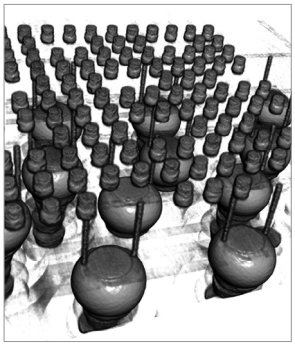

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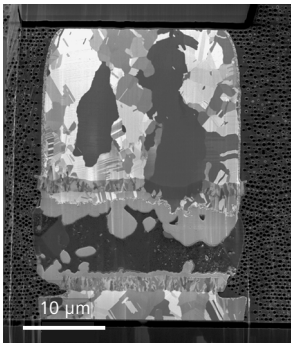

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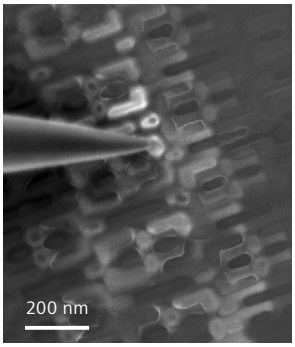

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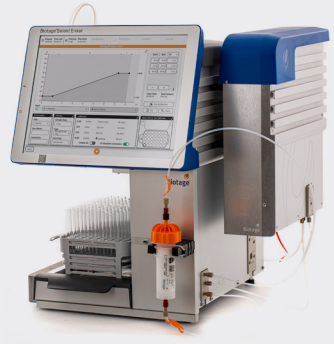

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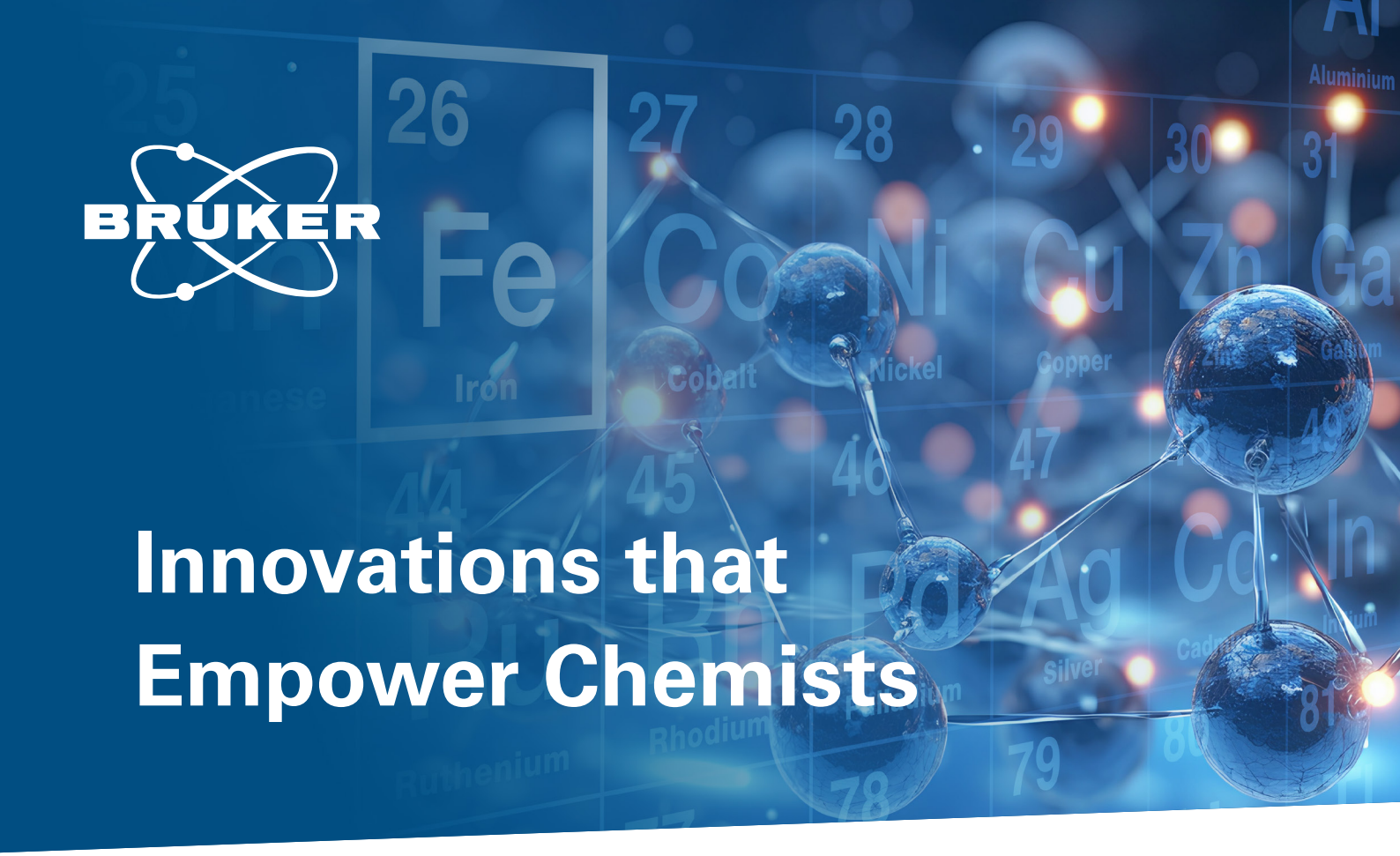
Bruker is enabling innovation, improved productivity and customer success in life science molecular research, in applied and pharma applications, in microscopy, nanoanalysis, and in industrial applications, as well as in cell biology, preclinical imaging, clinical research and clinical microbiology. Today, worldwide more than 8500 employees are working on this permanent challenge at over 90 locations on all continents.



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About Us

We are LyondellBasell (LYB) – a leader in the global chemical industry creating solutions for everyday sustainable living. Through advanced technology and focused investments, we are enabling a circular and low carbon economy. Across all we do, we aim to unlock value for our customers, investors and society. As one of the world's largest producers of polymers and a leader in polyolefin technologies, we develop, manufacture and market high-quality and innovative products for applications ranging from sustainable transportation and food safety to clean water and quality healthcare. For more information, please visit www.lyb.com or follow @LyondellBasell on LinkedIn.

Solutions for a better tomorrow

Many of the chemicals and plastics we supply help create innovative products that meet the needs of modern society and contribute to sustainable development. Our products are found in nearly every sector of the economy.

Reducing emissions

Stronger, lighter plastics support increased fuel efficiency

Food safety & access

Food packaging and films that improve freshness, portability and extend shelf-life

Potable water delivery

Stronger, longer-lasting pipes used in municipal water systems and key elements used in water filtration systems

Agricultural efficiency

Lighter machinery, crop protection and soil conditioning used to be more efficient in agroprocessing

Sustainable & modern living

Materials that form components used in solar panels, wind turbines, children's toys, cosmetics, leak-proof and shatter-proof containers

Quality healthcare

Improved medical supplies such as synthetic latex gloves, hand sanitizers, biohazard bags and pill coatings

Our key products areas

LyondellBasell develops and delivers innovative products and solutions in five key areas:

CHEMICALS

We produce the chemical building blocks for:

- Furniture / household goods
- Coatings / adhesives / cleaners
- Cosmetics / personal care products
- Industrial fluids
- Fuel additives

POLYMERS

Our versatile plastic resins are used to create a variety of products including:

- Rigid and flexible packaging
- Textiles
- Automotive parts
- Healthcare
- Pipe
- Agricultural films/irrigation

ADVANCED POLYMERS

Our diverse portfolio is used to create customizable products including:

- Automotive parts
- Differentiated packaging
- Electronics/appliances
- Building and construction materials
- Oil field services
- Aerospace
- Pipe
- Agriculture
- Wire and cable

FUELS

Our refinery in the U.S. produces:

- Gasoline / fuel components
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We license our state-of-the-art manufacturing and process technologies

- Polyolefin catalysts
- Petrochemical process licenses

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Mapei Group

Fondata nel 1937 a Milano, Mapei è uno tra i maggiori produttori mondiali di prodotti chimici per l'edilizia ed ha contribuito alla realizzazione delle più importanti opere architettoniche e infrastrutturali a livello globale. Con 102 consociate distribuite in 57 Paesi e 90 stabilimenti produttivi operanti in 35 nazioni, il Gruppo occupa oltre 11.900 dipendenti in tutto il mondo.

Nell'anno 2022 il Gruppo Mapei ha registrato un fatturato consolidato di 4 miliardi di euro. Alla base del successo dell'azienda: la specializzazione, l'internazionalizzazione, la ricerca e sviluppo e la sostenibilità.

www.mapei.com

Founded in 1937 in Milan, Mapei is now one of the world's leading manufacturers of chemical products for the building industry and has contributed to the construction of some of the most important architectural and infrastructural works worldwide. With 102 subsidiaries operating in 57 countries and 90 manufacturing plants in 35 different nations, the Group employs more than 11,900 staff worldwide.

The Mapei Group's consolidated revenu amounted to almost €4 billion in 2022. The foundations for the success of the company are specialisation, internationalisation, research & development and sustainability.

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Passione, spirito di squadra e uno sguardo sempre rivolto al futuro. Mapei contribuisce alle più importanti opere architettoniche e infrastrutturali, ai progetti in ambito residenziale, al restauro di edifici storici a livello globale. Nel segno dell'innovazione, ci impegniamo ogni giorno per un'edilizia sempre più sostenibile.

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Syensqo

SYENSQO

About Syensqo

Syensqo is a science company developing groundbreaking solutions that enhance the way we live, work, travel and play. Inspired by Ernest Solvay, we bring great minds together to push the limits of science and innovation for the benefit of our customers, with a diverse, global team of more than 13,000 associates in 30 countries.

Our solutions contribute to safer, cleaner, and more sustainable products found in homes, food and consumer goods, planes, cars, batteries, smart devices and health care applications. Our innovation enables us to deliver on the ambition of a circular economy and explore breakthrough technologies that advance humanity.

Informazioni su Syensqo

Syensqo è una società scientifica che sviluppa soluzioni innovative per migliorare il modo di vivere, lavorare, viaggiare e giocare. Ispirati da Ernest Solvay, riuniamo grandi personalità per superare i limiti di scienza e innovazione a vantaggio dei clienti, con un team globale e diversificato di 13.000 collaboratori in 30 Paesi.

Le nostre soluzioni contribuiscono a creare prodotti più sicuri, puliti, sostenibili nelle case, nel cibo e in beni di consumo, aerei, automobili, batterie, dispositivi intelligenti e applicazioni nel campo sanitario. La nostra spinta innovativa ci permette di affrontare le sfide di un'economia circolare ed esplorare tecnologie che fanno progredire l'umanità.

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We empower you to turn your vision into tomorrow's reality. Let's pave the way for a new era of technological progress to shape a brighter future for all.
Syensqo. Explorers creating breakthroughs that advance humanity.

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Thermo Fisher Scientific Inc. is the world leader in serving science, with annual revenue of approximately $40 billion. Our Mission is to enable our customers to make the world healthier, cleaner and safer. Whether our customers are accelerating life sciences research, solving complex analytical challenges, increasing productivity in their laboratories, improving patient health through diagnostics or the development and manufacture of life-changing therapies, we are here to support them. Our global team delivers an unrivaled combination of innovative technologies, purchasing convenience and pharmaceutical services through our industry-leading brands, including Thermo Scientific, Applied Biosystems, Invitrogen, Fisher Scientific, Unity Lab Services, Patheon and PPD. For more information, please visit www.thermofisher.com.

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With our extensive knowledge in the fields of sample preparation, heat treatment and analysis of solids, we empower our customers to make progress and make the world better every day. We provide them with the means to effectively and reliably design their processes, products, and services to become safer, more efficient, and sustainable.

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ABSTRACT

Versalis

Versalis is Eni's chemical company that operates both nationally and internationally in the basic chemicals and intermediates, plastics, rubber and chemistry from secondary raw material and renewables sources/feedstock. The Company is committed to a transformation process towards a chemical industry of the future based on portfolio specialization, circularity and biochemistry (also thanks to Novamont acquisition in 2023), with the aim of achieving its decarbonization targets, in line with Eni's strategy.

Versalis è la società chimica di Eni che opera a livello nazionale e internazionale nei settori delle sostanze chimiche di base e degli intermedi, delle materie plastiche, della gomma e della chimica derivante da materie prime secondarie e fonti di energia rinnovabile. L'azienda si impegna in un processo di trasformazione verso un'industria chimica del futuro basata sulla specializzazione del portafoglio, la circolarità e la biochimica (anche grazie all'acquisizione di Novamont nel 2023), con l'obiettivo di raggiungere i suoi obiettivi di decarbonizzazione, in linea con la strategia di Eni.

versalis

Our mission

We are Versalis and we lead sustainable chemistry, by people and for people.

We drive diversity, dialogue, innovation.
We speak with pride and responsibility.
We are reliable and concrete. Chemistry is our world.

We create value today, and tomorrow.

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Massimo Trotta
Coordinamento gruppo di lavoro comunicazione

Moscabianca
Agenzia di comunicazione

Giuseppe Di Caterino
Ufficio stampa istituzionale

Promoest
Organizzazione evento

Lorenza Accusani
Ufficio stampa scientifico

Marina Maffei
Ufficio stampa scientifico

Medaglie della SCI 2024

Medaglia Natta: Aldo Roda

Motivazione**:** Per il rilevante contributo scientifico nelle scienze chimiche ed in particolare per il lavoro pioneristico ed innovativo nel campo della bioanalitica e della biosensoristica basata su chemiluminescenza anche con impiego di sistemi cellulari ingegnerizzati. Questa ricerca ha aperto nuove frontiere nello sviluppo di metodologie e strumentazioni miniaturizzate per la diagnostica clinica e farmaceutica, coniugando rigore metodologico con una spiccata originalità.

Medaglia Cannizzaro: Gianfranco Pacchioni

Motivazione**:** Per il pionieristico lavoro nel campo delle scienze dei materiali, che ha aperto nuove prospettive verso la comprensione di processi catalitici e fotocatalitici di grande importanza applicativa ed ha illustrato magistralmente la rilevanza degli approcci teorico-computazionali nella risoluzione di problemi chimici complessi.

Medaglia Illuminati: Carlo Fiorentini

Motivazione: Carlo Fiorentini, persona di grande valore culturale, sia scientifico-epistemologico che pedagogico didattico, si è distinto nella Didattica della Chimica per il rinnovamento dell'insegnamento scientifico testimoniato da pregevoli pubblicazioni, per la partecipazione a Commissioni e Gruppi di lavoro nazionali su attività di formazione e di didattica e per la divulgazione della Chimica a diversi livelli.

Medaglia Pisani: Maria Cristina Menziani

Motivazione: Per l'eccellente attività scientifica volta alla razionalizzazione ed interpretazione di dati sperimentali riguardanti sistemi di interesse biologico e farmacologico, basate sullo sviluppo di innovative strategie di modellistica molecolare funzionali alla progettazione di nuovi farmaci e biomateriali, contribuendo significativamente al progresso della ricerca in campo teranostico.

Medaglie della SCI 2024

Medaglia Piria: Maurizio Prato

Motivazione: Per la sua visione antesignana che ha elevato studi fondamentali di Sintesi Organica a ricerca interdisciplinare di frontiera con eccezionale impatto scientifico e di grandissimo potenziale biomedico e tecnologico in molteplici aree di medicina rigenerativa e nanomedicina e per la conversione dell'energia solare con processi e materiali sostenibili portando lustro alla Scuola italiana di Chimica Organica e Materiali Organici.

Medaglia Paternò: Luca Prodi

Motivazione: Per l'eccellente contributo allo sviluppo di sistemi luminescenti nanostrutturati, capaci di permettere la rilevazione di molecole di grande rilevanza in sistemi biologici, ambientali e alimentari. Il suo lavoro rappresenta un efficace connubio tra ricerca fondamentale e applicata e il loro trasferimento tecnologico.

Medaglia Tiezzi: Damià Barceló Culleres

Motivazione: Per il contributo originale all'avanzamento significativo delle scienze chimiche con lo sviluppo di metodologie analitiche innovative per l'identificazione, quantificazione e mitigazione di contaminanti ambientali nelle risorse idriche e per l'eccellenza e la transdisciplinarità delle sue ricerche che hanno stimolato il dialogo su standard di sicurezza ambientale più stringenti, influenzando le politiche pubbliche a livello nazionale e internazionale.

Medaglia Marotta: Armida Torreggiani

Motivazione: Per il contributo significativo nella sperimentazione di nuove modalità di comunicazione delle scienze chimiche, valorizzando gli aspetti interdisciplinari con le altre discipline STEAM e per la capacità di attrarre finanziamenti per l'organizzazione di eventi di divulgazione scientifica di grande successo.

Società Chimica Italiana

XXVIII Congresso Nazionale

MILANO, 26 - 30 Agosto 2024

SCI 2024

Chimica

ELEMENTI DI FUTURO

Programma Scientifico

Panoramica della sessione

SCI2024 - XXVIII Congresso Nazionale della Società Chimica Italiana

Lunedì, 26.08.2024

8:30 - 14:00

REGISTRATION: Advance registration

Luogo, sala: **Registration Area (level 0)**
Registration is open throughout the conference 8-19

10:00-12:00

SATELLITE: IUPAC CrystEng 2024: SATELLITE EVENT: 4th IUPAC Workshop on Crystal Engineering

Luogo, sala: **Red2 (level +1)**
Chair: **Pierangelo Metrangolo**, Politecnico di Milano
Chair: **Gabriella Cavallo**, Politecnico di Milano
Chair: **Giancarlo Terraneo**, Politecnico di Milano
Satellite meeting to SCI2024 and ECM34 - Padova, in relation with the IUPAC Project 2012-044-1-100 "Basic Terminology of Crystal Engineering" https://iupac.org/project/2012-044-1-100/

14:00-15:30

OPENING: Opening Ceremony

Luogo, sala: **Silver Plenary (level +2)**
Chair: **Gianluca Maria Farinola**, Società Chimica Italiana
Medal and Awards Ceremony of Società Chimica Italiana and Chemistry Europe
With the participation of: **Alessandro Abbotto**, Università di Milano-Bicocca, **Maurizio Benaglia**, Università di MIlano-Statale, **Pierangelo Metrangolo**, Politecnico di Milano, **Lidia Armelao**, Consiglio Nazionale delle Ricerche, **Eleonora Aquilini**, Divisone Didattica SCI, **Cristiana Gaburri** Scientific Technical Central Director, Federchimica; **Nausicaa Orlandi**, National Federation of the Orders of Chemists and Physicists

15:30-17:00

POSTER-A: Poster Session A

Luogo, sala: **Hall B (main hall; level +1)**

17:00-19:00

PL-A: Plenary Session A

Luogo, sala: **Silver Plenary (level +2)**
Chair: **Angela Agostiano**, EuChemS
Chair: **Gaetano Guerra**, Università di Salerno
Chair: **Mario Vito Marchionna**, Saipem
Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna

19:00-21:00

WELCOME: Welcome Mixer

Luogo, sala: **Vigorelli Stadium**
The welcome mixer will take place in the splendid setting of Milan's historic Vigorelli Stadium.

The “Velodromo Vigorelli” stadium is one of the most iconic sports sites for Italian and international sports. Built in 1935 and hosting up to 9,000 people, the velodrome became the most famous in Italy and one of the most important in the world. Just three days after its construction, cyclist Giuseppe Olmo set a new hour record on the inclined wooden track (with a maximum curve slope of 42 degrees) covered with 72 kilometers of Swedish pine strips. The “Vigorelli” quickly became a site for significant track cycling races and has also been chosen multiple times as a finish stage for road races like Giro d'Italia. Several world hour records were set at the Vigorelli velodrome, the most famous being that of Fausto Coppi in 1942 (45.8 km). In 2006, it was a filming location for the TV series "Gino Bartali - L'intramontabile" starring Pierfrancesco Favino. The Vigorelli velodrome is also famous for hosting the Beatles' first concert in Italy (1965; a plaque at the entrance commemorates it) and a notable concert by the rock band Led Zeppelin (European Tour, 1971), which was characterized by violent riots between concert attendees and police and that caused the end of the show after only a few minutes, with the complete destruction of the stage and the band's equipment. It is currently the home stadium for the Milano American football teams Seamen and Rhinos.

21:00-22:15

Exclusive guided tour (with fee): Tour guidato esclusivo a pagamento da 75 minuti: Castello Sforzesco- Milano zona centro (vedi opzioni in registrazione)

Luogo, sala: **Castello Sforzesco**
Tour esclusivo con apertura straordinaria alle Merlate. Guida in italiano e inglese (1 ora e 15 minuti).
Ammissione solo per persone appositamente registrate al tour. Non sono ammessi iscritti al congresso che non si sono registrati al tour.
Per registrarsi vai al menu principale: "Modifica i tuoi dati di iscrizione come partecipante"

Martedì, 27.08.2024

8:30-9:00

MD-A: Medal Session A
Luogo, sala: **Silver Plenary (level +2)**
Chair: **Luigi Mondello**, Università di Messina

8:30-19:00

Silent room August 27th: Silent room programme August 27th
Luogo, sala: **SilentRoom (main hall; level +1)**
Chair: **Alessandro Minguzzi**, Università degli Studi di Milano
Chair: **Emanuela Licandro**, Università degli Studi di Milano
13:15 -14:45 Lunch/Job Offer/Book Presentation

9:00-10:30

PL-B: Plenary Session B
Luogo, sala: **Silver Plenary (level +2)**
Chair: **Giorgia Oliviero**, Università degli Studi di Napoli Federico II
Chair: **Antonio Proto**, Università di Salerno
Chair: **Paola Minghetti**, unimi

10:30-11:00

COFFEE-BREAK1: Coffee Break & Expo
Luogo, sala: **Hall B (main hall; level +1)**

11:00-13:00

TOPIC-A: Chemistry & Society
Luogo, sala: **Silver Plenary (level +2)**
Chair: **Pierangelo Metrangolo**, Politecnico di Milano
Chair: **Lidia Armelao**, Consiglio Nazionale delle Ricerche
11:00-11:30 Lidia Armelao, Department of Chemical Sciences and Materials Technology (DSCTM), National Research Council of Italy (CNR), Chemical Sciences and Innovative Materials for Health and Sustainable Development: An overview of the current research activities and perspectives @ DSCTM CNR
11.30-12:00 Fiorenzo Fumanti, Italian Institute for Environmental Protection and Research (ISPRA), The national and European mining situation: A new development model and the dependence on critical raw materials
12:00-12:30 Giulia Monteleone, Energy Technologies and Renewable Sources Department, ENEA, The scientific research to support industry, public administration, and citizens for a sustainable energy transition
12:30-13:00 Antonietta Lombardozzi, Polizia di Stato, Scienza Forense e Innovazione: rafforzare la sinergia tra Enti

13:00-14:30

LUNCH1: Lunch & Expo
Luogo, sala: **Hall B (main hall; level +1)**
Check the registration area in ConfTool for any lunch booking options at the congress center or nearby.

14:30-17:00

TOPIC-B: Industry Focus
Luogo, sala: **Silver Plenary (level +2)**
Chair: **Maurizio Benaglia**, Università degli Studi di Milano
Chair: **Cristiana Gaburri**, Federchimica
Sustainability: key factors for the competitiveness of the chemical industry
The session will commence with presentations by key, international chemical industry stakeholders. Each speaker will provide an overview of their organization's role within the industry and share insights into main advances done by their relevant companies in crucial topics, including circular economy, energy, process sustainability, decarbonisation. Central to the presentations will be a focus on the the current challenges faces by modern industrial chemistry, together with the relevant possible solutions, highlighting the role of research carried out in academia and in research centres.
14:30-14:45 Guido Guidesi – Assessore allo Sviluppo Economico di Regione Lombardia – Introductory Greetings
14:45-15:00 Juliette Vitaloni – Direttore Centro Studi e Internazionalizzazione di Federchimica – Chemical industry and economic scenario
15:00 – 15:15 Angelo Ferrando – Responsabile Sviluppo Nuove Piattaforme Tecnologiche di Versalis – Designing a circular and renewable chemical industry
15:15 – 15:30 Marco Apostolo – Country Manager Italia Syensqo – The Role of Special Polymers for Sustainable Future Technologies
15:30 – 15:45 Mikaela Decio – Responsabile Corporate Environmental Sustainability Mapei – Decarbonisation
15:45 – 16:00 Mauro Senili – Responsabile Ricerca e Sviluppo H2 Sostenibile del Gruppo SOL – Hydrogen for energy transition
16:00 – 17:00 Round Table – Moderator: Massimo Polidoro – Journalist and Science Communicator
Following the presentations, the session will transition into a roundtable discussion, offering participants the opportunity to engage directly with industry experts. Attendees will have the chance to pose questions , finding a common ground where industry and academia can collaborate with reciprocal advantages and benefits.
By fostering dialogue between industry representatives and academic ones, this session aims to bridge the gap between academia and industry: equipping academic researchers with the insights and guidance needed to lead their findings towards an industrial application and providing industries with the possibility to explore new basic solutions for greater competitiveness and sustainability.

17:00-19:00

ASSEMBLEA: Assemblea dei Soci SCI
Luogo, sala: **Silver Plenary (level +2)**
Chair: **Gianluca Maria Farinola**, Società Chimica Italiana

19:00-21:00

TOPIC-C: Career Event & Student Program
Luogo, sala: **Red2 (level +1)**
Chair: **Marta Da Pian**, Società Chimica Italiana - Gruppo Giovani
19:00-19:10 Marta Da Pian, SCI Giovani, Veronica Cremonesi, Federchimica, "Introduction"
19:10-19:30 Anni Siltaten, The Chemical Industry Federation of Finland, "A chemistry job in Europe: competencies, skills and guidelines"
19:30-19:50 Gabriella Bazzana and Ugo Visentini, LyondellBasell, "Job posting and requirements: career possibilities for PhDs holders"
19:50-20:10 Maria Valeria Picci, Polizia di Stato, "A chemistry job in forensic sciences"
20:10-20:30 Round table
20:30-20:40 Conclusions

Mercoledì, 28.08.2024

8:30 - 10:30	**ParallelTopic01: Advanced monitoring, sensing and imaging** Luogo, sala: Yellow2 (level +1) Chair: **Andrew Smith**, University of Milano-Bicocca Chair: **Dario Compagnone**, Università di Teramo	**ParallelTopic02: Environmental protection** Luogo, sala: Green2 (level -1) Chair: **Antonio Marcomini**, Università Ca' Foscari Venezia Chair: **Chiara Zanardi**, Università Ca' Foscari Venezia	**ParallelTopic03: Clean energy** Luogo, sala: Yellow 3 (level +1) Chair: **Sergio Brutti**, Università di Roma La Sapienza Chair: **Riccardo Ruffo**, Università di Milano Bicocca	**ParallelTopic04: Health** Luogo, sala: Blue1 (level +1) Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna Chair: **Paolo Caliceti**, Università di Padova Chair: **Maria Valeria D'Auria**, Università di Napoli Federico II	**ParallelTopic05: Cultural heritage** Luogo, sala: Turquoise1 (level -1) Chair: **Elisabetta Zendri**, Università Ca' Foscari di Venezia Chair: **Antonio Proto**, Università di Salerno	**ParallelTopic06: Industry and technology transfer** Luogo, sala: Orange 3 (level -1) Chair: **Mario Vito Marchionna**, Saipem Chair: **Vincenzina Barbera**, Politecnico di Milano	**ParallelTopic07: Catalysis** Luogo, sala: Blue2 (level +1) Chair: **Tommaso Tabanelli**, Università di Bologna Chair: **Elena Groppo**, Università di Torino Chair: **Marcella Bonchio**, Università di Padova Chair: **Federica Menegazzo**, Università Ca' Foscari Venezia	**ParallelTopic08: Chemical education, communication and outreach** Luogo, sala: Orange 2 (level -1) Chair: **Ugo Cosentino**, Università Milano-Bicocca
	ParallelTopic09: Artificial intelligence and modeling for chemistry Luogo, sala: Green1 (level -1) Chair: **Piero Ugliengo**, Università di Torino	**ParallelTopic10: Chemistry meets circularity** Luogo, sala: Red2 (level +1) Chair: **Antonella Salvini**, Università di Firenze Chair: **Chiara Samorì**, Università di Bologna	**ParallelTopic12: Chemistry at the life science interface** Luogo, sala: Red1 (level +1) Chair: **Francesco Peri**, University of Milano-Bicocca Chair: **Gianluca Sbardella**, Università di Salerno Chair: **Alessandra Magistrato**, CNR	**ParallelTopic13: Smart materials** Luogo, sala: Yellow 1 (level +1) Chair: **Raffaele Riccio**, Università di Salerno Chair: **Alessandro Abbotto**, Università di Milano-Bicocca Chair: **Elisa Moretti**, Ca' Foscari University of Venice	**ParallelTopic14: Food** Luogo, sala: Green3 (level -1) Chair: **Paola Montoro**, Università di Salerno Chair: **Nadia Mulinacci**, Università di Firenze	**ParallelTopic15: New Reactions** Luogo, sala: Orange 1 (level -1) Chair: **Andrea Biffis**, Università di Padova Chair: **Fabio Ragaini**, Università degli Studi di Milano		
8:30 - 19:00	**Silent room August 28th: Silent room programme August 28th** Luogo, sala: SilentRoom (main hall; level +1) Chair: **Alessandro Minguzzi**, Università degli Studi di Milano Chair: **Emanuela Licandro**, Università degli Studi di Milano 9:00-10:00Impact Factors and publication ethics – it's all in the day's work of an editor Speaker: Haymo Ross, Chemistry Europe 10.15-11.15Quality by Design mantra - Olon's approach Speaker. Paolangelo Cerea, Olon SpA 11.45-12.15Shimadzu: Innovations since 150 years up to today, a short journey through history and latest developments Speaker: Björn Thoralf Erxleben and Domingo Pastran 12.30-13.00AI in chemistry: a publisher perspective Speaker. Giulia Monclesi, Elsevier 13:15-14:45Lunch/Job Offer/Book Presentation Speaker: TBA 15.00-15.30Exploring innovation: patents as a professional horizon for young chemists Speaker: Francesca Meroni, Italian and European Patent Attorney at Jacobacci & Partners Spa 15.45-16.15SCI – SeedScience, science education from the African continent Speaker: Michele Raggio 16:30-17:30The recycling of PET Bottles: an opportunity for the Italian system, DENTIS RECYCLING ITALY S.r.l. Speaker: Roberto Tangorra, Head of Quality...							
10:30 - 12:30	**ParallelTopic01 - ID: 172: Advanced monitoring, sensing and imaging** Luogo, sala: Yellow2 (level	**ParallelTopic02 - ID: 173: Environmental protection** Luogo, sala: Green2 (level -1) Chair: **Concetta De Stefano**, Università	**ParallelTopic03 - ID: 174: Clean energy** Luogo, sala: Yellow 3 (level +1) Chair: **Barbara Mecheri**, UNIVERSITA' degli STUDI di ROMA TOR VERGATA	**ParallelTopic04 - ID: 175: Health** Luogo, sala: Blue1 (level +1) Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna Chair: **Paolo**	**ParallelTopic05 - ID: 176: Cultural heritage** Luogo, sala: Turquoise1 (level -1) Chair: **Paola Fermo**, Università degli Studi di Milano	**ParallelTopic06 - ID: 177: Industry and technology transfer** Luogo, sala: Orange 3 (level -1) Chair: **Vincenzina Barbera**, Politecnico di	**ParallelTopic07 - ID: 178: Catalysis** Luogo, sala: Blue2 (level +1) Chair: **Rinaldo Psaro**, Cnr SCITEC "Giulio Natta" Chair: **Michela Signoretto**,	**ParallelTopic08 - ID: 179: Chemical education, communication and outreach** Luogo, sala: Orange 2 (level -1) Chair: **Eleonora Aquilini**,

	+1) Chair: **Andrew Smith**, University of Milano-Bicocca Chair: **Dario Compagnone**, Università di Teramo	degli Studi di Messina	Chair: **Adele Mucci**, Università di Modena e Reggio Emilia	**Caliceti**, Università di Padova	Chair: **Silvia Prati**, UNIVERSITY OF BOLOGNA	Milano Chair: **Giorgio Bertolini**, Olon SpA Chair: **Mario Vito Marchionna**, Saipem Chair: **Maurizio Galimberti**, Politecnico di Milano	Università Ca' Foscari, Venezia Chair: **Gianguido Ramis**, Università di Genova Chair: **Alessandro Trovarelli**, Università di Udine	DD-SCI Chair: **Margherita Venturi**, Università di Bologna
	ParallelTopic09 - ID: 180: Artificial intelligence and modeling for chemistry Luogo, sala: **Green1 (level -1)** Chair: **Bartolomeo Civalleri**, Università di Torino	**ParallelTopic10 - ID: 181: Chemistry meets circularity** Luogo, sala: **Red2 (level +1)** Chair: **Francesco Ruffo**, Università di Napoli Federico II Chair: **Fabrizio Cavani**, Università di Bologna Chair: **Antimo Gioiello**, Università degli Studi di Perugia	**ParallelTopic12 - ID: 182: Chemistry at the life science interface** Luogo, sala: **Red1 (level +1)** Chair: **Cesare Gennari**, Università degli Studi di Milano Chair: **Francesco Peri**, University of Milano-Bicocca Chair: **Gianluca Sbardella**, Università di Salerno	**ParallelTopic13 - ID: 183: Smart materials** Luogo, sala: **Yellow 1 (level +1)** Chair: **Alessandro Casnati**, Università di Parma Chair: **Francesca D'Anna**, Università degli studi di Palermo	**ParallelTopic14 - ID: 184: Food** Luogo, sala: **Green3 (level -1)** Chair: **Vito Gallo**, Politecnico di Bari Chair: **Paola Dugo**, Università di Messina	**ParallelTopic15 - ID: 185: New Reactions** Luogo, sala: **Orange 1 (level -1)** Chair: **Isabella Daidone**, University of L'Aquila Chair: **Carla Marchioro**, Consultant		
12:30 - 14:00	**LUNCH2: Lunch & Expo** Luogo, sala: **Hall B (main hall; level +1)** Check the registration area in ConfTool for any lunch booking options at the congress center or nearby.							
14:00 - 16:00	**ParallelTopic01 - ID: 186: Advanced monitoring, sensing and imaging** Luogo, sala: **Yellow2 (level +1)** Chair: **Dario Compagnone**, Università di Teramo Chair: **Andrew Smith**, University of Milano-Bicocca	**ParallelTopic02 - ID: 187: Environmental protection** Luogo, sala: **Green2 (level -1)** Chair: **Alessandra Criscuoli**, Istituto per la Tecnologia delle Membrane (CNR-ITM) Chair: **Christian Durante**, Università degli studi di Padova	**ParallelTopic03 - ID: 188: Clean energy** Luogo, sala: **Yellow 3 (level +1)** Chair: **Silvia Gross**, Università di Padova	**ParallelTopic04 - ID: 189: Health** Luogo, sala: **Blue1 (level +1)** Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna Chair: **Paolo Caliceti**, Università di Padova	**ParallelTopic06 - ID: 190: Industry and technology transfer** Luogo, sala: **Orange 3 (level -1)** Chair: **Maurizio Galimberti**, Politecnico di Milano Chair: **Maria Carafa**, Sapienza Università di Roma Chair: **Silvia Davalli**, Evotec	**ParallelTopic07 - ID: 191: Catalysis** Luogo, sala: **Blue2 (level +1)** Chair: **Paolo Fornasiero**, Università di Trieste Chair: **Mario Chiesa**, Università di Torino Chair: **Barbara Milani**, Unviersità degli Studi di Trieste Chair: **Alceo Macchioni**, Università degli Studi di Perugia	**ParallelTopic08 - ID: 192: Chemical education, communication and outreach** Luogo, sala: **Orange 2 (level -1)** Chair: **Riccardo Lucentini**, Fondazione Ri.MED Chair: **Massimo Trotta**, Consiglio Nazionale delle Ricerche	**ParallelTopic09 - ID: 193: Artificial intelligence and modeling for chemistry** Luogo, sala: **Green1 (level -1)** Chair: **Marco De Vivo**, Istituto Italiano di Tecnologia
	ParallelTopic10 - ID: 194: Chemistry meets circularity Luogo, sala: **Red2**	**ParallelTopic11: Inclusion, equity, diversity, and ethics** Luogo, sala: **Turquoise1 (level -**	**ParallelTopic12 - ID: 195: Chemistry at the life science interface** Luogo, sala: **Red1**	**ParallelTopic13 - ID: 196: Smart materials** Luogo, sala: **Yellow 1 (level +1)** Chair: **Maurizio**	**ParallelTopic14 - ID: 197: Food** Luogo, sala: **Green3 (level -1)** Chair: **Arianna Rossetti**,	**ParallelTopic15 - ID: 198: New Reactions** Luogo, sala: **Orange 1 (level -1)** Chair: **Marco Bandini**,		

	(level +1) Chair: **Carlo Punta**, Politecnico di Milano Chair: **Fabrizio Passarini**, Università di Bologna	1) Chair: **Marta Da Pian**, Società Chimica Italiana - Gruppo Giovani Chair: **Alessandro Minguzzi**, Università degli Studi di Milano	(level +1) Chair: **Francesco Peri**, University of Milano-Bicocca Chair: **Gianluca Sbardella**, Università di Salerno	**Peruzzini**, CNR Chair: **Lidia Armelao**, Consiglio Nazionale delle Ricerche	Politecnico di Milano	Università di Bologna Chair: **Marzio Rancan**, ICMATE		
16:00 - 17:30	**ParallelTopic01 - ID: 199: Advanced monitoring, sensing and imaging** Luogo, sala: Yellow2 (level +1) Chair: **Dario Compagnone**, Università di Teramo Chair: **Andrew Smith**, University of Milano-Bicocca	**ParallelTopic02 - ID: 200: Environmental protection** Luogo, sala: Green2 (level -1) Chair: **Carmelo Sgarlata**, Università degli Studi di Catania Chair: **Luigi Mondello**, Università di Messina Chair: **Antonio Proto**, Università di Salerno Chair: **Tommaso Cataldi**, Università di Bari Aldo Moro	**ParallelTopic03 - ID: 201: Clean energy** Luogo, sala: Yellow 3 (level +1) Chair: **Mario Chiesa**, Università di Torino Chair: **Paola Manini**, Università degli Studi di Napoli Federico II	**ParallelTopic04 - ID: 202: Health** Luogo, sala: Blue1 (level +1) Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna Chair: **Paolo Caliceti**, Università di Padova	**ParallelTopic06 - ID: 203: Industry and technology transfer** Luogo, sala: Orange 3 (level -1) Chair: **Maurizio Galimberti**, Politecnico di Milano Chair: **Mario Vito Marchionna**, Saipem	**ParallelTopic07 - ID: 204: Catalysis** Luogo, sala: Blue2 (level +1) Chair: **Alceo Macchioni**, Università degli Studi di Perugia	**ParallelTopic08 - ID: 205: Chemical education, communication and outreach** Luogo, sala: Orange 2 (level -1) Chair: **Eleonora Aquilini**, DD-SCI	**ParallelTopic09 - ID: 206: Artificial intelligence and modeling for chemistry** Luogo, sala: Green1 (level -1) Chair: **Claudio Greco**, Università degli Studi di Milano - Bicocca
	ParallelTopic10 - ID: 207: Chemistry meets circularity Luogo, sala: Red2 (level +1) Chair: **Giulia Licini**, Università di Padova	**ParallelTopic11 - ID: 208: Inclusion, equity, diversity, and ethics** Luogo, sala: Turquoise1 (level -1) Chair: **Marta Da Pian**, Società Chimica Italiana - Gruppo Giovani Chair: **Alessandro Minguzzi**, Università degli Studi di Milano	**ParallelTopic12 - ID: 209: Chemistry at the life science interface** Luogo, sala: Red1 (level +1) Chair: **Francesco Peri**, University of Milano-Bicocca Chair: **Gianluca Sbardella**, Università di Salerno	**ParallelTopic13 - ID: 210: Smart materials** Luogo, sala: Yellow 1 (level +1) Chair: **Sabrina Antonello**, University of Padova	**ParallelTopic14 - ID: 211: Food** Luogo, sala: Green3 (level -1) Chair: **Stefano Alcaro**, Università Magna Graecia di Catanzaro Chair: **Nadia Lotti**, Università di Bologna	**ParallelTopic15 - ID: 212: New Reactions** Luogo, sala: Orange 1 (level -1) Chair: **Giorgio Grillo**, Università di Torino Chair: **Paolo Dambruoso**, CNR		
17:30 - 19:00	**Assemblea ABC: Assemblea dei Soci della Divisione di Chimica dell' Ambient**	**Assemblea ALI: Assemblea dei Soci della Divisione di Chimica degli Alimenti** Luogo, sala: Orange 3 (level -1)	**Assemblea ANA: Assemblea dei Soci della Divisione di Chimica Analitica** Luogo, sala: Red2 (level +1) Chair: **Luigi**	**Assemblea CSB: Assemblea dei Soci della Divisione di Chimica dei Sistemi Biologici** Luogo, sala: Green3 (level -1)	**Assemblea DID: Assemblea dei Soci della Divisione di Didattica Chimica** Luogo, sala: Meeting4+5 (level -	**Assemblea ELE: Assemblea dei Soci della Divisione di Elettrochimica** Luogo, sala: Orange 1 (level -1)	**Assemblea FAR: Assemblea dei Soci della Divisione di Chimica Farmaceutica** Luogo, sala: Blue1 (level +1)	**Assemblea FIS: Assemblea dei Soci della Divisione di Chimica Fisica** Luogo, sala: Yellow 1 (level +1) Chair: **More**

	e e dei Beni Culturali Luogo, sala: **Green1 (level -1)** Chair: **Antonio Proto**, Università di Salerno	Chair: **Nadia Mulinacci**, Università di Firenze	**Mondello**, Università di Messina	Chair: **Alessandra Magistrato**, CNR	**1)** Chair: **Eleonora Aquilini**, DD-SCI	Chair: **Monica Santamaria**, Università di Palermo	Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna	**no Meneghetti**, Università di Padova
	Assemblea IND: Assemblea dei Soci della Divisione di Chimica Industriale Luogo, sala: **Yellow3 (level +1)** Chair: **Mario Vito Marchionna**, Saipem	**Assemblea INO: Assemblea dei Soci della Divisione di Chimica Inorganica** Luogo, sala: **Blue2 (level +1)** Chair: **Mario Chiesa**, Università di Torino	**Assemblea MAS: Assemblea dei Soci della Divisione di Spettrometria di Massa** Luogo, sala: **Turquoise1 (level -1)** Chair: **Giuliana Bianco**, Unibas	**Assemblea ORG: Assemblea dei Soci della Divisione di Chimica Organica** Luogo, sala: **Red1 (level +1)** Chair: **Alessandro Abbotto**, Università di Milano-Bicocca	**Assemblea TEC: Assemblea dei Soci della Divisione di Chimica per le Tecnologie** Luogo, sala: **Yellow 2 (level +1)** Chair: **Piero Mastrorilli**, POLITECNICO DI BARI	**Assemblea TEF: Assemblea dei Soci della Divisione di Tecnologia Farmaceutica** Luogo, sala: **Orange 2 (level -1)** Chair: **Paola Minghetti**, unimi	**Assemblea TEO: Assemblea dei Soci della Divisione di Chimica Teorica e Computazionale** Luogo, sala: **Green2 (level -1)** Chair: **Claudio Greco**, Università degli Studi di Milano - Bicocca	
19:00 - 20:30	**POSTER-B: Poster Session B** Luogo, sala: **Hall B (main hall; level +1)**							
20:30 - 22:00	**TOPIC-D: Junior Group Event** Luogo, sala: **Red1 (level +1)** **20:30-20:45** Marta Da Pian, SCI Giovani, Antonio Monopoli, SCI Puglia, Introduction **20:45-21:15** Interview to Barbascura X, "Come si diventa divulgatori scientifici" **21:15-21:45** Q&A **21:45-22:00** Conclusion							

Giovedì, 29.08.2024

8:30 - 10:30	**ANA-1A: Divisione di Chimica Analitica - Parte 1A** Luogo, sala: Red 2 (level +1) Chair: **Anna Laura Capriotti**, Sapienza Chair: **Alberto Cavazzini**, Università di Ferrara	**ANA-2A: Divisione di Chimica Analitica - Parte 2A** Luogo, sala: Orange1 (level -1) Chair: **Dario Compagnone**, Università di Teramo Chair: **Giovanna Marrazza**, Università di Firenze	**ANA-3A: Divisione di Chimica Analitica - Parte 3A** Luogo, sala: Orange 2 (level -1) Chair: **Gianpiero Adami**, Università degli Studi di Trieste Chair: **Paola Fermo**, Università degli Studi di Milano	**CSB-1A: Divisione di Chimica dei Sistemi Biologici - Parte 1A** Luogo, sala: Turquoise1 (level -1)	**DID-A: Divisione di Didattica Chimica - Parte A** Luogo, sala: Meeting 3 (level -1) Chair: **Elena Maria Ghibaudi**, Università di Torino	**ELE-2: Divisione di Elettrochimica - Parte 2** Luogo, sala: Meeting4+5 (level -1) Chair: **Giovanni Valenti**, University of Bologna Chair: **Matteo Bonomo**, Università di Torino	**FAR-1A: Divisione di Chimica Farmaceutica - Parte 1A** Luogo, sala: Blue1 (level +1) Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna	**FIS-1A: Divisione di Chimica Fisica - Parte 1A** Luogo, sala: Yellow1 (level +1) Chair: **Piero Ugliengo**, Università di Torino
	IND-1A: Divisione di Chimica Industriale - Parte 1A Luogo, sala: Yellow3 (level +1) Chair: **Mario Vito Marchionna**, Saipem Chair: **Anna Maria Raspolli Galletti**, University of Pisa	**INO-1A: Divisione di Chimica Inorganica - Parte 1A** Luogo, sala: Blue2 (level +1) Chair: **Francesco Ruffo**, Università di Napoli Federico II	**INO-2A: Divisione di Chimica Inorganica - Parte 2A** Luogo, sala: White2 (level +2) Chair: **Mario Chiesa**, Università di Torino	**TEC-A: Divisione di Chimica per le Tecnologie - Parte A** Luogo, sala: Yellow 2 (level +1) Chair: **Piero Mastrorilli**, POLITECNICO DI BARI Chair: **Salvatore Failla**, Università di Catania	**TEF-1: Divisione di Tecnologia Farmaceutica - Parte 1** Luogo, sala: Meeting 6 (level -1) Chair: **Paolo Blasi**, University of Bologna Chair: **Maria Carafa**, Sapienza Università di Roma			
8:30 - 11:00	**ABC-A: Divisione di Chimica dell'Ambiente e dei Beni Culturali - Parte A** Luogo, sala: White1 (level +2) Chair: **Elisabetta Zendri**, Università Ca' Foscari di Venezia Chair: **Antonio Proto**, Università di Salerno		**ORG-1A: Divisione di Chimica Organica - Parte 1A** Luogo, sala: Red1 (level +1) Chair: **Lucia Pasquato**, Università degli Studi di Trieste Chair: **Renzo Luisi**, University of Bari "A. Moro"		**TEO-A: Divisione di Chimica Teorica e Computazionale - Parte A** Luogo, sala: Orange3 (level -1) Chair: **Claudio Greco**, Università degli Studi di Milano - Bicocca			
8:30 - 11:30	**ELE-1: Divisione di Elettrochimica - Parte 1** Luogo, sala: Turquoise2 (level -1) Chair: **Vito Di Noto**, Università degli Studi di Padova Chair: **Maria Assunta Navarra**, Sapienza Università di Roma							
8:30 - 19:00	**Silent room August 29th: Silent room programme August 29th** Luogo, sala: SilentRoom (main hall; level +1) Chair: **Alessandro Minguzzi**, Università degli Studi di Milano Chair: **Emanuela Licandro**, Università degli Studi di Milano 9:00-10:00Green Chemistry - Challenging reactions in aqueous media Speaker: Mattia Stucchi, Olon SpA 10.15-11.15Closed circular economy for the collection and recycling of PET bottles Speaker: Igor Toscani, Coripet – Consorzio volontario per riciclo del PET 12.30-13.00Art for Chemistry Speaker: Maria Pomiansky 13.15-14.45Lunch/Job Offer/Book Presentation Speaker: TBA 15.00-15.30The culture of restoration. Applications between theory experiences and laboratory activities Speaker: Scuola Restauro Botticino 15.45-16.15Integrazione tra tecniche analitiche GC-MS, FTIR e NMR benchtop per l'identificazione forense di nuove sostanze psicoattive: un caso studio (Polizia Scientifica) Speaker: Chiara Ciccarelli, Commissario Capo Tecnico della Polizia di Stato del Gabinetto Regionale Polizia Scientifica di Milano 16.30-17.00Tecniche chimico-fisiche di evidenziazione impronte latenti in ambito forense. Speaker: Lucio Diego Bencivinni, Commissario Capo Tecnico della...							

9:00 - 10:30	**FIS-2A: Divisione di Chimica Fisica - Parte 2A** Luogo, sala: **Green1 (level -1)** Chair: **Marco Geppi**, Università di Pisa							
9:15 - 11:00	**ORG-2A: Divisione di Chimica Organica - Parte 2A** Luogo, sala: **Green2 (level -1)** Chair: **Alessandra Napolitano**, Università di Napoli Federico II Chair: **Alberto Minassi**, università del piemonte orientale				**ORG-3A: Divisione di Chimica Organica - Parte 3A** Luogo, sala: **Green3 (level -1)** Chair: **Alessandro Mordini**, Consiglio Nazionale delle Ricerche Chair: **Luca Pignataro**, Università degli Studi di Milano			
10:30 - 13:00	**ANA-1B: Divisione di Chimica Analitica - Parte 1B** Luogo, sala: **Red 2 (level +1)** Chair: **Tommaso Cataldi**, Università di Bari Aldo Moro Chair: **Massimo Del Bubba**, Università di Firenze	**ANA-2B: Divisione di Chimica Analitica - Parte 2B** Luogo, sala: **Orange1 (level -1)** Chair: **Aldo Roda**, università di Bologna Chair: **Sandra Furlanetto**, Università di Firenze	**ANA-3B: Divisione di Chimica Analitica - Parte 3B** Luogo, sala: **Orange 2 (level -1)** Chair: **Claudio Minero**, Università di Torino Chair: **Carlo Dossi**, University of Insubria	**CSB-1B: Divisione di Chimica dei Sistemi Biologici - Parte 1B** Luogo, sala: **Turquoise1 (level -1)**	**DID-B: Divisione di Didattica Chimica - Parte B** Luogo, sala: **Meeting 3 (level -1)** Chair: **Elena Maria Ghibaudi**, Università di Torino	**FAR-1B: Divisione di Chimica Farmaceutica - Parte 1B** Luogo, sala: **Blue1 (level +1)** Chair: **Patrizia Diana**, UNIVERSITA' DI PALERMO Chair: **Gianluca Sbardella**, Università di Salerno	**FIS-1B: Divisione di Chimica Fisica - Parte 1B** Luogo, sala: **Yellow1 (level +1)** Chair: **Sergio Brutti**, Università di Roma La Sapienza	**FIS-2B: Divisione di Chimica Fisica - Parte 2B** Luogo, sala: **Green1 (level -1)** Chair: **Concetta Giancola**, Università di Napoli Federico II
	IND-1B: Divisione di Chimica Industriale - Parte 1B Luogo, sala: **Yellow3 (level +1)** Chair: **Giorgia Albonetti**, Università degli studi di Ferrara Chair: **Federico Bella**, Politecnico di Torino	**INO-1B: Divisione di Chimica Inorganica - Parte 1B** Luogo, sala: **Blue2 (level +1)** Chair: **Diego La Mendola**, Università di Pisa	**INO-2B: Divisione di Chimica Inorganica - Parte 2B** Luogo, sala: **White2 (level +2)** Chair: **Cristina Femoni**, University of Bologna, Department of Industrial Chemistry "Toso Montanari"	**MAS: Divisione di Spettrometria di Massa** Luogo, sala: **Meeting4+5 (level -1)** Chair: **Maria Assunta Acquavia**, Università degli Studi della Basilicata Chair: **Flaminia Vincenti**, Divisione Spettrometria di Massa - SCI	**TEC-B: Divisione di Chimica per le Tecnologie - Parte B** Luogo, sala: **Yellow2 (level +1)** Chair: **Marta Feroci**, Sapienza Università Roma Chair: **Giuseppina Raffaini**, Politecnico di Milano			
11:00 - 13:00	**ABC-B: Divisione di Chimica dell'Ambiente e dei Beni Culturali - Parte B** Luogo, sala: **White1 (level +2)** Chair: **Silvia Prati**, UNIVERSITY OF BOLOGNA Chair: **Raf**	**ORG-1B: Divisione di Chimica Organica - Parte 1B** Luogo, sala: **Red1 (level +1)** Chair: **Cristina Prandi**, Universita' di Torino Chair: **Vito Capriati**, Università degli Studi di Bari Aldo Moro	**ORG-2B: Divisione di Chimica Organica - Parte 2B** Luogo, sala: **Green2 (level -1)** Chair: **Alessandra Tolomelli**, Alma Mater Studiorum Università di Bologna Chair: **Gennaro Piccialli**, Università degli Studi di	**ORG-3B: Divisione di Chimica Organica - Parte 3B** Luogo, sala: **Green3 (level -1)** Chair: **Michele Maggini**, Università di Padova Chair: **Serena Riela**, Università di Catania	**TEO-B: Divisione di Chimica Teorica e Computazionale - Parte B** Luogo, sala: **Orange 3 (level -1)** Chair: **Enrico Bodo**, Università di Roma La Sapienza			

	faele Cucciniello, University of Salerno		Napoli Federico II					
11:30 - 12:00	**FIS-3: Divisione di Chimica Fisica - Parte 3** Luogo, sala: **Turquoise2 (level -1)** Chair: **Maria Vittoria Dozzi**, Università degli Studi di Milano							
12:00 - 12:30	**ALI-2A: Divisione di Chimica degli Alimenti - Parte 2A** Luogo, sala: **Turquoise2 (level -1)** Chair: **Gianni Zoccatelli**, Università di Verona Chair: **Chiara Dall'Asta**, University of Parma							
13:00 - 14:30	**LUNCH3: Lunch & Expo** Luogo, sala: **Hall B (main hall; level +1)** Check the registration area in ConfTool for any lunch booking options at the congress center or nearby.							
14:30 - 16:00	**INO-2C: Divisione di Chimica Inorganica - Parte 2C** Luogo, sala: **White2 (level +2)** Chair: **Alceo Macchioni**, Università degli Studi di Perugia				**INO-3: Divisione di Chimica Inorganica - Parte 3** Luogo, sala: **Green1 (level -1)** Chair: **Michele Benedetti**, Università del Salento			
14:30 - 16:30	**ABC-C: Divisione di Chimica dell'Ambiente e dei Beni Culturali - Parte C** Luogo, sala: **White1 (level +2)** Chair: **Davide Vione**, Università di Torino Chair: **Antonio Marcomini**, Università Ca' Foscari Venezia	**ALI-1A: Divisione di Chimica degli Alimenti - Parte 1A** Luogo, sala: **Turquoise1 (level -1)** Chair: **Roberta Budriesi**, Università di Bologna Chair: **Filomena Corbo**, Università di Bari Aldo Moro Chair: **Chiara Emilia Cordero**, Università di Torino Chair: **Gianni Galaverna**, Università di Parma	**ALI-2B: Divisione di Chimica degli Alimenti - Parte 2B** Luogo, sala: **Turquoise2 (level -1)** Chair: **Gianni Zoccatelli**, Università di Verona Chair: **Chiara Dall'Asta**, University of Parma Chair: **Nadia Mulinacci**, Università di Firenze Chair: **Raffaella Boggia**, UNIGE-University of Genoa (Italy)	**ANA-1C: Divisione di Chimica Analitica - Parte 1C** Luogo, sala: **Red2 (level +1)** Chair: **Maria Careri**, Università di Parma Chair: **Laura Anfossi**, Università di Torino	**ANA-2C: Divisione di Chimica Analitica - Parte 2C** Luogo, sala: **Orange 1 (level -1)** Chair: **Alberto Pettignano**, Università di Palermo Chair: **Carmelo Sgarlata**, Università degli Studi di Catania	**ANA-3C: Divisione di Chimica Analitica - Parte 3C** Luogo, sala: **Orange 2 (level -1)** Chair: **David e Ballabio**, Università Milano - Bicocca Chair: **Giuseppe Spoto**, Università degli Studi di Catania	**CSB-2: Divisione di Chimica dei Sistemi Biologici - Parte 2** Luogo, sala: **Meeting3 (level -1)**	**FAR-1C: Divisione di Chimica Farmaceutica - Parte 1C** Luogo, sala: **Blue1 (level +1)** Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna Chair: **Violetta Cecchetti**, Università di Perugia
	FIS-1C: Divisione di Chimica Fisica - Parte 1C Luogo, sala: **Yellow1 (level +1)** Chair: **Elena Selli**, Università degli Studi di Milano	**IND-1C: Divisione di Chimica Industriale - Parte 1C** Luogo, sala: **Yellow 3 (level +1)** Chair: **Martino Di Serio**, Università di Napoli Federico II Chair: **Emilia Paone**, Università Mediterranea di Reggio Calabria	**INO-1C: Divisione di Chimica Inorganica - Parte 1C** Luogo, sala: **Blue2 (level +1)** Chair: **Barbara Milani**, Unviersità degli Studi di Trieste	**ORG-1C: Divisione di Chimica Organica - Parte 1C** Luogo, sala: **Red1 (level +1)** Chair: **Emanuela Licandro**, Università degli Studi di Milano Chair: **Cristiano Zonta**, Università di Padova	**ORG-2C: Divisione di Chimica Organica - Parte 2C** Luogo, sala: **Green2 (level -1)** Chair: **Anna Bernardi**, Università degli Studi di Milano Chair: **Lucia Panzella**, Università di Napoli Federico II	**ORG-3C: Divisione di Chimica Organica - Parte 3C** Luogo, sala: **Green3 (level -1)** Chair: **Antonella Fontana**, università "G. d'Annunzio" Chair: **Francesco Nicotra**, Università degli Studi di Milkano-Bicocca	**TEC-C: Divisione di Chimica per le Tecnologie - Parte C** Luogo, sala: **Yellow2 (level +1)** Chair: **Cristina Leonelli**, Università degli Studi di Modena e Reggio Emilia Chair: **Andrea Melchior**, Università di Udine	**TEO-C: Divisione di Chimica Teorica e Computazionale - Parte C** Luogo, sala: **Orange3 (level -1)** Chair: **Marco Mendolicchio**, Scuola Normale Superiore
14:30 - 17:30	**TEF-2: Divisione di Tecnologia Farmaceutica - Parte 2** Luogo, sala: **Meeting4+5 (level -1)**							

	Chair: **Paola Minghetti**, unimi Chair: **Paolo Caliceti**, Università di Padova							
16:00 - 18:30	**FAR-2A: Divisione di Chimica Farmaceutica - Parte 2A** Luogo, sala: **White2 (level +2)** Chair: **Giancarlo Aldini**, Università degli Studi di Milano Chair: **Isabella Romeo**, Università Magna Graecia di Catanzaro				**ORG-4A: Divisione di Chimica Organica - Parte 4A** Luogo, sala: **Green1 (level -1)** Chair: **Luigi Lay**, Università degli Studi di Milano Chair: **Walter Cabri**, University of Bologna			
16:30 - 18:30	**ABC-D: Divisione di Chimica dell'Ambiente e dei Beni Culturali - Parte D** Luogo, sala: **White1 (level +2)** Chair: **Luca Rivoira**, Università degli Studi di Torino Chair: **Daniele Cespi**, Alma Mater Studiorum – Università di Bologna	**ALI-1B: Divisione di Chimica degli Alimenti - Parte 1B** Luogo, sala: **Turquoise1 (level -1)** Chair: **Eugenio Aprea**, University of Trento Chair: **Paola Dugo**, Università di Messina	**ANA-1D: Divisione di Chimica Analitica - Parte 1D** Luogo, sala: **Red2 (level +1)** Chair: **Marco Giannetto**, Università di Parma Chair: **Luisa Torsi**, Università degli Studi di Bari Aldo Moro	**ANA-2D: Divisione di Chimica Analitica - Parte 2D** Luogo, sala: **Orange1 (level -1)** Chair: **Concetta De Stefano**, Università degli Studi di Messina Chair: **Raffaela Biesuz**, Università di Pavia	**ANA-3D: Divisione di Chimica Analitica - Parte 3D** Luogo, sala: **Orange 2 (level -1)** Chair: **Nicola Cioffi**, Università degli Studi di Bari Aldo Moro Chair: **Paolo Oliveri**, Università degli Studi di Genova	**ANA-4A: Divisione di Chimica Analitica - Parte 4A** Luogo, sala: **Orange 3 (level -1)** Chair: **Paola Agata Eustochia Donato**, Università degli Studi di Messina Chair: **Marco Vincenti**, Università degli Studi di Torino	**FAR-1D: Divisione di Chimica Farmaceutica - Parte 1D** Luogo, sala: **Blue1 (level +1)** Chair: **Stefano Alcaro**, Università Magna Graecia di Catanzaro Chair: **Paola Conti**, Università degli Studi di Milano	**FIS-1D: Divisione di Chimica Fisica - Parte 1D** Luogo, sala: **Yellow1 (level +1)** Chair: **Maria Luisa Saladino**, University of Palermo
	IND-1D: Divisione di Chimica Industriale - Parte 1D Luogo, sala: **Yellow3 (level +1)** Chair: **Paolo Vacca**, Saes Getters Spa Chair: **Giorgio Ferrari**, Mapei S.p.A.	**IND-2A: Divisione di Chimica Industriale - Parte 2A** Luogo, sala: **Turquoise2 (level -1)** Chair: **Federica Menegazzo**, Università Ca' Foscari Venezia Chair: **Paolo Ciambelli**, Narrando	**INO-1D: Divisione di Chimica Inorganica - Parte 1D** Luogo, sala: **Blue2 (level +1)** Chair: **Silvia Gross**, Università di Padova	**ORG-1D: Divisione di Chimica Organica - Parte 1D** Luogo, sala: **Red1 (level +1)** Chair: **Giovanni Piersanti**, Università degli studi di Urbino Carlo Bo Chair: **Raffaele Saladino**, Università della Tuscia	**ORG-2D: Divisione di Chimica Organica - Parte 2D** Luogo, sala: **Green2 (level -1)** Chair: **Daniele Passarella**, Università degli Studi di Milano Chair: **Antonio Molinaro**, Universita di Napoli Federico II	**ORG-3D: Divisione di Chimica Organica - Parte 3D** Luogo, sala: **Green3 (level -1)** Chair: **Alessandro Pezzella**, Università di Napoli Federico II Chair: **Raffaella Mancuso**, Università della Calabria	**TEC-D: Divisione di Chimica per le Tecnologie - Parte D** Luogo, sala: **Yellow2 (level +1)** Chair: **Candida Milone**, Università di Messina Chair: **Fabio Ganazzoli**, Politecnico di Milano	
17:30 - 18:30	**CSB-3: Divisione di Chimica dei Sistemi Biologici - Parte 3** Luogo, sala: **Meeting4+5 (level -1)**							
18:30 - 23:00	**DINNER: Gala Dinner with Happy Hour and Exclusive Guided Tour of the Museum** Luogo, sala: **Museo Nazionale Scienza e Tecnologia Leonardo da Vinci (MUST)** 6:30 - 8:00 PM: Happy Hour and Guided Tours 8:00 - 11:00 PM: Gala Dinner An exciting discovery of the Museum's highlights awaits you: the Leonardo da Vinci Galleries, the Space exhibition with lunar rocks, the Vega launcher, the Enrico Toti submarine, the Conte Biancamano ocean liner, locomotives and airplanes. Tours depart continuously upon reaching a predetermined number of guests and guide participants from the Happy Hour hall to the cloisters where the dinner will take place, passing through the most interesting areas of the Museum. For further details, visit: https://www.museoscienza.org/en							

Venerdì, 30.08.2024

8:30 - 9:30	**MD-B: Medal Session B** Luogo, sala: **Silver Plenary (level +2)** Chair: **Federico Bella**, Politecnico di Torino Chair: **Claudio Pettinari**, Università di Camerino
8:30 - 17:00	**Silent room August 30th: Silent room programme August 30th** Luogo, sala: **SilentRoom (main hall; level +1)** Chair: **Alessandro Minguzzi**, Università degli Studi di Milano Chair: **Emanuela Licandro**, Università degli Studi di Milano **13:15-14:45** Lunch/Job Offer/Book Presentation
9:30 - 10:00	**PL-C: Plenary Session C** Luogo, sala: **Silver Plenary (level +2)** Chair: **Mario Chiesa**, Università di Torino
10:00-10:45	**NB: Nobel Session** Luogo, sala: **Silver Plenary (level +2)** Chair: **Gianluca Maria Farinola**, Società Chimica Italiana
10:45-11:15	**COFFEE-BREAK2: Coffee Break & Expo** Luogo, sala: **Hall B (main hall; level +1)**
11:15-11:45	**PL-D: Plenary Session D** Luogo, sala: **Silver Plenary (level +2)** Chair: **Franco Alhaique**, Sapienza Università di Roma
11:45-12:45	**TOPIC-E: Outreach & Dissemination** Luogo, sala: **Silver Plenary (level +2)** Chair: **Margherita Venturi**, Università di Bologna
12:45-14:15	**LUNCH4: Lunch & Expo** Luogo, sala: **Hall B (main hall; level +1)** Check the registration area in ConfTool for any lunch booking options at the congress center or nearby.
14:15-17:00	**TOPIC-F: Arts & Music** Luogo, sala: **Silver Plenary (level +2)**
17:00-18:00	**CLOSING: Closing Ceremony** Luogo, sala: **Silver Plenary (level +2)** Chair: **Gianluca Maria Farinola**, Società Chimica Italiana

Società Chimica Italiana

XXVIII Congresso Nazionale

MILANO, 26 - 30 Agosto 2024

SCI 2024

Chimica

ELEMENTI DI FUTURO

Programma dettagliato

Programma dettagliato del Congresso

SCI2024 - XXVIII Congresso Nazionale della Società Chimica Italiana

Lunedì, 26 agosto 2024

8:30 - 14:00

REGISTRATION: Advance registration
Luogo, sala: **Registration Area (level 0)**
Registration is open throughout the conference 8-19

10:00 - 12:00

IUPAC CrystEng 2024: 4th IUPAC Workshop on Crystal Engineering
Luogo, sala: **Red2 (level +1)**
Chair di sessione: **Pierangelo Metrangolo**, Politecnico di Milano; pierangelo.metrangolo@polimi.it
Chair di sessione: **Gabriella Cavallo**, Politecnico di Milano; gabriella.cavallo@polimi.it
Chair di sessione: **Giancarlo Terraneo**, Politecnico di Milano; giancarlo.terraneo@polimi.it
Satellite meeting to SCI2024 and ECM34 - Padova, in relation with the IUPAC Project 2012-044-1-100 "Basic Terminology of Crystal Engineering" https://iupac.org/project/2012-044-1-100/

14:00 - 15:30

OPENING: Opening Ceremony
Luogo, sala: **Silver Plenary (level +2)**
Chair di sessione: **Gianluca Maria Farinola**, Società Chimica Italiana; gianlucamaria.farinola@uniba.it
Chair di sessione: **Alessandro Abbotto**, Università di Milano-Bicocca; alessandro.abbotto@unimib.it
Chair di sessione: **Maurizio Benaglia**, Università degli Studi di Milano; maurizio.benaglia@unimi.it
Chair di sessione: **Pierangelo Metrangolo**, Politecnico di Milano; pierangelo.metrangolo@polimi.it
Chair di sessione: **Lidia Armelao**, Consiglio Nazionale delle Ricerche; direttore.dsctm@cnr.it
Chair di sessione: **Eleonora Aquilini**, DD-SCI; ele.aquilini6@gmail.com
Other Chairs: **Cristiana Gaburri** Scientific Technical Central Director, Federchimica; **Nausicaa Orlandi** (President of the National Federation of the Orders of Chemists and Physicists)

15:30 - 17:00

POSTER-A: Poster Session A
Luogo, sala: **Hall B (main hall; level +1)**

17:00 - 19:00

PL-A: Plenary Session A
Luogo, sala: **Silver Plenary (level +2)**

17:00 - 17:30

PL-01. A brief philosophical history of the periodic table

Scerri, Eric
University of California Los Angeles (UCLA), United States of America; scerri@chem.ucla.edu

The lecture will begin with a brief history of the origins of the periodic table, beginning with the contributions of Lavoisier, Dalton, Döbereiner and others. I will proceed to the Karlsruhe conference and the ensuing independent discovery of the periodic table by as many as six individuals, culminating with Mendeleev's table just over 150 years ago. We will move on to the challenges that the periodic table faced, such as the existence of pair reversals and the discovery of the noble gases.

Next came several discoveries in physics, including X-rays, radioactivity and the electron, all of which had a profound effect on the understanding of the periodic table. Research in atomic structure beginning at the turn of the 20th century prompted some physicists such as J.J. Thomson and Niels Bohr to begin to seek a fundamental explanation for the periodic table in terms of electronic structure.

The later developed quantum mechanics of Heisenberg, Schrödinger, Pauli and others led to a more rigorous explanation, although some open questions remain up to present times. For example, there is yet no fundamental explanation for the empirical rule that the occupation of atomic orbitals proceeds via the simple n + l rule.

In addition, relativistic effects are being increasingly considered in attempts to understand the heavier elements in particular.

Finally, several other remaining open questions will be discussed, such as the membership of group 3 of the periodic table, alternative representations such as the 32-column format, the left-step periodic table and whether there may exist an 'optimal form' of the periodic table.

17:30 - 18:00

PL-02. "They do it with mirrors" Biogenic advanced functional materials engineered to fulfill optical functions

Addadi, Lia; Oron, Dan; Kronik, Leeor; Weiner, Steve
Weizmann Institute of Science, Israel; lia.addadi@weizmann.ac.il

Organisms construct optical 'devices' based on assemblies of crystals of organic compounds. The constituent molecules are mostly purines and pteridines. All the crystals have unusually high refractive indexes in the directions along which the light penetrates the crystal. The crystals form mirrors and light scattering layers that function to increase light sensitivity in the eyes of some organisms, or endow them with brilliant structural colors1. The architecture of the reflecting layers varies from multi-layered mirrors tiled with mosaics of guanine2 or xanthine3 crystals, to densely packed assemblies of multilayer core-shell spherulites composed of isoxanthopterin crystals4, or to assemblies of block-shaped crystals of 7,8-dihydroxanthopterin5. In all these examples, the hierarchical organization is controlled from the crystal structure at the nanoscale to the complex 3D super-structure at the millimeter level. The molecule, the crystal structure, the crystal size, the crystal morphology and the super-structural arrangement, all together

determine the optical properties of the material. We have thus a vast choice of molecular components, assembled following precise blueprints. What makes these components especially apt to fulfill optical functions in organisms, and how do organisms assemble them? Answers to these questions may allow us to synthesize materials with interesting optical properties6.

[1] D Gur, B Palmer, S Weiner, L Addadi, Adv Funct Mater 2017, 1603514

[2] BA Palmer, GJ Taylor, … N Elad, D Oron, S Weiner, L Addadi, Science 2017, 358, 1172–1175

[3] O Friedman, A Böhm, … G Pass, S Weiner, L Addadi, J. Struct Biol 2022, DOI 10.1016/j.jsb.2022.107834

[4] BA Palmer, VJ Yallapragada, … S Weiner, L Addadi, D Oron, Nature Nanotechnology 2020 15 , 138–144

[5] G Zhang, A Hirsch, … L Kronik, L Leiserowitz, S Weiner and L Addadi, J Am Chem Soc 2019, 141, 50, 19736–19745

[6] L Alus, L Houben, … Dan Oron, Lia Addadi, Adv Mater 2024, manuscript under revision.

18:00 - 18:30

PL-03. Computational Discovery of Metal-Organic Frameworks for a Changing World

Gagliardi, Laura

University of Chicago, United States of America; lgagliardi@uchicago.edu

Addressing the energy challenges that we face globally requires the coordinated efforts of scientists, engineers, and policy makers. Chemistry has the potential to drive quantum leaps in technology. With theory, computation, and machine intelligence we can accelerate the search for solutions to water scarcity, decarbonization, and clean energy. Metal-organic frameworks (MOFs) are versatile platforms for various applications including catalysis for complex reactions and water harvesting. I will first present our ongoing efforts to understand and design the water-filling mechanism for water-harvesting MOFs.1

I will then describe our combined computational and data-driven study of MOF-supported catalysts. Utilization of machine learning algorithms in conjunction with experimental data can not only predict superior catalytic materials, but also under which experimental conditions they are most optimal.2

[1] N. Hanikel, D. Kurandina, S. Chheda, Z. Zheng, Z. Rong, S. E. Neumann, J. Sauer, J. I. Siepmann, L. Gagliardi, and O. M. Yaghi, ACS Central Science., 2023, 9, 551-557.

[2] K. E. McCullough, D. S. King, S. Chheda, M. S. Ferrandon, T. A. Goetjen, Z. H. Syed, T. R. Graham, N. M. Washton, O. K. Farha, L. Gagliardi, and M. Delferro, ACS Central Science 2023, 9, 266-276.

18:30 - 19:00

PL-04. Thermodynamic and kinetic approaches for drug discovery to target protein misfolding and aggregation

Vendruscolo, Michele

University of Cambridge, United Kingdom; mv245@cam.ac.uk

Protein misfolding diseases, including Alzheimer's and Parkinson's diseases, are characterised by the aberrant aggregation of proteins. These conditions are still largely untreatable, despite having a major impact on our healthcare systems and societies. To address this problem, I will describe drug discovery strategies to target protein misfolding and aggregation. More specifically, I will compare thermodynamic approaches based on the stabilization of the native states of proteins with kinetic approaches based on the slowing down of the aggregation process. This comparison will be carried out in terms of the current knowledge on the process of protein misfolding and aggregation, the mechanisms of disease and the therapeutic targets.

19:00 - 21:00

WELCOME: Welcome Mixer

Luogo, sala: **Vigorelli Stadium**

The welcome mixer will take place in the splendid setting of Milan's historic Vigorelli Stadium.

The "Velodromo Vigorelli" stadium is one of the most iconic sports sites for Italian and international sports. Built in 1935 and hosting up to 9,000 people, the velodrome became the most famous in Italy and one of the most important in the world. Just three days after its construction, cyclist Giuseppe Olmo set a new hour record on the inclined wooden track (with a maximum curve slope of 42 degrees) covered with 72 kilometers of Swedish pine strips. The "Vigorelli" quickly became a site for significant track cycling races and has also been chosen multiple times as a finish stage for road races like Giro d'Italia. Several world hour records were set at the Vigorelli velodrome, the most famous being that of Fausto Coppi in 1942 (45.8 km). In 2006, it was a filming location for the TV series "Gino Bartali - L'intramontabile" starring Pierfrancesco Favino. The Vigorelli velodrome is also famous for hosting the Beatles' first concert in Italy (1965; a plaque at the entrance commemorates it) and a notable concert by the rock band Led Zeppelin (European Tour, 1971), which was characterized by violent riots between concert attendees and police and that caused the end of the show after only a few minutes, with the complete destruction of the stage and the band's equipment. It is currently the home stadium for the Milano American football teams Seamen and Rhinos.

21:00 - 22:15

Exclusive guided tour (with fee): Tour guidato esclusivo a pagamento da 75 minuti: Castello Sforzesco- Milano zona centro (vedi opzioni in registrazione)

Luogo, sala: **Castello Sforzesco**

Tour esclusivo con apertura straordinaria alle Merlate. Guida in italiano e inglese (1 ora e 15 minuti).
Ammissione solo per persone appositamente registrate al tour. Non sono ammessi iscritti al congresso che non si sono registrati al tour.
Per registrarsi vai al menu principale: "Modifica i tuoi dati di iscrizione come partecipante"

Martedì, 27 agosto 2024

8:30 - 9:00

MD-A: Medal Session A
Luogo, sala: **Silver Plenary (level +2)**

8:30 - 9:00

MD-07. Medaglia Tiezzi. Unlocking Large Biomolecules: Insights into Public Health and Industrial Activity Signatures

Barcelo, Damia
Chemistry and Physics Department, University of Almeria, Ctra Sacramento s/n, 04120, Almería, Spain

8:30 - 19:00

Silent room August 27th: Silent room programme August 27th
Luogo, sala: **SilentRoom (main hall; level +1)**
Chair: **Alessandro Minguzzi**, Università degli Studi di Milano; alessandro.minguzzi@unimi.it
Chair: **Emanuela Licandro**, Università degli Studi di Milano; emanuela.licandro@unimi.it

9:00 - 10:30

PL-B: Plenary Session B
Luogo, sala: **Silver Plenary (level +2)**

9:00 - 9:30

PL-05. Medicinal Chemistry of Orphan G Protein-coupled Receptors

Müller, Christa Elisabeth
University of Bonn, Germany

9:30 - 10:00

PL-06. Artists' secrets revealed under synchrotron light

Cotte, Marine[1,2]
1: ESRF, The European Synchrotron Radiation Facility, 38000, Grenoble, France; 2: Sorbonne Université, Laboratoire d'Archéologie Moléculaire et Structurale (LAMS), CNRS, 75005, Paris, France

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10:00 - 10:30

PL-07. Chemistry Innovation in Small Molecule Drug Discovery

Hartung, Ingo V.
Merck Healthcare KGaA, Germany

10:30 - 11:00

COFFEE-BREAK1: Coffee Break & Expo
Luogo, sala: **Hall B (main hall; level +1)**

11:00 - 13:00

TOPIC-A: Chemistry & Society
Luogo, sala: **Silver Plenary (level +2)**
Chair: **Pierangelo Metrangolo**, Politecnico di Milano; pierangelo.metrangolo@polimi.it
Chair: **Lidia Armelao**, Consiglio Nazionale delle Ricerche; direttore.dsctm@cnr.it
11:00-11:30 Lidia Armelao, Department of Chemical Sciences and Materials Technology (DSCTM), National Research Council of Italy (CNR), Chemical Sciences and Innovative Materials for Health and Sustainable Development: An overview of the current research activities and perspectives @ DSCTM CNR
11.30-12:00 Fiorenzo Fumanti, Italian Institute for Environmental Protection and Research (ISPRA), The national and European mining situation: A new development model and the dependence on critical raw materials
12:00-12:30 Giulia Monteleone, Energy Technologies and Renewable Sources Department, ENEA, The scientific research to support industry, public administration, and citizens for a sustainable energy transition
12:30-13:00 Antonietta Lombardozzi, Polizia di Stato, Scienza Forense e Innovazione: rafforzare la sinergia tra Enti

13:00 - 14:30

LUNCH1: Lunch & Expo
Luogo, sala: **Hall B (main hall; level +1)**
Check the registration area in ConfTool for any lunch booking options at the congress center or nearby.

14:30 - 17:00

TOPIC-B: Industry Focus
Luogo, sala: **Silver Plenary (level +2)**
Chair: **Maurizio Benaglia**, Università degli Studi di Milano; maurizio.benaglia@unimi.it
Chair: **Cristiana Gaburri**, Federchimica; c.gaburri@federchimica.it
Sustainability: key factors for the competitiveness of the chemical industry
The session will commence with presentations by key, international chemical industry stakeholders. Each speaker will provide an overview of their organization's role within the industry and share insights into main advances done by their relevant companies in crucial topics, including circular economy, energy, process sustainability, decarbonisation. Central to the presentations will be a focus on the the current challenges faces by modern industrial chemistry, together with the relevant possible solutions, highlighting the role of research carried out in academia and in research centres.
14:30-14:45 Guido Guidesi – Assessore allo Sviluppo Economico di Regione Lombardia – Introductory Greetings
14:45-15:00 Juliette Vitaloni – Direttore Centro Studi e Internazionalizzazione di Federchimica – Chemical industry and economic scenario
15:00 – 15:15 Angelo Ferrando – Responsabile Sviluppo Nuove Piattaforme Tecnologiche di Versalis – Designing a circular and renewable chemical industry
15:15 – 15:30 Marco Apostolo – Country Manager Italia Syensqo – The Role of Special Polymers for Sustainable Future Technologies
15:30 – 15:45 Mikaela Decio – Responsabile Corporate Environmental Sustainability Mapei – Decarbonisation
15:45 – 16:00 Mauro Senili – Responsabile Ricerca e Sviluppo H2 Sostenibile del Gruppo SOL – Hydrogen for energy transition
16:00 – 17:00 Round Table – Moderator: Massimo Polidoro – Journalist and Science Communicator
Following the presentations, the session will transition into a roundtable discussion, offering participants the opportunity to

	engage directly with industry experts. Attendees will have the chance to pose questions , finding a common ground where industry and academia can collaborate with reciprocal advantages and benefits. By fostering dialogue between industry representatives and academic ones, this session aims to bridge the gap between academia and industry: equipping academic researchers with the insights and guidance needed to lead their findings towards an industrial application and providing industries with the possibility to explore new basic solutions for greater competitiveness and sustainability.
17:00 - 19:00	**ASSEMBLEA: Assemblea dei Soci SCI** Luogo, sala: **Silver Plenary (level +2)** Chair: **Gianluca Maria Farinola**, Società Chimica Italiana; gianlucamaria.farinola@uniba.it
19:00 - 21:00	**TOPIC-C: Career Event & Student Program** Chair: **Marta Da Pian**, Società Chimica Italiana - Gruppo Giovani; marta.dapian@gmail.com **19:00-19:10** Introduction **19:10-19:30** Anni Siltaten, The Chemical Industry Federation of Finland, "A chemistry job in Europe: competencies, skills and guidelines" **19:30-19:50** HR representative from a sponsor industry (TBD), "Job posting and requirements: career possibilities for PhDs holders" **19:50-20:10** Antonietta Lombardozzi, Polizia di Stato, "A chemistry job in forensic sciences" **20:10:20:30** Round table **20:30-21:00** Conclusions

Mercoledì, 28 agosto 2024

8:30 - 10:30

ParallelTopic01: Advanced monitoring, sensing and imaging

Luogo, sala: **Yellow2 (level +1)**
Chair: **Andrew Smith**, University of Milano-Bicocca; andrew.smith@unimib.it
Chair: **Dario Compagnone**, Università di Teramo; dcompagnone@unite.it

8:30 - 9:00

KN-001. Rapid Evaporative Ionisation Mass Spectrometry for the Real-time Monitoring of Medical Interventions: Towards Single Cell Resolution Autonomous Robotic Surgery

Takats, Zoltan[1,2]; Simon, Daniel[2]; Zhao, Jinshi[2]; Runciman, Mark[2]; Xu, Haozheng[2]; Xiang, Yuchen[2]; Giannarou, Stamatia[2]; Mylonas, George[2]; Temelkuran, Burak[2]; Wang, Yu[2]; Murray, Robert[2]
1: University of Regensburg, Germany; 2: Imperial College London, UK

9:00 - 9:30

KN-002. Plasmonics and Cancer Diagnostics: Ultrasensitive Optical Biosensing of Circulating Tumor DNA in Blood-based Liquid Biopsies from Cancer Patients

Spoto, Giuseppe
Università degli Studi di Catania, Italia

9:30 - 10:00

KN-003. When MALDI-MSI meets the clinical need: case experience in nephrology

L'Imperio, Vincenzo
Universitá degli studi di Milano Bicocca, Italia

10:00 - 10:30

KN-004. MRI-CEST contrast agents: in vivo sensors for metabolic Imaging

Delli Castelli, Daniela
Università degli Studi di Torino, Italia

ParallelTopic02: Environmental preservation

Luogo, sala: **Green2 (level -1)**
Chair: **Antonio Marcomini**, Università Ca' Foscari Venezia; marcomini@unive.it
Chair: **Chiara Zanardi**, Università Ca' Foscari Venezia; chiara.zanardi@unive.it

8:30 - 9:00

KN-016. Relevance of per- and polyfluoroalkyl substances (PFAS) contamination in Italy

Valsecchi, Sara
Consiglio Nazionale delle Ricerche, Italia

9:00 - 9:30

KN-017. PFAS pollution in the aquifers of central Veneto Region: hydrogeological features and environmental implications

Sottani, Andrea
Sinergeo, Italia

PFAS: Advances in quantification, remediation and elimination

Marcomini, Antonio[1]; De Stefano, Concetta[2]
1: Università Ca' Foscari Venezia, Italia; 2: Università di Messina

ParallelTopic03: Clean energy

Luogo, sala: **Yellow3 (level +1)**
Chair: **Sergio Brutti**, Università di Roma La Sapienza; sergio.brutti@uniroma1.it
Chair: **Riccardo Ruffo**, Università di Milano Bicocca; riccardo.ruffo@unimib.it

8:30 - 9:00

KN-022. Moving Towards More Sustainable (Post-)Lithium Batteries

Bresser, Dominic[1,2]
1: Karlsruhe Institute of Technology (KIT), Germany; 2: Helmholtz Institute Ulm (HIU)

9:00 - 9:30

KN-023. Sustainability key-challenges across the European battery value chain: an overview from the BATT4EU/Batteries Europe joint Task Force

Quartarone, Eliana
Università di Pavia, Italy

9:30 - 10:00

Paving the way to a sustainable stationary energy storage system: The development of aqueous zinc-ion batteries

La Mantia, Fabio
Universität Bremen, Germany

10:00 - 10:30

Deciphering the Structural Rearrangement in the Activation Cycles of a Cobalt-Free, Lithium-Rich Layered Oxide Cathode

Busato, Matteo[1,2]; Tuccillo, Mariarosaria[1,2,3]; Celeste, Arcangelo[1,2,3]; Tofoni, Alessandro[1,2]; Freunberger, Stefan[2,4]; Silvestri, Laura[3]; D'Angelo, Paola[1,2]; Brutti, Sergio[1,2,5,6]
1: Department of Chemistry, Sapienza University of Rome; 2: ALISTORE European Research Institute; 3: Department of Energy Technologies and Renewable Sources, ENEA, C.R. Casaccia; 4: Institute of Science and Technology Austria (ISTA); 5: GISEL-Centro di Riferimento Nazionale per i Sistemi di Accumulo Elettrochimico di Energia; 6: Istituto dei Sistemi Complessi, Consiglio Nazionale delle Ricerche

ParallelTopic04: Health

Luogo, sala: **Blue1 (level +1)**
Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna; marialaura.bolognesi@unibo.it
Chair: **Paolo Caliceti**, Università di Padova; paolo.caliceti@unipd.it
Chair: **Maria Valeria D'Auria**, Università di Napoli Federico II; madauria@unina.it

8:30 - 9:00

KN-028. Discovery of entrectinib: an amazing journey from target biology to innovative therapy

Ardini, Elena
Nerviano Medical Sciences, Italy

9:00 - 9:30

KN-029. Targeted radionuclide therapy: the influence of linker modification on cell selectivity

Vettorato, Elisa[1]; Verona, Marco[1]; Croci, Stefania[2]; Bisio, Alessandra[3]; Maniglio, Devid[4]; Asti, Mattia[5]; Marzaro, Giovanni[1]; Mastrotto, Francesca[1]
1: Department of Pharmaceutical and Pharmacological Sciences, University of Padova, via Marzolo 5, Padova; 2: Clinical Immunology, Allergy, and Advanced Biotechnologies Unit, AUSL-IRCCS di Reggio Emilia, Reggio Emilia,; 3: Department of Cellular, Computational and Integrative Biology (CIBIO), University of Trento; 4: Department of Industrial Engineering and BIOtech Research Center, University of Trento, Trento; 5: Radiopharmaceutical Chemistry Section, Nuclear Medicine Unit, AUSL-IRCCS di Reggio Emilia, Reggio Emilia

9:30 - 10:00

ORG-PZ-03. Premio alla Ricerca "Chimica organica per le scienze della vita". Unveiling the potential of synthetic nucleic acid analogs as versatile tools for enhancing human health

Oliviero, Giorgia
Università degli Studi di Napoli Federico II, Italia

10:00 - 10:30

ParallelTopic05: Cultural heritage
Luogo, sala: **Turquoise1 (level -1)**
Chair: **Elisabetta Zendri**, Università Ca' Foscari di Venezia; elizen@unive.it
Chair: **Antonio Proto**, Università di Salerno; aproto@unisa.it

8:30 - 9:00

KN-039. The Superintendence of the Sea. Research, protection, enjoyment, and enhancement of underwater cultural heritage in Sicily.

La Rocca, Roberto
Sorpintendenza del Mare, Italia

9:00 - 9:30

KN-040. Underwater Cultural Heritage: knowledge and conservation

Saladino, Maria Luisa[1]; Ruffolo, Silvestro[2]
1: University of Palermo, Italia; 2: Università della Calabria, Italia

9:30 - 10:00

KN-041. The preservation of historical violins between restoration, function and enhancement

Cacciatori, Fausto
museo del violino, Italia

10:00 - 10:30

KN-042. Interdisciplinary studies for the conservation, diagnostics and acoustics of historical violins

Malagodi, Marco[1]; Malvermi, R.[2]
1: Università di Pavia, Italia; 2: Politecnico of Milano, Italia

ParallelTopic06: Industry and technology transfer
Luogo, sala: **Orange3 (level -1)**
Chair: **Mario Vito Marchionna**, Saipem; mario.marchionna@saipem.com
Chair: **Vincenzina Barbera**, Politecnico di Milano; vincenzina.barbera@polimi.it

8:30 - 9:00

KN-047. A Nobel Prize to shape our future. An example of technology transfer

Galimberti, Maurizio
Politecnico di Milano, Italia

9:00 - 9:30

KN-048. Sustainability evaluation to support technological transfer: a case study

Bontempi, Elza
University of Brescia, Italia

9:30 - 9:45

Development of innovative advanced materials for water remediation: research and business cooperation to deal with sustainability challenges.

Bocchi, Letizia
Medica SpA, Italia

9:45 - 10:15

KN-049. WembraneX: the next generation of membranes for water treatment

Figoli, Alberto[1,2]; Russo, Francesca[1,2]; Gabriele, Bartolo[3]; La Noce, Daniela Francesca[4]; Ricci, Emanuela[4]; Arizzi, Simone[2]; Basso, Andrea[2,6]; Hoinkis, Jan[5]; Galiano, Francesco[1,2]
1: Institute on Membrane Technology, National Research Council of Italy (CNR-ITM), Rende (CS), Italy; 2: WEMBRANEX SRL, Cosenza, Italu; 3: Laboratory of Industrial and Synthetic Organic Chemistry (LISOC), Department of Chemistry and Chemical Technology (CTC), University of Calabria, Rende (CS), Italy; 4: UVR,Spin-off sector, National Research Council of Italy (CNR), Roma, Italy; 5: Karlsruhe University of Applied Sciences (HKA),

ParallelTopic07: Catalysis
Luogo, sala: **Blue2 (level +1)**
Chair: **Tommaso Tabanelli**, Università di Bologna; tommaso.tabanelli@unibo.it
Chair: **Elena Groppo**, Università di Torino; elena.groppo@unito.it
Chair: **Marcella Bonchio**, Università di Padova; marcella.bonchio@unipd.it
Chair: **Federica Menegazzo**, Università Ca' Foscari Venezia; fmenegaz@unive.it

8:30 - 9:00

ORG-MD-01. Medaglia Mangini. The Oxygen Paradox, a lifelong challenging dance

Conte, Valeria
Università di Roma Tor Vergata, Italia

9:00 - 9:30

KN-060. Contribution of catalysis and process optimization to improve sustainability in thermoset materials

Cortelli, Carlotta
Polynt Group

9:30 - 9:45

IND-OR-041. Chemical and enzymatic hydrolysis of waste wheat bran to sugars and their simultaneous biocatalytic conversion to valuable carotenoids and lipids

Di Fidio, Nicola[1]; Carmassi, Leonardo[1]; Kasmiarti, Getari[2]; Fulignati, Sara[1]; Licursi, Domenico[1]; Antonetti, Claudia[1]; Raspolli Galletti, Anna Maria[1]
1: Università di Pisa, Italia; 2: Universitas Sriwijaya, Indonesia

9:45 - 10:00

FIS-OR-052. Cerium Oxide-based catalysts for direct synthesis of dimethyl carbonate from methanol and CO2

Rusta, Nicoletta[1]; Mameli, Valentina[1]; Secci, Fausto[1]; Porcu, Stefania[2]; Seeharaj, Panpailin[3]; Gazzoli, Delia[4]; Ricci, Pier Carlo[2]; Rombi, Elisabetta[1]; Cannas, Carla[1]

KN-030. Non-canonical nucleic acids arrangements for targeted therapies

Sissi, Claudia
Università di Padova, Italia

ParallelTopic08: Chemical education, communication and outreach
Luogo, sala: **Orange2 (level -1)**
Chair: **Ugo Cosentino**, Università Milano-Bicocca; ugo.cosentino@unimib.it

8:30 - 9:00

KN-063. Beyond Chemophilia and Chemophobia: a modest proposal for communication of chemistry

Trotta, Massimo[1]; Lucentini, Riccardo[2]
1: Istituto per i Processi chimico Fisici - Consiglio Nazionale delle Ricerche, Italia; 2: Istituto per la Sintesi Organica e la Fotoreattività - Consiglio Nazionale delle Ricerche, Italia

9:00 - 9:30

KN-064. Metaversity, a place where Education, Communication, and Outreach are innovative.

Grieco, Paolo
Università di Napoli Federico II, Italia

9:30 - 10:00

KN-065. The Virtual Laboratory Framework: Blending Computation, Representation and Visualization from Quantum Chemistry, through Machine-Learning, to Virtual Reality.

Lazzari, Federico
Scuola Normale Superiore, Pisa, Italia

10:00 - 10:30

KN-066. Chemistry and Complexity Science allied together for a better future

Gentili, Pier Luigi
Università degli Studi di Perugia, Italia

ParallelTopic09: Artificial intelligence and modeling for chemistry
Luogo, sala: **Green1 (level -1)**
Chair: **Piero Ugliengo**, Università di Torino; piero.ugliengo@unito.it

8:30 - 9:00

KN-073. Bottom-up machine-learning for chemical modeling

Ceriotti, Michele
EPFL, Svizzera

9:00 - 9:30

KN-074. Enhancing Atomistic Simulations of Oxide Glasses through the Power of Machine Learning

Pedone, Alfonso
Università di Modena e Reggio Emilia, Italia

9:30 - 10:00

KN-075. From molecular modeling to data science: shaping computer-aided drug design for new therapeutic strategies

De Rosa, Maria Cristina
CNR, Italia

10:00 - 10:15

TEO-OR-025. A machine learning approach for the prediction of atomic charges of metal- organic frameworks

Paja, Herald; Donà, Lorenzo; Raimondo, Mattia; Civalleri, Bartolomeo
Department of Chemistry, University of Turin, via Pietro Giuria 7, 10125, Torino TO, Italy

10:15 - 10:30

FIS-OR-050. Beyond configurational entropy: understanding the phase stability of high entropy oxide Mg0.2Co0.2Ni0.2Cu0.2Zn0.2O by a chemometric approach

Fracchia, Martina[1,2]; Coduri, Mauro[1,2]; Magnaghi, Lisa

Karlsruhe, Germany; 6: Progress Tech Transfer, MITO Technology Srl, Milano, Italy

10:15 - 10:30

G.P.S. Tech dal bancone di laboratorio al mercato dei materiali innovativi

Antenucci, Stefano
G.P.S. Tech, Italia

ParallelTopic10: Chemistry meets circularity
Luogo, sala: **Red2 (level +1)**
Chair: **Antonella Salvini**, Università di Firenze; antonella.salvini@unifi.it
Chair: **Chiara Samorì**, Università di Bologna; chiara.samori3@unibo.it

8:30 - 9:00

KN-083. Sustainability in the chemical industry: a 100-year history

Cavani, Fabrizio
Università di Bologna, Italia

9:00 - 9:30

KN-084. The role of catalysis and novel technologies for the definition of modern green chemistry

Vaccaro, Luigi
Università degli studi di Perugia, Italia

9:30 - 10:00

KN-088. Sustainable chemistry in secondary school: issues and opportunities

Jurinovich, Sandro
IT "C. Cattaneo", San Miniato (PI), Italia

10:00 - 10:30

KN-085. The intertwined fate of biomass and plastics in the green revolution: from fundamentals to chemical technologies for the circular economy

Mauriello, Francesco
Università degli Studi Mediterranea di Reggio Calabria, Italia

1: Università degli Studi di Cagliari (Dipartimento di Chimica), Italia; 2: Università degli Studi di Cagliari (Dipartimento di Fisica), Italia; 3: King Mongkut's Institute of Technology Ladkraban Bangkok, Thailandia; 4: Università La Sapienza Roma, Italia

ParallelTopic12: Chemistry at the life science interface
Luogo, sala: **Red1 (level +1)**
Chair: **Francesco Peri**, University of Milano-Bicocca; francesco.peri@unimib.it
Chair: **Gianluca Sbardella**, Università di Salerno; gsbardella@unisa.it
Chair: **Alessandra Magistrato**, CNR; alessandra.magistrato@sissa.it

8:30 - 9:00

KN-095. Molecular architecture and mechanism of RNA-modifying ribozymes

Höbartner, Claudia
University of Würzburg, Germany

9:00 - 9:30

KN-096. The renaissance era of peptides in drug discovery

Saviano, Michele[1]; Del Gatto, Annarita[2]; Zaccaro, Laura[3]
1: CNR-Institute of Crystallography; 2: CNR-Institute of Biostructures and Bioimaging; 3: CNR-Institute of Biostructures and Bioimaging

9:30 - 10:00

KN-097. Design and Development of Novel Triazolopyrimidine- and Quinoline-Based NADPH Oxidases Bona-Fide Inhibitors for Cancer and Non-Cancer Diseases

Valente, Sergio[1]; Reis, Joana[2,3]; Gorgulla, Christoph[3,4]; Massari, Marta[2]; Marchese, Sara[2]; Noce, Beatrice[1]; Lambona, Chiara[1]; Basile, Lorenzo[2]; Toerner, Ricarda[3]; Cox, Huel[3]; Viennet, Thibault[3]; Yang, Moon Hee[5]; Rees, Matthew G[5]; Mormino, Alessandro[6]; Garofalo, Stefano[6]; Limatola, Cristina[6]; Capasso, Lucia[7]; Nebbioso, Angela[7]; Altucci, Lucia[7]; Mai, Antonello[1]; Arthanari, Haribabu[3]; Mattevi, Andrea[2]
1: Department of Drug Chemistry and Technologies, Sapienza University of Rome, P.le A. Moro 5, 00185 Rome,

ParallelTopic13: Smart materials
Luogo, sala: **Yellow1 (level +1)**
Chair: **Elisa Moretti**, Ca' Foscari University of Venice; elisa.moretti@unive.it

8:30 - 9:00

MD-05. Medaglia Piria. Nanomaterials for a Better Future

Prato, Maurizio
Università di Trieste, Italia

9:00 - 9:30

MD-06. Medaglia Paternò. Luminescence-based detection of analytes of clinical and environmental relevance

Prodi, Luca
Università di Bologna, Italia

9:30 - 10:00

KN-107. Smart multifunctional hybrid materials as key pillars towards innovation and sustainability: advantages and challenges

Plutino, Maria Rosaria
Institute for the Study of Nanostructured Materials, ISMN–CNR, URT Messina

10:00 - 10:30

KN-108. Aggregation Induced Emission: An Insight into the Excited State and Aggregate Formation Mechanism

Bianconi, Tommaso; Montanari, Chiara; Cesaretti, Alessio; Misra, Rajnesh; Cai, Zhengxu; Carlotti, Benedetta
Università degli Studi di Perugia, Italia

Rita[1,2]; Ghigna, Paolo[1,2]; Biesuz, Raffaela[1,2]; Anselmi Tamburini, Umberto[1,2]
1: Università degli studi di Pavia, Italia; 2: Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Italia

ParallelTopic14: Food
Luogo, sala: **Green3 (level -1)**
Chair: **Paola Montoro**, Università di Salerno; pmontoro@unisa.it
Chair: **Nadia Mulinacci**, Università di Firenze; nadia.mulinacci@unifi.it

8:30 - 9:00

KN-118. Mapping metabolism in action by mass spectrometry

Zamboni, Nicola
ETH Zurich, Switzerland

9:00 - 9:30

KN-119. Proteomics in food research

Sagratini, Gianni; Alessandroni, Laura
Università di Camerino, Italia

9:30 - 10:00

KN-120. Volatomics and Postharvest Handling of Horticultural Crops

Cozzolino, Rosaria
Institute of Food Science ISA CNR, Italia

ParallelTopic15: New Reactions
Luogo, sala: **Orange1 (level -1)**
Chair: **Andrea Biffis**, Università di Padova; andrea.biffis@unipd.it
Chair: **Fabio Ragaini**, Università degli Studi di Milano; fabio.ragaini@unimi.it

8:30 - 9:00

KN-133. Organometallic Catalysis Applied to the Synthesis of High Value Added Compounds: The Contribution of the Research Group of Industrial and Synthetic Organic Chemistry of the University of Calabria

Gabriele, Bartolo
Università della Calabria, Italia

9:00 - 9:30

KN-134. Aluminum Cocatalysts for Olefin Polymerization: Methylaluminoxane and its "Molecular Cousins"

Zaccaria, Francesco
Università di Napoli Federico II, Italia

Italy; 2: Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, Via Ferrata 5, 27100 Pavia, Italy; 3: Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School (HMS), Building C, 240 Longwood Ave, 02115 Boston, MA, USA; Department of Cancer Biology, Dana-Farber Cancer Institute (DFCI), 450 Brookline Ave, 02215 Boston, MA, USA; 4: Department of Physics, Faculty of Arts and Sciences, Harvard University, 17 Oxford St, 02138 Cambridge, MA, USA; 5: Broad Institute of Harvard and MIT, 415 Main St., 02142 Cambridge, MA, USA; 6: Department of Physiology and Pharmacology, Sapienza University, P.le A. Moro 5, 00185 Rome, Italy; 7: Department of Precision Medicine, University of Campania "Luigi Vanvitelli", Vico L. De Crecchio 7, 80138 Naples, Italy

10:00 - 10:30

CSB-MD-01. The contribution of in-cell NMR to cellular structural biology

Banci, Lucia
University of Florence, Italy

10:00 - 10:30

KN-121. NMR-based metabolomics in food science

Mannina, Luisa[1]; Sobolev, Anatoly P.[2]
1: Laboratory of Food Chemistry, Department of Chemistry and Technology of Drugs, Sapienza University of Rome, P.le Aldo Moro 5, 00185 Rome, Italy; 2: Magnetic Resonance Laboratory “Segre-Capitani”, Institute for Biological Systems, CNR, Via Salaria, Km 29.300, 00015 Monterotondo, Italy

9:30 - 10:00

KN-135. Novelty in Transfer Hydrogenation and Related Reactions Catalyzed by Ruthenium Catalysts

Baratta, Walter
University of Udine, Italia

10:00 - 10:15

ORG-PZ-06. Premio alla Ricerca junior "Chimica organica nei suoi aspetti metodologici". Rapid and scalable photocatalytic C(sp2)–C(sp3) Suzuki−Miyaura cross-coupling of aryl bromides with alkyl boranes

Capaldo, Luca[1,2]; Wan, Ting[1]; Djossou, Jonas[1]; Staffa, Angela[3]; de Zwart, Felix[1]; de Bruin, Bas[1]; Noël, Timothy[1]
1: Van 't Hoff Institute for Molecular Sciences, University of Amsterdam, Science Park 904, 1090 GD Amsterdam; 2: SynCat Lab, Dept. of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Parco delle Scienze 17/A, 43124 Parma; 3: Merck Healthcare KGaA, Frankfurter Str. 250, 64293 Darmstadt

10:15 - 10:30

TEO-OR-020. N-Heterocyclic Molecules for Tunable Functionalization of Oxide Surfaces

Tosoni, Sergio
Università di Milano-Bicocca, Italia

8:30 - 19:00

Silent room August 28th: Silent room programme August 28th
Luogo, sala: **SilentRoom (main hall; level +1)**
Chair: **Alessandro Minguzzi**, Università degli Studi di Milano; alessandro.minguzzi@unimi.it
Chair: **Emanuela Licandro**, Università degli Studi di Milano; emanuela.licandro@unimi.it
9:00-10:00Impact Factors and publication ethics – it’s all in the day’s work of an editor Speaker: Haymo Ross, Chemistry Europe 10.15-11.15Quality by Design mantra - Olon’s approach Speaker. Paolangelo Cerea, Olon SpA 11.45-12.15Shimadzu: Innovations since 150 years up to today, a short journey through history and latest developments Speaker: Björn Thoralf Erxleben and Domingo Pastran 12.30-13.00AI in chemistry: a publisher perspective Speaker. Giulia Monclesi, Elsevier 13:15-14:45Lunch/Job Offer/Book Presentation Speaker: TBA 15.00-15.30Exploring innovation: patents as a professional horizon for young chemists Speaker: Francesca Meroni, Italian and European Patent Attorney at Jacobacci & Partners Spa 15.45-16.15SCI – SeedScience, science education from the African continent Speaker: Michele Raggio 16:30-17:30The recycling of PET Bottles: an opportunity for the Italian system, DENTIS RECYCLING ITALY S.r.l. Speaker: Roberto Tangorra, Head of Quality...

10:30 - 12:30

ParallelTopic01 - ID: 172: Advanced monitoring, sensing and imaging
Luogo, sala: **Yellow2 (level +1)**
Chair: **Andrew Smith**, University of Milano-Bicocca; andrew.smith@unimib.it
Chair: **Dario Compagnone**, Università di Teramo; dcompagnone@unite.it

10:30 - 11:00

KN-005. Translating spatial biology applications from

ParallelTopic02 - ID: 173: Environmental preservation
Luogo, sala: **Green2 (level -1)**
Chair: **Concetta De Stefano**, Università degli Studi di Messina; cdestefano@unime.it

10:30 - 11:00

KN-018. The Remediation in the National System of Environmental Protection: state-of-the-art and perspectives

ParallelTopic03 - ID: 174: Clean energy
Luogo, sala: **Yellow3 (level +1)**
Chair: **Barbara Mecheri**, UNIVERSITA' degli STUDI di ROMA TOR VERGATA; barbara.mecheri@uniroma2.it
Chair: **Adele Mucci**, Università di Modena e Reggio Emilia; adele.mucci@unimore.it

10:30 - 11:00

KN-024. Recent Advances in Electrocatalysts for Low

ParallelTopic04 - ID: 175: Health
Luogo, sala: **Blue1 (level +1)**
Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna; marialaura.bolognesi@unibo.it
Chair: **Paolo Caliceti**, Università di Padova; paolo.caliceti@unipd.it

10:30 - 11:00

early drug development to a clinical setting

Flint, Lucy Ellen
AstraZeneca, United Kingdom

11:00 - 11:30

KN-006. Point-Of-Care Ultra-Portable Single-Molecule Bioassays for One-Health

Torsi, Luisa
Università degli Studi di Bari Aldo Moro, Italia

11:30 - 12:00

KN-007. Integrative approach by multiscale imaging to monitoring neuron/glia neurochemical communication in healthy and diseased brain networks

Cristino, Luigia
Istituto di Chimica Biomolecolare, Consiglio Nazionale delle Ricerche (CNR), Italia

12:00 - 12:30

KN-008. Recent advances in portable NMR sensor and its applications

Proietti, Noemi
Istituto di Scienze del Patrimonio Culturale, CNR, Italia

ParallelTopic05 - ID: 176: Cultural heritage
Luogo, sala: **Turquoise1 (level -1)**
Chair: **Paola Fermo**, Università degli Studi di Milano; paola.fermo@unimi.it
Chair: **Silvia Prati**, UNIVERSITY OF BOLOGNA; s.prati@unibo.it

10:30 - 11:00

KN-043. The role of science between research, protection, and fruition of cultural heritage: a 20-year

Fratini, Michele; Araneo, Federico; Bartolucci, Eugenia
ISPRA Istituto Superiore per la Protezione e Ricerca Ambietale, Italia

11:00 - 11:30

KN-019. Emerging technologies for Environmental remediation

Mascia, Michele; Mais, Laura; Vacca, Annalisa; Melis, Nicola
Università degli Studi di Cagliari, Italia

11:30 - 12:30

Environmental remediation of contaminated sites: the challenges

Marcomini, Antonio[1]; De Stefano, Concetta[2]
1: Università Ca' Foscari Venezia, Italia; 2: Università di Messina

ParallelTopic06 - ID: 177: Industry and technology transfer
Luogo, sala: **Orange3 (level -1)**
Chair: **Vincenzina Barbera**, Politecnico di Milano; vincenzina.barbera@polimi.it
Chair: **Giorgio Bertolini**, Olon SpA; gbertolini@olonspa.it
Chair: **Mario Vito Marchionna**, Saipem; mario.marchionna@saipem.com
Chair: **Maurizio Galimberti**, Politecnico di Milano; maurizio.galimberti@polimi.it

10:30 - 10:45

Temperature Fuel Cells and Electrolyzers

D'Epifanio, Alessandra
University of Rome Tor Vergata, Italia

11:00 - 11:30

KN-025. Membranes for Energy

Figoli, Alberto; Jansen, Johannes Carolus; Galiano, Francesco; Esposito, Elisa; Fontananova, Enrica
Institute on Membrane Technology, National Research Council of Italy (CNR-ITM), Rende (Italy)

11:30 - 12:00

KN-026. Applications of NMR techniques in the design and development of Polymer Electrolyte Membranes for energy production and storage

Simari, Cataldo; Nicotera, Isabella
Department of Chemistry and Chemical Technology, University of Calabria, 87036 Rende (CS), Italy;

ParallelTopic07 - ID: 178: Catalysis
Luogo, sala: **Blue2 (level +1)**
Chair: **Rinaldo Psaro**, Cnr SCITEC "Giulio Natta"; rinaldo.psaro@scitec.cnr.it
Chair: **Michela Signoretto**, Università Ca' Foscari, Venezia; miky@unive.it
Chair: **Gianguido Ramis**, Università di Genova; gianguidoramis@unige.it

10:30 - 11:00

KN-061. CO2: from a Waste to a Resource in the Energy Sector

KN-031. Exploring a new dimension in DNA for the future of precision medicine

Amato, Jussara
Università di Napoli Federico II, Italia

11:00 - 11:30

KN-032. Well known polysaccharides (hyaluronic acid, alginate) we know rather little about

Tirelli, Nicola
Istituto Italiano di Tecnologia, Italy

11:30 - 12:00

KN-033. Innovation in Precision Medicines: Antibody-Drug Conjugates

Pasut, Gianfranco[1]; Valsasina, Barbara[2]
1: Dept. Pharmaceutical and Pharmacological Sciences, University of Padova, Via F. Marzolo 5, 35131, Padova, Italy; 2: Nerviano Medical Sciences, Viale Pateur 10, 20014 Nerviano (MI)

12:00 - 12:30

KN-034. Navigating Extracellular Vesicles heterogeneity by Membrane Sensing Peptides

Cretich, Marina[1]; Frigerio, Roberto[1]; Gagni, Paola[1]; Bergamaschi, Greta[1]; Burrello, Jacopo[2]; Lodigiani, Giulia[1]; Panella, Stefano[2]; Romano, Miriam[3]; Zendrini, Andrea[3]; Radeghieri, Annalisa[3]; Barile, Lucio[2]; Gori, Alessandro[1]
1: SCITEC CNR, Italia; 2: Istituto Cardiocentro Ticino, Ente Ospedaliero Cantonale, Bellinzona, Switzerland; 3: Department of Molecular and Translational Medicine, University of Brescia, Brescia, Italy

ParallelTopic08 - ID: 179: Chemical education, communication and outreach
Luogo, sala: **Orange2 (level -1)**
Chair: **Eleonora Aquilini**, DD-SCI; ele.aquilini6@gmail.com
Chair: **Margherita Venturi**, Università di Bologna; margherita.venturi@unibo.it

10:30 - 11:00

MD-03. Medaglia Illuminati. Reflection on Chemistry Educational Research: the example of the pathway on combustion in elementary school

experience at the CCR "La Venaria Reale"

Pozzi, Federica
Centro per la Conservazione ed il Restauro dei Beni Culturali "La Venaria Reale", Italia

11:00 - 11:30

KN-044. Cutting-edge investigation methods in the field of non-invasive and micro-invasive analytical approaches for diagnostics applied to heritage studies and conservation

Colombini, Maria Perla[1]; Brunetti, Bruno[2]
1: Università di Pisa, Italia; 2: Consorzio INSTM, Università di Perugia

11:30 - 12:00

KN-045. Methodologies and experiences in comparison in the field of paper restoration

Montalbano, Letizia
Opificio delle Pietre Dure, Italia

12:00 - 12:30

KN-046. Nanostructured materials for the conservation of graphic documents

Giorgi, Rodorico
University of Florence, Italy

ParallelTopic09 - ID: 180: Artificial intelligence and modeling for chemistry
Luogo, sala: **Green1 (level -1)**
Chair: **Bartolomeo Civalleri**, Università di Torino; bartolomeo.civalleri@unito.it

10:30 - 11:00

KN-076. Unravelling the molecular aspects of catalysts under operando conditions combining simulations and machine learning

Piccini, GiovanniMaria
Università di Modena e Reggio Emilia, Italia

11:00 - 11:30

KN-077. The Hidden Dynamics of Metals: A Deep Dive Fueled by ML

Delle Piane, Massimo; Cioni, Matteo; Perrone, Mattia; Pavan, Giovanni M.
Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy

IND-OR-022. VisioNing: valorization of agro-industrial wastewater. From research bench to business.

Falletta, Ermelinda; Magni, Mirko; Stefania, Marzorati; Meroni, Daniela; Adani, Fabrizio; Bianchi, Claudia L.
Università degli Studi di Milano, Italia

10:45 - 11:15

KN-050. PolyCrystalLine – When a good scientific idea is met with passion and competence a company is born

Giaffreda, Stefano Luca
PolyCrystalLine SPA, Italia

11:15 - 12:30

"Industry & Technology Transfer Roundtable"

Marchionna, Mario Vito[1]; Barbera, Vincenzina[2]; Galimberti, Maurizio[2]; Vacca, Paolo[3]
1: Saipem, Italia; 2: Politecnico di Milano, Italia; 3: Saes Getters, Italia

ParallelTopic10 - ID: 181: Chemistry meets circularity
Luogo, sala: **Red2 (level +1)**
Chair: **Francesco Ruffo**, Università di Napoli Federico II; ruffo@unina.it
Chair: **Fabrizio Cavani**, Università di Bologna; fabrizio.cavani@unibo.it
Chair: **Antimo Gioiello**, Università degli Studi di Perugia; antimo.gioiello@unipg.it

10:30 - 11:00

KN-086. From research lab to industry embracing circular economy and green chemistry: the real-life case of ISusChem Srl

Melchiorre, Massimo
University of Naples Federico II, Italia

11:00 - 11:30

KN-087. Developing complementary technologies and skills for the green transition: from the fundamentals of ecocompatible solvents in liquid chromatography to

Millini, Roberto
Eni S.p.A., Italia

11:00 - 12:30

Biomass and decarbonisation: challenges and opportunities in energy transition

Signoretto, Michela
Università Ca' Foscari, Venezia, Italia

ParallelTopic12 - ID: 182: Chemistry at the life science interface
Luogo, sala: **Red1 (level +1)**
Chair: **Cesare Gennari**, Università degli Studi di Milano; cesare.gennari@unimi.it
Chair: **Francesco Peri**, University of Milano-Bicocca; francesco.peri@unimib.it
Chair: **Gianluca Sbardella**, Università di Salerno; gsbardella@unisa.it

10:30 - 11:00

ORG-MD-02. Medaglia Quilico. Handcrafting Function-Rich Molecules: an Amazing Opportunity to Serve Life Sciences

Zanardi, Franca
University of Parma, Italia

11:00 - 11:30

KN-098. Beyond Traditional Paths: Pioneering Drug Discovery at the Chemistry-Biology-Physics Nexus

Barreca, Maria Letizia
Department of Pharmaceutical Sciences, University of

Fiorentini, Carlo
Divisione didattica SCI, Italia

11:00 - 12:30

Roundtable: innovative didactic methodologies and technologies

Venturi, Margherita
Università di Bologna, Italia

ParallelTopic13 - ID: 183: Smart materials
Luogo, sala: **Yellow1 (level +1)**
Chair: **Alessandro Casnati**, Università di Parma; alessandro.casnati@unipr.it
Chair: **Francesca D'Anna**, Università degli studi di Palermo; francesca.danna@unipa.it

10:30 - 11:00

KN-109. Multivalent Interactions in the Detection of DNA and Viruses

Huskens, Jurriaan
University of Twente, Netherlands, The

11:00 - 11:30

KN-110. Smart nanocomposites in tendon tissue engineering

Bianchi, Eleonora; Ruggeri, Marco; Vigani, Barbara; Rossi, Silvia; Sandri, Giuseppina
Università di Pavia, Italia

11:30 - 12:00

KN-078. Quantum crystallography and quantum computing

Macchi, Piero

Dipartimento di Chimica, Materiali e Ingegneria Chimica, Politecnico di Milano, Italia

12:00 - 12:15

TEO-OR-026. Building reactive potentials through machine learning and enhanced sampling: from methods to catalytic applications

Bonati, Luigi; Parrinello, Michele

Atomistic Simulations, Istituto Italiano di Tecnologia, Italia

ParallelTopic14 - ID: 184: Food

Luogo, sala: **Green3 (level -1)**
Chair: **Vito Gallo**, Politecnico di Bari; vito.gallo@poliba.it
Chair: **Paola Dugo**, Università di Messina; pdugo@unime.it

10:30 - 11:00

KN-122. The metrological approach for the future of analytical chemistry in food science: issues, sinergies and challenges

Careri, Maria

Università di Parma, Italia

11:00 - 11:30

KN-123. Agri-food chain legislation: official control in Italy

Gregori, Emanuela; Stacchini, Paolo

Istituto Superiore di Sanità, Italia

11:30 - 12:00

KN-124. Recent trends of allergen analysis in food

Galarini, Roberta

IZS DELL'UMBRIA E DELLE MARCHE "TOGO ROSATI", Italia

12:00 - 12:30

KN-125. How Food Chemistry can support the safety assessment of Novel Foods

Dall'Asta, Chiara

Department of Food and Drug, University of Parma, Italia

process intensification in (bio-pharmaceutical) industry

Cavazzini, Alberto[1,2]; Catani, Martina[1]; De Luca, Chiara[1]; Felletti, Simona[3]; Franchina, Flavio Antonio[1]; Beccaria, Marco[1]; Pasti, Luisa[3]

1: Dept of chemical, pharmaceutical and agricultural sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy; 2: Council for agricultural research and economics, CREA, via della Navicella 2-4, Rome, Italy; 3: Dept of environmental and prevention sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy

11:30 - 12:30

Chemistry meets Sustainability: an industrial point of view

Licini, Giulia

Università di Padova, Italia

ParallelTopic15 - ID: 185: New Reactions

Luogo, sala: **Orange1 (level -1)**
Chair: **Isabella Daidone**, University of L'Aquila; isabella.daidone@univaq.it
Chair: **Carla Marchioro**, Consultant; carla.marchioro.cm@gmail.com

10:30 - 11:00

KN-136. A multiscale perspective on charge transfer reactions for connecting experiments and simulations

Zanetti Polzi, Laura

Center S3, CNR Institute of Nanoscience, Italia

11:00 - 11:30

KN-137. Advanced supercomputing approaches in chemistry and prebiotic chemistry

Cassone, Giuseppe

Istituto per i Processi Chimico-Fisici, Consiglio Nazionale delle Ricerche, Italia

11:30 - 12:00

KN-138. From β- to Ω-oxidation: NMR targeted metabolomics sheds light on dual enzymatic functions in mitochondrial long-chain fatty acid metabolism

Fabbian, Simone; Bellanda, Massimo; Schievano, Elisabetta; Giachin, Gabriele

Department of Chemical Sciences (DiSC), University of Padua, via Marzolo 1, 35131, Padova

Perugia, Via Fabretti 48, Perugia 06123, Italy

11:30 - 12:00

KN-099. Micro4all: a major change in drug discovery

Maffioli, Sonia Ilaria

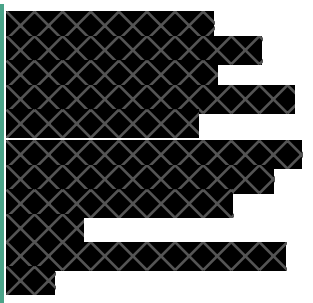
NAICONS srl, Italia

12:00 - 12:30

KN-100. Structural insights into G-quadruplex-protein recognition: the case of anti-thrombin aptamers

Troisi, Romualdo; Sica, Filomena

Dipartimento di Scienze Chimiche, Università di Napoli Federico II, 80126 Napoli, Italia



12:00 - 12:30

KN-112. Advanced Materials requirement for sustainable Food Packaging Equipment design

Guidetti, Gloria[1]; Rossi, Silvia[2]

1: Tetra Pak Packaging Solutions; 2: Tetra Pak Packaging Solutions

12:00 - 12:15

TEO-OR-028. Theoretical-Computational Approaches for Ultrafast Photo-Induced Phenomena in Complex Environments

Coppola, Federico[2]; Perrella, Fulvio[2]; Rega, Nadia[1,2,3]; Petrone, Alessio[1,2,3]
1: Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Complesso Universitario di Monte S. Angelo, via Cintia 21, I-80126, Napoli, Italy; 2: Scuola Superiore Meridionale, Largo San Marcellino 10, I-80138, Napoli, Italy; 3: Istituto Nazionale Di Fisica Nucleare, sezione di Napoli, Complesso Universitario di Monte S. Angelo ed. 6, via Cintia, I-80126, Napoli, Italy

12:15 - 12:30

TEO-OR-029. Novel computational strategies for the study of chemical selectivity: Combining high accuracy and chemical insight

Bistoni, Giovanni
Università degli studi di Perugia, Italia

12:30 - 14:00

LUNCH2: Lunch & Expo
Luogo, sala: **Hall B (main hall; level +1)**
Check the registration area in ConfTool for any lunch booking options at the congress center or nearby.

14:00 - 16:00

ParallelTopic01 - ID: 186: Advanced monitoring, sensing and imaging
Luogo, sala: **Yellow2 (level +1)**
Chair: **Dario Compagnone**, Università di Teramo; dcompagnone@unite.it
Chair: **Andrew Smith**, University of Milano-Bicocca; andrew.smith@unimib.it

14:00 - 14:30

KN-009. Micro and nanoplastics detection in air and water environments

Gucciardi, Pietro Giuseppe
CNR-IPCF, Consiglio Nazionale delle Ricerche, Italia

14:30 - 15:00

KN-010. Smart Biosensors in food analysis: current applications and future trends

Marrazza, Giovanna
Università di Firenze, Italia

15:00 - 15:30

ParallelTopic02 - ID: 187: Environmental preservation
Luogo, sala: **Green2 (level -1)**
Chair: **Alessandra Criscuoli**, Istituto per la Tecnologia delle Membrane (CNR-ITM); a.criscuoli@itm.cnr.it
Chair: **Christian Durante**, Università degli studi di Padova; christian.durante@unipd.it

14:00 - 14:30

KN-020. Critical chemical elements for the energy transition

Armaroli, Nicola
Istituto per la Sintesi Organica e la Fotoreattività, Consiglio Nazionale delle Ricerche, Bologna, Italy

14:30 - 15:00

KN-021. The arrow of time in recycling materials from energy storage devices

Magagnin, Luca
Politecnico di Milano, Italia

15:00 - 16:00

ParallelTopic03 - ID: 188: Clean energy
Luogo, sala: **Yellow3 (level +1)**
Chair: **Silvia Gross**, Università di Padova; silvia.gross@unipd.it

14:00 - 14:30

KN-027. Sustainable and Circular Materials Chemistry

Slootweg, Chris
University of Amsterdam, Netherlands, The

14:30 - 16:00

Technology and market challenges in the energy transition: an industrial focus

Rossetti, Ilenia[1]; Gross, Silvia.[2]; Ruffo, Riccardo[3]; Brutti, Sergio[4]; Abbotto, Alessandro[3]; Mecheri, Barbara[5]; Mucci, Adele[6]; Manini, Paola[7]; Liotta, Leonarda Francesca[8]; Barison, Simona[8]
1: Università degli Studi di Milano, Italia; 2: Università degli Studi di Padova; 3: Università degli Studi di Milano Bicocca; 4: Università degli Studi di Roma La Sapienza; 5:

ParallelTopic04 - ID: 189: Health
Luogo, sala: **Blue1 (level +1)**
Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna; marialaura.bolognesi@unibo.it
Chair: **Paolo Caliceti**, Università di Padova; paolo.caliceti@unipd.it

14:00 - 14:30

KN-035. Fluorinated nanoparticles as bioimaging tools and delivery agents

Baldelli Bombelli, Francesca
Politecnico di Milano, Italy

14:30 - 15:00

KN-036. Printed electrochemical strips to early diagnose diseases, to evaluate vectors' encapsulation, and to monitor therapeutic efficacy: user-friendly diagnostics for personalized treatments

Cinti, Stefano
Università degli Studi di Napoli Federico II, Italia

KN-011. Two-dimensional virtual imaging as a tool for the identification of unknown molecules using comprehensive two-dimensional chromatography techniques

Zoccali, Mariosimone[1]; Tranchida, Peter Q.[2]; Mondello, Luigi[2,3]

1: Department of Mathematical and Computer Science, Physical Sciences and Earth Sciences, University of Messina, Viale Ferdinando Stagno d'Alcontres 31, 98166 – Messina, Italy; 2: Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy; 3: Chromaleont s.r.l., c/o Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy

15:30 - 16:00

KN-012. Augmented Visualization and Sensing in multidimensional chromatography: we see what you smell

Caratti, Andrea[1]; Trapani, Fulvia[1]; Fina, Angelica[1]; Bicchi, Carlo[1]; Liberto, Erica[1]; Reichenbach, Stephen E[2,3]; Tao, Qingping[3]; Geschwender, Daniel[3]; Cordero, Chiara Emilia[1]

1: Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Via Pietro Giuria 9, I-10125 Torino, Italy; 2: Computer Science and Engineering Department, University of Nebraska – Lincoln 104E Avery Hall, Lincoln, NE 68588-0115, USA; 3: GC Image, PO Box 57403, Lincoln, NE 68505-7403, USA

ParallelTopic06 - ID: 190: Industry and technology transfer
Luogo, sala: **Orange3 (level -1)**
Chair: **Maurizio Galimberti**, Politecnico di Milano; maurizio.galimberti@polimi.it
Chair: **Maria Carafa**, Sapienza Università di Roma; maria.carafa@uniroma1.it
Chair: **Silvia Davalli**, Evotec; silvia.davalli@evotec.com

14:00 - 14:30

Critical raw materials, recycling and substitution

Marcomini, Antonio[1]; De Stefano, Concetta[2]

1: Università Ca' Foscari Venezia, Italia; 2: Università di Messina

ParallelTopic07 - ID: 191: Catalysis
Luogo, sala: **Blue2 (level +1)**
Chair: **Paolo Fornasiero**, Università di Trieste; pfornasiero@units.it
Chair: **Mario Chiesa**, Università di Torino; mario.chiesa@unito.it
Chair: **Barbara Milani**, Unviersità degli Studi di Trieste; milaniba@units.it

14:00 - 14:30

Critical Row materials, single atom catalysis, metal free

Università degli Studi di Roma 2; 6: Università degli Studi di Modena e Reggio Emilia; 7: Università degli Studi di Napoli; 8: CNR

ParallelTopic08 - ID: 192: Chemical education, communication and outreach
Luogo, sala: **Orange2 (level -1)**
Chair: **Riccardo Lucentini**, Fondazione Ri.MED; ricky_l@hotmail.it
Chair: **Massimo Trotta**, Consiglio Nazionale delle Ricerche; massimo.trotta@cnr.it

14:00 - 14:30

MD-08. Medaglia Marotta. Fostering youngsters' interest in chemistry for

15:00 - 15:30

KN-037. Making the invisible visible: contrast agents for diagnostic imaging

Lattuada, Luciano

Bracco Imaging, Italia

15:30 - 16:00

KN-038. Targeted MRI contrast agents for precision medicine

Geninatti Crich, Simonetta[1]; Lanfranco, Alberto[2]; Rakhshan, sahar[1]; Alberti, Diego[1]; Bitonto, Valeria[1]; Zarechian, Ayda[1]; Renzi, Polyssena[2]; Protti, Nicoletta[3]; Altieri, Saverio[3]; Deagostino, Annamaria[2]

1: Department of Molecular Biotechnology and Health sciences, University of Turin; 2: Department of Chemistry, University of Turin; 3: Department of Physics, University of Pavia

ParallelTopic09 - ID: 193: Artificial intelligence and modeling for chemistry
Luogo, sala: **Green1 (level -1)**
Chair: **Marco De Vivo**, Istituto Italiano di Tecnologia; marco.devivo@iit.it

14:00 - 14:30

KN-082. Deep learning to design novel and selective nkcc1 inhibitor chemotypes for the treatment of brain disorders with defective nkcc1/kcc2 ratio.

KN-051. Technology Innovation to enable Polymer Circularity: MoReTec, from inception to industrialization

Mei, Gabriele
Basell Polieolefine Italia Srl, Italia

14:30 - 15:00

KN-052. Corporate Open Innovation- Barilla case

Berti, Claudia
Barilla, Italia

15:00 - 15:30

KN-053. Technology transfer for sustainable industrial development

Vacca, Paolo
Saes Getters Spa, Italia

15:30 - 16:00

KN-054. Pharma Innovation & Business in Italy: Nurturing potentials in an underestimated environment thorough EXTEND, a unique structured partnership between Accademia, VC and Pharma

Felici, Antonio
Evotec, Italia

catalysis and artificial intelligence

Chiesa, Mario[1]; Fornasiero, Paolo[2]
1: Università di Torino, Italia; 2: Università di Trieste, Italia

14:30 - 15:30

Catalysis activated by light

Fornasiero, Paolo[1]; Chiesa, Mario[2]
1: Università di Trieste, Italia; 2: Università di Torino, Italia

15:30 - 16:00

KN-062. Ziegler Natta Catalysts & Polypropylene : 70 years of continuous advancement

Visentini, Ugo
Basell poliolefine italia srl, Italia

sustainable society: Mission (im)Possible!

Torreggiani, Armida[1]; Zanelli, Alberto[1]; Ienco, Andrea[2]; Deganello, Francesca[3]; Tassistro, Michela[4]; Lucentini, Riccardo[1]; Polo, Eleonora[1]
1: Consiglio Nazionale delle Ricerche - Istituto per la Sintesi e la Fotoreattività- ISOF-CNR, Italia; 2: Consiglio Nazionale delle Ricerche - Istituto Chimica Composti OrganoMetallici- ICCOM-CNR; 3: Consiglio Nazionale delle Ricerche - Istituto per lo Studio di Materiali Nanostrutturati ISMN-CNR, Palermo; 4: Consiglio Nazionale delle Ricerche - Istituto di Scienze e Tecnologie Chimiche, SCITEC-CNR, Genova

14:30 - 15:00

KN-067. Communicating Science. A creative and ethical challenge

Polidoro, Massimo
Think About Science, Italia

15:00 - 15:30

KN-068. Stranger Molecules: chemistry becomes art

Lucentini, Riccardo[1]; Bettucci, Ottavia[2]; Pucciarelli, Rosa Anna[3]
1: Fondazione Ri.MED; 2: Università degli Studi di Milano Bicocca, Dipartimento di Scienza dei Materiali; 3: Accademia di Belle Arti, Bari

15:30 - 16:00

KN-069. "It's not just a matter of Science!" Tips and clues from the acting world to improve your communication skills

Dessì, Alessio
CNR - ICCOM, Italia

Ruiz Munevar, Manuel Jose[2]; Borgogno, Marco[1]; Savardi, Annalisa[1]; Mattio, Luce[2]; Vitali Forconesi, Gabrielle[2]; Ruggeri, Michele[2]; Vidossich, Pietro[2]; Garanzini, Anna[3]; Walu Emakana, Danielle[3]; Cancedda, Laura[1,3]; De Vivo, Marco[1,2]
1: IAMA Therapeutics, via Filippo Turati 2, 16128 Genoa, Italy; 2: Molecular Modeling & Drug Discovery Laboratory, Istituto Italiano di Tecnologia, via Morego, 30, 16163 Genoa, Italy; 3: Brain Development & Disease Laboratory, Istituto Italiano di Tecnologia, via Morego, 30, 16163 Genoa, Italy

14:30 - 15:00

KN-080. Chemometrics in clinical chemistry: examples of open-source applications for method validation and evaluation of real cases

Alladio, Eugenio[1,2,3]; Castellino, Lorenzo[1]; Solarino, Giovanni[1]; Vincenti, Marco[1,2]
1: Dipartimento di Chimica, Università di Torino, Italia; 2: Centro Regionale Antidoping "A. Bertinaria" di Orbassano (Torino), Italia; 3: DataBloom Srl, Torino, Italia

15:00 - 15:30

KN-081. Food toxicology and food bioactives assessment through in silico methods - is AI the new era of testing?

Dellafiora, Luca[1]; Perugino, Florinda[1,2]; Pedroni, Lorenzo[1]; Dall'Asta, Chiara[1]; Galaverna, Gianni[1]
1: Department of Food and Drug, University of Parma, Parma, Italy; 2: Department of Biology, University of Naples Federico II, Naples, Italy

15:30 - 15:45

ANA-OR-099. A multi-block approach for discriminating spray paints for forensic purposes

Mazzoleni, Alberto[1,2]; Lombardi, Livia[3]; Alladio, Eugenio[1,2]
1: Università di torino, Italia; 2: Databloom s.r.l, Italia; 3: Carabinieri, Reparto Investigazioni Scientifiche (RIS), Italia

15:45 - 16:00

Application of Rapid Evaporative Ionization Mass

ParallelTopic10 - ID: 194: Chemistry meets circularity
Luogo, sala: **Red2 (level +1)**
Chair: **Carlo Punta**, Politecnico di Milano; carlo.punta@polimi.it
Chair: **Fabrizio Passarini**, Università di Bologna; fabrizio.passarini@unibo.it

14:00 - 14:30

KN-089. Circular Economy and material efficiency in Europe: policy failures and 'strategic autonomy'

Zoboli, Roberto
Università Cattolica del S. Cuore, Italia

14:30 - 15:00

KN-090. Safe and sustainable by design chemicals and materials

Sala, Serenella
European Commission Joint Research Centre, Italy

15:00 - 16:00

La bioeconomia circolare la necessità di un approccio intersettoriale

Licini, Giulia
Università di Padova, Italia

ParallelTopic11: Inclusion, equity, diversity, and ethics
Luogo, sala: **Turquoise1 (level -1)**
Chair: **Marta Da Pian**, Società Chimica Italiana - Gruppo Giovani; marta.dapian@gmail.com
Chair: **Alessandro Minguzzi**, Università degli Studi di Milano; alessandro.minguzzi@unimi.it

14:00 - 14:30

KN-091. Why is gender balance important to chemistry? A philosophical analysis

Seifert, Vanessa Angela
University of Athens, Greece

14:30 - 15:00

KN-092. Understanding Gender+ Approach in Chemistry Research and Innovation: What, How, Who

Bannò, Mariasole
Università di Brescia, Italia

15:00 - 15:30

KN-093. Diversity & Inclusion: why it matters and how can we make it work? A perspective from the publisher Elsevier.

Kolman, Michiel
Elsevier, Netherlands, The

15:30 - 16:00

KN-094. Ethical aspects of the chemist profession

Busetto, Maddalena; Frattini, Valeria; Viola, Paolo Giovanni
ARPA Lombardia /OICFL, Italia

ParallelTopic12 - ID: 195: Chemistry at the life science interface
Luogo, sala: **Red1 (level +1)**
Chair: **Francesco Peri**, University of Milano-Bicocca; francesco.peri@unimib.it
Chair: **Gianluca Sbardella**, Università di Salerno; gsbardella@unisa.it

14:00 - 14:30

KN-101. Antimicrobial peptides and their interaction with model membranes: a biophysical approach

Oliva, Rosario
Università degli Studi di Napoli Federico II, Italia

14:30 - 15:00

KN-102. Modulating Biochemical Complexes in Health and Disease: From Glycosylation to Small Molecules

Colombo, Giorgio
Università di Pavia, Italia

15:00 - 15:30

KN-103. A decade of the liposome-protein corona: Lessons learned and future breakthroughs in theranostics

Capriotti, Anna Laura[1]; Caracciolo, Giulio[2]; Pozzi, Daniela[2]; Laganà, Aldo[1]
1: Dipartimento di Chimica, Sapienza Università di Roma, Piazzale Aldo Moro, 5, 00185, Roma, Italia; 2: Dipartimento di Medicina Molecolare, Sapienza Università di Roma, Viale Regina Margherita 291, 00185, Roma , Italia

15:30 - 16:00

ParallelTopic13 - ID: 196: Smart materials
Luogo, sala: **Yellow1 (level +1)**
Chair: **Maurizio Peruzzini**, CNR; maurizio.peruzzini@iccom.cnr.it
Chair: **Lidia Armelao**, Consiglio Nazionale delle Ricerche; direttore.dsctm@cnr.it

14:00 - 14:30

KN-113. Graphene history – from lab weirdo to breakthrough in industrial innovation

Palermo, Vincenzo
Istituto per la Sintesi Organica e la Fotoreattività (ISOF), Consiglio Nazionale delle Ricerche, Bologna, Italy

14:30 - 15:00

INO-MD-01. Medaglia Sacconi. Biological properties of "inorganic" phosphorus dendrimers

Caminade, Anne-Marie
CNRS, France

15:00 - 15:30

ORG-PZ-01. Premio alla Ricerca "Chimica organica per l'ambiente, l'energia e le nanoscienze". Chemical tailoring of graphene materials for environmental applications: from lab-to-fab to market exploitation

Melucci, Manuela
Consiglio Nazionale delle Ricerche, Istituto per la Sintesi Organica e la Fotoreattività (CNR-ISOF)

15:30 - 16:00

KN-115. Sulfur-rich macromolecular architectures from inverse

Spectrometry: from clinical diagnosis to food traceability

Rigano, Francesca[1]; Mangraviti, Domenica[1]; Cafarella, Cinzia[1]; Dugo, Paola[1,2]; Mondello, Luigi[1,2]
1: Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy; 2: Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy

KN-104. Fighting stress with food choices?

Mattivi, Fulvio; Anesi, Andrea
Unit of Metabolomics, Research and Innovation Centre, Fondazione Edmund Mach, San Michele all'Adige,Italy

vulcanization: Novel metamaterials for nanophotonics

Stagnaro, Paola
CNR- SCITEC, Italia

ParallelTopic14 - ID: 197: Food
Luogo, sala: **Green3 (level -1)**
Chair: **Arianna Rossetti**, Politecnico di Milano; arianna.rossetti@polimi.it

14:00 - 14:30

KN-126. The power of analytical chemistry for the traceability of Italian excellences

Dugo, Paola[1,2]; Rigano, Francesca[1]; Cacciola, Francesco[1]; Mondello, Luigi[1,2]
1: Università di Messina, Italia; 2: Chromaleont srl, Messina, Italia

14:30 - 15:00

KN-127. Coffee chemotaxonomy markers: focus on diterpenes

Guercia, Elena[1]; Navarini, Luciano[2]
1: illycaffè SpA, Area Science Park, Aromalab, 34149 Trieste, Italia; 2: illycaffè SpA, via Flavia 110, 34147, Trieste, Italia

15:00 - 15:30

KN-128. Quality and safety aspects of food supplements

Di Lorenzo, Chiara Maria; Bani, Corinne; Mercogliano, Francesca; Restani, Patrizia
Università degli Studi di Milano, Italia

15:30 - 16:00

KN-129. The pomegranate fruit: not just a simple food

Carradori, Simone
"G. d'Annunzio" University of Chieti-Pescara, Italy

ParallelTopic15 - ID: 198: New Reactions
Luogo, sala: **Orange1 (level -1)**
Chair: **Marco Bandini**, Università di Bologna; marco.bandini@unibo.it
Chair: **Marzio Rancan**, ICMATE; marzio.rancan@cnr.it

14:00 - 14:30

KN-139. Late-Stage Functionalizations

Ritter, Tobias
Max-Planck-Institut für Kohlenforschung, Germany

14:30 - 15:00

ORG-PZ-02. Premio alla Ricerca "Chimica organica nei suoi aspetti metodologici". One-Pot Asymmetric Organocatalysis: Multipurpose Tool to Access Carboxylic Acid Derivatives

Lattanzi, Alessandra
Università di Salerno, Italia

15:00 - 15:30

KN-140. Chemistry under extreme pressure conditions

Ceppatelli, Matteo[1,2]; Serrano-Ruiz, Manuel[1]; Morana, Marta[3]; Dziubek, Kamil[4]; Scelta, Demetrio[1,2]; Garbarino, Gaston[5]; Svitlyk, Volodymyr[5]; Poręba, Tomasz[5]; Mezouar, Mohamed[5]; Peruzzini, Maurizio[1]; Bini, Roberto[2,6]
1: ICCOM-CNR, Institute of Chemistry of OrganoMetallic Compounds, National Research Council of Italy, Via Madonna del Piano 10, I-50019 Sesto Fiorentino, Firenze, Italy; 2: LENS, European Laboratory for Non-linear Spectroscopy, Via N. Carrara 1, I-50019 Sesto Fiorentino, Firenze, Italy; 3: Dipartimento di Scienze della Terra, Università degli Studi di Firenze, Via La Pira 4,I-50121, Firenze, Firenze, Italy; 4: Institut für Mineralogie und Kristallographie, Universität Wien, Josef-Holaubek-Platz 2,A-1090, Wien, Austria; 5: ESRF, European Synchrotron Radiation Facility, 71 Avenue des Martyrs, CS40220, 38043 Grenoble Cedex 9, France; 6: Dipartimento di Chimica "Ugo

Schiff ", Università degli Studi di Firenze, Via della Lastruccia 3, I-50019 Sesto Fiorentino, Firenze, Italy

15:30 - 15:45

IND-OR-042. A circular economy approach for the design, synthesis, and utilization of Ni-based heterogenous catalyst

Valentini, Federica; Vaccaro, Luigi
Università degli Studi di Perugia, Italia

16:00 - 17:30

ParallelTopic01 - ID: 199: Advanced monitoring, sensing and imaging
Luogo, sala: **Yellow2 (level +1)**
Chair: **Dario Compagnone**, Università di Teramo; dcompagnone@unite.it
Chair: **Andrew Smith**, University of Milano-Bicocca; andrew.smith@unimib.it

16:00 - 16:30

KN-013. Generation and modeling of plasmonic nanoparticles for sensing

Compagnini, Giuseppe
Università di Catania, Italia

16:30 - 17:00

KN-014. Single-Cell and Imaging Mass Cytometry for Advanced Materials

Fusco, Laura[1]; Gazzi, Arianna[1]; Shuck, Christopher[1]; Orecchioni, Marco[1]; Keren, Leat[1]; Bedognetti, Davide[1]; Gogotsi, Yury[1]; Delogu, Lucia Gemma[1,2]
1: Università di Padova, Italia; 2: Khalifa University

17:00 - 17:30

KN-015. Advanced NMR monitoring of the transport properties in hydrogels and eutectogels

Mele, Andrea; Castiglione, Franca; Vanoli, Valeria; Di Pietro, Maria Enrica; Casalegno, Mosè; Rossi, Filippo
Politecnico di Milano, Italia

ParallelTopic02 - ID: 200: Environmental preservation
Luogo, sala: **Green2 (level -1)**

16:00 - 16:30

Assessing the environmental impact in anthropogenic elemental cycles

Ciacci, Luca
Università di Bologna, Italia

16:30 - 17:00

ABC-MD-01. Sustainability, Circular Economy and Chemistry

Passarini, Fabrizio
Università di Bologna, Italia

17:00 - 17:30

ABC-MD-02. Medaglia Liberti. The challenging role of chromatography in environmental analysis: unveiling the polyhedrality of separation sciences

Bruzzoniti, Maria
University of Turin, Italia

ParallelTopic03 - ID: 201: Clean energy
Luogo, sala: **Yellow3 (level +1)**
Chair: **Mario Chiesa**, Università di Torino; mario.chiesa@unito.it
Chair: **Paola Manini**, Università degli Studi di Napoli Federico II; pmanini@unina.it

16:00 - 16:30

INO-MD-02. Medaglia Malatesta. Modeling Materials and Processes in Hybrid/Organic Photovoltaics: From Dye-sensitized to Perovskite Solar Cells

De Angelis, Filippo
Università di Perugia, Italia

16:30 - 16:45

ORG-PZ-05. Premio alla Ricerca junior "Chimica organica per l'ambiente, l'energia e le nanoscienze". Artificial Water Channels in Quantasome Photosynthetic Systems

Rigodanza, Francesco[1]; Crea, Ilaria[1]; Gobbato, Thomas[1]; Prato, Maurizio[2]; Bonchio, Marcella[1]
1: Università di Padova, Italia; 2: CIC biomaGUNE, Spain

16:45 - 17:00

ORG-OR-067. Synthesis and characterization of Near Infrared dyes for colorless dye sensitized solar cells

Barbero, Nadia[1,2]; Bokan, Maksym[1]; Bondar, Kateryna[1]; Pasculli, Donato[1]; Segura Zarate, Ana Yancy[1]; Grifoni, Fionnuala[3]; Borrelli, Raffaele[4]; Bonomo, Matteo[1]; Galliano, Simone[1]; Matteocci, Fabio[5]; Di Carlo, Aldo[5]; Sauvage, Frédéric[3]; Barolo, Claudia[1,2]
1: Department of Chemistry, NIS Interdepartmental and INSTM Reference Centre, University of Torino, Italia; 2: Istituto di Scienza, Tecnologia

ParallelTopic04 - ID: 202: Health
Luogo, sala: **Blue1 (level +1)**
Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna; marialaura.bolognesi@unibo.it
Chair: **Paolo Caliceti**, Università di Padova; paolo.caliceti@unipd.it

16:00 - 17:30

Chemistry and Precision Medicine: where we are and where we could be by integrating diverse expertise and perspectives

Bolognesi, Maria-Laura[1]; Caliceti, Paolo[2]
1: Alma Mater Studiorum - Università di Bologna, Italia; 2: Università degli Studi di Padova, Italia

ParallelTopic06 - ID: 203: Industry and technology transfer
Luogo, sala: **Orange3 (level -1)**
Chair: **Maurizio Galimberti**, Politecnico di Milano; maurizio.galimberti@polimi.it
Chair: **Mario Vito Marchionna**, Saipem; mario.marchionna@saipem.com

16:00 - 16:15

INO-OR-077. e-CCM TECHNOLOGY: TRASFORMING CO2 INTO BUILDING MATERIALS

Cambise, Paolo; MILLINI, ROBERTO
Eni S.p.A., Italia

16:15 - 16:30

Hydrotreated vegetable oil (HVO) derived from totally renewable feedstocks

Fittavolini, Corrado
Eni S.p.A., Italia

16:30 - 17:00

Char from pyrolysis of plastics: from secondary product to raw material

Signoretto, Michela[1]; Vecchini, Nicola[2]
1: Università Ca' Foscari, Venezia, Italia; 2: Versalis

ParallelTopic07 - ID: 204: Catalysis
Luogo, sala: **Blue2 (level +1)**
Chair: **Alceo Macchioni**, Università degli Studi di Perugia; alceo.macchioni@unipg.it

16:00 - 16:30

INO-PZ-01. Targa Chini. Ziegler-Natta Catalysis: a Journey in the Land of Serendipity

Busico, Vincenzo; Cipullo, Roberta; Antinucci, Giuseppe
Federico II University of Naples (Italy) - Dept. Chemical Sciences, Italia

16:30 - 16:45

TEO-OR-030. Unravelling the complex dynamical behavior of heterogeneous catalysts during reactants exposure

Raucci, Umberto; Yang, Manyi; Tosello, Axel; Mambretti, Francesco; Parrinello, Michele
Italian Institute of Technology, Italia

16:45 - 17:00

INO-OR-001. H2 production by ethanol dehydrogenation on metal doped ZnIn2S4 photocatalysts

e Sostenibilità per lo Sviluppo dei Materiali Ceramici (ISSMC-CNR), Italia; 3: CNRS, Université Picardie Jules Verne, Laboratoire de réactivité et Chimie du Solide, UMR 7314, Amiens, Francia; 4: Dipartimento di Scienze Agrarie Forestali e Alimentari, University of Torino, Italia; 5: CHOSE- Centre for Hybrid and Organic Solar Energy, Department of Electronics Engineering, University of Rome “Tor Vergata”, Italia

17:00 - 17:15

ORG-OR-069. Sustainable Horizons: Unleashing the Power of Earth-Abundant Metal Complexes in Photo-driven CO2 Reduction

Bizzarri, Claudia
Karlsruhe Institute of Technology, Germania

17:15 - 17:30

Addressing key challenges in the development “beyond Li-ion” chemistries

Elia, Giuseppe Antonio
Politecnico di Torino, Italy

ParallelTopic08 - ID: 205: Chemical education, communication and outreach
Luogo, sala: **Orange2 (level -1)**
Chair: **Eleonora Aquilini**, DD-SCI; ele.aquilini6@gmail.com

16:00 - 16:30

KN-070. Chemistry, a good choice

Cremonesi, Veronica
Federchimica, Italia

16:30 - 17:00

KN-071. But is chemistry just bad? A journey into the marvelous world of cinema, from Breaking Bad to Railway Men

Pettinari, Claudio
Università di Camerino, Italia

17:00 - 17:30

KN-072. Unveiling the Dual Genius of Aleksandr Porfir'evič Borodin: Between Chemistry and Music

Benedetti, Alessia; De Iudicibus, Giulio; Santangelo, Stefania
Conservatorio di Musica “Nino Rota” - Monopoli, Italia

ParallelTopic09 - ID: 206: Artificial intelligence and modeling for chemistry
Luogo, sala: **Green1 (level -1)**
Chair: **Claudio Greco**, Università degli Studi di Milano - Bicocca; claudio.greco@unimib.it

16:00 - 16:30

MD-04. Medaglia Pisani. 1988-2024, a 35-years journey across computational life and material sciences.

Menziani, Maria Cristina
Università di Modena e Reggio Emilia, Italia

16:30 - 17:00

KN-079. Role of computational methods in the era of precision medicine

Cavalli, Andrea
ISTITUTO ITALIANO DI TECNOLOGIA, Italia

17:00 - 17:15

FAR-OR-031. Q-raKtion: A Novel Data Curation Tool to Aid Drug/Agrochemical Discovery

Palazzotti, Deborah; Sabatini, Stefano; Massari, Serena; Barreca, Maria Letizia; Astolfi, Andrea

S.p.A., via G. Taliercio 14, 46100 Mantova, Italy

17:00 - 17:30

Ad-hoc synthesized catalysts and commercial ones: their catalytic applications in the perspective of sustainability

Antonetti, Claudia
Università di Pisa, Italia

Grassi, Nicola[1]; Baumgartner, Bettina[2]; Luo, Nengchao[3]; Monai, Matteo[2]; Wang, Feng[3]; Foransiero, Paolo[1]; Montini, Tiziano[1]
1: Universita' degli Studi di Trieste, Italia; 2: Utrecht University, the Netherlands; 3: Dalian Institute of Chemical Physics, China

17:00 - 17:15

TEC-OR-035. A virtuous cycle of wastes: iron oxides supported on steel slags as catalyst for the hydrogenation of nitroarenes

Derobertis, Francesca[1]; Mesto, Ernesto[2]; Schingaro, Emanuela[2]; Ditaranto, Nicoletta[3]; Dell'Anna, Maria Michela[1]; Mastrorilli, Piero[1]
1: Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari, Italia; 2: Dipartimento di Scienze della Terra e Geoambientali, Università degli Studi di Bari Aldo Moro, Italia; 3: Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Italia

Department of Pharmaceutical Sciences, University of Perugia, Via del Liceo, 1, Perugia 06123, Italy

17:15 - 17:30

TEO-OR-027. A General Perturbative Route to Anharmonic Vibro-Rotational Spectroscopy in Internal Curvilinear Coordinates

Mendolicchio, Marco
Scuola Normale Superiore, Italia

ParallelTopic10 - ID: 207: Chemistry meets circularity
Luogo, sala: **Red2 (level +1)**
Chair: **Giulia Licini**, Università di Padova; giulia.licini@unipd.it

16:00 - 16:15

TEC-PZ-01. Premio Miglior Tesi di Dottorato "Cinzia Chiappe". Multifunctional hybrid materials from biowaste valorization

Venezia, Virginia
Università degli Studi di Napoli Federico II, Italia

16:15 - 16:30

ORG-OR-036. Dimethyl carbonate-mediated synthesis of 2,5-furandicarboxylic acid esters from galactaric acid

Trapasso, Giacomo; Annatelli, Mattia; Chìcharo, Beatriz; Aricò, Fabio
Università Ca' Foscari Venezia, Italia

16:30 - 17:00

Heterogenous catalysts from renewable sources for sustainable chemical processes

Licini, Giulia
Università di Padova, Italia

ParallelTopic11 - ID: 208: Inclusion, equity, diversity, and ethics
Luogo, sala: **Turquoise1 (level -1)**
Chair: **Marta Da Pian**, Società Chimica Italiana - Gruppo Giovani; marta.dapian@gmail.com
Chair: **Alessandro Minguzzi**, Università degli Studi di Milano; alessandro.minguzzi@unimi.it

Enhancing Diversity & Inclusion: A Workshop on Integrating D&I Elements in Research

Da Pian, Marta[1]; Leggerini, Chiara[2]; Bannò, Mariasole[2]; Minguzzi, Alessandro[3]
1: Elsevier B.V. Radarweg 29, 1043 NX Amsterdam; 2: University of Brescia, via Branze 38, 25123, Brescia; 3: University of Milan, via Golgi, 19 - Corpo A,20133 Milano

16:00 - 16:30

KN-055. Drama Science, Diversity, and Inclusion

Cecchi, Teresa; Giuliani, Arianna
ITT Montani, Italia

ParallelTopic12 - ID: 209: Chemistry at the life science interface
Luogo, sala: **Red1 (level +1)**
Chair: **Francesco Peri**, University of Milano-Bicocca; francesco.peri@unimib.it
Chair: **Gianluca Sbardella**, Università di Salerno; gsbardella@unisa.it

16:00 - 16:30

KN-105. Modular and adaptive self-assembling dendrimers for biomedical applications

Peng, Ling
CNRS - Aix Marseille University, France

16:30 - 18:00

Challenges and opportunities at the interface between Chemistry and Life Sciences

Peri, Francesco[1]; Sbardella, Gianluca[2]; Mattivi, Fulvio[3]; Capriotti, Anna Laura[4]; Colombo, Giorgio[5]; Troisi, Romualdo[6]; Maffioli, Sonia[7]; Hortbartner, Claudia[8]; Valente, Sergio[4]; Saviano, Michele[9]; Banci, Lucia[10]; Peng, Ling[11]; Oliva, Rosario[6]; Zanardi, Franca[12]; Barreca, Maria Letizia[13]
1: Università degli Studi di Milano-Bicocca, Italia; 2: Università degli Studi di

ParallelTopic13 - ID: 210: Smart materials
Luogo, sala: **Yellow1 (level +1)**
Chair: **Sabrina Antonello**, University of Padova; sabrina.antonello@unipd.it

16:00 - 16:15

ELE-OR-001. Blue-Emitting Carbon Quantum Dots: Insight into the Effect of the Synthesis Parameters of the Hydrothermal Approach

Vercelli, Barbara[1]; La Ferla, Barbara[2]; Montero Martos, José Maria[3]; Ponce Ortiz, Rocio[4]; Ruiz Delgado, Maria del Carmen[4]
1: Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia, CNR-ICMATE; 2: Dipartimento di Scienze dell'Ambiente e della Terra, Università degli Studi di Milano-Bicocca; 3: Servicios Centrales de Apoyo a la Investigación, Universidad de Málaga; 4: Departamento de Quimica Fisica, Universidad de Málaga

16:15 - 16:30

ELE-OR-002. Intact photosynthetic bacteria-based photoanodes for energy and contaminant monitoring

Grattieri, Matteo[1,2]; Honorio Franco, Jefferson[1];

17:00 - 17:30

The transition towards a circular economy and sustainable development: a convergent approach in the context of EU/National Programmes

Licini, Giulia
Università di Padova, Italia

ParallelTopic14 - ID: 211: Food
Luogo, sala: **Green3 (level -1)**
Chair: **Stefano Alcaro**, Università Magna Graecia di Catanzaro; alcaro@unicz.it
Chair: **Nadia Lotti**, Università di Bologna; nadia.lotti@unibo.it

16:00 - 16:30

KN-130. Microplastics in Foods: Origin and Detection Methods

Fiorini, Maurizio[1]; Lotti, Nadia[1]; Soccio, Michelina[1]; Battaglini, Elena[2]
1: DICAM Università di Bologna; 2: Sherwin-Williams

16:30 - 17:00

KN-131. Upcycling of fishery unsorted side-streams: a case study

Boggia, Raffaella[1]; Grasso, Federica[1]; Orlandi, Valentina[1]; Méndez Paz, Diego[2]; Vázquez Sobrado, Rebeca[2]; Alonso Martínez, Maria Mercedes[2]; Turrini, Federica[1]

ParallelTopic15 - ID: 212: New Reactions
Luogo, sala: **Orange1 (level -1)**
Chair: **Giorgio Grillo**, Università di Torino; giorgio.grillo@unito.it

16:00 - 16:30

KN-141. New modalities: Chemical synthesis of complex bio-inspired molecules and conjugates

Lattanzi, Giulia
Aptuit (Verona) Srl, an Evotec company

16:30 - 17:00

KN-142. Electron welfare for biological synthesis of hydrogen and CO2 valorization

d'Ippolito, Giuliana; Fontana, Angelo
Istituto di Chimica Biomolecolare (ICB), Dipartimento Scienze Chimiche e Tecnologie dei Materiali (DSCTM), Consiglio Nazionale delle Ricerche (CNR). Via Salerno, Italia; 3: Fondazione Edmund Mach, San Michele all'Adige, (TN), Italia; 4: Università degli Studi La Sapienza, Roma, Italia; 5: Università degli Studi di Pavia, Italia; 6: Università Federico Secondo Napoli, Italia; 7: Naicons, Italia; 8: University of Würzburg (Germany); 9: CNR_IC, Bari, Italia; 10: Università degli Studi di Firenze, Italia; 11: CNRS - Aix Marseille University, France; 12: University of Parma, Italia; 13: Univerity of Perugia, Italy

Lacalamita, Dario[1]; Stufano, Paolo[3]; de Moura Torquato, Lilian Danielle[1,4,5]; Labarile, Rossella[2]; Matteucci, Rosa Maria[6]; Boldrin Zanoni, Maria Valnice[4,5]; Trotta, Massimo[2]; Farinola, Gianluca Maria[1]
1: Università degli Studi di Bari "Aldo Moro", Italia; 2: CNR-IPCF, Consiglio Nazionale delle Ricerche; 3: CNR-NANOTEC, Consiglio Nazionale delle Ricerche; 4: Institute of Chemistry, São Paulo State University (UNESP); 5: National Institute for Alternative Technologies of Detection, Toxicological Evaluation and Removal of Micropollutants and Radioactives (INCT-DATREM); 6: Politecnico di Bari

16:30 - 17:00

KN-116. Molecular Gold Nanoclusters and the Hydrogen/Deuterium Puzzle

Maran, Flavio
Department of Chemistry University of Padova, Department of Chemistry University of Connecticut

17:00 - 17:30

KN-117. Defects Activity in Metal Halide Perovskite Semiconductors

Petrozza, Annamaria
Istituto Italiano di tecnologia, Italia

	1: DIFAR, Department of Pharmacy, University of Genoa, Viale Cembrano 4, 16148 Genova, Italy; 2: ANFACO-CECOPESCA, Department of Circular Economy, Colexio Universitario, 36310 Vigo, Spain **17:00 - 17:30** **KN-132. Use of lamellar solids as a novel approach to food processing** **Epifano, Francesco[1]; Collevecchio, Chiara[1]; Fiorito, Serena[1]; Spogli, Roberto[2]; Genovese, Salvatore[1]** 1: Università "Gabriele d'Annunzio" Chieti-Pescara, Italia, Dipartimento di Farmacia; 2: Prolabin & Tefarm Srl, Via dell'Acciaio 9, Pontefelcino, Perugia	Campi Flegrei, 34 – 80078 Pozzuoli, Napoli **17:00 - 17:30** **KN-143. Enabling technologies in organic synthesis: the truth about their industrial scalability** **Cravotto, Giancarlo** University of Turin, Italia		
17:30 - 19:00	**Assemblea ABC: Assemblea dei Soci della Divisione di Chimica dell' Ambiente e dei Beni Culturali** Luogo, sala: **Green1 (level -1)** Chair: **Antonio Proto**, Università di Salerno; aproto@unisa.it **Assemblea DID: Assemblea dei Soci della Divisione di Didattica Chimica** Luogo, sala: **Meeting4+5 (level -1)** Chair: **Eleonora Aquilini**, DD-SCI; ele.aquilini6@gmail.com **Assemblea IND: Assemblea dei Soci della Divisione di Chimica Industriale** Luogo, sala: **Yellow3 (level +1)** Chair: **Mario Vito Marchionna**, Saipem; mario.marchionna@saipem.com **Assemblea TEC: Assemblea dei Soci della Divisione di Chimica per le Tecnologie** Luogo, sala: **Yellow2 (level +1)** Chair: **Piero Mastrorilli**, POLITECNICO DI BARI; p.mastrorilli@poliba.it	**Assemblea ALI: Assemblea dei Soci della Divisione di Chimica degli Alimenti** Luogo, sala: **Orange3 (level -1)** Chair: **Nadia Mulinacci**, Università di Firenze; nadia.mulinacci@unifi.it **Assemblea ELE: Assemblea dei Soci della Divisione di Elettrochimica** Luogo, sala: **Orange1 (level -1)** Chair: **Monica Santamaria**, Università di Palermo; monica.santamaria@unipa.it **Assemblea INO: Assemblea dei Soci della Divisione di Chimica Inorganica** Luogo, sala: **Blue2 (level +1)** Chair: **Mario Chiesa**, Università di Torino; mario.chiesa@unito.it **Assemblea TEF: Assemblea dei Soci della Divisione di Tecnologia Farmaceutica** Luogo, sala: **Orange2 (level -1)** Chair: **Paola Minghetti**, unimi; paola.minghetti@unimi.it	**Assemblea ANA: Assemblea dei Soci della Divisione di Chimica Analitica** Luogo, sala: **Red2 (level +1)** Chair: **Luigi Mondello**, Università di Messina; lmondello@unime.it **Assemblea FAR: Assemblea dei Soci della Divisione di Chimica Farmaceutica** Luogo, sala: **Blue1 (level +1)** Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna; marialaura.bolognesi@unibo.it **Assemblea MAS: Assemblea dei Soci della Divisione di Spettrometria di Massa** Luogo, sala: **Turquoise1 (level -1)** Chair: **Giuliana Bianco**, Unibas; giuliana.bianco@unibas.it **Assemblea TEO: Assemblea dei Soci della Divisione di Chimica Teorica e Computazionale** Luogo, sala: **Green2 (level -1)** Chair: **Claudio Greco**, Università degli Studi di Milano - Bicocca; claudio.greco@unimib.it	**Assemblea CSB: Assemblea dei Soci della Divisione di Chimica dei Sistemi Biologici** Luogo, sala: **Green3 (level -1)** Chair: **Alessandra Magistrato**, CNR; alessandra.magistrato@sissa.it **Assemblea FIS: Assemblea dei Soci della Divisione di Chimica Fisica** Luogo, sala: **Yellow1 (level +1)** Chair: **Moreno Meneghetti**, Università di Padova; moreno.meneghetti@unipd.it **Assemblea ORG: Assemblea dei Soci della Divisione di Chimica Organica** Luogo, sala: **Red1 (level +1)** Chair: **Alessandro Abbotto**, Università di Milano-Bicocca; alessandro.abbotto@unimib.it
19:00 - 20:30	**POSTER-B: Poster Session B** Luogo, sala: **Hall B (main hall; level +1)**			
20:30 - 22:00	**TOPIC-D: Junior Group Event** Luogo, sala: **Red1 (level +1)** **20:30-20:45** Introduction **20:45-21:15** Interview to Barbascura **21:15-21:30** Q&A **21:30-22:00** Conclusions			

Giovedì, 29 agosto 2024

8:30 - 10:30

ANA-1A: Divisione di Chimica Analitica - Parte 1A

Luogo, sala: **Red2 (level +1)**
Chair: **Anna Laura Capriotti**, Sapienza; annalaura.capriotti@uniroma1.it
Chair: **Alberto Cavazzini**, Università di Ferrara; cvz@unife.it

8:30 - 9:00

ANA-KN-01. Sample preparation in one click: monolith columns as a case study

Montone, Carmela Maria; Aita, Sara Elsa; Cerrato, Andrea; Cavaliere, Chiara; Laganà, Aldo; Piovesana, Susy; Taglioni, Enrico; Capriotti, Anna Laura
University of Rome "La Sapienza", Italia

9:00 - 9:15

ANA-OR-001. Extractive-Liquid Sampling Electron Ionization-Mass Spectrometry (E-LEI-MS) for real-time targeted and non-targeted analysis of pesticides in light cannabis and drugs

Arigò, Adriana[1]; Nevola, Giovanna[1]; Famiglini, Giorgio[1]; Palma, Pierangela[1,2]; Cappiello, Achille[1,2]
1: Department of Pure and Applied Sciences, University of Urbino Carlo Bo, Piazza Rinascimento, 6, 61029 – Urbino, Italy; 2: Vancouver Island University, 900 Fifth St, BC V9R 5S5, Nanaimo – Canada

9:15 - 9:30

ANA-OR-002. Chromatographic enantioresolution and stereochemical characterization of seized synthetic cannabinoid receptor agonists with Whelk-O□1 chiral stationary phases

varfaj, Ina[1]; Protti, Michele[2]; Di Michele, Alessandro[1]; Migni, Anna[1]; Carotti, Andrea[1]; Sardella, Roccaldo[1]; Mercolini, Laura[2]
1: Università degli Studi di Perugia, Italia; 2: Università di Bologna, Italia

9:30 - 9:45

ANA-OR-003. Enhancing Human Volatilome

ANA-2A: Divisione di Chimica Analitica - Parte 2A

Luogo, sala: **Orange1 (level -1)**
Chair: **Dario Compagnone**, Università di Teramo; dcompagnone@unite.it
Chair: **Giovanna Marrazza**, Università di Firenze; giovanna.marrazza@unifi.it

8:30 - 9:00

ANA-KN-02. A casebook of selectors and probes in chiral voltammetry: stereogenic elements, interactions, implementation strategies

Mussini, Patrizia Romana[1]; Arnaboldi, Serena[1]; Grecchi, Sara[1]; Licandro, Emanuela[1]; Araneo, Silvia[1]; Benincori, Tiziana[2]; Fontana, Francesca[3]; Rizzo, Simona[4]; Guazzelli, Lorenzo[5]; Cirilli, Roberto[6]
1: Università degli Studi di Milano, Dipartimento di Chimica; 2: Università degli Studi dell'Insubria, Dipartimento di Scienza e Alta Tecnologia; 3: Università degli Studi di Bergamo, Dipartimento di Ingegneria e Scienze Applicate; 4: CNR, Istituto di Scienze e Tecnologie Chimiche "Giulio Natta"; 5: Università degli Studi di Pisa, Dipartimento di Farmacia; 6: Istituto Superiore di Sanità, Centro Nazionale per il Controllo e la Valutazione dei Farmaci

9:00 - 9:15

ANA-OR-017. Determination of additives in copper plating baths by dynamic Electrochemical Impedance Spectroscopy (EIS)

Giurlani, Walter[1,2]; Verrucchi, Margherita[1]; Bonechi, Marco[1,2]; Pappaianni, Giulio[1]; Marziali, Michele[1]; Zangari, Giovanni[3]; Innocenti, Massimo[1,2]
1: Department of Chemistry, University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino (FI), Italy; 2: INSTM, Via G. Giusti 9, 50121 Firenze (FI), Italy;; 3: Department of Materials Science and Engineering, University of Virginia, Charlottesville, VA, 22904, United States

9:15 - 9:30

ANA-OR-018. Electrochemically powered dissipative hydrogel films for out-of-equilibrium operations

ANA-3A: Divisione di Chimica Analitica - Parte 3A

Luogo, sala: **Orange2 (level -1)**
Chair: **Gianpiero Adami**, Università degli Studi di Trieste; gadami@units.it
Chair: **Paola Fermo**, Università degli Studi di Milano; paola.fermo@unimi.it

8:30 - 9:00

ANA-KN-03. Citizen science: An opportunity for innovation in Analytical Chemistry

Loiselle, Steven; Boldrini, Amedeo; Polvani, Alessio; Liu, Xin; Cirrone, Riccardo; Tamasi, Gabriella
University of Siena, Italia

9:00 - 9:15

ANA-OR-033. Microplastics as vehicles for toxic metal ions: an adsorption study

Muratore, Nicola[1]; Arrabito, Giuseppe[1]; Lascari, Davide[1]; Cataldo, Salvatore[1,2]; Lazzara, Giuseppe[1,2]; Cavallaro, Giuseppe[1,2]; Pettignano, Alberto[1,2]
1: Dipartimento di Fisica e Chimica - Emilio Segrè, Università di Palermo, V.le delle Scienze, Ed. 17, 90128, Palermo; 2: NBFC, National Biodiversity Future Center, Palermo, Piazza Marina 61, 90133, Palermo

9:15 - 9:30

ANA-OR-034. Synthetic strategy and application of cellulose acetate microbeads from waste sources for water remediation applications

Antonelli, Lorenzo; De Cesaris, Massimo Giuseppe; Grasso, Susanna; Gentili, Alessandra
Sapienza Università di Roma, Italia

9:30 - 9:45

ANA-OR-035. PEGDA-based Ion Imprinted Polymer for Lithium Adsorption

Testa, Valentina[1]; Bruzzoniti, Maria Concetta[1]; Tumiatti, Vander[2]; Tumiatti, Michela[2]; Rivoira, Luca[1]; Serra, Thea[1]; Cavalera, Simone[1]; Di Nardo, Fabio[1]; Anfossi, Laura[1]; Baggiani, Claudio[1]
1: Università di Torino, Italia; 2: Sea Marconi Technologies

CSB-1A: Divisione di Chimica dei Sistemi Biologici - Parte 1A

Luogo, sala: **Turquoise1 (level -1)**

8:30 - 9:00

The acidic intrinsically disordered region of the inflammatory mediator HMGB1 mediates fuzzy interactions with CXCL12

Musco, Giovanna
IRCCS Ospedale San Raffaele, Italia

9:00 - 9:15

CSB-OR-001. Is proteins structural stability challenged by lipid peroxidation?

Honisch, Claudia[1]; Rotondo, Martina[2]; Galluppo, Elisabetta[1]; Tartaggia, Stefano[1]; Hussain, Rohanah[3]; Siligardi, Giuliano[3]; Ruzza, Paolo[1]
1: Istituto di Chimica Biomolecolare del CNR, Padova, IT; 2: Università degli Studi di Napoli Federico II, Dip. di Biologia, Napoli, IT; 3: Diamond Light Source, Harwell Science and Innovation Campus, Didcot, UK

9:15 - 9:30

CSB-OR-002. Developing New Toll-Like Receptor 4 (TLR4) Modulators as Innovative and Inexpensive Vaccine Adjuvants

Romerio, Alessio; Shaik, Mohammed M.; Italia, Alice; Lami, Federico; Peri, Francesco
Università degli Studi di Milano-Bicocca, Italia

9:30 - 9:45

CSB-OR-003. Monovalent metal ions promote pre-mRNA splicing

Aupič, Jana[1]; Borišek, Jure[2]; Fica, Sebastian M.[3]; Galej, Wojciech P.[4]; Magistrato, Alessandra[1]
1: CNR-IOM c/o International School for Advanced Studies (SISSA), Trieste, Italy; 2: Theory department, National Institute of Chemistry, Ljubljana, Slovenia; 3: Department of Biochemistry, University of Oxford, Oxford, UK; 4: European Molecular Biology Laboratory, Grenoble, France

Investigation with Active Carbon Fibers: A Novel Approach for Improved Sampling and Analysis

Crescenzi, Carlo[1]; Santarelli, Elisabetta[1]; Caponigro, Vicky[1]; Mosca, Sivia[2]; Manni, Andrea[3]; Guerriero, Ettore[2]
1: Università degli Studi di Salerno, Italia; 2: CNR - Istituto sull'Inquinamento Atmosferico (CNR-IIA), Italia; 3: c Spectra 2000, Italia

9:45 - 10:00

ANA-OR-004. Comprehensive characterization of a Brazilian essential oil exploiting quali-quantitative, enantiomeric, and a preparative GC fast isolation followed by spectroscopy approaches

Sciarrone, Danilo[1]; Cucinotta, Lorenzo[1]; Coppolino, Carmelo[1]; Irrera, Elisa[1]; Rotondo, Archimede[2]; Donato, Paola[1]; Mondello, Luigi[1,3]
1: Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy; 2: Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Messina, Italy; 3: Chromaleont S.R.L., C/O Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy

10:00 - 10:15

ANA-OR-005. Monitoring (semi)volatile poly- & perfluorinated hydrocarbons in environmental samples using GC-MS

Corviseri, Maria C[1]; De Poli, Marco[2]; Stevanin, Claudia[1]; Cavazzini, Alberto[2,3]; Pasti, Luisa[1]; Franchina, Flavio A[2]
1: Department of Environmental and Prevention Sciences, University of Ferrara, Via Luigi Borsari n. 46 - 44121, Ferrara, Italy; 2: Department of Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, Via Luigi Borsari n. 46 - 44121, Ferrara, Italy; 3: Council for Agricultural Research and Economics, CREA, Via della Navicella n. 2/4 - 00184, Rome, Italy
dplmrc@unife.it

Baretta, Roberto; Frasconi, Marco
Department of Chemical Sciences, University of Padova, Via Marzolo 1, 35131 Padova, Italy

9:30 - 9:45

ANA-OR-019. Revolutionizing Alzheimer's disease diagnosis: the advancement of screen-printed electrochemical biosensors for biomarkers detection

Miglione, Antonella[1]; Raucci, Ada[1]; Amato, Jussara[1]; Marzano, Simona[1]; Pagano, Bruno[1]; Raia, Tiziana[2]; Lucarelli, Marco[2,3]; Fuso, Andrea[2]; Cinti, Stefano[1,4]
1: Department of Pharmacy, University of Naples "Federico II", Via Domenico Montesano 49, 80131 Naples, Italy.; 2: Department of Experimental Medicine, Sapienza University of Rome, Viale Regina Elena 324, 00161 Rome, Italy; 3: Pasteur Institute Cenci Bolognetti Foundation, Sapienza University of Rome, Rome, Italy; 4: BAT Center - Interuniversity Center for Studies on Bioinspired Agro-Environmental Technology, University of Naples "Federico II", 80055 Naples, Italy

9:45 - 10:00

ANA-OR-020. A ligand-based electrochemical magneto-assay for point-of-care determination of BRD4

Fortunati, Simone; Pedrini, Federica; Donofrio, Gaetano; Giannetto, Marco; Bertucci, Alessandro; Careri, Maria
Università di Parma, Italia

10:00 - 10:15

ANA-OR-021. An integrated paper-based electrochemical point-of-care device for precision medicine in breast cancer

Fiore, Luca[1,2]; Leotta, Giorgia[1]; Antinucci, Arianna[1]; Fegatelli, Greta[1]; Chiara, Francesco[3]; Roggero, Simona[4]; Arcuri, Giorgia[5]; Orlandi, Armando[5]
1: Department of Chemical Science and Technologies, University of Rome "Tor Vergata", Italy; 2: Sense4Med s.r.l., via Bitonto 139, Rome, Italy; 3: Laboratory of Clinical Pharmacology, "Franco Ghezzo", Department of Clinical and Biological Sciences, University of Turin, S. Luigi

9:45 - 10:00

ANA-OR-036. Gallic acid for the sequestration of Cd2+ and Pb2+ in aqueous solutions

Irto, Anna[1]; Raccuia, Salvatore Giovanni Michele[1]; Cigala, Rosalia Maria[1]; Bretti, Clemente[1]; Gómez-Laserna, Olivia[2]; Cardiano, Paola[1]; Crea, Francesco[1]; De Stefano, Concetta[1]
1: Università degli Studi di Messina, Italia; 2: University of the Basque Country (EHU/UPV), Spain

10:00 - 10:15

ANA-OR-037. Reconfigurable cellulose-supported ZnO microflowers for environmental remediation: from emerging pollutants photodegradation to smart antibacterial interfaces

Arrabito, Giuseppe[1]; Maggiore, Maria[1]; Ferrara, Vittorio[1]; Prestopino, Giuseppe[2]; Scopelliti, Michelangelo[1]; Pignataro, Bruno[1]; Campanile, Floriana[3]; Costanzo, Paola[4]
1: Department of Physics and Chemistry-Emilio Segrè, University of Palermo, 90128 Palermo, Italy; 2: Department of Industrial Engineering, University of Rome "Tor Vergata", 00133 Rome, Italy; 3: Department of Biomedical and Biotechnological Sciences, University of Catania, 95123 Catania, Italy; 4: Department of Chemistry and Chemical Technologies, University of Calabria, 87036 Rende, CS, Italy

10:15 - 10:30

ANA-OR-038. Sewage sludge biochar as green d–SPE adsorbent in QuEChERS clean-up process for the multi-residue LC-MS/MS analysis of emerging micropollutants in edible crops

Renai, Lapo[1]; Bonaccorso, Giulia[1]; Fichera, Michelangelo[1]; Rivoira, Luca[2]; Bruzzoniti, Maria Concetta[2]; Del Bubba, Massimo[1]
1: Department of Chemistry, University of Florence, Via della Lastruccia 3, 50019, Sesto Fiorentino, Florence, Italy; 2: Department of Chemistry, University of Turin, Via Pietro Giuria 7, Turin, 10125, Italy

9:45 - 10:00

CSB-OR-004. Integrated metabolomics and proteomics of symptomatic and early pre-symptomatic states of colitis

Shimshoni, Elee[1]; Solomonov, Inna[1]; Sagi, Irit[1]; Ghini, Veronica[2]
1: Weizmann Institute of Science, Israel; 2: Univerisità degli Studi di Firenze, Italia

10:00 - 10:15

CSB-OR-005. Potential relationship between secondary structure and biological functionality of Micro-RNAs

D'Urso, Alessandro
Università degli Studi di Catania, Italia

10:15 - 10:30

CSB-OR-006. Combined chemical tools to tackle a challenging mitochondrial target with therapeutic relevance: synergic use of NMR, SAXS and MS unveils the structural properties of the protein OSCP

Fabbian, Simone[1]; Giachin, Gabriele[2]; Sosic, Alice[1]; De Zotti, Marta[2]; Battistutta, Roberto[2]; Bellanda, Massimo[2]
1: Department of Pharmaceutical and Pharmacological Sciences, University of Padova (Italy); 2: Department of Chemical Sciences, University of Padova (Italy)

10:15 - 10:30

ANA-OR-006. The usefulness of the cryogenic zone compression approach coupled to gas chromatography mass spectrometry for the determination of polycyclic aromatic hydrocarbons in extra-virgin olive oil

Arena, Alessia[1]; Zoccali, Mariosimone[2]; Tranchida, Peter Q.[3]; Mondello, Luigi[1,3]
1: Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy; 2: Department of Mathematical and Computer Science, Physical Sciences and Earth Sciences, University of Messina, Viale F. Stagno d'Alcontres 31, 98166 – Messina, Italy; 3: Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy
Gonzaga Hospital, Torin, Italy; 4: Fidelio Medical srl, Corso Re Umberto 8, Torin, Italy; 5: Comprehensive Cancer Center, UOC Medical Oncology, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Roma, Italy

10:15 - 10:30

ANA-OR-022. Sensitive detection of SARS-CoV-2 spike protein using ACE2-modified graphene field-effect transistors.

Silvestri, Alessandro
Università Ca' Foscari Venezia, Italia

DID-A: Divisione di Didattica Chimica - Parte A

Luogo, sala: **Meeting3 (level -1)**
Chair: **Elena Maria Ghibaudi**, Università di Torino; elena.ghibaudi@unito.it

8:30 - 9:00

The Interconnectedness of Sustainable Development-oriented Critical Challenges, Chemistry Teaching and Systems Thinking

Delaney, Seamus
Deakin University, Australia

9:00 - 9:15

DID-OR-001. Inclusion through the disciplines: the case of chemistry

Aquilini, Eleonora
DD-SCI, Italia

9:15 - 9:30

DID-OR-002. Ten Fashionable Years – Keeping Dyeing Chemistry from Dying

Palazzi, Sergio
ISIS di Setificio "Paolo Carcano", Como, Italia

9:30 - 10:00

ELE-2: Divisione di Elettrochimica - Parte 2

Luogo, sala: **Meeting4+5 (level -1)**
Chair: **Giovanni Valenti**, University of Bologna; g.valenti@unibo.it
Chair: **Matteo Bonomo**, Università di Torino; matteo.bonomo@unito.it

8:30 - 8:45

ELE-OR-011. EC-STM study of self-assembled Cr-octaethylporphyrin monolayer on Au(111) electrode in acid electrolyte and effect of O2 coordination.

Cazzadori, Francesco[1]; Facchin, Alessandro[2]; Baron, Marco[1]; Durante, Christian[1]
1: University of Padova, Department of Chemical Sciences, via Marzolo 1, 35131, Padova, Italy; 2: Technical University of Munich, Department of Chemistry, Lichtenbergstraße 4D-85748 Garching

8:45 - 9:00

ELE-OR-012. PHOTO-ELECTROCHEMICAL DETECTION OF EMERGING POLLUTANTS WITH TITANIA BASED ELECTRODES

FAR-1A: Divisione di Chimica Farmaceutica - Parte 1A

Luogo, sala: **Blue1 (level +1)**
Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna; marialaura.bolognesi@unibo.it

8:30 - 9:00

FAR-MD-01. Medaglia Giordano Giacomello. The fascinating discovery of two antiviral drugs Raltegravir and Grazoprevir: the relevance of the scientific method and serendipity in drug discovery.

Summa, Vincenzo
Università Federico II di Napoli, Italia

9:00 - 9:15

FAR-PZ-03. Premio Tesi di Dottorato. Design, synthesis, and biological evaluation of bitopic ligands for novel strategies targeting cannabinoid receptors

Ferrisi, Rebecca[1,2]; Laprairie, Robert[3]; Manera, Clementina[1]
1: Department of Pharmacy, University of Pisa, 56126 Pisa, Italy; 2: Department of Pharmaceutical Sciences, University of Milan, 20133 Milano, Italy; 3: College of Pharmacy and Nutrition,

FIS-1A: Divisione di Chimica Fisica - Parte 1A

Luogo, sala: **Yellow1 (level +1)**
Chair: **Piero Ugliengo**, Università di Torino; piero.ugliengo@unito.it

8:30 - 9:00

ASTROCHEMISTRY & SOLAR SYSTEM ANCIENT HISTORY

Ceccarelli, Cecilia
Universitè Grenoble Alpes, Francia

9:00 - 9:15

FIS-OR-001. Unveiling Earth's phosphorus dawn and fate: computational explorations of P-bearing mineral surfaces in the tapestry of prebiotic chemistry

Corno, Marta[1]; Pantaleone, Stefano[1]; Rimola, Albert[2]; Balucani, Nadia[3]; Ugliengo, Piero[1]
1: Dipartimento di Chimica, Università di Torino, Italia; 2: Departament de Química, Universitat Autònoma de Barcelona, Bellaterra, Catalonia, Spain; 3: Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Italia

Acidi e basi da Arrhenius a Brønsted e Lowry: una vicenda con molti protagonisti

Calascibetta, Franco[1]; Barbarulo, Maria Vittoria[2]
1: Università Sapienza, Roma, in pensione, Italia; 2: Liceo classico Eugenio Montale, Roma

10:00 - 10:15

DID-OR-003. The Chemistry of Macromolecules in the stories of Primo Levi

Villani, Vincenzo
Università della Basilicata, Italia

10:15 - 10:30

DID-OR-004. Design and testing of a teaching sequence on the notions of permanent and instantaneous dipole

Cimadamore, Nicolò[1]; Ghirardi, Marco[1,2]; Regis, Alberto[1]; Ghibaudi, Elena Maria[1]
1: Università di Torino, Italia; 2: ITIS Quintino Sella, Biella (Italy)

Fumagalli, Daniele; Pifferi, Valentina; Falciola, Luigi
Università degli Studi di Milano, Italia

9:00 - 9:15

ELE-OR-013. Pulsed Current Electroplating: Innovations for Sustainable Industrial Enhancement

Mariani, Elena[1,2]; Giurlani, Walter[1,3]; Dell'Aquila, Vincenzo[2]; Bitossi, Samuele[1]; Giovani, Claudia[1]; Lo Nostro, Pierandrea[1]; Innocenti, Massimo[1,3]
1: Dipartimento di Chimica, Università degli Studi di Firenze, Sesto Fiorentino, Italia; 2: Eco-Tech Finish s.r.l, Arezzo, Italia; 3: Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Firenze, Italia

9:15 - 9:30

ELE-OR-014. Accelerated Metronidazole Breakdown with Nickel Hexacyanoferrate Nanocubes: A Sun-Powered Solution for Wastewater Treatment

Lushaj, Edlind[1]; Bordin, Matteo[1]; Liccardo, Letizia[1]; Barroso Martin, Isabel[2]; Rodriguez-Castellon, Enrique[2]; Vomiero, Alberto[1,3]; Moretti, Elisa[1]; Polo, Federico[1,4]
1: Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Via Torino 155, 30172 Venice, Italy; 2: Department of Inorganic Chemistry, Crystallography and Mineralogy. Faculty of Sciences, University of Malaga, Campus de Teatinos, 29071, Malaga, Spain; 3: Division of Materials Science, Department of Engineering Sciences and Mathematics, Luleå University of Technology, 97187 Luleå, Sweden; 4: European Centre for Living Technology (ECLT), Ca' Bottacin, Dorsoduro 3911, Calle Crosera, Venice 30124, Italy

9:30 - 9:45

ELE-OR-015. Electrochemical reduction applied to wastewater treatment of halogenated compounds

Vitulano, Fiammetta[1]; Sorti, Letizia[1]; Morelli, Carlo[1]; Uggeri, Fulvio[2]; Minguzzi, Alessandro[1]; Vertova, Alberto[1]

University of Saskatchewan, Saskatoon, SK S7N 5E5, Canada

9:15 - 9:30

FAR-PZ-04. Premio Tesi di Dottorato. Exploring innovative approaches to revolutionize leishmaniasis drug discovery: new chemical modalities and chemotypes

Salerno, Alessandra[1,2]
1: Department of Pharmacy and Biotechnology, Alma Mater Studiorum - University of Bologna, Via Belmeloro 6, Bologna 40126, Italy; 2: Centre for Targeted Protein Degradation, School of Life Sciences, University of Dundee 1 James Lindsay Place, DD1 5JJ Dundee, Scotland, U.K.

9:30 - 10:00

CXCR4 as potential predictive biomarkers for early-stage cancer detection, diagnosis and prognosis

Di Maro, Salvatore[1]; Mazzarella, Vincenzo[1]; Trotta, Annamaria[2]; Arcadio, Francesco[3]; Roussel, Tom[4]; Maisto, Constantina[5]; Cosconati, Sandro[1]; Cennamo, Nunzio[3]; Peng, Ling[4]; Lastoria, Secondo[5]; Zeni, Luigi[3]; Scala, Stefania[2]
1: DiSTABiF, Università degli Studi della Campania 'Luigi Vanvitelli', via Vivaldi 43, 81100 Caserta, Italy; 2: Microenvironment Molecular Targets, Istituto Nazionale per lo Studio e la Cura dei Tumori, IRCCS "Fondazione G. Pascale", Via M. Semmola 52, 80131 Napoli, Italy; 3: Dipartimento di Ingegneria, Università degli Studi della Campania 'Luigi Vanvitelli',via Roma 29, 80031 Aversa, Italy.; 4: CNRS, Centre Interdisciplinaire de Nanoscience de Marseille, Aix-Marseille University, UMR 7325, Equipe Labellisée Ligue Contre le Cancer, 163, avenue de Luminy, 13288, Marseille, France.; 5: Nuclear Medicine Division, Istituto Nazionale Tumori - IRCCS Fondazione G. Pascale, Napoli, Italy.

10:00 - 10:15

FAR-OR-001. Acyclic purine and pyrimidine nucleotide analogs as ecto-5'-nucleotidase (CD73) inhibitors

9:15 - 9:30

FIS-OR-002. A computation study of binding energies and vibrational spectral features of Sn species on amorphous water ice mantles

Perrero, Jessica[1,2]; Fuente, Asunción[3]; Ugliengo, Piero[2]; Rimola, Albert[1]
1: Departament de Química, Universitat Autònoma de Barcelona, Bellaterra, 08193, Catalonia, Spain; 2: Dipartimento di Chimica and Nanostructured Interfaces and Surfaces (NIS) Centre, Università degli Studi di Torino, 10125, Torino, Italy; 3: Centro de Astrobiología (CSIC/INTA), Torrejón de Ardoz, 28806, Spain

9:30 - 9:45

FIS-OR-003. Crossed molecular beam studies of the reactions between small aromatic compounds and atomic oxygen and atoms and implications in materials science

Balucani, Nadia[1]; Pannacci, Giacomo[1]; Vanuzzo, Gianmarco[1]; Rosi, Marzio[2]; Casavecchia, Piergiorgio[1]
1: DCBB - Università degli Studi di Perugia, Italia; 2: DICA - Università degli Studi di Perugia, Italia

9:45 - 10:00

FIS-OR-004. Multiscale Frozen Density Embedding/Molecular Mechanics Approach for Simulating Response Properties of Solvated Systems

Lafiosca, Piero[1]; Rossi, Federico[2]; Egidi, Franco[3]; Giovannini, Tommaso[1]; Cappelli, Chiara[1]
1: Scuola Normale Superiore, Italia; 2: Norwegian University of Science and Technology, Norway; 3: Software for Chemistry and Materials, The Netherlands

10:00 - 10:15

FIS-OR-005. Adsorption and decomposition of ammonia on Fe surfaces: a molecular dynamics study

Perego, Simone[1,2]; Bonati, Luigi[1]; Parrinello, Michele[1]
1: Istituto Italiano di Tecnologia; 2: Università degli Studi di Milano-Bicocca

1: Università degli Studi di Milano, Italia; 2: Bracco S.p.A., Italia

9:45 - 10:00

ELE-OR-016. The Interplay between Zn(II) Porphyrins and SnO2 in Boosting the Sensing of Gaseous Acetone

Pargoletti, Eleonora[1]; Tessore, Francesca[1]; Di Carlo, Gabriele[1]; Trioni, Mario Italo[2]; Soave, Raffaella[2]; Cappelletti, Giuseppe[1]

1: Università degli Studi di Milano, Italia; 2: Consiglio Nazionale delle Ricerche, Istituto di Scienze e Tecnologie Chimiche "Giulio Natta"

10:00 - 10:15

ELE-OR-018. Design rule hidden from the eye in S/N-bridged ancillary ligands for copper(I) complexes applied to light-emitting electrochemical cells

Cavinato, Luca M.[1]; Giobbio, Ginevra[2]; Gaillard, Sylvain[2]; Costa, Ruben D.[1]

1: Technical University of Munich, 94315 Straubing, Germany; 2: Normandie University, ENSICAEN, UNICAEN, CNRS, LCMT, 14000 Caen, France

10:15 - 10:30

ELE-OR-018. Hybrid fluorescent protein-polymer derivatives for stable deep-red lighting devices

Ferrara, Sara; Gutierréz-Armayor, David; Nieddu, Mattia; Costa, Rubén D.

Technical University of Munich

Federico, Stephanie[1,2]; Renn, Christian[2]; Břehová, Petra[3]; Janeba, Zlatko[3]; Zimmermann, Herbert[4]; El-Tayeb, Ali[2]; Sträter, Norbert[5]; Müller, Christa E.[2]

1: Department of Chemical and Pharmaceutical Sciences, University of Trieste, Via Licio Giorgieri 1, 34127 Trieste, Italy; 2: PharmaCenter Bonn, Pharmaceutical Institute, Pharmaceutical & Medicinal Chemistry, University of Bonn, An der Immenburg 4, 53121 Bonn, Germany; 3: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, v.v.i. Flemingovo nám. 2, 16610 Prague 6, Czech Republic; 4: Institute of Cell Biology and Neuroscience, Goethe-University, Max-von-Laue-Str. 13, 60439 Frankfurt am Main, Germany; 5: Institute of Bioanalytical Chemistry, Center for Biotechnology and Biomedicine, Leipzig University, Deutscher Platz 5, 04103 Leipzig, Germany

10:15 - 10:30

FAR-OR-002. Unveiling Multimodal Solutions for Targeting IDO1 activities in Cancer Immunotherapy

Rezzi, Sarah Jane[1]; Fallarini, Silvia[1]; Aprile, Silvio[1]; Miggiano, Riccardo[1]; Massarotti, Alberto[1]; Bari, Elia[1]; Panfili, Eleonora[2]; Ugel, Stefano[3]; Torre, Maria Luisa[1]; Macchiarulo, Antonio[2]; Pallotta, Maria Teresa[2]; Di Martino, Rita Maria Concetta[1]; Pirali, Tracey[1]

1: Università del Piemonte Orientale, Dipartimento di Scienze del Farmaco, Via Bovio 6, 28100 Novara, Italia; 2: Università degli Studi di Perugia, Piazza Università 1, 06123 Perugia, Italia; 3: Università di Verona, Piazzale Ludovico Antonio Scuro 10, 37124 Verona, Italia

10:15 - 10:30

FIS-OR-007. Thermodynamic study of urea/choline chloride deep eutectic solvent by vapor pressure measurements under effusion conditions

Travaglini, Francesco Iacopo; Romagnoli, Lorenza; Busato, Matteo; Mannucci, Giorgia; D'Angelo, Paola; Ciccioli, Andrea

Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia

IND-1A: Divisione di Chimica Industriale - Parte 1A
Luogo, sala: **Yellow3 (level +1)**
Chair: **Mario Vito Marchionna**, Saipem; mario.marchionna@saipem.com
Chair: **Anna Maria Raspolli Galletti**, University of Pisa; anna.maria.raspolli.galletti@unipi.it

8:30 - 8:45

IND-OR-001. Molecular imprinted poly-3,4 ethylenedioxythiophene for supercapacitor application

INO-1A: Divisione di Chimica Inorganica - Parte 1A
Luogo, sala: **Blue2 (level +1)**
Chair: **Francesco Ruffo**, Università di Napoli Federico II; ruffo@unina.it

8:30 - 8:45

INO-OR-002. Enhancing Antitumor Activity of Platinum-Based Organometallic Compounds: Investigating the Effects of Ligand Substitution and Hydrophobicity. A Study of Novel Water-Soluble Monofunctional

INO-2A: Divisione di Chimica Inorganica - Parte 2A
Luogo, sala: **White2 (level +2)**
Chair: **Mario Chiesa**, Università di Torino; mario.chiesa@unito.it

8:30 - 8:45

INO-OR-003. Design of Cu-based Electro-Catalysts for Renewable Fuels Production through CO2 Reduction

Nistico', Roberto[1]; Dozzi, Maria Vittoria[2]; Mino, Lorenzo[3]; Vigni, Laura[2]; Longhi, Mariangela[2]; Cantoni, Matteo[4]; Mantovan, Roberto[5];

TEC-A: Divisione di Chimica per le Tecnologie - Parte A
Luogo, sala: **Yellow2 (level +1)**
Chair: **Piero Mastrorilli**, POLITECNICO DI BARI; p.mastrorilli@poliba.it
Chair: **Salvatore Failla**, Università di Catania; sfailla@dii.unict.it

8:30 - 8:45

TEC-OR-001. Biomimetic Design of Novel Structural Biomaterials through Halogen Bonding

Metrangolo, Pierangelo

Sangiorgi, Nicola; Sanson, Alessandra
ISSMC-CNR, Italia

8:45 - 9:00

IND-OR-002. Branched poly-L-lactide from renewable polyols as nanosystems for drug delivery

Brugnoli, Benedetta[1]; Frezza, Chiara[1]; Mariano, Alessia[2]; Axioti, Eleni[3]; Taresco, Vincenzo[3]; Del Giudice, Alessandra[1]; Galantini, Luciano[1]; Scotto d'Abusco, Anna[2]; Francolini, Iolanda[1]
1: Department of Chemistry, Sapienza University of Rome, Italy; 2: Department of Biomedical Sciences, Sapienza University of Rome, Italy; 3: School of Chemistry, University of Nottingham

9:00 - 9:15

IND-OR-003. Curcumin-Based Polymer Derivatives for Pollutants Sensing Applications

Nicosia, Angelo[1]; Mezzina, Lidia[1]; De Guidi, Guido[1]; Mineo, Placido[1,2]
1: Department of Chemical Sciences, University of Catania, V.le A.Doria 6, Catania (Italy); 2: Institute of Polymers, Composites and Biomaterials, National Research Council, Via P. Gaifami 18, Catania (Italy)

9:15 - 9:30

IND-OR-004. Gold nanoparticles supported on poly(2,6-dimethyl-1,4-phenylene oxide) as active catalyst in aerobic oxidation of alcohols: the potential of a porous polymer support

Contento, Irene[1,2]; Zerino, Antonio[1]; Lodato, Valentina[1]; Capacchione, Carmine[1,2]; Buonerba, Antonio[1,2]; Grassi, Alfonso[1,2]
1: Department of Chemistry and Biology "Adolfo Zambelli", University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano (SA) (Italy); 2: Consorzio InterUniversitario Reattività e Catalisi (CIRCC), Via Celso Ulpiani, 27- 70126 Bari, Italy

9:30 - 9:45

IND-OR-005. Hydrophobic poly(ester-urethane)s coatings from tomato cutin for recyclable paper

Organometallic Pt(II) Complexes [PtL(η1-C2H4OEt)(phen)]+ (L = DMSO, NH3, 1-hexyl-1H-imidazole, 1-hexyl-1H-benzo[d]imidazole)

Benedetti, Michele; Ali, Asjad; Stefàno, Erika; De Castro, Federica; Rovito, Gianluca; Muscella, Antonella; Marsigliante, Santo; Fanizzi, Francesco Paolo
Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy.

8:45 - 9:00

INO-OR-004. Ternary Lanthanide (III) complexes with Fluoride ion: solution structures and dynamics investigated with 19F-CEST

Garello, Francesca[1]; Costanzo, Diana[1]; Carrera, Carla[1]; Destro, Gianluca[1]; Aime, Silvio[2]; Terreno, Enzo[1]
1: Centro di Imaging Molecolare e Preclinico, Dipartimento di Biotecnologie Molecolari e Scienze per la salute, Università degli Studi di Torino, Piazza Nizza 44/bis, 10126 Torino, Italy.; 2: IBB-CNR, Università degli Studi di Torino, Via Nizza 52, 10126, Torino, Italy. e-mail: francesca.garello@unito.it

9:00 - 9:15

INO-OR-006. Light-Activated Therapeutics: Designing Photoresponsive Bioactive Compounds with Ruthenium(II) Polypyridyl Complexes

Giacomazzo, Gina Elena; Conti, Luca; Ceccherini, Valentina; Valtancoli, Barbara; Giorgi, Claudia
Università degli Studi di Firenze, Italia

9:15 - 9:30

INO-OR-008. TARGETING MCT1: FROM FLUORINE TO COPPER IN NUCLEAR MEDICINE

Mari, Matteo[1]; Storchi, Jennifer[1]; Frignani, Elia[1]; Asti, Mattia[2]; Patinec, Veronique[3]; Zambon, Alfonso[1]; Tripier, Raphael[3]; Ferrari, Erika[1]
1: Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia, via G. Campi 103, 41125, Modena, Italy.; 2: Radiopharmaceutical Chemistry

Mostoni, Silvia[1]; Scotti, Roberto[1]
1: Universita' degli studi di Milano-Bicocca, Italia; 2: Università degli studi di Milano, Italia; 3: Università degli studi di Torino, Italia; 4: Politecnico di Milano, Italia; 5: CNR-IMM, Italia

8:45 - 9:00

INO-OR-005. Hybrid Ag+/TiO2 nanocomposite coatings via Aerosol assisted atmospheric pressure plasma deposition for environmental remediation

Del Sole, Regina[1]; Palumbo, Fabio[2]; Lo Porto, Chiara[3]; Comparelli, Roberto[3]; Curri, Maria Lucia[1,3]; Fracassi, Francesco[1,2]; Milella, Antonella[1,2]
1: Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Via Orabona 4, 70126 Bari,Italy; 2: Istituto di Nanotecnologia, CNR, c/o Dip. Chimica Via Orabona 4, 70126 Bari, Italy; 3: Istituto per i Processi Chimico-Fisici, CNR, c/o Dip. Chimica Via Orabona 4, 70126 Bari, Italy

9:00 - 9:15

INO-OR-007. Gold-Catalyzed Cycloisomerization and Hydration/Homocoupling Reactions of Terminal Alkynes

Sargentoni, Nicola; Luciani, Lorenzo; Galassi, Rossana
University of Camerino, School of Science and Technology, Chemistry Section, Via Madonna delle Carceri, Camerino, I-62032 - Italy

9:15 - 9:30

INO-OR-009. Disclosing the role of catalyst-substrate interaction and surface dynamics in liquid-phase heterogeneous catalysis

Stucchi, Marta[1]; Korb, Jean-Pierre[2]; Villa, Alberto[1]; Prati, Laura[1]
1: Università degli Studi di Milano, Italia; 2: Sorbonne-université, CNRS, PHENIX, Paris, France

9:30 - 9:45

INO-OR-011. Copper(II) Salben Complexes as Efficient Catalysts in C-N Coupling Reactions

Marchi, Lorenzo[1]; Steiner, Markus[2]; Singhal, Ritik[2];
Politecnico di Milano, Italia

8:45 - 9:00

TEC-OR-002. Adsorption of Cisplatin and Its Derivatives on Graphene.

Cracchiolo, Maria; Melchior, Andrea
Polytechnic Department of Engineering and Architecture, Laboratory of Chemical Technology, University of Udine, via del Cotonificio 108, 33100, Udine, Italy

9:00 - 9:15

TEC-OR-003. Synthesis and cytotoxic activity of a series of chloro-oxo-dihydroquinoline-hydrazones Copper(II) complexes

Sgarbossa, Paolo[1]; Bertani, Roberta[1]; Thirunavukkarasu, Thangavel[2]; Natarajan, Karuppannan[3]; Gandin, Valentina[4]; Marzano, Cristina[4]; Albinati, Alberto[5]; Casella, Girolamo[6]; Zoleo, Alfonso[7]
1: Department of Industrial Engineering, University of Padova, Padova, Italy; 2: Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, India; 3: Research and Development Centre, PSGR Krishnammal College for Women, Coimbatore, India; 4: Department of Pharmaceutical and Pharmacological Sciences, University of Padova, Padova, Italy; 5: CNR-ICCOM, Sesto Fiorentino, Italy and University of Milano, Milan Italy; 6: Dipartimento di Scienze della Terra e del Mare, University of Palermo, Palermo, Italy; 7: Dipartimento di Scienze Chimiche, University of Padova, Padova, Italy

9:15 - 9:30

TEC-OR-004. Radiation crosslinked hydrogel wound dressings containing egg white proteins

Gulino, Federica[1]; Muscolino, Emanuela[1]; Alessi, Sabina[1]; Nuzzo, Domenico[2]; Picone, Pasquale[2]; Giacomazza, Daniela[3]; Dispenza, Clelia[1,3]
1: Dipartimento di Ingegneria, Università degli Studi di Palermo, Viale delle Scienze 6, 90128 Palermo, Italy; 2: Istituto per la Ricerca e l'Innovazione Biomedica, Consiglio Nazionale delle Ricerche, Via U. La Malfa 153, 90146 Palermo, Italy; 3: Istituto di BioFisica, Consiglio

Buratti, Elena[1]; Scittarelli, Doriana[1]; Lerin, Lindomar Alberto[1]; Odoardo, Andrea[1]; D'Ilorio, Andrea[1]; Calosi, Matteo[1]; Montanari, Angela[2]; Balbo, Andrea[3]; Bertoldo, Monica[1]
1: Dipartimento di Scienze Chimiche, Farmaceutiche e Agrarie, Università di Ferrara, Italia; 2: Tomapaint Srl, Parma, Italia; 3: Dipartimento di Ingegneria, Università di Ferrara, Italia

9:45 - 10:00

IND-OR-006. Catalytic Chemical Upcycling of Elastane

Brandi, Francesco; Moreno Marrodan, Carmen; Liguori, Francesca; Oberhauser, Werner; Barbaro, Pierluigi
Consiglio Nazionale delle Ricerche, Istituto di Chimica dei Composti Organo Metallici

Section, Nuclear Medicine Unit, Azienda USL-IRCCS Reggio Emilia, via Amendola 2, 42122, Reggio Emilia, Italy; 3: Univ de Brest, UMR-CNRS 6521 CEMCA, 6 avenue Victor le Gorgeu, F-29200 Brest, France.

9:30 - 9:45

INO-OR-010. Paddlewheel diruthenium complexes: potent inhibitors of amyloid-beta aggregation

La Manna, Sara[1]; Florio, Daniele[1]; Cugudda, Alessia[1]; Merlino, Antonello[2]; Marasco, Daniela[1]
1: Department of Pharmacy, University of Naples "Federico II", 80131, Naples, Italy; 2: Department of Chemical Sciences, University of Naples "Federico II", 80126, Naples, Italy

9:45 - 10:00

INO-OR-012. Towards Atomically Precise Gold Nanoclusters Application in Nanomedicine

Saggiotti, Giulia[1]; Mauceri, Matteo[1,2]; Gandin, Valentina[1]; Rizzolio, Flavio[2]; Biffis, Andrea[1]
1: Università di Padova; 2: Università Ca' Foscari Venezia

10:00 - 10:15

INO-OR-014. Selective oxidation of halogenated phenols catalyzed by a miniaturized heme-enzyme: insight into the mechanism of action

De Fenza, Maria[1]; D'Alonzo, Daniele[1]; Leone, Linda[1]; Maglio, Ornella[1,2]; Pavone, Vincenzo[1]; Nastri, Flavia[1]; Lombardi, Angelina[1]
1: Department of Chemical Sciences, University of Naples Federico II – Via Cintia, 80126 Naples, Italy; 2: Institute of Biostructures and Bioimaging, National Research Council, Naples, Italy

10:15 - 10:30

INO-OR-016. Di-Iron Complexes with Organosulfur Groups as Anticancer Agents

Saviozzi, Chiara[1]; Mojić, Marija[2]; Biancalana, Lorenzo[1]; Maksimović-Ivanić, Danijela[2]; Mijatović, Sanja[2]; Marchetti, Fabio[1]
1: Department of Chemistry and Industrial Chemistry, University of Pisa, Italy; 2: Department of

Fantasia, Serena Maria[2]; Rigamonti, Luca[1]
1: Dipartimento di Scienze Chimiche e Geologiche, Università degli Studi di Modena e Reggio Emilia, via G. Campi 103, 41125 Modena, Italy; 2: Department of Synthetic Molecules Technical Development, Process Chemistry & Catalysis, F. Hoffmann-La Roche Ltd, Basel, Switzerland

9:45 - 10:00

INO-OR-013. High-Throughput Experimentation (HTE) in Catalytic Olefin Polymerization: a Powerful Tool to Investigate Complex Materials

Vittoria, Antonio[1,3]; Urciuoli, Gaia[1,3]; Costanzo, Salvatore[2,3]; Tammaro, Daniele[2,3]; Cannavacciuolo, Felicia Daniela[1,3]; Pasquino, Rossana[2,3]; Cipullo, Roberta[1,3]; Auriemma, Finizia[1,3]; Grizzuti, Nino[2,3]; Maffettone, Pier Luca[2,3]; Vincenzo, Busico[1,3]
1: Dipartimento di Scienze Chimiche, Università di Napoli Federico II, 80126 Napoli, Italy; 2: Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università di Napoli Federico II, Napoli 80125, Italy; 3: DPI, 5600 AX Eindhoven, the Netherlands

10:00 - 10:15

INO-OR-015. Zinc(II) Complexes with Schiff bases of 5-pyrazolones acting as Zinc Metallochaperones for Mutant p53 Reactivation

Xhafa, Sonila[1]; Di Nicola, Corrado[1]; Tombesi, Alessia[1]; Pettinari, Riccardo[1]; Pettinari, Claudio[1]; Scarpelli, Francesca[2]; Crispini, Alessandra[2]; La Deda, Massimo[2]; D'orazi, Gabriella[3]; Galindo, Agustin[4]; Marchetti, Fabio[1]
1: Università di Camerino, Italia; 2: Università della Calabria, Italia; 3: IRCCS Regina Elena, Italia; 4: Università di Siviglia, Spagna

10:15 - 10:30

INO-OR-017. Does the Oxygen Evolution Reaction follow the classical OH*, O*, OOH* path on single atom catalysts?

Nazionale delle Ricerche, Via U. La Malfa 153, 90146 Palermo, Italy

9:30 - 9:45

TEC-OR-005. Branched fluorinated Janus-type dendrimers: From physico-chemical properties to gene delivery applications

Rosati, Marta[1]; Acocella, Angela[2]; Pizzi, Andrea[1]; Demitri, Nicola[3]; Nonappa, Nonappa[4]; Turtù, Giorgio[2]; Bona, Beatrice Lucia[1]; Raffaini, Giuseppina[1]; Zerbetto, Francesco[2]; Baldelli Bombelli, Francesca[1]; Cavallo, Gabriella[1]; Metrangolo, Pierangelo[1]
1: Politecnico di Milano, Italia; 2: Università di Bologna, Italia; 3: Elettra Sincrotrone Trieste, Italia; 4: Tampere University, Finlandia

9:45 - 10:00

TEC-OR-006. Surface coating of magnesium alloy resorbable implants manufactured via superplastic forming

Rizzuti, Antonino[1]; Cusanno, Angela[2]; Sorgente, Donato[3]; De Bonis, Angela[4]; Salvi, Anna Maria[4]; Santamaria, Monica[5]; Pupillo, Davide[6]; Mastrorilli, Piero[1]; Palumbo, Gianfranco[2]
1: DICATECh - Politecnico di Bari, Bari, Italia; 2: DMMM - Politecnico di Bari, Bari, Italia; 3: School of Engineering, Università degli Studi della Basilicata, Potenza, Italia; 4: Department of Science, Università degli Studi della Basilicata, Potenza, Italia; 5: Department of Engineering, Università degli Studi di Palermo, Palermo, Italia; 6: Dipartimento di Scienza Applicata e Tecnologia, Politecnico di Torino, Torino, Italia

10:00 - 10:15

TEC-OR-007. Devices for the isolation of rare cells in biological specimens for diagnostic applications

Muscolino, Emanuela[1,2]; Acuto, Santina[3]; Romano, Andrea[3]; Giuliano, Federica[1]; Di Stefano, Anna Barbara[4]; Dispenza, Clelia[1,2]
1: Dipartimento di Ingegneria, University of Palermo, Viale delle Scienze, Edificio 6, 90128 Palermo, Italy; 2: Istituto di BioFisica, Consiglio Nazionale

Immunology, Institute for Biological Research “Sinisa Stankovic” - National Institute of Republic of Serbia, University of Belgrade, Serbia

Barlocco, Ilaria[1]; Cipriano, Luis[2]; Di Liberto, Giovanni[2]; Pacchioni, Gianfranco[2]
1: Università degli Studi di Milano; 2: Università degli Studi di Milano Bicocca

delle Ricerche, Via U. La Malfa 153, 90146 Palermo, Italy; 3: Campus di ematologia con malattie rare, AOOR Villa Sofia Cervello, Palermo, Italy; 4: BIOPLAST-Laboratory of BIOlogy and Regenerative Medicine-PLASTic Surgery, Dipartimento di Discipline Chirurgiche, Oncologiche e Stomatologiche, University of Palermo, via del Vespro 129, 90127 Palermo, Italy

10:15 - 10:30

TEC-OR-008. SELECTIVE MODULATION OF A1 ASTROCYTES BY DRUG-LOADED NANO-STRUCTURED GELS IN SPINAL CORD INJURY

Rossetti, Arianna[1]; Pizzetti, Fabio[1]; Mauri, Emanuele[1]; Veglianese, Pietro[2]; Sacchetti, Alessandro[1]; Rossi, Filippo[1]
1: Department of Chemistry, Materials and Chemical engineering “Giulio Natta”, Politecnico di Milano, via Mancinelli 7, 20131 Milano, Italy; 2: Department of Neuroscience, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, via Mario Negri 2, 20156 Milano, Italy

TEF-1: Divisione di Tecnologia Farmaceutica - Parte 1
Luogo, sala: **Meeting6 (level -1)**
Chair: **Paolo Blasi**, University of Bologna; p.blasi@unibo.it
Chair: **Maria Carafa**, Sapienza Università di Roma; maria.carafa@uniroma1.it

8:30 - 8:45

TEF-OR-001. How to assess the quality of complex drug products and their copies: the case study of semisolid preparations

Musazzi, Umberto Maria; Volontè, Paola
Università degli Studi di Milano, Italia

8:45 - 9:00

TEF-OR-002. Targeted nanomemedicine: tailoring drug delivery systems for specific diseases

Duskey, Jason Thomas[1]; Ottonelli, Ilaria[1]; Caraffi, Riccardo[1,2]; Cuoghi, Sabrina[1]; Rodà, Francesca[1,2]; Tosi, Francesca[1]; Cattaneo, Elena[3,4]; Valenza, Marta[3,4]; Marigo, Valeria[5,6]; Grabrucker, Andreas Martin[7,8,9]; Vandelli,

Maria Angela[1]; Ruozi, Barbara[1]

1: Department of Life Sciences, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO, 41125; 2: Clinical and Experimental Medicine PhD Program, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO 41125; 3: Department of Biosciences, University of Milan, Via Giovanni Celoria, 26, Milano MI, 20133; 4: Istituto Nazionale di Genetica Molecolare "Romeo ed Enrica Invernizzi", Via Francesco Sforza, 35, Milan MI, 20122; 5: Department of Molecular Biology, University of Modena and Reggio Emilia, via Giuseppe Campi 287, Modena MO, 41125; 6: Center for Neuroscience and Neurotechnology, University of Modena and Reggio Emilia, via Giuseppe Campi 287, Modena MO, 41125; 7: Department of Biological Sciences, University of Limerick, V94 T9PX Limerick, Ireland; 8: Bernal Institute, University of Limerick, V94 T9PX Limerick, Ireland; 9: Health Research Institute (HRI), University of Limerick, V94 T9PX Limerick, Ireland

9:00 - 9:15

TEF-OR-003. Leveraging (bio)active lipid nanoparticles for biomaterials design and drug delivery applications

Nele, Valeria

Università degli Studi di Napoli Federico II, Italia

9:15 - 9:30

TEF-OR-004. Well-established and new smart nanovesicles for selective Phenformin (POSV) targeting in Medulloblastoma

Di Magno, Laura[1]; Rinaldi, Federica[1]; Ripa, Silvia[1]; Cairoli, Sara[2]; Goffredo, Bianca Maria[2]; Carafa, Maria[1]; Marianecci, Carlotta[1]; Canettieri, Gianuca[1,3]

1: Sapienza Università di Roma, Italia; 2: Ospedale Pediatrico Bambino Gesù, Roma, Italia; 3: Istituto Pasteur Italia, Fondazione Cenci-Bolognetti, Roma, Italia

9:30 - 9:45

TEF-OR-005. Lipid-based nanocarriers to target brain tumours: recent evidences from preclinical studies

Battaglia, Luigi
Università degli Studi di Torino, Italia

9:45 - 10:00

TEF-OR-006. Production of personalized pharmaceutical dosage forms by Direct powder extrusion 3D printing

Racaniello, Giuseppe Francesco; Pistone, Monica; Totaro, Mariangela; Laquintana, Valentino; Cutrignelli, Annalisa; Lopedota, Angela Assunta; Denora, Nunzio
Department of Pharmacy – Pharmaceutical Sciences, University of Bari Aldo Moro, Via E. Orabona 4, Bari (Italy)

8:30 - 11:00

ABC-A: Divisione di Chimica dell'Ambiente e dei Beni Culturali - Parte A

Luogo, sala: **White1 (level +2)**
Chair: **Elisabetta Zendri**, Università Ca' Foscari di Venezia; elizen@unive.it
Chair: **Antonio Proto**, Università di Salerno; aproto@unisa.it

8:30 - 9:00

Ancient Alchemies: Analytical Identification of Psychotropic Substances in Archaeology

Greco, Enrico[1]; Tanasi, Davide[2]; Samorini, Giorgio[3]; Barbieri, Pierluigi[1]
1: Università degli Studi di Trieste, Italia; 2: University of South Florida, Tampa, US; 3: Indipendent Researcher, Bologna, Italia

9:00 - 9:15

ABC-OR-003. Street art materials: characterisation by analytical pyrolysis coupled with gas chromatography and mass spectrometry

Pizzimenti, Silvia[1,2]; La Nasa, Jacopo[2]; Degano, Ilaria[2]; Modugno, Francesca[2]
1: Dipartimento di Farmacia, Università di Pisa, Italia; 2: Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia

9:15 - 9:30

ABC-OR-004. Sustainable biodeterioration prevention for Built Heritage stone surfaces: increasing essential oils antimicrobial features through encapsulation with SiO2-based NPs

ORG-1A: Divisione di Chimica Organica - Parte 1A

Luogo, sala: **Red1 (level +1)**
Chair: **Lucia Pasquato**, Università degli Studi di Trieste; lpasquato@units.it
Chair: **Renzo Luisi**, University of Bari "A. Moro"; renzo.luisi@uniba.it

8:30 - 9:00

ORG-MD-03. Medaglia Ciamician. New Catalytic Approaches Towards the Synthesis of Organic Compounds

Filippini, Giacomo
Università di Trieste, Italia

9:00 - 9:15

ORG-OR-001. Azolium-based organocatalysts immobilized on bamboo as recyclable and sustainable mediators for C-O bond formation reactions

Albonetti, Giorgia; Di Carmine, Graziano; Massi, Alessandro
Università degli studi di Ferrara, Italia

9:15 - 9:30

ORG-OR-002. Enzymatic Synthesis of New Acetoacetate–Ursodeoxycholic Acid Hybrids as Potential Therapeutic Agents and Useful Synthetic Scaffolds as Well

Aprile, Simona; Venturi, Valentina; Marchesi, Elena; Perrone, Daniela; Costa, Valentina; Catani, Martina; Lerin, Lindomar Alberto; Zappaterra, Federico; Giovannini, Pier Paolo; Preti, Lorenzo

TEO-A: Divisione di Chimica Teorica e Computazionale - Parte A

Luogo, sala: **Orange3 (level -1)**
Chair: **Claudio Greco**, Università degli Studi di Milano - Bicocca; claudio.greco@unimib.it

8:30 - 9:00

Do we really understand catalysis?

Parrinello, Michele
Istituto Italiano di Tecnologia, Italia

9:00 - 9:15

TEO-OR-001. Accurate reduced cost VRC-TST rates for barrierless reaction by means of DFT geometry optimizations, coupled cluster composite methods, and difference-dedicated multireference contributions

Crisci, Luigi
Scuola Normale Superiore, Italia

9:15 - 9:30

TEO-OR-002. Non-equilibrium dynamical effects on excited states within polarizable environment: perspectives from an open quantum system approach

Guido, Ciro A.
Dip. Scienze ed Innovazione Tecnologica, Università del Piemonte Orientale, Italia

9:30 - 9:45

TEO-OR-003. Real-Time and Strong Coupling between Molecules and a Continuum Environment

Pipolo, Silvio[1]; Corni, Stefano[2]

Campostrini, Andrea[1,2]; Sala-Luis, Agustí[2]; Bosch-Roig, Pilar[2]; Ghedini, Elena[1]; Signoretto, Michela[1]; Menegazzo, Federica[1]
1: CATMAT Lab, Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Venice, Italy; 2: Instituto Universitario de Restauración del Patrimonio, Universitat Politècnica de València, Valencia, Spain

9:30 - 9:45

ABC-OR-007. NANO-STRUCTURED EMULSIONS LOADED GEL FOR REMOVING UNDESIRED MATERIALS FROM STONE ARTIFACTS

Weththimuni, Maduka Lankani[1]; Ferretti, Matteo[1]; Licchelli, Maurizio[1,2]
1: Department of Chemistry, University of Pavia, via T. Taramelli 12, 27100, Pavia, Italy; 2: CISRiC, University of Pavia, via A. Ferrata 3, 27100 Pavia, Italy

9:45 - 10:00

ABC-OR-010. An Innovative Approach to disclose Paleolithic Stone Tools as Bio-Archives

Badetti, Elena[1]; Sorrentino, Giusi[1]; Longo, Laura[1]; Cagnato, Clarissa[1]; Brunelli, Andrea[1]; Semenzin, Elena[1]; Marcomini, Antonio[1]; Porpora, Francesca[2]; Carretti, Emiliano[2]; Dei, Luigi[2]
1: Ca' Foscari University of Venice, Italia; 2: University of Florence, Via della Lastruccia 3, Sesto Fiorentino

10:00 - 10:15

ABC-OR-001. Synthesis of ZIF-8 in glycerol carbonate: process optimization and life cycle assessment

Sessa, Alessandra[1]; Prete, Prisco[1]; Cespi, Daniele[2,3,4]; Rossi, Eleonora[2,3,4]; Passarini, Fabrizio[2,3,4]; Cucciniello, Raffaele[1]
1: Dipartimento di Chimica e Biologia 'Adolfo Zambelli', Università di Salerno, Via Giovanni Paolo II,132 - 84084 Fisciano SA, Italy; 2: Dipartimento di Chimica Industriale "Toso Montanari", Alma Mater Studiorum Università di Bologna, Viale del Risorgimento, 4, 40136 Bologna (BO); 3: Center for Chemical Catalysis - C3, Alma Mater Studiorum Università di Università degli studi di Ferrara, Italia

9:30 - 9:45

ORG-OR-003. Divergent Total Synthesis of Tricyclic Clavine Alkaloids via Metal-Free Reductive Coupling

Bartoccini, Francesca; Diotallevi, Francesca; Piersanti, Giovanni
Università degli Studi di Urbino Carlo Bo, Italia

9:45 - 10:00

ORG-OR-004. Low Environmental Impact Synthesis of γ-Lactones through Photoinduced Baeyer-Villiger Oxidation of Cyclic Ketones

Cabua, Maria Chiara; Moi, Davide; Secci, Francesco
Università degli Studi di Cagliari, Italia

10:00 - 10:15

ORG-OR-005. Multi-enzymatic nanoreactors for the synthesis of privileged scaffolds

Capecchi, Eliana; Tomaino, Elisabetta; Ubertini, Valentina; Saladino, Raffaele
Università degli studi della Tuscia, Dipartimento di Scienze Ecologiche e Biologiche Italia

10:15 - 10:30

ORG-OR-006. Stereoselective Approach to Heavily Hydroxylated Azepane and Azocane Iminosugars via Osmium-Catalyzed Tethered Aminohydroxylation

Cardona, Francesca[1]; Martínez-Bailén, Macarena[1,2]; Matassini, Camilla[1]; Clemente, Francesca[1]; Faggi, Cristina[1]; Goti, Andrea[1]
1: Università degli Studi di Firenze, Dipartimento di Chimica "Ugo Schiff" (DICUS), Italia; 2: Universidad de Sevilla, Departamento de Química Orgánica, Facultad de Química, Spain

10:30 - 10:45

ORG-OR-007. New Hydrogen Bonding Motifs for Anion Binding Catalysis

Carioscia, Alessio; Iapadre, Debora; Di Pietro, Jonathan; Incerto, Elena; Pesciaioli, Fabio; Carlone, Armando
1: Dipartimento di Chimica, Universita di Lille, Francia; 2: Dipartimento di Chimica, Universita di Padova, Italia

9:45 - 10:00

TEO-OR-004. Tackling size and complexity of Metal-Organic Frameworks from cheap hybrid DFT methods

Donà, Lorenzo; Raimondo, Mattia; Civalleri, Bartolomeo
Università di Torino, Italia

10:00 - 10:15

TEO-OR-005. From Theory to Practice: DFT Insights into Anharmonicity Effects on Vibrational Spectra in Solid-State Chemistry

Mitoli, Davide[1]; Maul, Jefferson[2]; Erba, Alessandro[1]
1: Dipartimento di Chimica, Università di Torino, Torino, Piemonte, Italy; 2: Materials Science and Engineering Graduate Program, UFPB, João Pessoa, Brazil

10:15 - 10:30

TEO-OR-006. A time averaged semiclassical approach to IR spectroscopy

Lanzi, Cecilia; Aieta, Chiara; Ceotto, Michele; Conte, Riccardo
Università degli studi di Milano, Italia

10:30 - 10:45

TEO-OR-007. Exploring Photoinduced Non-Equilibrium Dynamics and Spectroscopy through AIMD Simulations and Wavelet Transform

Coppola, Federico[1]; Carfora, Raoul[1,2]; Petrone, Alessio[2,1,3]; Rega, Nadia[2,1,3]
1: Scuola Superiore Meridionale, Largo San Marcellino 10, I-80138, Napoli, Italy; 2: Department of Chemical Sciences, University of Napoli Federico II, Complesso Universitario di M.S. Angelo, via Cintia 21, I-80126, Napoli, Italy; 3: Istituto Nazionale Di Fisica Nucleare, sezione di Napoli, Complesso Universitario di M.S. Angelo ed. 6, via Cintia 21, I-80126, Napoli, Italy

10:45 - 11:00

TEO-OR-008. Excited-state dynamics in Non-Fullerene

Bologna, Viale del Risorgimento, 4, 40136 Bologna (BO); 4: Centro Interdipartimentale di Ricerca Industriale (CIRI) Fonti Rinnovabili, Ambiente, Mare, Energia (FRAME), Via Angherà, 22, 47922 Rimini (RN)

10:15 - 10:30

ABC-OR-002. Marine biota as an environmental indicator: determination of heavy metals and rare earth elements.

Cucolo, Claudia; Marano, Alessandra; Toscanesi, Maria; Topa, Rosanna; Sbriglia, Sara; Di Natale, Gabriella; Giarra, Antonella; Salvi, Clorinda; Belletti, Angela; Trifuoggi, Marco

Università degli Studi di Napoli Federico II, Italia

10:30 - 10:45

ABC-OR-005. Pilot-scale raceway pond reactor for CEC removal from municipal WWTP effluents by iron biochar assisted solar photo-Fenton

Faggiano, Antonio[1]; Soriano-Molina, Paula[2]; Motta, Oriana[3]; Ricciardi, Maria[1]; Proto, Antonio[1]

1: Department of Chemistry and Biology “Adolfo Zambelli”, University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano, SA, Italy; 2: Chemical Engineering Department, University of Almería, Ctra. de Sacramento s/n, Almería 04120, Spain; 3: Department of Medicine Surgery and Dentistry “Scuola Medica Salernitana”, University of Salerno, via S. Allende 1, 84081 Baronissi, SA, Italy

10:45 - 11:00

ABC-OR-006. Biogeochemistry and bioaccumulation of toxic elements in freshwater ecosystems of Bosnia and Herzegovina

Petroselli, Chiara; Placidi, Giulia; Selvaggi, Roberta; Lorenzoni, Francesca; Carosi, Antonella; Lorenzoni, Massimo; Cappelletti, David

Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Italia

Università degli studi dell'Aquila, Italia

10:45 - 11:00

ORG-OR-008. Reductive Dehalogenation Through a New Photo-Generated Super-Reducing Excited State Di-Anion

Cerveri, Alessandro

Università di Parma, Italia

Acceptors for Organic Photovoltaics

Giannini, Samuele[1]; Gillett, Alexander J.[2]; Prampolini, Giacomo[1]; Santoro, Fabrizio[1]; Beljonne, David[3]

1: CNR-ICCOM, Pisa, Italy; 2: University of Cambridge, Cavendish Laboratory, United Kingdom; 3: University of Mons, Laboratory for Chemistry of Novel Materials, Mons, Belgium

8:30 - 11:30 **ELE-1: Divisione di Elettrochimica - Parte 1**

Luogo, sala: **Turquoise2 (level -1)**

Chair: **Vito Di Noto**, Università degli Studi di Padova; vito.dinoto@unipd.it
Chair: **Maria Assunta Navarra**, Sapienza Università di Roma; mariassunta.navarra@uniroma1.it

8:30 - 8:45

ELE-OR-003. Development of battery components based on biomass-derived materials

Tsurumaki, Akiko[1,2]; Zamparelli, Corrado[1]; Liberti, Valentina[1]; Dal Bosco, Chiara[1]; Gasperi, Tecla[3]; Gentili, Alessandra[1,2]; Navarra, Maria Assunta[1,2]
1: Sapienza University of Rome, Italy; 2: Hydro-Eco Research Center, Sapienza University of Rome, Italy; 3: Roma Tre University, Italy

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8:45 - 9:00

ELE-OR-004. Thiol-ene Polymerization towards easily up-scalable Gel Polymer Electrolyte

Longo, Mattia[1]; Gandolfo, Matteo[1]; Bodoardo, Silvia[1]; Fontana, Daniela[2]; Amici, Julia[1]
1: Politecnico di Torino, Italia; 2: COMAU, Italia

9:00 - 9:15

ELE-OR-005. Characterization of hybrid DMSO-aqueous electrolytes for non-flammable lithium-ion batteries

Pellini, Ivan Claudio[1]; Polato, Elena[1]; Khalid, Shahid[1]; Ruffo, Riccardo[1,2]
1: University of Milano-Bicocca, via Roberto Cozzi 55, 20125; 2: National Reference Center for Electrochemical Energy Storage (GISEL), Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), 50121 Firenze, Italy

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9:15 - 9:30

ELE-OR-006. From recycled PVB to innovative separators and binders for Li- and Na-ion Batteries

Piovano, Alessandro[1,2]; Darjazi, Hamideh[1,2]; Porporato, Silvia[1,2]; Gastaldi, Matteo[1,2]; Falco, Marisa[1,2]; Meligrana, Giuseppina[1,2]; Elia, Giuseppe Antonio[1,2]; Gerbaldi, Claudio[1,2]
1: GAME Lab, Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy; 2: National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM, Via G. Giusti 9, Firenze 50121, Italy

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9:30 - 9:45

ELE-OR-007. Designed Solutions to Face the Bigger K-ion Challenge in Potassium Organic Batteries

Trano, Sabrina[1]; Mantione, Daniele[2]; Lingua, Gabriele[2]; Armandi, Marco[1]; Francia, Carlotta[1]; Mecerreyes, David[2]; Bella, Federico[1]
1: Politecnico di Torino, Italia; 2: POLYMAT, University of the Basque Country

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9:45 - 10:00

ELE-OR-008. Anion exchange membrane based on N,N- dimethyl piperidinium cation for water electrolyzer application

Ferrari, Alessandro Raffaele; Caielli, Tommaso; Stucchi, Diego; Mustarelli, Piercarlo
Università degli studi di Milano-Bicocca, Italia

10:00 - 10:15

ELE-OR-009. Functionalized Templatation: Precision Engineering of Fe-N-Cs Active Structure for Oxygen Reduction Reaction

Muhyuddin, Mohsin[1]; Honig, Hilah C.[2]; Mostoni, Silvia[1]; Valagussa, Paolo[1]; D'Arienzo, Massimiliano[1]; Scotti, Roberto Scotti[1,3]; Elbaz, Lior[2]; Santoro, Carlo[1]
1: Department of Materials Science University of Milano-Bicocca , Building U5,Via Roberto Cozzi 55, 20125, Milano, Italy.; 2: Chemistry Department, Bar-Ilan Center for Nanotechnology and Advanced Materials, Bar- Ilan University, Ramat-Gan 5290002, Israel.; 3: Institute for Photonics and Nanotechnologies-CNR, Via alla Cascata 56/C, 38123 Povo (TN), Italy.

10:15 - 10:30

ELE-OR-010. Near-infrared sensors for the determination of the state of charge in all-copper redox flow batteries

Petruzzelli, Rossella; Lacarbonara, Giampaolo; Arbizzani, Catia
Università di Bologna, Italia

10:30 - 11:00

Premiazione Tesi di Dottorato di Ricerca

Santamaria, Monica
Università di Palermo, Italia

11:00 - 11:30

Premiazione Tesi di Laurea Magistrale

Santamaria, Monica

Università di Palermo, Italia

8:30 - 19:00

Silent room August 29th: Silent room programme August 29th
Luogo, sala: **SilentRoom (main hall; level +1)**
Chair: **Alessandro Minguzzi**, Università degli Studi di Milano; alessandro.minguzzi@unimi.it
Chair: **Emanuela Licandro**, Università degli Studi di Milano; emanuela.licandro@unimi.it
9:00-10:00Green Chemistry - Challenging reactions in aqueous media Speaker: Mattia Stucchi, Olon SpA 10.15-11.15Closed circular economy for the collection and recycling of PET bottles Speaker: Igor Toscani, Coripet – Consorzio volontario per riciclo del PET 12.30-13.00Art for Chemistry Speaker: Maria Pomianski, Ralf Stutzki 13.15-14.45Lunch/Job Offer/Book Presentation Speaker: TBA 15.00-15.30The culture of restoration. Applications between theory experiences and laboratory activities Speaker: Scuola Restauro Botticino 15.45-16.15Integrazione tra tecniche analitiche GC-MS, FTIR e NMR benchtop per l'identificazione forense di nuove sostanze psicoattive: un caso studio (Polizia Scientifica) Speaker: Chiara Ciccarelli, Commissario Capo Tecnico del della Polizia di Stato del Gabinetto Regionale Polizia Scientifica di Milano 16.30-17.00Tecniche chimico-fisiche di evidenziazione impronte latenti in ambito forense. Speaker: Lucio Diego Bencivinni, Commissario Capo...

9:00 - 10:30

FIS-2A: Divisione di Chimica Fisica - Parte 2A
Luogo, sala: **Green1 (level -1)**
Chair: **Marco Geppi**, Università di Pisa; marco.geppi@unipi.it

9:00 - 9:15

FIS-OR-031. Soft composites based on liquid crystalline elastomers: chemical-physical and shape-memory properties of 3D reprogrammable systems

Resetic, Andraz[1]; Derets, Nikita[1,2]; Romano, Giuseppe[3]; Zalar, Bostjan[1]; Domenici, Valentina[4]
1: Department of Condensed Matter Physics, Jožef Stefan Institute, Slovenia.; 2: Ioffe Institute, Politekhnicheskaya 26, 194021 St. Petersburg, Russia.; 3: Massachusetts Institute of Technology, 314 Main St, Cambridge, MA, USA; 4: Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia

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9:15 - 9:30

FIS-OR-032. Tailoring Magnetic Properties in Superexchange-Coupled Nanocomposites: Insights from Monte Carlo Simulations and Spark Plasma Sintering

Maltoni, Pierfrancesco[1,4]; Barucca, Gianni[2]; Rutwoski, Bogdan[3]; Varvaro, Gaspare[4]; De Toro, Jose[5]; Vasilakaki, Marianna[6]; Trohidou, Kalliopi[6]; Peddis, Davide[1,4]; Mathieu, Roland[7]
1: Universita di Genova, Italia; 2: Università Politecnica delle Marche; 3: AGH University of Krakow; 4: CNR-ISM; 5: Universidad de Castilla-La Mancha; 6: NCSR "Demokritos",; 7: Uppsala University

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9:30 - 9:45

FIS-OR-033. Optimization of F-ZnO NPs as a transducer for an optical biosensor

Gallucci, Noemi[1,2]; Cangiano, Alessandro[1,2]; Martinez, Eugenie[3]; Gutfreund, Philipp[4]; Oscurato, Stefano Luigi[1]; Salvatore, Marcella[1]; Di Girolamo, Rocco[1]; Sica, Filomena[1]; Vitiello, Giuseppe[1,2]; Paduano, Luigi[1,2]
1: Università degli Studi di Napoli Federico II, Italia; 2: CSGI Center for Colloid and Surface Science, Sesto Fiorentino, Italia; 3: CEA-LETI, Grenoble, France; 4: ILL Institut Laue-Langevin, Grenoble, France

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9:45 - 10:00

FIS-OR-034. Guiding the packing, morphology and optical properties of metal-organic frameworks

di Gregorio, Maria Chiara[1]; Nasi, Hadar[2]; Wen, Quiang[3]; J. W. Shimon, Linda[4]; Kaplan-Ashiri, Ifat[5]; Bendikov, Tatyana[6]; Leitus, Gregory[7]; Kazes, Miri[8]; Oron, Dan[9]; Lahav, Michal[10]; van der Boom, Milko Erik[11]
1: Sapienza University, Department of Chemistry, P.le Aldo Moro 5, 00185 Rome, Italy; 2: Weizmann Institute of Science, Department of Molecular Chemistry and Materials Science, 7610001 Rehovot, Israel; 3: Weizmann Institute of Science, Department of Chemical Research Support, 7610001 Rehovot, Israel; 4: Weizmann Institute of Science, Department of Chemical Research Support, 7610001 Rehovot, Israel; 5: Weizmann Institute of Science, Department of Chemical Research Support, 7610001 Rehovot, Israel; 6: Weizmann Institute of Science, Department of Chemical Research Support, 7610001 Rehovot, Israel; 7: Weizmann Institute of Science, Department of Chemical Research Support, 7610001 Rehovot, Israel; 8: Weizmann Institute of Science, Department of Molecular Chemistry and Materials Science, 7610001 Rehovot, Israel; 9: Weizmann Institute of Science, Department of Molecular Chemistry and Materials Science, 7610001 Rehovot, Israel; 10: Weizmann Institute of Science, Department of Molecular Chemistry and Materials Science, 7610001 Rehovot, Israel; 11: Weizmann Institute of Science, Department of Molecular Chemistry and Materials Science, 7610001 Rehovot, Israel

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10:00 - 10:15

FIS-OR-035. Strontium Aluminate Phosphors: a photochemical and environmental journey insight the most famous persistent luminescent material

Bondi, Roberto; Latterini, Loredana
Università degli Studi di Perugia, Italia

10:15 - 10:30

FIS-OR-036. Investigation of the CO2 interaction with a polymeric membrane containing triptycene groups using Solid-State NMR spectroscopy

Della Latta, Elisa[1]; Martini, Francesca[1,3]; Borsacchi, Silvia[2,3]; Swager, Timothy M.[4]; Storme, Kayla R.[4]; Warndorf, Molly C.[4]; Geppi, Marco[1,2,3]

1: Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia; 2: Istituto di Chimica dei Composti Organo Metallici, Consiglio Nazionale delle Ricerche (CNR-ICCOM), Pisa, Italia; 3: Centro per l'Integrazione della Strumentazione Scientifica dell'Università di Pisa (CISUP), Pisa, Italia; 4: Department of Chemistry Massachusetts Institute of Technology, Cambridge, USA

9:15 - 11:00

ORG-2A: Divisione di Chimica Organica - Parte 2A

Luogo, sala: **Green2 (level -1)**

Chair: **Alessandra Napolitano**, Università di Napoli Federico II; alesnapo@unina.it

Chair: **Alberto Minassi**, università del piemonte orientale; alberto.minassi@uniupo.it

9:15 - 9:30

ORG-OR-037. P53 Modulating small molecule drug conjugates for targeted immuno-oncological therapy

Arrigoni, Federico[1]; Markevičiūtė, Elena[1]; Ferrari, Ana[2]; Prpic, Helena[1]; Gazzola, Silvia[1]; Roscilli, Giuseppe[2]; Piarulli, Umberto[1]

1: Dipartimento di Scienza ed Alta Tecnologia, Università degli Studi dell'Insubria, Como, Italy; 2: Takis S.r.l., Via Castel Romano 100, 00128, Rome, Italy

9:30 - 9:45

ORG-OR-038. Synthesis, characterization and 3D bioprinting of hydrogels for the production of glioblastoma multiforme in vitro models

Cadamuro, Francesca[1]; Nicotra, Francesco[1]; Russo, Laura[1,2,3]

1: School of Medicine and Surgery, University of Milan Bicocca, Vedano al Lambro (MB), Italy; 2: CÚRAM, SFI Research Centre for Medical Devices, National University of Ireland, Galway; 3: Imperial College of London, Department of Materials, London

9:45 - 10:00

ORG-OR-039. Melanin-based glycopolymer as a tool for bioinspired dynamic Galectin Binding

Capasso, Domenica[1]; Carrella, Emanuele[2]; Iadonisi, Alfonso[2]; Di Gaetano, Sonia[3]; Russo, Rita[3]; Pirone, Luciano[3]; Pedone, Emilia[3]; Pezzella, Alessandro[1]

1: Dipartimento di Fisica, Università degli Studi di Napoli Federico II, Italia; 2: Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Italia; 3: IBB-CNR di Napoli

10:00 - 10:15

ORG-OR-040. Exploring the chemical space of antidiabetic marine sesquiterpene avarone by synthesis of 1,4-benzoquinones for targeting PTP1B and aldose reductase

Casertano, Marcello[1]; Genovese, Massimo[2]; Del Corso, Antonella[3]; Paoli, Paolo[2]; Menna, Marialuisa[1]; Imperatore, Concetta[1]

1: Dipartimento di Farmacia, Università degli Studi di Napoli Federico II, Italia; 2: Department of Experimental and Clinical Biomedical Sciences, University of Firenze, Italy; 3: Department of Biology, University of Pisa, Via S. Zeno 51, 56123 Pisa, Italy

10:15 - 10:30

ORG-OR-041. Targeting L-SIGN: a potential tool against SARS-CoV-2.

Cavazzoli, Gianluca[1]; Pollastri, Sara[1]; Delaunay, Clara[2]; Thepaut, Michél[2]; Fieschi, Franck[2]; Bernardi, Anna[1]

1: Università degli Studi di Milano, Milano, Italia; 2: Université Grenoble Alpes, CNRS, CEA, Institut de Biologie Structurale, Grenoble, France

10:30 - 10:45

ORG-OR-042. Targeting ferroptosis in Pyricularia oryzae

ORG-3A: Divisione di Chimica Organica - Parte 3A

Luogo, sala: **Green3 (level -1)**

Chair: **Alessandro Mordini**, Consiglio Nazionale delle Ricerche; alessandro.mordini@unifi.it

Chair: **Luca Pignataro**, Università degli Studi di Milano; luca.pignataro@unimi.it

9:15 - 9:30

ORG-OR-065. Metal ions trigger the gelation of peptide-appended coordination cages

Adorinni, Simone[1]; Li, Meng[2]; Zhu, Huangtianzhi[2]; Xue, Weichao[2]; Kralj, Slavko[3]; Nitschke, Jonathan Russel[2]; Marchesan, Silvia[1]

1: Department of Chemical & Pharmaceutical Sciences, University of Trieste, Via L. Giorgieri 1, 34127, Trieste, Italy; 2: Department of Chemistry, University of Cambridge, Lensfield Road, CB2 1EW, Cambridge, United Kingdom; 3: Materials Synthesis Dept., Jožef Stefan Institute, Jamova 39, 1000, Ljubljana, Slovenia

9:30 - 9:45

ORG-OR-066. A Detailed Investigation of the Sensing Mechanism of an Azocalix[4]arene Chromoionophore

Baldini, Laura; Balestri, Davide; Marchiò, Luciano; Casnati, Alessandro

Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale, Università di Parma, Italia

9:45 - 10:00

ORG-OR-095. Waste-Minimized Approach for Csp2 – N Bond Formation via Heterogeneous Buchwald-Hartwig Coupling to Access Di- and Triarylamines

Brufani, Giulia[1,2]; Chen, Shaomin[2,3]; Tiberi, Maria Teresa[2]; Mauriello, Francesco[1]; Vaccaro, Luigi[2]

1: Dipartimento DICEAM, Università degli Studi Mediterranea di Reggio Calabria, Loc. Feo di Vito, I-89122 Reggio Calabria, Italy; 2: Laboratory of Green S.O.C. – Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Via Elce di Sotto 8, 06123, Perugia, Italy; 3: Key Laboratory of Material Chemistry for Energy Conversion and Storage, Ministry of Education, Hubei Key Laboratory of Material Chemistry and Service Failure, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

10:00 - 10:15

ORG-OR-068. Tailored Metal-Porphyrin Based Molecular Electrocatalysts for Enhanced Artificial Nitrogen Fixation to Green Ammonia

Bettucci, Ottavia; Salerno, Giorgia; Manfredi, Norberto; Abbotto, Alessandro

Università degli Studi Milano Bicocca, Italia

10:15 - 10:30

ORG-OR-098. Designing of quaternary ammonium salts and functionalized silica materials for marine antifouling coatings

Marzullo, Paola[1]; D'Anna, Francesca[1]; Presentato, Alessandro[1]; Alduina, Valeria[1]; Marullo, Salvatore[1]; Liotta, Leonarda Francesca[2]; Gruttadauria, Michelangelo[1]

1: Università degli Studi di Palermo, Italia; 2: ISMN-CNR, Via U.La Malfa 153, Palermo, Italia

Christodoulou, Michail; Kunova, Andrea; Princiotto, Salvatore; Pinna, Cecilia; Cortesi, Paolo; Pinto, Andrea; Dallavalle, Sabrina
Universita degli Studi di Milano, Italy

10:45 - 11:00

ORG-OR-043. Design and synthesis of polyamines as tools to develop highly performing ferritin-conjugates for RNA therapeutics.

Cianfoni, Gabriele[1]; Athanassopoulos, Constantinos[2]; Botta, Bruno[1]; Ghirga, Francesca[1]; Boffi, Alberto[3]; Baiocco, Paola[3]; Quaglio, Deborah[1]
1: Department of Chemistry and Technologies of Drug, Sapienza University of Rome, Italy; 2: Department of Chemistry, University of Patras, Greece; 3: Department of Biochemical Sciences, Sapienza University of Rome, Italy

10:30 - 13:00

ANA-1B: Divisione di Chimica Analitica - Parte 1B

Luogo, sala: **Red2 (level +1)**
Chair: **Tommaso Cataldi**, Università di Bari Aldo Moro; tommaso.cataldi@uniba.it
Chair: **Massimo Del Bubba**, Università di Firenze; massimo.delbubba@unifi.it

10:30 - 10:45

ANA-OR-007. New performing GC columns with unmatched separation capabilities

Nardiello, Donatella[1]; Sun, Tao[3]; Cai, Zhiqiang[2]; Liu, Xianming[2]; Quinto, Maurizio[1]
1: University of Foggia, DAFNE, via Napoli 25 - 71122 Foggia - Italy; 2: Luoyang Normal University, College of Chemistry and Chemical Engineering, Luoyang 471934, P. R. China; 3: Shenyang University of Technology, School of Petrochemical Engineering, Liaoyang, 111003, Liaoning, P. R. China

10:45 - 11:00

ANA-OR-008. Comprehensive Characterization of Egyptian Calendula (Calendula officinalis L.) Essential Oil and Absolute by Rapid Evaporative-Ionization Mass Spectrometry

Trovato, Emanuela[1]; Vento, Federica[1]; Mangraviti, Domenica[1]; Rigano, Francesca[1]; Fakhry, Hussein A.[2]; Dugo, Paola[1,3]; Mondello, Luigi[1,3]
1: Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy; 2: A. Fakhry & Co. 1081 Comiche El-Nil, Cairo 1145l, EGYPT; 3: Chromaleont s.r.l., c/o Department of Chemical,

ANA-2B: Divisione di Chimica Analitica - Parte 2B

Luogo, sala: **Orange1 (level -1)**
Chair: **Aldo Roda**, università di Bologna; aldo.roda@unibo.it
Chair: **Sandra Furlanetto**, Università di Firenze; sandra.furlanetto@unifi.it

10:30 - 10:45

ANA-OR-023. Detection of Phthalates from Mulches: A Nanocomposite-Based Electrochemical Aptasensor

Selvolini, Giulia[1]; Scopetani, Costanza[1]; Bellabarba, Agnese[2,3]; Martellini, Tania[1,4]; Cincinelli, Alessandra[1,4]; Viti, Carlo[2,3]; Adessi, Alessandra[2]; Marrazza, Giovanna[1]
1: Department of Chemistry "Ugo Schiff" (DICUS), University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino (FI), Italy; 2: Laboratory of Phenomics, Genomics, and Proteomics (GENEXPRESS), University of Florence, Via della Lastruccia 14, 50019 Sesto Fiorentino (FI), Italy; 3: Department of Agriculture, Food, Environmental and Forestry Sciences (DAGRI), University of Florence, Piazzale delle Cascine 18, 50144 Florence, Italy; 4: Center for Colloid and Surface Science (CSGI), University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino (FI), Italy

10:45 - 11:00

ANA-OR-024. CELECTOR, AN INNOVATIVE LABEL-FREE TECHNOLOGY FOR THE QUALITY CONTROL OF LIVING CELLS FOR IMPROVED THERAPY MEDICIANL PRODUCTS

Roda, Barbara[1]; Zia, Silvia[2]; Marassi, Valentina[3]; Alviano, Francesco[4]; Bpnsi, Laura[5]; Zattoni, Andrea[6]; Reschiglian, Pierluigi[7]

10:30 - 10:45

ORG-OR-070. Chiral-chiral interactions as determining factors in gelation processes

Cacioppo, Michele; Marullo, Salvatore; D'Anna, Francesca
Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), Università Degli Studi di Palermo, Viale Delle Scienze, Ed. 17, Palermo, 90128, Italia

10:45 - 11:00

ORG-OR-071. Novel chiral azole-based chromophores for optoelectronic applications

Campinoti, Caterina; Taddeucci, Andrea; Sardelli, Francesca; Pescitelli, Gennaro; Di Bari, Lorenzo; Zinna, Francesco; Lessi, Marco
Università di Pisa, Italia

ANA-3B: Divisione di Chimica Analitica - Parte 3B

Luogo, sala: **Orange2 (level -1)**
Chair: **Claudio Minero**, Università di Torino; claudio.minero@unito.it
Chair: **Carlo Dossi**, University of Insubria; carlo.dossi@uninsubria.it

10:30 - 10:45

ANA-OR-039. A "white" analytical method for the determination of emerging contaminants in water: optimization of the analytes' extraction by a bio-degradable polymeric film

Benedetti, Barbara; Ceccardi, Erica; MacKeown, Henry; Di Carro, Marina; Magi, Emanuele
Università degli studi di Genova, Italia

10:45 - 11:00

ANA-OR-040. Wood-derived biochar in biodegradable membrane for pharmaceuticals thin-film microextraction in environmental waters

Merlo, Francesca[1]; Ghiglione, Riccardo[1]; Fontàs, Claudia[2]; Anticò, Enriqueta[2]; Speltini, Andrea[1]; Profumo, Antonella[1]
1: Università di Pavia, Italia; 2: Universitat de Girona, Spain

11:00 - 11:15

ANA-OR-041. Controlled Periodic Illumination (CPI) for enhancing the photonic efficiency of a photocatalytic system

Maurino, Valter; Bianco, Ettore; Pellegrino, Francesco; Sordello, Fabrizio
Università di Torino, Italia

11:15 - 11:30

CSB-1B: Divisione di Chimica dei Sistemi Biologici - Parte 1B

Luogo, sala: **Turquoise1 (level -1)**

10:30 - 11:00

Advanced extracellular matrix mimics with controlled mechanics for the study of cell mechanosensing

Sacco, Pasquale
Università degli Studi di Trieste, Dipartimento di Scienze della Vita

11:00 - 11:15

CSB-OR-007. Targeting METTL3-14 degradation via "hijacking" of the ubiquitin-proteasome system by medicinal chemistry design and synthesis of a promising library of PROTACs

Romanucci, Valeria[1]; Di Fabio, Giovanni[1]; Errani, Francesco[2]; Invernizzi, Annalisa[2]; Herok, Marcin[2]; Bochenkova, Elena[2]; Stamm, Fiona[2]; Corbeski, Ivan[2]; Zálešák, František[2]; Caflisch, Amedeo[2]
1: Università degli Studi di Napoli Federico II, Italia; 2: University of Zurich, Zurich CH-8057, Switzerland

11:15 - 11:30

CSB-OR-008. Exploiting the Bile Acid Binding Protein as Transporter of a Cholic Acid/Mirin Bioconjugate for Liver Cancer Therapy

Tassone, Giusy[1]; Maramai, Samuele[1]; Paolino, Marco[1]; Lamponi, Stefania[1]; Poggialini, Federica[1]; Dreassi, Elena[1]; Petricci, Elena[1]; Alcaro, Stefano[2,3]; Pozzi, Cecilia[1]; Romeo, Isabella[2,3]
1: Department of Biotechnology, Chemistry and

Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy emanuela.trovato1@unime.it

11:00 - 11:15

ANA-OR-009. How the aroma profile and cannabinoid content of Cannabis sativa L. inflorescences is influenced by drying and storage conditions

Spadafora, Damiana Natasha[1]; Felletti, Simona[2]; Chenet, Tatiana[2]; Catani, Martina[1]; De Luca, Chiara[1]; Cescon, Mirco[1]; Franchina, Flavio Antonio[1]; Stevanin, Claudia[2]; Cavazzini, Alberto[1,3]; Pasti, Luisa[2]

1: Department of Chemical, Pharmaceutical, and Agricultural Sciences, Via Luigi Borsari 46, University of Ferrara, 44121 Ferrara, Italy; 2: Department of Environmental and Prevention Sciences, University of Ferrara, Via L. Borsari 46, 44121 Ferrara, Ital; 3: Council for Agricultural Research and Economics, CREA, via della Navicella 2/4, Rome, 00184, Italy

11:15 - 11:30

ANA-OR-010. Greening reversed-phase liquid chromatography by using novel eco-friendly solvents as organic modifiers

Catani, Martina[1]; Bozza, Desiree[1]; De Luca, Chiara[1]; Felletti, Simona[2]; Spedicato, Matteo[1]; Macis, Marco[3]; Ricci, Antonio[3]; Cavazzini, Alberto[1,4]

1: Dept. of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy; 2: Dept. of Environmental and Prevention Sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy; 3: Fresenius Kabi iPSUM, via San Leonardo 23, Villadose, Rovigo, Italy; 4: Council for Agricultural Research and Economics, CREA, via della Navicella 2/4, Rome, Italy

11:30 - 11:45

ANA-OR-011. Technology transfer from the synergy between academic research and industry: development of innovative packaging in a context of circular economy

Cavazza, Antonella[1,2]; Pitirollo, Olimpia[2]; Grimaldi, 1: University of Bologna Italia, Stem sel srl; 2: Stem Sel srl; 3: University of Bologna Italia; 4: University of Bologna Italia, Stem sel srl; 5: University of Bologna Italia, Stem sel srl; 6: University of Bologna Italia, Stem sel srl; 7: University of Bologna Italia, Stem sel srl

11:00 - 11:15

ANA-OR-025. Development of analytical methods for quality control of therapeutic proteins using Quality by Design principles: the Infliximab case study

Pasquini, Benedetta[1]; Orlandini, Serena[1]; Pieraccini, Giuseppe[2]; Temporini, Caterina[3]; Gotti, Roberto[4]; Ascione, Alessandro[5]; Furlanetto, Sandra[1]

1: Università di Firenze, Italia; 2: CISM, Università di Firenze, Italia; 3: Università di Pavia, Italia; 4: Università di Bologna, Italia; 5: Istituto Superiore di Sanità, Italia

11:15 - 11:30

ANA-OR-026. Concerted development of Lateral Flow Immunoassays detecting infectious diseases: the case of the foot-and-mouth disease (FMD) virus diagnosis and serotyping.

Cavalera, Simone[1]; Foglia, Efrem Alessandro[2]; Grazioli, Santina[2]; Rosati, Sergio[3]; Russo, Alida[1,4]; Colitti, Barbara[3]; Nogarol, Chiara[5]; Di Nardo, Fabio[1]; Serra, Thea[1]; Testa, Valentina[1]; Baggiani, Claudio[1]; Brocchi, Emiliana[2]; Anfossi, Laura[1]

1: Università degli Studi di Torino, Dipartimento di Chimica, Torino, Italia; 2: Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia-Romagna, Brescia, Italia; 3: Università degli Studi di Torino, Dipartimento di Scienze Veterinarie, Grugliasco (TO), Italia; 4: Tyndall National Institute, University College Cork, Cork, Ireland; 5: In3Diagnostic, Grugliasco (TO), Italia

11:30 - 11:45

ANA-OR-027. Sustainable biomimetics made by the molecular imprinting of silk fibroin: synthesis, properties and applications.

Bossi, Alessandra Maria[1]; Maniglio, Devid[2]

ANA-OR-042. Electrochemical degradation of oxolinic acid on BDD electrodes

Ali, Mukhtiar[1]; Sordello, Fabrizio[1]; Carena, Luca[1]; Lopes, Ana[2]; Fernandes, Annabel[2]

1: University of Turin, Italy; 2: Universidade da Beira Interior (UBI), Covilhã, Portugal

11:30 - 11:45

ANA-OR-043. Debunking the need (and existence) of "pure" g-C3N4 to optimize its photocatalytic properties for environmental applications

Sciscenko, Ivan Matias[1]; Actis, Arianna[2]; Salvadori, Enrico[2]; Arques, Antonio[1]; Minero, Claudio[2]; Sordello, Fabrizio[2]; Minella, Marco[2]

1: Universitat Politècnica de València, Departamento de Ingeniería Textil y Papelera, Plaza Ferrándiz y Carbonell s/n, 03801 Alcoy, Spain; 2: Università di Torino, Dipartimento di Chimica, Via Pietro Giuria 5, 10125 Torino, Italy

11:45 - 12:00

ANA-OR-044. Principal Component Analysis describes soil features through Rare Earth Element distributions overcoming normalization challenges

Barbera, Marcella[1]; Malegori, Cristina[2]; Gariglio, Sara[2]; Oliveri, Paolo[2]; Saiano, Filippo[3]; Piazzese, Daniela[1]

1: University of Palermo, Department of Earth and Marine Sciences, 90123 Palermo; 2: University of Genova, Department of Pharmacy, Viale Cembrano, 4, I-16148, Genova, Italy; 3: University of Palermo, Department Agricultural Food and Forestry Sciences, 90128 Palermo, Italy

12:00 - 12:15

ANA-OR-045. Self-Organizing Maps: An AI Tool for Identifying Unexpected Source Signatures in Non-Target Screening Analysis of Urban Wastewater by HPLC-HRMS

Gelao, Vito[1]; Fornasaro, Stefano[2]; Briguglio, Sara[1]; Mattiussi, Michele[1]; De Martin, Stefano[1]; Astel, Aleksander M[3]; Barbieri, Pierluigi[2]; Licen, Sabina[2] Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy; 2: Dipartimento di Scienze della Salute, Università degli Studi "Magna Græcia" di Catanzaro, Campus "S. Venuta", Viale Europa, 88100 Catanzaro, Italy; 3: Net4Science Academic Spin-Off, Università degli Studi "Magna Græcia" di Catanzaro, Campus "S. Venuta", Viale Europa, 88100 Catanzaro, Italy

11:30 - 11:45

CSB-OR-009. Role of A111/114R in the biosynthesis of giant virus PBCV-1 N-glycan assembly

Speciale, Immacolata[1]; Russo Krauss, Irene[1,2]; Pizzo, Elio[3]; Notomista, Ennio[3]; Molinaro, Antonio[1]; Van Etten, Jim[4]; De Castro, Cristina[1]

1: Department of Chemical Sciences, University of Napoli, Via Cintia 26, 80126 Napoli; 2: Consorzio Interuniversitario per lo Sviluppo dei Sistemi a Grande Interfase (CSGI), Via della Lastruccia 3, 50019 Firenze; 3: Department of Biology, University of Napoli, Via Cintia 26, 80126 Napoli; 4: Plant Pathology University of Nebraska, Lincoln, NE 68683-0900, US

11:45 - 12:00

CSB-OR-010. OTUB1 DEUBIQUITINASE AS A POSSIBLE TARGET TO REGULATE TAU FIBRILS FORMATION: INSIGHTS INTO FUNCTIONAL INTERACTIONS

Tira, Roberto

Università di Verona, Italia

12:00 - 12:15

CSB-OR-011. Phosphorylation-independent binding of Arrestin 3 to beta2-adrenergic receptor driven by a small molecule

Kurt, Han[2]; Son, Cagdas[2]; Zheng, Chen[3]; Cagavi, Esra[2]; Meli, Massimiliano[1]; Bassanini, Ivan[1]; Ferrandi, Erica[1]; Vasile, Francesca[4]; Gurevich, Vsevolod[3]; Morra, Giulia[1]; Sensoy, Ozge[2]

1: CONSIGLIO NAZIONALE DELLE RICERCHE, Italia; 2: ISTANBUL MEDIPOL UNIVERSITY, Turkey; 3: VANDERBILT UNIVERSITY, Usa; 4: UNIVERSITA DEGLI STUDI DI MILANO, Italia

Maria[3]; Messinese, Edmondo[1]; Fontanarosa, Marco[1]
1: University of Parma, Department of Chemistry, Life Sciences and Environmental Sustainability; 2: CIPACK, Interdepartmental Centre for Packaging; 3: University of Parma, Department of Engineering and Architecture

11:45 - 12:00

Multicolumn countercurrent chromatography combined with ethanol for the green purification of Crocin-I extracted from saffron

De Luca, Chiara[1]; Hooshyari Ardakani, Mohammad[2]; Nosengo, Chiara[1]; Felletti, Simona[3]; Catani, Martina[1]; Cavazzini, Alberto[1,4]; Rezadoost, Hassan[2,5]
1: Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via L. Borsari 46, 44121 Ferrara, Italy; 2: Department of Phytochemistry, Medicinal Plants and Drugs Research Institute, Shahid Beheshti University, G.C., Evin, Tehran, Iran; 3: Department of Environmental and Prevention Sciences, University of Ferrara, via L. Borsari 46, 44121 Ferrara,; 4: Council for Agricultural Research and Economics, CREA, via della Navicella 2/4, Rome, 00184, Italy; 5: Center for International Scientific Studies & collaboration (CISSC), Ministry of Science Research and Technology, Islamic Republic of Iran

12:00 - 12:15

ANA-OR-013. Agrifood residues valorization: chemical profiling of Kombucha beverages by chromatography and mass spectrometry

Sabatini, Francesca[1,2]; Termopoli, Veronica[1,2]; Libri, Sofia[1,2]; Lange, Heiko[1,2]; Gosetti, Fabio[1,2]; Maresca, Emanuela[3,2]; Aulitto, Martina[3,2]; Contursi, Patrizia[3,2]; Orlandi, Marco Emilio[1,2]
1: Università di Milano-Bicocca, Dipartimento di Scienze della Terra e dell'ambiente, Milano, Italia; 2: NBFC, Centro Nazionale della Biodiversità; 3: Università di Napoli Federico II, Dipartimento di Biologia, Napoli, Italia

1: Università di Verona, Italia; 2: Università di Trento, Italia

11:45 - 12:00

ANA-OR-028. Characterization of biomimetic vesicle-compatible nanospheres for EV-mediated therapy development with HF5-multidectection

Giordani, Stefano[1]; Mavridi-Printezi, Alexandra[1]; Roda, Barbara[1,2]; Reschiglian, Pierluigi[1,2]; Montalti, Marco[1]; Zattoni, Andrea[1,2]; Marassi, Valentina[1,2]
1: Dept. of Chemistry "G. Ciamician"- University of Bologna, Via Selmi 2, Bologna, Italy; 2: byFlow srl, Via dell'Arcoveggio, 74, Bologna, Italy

12:00 - 12:15

ANA-OR-029. Rapid and Convenient Quantification of Therapeutic Monoclonal Antibodies in Undiluted Biological Fluids

Idili, Andrea[1]; Chamorro, Alejandro[1]; Fetter, Lisa[2]; Kippin, Tod[2]; Valenti, Giovanni[3]; Porchetta, Alessandro[1]; Plaxco, Kevin[2]
1: Università degli Studi di Roma Tor Vergata, Italia; 2: University of California, Santa Barbara, California, United States; 3: Alma Mater Studiorum - Università di Bologna

12:15 - 12:30

ANA-OR-030. The value of mass spectrometry in exploring challenging plant lipidome

Calvano, Cosima Damiana; Ventura, Giovanni; Bianco, Mariachiara; Coniglio, Davide; Castellaneta, Andrea; Losito, Ilario; Cataldi, Tommaso R.I.
Università degli studi di Bari, Italia

12:30 - 12:45

ANA-OR-031. First proof of concept of a click inverse electron-demand Diels-Alder reaction for pinpointing carbon-carbon double bonds in untargeted lipidomics

Cerrato, Andrea[1,2]; Laganà, Aldo[1,2]; Taglioni, Enrico[1]; Capriotti, Anna Laura[1]
1: Dipartimento di Chimica, Sapienza Università di Roma,

1: Regional Environmental Protection Agency—ARPA-FVG, Via Cairoli 14, 33057 Palmanova, Italy; 2: Department of Chemical and Pharmaceutical Sciences, University of Trieste, Via Giorgieri 1, 34127 Trieste, Italy; 3: Department of Environmental Chemistry and Toxicology, Pomeranian University in Słupsk, 22a Arciszewskiego Str., 76-200 Słupsk, Poland

12:15 - 12:30

ANA-OR-046. OPTIMIZATION OF AN LC-MS ANALYTICAL METHOD FOR THE DETERMINATION OF MULTI-CLASS POLAR EMERGING CONTAMINANTS IN RECLAIMED WATER

Pellacani, Samule[1]; Battisti, Marco[1]; Benedetti, Barbara[2]; Cocchi, Marina[1]; Durante, Caterina[1]; Strani, Lorenzo[1]
1: Università degli studi di Modena e Reggio Emilia, Italia; 2: Università degli studi di Genova

12:30 - 12:45

ANA-OR-047. Multivariate analysis of the photoaging of four types of microplastics by Micro-IR spectroscopy

Conterosito, Eleonora[1]; Roncoli, Maddalena[1]; Ivaldi, Chiara[1]; Perin, Elena[1]; De Felice, Beatrice[2]; Gazzotti, Stefano[3]; Ortenzi, Marco Aldo[3]; Parolini, Marco[2]; Gianotti, Valentina[1]
1: Università del Piemonte Orientale, Dipartimento per lo sviluppo sostenibile e la transizione ecologica, Italia; 2: Department of Environmental Science and Policy, University of Milan; 3: LaMPo, Department of Chemistry, Università degli Studi di Milano, Italia

12:45 - 13:00

ANA-OR-048. Accurate pH monitoring of highly concentrated saline aqueous solutions (Seawater-like) with a pH Colorimetric Sensor Array

Pastore, Andrea; Badocco, Denis; Cappellin, Luca; Tubiana, Mauro; Zanut, Alessandra; Bogialli, Sara; Roverso, Marco; Pastore, Paolo
università padova, Italia

12:15 - 12:30

CSB-OR-012. Exploring mesothelin-Fn3 interaction by computational modeling and epitope mapping

Piccardi, Margherita[1,2]; Spinello, Angelo[3]; Butera, Valeria[3]; Landi, Stefano[2]; Gemignani, Federica[2]; Barone, Giampaolo[3]; Moore, Sarah J.[1]
1: Picker Engineering Program, Smith College, Northampton, Massachusetts, USA; 2: Department of Biology, University of Pisa, Pisa, Italy; 3: Department of Biological, Chemical and Pharmaceutical Sciences, University of Palermo, Italy

12:30 - 12:45

CSB-OR-013. Proteins as biomolecular carriers of photosensitizing agents for application in nanomedicine

Di Giosia, Matteo; Marconi, Alessia; Mattioli, Edoardo Jun; Zerbetto, Francesco; Calvaresi, Matteo
NanoBio Interface Lab - Dipartimento di chimica "Ciamician", Alma Mater Studiorum - Università di Bologna, Italia

12:45 - 13:00

CSB-OR-014. A paradigmatic example of multidomain protein studied by NMR spectroscopy: The nucleoprotein of SARS-CoV-2

Schiavina, Marco; Bolognesi, Tessa; Tino, Angela; Felli, Isabella Caterina; Pierattelli, Roberta
Università degli Studi di Firenze, Italia

12:15 - 12:30

ANA-OR-014. CP-MIMS: a new frontier for the real-time monitoring of hazardous chemical migration from food contact materials

Piergiovanni, Maurizio[1]; Mattarozzi, Monica[1]; Bianchi, Federica[1]; Riboni, Nicolò[1]; Termopoli, Veronica[2]; Consonni, Viviana[2]; Ballabio, Davide[2]; Careri, Maria[1]

1: Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Parma, Italy; 2: Department of Earth and Environmental Sciences, University of Milano-Bicocca, Milan, Italy

12:30 - 12:45

ANA-OR-015. Electroosmotic Flow in Capillary Zone Electrophoresis: Theoretical and Practical Aspects

Corradini, Danilo

Consiglio Nazionale delle Ricerche, Italia

12:45 - 13:00

ANA-OR-016. Identification and quantification of soybean and mustard allergenic proteins in wheat flour using mass spectrometry-based approaches

Bianco, Mariachiara[1]; Ventura, Giovanni[1,2]; Pagano, Antonio[1]; Calvano, Cosima Damiana[1,2]; Losito, Ilario[1,2]; Cataldi, Tommaso[1,2]

1: Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, via Orabona 4, 70126, Bari; 2: Centro interdipartimentale SMART, Università degli Studi di Bari Aldo Moro, via Orabona 4, 70126, Bari

DID-B: Divisione di Didattica Chimica - Parte B
Luogo, sala: **Meeting3 (level -1)**
Chair: **Elena Maria Ghibaudi**, Università di Torino; elena.ghibaudi@unito.it

10:30 - 10:45

DID-OR-005. Three-Dimensional Structures in Late Nineteenth and Early Twentieth Century Chemistry Textbooks

Chioccioli, Matteo

Istituto Scolastico "Marsilio Ficino" - Figline e Incisa Valdarno (FI), Italia

10:45 - 11:00

Roma, Italia; 2: Istituto Nazionale di Biostrutture e Biosistemi (INBB), Roma, Italia

12:45 - 13:00

ANA-OR-032. LipiD7: a Matlab routine for lipids characterization

Ventura, Giovanni[1,2]; Calvano, Cosima Damiana[1,2]; Losito, Ilario[1,2]; Cataldi, Tommaso R. I.[1,2]

1: Università degli studi di Bari, Italia; 2: Interdepartmental Research Center SMART, Bari, Italia

FAR-1B: Divisione di Chimica Farmaceutica - Parte 1B
Luogo, sala: **Blue1 (level +1)**
Chair: **Patrizia Diana**, UNIVERSITA' DI PALERMO; patrizia.diana@unipa.it
Chair: **Gianluca Sbardella**, Università di Salerno; gsbardella@unisa.it

10:30 - 10:45

FAR-OR-003. New Pyrrole Derivatives as Ferroptosis Inducers

La Regina, Giuseppe

Laboratory Affiliated with the Institute Pasteur Italy - Cenci Bolognetti Foundation, Dipartimento di Chimica e Tecnologie del Farmaco,

FIS-1B: Divisione di Chimica Fisica - Parte 1B
Luogo, sala: **Yellow1 (level +1)**
Chair: **Sergio Brutti**, Università di Roma La Sapienza; sergio.brutti@uniroma1.it

10:30 - 10:45

FIS-OR-008. CO-induced dynamic behavior of Al2O3-supported Pd nanoparticles at room temperature

Ricchebuono, Alberto[1]; Vottero, Eleonora[1]; Bonavia, Daniele[2]; Lazzarini, Paolo[1]; Pellegrini, Riccardo[3]; Crocellà, Valentina[1]; Porcaro, Natale[1]; Checchia, Stefano[2]; Ferri, Davide[4]; Piovano, Andrea[5]; Groppo, Elena[1]

FIS-2B: Divisione di Chimica Fisica - Parte 2B
Luogo, sala: **Green1 (level -1)**
Chair: **Concetta Giancola**, Università di Napoli Federico II; giancola@unina.it

10:30 - 10:45

FIS-OR-037. Temporal Progression of Glycation in Collagen Type 1 Bovine Pericardium BioTissues

De Caro, Liberato[1]; Terzi, Alberta[1]; Sibillano, Teresa[1]; Fusaro, Luca[2]; Altamura, Davide[1]; Boccafoschi, Francesca[2]; Bunk, Oliver[3]; Giannini, Cinzia[1]

1: Institute of Crystallography, National Research Council (IC-

DID-OR-006. Computing in class for chemistry teaching and learning

Orian, Laura[1]; Lieber, Leonie[2]; Graulich, Nicole[2]; Licini, Giulia[1]
1: Università degli Studi di Padova, Italia; 2: Justus-Liebig University Gießen Germany

11:00 - 11:15

DID-OR-007. How Science on Stage contributes to improving STEM education

Ambrogi, Paola
DDSCI, Italia

11:15 - 11:30

DID-OR-008. The "Giochi della Chimica" competition: analysis of students results and participation

Abbotto, Alessandro[1]; Albano, Gianluigi[2]; Da Pian, Marta[3]; Falciola, Luigi[4]; Fattorusso, Roberto[5]; Severi, Alice[6]; Tersigni, Mariaroberta[7]
1: Comitato Organizzatore dei Giochi della Chimica - Università di Milano-Bicocca; 2: Comitato Organizzatore dei Giochi della Chimica - Università di Pisa; 3: Comitato Organizzatore dei Giochi della Chimica - Elsevier; 4: Comitato Organizzatore dei Giochi della Chimica - Università di Milano; 5: Comitato Organizzatore dei Giochi della Chimica - Università della Campania "L. Vanvitelli"; 6: Comitato Organizzatore dei Giochi della Chimica - ISIS Follonica, Follonica (Gr); 7: Comitato Organizzatore dei Giochi della Chimica - ITT-LSA "Ettore Molinari", Milano

11:30 - 11:45

DID-OR-009. I Giochi di Avogadro: Analysis of an Experience in Promoting Chemical Culture in First Degree Secondary Schools in Italy

Abbotto, Alessandro[1]; Ambrogi, Paola[2]; Donghi, Sabrina[3]; Falciola, Luigi[4]; Fattorusso, Roberto[5]; Severi, Alice[6]; Venturi, Margherita[7]
1: Università di Milano-Bicocca, Milano, Italia; 2: IIS L. Nobili, Reggio Emilia, Italia (retired); 3: Istituto Comprensivo Luigi Galvani Milano, Italia; 4: Università di Milano, Milano, Italia; 5: Università della Campania "L. Vanvitelli", Napoli, Italia; 6: ISIS Follonica - Scuola Secondaria di II grad, Sapienza University of Rome, 00185 Rome, Italy

10:45 - 11:00

FAR-OR-004. Overcoming of metabolic issues in 2-hydroxypyrazolo[1,5-a]pyridine scaffold-based inhibitors of human dihydroorotate dehydrogenase: the story of MEDS700

Vigato, Chiara[1]; Sainas, Stefano[1]; Giorgis, Marta[1]; Pippione, Agnese Chiara[1]; Passoni, Alice[2]; Bagnati, Renzo[2]; Circosta, Paola[3]; Alberti, Marta[4]; Miggiano, Riccardo[4]; Boschi, Donatella[1]; Lolli, Marco Lucio[1]
1: Department of Drug Science and Technology, University of Torino, Italy; 2:) Department of Environmental Health Sciences, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milano, Italy; 3: Molecular Biotechnology Center, University of Torino, Italy; 4: Department of Pharmaceutical Sciences, University of Piemonte Orientale, Novara, Italy

11:00 - 11:15

FAR-OR-005. Design and Synthesis of Selective PPI Inhibitors Against the EphA2 Receptor Targeting Glioblastoma Multiforme (GBM)

Guidetti, Lorenzo; Castelli, Riccardo; Scalvini, Laura; Tognolini, Massimiliano; Lodola, Alessio
Università di Parma, Italia

11:15 - 11:30

FAR-OR-006. Novel 5-arylamino pyrazoles able to interfere with angiogenesis and Ca2+ homeostasis

Lusardi, Matteo[1]; Brullo, Chiara[1]; Petrella, Antonello[2]; Ponassi, Marco[3]; Belvedere, Raffaella[2]; Iervasi, Erika[3]; Spallarossa, Andrea[1]
1: Università degli Studi di Genova, Italia; 2: Università degli Studi di Salerno, Italia; 3: IRCSS Ospedale Policlinico San Martino Genova, Italia

11:30 - 11:45

FAR-OR-007. Unveiling the potential anticancer activity of newly developed Cu(I) phosphino complexes

1: Università di Torino, Italia; 2: ESRF-The European Synchrotron, Grenoble, France; 3: Chimet SpA - Catalyst Division, Viciomaggio (Arezzo), Italia; 4: Paul Scherrer Institut PSI, Villigen, Switzerland; 5: Institut Laue-Langevin (ILL), Grenoble, France

10:45 - 11:00

FIS-OR-009. Insights into the activity of the different phases of Bi2O3 for the photocatalytic production of ammonia

Grigoras, Amalia Malina[1]; Roeffaers, Maarten[2]; Latterini, Loredana[1]
1: Nano4Light Lab, Department of Chemistry Biology and Biotechnology of Perugia, Italia; 2: cMACS, Katholieke Universiteit of Leuven, Belgium

11:00 - 11:15

FIS-OR-010. Effects of Au Nanoparticles Deposition on the Photoactivity of Differently Shaped Anatase TiO2

Montalbano, Marco[1]; Marra, Gianluigi[2]; Selli, Elena[1]; Dozzi, Maria Vittoria[1]
1: Università degli Studi di Milano, Italia; 2: ENI S.p.A. Novara Laboratories (NOLAB), Renewable and Material Science Research Center, (DE-R&D)

11:15 - 11:30

FIS-OR-011. Reduction of Ru/Al2O3 followed by temperature programmed operando methods.

Lazzarini, Paolo[1]; Ricchebuono, Alberto[1]; Bonavia, Daniele[1,2]; Checchia, Stefano[2]; Pellegrini, Riccardo[3]; Ferri, Davide[4]; Piovano, Andrea[5]; Groppo, Elena[1]
1: Università di Torino, Italia; 2: European Synchrotron (ESRF), Francia; 3: Chimet S.p.A., Italia; 4: Paul Scherrer Institute (PSI), Svizzera; 5: Institute Laue Langevin (ILL), Francia

11:30 - 11:45

FIS-OR-012. Insight on Ti Sites in MWW Zeolite in presence of Hydrogen Peroxide

Rosso, Francesca; Airi, Alessia; Signorile, Matteo; Bordiga, Silvia; Crocellà, Valentina; Bonino, Francesca
CNR), v. Amendola 122/O, Bari, (Italy); 2: Department of Health Sciences, University of Piemonte Orientale, & Tissuegraft srl., Novara (Italy); 3: Paul Scherrer Institut, 5232 Villigen, PSI (Switzerland)

10:45 - 11:00

FIS-OR-038. Spectroscopy and microscopy methods to unravel the interactions between protein and 2D nanostructured materials

Quaglia, Giulia[1]; Rinaldi, Silvia[2]; Grigoras, Amalia Malina[1]; Caporali, Maria[2]; Serrano Ruiz, Manuel[2]; Peruzzini, Maurizio[2]; Ienco, Andrea[2]; Latterini, Loredana[1]
1: Nano4Light-Lab, Department of Chemistry, Biology and Biotechnology, University of Perugia, Via Elce di Sotto 8, Perugia 06123, Italy; 2: CNR - Istituto di Chimica dei Composti Organometallici (CNR-ICCOM), Via Madonna del Piano 10, Sesto Fiorentino I-50019, Italy

11:00 - 11:15

FIS-OR-039. SERS Nanostructures with ad hoc designed oligopeptides targeting the programmed death ligand 1 (PD-L1) for applications in cancer therapy.

Giannetti, Micaela[1]; Mazzuca, Claudia[1]; Litti, Lucio[2]; Caligiuri, Isabella[3]; Gobbo, Marina[2]; Rizzolio, Flavio[3,4]; Palleschi, Antonio[1]; Meneghetti, Moreno[2]
1: Department of Chemical Science and Technologies, University of Rome "Tor Vergata", and CSGI unit of Rome, Via della Ricerca Scientifica, 00133 Rome, Italy; 2: Department of Chemical Sciences, University of Padova, via F. Marzolo 1, 35131 Padova, Italy.; 3: Pathology Unit, Centro di Rif. Oncologico di Aviano (CRO) IRCCS, via F. Gallini 2, 33081 Aviano (PN), Italy; 4: Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, via Torino 155, 30172 Venice, Italy

11:15 - 11:30

FIS-OR-040. Unfolding and refolding of Albumin induced by a time-programmable dissipative pH-jump

Del Giudice, Alessandra; Del Giudice, Daniele; Spatola,

Follonica (Gr), Italia; 7: University of Bologna, Bologna, Italia

11:45 - 12:00

DID-OR-010. Serious games on chemistry and sustainability for schools and the citizens

Deganello, Francesca[1]; Testa, Maria Luisa[1]; Aliotta, Chiara[1]; Russo, Marco[1]; Ienco, Andrea[2]; D'Errico, Chiara[3]; Grasso, Valentina[3]; Torreggiani, Armida[4]

1: CNR-ISMN (Palermo, Italy); 2: CNR-ICCOM (Firenze, Italy); 3: CNR-IBE (Firenze, Italy); 4: CNR-ISOF (Bologna, Italy)

12:00 - 12:15

DID-OR-011. The National Chemistry Project of the Piano Lauree Scientifiche

Cosentino, Ugo

Università Milano-Bicocca, Italia

12:15 - 12:30

Attività laboratoriali del PLS Chimica: una opportunità per insegnanti e studenti

Funicello, Maria

Università della Basilicata, Italia

12:30 - 12:45

DID-OR-013. Should I enroll or not? A profile of freshmen in Chemistry and Industrial Chemistry undergraduate courses in Italy and analysis of the impact of the activities of the "Piano Lauree Scientifiche" on university study course enrollments.

Tarallo, Oreste[1]; Galano, Silvia[2]; Testa, Italo[2]

1: Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Italia; 2: Dipartimento di Fisica "E.Pancini", Università degli Studi di Napoli Federico II, Italia

De Franco, Michele[1]; Gandin, Valentina[2]; Pratt, Edwin[1]; Lewis, Jason[1]

1: Memorial Sloan Kettering Cancer Center; 2: Università degli Studi di Padova

11:45 - 12:00

FAR-OR-008. Novel Dual HDAC1,2/LSD1 Inhibitors as Epi-pharmacological Approach to Combat Cancer

Lambona, Chiara[1]; Noce, Beatrice[1]; Di Bello, Elisabetta[1]; Castiello, Carola[1]; Mattevi, Andrea[2]; Nebbioso, Angela[3]; Altucci, Lucia[3]; Valente, Sergio[1]; Mai, Antonello[1]

1: Department of Drug Chemistry and Technologies, Sapienza University of Rome, P. le A. Moro 5 00185 Rome (Italy); 2: Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, Via A. Ferrata 9 27100 Pavia (Italy); 3: Department of Medicine of Precision, University of Campania "Luigi Vanvitelli", Vico L. De Crecchio 7 80138 Naples (Italy)

12:00 - 12:15

FAR-OR-009. A journey through targeting BRCA2-RAD51 protein-protein interaction to establish synthetic lethality as paradigm for anticancer drug discovery

Bagnolini, Greta[1]; Poppi, Laura[1]; Previtali, Viola[2]; Ferrandi, Giovanni[1,2]; Rinaldi, Francesco[2]; Girotto, Stefania[2]; Hirsch, Anna K.H.[3]; Roberti, Marinella[1]; Cavalli, Andrea[4]

1: Department of Pharmacy and Biotechnology (FaBiT), University of Bologna, 40126 Bologna, Italy; 2: Computational & Chemical Biology, Istituto Italiano di Tecnologia, 16163 Genova, Italy; 3: HZI, Helmholtz Institute for Pharmaceutical Research Saarland (HIPS), 66123 Saarbrucken, Germany; 4: CECAM, EPFL, Avenue Forel 3, CH - 1015 Lausanne, Switzerland

12:15 - 12:30

FAR-OR-010. Reshaping therapeutic options for triple negative breast cancer: selective histone deacetylase 6 inhibitors on the stage with merit

Barone, Simona; Bello, Ivana; Summa, Vincenzo; Panza,

Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15, 10135 and Via P. Giuria 7, 10125, Torino, Italy.

11:45 - 12:00

FIS-OR-013. The double life of kesterite nanoparticles: photovoltaics and photocatalysis

Tseberlidis, Giorgio[1]; Husien, Amin Hasan[1]; Trifiletti, Vanira[1]; Binetti, Simona[1]; Gosetti, Fabio[2]

1: Department of Materials Science and Solar Energy Research Center (MIB-SOLAR), University of Milano-Bicocca, Via Cozzi 55, 20125, Milan, Italy; 2: Department of Earth and Environmental Sciences, POLARIS Research Center, University of Milano-Bicocca, Piazza della Scienza 1, 20126, Milan, Italy

12:00 - 12:15

FIS-OR-014. CO oxidation on LaFe1-xCoxO3 perovskite: transient species analysis via Modulation Excitation DRIFT Spectroscopy with Phase Sensitive Detection (ME-DRIFTS-PSD)

Ticali, Pierfrancesco; Cosanne, Nicolas; Najafishirtari, Sharif; Behrens, Malte

Institute for Inorganic Chemistry, Christian-Albrechts Univerisity of Kiel, 24118 Kiel, Germany

12:15 - 12:30

FIS-OR-015. Role of the nature, strength, and density of the acid sites in mesostructured aluminosilicate catalysts for CO2 conversion to dimethyl ether

Secci, Fausto[1,2]; Mameli, Valentina[1,2]; Rombi, Elisabetta[1,2]; Lai, Sarah[3]; Sanna Angotzi, Marco[1,2]; Russo, Patricia A.[4]; Pinna, Nicola[4]; Mureddu, Mauro[3]; Cannas, Carla[1,2]

1: Università degli Studi di Cagliari, Italia; 2: Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Italia; 3: Sotacarbo SpA, Italia; 4: Humboldt-Universität zu Berlin, Germania

12:30 - 12:45

Emanuele; Galantini, Luciano; Di Stefano, Stefano

Sapienza Università di Roma, Italia

11:30 - 11:45

FIS-OR-041. High-throughput screening and optimization of microfluidic-synthetized lipid-based nanocarriers

Clemente, Ilaria[1,2,3]; Gabbricci, Giulia[1,2,3]; Talarico, Luigi[1,2,3]; Pepi, Simone[1,2,3]; Bonechi, Claudia[1,2,3]; Leone, Gemma[1,2,3]; Magnani, Agnese[1,2,3]

1: Università degli Studi di Siena, Italia; 2: Center for Colloid and Surface Science (CSGI), Italia; 3: National Interuniversity Consortium of Material Science and Technology (INSTM), Italia

11:45 - 12:00

FIS-OR-042. Effect of proteins and stabilizing agents on the formation and stability of colloidal hybrid calciprotein-like particles

Gelli, Rita; Ridi, Francesca

Dipartimento di Chimica "Ugo Schiff" & CSGI, Università degli studi di Firenze, Italia

12:00 - 12:15

FIS-OR-043. Physicochemical studies of new G-quadruplex-forming aptamers against mutant huntingtin

D'Aria, Federica[1]; Riccardi, Claudia[2]; Digilio, Filomena Anna[3]; Cardillo, Maria Rosaria[4]; Amato, Jussara[1]; Fasano, Dominga[5,6]; De Rosa, Laura[5]; Paladino, Simona[5]; Melone, Mariarosa Anna Beatrice[6,7]; Montesarchio, Daniela[2]; Giancola, Concetta[1]

1: Dipartimento di Farmacia, Università degli studi di Napoli Federico II; 2: Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II; 3: Istituto di Ricerca sugli Ecosistemi Terrestri, UOS Napoli-CNR; 4: Dipartimento di Medicina Sperimentale, Università degli studi della Campania Luigi Vanvitelli; 5: Dipartimento di Medicina Molecolare e Biotecnologie Mediche, Università degli Studi di Napoli Federico II, Dipartimento di Scienze Mediche e Chirurgiche Avanzate, Università degli studi della Campania Luigi Vanvitelli; 6: Dipartimento di Scienze Mediche e Chirurgiche Avanzate, Università degli studi

Elisabetta; Brindisi, Margherita
Department of Pharmacy, University Federico II of Naples, Via Domenico Montesano 49, 80131, Naples, Italy

12:30 - 13:00

Gaining insights into SMYD3 binding and inhibition through a combination of biochemical and biophysical approaches

Naldi, Marina[1]; Fablni, Edoardo[1]; Talibov, Vladimir O.[2]; Tedesco, Daniele[3]; Mihalic, Filip[2]; Cederfeldt, Daniela[2]; Danielson, U. Helena[2]; Manoni, Elisabetta[3]; Parenti, Marco[3]; Varchi, Greta[3]; Del Rio, Alberto[3,4]; Bartolini, Manuela[1]
1: Department of Pharmacy and Biotechnology, Alma Mater Studiorum University of Bologna, via Belmeloro 6, Bologna, Italy; 2: Department of Chemistry – BMC and Science for Life Laboratory, Uppsala University, Uppsala, Sweden; 3: Institute of Organic Synthesis and Photoreactivity - National Research Council, via P. Gobetti 101, Bologna, Italy; 4: Innovamol Consulting Srl, via San Faustino 167, Modena, Italy

FIS-OR-016. Influence of Halloysite from different deposits on organic molecules degradation

Ferlito, Chiara; Lisuzzo, Lorenzo; Lazzara, Giuseppe; Palumbo Piccionello, Antonio; Rizzo, Carla; Milioto, Stefana
Università degli studi di Palermo, Italia

12:45 - 13:00

FIS-OR-006. Exploring PET dissolution in monoterpenoid-based eutectic solvents: experimental insights and Molecular Dynamics simulations

Mangiacapre, Emanuela[1]; Czerska, Angelika[1]; Lo Celso, Fabrizio[2]; Triolo, Alessandro[3]; Russina, Olga[1]
1: Sapienza Università di Roma, Italia; 2: Università degli studi di Palermo, Italia; 3: Istituto Struttura della Materia, CNR, Italia

della Campania Luigi Vanvitelli; 7: Sbarro Institute for Cancer Research and Molecular Medicine, Center for Biotechnology, Temple University, Philadelphia

12:15 - 12:30

FIS-OR-044. Liposomes for enhanced intracellular delivery of therapeutics through inhalation: design and physicochemical characterization

De Cristofaro, Ilaria[1]; Gallucci, Noemi[1,2]; Chino, Marco[1]; D'Alonzo, Daniele[1]; Del Vecchio, Pompea Giuseppina Grazia[1]; Sica, Filomena[1]; Paduano, Luigi[1,2]
1: Università degli Studi di Napoli Federico II, Italia; 2: CSGI Consorzio Interuniversitario per lo sviluppo dei Sistemi a Grande Interfase, Italia

12:30 - 12:45

FIS-OR-045. Exploring the Cellular Antioxidant Mechanism Against Cytotoxic Silver Nanoparticles: A Raman Spectroscopic Analysis

Redolfi-Bristol, Davide[1,2]; Yamamoto, Kenta[3]; Marin, Elia[2]; Zhu, Wenliang[2]; Mazda, Osam[3]; Riello, Pietro[1]; Pezzotti, Giuseppe[1,2,3]
1: Università Ca' Foscari Venezia, Italia; 2: Kyoto Institute of Technology, Giappone; 3: Kyoto Prefectural University of Medicine, Giappone

12:45 - 13:00

FIS-OR-046. Large Pore Mesoporous Silica-Based Nanostructures and Nanostructured Lipid Carriers as New Platforms of Gene Transfection Immunotherapy of Cancer

Rizzi, Federica[1,2]; Mastrogiacomo, Rita[1,2,3]; Vischio, Fabio[1,2]; Leccese, Gabriella[4]; Maiorano, Gabriele[4]; Palamà, Ilaria Elena[4]; Lasala, Pierluigi[1,3]; Comparelli, Roberto[1,2]; Castaldo, Rachele[5]; Panniello, Annamaria[1]; Striccoli, Marinella[1]; Fanizza, Elisabetta[1,2,3]; Curri, Maria Lucia[1,2,3]; Depalo, Nicoletta[1,2]
1: Institute for Chemical and Physical Processes (IPCF)-CNR SS Bari, 70126, Italy; 2: National Interuniversity Consortium of Materials

IND-1B: Divisione di Chimica Industriale - Parte 1B
Luogo, sala: **Yellow3 (level +1)**
Chair: **Giorgia Albonetti**, Università degli studi di Ferrara; giorgia.albonetti@unife.it
Chair: **Federico Bella**, Politecnico di Torino; federico.bella@polito.it

10:30 - 10:45

IND-OR-008. Stability of Ba-based Dual Function Materials (DFMs) for cyclic CO2 capture and hydrogenation probed by operando FT-IR

Nava, Giuseppe; Porta, Alessandro; Matarrese, Roberto; Visconti, Carlo Giorgio; Lietti, Luca
Politecnico di Milano, Italia

10:45 - 11:00

IND-OR-009. Operando-Raman Analysis of Surface Carbon Formation and Its Implications on Methane Dry Reforming Kinetics on Rh-Based Catalysts

Colombo, Riccardo; Moroni, Gianluca; Negri, Chiara; Maestri, Matteo
Politecnico di Milano, Italia

11:00 - 11:15

IND-OR-010. One-pot syncrude production via CO2 hydrogenation over promoted iron-based catalyst

Rolandi, Beda; Piacentini, Mattia; Porta, Alessandro; Visconti, Carlo Giorgio; Lietti, Luca
Politecnico di Milano, Italia

11:15 - 11:30

IND-OR-011. Regenerable Ni-Al catalysts in Methane Dry Reforming: the core-shell structure case

Da Pian, Giulia[1]; Braido, Rachele[1]; Pizzolato, Marco[1]; Martin, Irene[2,3]; Cruciani, Giuseppe[4]; Signoretto, Michela[1]
1: Università Ca' Foscari Venezia; 2: Istituto Italiano di Tecnologia; 3: Politecnico di Torino; 4: Università di Ferrara

INO-1B: Divisione di Chimica Inorganica - Parte 1B
Luogo, sala: **Blue2 (level +1)**
Chair: **Diego La Mendola**, Università di Pisa; diego.lamendola@unipi.it

10:30 - 10:45

INO-OR-018. Naproxen-gold (I) Complex as Innovative Approach Against Staphylococcus Species Diseases

Di Leo, Riccardo[1]; Chiaverini, Lorenzo[1]; Tolbatov, Iogann[2]; Marrone, Alessandro[3]; Dalli, Andrea[4]; Ferretti, Caterina[4]; Poma, Noemi[4]; Di Luca, Mariagrazia[4]; Marzo, Tiziano[1]; La Mendola, Diego[1]
1: Department of Pharmacy, University of Pisa, Via Bonanno Pisano 6, 56126, Pisa, Italy; 2: Department of Physics and Astronomy, University of Padova, Via F. Marzolo 8, 35131, Padova, Italy; 3: Department of Pharmacy, "G. D'Annunzio" University of Chieti-Pescara, Via dei Vestini 31, 66100, Chieti, Italy; 4: Department of Biology, University of Pisa, Via San Zeno 35-39, 56127, Pisa, Italy

10:45 - 11:00

INO-OR-020. Exploring the efficacy of paramagnetic nanogels as MRI probes

Ricci, Marco[1]; Carniato, Fabio[1]; Tei, Lorenzo[1]; Garello, Francesca[2]; Furlan, Chiara[2]; Terreno, Enzo[2]; Parigi, Giacomo[3]; Ravera, Enrico[3]; Luchinat, Claudio[3]; Botta, Mauro[1]
1: Department of Science and Technological Innovation, University of Piemonte Orientale, V.le T. Michel 11, Alessandria; 2: Molecular Imaging Centre, Department of Molecular Biotechnology and Health Sciences, University of Turin, Via Nizza 52, Turin; 3: Magnetic Imaging Center (CERM) and Department of Chemistry "Ugo Shiff", University of Florence, Via Luigi Sacconi 6, Florence

11:00 - 11:15

INO-2B: Divisione di Chimica Inorganica - Parte 2B
Luogo, sala: **White2 (level +2)**
Chair: **Cristina Femoni**, University of Bologna, Department of Industrial Chemistry "Toso Montanari"; cristina.femoni@unibo.it

10:30 - 10:45

INO-OR-019. Chiral Nickel(II)-based Metal-Hydroxide Organic Frameworks (MHOFs) as Spin-selective Catalysts of Oxygen Evolution Reaction

Nicolini, Alessio[1]; Campi, Martina[2]; Biagi, Roberto[2]; Borsari, Marco[1]; Cornia, Andrea[1]; Mucci, Adele[1]; Tassinari, Francesco[1]
1: Dept. of Chemical and Geological Sciences & INSTM RU, University of Modena and Reggio Emilia, I-41125, Modena; 2: Dept. of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia, I-41125, Modena

10:45 - 11:00

INO-OR-021. The crucial role of X-ray absorption spectroscopy for catalysts design

Dolcet, Paolo[1,2]; Maurer, Florian[2]; Casapu, Maria[2]; Grunwaldt, Jan-Dierk[2]
1: Department of Chemical Sciences, University of Padova, Italy; 2: Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology, Germany

11:00 - 11:15

INO-OR-023. Various Alkyne Functionalization Promoted By Coinage Metal N-Heterocyclic Carbene Complexes

D'Amato, Assunta[1]; Sirignano, Marco[1]; Mariconda, Annaluisa[2]; Longo, Pasquale[1]
1: Università degli Studi di Salerno, Italia; 2: Università della Basilicata, Italia

Science and Technology (INSTM), Bari, 70126, Italy; 3: Department of Chemistry, University of Bari, 70126, Italy; 4: Institute of Nanotechnology (NANOTEC)-CNR, Lecce, 73100, Italy; 5: Institute of Polymers, Composites and Biomaterials (IPCB)-CNR Pozzuoli, 80078, Italy

MAS: Divisione di Spettrometria di Massa
Luogo, sala: **Meeting4+5 (level -1)**
Chair: **Maria Assunta Acquavia**, Università degli Studi della Basilicata; maria.acquavia@unibas.it
Chair: **Flaminia Vincenti**, Divisione Spettrometria di Massa - SCI; flavincenti@gmail.com

10:30 - 11:00

MAS-PZ-01. Premio per Giovani Ricercatori Operanti nel Campo della Spettrometria di Massa. Development of a Fully Automated Method HS-SPME-GC-MS/MS for the Determination of Odor-Active Carbonyls in Wines: a "Green" Approach to Improve Robustness and Productivity in the Oenological Analytical Chemistry

Piergiovanni, Maurizio[1]; Carlin, Silvia[2]; Lotti, Cesare[2]; Vrhovsek, Urska[2]; Mattivi, Fulvio[1,2]
1: Center Agriculture Food Environment (C3A), University of Trento, via Edmund Mach 1, San Michele all'Adige (TN); 2: Center Research and Innovation, Edmund Mach Foundation, San Michele all'Adige (TN)

11:00 - 11:15

MAS-OR-001. Lipids, proteins, cells: advanced spatial multiomics to delve deeper into the complex molecular and cellular landscape of the tumour microenvironment

Bindi, Greta[1]; Monza, Nicole[1]; Santos de Oliveira, Glenda[1]; Denti, Vanna[1]; L'Imperio, Vincenzo[2]; Pagni, Fabio[2]; Magni, Fulvio[1]; Smith, Andrew[1]
1: University of Milan-Bicocca, via Raoul Follereau, 3, Vedano al Lambro, Italy; 2: University of Milano-Bicocca, IRCCS Fondazione San Gerardo dei Tintori, Via G. B. Pergolesi, 33, Monza, Italy

11:30 - 11:45

IND-OR-012. Solar energy conversion via photo-thermo-catalytic H2 production

Livolsi, Simone[1]; Bossola, Filippo[2]; Eslava, Salvador[3]; Chiarello, Gian Luca[1]

1: Chemistry Department, University of Milan, 20133 Milan, Italy; 2: CNR-Istituto di Scienze e Tecnologie Chimiche “Giulio Natta”, 20133 Milan, Italy; 3: Chemical Engineering Department, Imperial College London, SW7 2AZ London, UK

11:45 - 12:00

IND-OR-013. Advancing decarbonization: experimental perspectives on CO2 methanation

Tommasi, Matteo[1]; Rotasperti, Lorenzo[1]; Rotasperti, Matteo[1]; Gramegna, Alice[2]; Degerli, Simge Naz[2]; Ramis, Gianguido[3]; Galli, Federico[4]; Rossetti, Ilenia[1,2]

1: Dip. Chimica, Università degli Studi di Milano, Via C. Golgi 19, 20133 Milan, Italy; 2: INSTM Unit Milano-Università, Via C. Golgi 19, 20133 Milan, Italy; 3: Dip. Ing. Chimica, Civile ed Ambientale, Università degli Studi di Genova, Via all’Opera Pia 15A, 16145 Genoa, Italy; 4: Université de Sherbrooke, Département de génie chimique et de génie biotechnologique, 2500 boul. de l’Université, Sherbrooke Québec, Canada, J1K 2R1

12:00 - 12:15

IND-OR-014. Ti/Zr/O Mixed Oxides for the Catalytic Transfer Hydrogenation of Furfural to GVL in a Liquid-Phase Continuous-Flow Reactor

Saotta, Anna

Alma Mater Studiorum University of Bologna, Italia

12:15 - 12:30

IND-OR-015. Hydrogen production by CH4 decomposition via chemical looping process

La Greca, Eleonora[1,2]; Consentino, Luca[2]; Pantaleo, Giuseppe[2]; La Parola, Valeria[2]; Fiorenza, Roberto[1]; Scirè, Salvatore[1]; Liotta, Leonarda Francesca[2]

1: Department of Chemical Science, University of Catania;

INO-OR-022. SnIV-porphyrins/amino acid conjugates as mimic models for Artificial Photosynthesis

Fogar, Greta[1]; Amati, Agnese[2]; Natali, Mirco[2]; Iengo, Elisabetta[1]

1: Department of Chemical and Pharmaceutical Sciences, University of Trieste, Trieste (Italy); 2: Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, Ferrara (Italy)

11:15 - 11:30

INO-OR-024. Lignin-based hybrid drug delivery system for phytosanitary application

Libri, Sofia; Zoia, Luca; Lange, Heiko

Università di Milano Bicocca, Italia

11:30 - 11:45

INO-OR-026. Gold nanoparticles coated with glutathione for the design of targeted nanocarriers in personalized nanomedicine

Buonerba, Antonio[1]; Puliatti, Giulia[2]; Marcocci, Maria Elena[3]; Contento, Irene[1]; Castagno, Nicolina[1]; Baldino, Lucia[1]; Scognamiglio, Mariarosa[1]; Di Girolamo, Rocco[4]; Capacchione, Carmine[1]; Grassi, Claudio[2]; Grassi, Alfonso[1]; Roberto Piacentini, Roberto Piacentini[2]

1: University of Salerno, 84084 Fisciano (SA), Italy; 2: Università Cattolica del Sacro Cuore, 00168 Rome, Italy; 3: Sapienza University of Rome, 00185 Roma, Italy; 4: University of Naples Federico II, Naples, Italy

11:45 - 12:00

INO-OR-028. Synthesis and Characterization of functionalized Gold Nanorods for Drug Delivery Applications

Amatori, Simone[1]; Binelli, Ludovica[1,2]; Lopez, Alberto[1]; Venditti, Iole[1]; Iucci, Giovanna[1]; Meneghini, Carlo[1]

1: Department of Sciences, Roma Tre University, Via della Vasca Navale 79, 00146, Rome, Italy; 2: Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Roma 3, Department of Sciences, Roma Tre University,00146 Rome, Italy

11:15 - 11:30

INO-OR-025. Synthesis of mugineic acid family phytosiderophore analogues as low-cost and sustainable iron fertilizers for agriculture in poor soil

Masetti, Andrea[1]; Mazzoni, Rita[1]; Namba, Kosuke[2]; Sato, Ryota[2]

1: Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italia; 2: Faculty of Pharmaceutical Sciences, Tokushima University, Japan

11:30 - 11:45

INO-OR-027. Operando Study of Cobalt-Aluminum LDH for Oxygen Evolution Reaction

Cattelan, Mattia[1,2]; Yang, Jijin[1]; Nalesso, Marco[1]; Bussetti, Gianlorenzo[3]; Magnano, Elena[4,5]; Nappini, Silvia[4]; Napal, Ilargi[4,6]; Agnoli, Stefano[1,2]

1: Dipartimento di Scienze Chimiche, Università di Padova, Italia; 2: Consorzio INSTM, Firenze, Italia; 3: Dipartimento di Fisica, Politecnico di Milano, Milano, Italia; 4: IOM CNR, Laboratorio TASC, Trieste, Italia; 5: Department of Physics, University of Johannesburg, Johannesburg, South Africa; 6: Dipartimento di Fisica, Università di Trieste, Trieste, Italia

11:45 - 12:00

INO-OR-029. Photoswitchable chirality transfer in bright lanthanides quadruple stranded helicate-cages

Rancan, Marzio[1]; Rando, Maria[2]; Carlotto, Silvia[2]; Bottaro, Gregorio[1]; Armelao, Lidia[2,3]

1: ICMATE-CNR, via Marzolo 1, Padova; 2: Dipartimento Scienze Chimiche, Università di Padova, via Marzolo 1, Padova; 3: DSCTM-CNR, piazzale Aldo Moro 7, Roma

12:00 - 12:15

INO-OR-031. A concise synthetic approach to asymmetric b-functionalized antipodal push-pull porphyrins for potential application in photovoltaic, NLO and PDT

Demingo, Miriam; Lembo, Angelo; Gontrani, Lorenzo; Ricci, Cosimo; Casoli,

11:15 - 11:30

MAS-OR-002. Cross-linking Mass Spectrometry: a Tool for Revealing Potential de novo Protein-Protein Interactions at Plasma Membrane

Santorelli, Lucia[1]; Petrosino, Sara[1,2]; Costanzo, Michele[3,4]; Ruoppolo, Margherita[3,4]; Grumati, Paolo[1,2]

1: Telethon Institute of Genetics and Medicine (TIGEM), via Campi Flegrei 34, 80078 Pozzuoli; 2: Department of Clinical Medicine and Surgery, Federico II University, via Sergio Pansini, 5, 80131 Napoli; 3: Department of Molecular Medicine and Medical Biotechnology, University of Naples Federico II, via Domenico Montesano, 49, 80131 Napoli; 4: CEINGE–Biotecnologie Avanzate Franco Salvatore, via Gaetano Salvatore, 486, 8013, Napoli

11:30 - 11:45

MAS-OR-003. Pollution and Exposome: description of search for biomarkers of effect of oxidative stress; preliminary results

Maccari, Chiara

università di Parma, Italia

11:45 - 12:00

MAS-OR-004. The metabolic role of trehalose in autophagy induction in central nervous system

Serrao, Simone[1]; Camazzola, Davide[2]; Denti, Vanna[1]; Bossi, Eleonora[1]; Limo, Elena[1]; Esposito, Alessandro[2]; Martano, Giuseppe[2]; Guarnieri, Fabrizia Claudia[2]; Murru, Luca[2]; Paglia, Giuseppe[1]

1: Department of Medicine and Surgery, Proteomics and Metabolomics Unit, University of Milano-Bicocca, Vedano al Lambro (MB), Italy; 2: Institute of Neuroscience, National Research Council (CNR), Milan, Italy

12:00 - 12:15

MAS-OR-005. Using High-Resolution Mass Spectrometry to Investigate Supramolecular Architectures in Gas Phase

Della Sala, Paolo; Talotta, Carmen; Soriente, Annunziata; De Rosa,

2: Institute for the Study of Nanostructured Materials (ISMN), (Italian) National Research Council (CNR)

12:30 - 12:45

IND-OR-016. Separation of hydrogen from natural gas in distribution pipelines using electrochemical hydrogen compressor (EHC)

Zanella, Elisa; Vertova, Alberto; Longhi, Mariangela; Pirola, Carlo
Università degli Studi di Milano, Dipartimento di Chimica – via Golgi, 19, 20133 Milano (MI), Italy

12:00 - 12:15

INO-OR-030. Zeolitic Imidazolate Framework-8 (ZIF-8) for antimicrobial prevention

Di Matteo, Valentina[1]; Cassani, Maria Cristina[1]; Ballarin, Barbara[1]; Panzavolta, Silvia[2]; Di Filippo, Maria Francesca[2]; Bonvicini, Francesca[3]
1: Department of Industrial Chemistry "Toso Montanari", University of Bologna, 40136-Bologna, IT; 2: Department of Chemistry "G. Ciamician", University of Bologna, 40126-Bologna, Italy; 3: Department of Pharmacy and Biotechnology, University of Bologna, 40138-Bologna, Italy

12:15 - 12:30

INO-OR-032. Physiochemical characterization of lipidic nanoformulations encapsulating Natamycin

Talarico, Luigi[1,2,3]; Clemente, Ilaria[1,2]; Gennari, Alessandro[1]; Gabbricci, Giulia[1,2]; Pepi, Simone[1,2,3]; Leone, Gemma[1,2,3]; Bonechi, Claudia[1,2]; Mattioli, Simone[4]; Detta, Nicola[4]; Magnani, Agnese[1,2,3]
1: Università di Siena, Dipartimento di Biotecnologie, Chimica e Farmacia, Italia; 2: CSGI - Consorzio Interuniversitario per i Sistemi a Grande Interfase, Firenze, Italia; 3: INSTM Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Firenze, Italia; 4: Dompè farmaceutici, L'Aquila, Italia

12:30 - 12:45

INO-OR-034. Antioxidant activity of bioactive glasses loaded with flavonols

Giordana, Alessia[1]; Rigoletto, Monica[1]; Zambon, Alfonso[2]; Operti, Lorenza[1]; Cerrato, Giuseppina[1]; Lusvardi, Gigliola[2]
1: Università degli Studi di Torino, Italia; 2: Università degli Studi di Modena e Reggio Emilia, Italia

12:45 - 13:00

INO-OR-036. Novel on/off switch hydrogel functionalized with cyclometallated Ir(III)

Lorenzo; Carbone, Marilena; Tagliatesta, Pietro
STARTNETICS, Italia

12:15 - 12:30

INO-OR-033. Using impacts for the self-assembly of coordination polymers and polynuclear metal complexes

Cagossi, Giorgio; Mazzeo, Paolo Pio; Bacchi, Alessia; Daolio, Andrea; Pelagatti, Paolo
Università di Parma, Italia

12:30 - 12:45

INO-OR-035. Magnetic and structural characterization of Fe(II) and (III) pyclen complexes

Alberti, Matteo[1]; Caselli, Alessandro[1]; Zákutná, Dominika[2]; Soave, Raffaella[3]; Cargnoni, Fausto[3]; Trioni, Mario Italo[3]
1: Università degli Studi di Milano, Italia; 2: Charles University, Czech Republic; 3: Istituto di Scienze e Tecnologie Chimiche "G. Natta", Italia

12:45 - 13:00

INO-OR-037. A vapochromic chemosensor based on a Zn(II) salen-type complex for the detection of volatile organic compounds

Gaeta, Massimiliano; Oliveri, Ivan Pietro; Di Bella, Santo
Università degli Studi di Catania, Italia

Margherita; Iuliano, Veronica; Neri, Placido; Gaeta, Carmine
Dipartimento di Chimica e Biologia, Università degli Studi di Salerno, Italia

12:15 - 12:30

MAS-OR-006. A new comparative metabolomic approach to characterize the standardization of the UVCB production process

Burico, Michela[1]; Gironi, Beatrice[1]; Quintiero, Claudio Marzio[1]; Tamimi, Sara[1]; Stocchero, Matteo[2]; Decarli, Denise[1]; Gianni, Mattia[1]; Mattoli, Luisa[1]
1: ABOCA SPA, Italia; 2: University of Padova

12:30 - 12:45

MAS-OR-007. The interplay between UV spectroscopy and high-resolution mass spectrometry for the confident identification of Cucurbitacins in unexpectedly bitter Scopatizzo melons

Castellaneta, Andrea[1]; Losito, Ilario[1,2]; Palmitessa, Onofrio Davide[3]; Renna, Massimiliano[3]; Leoni, Beniamino[3]; Santamaria, Pietro[2,3]; Calvano, Cosima Damiana[1,2]; Cataldi, Tommaso[1,2]
1: Dipartimento di Chimica, Università degli Studi di Bari, Via Edoardo Orabona 4, 70126 Bari, Italy; 2: Centro Interdipartimentale SMART, Università degli Studi di Bari, Via Edoardo Orabona 4, 70126 Bari, Italy; 3: Dipartimento di Scienze del Suolo della Pianta e degli Alimenti, Università degli Studi di Bari Aldo Moro, Via Giovanni Amendola, 165/a, 70126 Bari BA 70126 Bari, Italy

complexes for in vitro cell imaging in 3D platforms

Lázaro, Ariadna[1]; Fiorini, Federica[2]; Longhi, Elena[2]; De Cola, Luisa[1,2,3]

1: Institut für Funktionelle Grenzflächen (IFG), Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen 76344, Germany; 2: Department of Pharmaceutical Science, Università degli Studi di Milano, Milan 20133, Italy.; 3: Department of Biochemistry, Instituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan 20156, Italy.

TEC-B: Divisione di Chimica per le Tecnologie - Parte B
Luogo, sala: **Yellow2 (level +1)**
Chair: **Marta Feroci**, Sapienza Università Roma; marta.feroci@uniroma1.it
Chair: **Giuseppina Raffaini**, Politecnico di Milano; giuseppina.raffaini@polimi.it

10:30 - 10:45

TEC-OR-009. Insights into factors influencing the performance of immobilized enzymes and biocatalytic membrane reactors

Giorno, Lidietta; Vitola, Giuseppe; Piacentini, Emma; Mazzei, Rosalinda

National Research Council of Italy, Institute on Membrane Technology (CNR-ITM), Italia

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10:45 - 11:00

TEC-OR-010. Adducts of sp2 Carbon Allotropes Functionalized with Pyrrole Compounds and with Transition Metal atoms: Towards Single Atom Catalysis

Barbera, Vincenzina; Magaletti, Federica; Gentile, Davide; Galimberti, Maurizio

Department of Chemistry, Materials and Chemical Engineering “G. Natta”, Politecnico di Milano, Via Mancinelli 7, 20131 Milano, Italy

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11:00 - 11:15

TEC-OR-011. Tuning the morphology and optical properties of Eu-doped YPO4 nanopowders by a rapid microwave-assisted hydrothermal method

Mortalò, Cecilia[1]; Paradisi, Enrico[2]; Zin, Valentina[1]; Deambrosis, Silvia Maria[1]; Miorin, Enrico[1]; Armetta, Francesco[3,4]; Boiko, Vitalii[5]; Hreniak, Dariusz[5]; Leonelli,

Cristina[2]; Saladino, Maria Luisa[3,4]

1: National Research Council of Italy (CNR), Institute of Condensed Matter Chemistry and Technologies for Energy (ICMATE), Corso Stati Uniti 4, I-35127, Padova, Italy; 2: Department of Engineering "Enzo Ferrari", University of Modena and Reggio Emilia, Via P. Vivarelli 10, I-41125 Modena, Italy; 3: Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF)-University of Palermo, Viale delle Scienze, Bld.17, I-90128, Palermo, Italy; 4: National Research Council of Italy (CNR), Institute for Chemical-Physical Processes (IPCF), V.le F. S. d'Alcontres 37, I-98158, Messina, Italy; 5: Institute of Low Temperature and Structure Research, Polish Academy of Sciences, ul Okólna 2, PL-50-422, Wrocław, Poland

11:15 - 11:30

TEC-OR-012. SYSTEMATIC INVESTIGATION ON THE SURFACTANT-ASSISTED LIQUID PHASE EXFOLIATION OF MoS2 AND WS2 IN WATER FOR SUSTAINABLE 2D MATERIAL INK

Pozzati, Micaela[1]; Boll, Felix[2]; Crisci, Matteo[2]; Domenici, Sara[1]; Smarsly, Bernd[2]; Wang, Mengjiao[1]; Gatti, Teresa[1,2]

1: Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italia; 2: Justus Liebig University Giessen, Heinrich Buff-Ring 17, 35392 Giessen, Germany.

11:30 - 11:45

TEC-OR-013. Development of Doped Li4SiO4-based Pellets for CO2 Capture at High Temperature

Rossi, Damiano[1]; Desideri, Umberto[2]; Seggiani, Maurizia[1]

1: DICI, University of Pisa, Largo Lucio Lazzarino, 56122 Pisa (Italy); 2: DESTEC, University of Pisa, Via Carlo Francesco Gabba 22, 56122 Pisa (Italy)

11:45 - 12:00

TEC-OR-014. EXPLORING THE POTENTIAL OF AMINO-ACID IONIC LIQUIDS AS HIGHLY PROMISING ABSORBENTS FOR EFFECTIVE CO2 CAPTURE

Mazzotta, Silvia[1,2,4]; Ferraro, Giuseppe[1,3]; Verga, Francesca[1,2]; Pirri, Fabrizio[1,3]; Bocchini, Sergio[1,3]

1: Center for Sustainable Future Technologies Istituto Italiano di Tecnologia, Via Livorno 60, 10144 Torino (Italy); 2: Dipartimento di Ingegneria dell'Ambiente, del Territorio e delle Infrastrutture (DIATI) Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino (Italy); 3: Dipartimento di Scienza Applicata e Tecnologia (DISAT), Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, (Italy); 4: Scuola Universitaria Superiore (IUSS) Pavia. Palazzo del Broletto-Piazza della Vittoria 15, 27100 Pavia, (Italy)

12:00 - 12:15

TEC-OR-015. Nanocellulose-based eco-safe materials for water treatment

Riva, Laura[1]; Battocchio, Chiara[2]; Gallo, Alessandra[3]; Corsi, Ilaria[4]; Punta, Carlo[1]

1: Department of Chemistry, Materials, and Chemical Engineering “G. Natta”, Politecnico di Milano, Milano, Italy; 2: Department of Science, Roma Tre University of Rome, Via della Vasca Navale 79, 00146 Rome, Italy; 3: Dept. of Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn, Napoli, Italy; 4: Department of Physical, Earth and Environmental Sciences, University of Siena, Italy

12:15 - 12:30

TEC-OR-016. Membrane processes as an effective and environmentally friendly technology for treating municipal water polluted by micro- and nanoplastics

Russo, Beatrice[1]; Limonti, Carlo[2]; Siciliano, Alessio[2]; Lavorato, Cristina[2]; Argurio, Pietro[2]; Molinari, Raffaele[2]; Figoli, Alberto[1]; Poerio, Teresa[1]

1: Institute on Membrane Technology CNR-ITM, Via P. Bucci cubo 17/C, Rende (CS,) Italy; 2: Department of Environmental Engineering (DIAm), University of Calabria, Via P. Bucci cubo 44/A, Rende (CS), Italy

12:30 - 12:45

TEC-OR-017. Waste to Wastewater Treatment: Sustainable Remediation

	from Dyes and Metals using Mono-Combusted Sewage Ash **Pachaiappan, Praveena[1]; Massa, Mattia[1]; Reishal, Tatsiana[3]; Punta, Carlo[2]; Bontempi, Elza[1]; D'Anna, Andrea[3]; Blazina, Marco[3]** 1: University of Brescia, Italy; 2: Politecnico di Milano, Italy; 3: MM SpA, Italy **12:45 - 13:00** **TEC-OR-018. Effect of agri-food by-product additives on properties of biodegradable composites: Evaluation of Chestnut Wood Fiber as functional filler** **Marotta, Angela[1]; Gioiella, Lucia[1]; Argenziano, Rita[2]; Panzella, Lucia[2]; Salzano de Luna, Martina[1]; Ambrogi, Veronica[1]** 1: Department of Chemical, Materials and Production Engineering, University of Naples Federico II; 2: Department of Chemical Sciences, University of Naples Federico II			
11:00 - 13:00	**ABC-B: Divisione di Chimica dell'Ambiente e dei Beni Culturali - Parte B** Luogo, sala: **White1 (level +2)** Chair: **Silvia Prati**, UNIVERSITY OF BOLOGNA; s.prati@unibo.it Chair: **Raffaele Cucciniello**, University of Salerno; rcucciniello@unisa.it **11:00 - 11:15** **ABC-OR-008. Life Cycle Assessment of a Catalytic Process for Methane Conversion to Hydrogen and Carbon Nanotubes using a Co-Precipitation Catalyst** **Rossi, Eleonora[1,2]; Canuti, Lisa[1]; Ciacci, Luca[1,2]; Giarnieri, Ilenia[1]; Benito, Patricia[1]; Passarini, Fabrizio[1,2]** 1: Università di Bologna, Italia; 2: Centro Interdipartimentale per la ricerca Industriale (CIRI) Fonti Rinnovabili, Ambiente, Mare ed Energia; Università di Bologna **11:15 - 11:30** **ABC-OR-009. Two-years analyses of beryllium-7 in the Antarctic region: use of beryllium-7 as a tracer of stratosphere-to-troposphere transport events** **Zappi, Alessandro[1]; Laghi, Laura[2]; Biondi, Mariassunta[1]; Putero, Davide[3]; Traversi,**	**ORG-1B: Divisione di Chimica Organica - Parte 1B** Luogo, sala: **Red1 (level +1)** Chair: **Cristina Prandi**, Universita' di Torino; cristina.prandi@unito.it Chair: **Vito Capriati**, Università degli Studi di Bari Aldo Moro; vito.capriati@uniba.it **11:00 - 11:15** **ORG-OR-009. Nanosized drug delivery systems of anticancer active ingredients: an NMR perspective** **Cesari, Andrea; Guazzelli, Elisa; Lessi, Marco; Martinelli, Elisa; Bellina, Fabio** Department of Chemistry and Industrial Chemistry, University of Pisa, via G. Moruzzi 13, Pisa (Italy) **11:15 - 11:30** **ORG-OR-010. Synthesis of 5-Hydroxyindoles Scaffold Using Resonance Acoustic Mixing** **Constantin, Ana Maria[1]; Basoccu, Francesco[2]; Maggi, Raimondo[1]; Porcheddu, Andrea[2]** 1: Università degli Studi di Parma, Italia; 2: Università di Cagliari **11:30 - 11:45**	**ORG-2B: Divisione di Chimica Organica - Parte 2B** Luogo, sala: **Green2 (level -1)** Chair: **Alessandra Tolomelli**, Alma Mater Studiorum Università di Bologna; alessandra.tolomelli@unibo.it Chair: **Gennaro Piccialli**, Università degli Studi di Napoli Federico II; gennaro.piccialli@unina.it **11:00 - 11:15** **ORG-OR-044. Structural and Immunological characterization of lipopolysaccharide from gut microbe Prevotella copri** **Cirella, Roberta; Andretta, Emanuela; De Simone Carone, Luca; Silipo, Alba; Molinaro, Antonio; Di Lorenzo, Flaviana** Università degli studi di Napoli "Federico II", Italia **11:15 - 11:30** **ORG-OR-045. Novel Olanzapine-based PROTACs Targeting Human D-Aspartate Oxidase (DASPO)** **Citarella, Andrea[1]; Cavinato, Miriam[2]; Rabattoni, Valentina[3]; Shehi, Haidi[2]; Galli, Michela[1]; Nardini, Marco[2]; Silvani, Alessandra[1]; Pollegioni, Loredano[3]; Passarella, Daniele[1]** 1: Department of Chemistry, University of Milan, Via Golgi	**ORG-3B: Divisione di Chimica Organica - Parte 3B** Luogo, sala: **Green3 (level -1)** Chair: **Michele Maggini**, Università di Padova; michele.maggini@unipd.it Chair: **Serena Riela**, Università di Catania; serena.riela@unict.it **11:00 - 11:15** **ORG-OR-072. Synthesis and preliminary tests of new graphene-based functionalized solid sorbents for selective CO2 Capture** **Ciulla, Michele[1]; Molinari, Fabricio[2]; Corsaro, Carmelo[3]; Wolicki, Rafal Damian[1]; Barbacane, Nadia[1]; Di Profio, Pietro[1]; Siani, Gabriella[1]; Neri, Giulia[2]** 1: Department of Pharmacy, University "G. d'Annunzio" of Chieti-Pescara, via dei Vestini 31, 66010 Chieti, Italy; 2: Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, V.le F. Stagno d'Alcontres 31, 98166 Messina, Italy; 3: Department of Mathematical and Computational Sciences, Physical Sciences and Earth Sciences, University of Messina, V.le F. Stagno d'Alcontres 31, 98166 Messina, Italy **11:15 - 11:30**

Rita[4]; Crocchianti, Stefano[5]; Cappelletti, David[5]; Tositti, Laura[1]
1: Dipartimento di Chimica "G. Ciamician", Università di Bologna, Italia; 2: Dipartimento di Ingegneria Industriale, Università di Bologna, Italia; 3: CNR-ISAC, Torino, Italia; 4: Dipartimento di Chimica "U. Schiff", Università di Firenze, Italia; 5: Dipartimento di Chimica, Biologia e Biotecnologie, Università di Perugia, Italia

11:30 - 11:45

ABC-OR-012. Proposal for a remediation method for the "vinegar syndrome" in cellulose acetate-based motion picture films

Porpora, Francesca[1]; Maiano, Alessia[1]; Forcellini, Camilla[1]; D'Aleo, Carlotta[1]; Lisi, Lorenzo[1]; Dei, Luigi[1]; De Sanctis, Marianna[2]; Weiss, Richard G.[3]; Carretti, Emiliano[1,4]
1: University of Florence and CSGI, Via della Lastruccia 3-13, 50019, Sesto Fiorentino, Italy.; 2: L'Immagine ritrovata SRL, Via Riva di Reno, 72, 40122, Bologna, Italy.; 3: Georgetown University, 37th and O Streets NW, Washington, DC 20057, USA.; 4: CNR-INO, Largo E. Fermi 6, 50125 Florence, Italy.

11:45 - 12:00

ABC-OR-021. Testing the EU Safe and Sustainable by Design (SSbD) framework for chemicals and materials in specific fields: an example on innovative solutions for art restoration

Semenzin, Elena[1]; Menegaldo, Martina[1]; Giubilato, Elisa[2]; Pizzol, Lisa[2]; Badetti, Elena[1]
1: Ca' Foscari University of Venice, Department of Environmental Sciences, Informatics and Statistics, Scientific Campus, via Torino 155, 30172 Mestre, VE, Italy; 2: GreenDecision s.r.l., Scientific Campus, via Torino 155, 30172 Mestre, VE, Italy

12:00 - 12:15

ABC-OR-022. Non-invasive analysis and Machine Learning methods for degraded copper-based artefacts characterisation

Labate, Maria[1]; Palumbo, Mauro[1]; Diana, Eliano[1];

ORG-OR-011. Structural Characterization of Legumins and Vicilins from Chickpea Seeds by Mass Spectrometry

Cunsolo, Vincenzo[1]; Di Francesco, Antonella[1]; De Santis, Michele Andrea[2]; Lanzoni, Aldo[1]; Pittalà, Maria Gaetana Giovanna[1]; Saletti, Rosaria[1]; Flagella, Zina[2]
1: Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania; 2: Department of Agriculture, Food, Natural Resources and Engineering (DAFNE), University of Foggia

11:45 - 12:00

ORG-OR-012. Dyedauxiliary group approach for the Truce-Smile rearrangement of N-sulfonyl-N-substituted acrylamides via sulfonyl radicals.

Di Terlizzi, Lorenzo[1]; Fagnoni, Maurizio[1]; Protti, Stefano[1]; Nicchio, Luca[1]; Masson, Geraldine[2]; Neuville, Luc[2]
1: PhotoGreen Lab, Università degli studi di Pavia, Italia; 2: Institutde Chimiedes SubstancesNaturelles(ICSN), CNRS UPR2301, UniversitéParis-Saclay, 91198 Gif-sur-Yvette Cedex, France;

12:00 - 12:15

ORG-OR-013. Use of ionic liquids in amidation reactions for PROTACs' synthesis

Eleuteri, Michela; Desantis, Jenny; Cruciani, Gabriele; Germani, Raimondo; Goracci, Laura
Department of Chemistry, Biology, and Biotechnology, University of Perugia, Via dell'Elce di Sotto 8, Perugia, Italy

12:15 - 12:30

ORG-OR-014. Synthetic optimization of N,N Dialkyl-2-arylindol-3-ylglyoxylamides

Famlonga, Luca; Barresi, Elisabetta; Taliani, Sabrina; Da Settimo Passetti, Federico; Marzo, Tiziano; Guazzelli, Lorenzo
Università di Pisa, Italia

12:30 - 12:45

ORG-OR-015. Chemoenzymatic Catalysis for the Stereoselective Synthesis and Derivatization of Terpenes

19, 20133 Milano, Italy, Milano, Italy; 2: Department of Biosciences, University of Milan, Via Celoria 26, 20133 Milano, Italy, Milano, Italy; 3: Department of Biotechnology and Life Sciences, University of Insubria, Via J.H. Dunant 3, 21100 Varese, Italy

11:30 - 11:45

ORG-OR-046. Rational design of multi-target modulators interfering with the three main pathways of the arachidonic acid cascade

Colarusso, Ester[1]; Gazzillo, Erica[1]; Chini, Maria Giovanna[2]; Giordano, Assunta[1,3]; Saviano, Anella[4]; Schettino, Anna[4]; Maione, Francesco[4]; Terracciano, Stefania[1]; Lauro, Gianluigi[1]; Bifulco, Giuseppe[1]
1: University of Salerno, Italia; 2: University of Molise, Italia; 3: Consiglio Nazionale Delle Ricerche, Italia; 4: University of Naples Federico II

11:45 - 12:00

ORG-OR-047. Semisynthetic glycoconjugates based on capsular polysaccharide fragments of Haemophilus influenzae type a as potential vaccine candidates

D'Orazio, Giuseppe[1]; Kohout, Claudia Vera[1]; Del Bino, Linda[2]; Romano, Maria Rosaria[2]; Adamo, Roberto[2]; Lay, Luigi[1]
1: Università degli Studi di Milano, Italia; 2: GSK, Siena, Italia

12:00 - 12:15

ORG-OR-048. Affinity Enhancement of Protein Ligands by Reversible-Covalent Engagement of Lysine Residues

Mason, Mattia; Belvisi, Laura; Pignataro, Luca; Dal Corso, Alberto
Università degli Studi di Milano, Italia

12:15 - 12:30

ORG-OR-049. Chemical synthesis and computational chemistry: a powerful combination for the identification of a new alternative approach to antitumoral therapy

De Gregorio, Rosa[1]; Rapacciuolo, Pasquale[1]; Sepe, Valentina[1]; Morretta,

ORG-OR-073. Design and synthesis of new photoactive molecules for Dye-Sensitized-Solar-Cells (DSSCs) operating in low-light conditions

D'Amico, Francesco
Università degli studi di Siena, Italia

11:30 - 11:45

ORG-OR-074. Catalyzed gas-liquid biphasic aerosol (photo)reaction: a process intensification approach

Dambruoso, Paolo[1]; Rovegno, Caterina[2]; Urbani, Daniele[2]; Torkian Valashani, Niloufar[3]; Van den Bogaert, Annelot[4]; Leblebici, Mumin Enis[4]; Kayahan, Emine[4]; Massi, Alessandro[2]
1: Institute of Organic Synthesis and Photoreactivity, Consiglio Nazionale delle Ricerche, Via P. Gobetti, 101, 40129 Bologna, Italy; 2: Dipartimento di Scienze Chimiche e Farmaceutiche, Univesit` a degli Studi di Ferrara, Via Luigi Borsari, 46, 44121 Ferrara, Italy; 3: Department of Civil, Chemical, Environmental and Materials Engineering (DICAM), University of Bologna, via Terracini, 28, I-40131 Bologna, Italy; 4: Center for Industrial Process Technology, Department of Chemical Engineering, KU Leuven, Agoralaan Building B, 3590 Diepenbeek, Belgium

11:45 - 12:00

ORG-OR-075. The Hexameric Resorcinarene Capsule as Supramolecular Photoacid for the Catalysis in Confined Space

De Rosa, Margherita; Ferrino, Giuseppina; Campanile, Giuseppa; Della Sala, Paolo; Talotta, Carmen; Soriente, Annunziata; Gaeta, Carmine; Neri, Placido
Università degli Studi di Salerno, Italia

12:00 - 12:15

ORG-OR-076. Steroid-fullerene hybrids as promising derivatives with potential application in medicinal chemistry and materials science

Lemos, Reinier[1,2]; Pérez-Badell, Yoana[2]; De Nisco, Mauro[3]; Pedatella, Silvana[1]; Suárez, Margarita[2]

Operti, Lorenza[1]; Aceto, Maurizio[2]; Agostino, Angelo[1]
1: Università di Torino, Italia; 2: Università del Piemonte Orientale, Italia

12:15 - 12:30

ABC-OR-024. Near-infrared hyperspectral imaging to map collagen content in prehistoric bones for radiocarbon dating

Malegori, Cristina[1]; Sciutto, Giorgia[2]; Oliveri, Paolo[1]; Prati, Silvia[2]; Gatti, Lucrezia[2]; Catelli, Emilio[2]; Benazzi, Stefano[2]; Cercatillo, Silvia[2]; Paleček, Dragana[2]; Mazzeo, Rocco[2]; Talamo, Sahra[2]
1: Università di Genova, Italia; 2: Università di Bologna, Italia

12:30 - 12:45

ABC-OR-025. PARCA - Advance in Proteomics and Analysis of dyes and Recovery of Charred and Aged textiles

Serafini, Ilaria[1,2]; Ciccola, Alessandro[3]; Coletti, Francesca[4]; Galli, Marco[4]; Kavich, Gwénaëlle M.[2]; Favero, Gabriele[3]; Cleland, Timothy P.[2]
1: Dept. of Chemistry, Sapienza University of Rome; 2: Museum Conservation Institute, Smithsonian Institution; 3: Dept. of Enviromental Biology, Sapienza University of Rome; 4: Dept. of Classics, Sapienza University of Rome

Fiorito, Daniele; Parmeggiani, Fabio; Gatti, Francesco Gilberto; Brenna, Maria Elisabetta
Politecnico di Milano, Italia

12:45 - 13:00

ORG-OR-016. EurJOC Society Award 2023. Organocatalytic Asymmetric Reduction of δ-Nitro Dienes: a Viable Entry to Functionalized Amines and Highly Substituted Enantioenriched Cyclopentanes

Franco, Francesca[1]; Faverio, Chiara[2]; Taini, Giulia[3]; Raimondi, Laura[4]; Benaglia, Maurizio[5]
1: università degli studi di Milano, Italia; 2: università degli studi di Milano, Italia; 3: università degli studi di Milano, Italia; 4: università degli studi di Milano, Italia; 5: università degli studi di Milano, Italia

Elva[1,2]; Di Giorgio, Cristina[3]; Monti, Maria Chiara[1]; Catalanotti, Bruno[1]; Zampella, Angela[1]; Fiorucci, Stefano[3]
1: Dipartimento di Farmacia, Università di Napoli "Federico II", Italia; 2: Dipartimento di Farmacia, Università di Salerno, Italia; 3: Dipartimento di Medicina e Chirurgia, Università di Perugia, Italia

12:30 - 12:45

ORG-OR-050. Discovering Cyclic Peptoids: Structures and Bioactivities of a Proteiform Scaffold

De Riccardis, Francesco; Schettini, Rosaria; De Cicco, Annalisa; Pierri, Giovanni; Tedesco, Consiglia; Della Sala, Giorgio; Izzo, Irene
Università di Salerno, Italia

12:45 - 13:00

ORG-OR-051. Design and antimicrobial activity of short antimicrobial peptides (SAMPs) as promising agents against resilient infections

Ferrazzano, Lucia[1]; Marforio, Tainah Dorina[1]; Rizzo, Silvia[1]; Di Stefano, Ilaria[1]; Corbisiero, Dario[1]; Cabri, Walter[1]; Gentilomi, Giovanna Angela[2]; Bonvicini, Francesca[2]; Tolomelli, Alessandra[1]
1: Department of Chemistry "G. Ciamician", University of Bologna, Via P. Gobetti 85, Bologna; 2: Department of Pharmacy and Biotechnology, University of Bologna, Via Massarenti 9, Bologna

1: Università degli Studi di Napoli Federico II, Italia; 2: Universidad de la Habana, Cuba; 3: Università di Basilicata, Italia

12:15 - 12:30

ORG-OR-077. CytroCell: A Citrus-based micronized cellulose for advanced applications

Li Petri, Giovanna; Angellotti, Giuseppe; Pagliaro, Mario; Ciriminna, Rosaria
Istituto per lo Studio dei Materiali Nanostrutturati, CNR, via U. La Malfa 153, 90146 Palermo, Italy

12:30 - 12:45

ORG-OR-078. Nanocellulose: a versatile platform for drug delivery

Mancusi, Francesca[1]; Bianchi, Elisa[1]; Gabbani, Alessio[2,3]; Muzzi, Beatrice[4]; Pineider, Francesco[2]; Maldonado Carmona, Nidia[5]; Insero, Giacomo[5]; Montis, Costanza[1]; Richichi, Barbara[1]; Cicchi, Stefano[1]
1: Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019, Sesto Fiorentino (FI), Italy; 2: Department of Chemistry and Industrial Chemistry, University of Pisa, Via Moruzzi 3, 56124, Pisa (PI), Italy; 3: Department of Physics and Astronomy, University of Florence, via Sansone 1, 50019, Sesto Fiorentino (FI), Italy; 4: CNR-ICCOM – Istituto di Chimica dei Composti Organometallici, 50019 Sesto Fiorentino (FI), Italy; 5: Department of Biomedical, Experimental and Clinical Sciences "Mario Serio", University of Florence, Viale Morgagni 50, 50134, Florence (FI), Italy

12:45 - 13:00

ORG-OR-079. Luminescent persistent radicals for photon management applications

Mattiello, Sara; Bionda, Andrea; Sassi, Mauro; Beverina, Luca
Università di Milano-Bicocca, Italia

TEO-B: Divisione di Chimica Teorica e Computazionale - Parte B
Luogo, sala: **Orange3 (level -1)**
Chair: **Enrico Bodo**, Università di Roma La Sapienza; enrico.bodo@uniroma1.it

11:00 - 11:15

TEO-OR-009. Computational modeling of gas-phase reactions: the role of intersystem crossing in the reaction between O(3P) and pyridine

Alessandrini, Silvia; Puzzarini, Cristina
Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Italia

11:15 - 11:30

TEO-OR-010. Shining Light on Inverted Singlet-Triplet Emitters

Bedogni, Matteo; Giavazzi, Davide; Di Maiolo, Francesco; Painelli, Anna
Parma University, Italia

11:30 - 11:45

TEO-OR-011. Ultrafast excited-state dynamics of Luteins in the major light-harvesting complex LHCII

Pedraza González, Laura Milena; Accomasso, Davide; Cupellini, Lorenzo; Granucci, Giovanni; Mennucci, Benedetta
Università di Pisa, Italia

11:45 - 12:00

TEO-OR-012. The nature of carotenoid S* state and its role in the nonphotochemical quenching of plants

Accomasso, Davide[1]; Londi, Giacomo[2]; Cupellini, Lorenzo[2]; Mennucci, Benedetta[2]
1: University of Warsaw, Polonia; 2: Università di Pisa, Italia

12:00 - 12:15

TEO-OR-013. Multiscale Modeling of the Photoinduced Enantioselective Radical Cyclization of α-Chloroamides in Flavin-Dependent Ene-Reductases

Dell'Orletta, Gianluca[1]; Capone, Matteo[1]; Scholes, Gregory D.[2]; Hyster, Todd K.[2]; Aschi, Massimiliano[1]; Daidone, Isabella[1]
1: University of L'Aquila, via Vetoio, L'Aquila 67010, Italy; 2: Princeton University, Princeton 08544, United States

12:15 - 12:30

TEO-OR-014. Computational insight on monoterpenoids antifungal activity

Pezzola, Silvia; Galloni, Pierluca; Conte, Valeria; Bocchinfuso, Gianfranco; Sabuzi, Federica; Venanzi, Mariano
Università "Tor Vergata" Roma, Italia

12:30 - 12:45

TEO-OR-015. A Theoretical-computational Protocol for Cancer Therapy: Modeling Aptamers and their Interactions with Oncological Targets

Donati, Greta[1]; D'Amore, Vincenzo Maria[1]; Diakogiannaki, Isidora[1]; Ingenito, Francesco[2]; Quintavalle, Cristina[3]; Di Leva, Francesco Saverio[1]; Condorelli, Gerolama[2,4]; Marinelli, Luciana[1]
1: Department of Pharmacy, University of Napoli Federico II, Via Domenico Montesano 49, 80131 Napoli, Italy; 2: Experimental Oncology and Immunology, Department of Molecular and Translational Medicine, University of Brescia, 25123, Italy; 3: Department of Molecular Medicine and Medical Biotechnology, University of Napoli Federico II, Via Pansini 5, 80131 Napoli, Italy; 4: IRCCS Neuromed – Istituto Neurologico Mediterraneo Pozzilli

12:45 - 13:00

TEO-OR-016. A Machine Learning tool for Pathway Analysis in Molecular Dynamics Simulations

Motta, Stefano[1]; Callea, Lara[1]; Bonati, Laura[1]; Pandini, Alessandro[2]
1: Università degli Studi di Milano-Bicocca, Italia; 2: Brunel University London, United Kingdom

11:30 - 12:00

FIS-3: Divisione di Chimica Fisica - Parte 3
Luogo, sala: **Turquoise2 (level -1)**
Chair: **Maria Vittoria Dozzi**, Università degli Studi di Milano; mariavittoria.dozzi@unimi.it

11:30 - 11:45

FIS-OR-047. Microbial-based biocathodes for green hydrogen production.

Lacalamita, Dario[1]; Stufano, Paolo[2]; Honorio Franco, Jefferson[1]; Labarile, Rossella[3]; Trotta, Massimo[3]; Tacca, Alessandra[4]; Grattieri, Matteo[1,3]; Farinola, Gianluca Maria[1]
1: Department of Chemistry, Università degli Studi di Bari “Aldo Moro”, Italia; 2: CNR-NANOTEC, Consiglio Nazionale delle Ricerche, Italia; 3: CNR-IPCF, Consiglio Nazionale delle Ricerche, Italia; 4: ENI Novara Laboratories (NOLAB), Italia

11:45 - 12:00

FIS-OR-048. Synergistic effects of inorganic nanoparticles for microbial electrochemical systems

Matteucci, Rosa Maria[1,2]; Lasala, Pierluigi[2,3]; Rizzi, Federica[2]; Honorio Franco, Jefferson[3]; Stufano, Paolo[4]; Curri, Lucia[2,3,5]; Fanizza, Elisabetta[2,3]; Grattieri, Matteo[2,3]

1: Dipartimento di Ingegneria Elettrica e dell'Informazione, Politecnico di Bari, via E. Orabona, Bari 70125 Italy; 2: CNR-IPCF, Consiglio Nazionale delle Ricerche, via E. Orabona 4, Bari, 70125, Italy; 3: Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", via E. Orabona 4, Bari, 70125, Italy; 4: CNR-NANOTEC, Consiglio Nazionale delle Ricerche, via E. Orabona 4, Bari, 70125, Italy; 5: National Interuniversity Consortium of Materials Science and Technology, INSTM, Bari Research Unit, 70126, Bari, Italy

12:00 - 12:30

ALI-2A: Divisione di Chimica degli Alimenti - Parte 2A
Luogo, sala: **Turquoise2 (level -1)**
Chair: **Gianni Zoccatelli**, Università di Verona; gianni.zoccatelli@univr.it
Chair: **Chiara Dall'Asta**, University of Parma; chiara.dallasta@unipr.it

12:00 - 12:15

ALI-OR-014. Valorization of grape pomace extracts against cranberry, elderberry, rose hip berry, goji berry and raisin extracts: Phytochemical profile and biological activity

Marinaccio, Lorenza[1]; Gentile, Giulia[1]; Llorent Martinez, Eulogio José[2]; Zengin, Gokhan[3]; Masci, Domiziana[4]; Mollica, Adriano[1]; Stefanucci, Azzurra[1]

1: Department of Pharmacy, "G. D'Annunzio" University of Chieti-Pescara, 66100 Chieti, Italy; 2: Department of Physical and Analytical Chemistry, University of Jaén, Campus Las Lagunillas S/N, E-23071 Jaén, Spain; 3: Department of Biology, Science Faculty, Selcuk University, Konya 42130, Turkey; 4: Department of Basic Biotechnological Sciences, Intensivological and Perioperative Clinics, Catholic University of Sacred Heart, Largo Francesco Vito 1, Rome 00168, Italy

12:15 - 12:30

ALI-OR-009. A metabolomist's point of view on the effects of soy-protein hydrolysate biostimulants on officinal plants: focus on Calendula officinalis

Peron, Gregorio[1]; Franceschi, Clizia[2]; Da Dalt, Chiara[3]; Ferrarese, Irene[3]; Sut, Stefania[3]; Dall'Acqua, Stefano[3]

1: Università di Brescia, Brescia, Italia; 2: Fomet SpA, San Pietro di Morubio, Verona, Italia; 3: Università di Padova, Padova, Italia

13:00 - 14:30

LUNCH3: Lunch & Expo
Luogo, sala: **Hall B (main hall; level +1)**
Check the registration area in ConfTool for any lunch booking options at the congress center or nearby.

14:30 - 16:00

INO-2C: Divisione di Chimica Inorganica - Parte 2C
Luogo, sala: **White2 (level +2)**
Chair: **Alceo Macchioni**, Università degli Studi di Perugia; alceo.macchioni@unipg.it

14:30 - 14:45

INO-OR-039. Unravelling the co-precipitation of spinel iron oxide nanoparticles via pH-potentiometric titrations

Casale, Michael[1]; Omelyanchik, Alexander[1,2]; Slimani, Sawssen[1,2]; Peddis, Davide[1,2]; Colombara, Diego[1]; Piccinni, Marco[1]

1: Università degli studi di Genova, Italia; 2: Institute of Structure of Matter, National Research Council, nM2-Lab, Via Salaria km 29.300, Monterotondo Scalo 00015, Roma,

14:45 - 15:00

INO-OR-042. Insights into graphene oxide reactivity through different functionalization strategies

Giaccari, Leonardo; Amato, Francesco; Motta, Alessandro; Marrani, Andrea Giacomo

Department of Chemistry, Sapienza University of Rome, Piazzale Aldo Moro, 5, 00185, Rome, Italy

15:00 - 15:15

INO-OR-045. How to guide photocatalytic applications of titanium dioxide co-doped with nitrogen and carbon by modulating the production of reactive oxygen species

Zollo, Alessia[1]; Livraghi, Stefano[1]; Giamello, Elio[1]; Cioni, Andrea[2]; Dami, Valentina[2]; Lorenzi, Giada[2]; Baldi, Giovanni[2]

1: Università di Torino, Italia; 2: COLOROBBIA CONSULTING S.r.l

15:15 - 15:30

INO-OR-048. Electroluminescent Copper(I) Complexes for Lighting Applications

INO-3: Divisione di Chimica Inorganica - Parte 3
Luogo, sala: **Green1 (level -1)**
Chair: **Michele Benedetti**, Università del Salento; michele.benedetti@unisalento.it

14:30 - 14:45

INO-OR-040. PET depolymerization using Zn2+ based DES

Ricci, Cosimo[1]; Gontrani, Lorenzo[1]; Bauer, Elvira Maria[2]; Casoli, Lorenzo[1]; Demingo, Miriam[1]; Lembo, Angelo[1]; Carbone, Marilena[1]

1: STARTNETICS, Italia; 2: ISM-CNR

14:45 - 15:00

INO-OR-043. Exploration of different synthetic routes for the design of tailored nanophosphors

Mazzariol, Chiara[1,2]; Bemfert, Lucas[2]; Dolcet, Paolo[1]; Borysova, Kateryna[2]; Müller-Buschbaum, Klaus[2]; Gross, Silvia[1]

1: Department of Chemical Sciences, University of Padova, Italy; 2: Institute for Inorganic and Analytical Chemistry, Justus-Liebig University Giessen, Germany

15:00 - 15:15

INO-OR-046. New CPL active Ln(III) complexes: from the design to the potential application

Ruggieri, Silvia[1]; Mizzoni, Silvia[1]; Willis, Oliver G[2]; Zinna, Francesco[2]; Di Bari, Lorenzo[2]; Sanadar, Martina[3]; Melchior, Andrea[3]; Sissa, Cristina[4]; Cavalli, Enrico[4]; Gualandi, Andrea[5]; C Neto, Albano N[6]; Piccinelli, Fabio[1]

1: Università di Verona, Italia; 2: Università di Pisa, Italia; 3: Università di Udine, Italia; 4: Università di Parma, Italia; 5: Università di Bologna, Italia; 6: Università di Aveiro, Portogallo

15:15 - 15:30

INO-OR-049. SERS enhancement of Methylene Blue exploiting thin polydopamine coating on Silver nanoparticles

Reviglio, Chiara[1]; Cavinato, Luca M.[2]; Barolo, Claudia[1]; Costa, Rubén D.[2]; Garino, Claudio[1]
1: Department of Chemistry, University of Turin; 2: Chair of Biogenic Functional Materials, Technical University of Munich

15:30 - 15:45

INO-OR-051. Luminescent solar concentrators based on energy transfer in polyurethane matrices

Mauri, Luca[1]; Dragonetti, Claudia[1]; Colombo, Alessia[1]; Fagnani, Francesco[1]; Roberto, Dominique[1]; Griffini, Gianmarco[2]; Tatsi, Elisavet[2]
1: Università degli Studi di Milano, Italia; 2: Politecnico di Milano

15:45 - 16:00

INO-OR-054. Plasma-Driven Engineering of Metal Halide Perovskite Interfaces for Photovoltaic Applications

Covella, Sara[1,2]; Perrotta, Alberto[3]; Russo, Francesca[1,4]; Palumbo, Fabio[3]; Milella, Antonella[1]; Armenise, Vincenza[1]; Fracassi, Francesco[1,3]; Rizzo, Aurora[5]; Colella, Silvia[3]; Listorti, Andrea[1,5]
1: Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", Via Orabona 4, 70126 Bari, Italy; 2: Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Via Elce di Sotto 8, 06123 Perugia, Italy; 3: CNR NANOTEC - c/o Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", Via Orabona 4, 70126 Bari, Italy; 4: Dipartimento di Ingegneria Elettrica e dell'Informazione, Politecnico di Bari, Via Orabona 4, 70126 Bari, Italy; 5: CNR NANOTEC – Istituto di Nanotecnologia, c/o Campus Ecotekne, Via Monteroni, 73100 Lecce, Italy sara.covella@uniba.it

Schiavi, Serena[1]; Taglietti, Angelo Maria[1]; Albini, Bendetta[2]; Galinetto, Pietro[2]
1: Università degli studi di Pavia, Dipartimento di Chimica, Italia; 2: Università degli studi di Pavia, Dipartimento di Fisica, Italia

15:30 - 15:45

INO-OR-052. Investigating the morphology and spectroscopic properties of lanthanide-doped alkaline-earth fluoride nanomaterials on varying the synthetic conditions

Milan, Emil[1]; Da Roit, Nicola[2]; Loschi, Francesca[1]; Radicchi, Eros[1]; Herrera, Miriam[3]; Speghini, Adolfo[1]
1: Università degli studi di Verona, Italia; 2: Institut fuer Katalyseforschung und technologie, Germany; 3: University of Cadiz, Spain

14:30 - 16:30

ABC-C: Divisione di Chimica dell'Ambiente e dei Beni Culturali - Parte C
Luogo, sala: **White1 (level +2)**
Chair: **Davide Vione**, Università di Torino; davide.vione@unito.it
Chair: **Antonio Marcomini**, Università Ca' Foscari Venezia; marcomini@unive.it

14:30 - 14:45

ABC-OR-011. Degradation of Nimesulide by Sunlight-Assisted-UVA irradiation: Kinetics and Reactive Species Generation

Medici, Antonio[1]; Di Fabio, Giovanni[1]; Sarakha, Mohamed[2]; Brigante, Marcello[2]; Zarrelli, Armando[1]
1: Department of Chemical Sciences, University of Naples Federico II, Italy; 2: Institut de Chimie de Clermont-Ferrand, Université Clermont Auvergne, France

14:45 - 15:00

ABC-OR-013. Photochemistry of the antibacterial oxolinic acid in surface waters

Carena, Luca[1]; Bertolotti, Silvia[2,3]; Minutoli, Viola[1]; Sarakha, Mohamed[3]; Fernandes, Annabel[4]; Lopes, Ana[4]; Sordello, Fabrizio[1]; Minella, Marco[1]; Vione, Davide[1]
1: Dipartimento di Chimica, Università di Torino, Torino,

ALI-1A: Divisione di Chimica degli Alimenti - Parte 1A
Luogo, sala: **Turquoise1 (level -1)**
Chair: **Roberta Budriesi**, Università di Bologna; roberta.budriesi@unibo.it
Chair: **Filomena Corbo**, Università di Bari Aldo Moro; filomena.corbo@uniba.it
Chair: **Chiara Emilia Cordero**, Università di Torino; chiara.cordero@unito.it
Chair: **Gianni Galaverna**, Università di Parma; gianni.galaverna@unipr.it

14:30 - 14:45

ALI-OR-007. Lipophenols: bioactive compounds from edible oils

Plastina, Pierluigi[1]; Buccafuri, Antonella[1]; Nicoletti, Rosa[2,3]; Benincasa, Cinzia[2]; Perri, Enzo[2]; Cione, Erika[1]; La Torre, Chiara[1]; Fazio, Alessia[1]
1: Università della Calabria, Italia; 2: CREA Research Centre for Olive, Fruit and Citrus Crops, Italia; 3: Università della Basilicata, Italia

14:45 - 15:00

ALI-OR-015. Lipidomics of Sheep and Goat Milk based Infant Formulas after Dynamic In Vitro Digestion

Caboni, Pierluigi[1]; Manis, Cristina[1]; Casula, Mattia[1];

ALI-2B: Divisione di Chimica degli Alimenti - Parte 2B
Luogo, sala: **Turquoise2 (level -1)**
Chair: **Gianni Zoccatelli**, Università di Verona; gianni.zoccatelli@univr.it
Chair: **Chiara Dall'Asta**, University of Parma; chiara.dallasta@unipr.it
Chair: **Nadia Mulinacci**, Università di Firenze; nadia.mulinacci@unifi.it
Chair: **Raffaella Boggia**, UNIGE-University of Genoa (Italy); raffaella.boggia@unige.it

14:30 - 14:45

ALI-OR-013. miRNAs as Biomolecular Markers for Food Safety, Quality and Traceability in Poultry Meat. A preliminary study

Marchetti, Nicola[1]; Baraldo, Nada[1]; Buzzoni, Luna[1]; Mancia, Annalaura[2]; Pasti, Luisa[1]; Cavazzini, Alberto[3]
1: Università di Ferrara, Italia; 2: Marine Science Research Institute, Jacksonville, FL (USA); 3: Consiglio per la Ricerca in Agricoltura e l'Analisi dell'Economia Agraria, Roma

14:45 - 15:00

ALI-OR-016. Green extraction of valuable proteins from unsorted fish-processing side streams: the Horizon 2020 - EcoeFISHent project

ANA-1C: Divisione di Chimica Analitica - Parte 1C
Luogo, sala: **Red2 (level +1)**
Chair: **Maria Careri**, Università di Parma; maria.careri@unipr.it
Chair: **Laura Anfossi**, Università di Torino; laura.anfossi@unito.it

14:30 - 15:00

ANA-KN-04. Bioluminescence analytical platforms for One Health: from paper sensors to thread-based analytical devices

Michelini, Elisa; Calabretta, Maria Maddalena; Gregucci, Denise; Nazir, Faisal; Maiorano, Emanuela
University of Bologna, Dept of Chemistry "Giacomo Ciamician", Italia

15:00 - 15:15

ANA-OR-049. Towards Nano- and Microplastic sensors: Identification of Nano- and Micro plastic particles via Artificial Intelligence combined with a Plasmonic probe functionalized with an Estrogen Receptor

Seggio, Mimimorena[1]; Arcadio, Francesco[2]; Radicchi, Eros[1]; Cennamo, Nunzio[2]; Zeni, Luigi[2]; Bossi, Alessandra Maria[1]
1: Università di Verona, Dipartimento di Biotecnologie, Strada le grazie 15, 37134,

Italy; 2: Dipartimento di Scienze della Vita e Biologia dei Sistemi, Università di Torino, Torino, Italy; 3: Université Clermont Auvergne, CNRS, Clermont Auvergne INP, ICCF, F-63000 Clermont-Ferrand, France; 4: FibEnTech-UBI, Department of Chemistry, Universidade da Beira Interior, Covilhã, Portugal

15:00 - 15:15

ABC-OR-014. Influence of the chemical environment on CO2-sequestration by clathrate hydrates: a Raman study

Zannotti, Marco; Giovannetti, Rita
Università di Camerino, Italia

15:15 - 15:30

ABC-OR-015. Source apportionment of real-time ultrafine airborne particulate data in an urban center of a medium-sized mediterranean city during summer period.

Manco, Antonio[1]; Siciliano, Tiziana[2]; Scerri, Mark[3]; Buccolieri, Riccardo[1]; Genga, Alessandra[1]
1: Dep. of Biological and Environmental Sciences and Technologies, University of Salento, 73100, Lecce; 2: Dep. of Mathematics and Physics, University of Salento, 73100, Lecce; 3: Environmental Management & Planning Division, Institute of Earth Systems, University of Malta, Msida MSD2080, Malta

15:30 - 15:45

ABC-OR-016. Recycling of construction and demolition waste in the European Union: an environmental and economic assessment

Caro, Dario
Università degli Studi di Siena, Italia

15:45 - 16:00

ABC-OR-029. Archaeometry and Artificial Intelligence: an Interdisciplinary Study for the Chemical Analysis of Burnt Soils and Stones from the Hearths at the Riparo Mochi Paleolithic Site

Guglielmi, Vittoria[1]; Carullo, Alessio[2]; Tassi, Anna Laura[1]; Sento, Marco[2]; Santaniello, Fabio[3]; Grimaldi, Stefano[3]; Fermo, Paola[1]; Santiglia, Alessia[1]; Scano, Paola[1]; Menard, Olivia[2]; Dupont, Didier[2]
1: Università di Cagliari, Dipartimento scienze della vita e ambiente, Cagliari, Italia; 2: Institut Agro UMR 1253 STLO 65 rue de Saint-Brieuc 35042 Rennes Cedex

15:00 - 15:15

ALI-OR-018. Comprehensive two-dimensional liquid chromatography for the characterization of the phenolic content in extra virgin olive oil and its by-products

Cacciola, Francesco[1]; Russo, Marina[2]; Arena, Katia[2]; Dugo, Paola[2,3]; Mondello, Luigi[2,3]
1: Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Via Consolare Valeria, 98125, Messina, Italy; 2: Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy; 3: Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy

15:15 - 15:30

ALI-OR-019. Integrated omics approaches for comprehensive study of X-ray irradiated soft cheeses

Mentana, Annalisa[1]; Calvano, Cosima D.[2,3]; Zianni, Rosalia[1]; Campaniello, Maria[1]; Rigante, Elena C.L.[2]; Cataldi, Tommaso R.I.[2,3]; Parisi, Antonio[1]; Nardelli, Valeria[1]
1: Laboratorio Nazionale di Riferimento per il trattamento degli alimenti e dei loro ingredienti con radiazioni ionizzanti, Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Via Manfredonia 20, 71121, Foggia, Italy; 2: Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, via Orabona 4, 70126 Bari, Italy; 3: Centro Interdipartimentale SMART, Università degli Studi di Bari Aldo Moro, via Orabona 4, 70126, Bari, Italy

15:30 - 15:45

Turrini, Federica[1]; Grasso, Federica[1]; Orlandi, Valentina[1]; Vasquez Sobrado, Rebeca[2]; Mendez Paz, Diego[2]; Alonso Martinez, Maria Mercedes[2]; Boggia, Raffaella[1]
1: Department of Pharmacy, University of Genoa, Viale Cembrano 4, 16148 Genova, Italy; 2: ANFACO-CECOPESCA, Department of Circular Economy, Colexio Universitario, 36310 Vigo, Spain

15:00 - 15:15

ALI-OR-004. Enzymatic protein hydrolysis of meat and poultry by-products: chemical characterization, process optimization and techno-functional properties.

Prandi, Barbara[1]; Samei, Seyedehparya[1]; Del Vecchio, Lorenzo[1]; Cirlini, Martina[1]; Beninati, Fabio[2]; Nardi, Andrea[2]; Tedeschi, Tullia[1]
1: Department of Food and Drug, University of Parma, Italy; 2: Gesco Sca, Cesena, Italy

15:15 - 15:30

ALI-OR-001. Primary and Secondary Metabolites Associated to Sensory Perception in Honey

Aprea, Eugenio[1]; Cliceri, Danny[1]; Betta, Emanuela[2]; Solovyev, Pavel[2]; Bontempo, Luana[2]; Gasperi, Flavia[1]
1: Center Agriculture Food Environment (C3A), University of Trento, San Michele All'Adige, Italy; 2: Research and Innovation Centre, Fondazione Edmund Mach, San Michele All'Adige, Italy

15:30 - 15:45

ALI-OR-002. A fermentation-based approach for the bioconversion of leftover food into astaxanthin by Phaffia rhodozyme

Vadalà, Rossella[1]; Cicero, Nicola[1,3]; De Maria, Laura[1]; Di Salvo, Eleonora[1]; De Pasquale, Rita[3]; Genovese, Claudia[2]; Costa, Rosaria[1]
1: University of Messina, Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, Via Consolare Valeria, Messina.; 2: National Research Council of Italy, Institute for Agriculture and Forestry Systems in the Mediterranean, Via Empedocle, Catania; 3: Science4life Srl, start up, Via Leonardo Sciascia Messina

Verona; 2: Università della Campania Luigi Vanvitelli, Dipartimento di Ingegneria, Via Roma, 29, 81031 Aversa

15:15 - 15:30

ANA-OR-050. Lab-made electroanalytical devices equipped with CO2 laser-assembled nanostructured materials

Della Pelle, Flavio[1]; Scroccarello, Annalisa[1]; Silveri, Filippo[1]; Paolini, Davide[1]; Fiori, Selene[1]; Bollella, Paolo[2]; Compagnone, Dario[1]
1: Department of Bioscience and Technology for Food, Agriculture and Environment, University of Teramo, Campus "Aurelio Saliceti" Via R. Balzarini 1, 64100 Teramo, Italy; 2: Department of Chemistry, University of Bari Aldo Moro, Via E. Orabona 4, 70125 Bari, Italy

15:30 - 15:45

ANA-OR-051. Optimization of bioplastic films' properties for colorimetric sensing applications in the food sector

Magnaghi, Lisa Rita[1,2]; Alberti, Giancarla[1]; Biesuz, Raffaela[1,2]
1: Università degli Studi di Pavia, Dipartimento di Chimica, Viale Taramelli 12, Pavia, 27100, Italy; 2: INSTM, Unità di Ricerca di Pavia, Via G. Giusti 9, Firenze, 50121, Italy

15:45 - 16:00

ANA-OR-052. Analysis of clinical samples of pancreatic cyst's lesions with a multi-analyte bioelectronic SiMoT array benchmarked against ultrasensitive chemiluminescent immunoassay

Macchia, Eleonora[1,2]; Scandurra, Cecilia[3]; Björkström, Kim[2]; Caputo, Mariapia[1]; Sarcina, Lucia[3]; Di Franco, Cinzia[4]; Catacchio, Michele[1]; Caironi, Mario[5]; Cantatore, Eugenio[6]; Torricelli, Fabrizio[7]; Esposito, Irene[8]; Scamarcio, Gaetano[9]; Torsi, Luisa[2,3]
1: Dipartimento di Farmacia-Scienze del Farmaco - Università degli studi di Bari Aldo Moro, Via Orabona 4, Bari; 2: The Faculty of Science and Engineering, Åbo Akademi University, 20500 Turku, Finland; 3: Dipartimento di

1: Dipartimento di Chimica, Università degli Studi di Milano, Italia; 2: Dipartimento di Elettronica e Telecomunicazioni, Politecnico di Torino, Italia; 3: Dipartimento di Lettere e Filosofia, Università di Trento, Italia

16:00 - 16:15

ABC-OR-031. Hyperspectral imaging and multiblock chemometric strategies for the study of multilayered paintings

Sciutto, Giorgia[1]; Catelli, Emilio[1]; Li, Zelan[1]; Occhipinti, Michele[2]; Prati, Silvia[1]; Tocchio, Alessandro[2]; Mazzeo, Rocco[1]; Oliveri, Paolo[3]

1: Department of Chemistry "G. Ciamician", University of Bologna, Ravenna Campus, Via Guaccimanni, 42, 48121 Ravenna; 2: Bruker Nano Analytics, via Conte Rosso 23, 20134, Milano, Italy; 3: Department of Pharmacy, University of Genova, Viale Cembrano 4, I-16148 Genova

16:15 - 16:30

ABC-OR-032. Materials and methodologies for the conservation of outdoor contemporary mural paintings

Cairoli, Aurora[1,2]; Zucchelli, Margherita[2]; Zendri, Elisabetta[2]

1: Sapienza Università di Roma, Italia; 2: Ca' Foscari Università di Venezia, Italia

ALI-OR-012. Preparation and characterization of chitosan/tpp nanoparticles loaded with olive pomace phenolic compounds

Fierri, Ilaria[1]; Chignola, Roberto[1]; Bellumori, Maria[2]; Romeo, Alessandro[3]; Benetti, Federico[4]; Zoccatelli, Gianni[1]

1: Department of Biotechnology, University of Verona, Strada le Grazie, 15, 37134, Verona (Italy); 2: Department of NEUROFARBA, University of Florence, Via Ugo Schiff, 6, 50019, Sesto F.No, Florence (Italy); 3: Department of Computer Science, University of Verona, Strada le Grazie, 15, 37134, Verona (Italy); 4: ECSIN-ECAMRICERT SRL, Corso Stati Uniti, 4, 35127, Padova (Italy)

15:45 - 16:00

ALI-OR-011. A multi-platform metabolomics approach for the characterization of novel food ingredients

Fuso, Andrea[1]; Rosso, Franco[2]; Rosso, Ginevra[2]; Manera, Ileana[2]; Caligiani, Augusta[1]

1: Università degli Studi di Parma, Italia; 2: Soremartec Italia Srl, Ferrero Group, 12051 Alba, CN, Italy

16:00 - 16:15

ALI-OR-008. Green extraction techniques to obtain potential ready to use nutraceutical supplements from Apulian Salicornia europaea L.

Limongelli, Francesco[1]; Panic, Manuela[2]; Damjanovic, Anja[2]; Tardugno, Roberta[3]; Clodoveo, Maria Lisa[4]; Crupi, Pasquale[4]; Redovnikovic, Ivana[2]; Corbo, Filomena[3]

1: Department of food and soil science, University of Bari "Aldo Moro", Italy; 2: Faculty of food technology and biotechnology, University of Zagreb, Croatia; 3: Department of pharmacy - drug science, University of Bari "Aldo Moro", Italy; 4: Interdisciplinary department of medicine, University of Bari "Aldo Moro", Italy

16:15 - 16:30

ALI-OR-003. Modulating the nutritional profile of the novel food Acheta domesticus by dietary supplementation with the eco-sustainable alga Ascophyllum nodosum

15:45 - 16:00

ALI-OR-024. Paracoccus sp LL1 a promising β-carotene cell factory

Tropea, Alessia[1]; Giuffrida, Daniele[2]; Rigano, Francesca[1]; Cafarella, Cinzia[1]; Micalizzi, Giuseppe[1]; Chiaia, Valentina[1]; La Tella, Roberta[1]; Dufossè, Laurent[3]; Kim, Beom Soo[4]; Mondello, Luigi[1,5]

1: Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy; 2: Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Via Consolare Valeria, 98125 Messina, Italy; 3: CHEMBIOPRO Laboratoire de Chimie et Biotechnologie des Produits Naturels, ESIROI Agroalimentaire, Université de La Réunion, 15 Avenue René Cassin, F-97400 Saint-Denis, Ile de La Réunion, France; 4: Department of Chemical Engineering, Chungbuk National University, Cheongju, Chungbuk 28644, Republic of Korea; 5: Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy

16:00 - 16:15

ALI-OR-022. Effect of acorn harvesting time on the nutritional profile, polyphenols content, antioxidant activity and volatiles of different acorn flours.

Acquaticci, Laura[1]; Santanatoglia, Agnese[1]; Vittadini, Elena[2]; La Terza, Antonietta[2]; Beghelli, Daniela[2]; Caprioli, Giovanni[1]

1: Chemistry Interdisciplinary Project (ChIP), University of Camerino, 62032, Camerino (MC), Italy.; 2: School of Biosciences and Veterinary Medicine, University of Camerino, Camerino (MC), Italy.

16:15 - 16:30

ALI-OR-021. Insights into the Structure–Capacity of Food

Chimica - Università degli studi di Bari Aldo Moro, Via Orabona 4, Bari; 4: CNR IFN, 70126 Bari, Italy; 5: Center for Nano Science and Technology, Istituto Italiano di Tecnologia, Via Rubattino 81, 20134, Milan, Italy; 6: Department of Electrical Engineering, Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands; 7: Dipartimento Ingegneria dell'Informazione, Università degli Studi di Brescia, 25123, Brescia, Italy; 8: Institute of Pathology, Heinrich-Heine University and University Hospital of Düsseldorf, 40225, Germany; 9: Dipartimento Interateneo di Fisica, Università degli Studi di Bari Aldo Moro, 70125 Bari, Italy

16:00 - 16:15

ANA-OR-053. Synthetic transcriptional cell-free systems for diagnostic and drug delivery applications

Ranallo, Simona; Ricci, Francesco

University of Rome Tor Vergata, Italia

16:15 - 16:30

ANA-OR-054. Bio-electronic platforms for fast and ultra-sensitive virus detection

Sarcina, Lucia[1,2]; Scandurra, Cecilia[1]; Caputo, Mariapia[3]; Catacchio, Michele[3]; Di Franco, Cinzia[4,2]; Scamarcio, Gaetano[5,2]; Bollella, Paolo[1,2]; Torricelli, Fabrizio[6]; Macchia, Eleonora[2,3]; Torsi, Luisa[1,2]

1: Dipartimento di Chimica - Università degli studi di Bari Aldo Moro, via Orabona 4 - Bari; 2: Centre for Colloid and Surface Science, Università degli Studi di Bari Aldo Moro, Via Orabona 4, Bari; 3: Dipartimento di Farmacia-Scienze del Farmaco - Università degli studi di Bari Aldo Moro, Via Orabona 4, Bari; 4: CNR – Institute of Photonics and Nanotechnologies, Via Amendola 173, Bari; 5: Dipartimento Interateneo di Fisica - Università degli studi di Bari Aldo Moro, Via Orabona 4, Bari; 6: Dipartimento di Ingegneria dell'Informazione - Università degli studi di Brescia, via Branze 38, Brescia

ANA-2C: Divisione di Chimica Analitica - Parte 2C
Luogo, sala: **Orange1 (level -1)**
Chair: **Alberto Pettignano**, Università di Palermo; alberto.pettignano@unipa.it
Chair: **Carmelo Sgarlata**, Università degli Studi di Catania; sgarlata@unict.it

14:30 - 15:00

ANA-KN-05. When we force equilibrium chemistry out of its comfort zone. A case study: recovery of critical metals from exhausted batteries

Lando, Gabriele[1]; Bianchi, Andrea[2]; Magnaghi, Lisa Rita[2]; Bretti, Clemente[1]; Milea, Demetrio[1]; Quartarone, Eliana[2]; De Stefano, Concetta[1]; Biesuz, Raffaela[2]
1: Università di Messina, Italia; 2: Università di Pavia, Italia

15:00 - 15:15

ANA-OR-063. Unravelling the binding features for the recognition equilibria of quercetin and its zinc(II)-complex into a macrocyclic-based micellar aggregate

Santonoceta, Giuseppina Domenica Giovanna[1]; Ferreri, Loredana[2]; Gama, Sofia[3]; Consoli, Grazia Maria Letizia[2]; Sgarlata, Carmelo[1]
1: Dipartimento di Scienze Chimiche, Università degli Studi di Catania, Viale A. Doria 6, 95125, Catania, Italy; 2: Istituto di Chimica Biomolecolare, CNR, Via Paolo Gaifami 18, 95126 Catania, Italy; 3: Centro de Ciências e Tecnologias Nucleares, Instituto Superior Técnico, Universidade de Lisboa, Estrada Nacional 10 (km 1397), 2695-066, Bobadela LRS, Portugal

15:15 - 15:30

ANA-OR-064. Solution equilibria studies on similarities between Fe(III) and Ga(III) hydroxypyrone complexes

Cappai, Rosita[1]; Fantasia, Alessandra[2]; Griffith, Darren[3]; Santos, Maria Amelia[4];

Ajdini, Behixhe[1]; Biancarosa, Irene[2]; Cardinaletti, Gloriana[3]; Illuminati, Silvia[1]; Annibaldi, Anna[1]; Girolametti, Federico[1]; Fanelli, Matteo[1]; Massi, Lorenzo[1]; Truzzi, Cristina[1]
1: Università Politecnica delle Marche, Italia; 2: Nutrinsect, Montecassiano, Italia; 3: Università di Udine, Italia

ANA-3C: Divisione di Chimica Analitica - Parte 3C
Luogo, sala: **Orange2 (level -1)**
Chair: **Davide Ballabio**, Università Milano - Bicocca; davide.ballabio@unimib.it
Chair: **Giuseppe Spoto**, Università degli Studi di Catania; giuseppe.spoto@unict.it

14:30 - 15:00

ANA-KN-06. XPS study and correlation between surface chemistry and catalytic activity of various oxides

Ditaranto, Nicoletta
Dipartimento di Chimica and CSGI – Consorzio Interuniversitario per lo sviluppo dei Sistemi a Grande Interfase, Unità di Bari, c/o Dipartimento di Chimica, Università degli Studi Bari Aldo Moro, via Edoardo Orabona 4, 70126 – Bari, I

15:00 - 15:15

ANA-OR-077. Mechanistic insights into the antimicrobial effect of copper-chitosan composites on Escherichia coli by scanning probe microscopy

Sportelli, Maria Chiara[1]; Caniglia, Giada[2]; d'Agostino, Danilo[1]; Mizaikoff, Boris[2]; Kranz, Christine[2]; Cioffi, Nicola[1]
1: Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Italia; 2: Institute of Analytical and Bioanalytical Chemistry, Ulm University, Albert Einstein Allee, 11, 89081, Ulm, Germany

15:15 - 15:30

ANA-OR-078. Analytical Characterization of Electrochemically Prepared Zn-based (Nano)materials

Izzi, Margherita[1,2]; Montefusco, Antonica Valeria[1,2,3]; Muggeo, Aldo[1]; Sportelli, Maria Chiara[1,2]; Gentile, Luigi[1,2]; Cioffi, Nicola[1,2]; Picca, Rosaria Anna[1,2]
1: Università degli studi di Bari Aldo Moro, Italia; 2: CSGI (Center for Colloid and Surface

Antioxidant Compounds Assessed Using Coulometry

Sammarco, Anna Sofia[1]; Picariello, Gianluca[2]; Siano, Francesco[2]; Vasca, Ermanno[1]
1: Università degli Studi di Salerno, Italia; 2: bIstituto di Scienze dell'Alimentazione – Consiglio Nazionale delle Ricerche, Avellino - Italy

CSB-2: Divisione di Chimica dei Sistemi Biologici - Parte 2
Luogo, sala: **Meeting3 (level -1)**

14:30 - 14:45

CSB-OR-019. Not only vinegar: Acetic Acid Bacteria as versatile biocatalysts for selective oxidation

Nespoli, Luca; Ribul Moro, Emma; Donzella, Silvia; Molinari, Francesco; Contente, Martina Letizia; Romano, Diego
Università degli Studi di Milano, Italia

14:45 - 15:00

CSB-OR-015. Enhancing Vaccine Efficacy through TLR4-based Adjuvant systems

Shaik, Mohammed Monsoor[1]; Romerio, Alessio[1]; Pasco, Samel Tanner[2]; Italia, Alice[1]; Lami, Federico[1]; Anguita, Juan[2]; Fernández-Tejada, Alberto[2]; Re, Francesca[1]; Peri, Francesco[1]
1: Università degli Studi di Milano-Bicocca, Piazza dell'Ateneo Nuovo, 1, 20126 Milano, Italy; 2: CIC bioGUNE, Parque Tecnológico de Bizkaia, Edificio 801 A - 48160 Derio, Spain

15:00 - 15:15

CSB-OR-016. Revealing the regulatory mechanisms of Rac1 small GTPases through all-atom simulations

Parise, Angela; Cresca, Sofia; Magistrato, Alessandra
Consiglio Nazionale delle ricerche (CNR)-IOM c/o International School for Advanced Studies (SISSA/ISAS), via Bonomea 265, 34136 Trieste, Italy

15:15 - 15:30

CSB-OR-020. Surface Plasmon Resonance and Photo-Induced Crosslinking as novel tools to monitor protein misfolding and oligomerization.

FAR-1C: Divisione di Chimica Farmaceutica - Parte 1C
Luogo, sala: **Blue1 (level +1)**
Chair: **Maria-Laura Bolognesi**, Alma Mater Studiorum - Università di Bologna; marialaura.bolognesi@unibo.it
Chair: **Violetta Cecchetti**, Università di Perugia; violetta.cecchetti@unipg.it

14:30 - 14:45

FAR-PZ-01. Premio Divisione di Chimica Farmaceutica. Discovery of a polypharmacological drug candidate restoring the physiological Tau-microtubule interaction for the treatment of Alzheimer's disease

Pinzi, Luca[1]; Conze, Christian[2]; Bisi, Nicolo[2]; Dalla Torre, Gabriele[1]; Soliman, Ahmed[2]; Nanci, Monteiro-Abreu[2]; Trushina, Nataliya I.[2]; Krusenbaum, Andrea[2]; Khodaei Dolouei, Maryam[2]; Hellwig, Andrea[3]; Christodoulou, Michael S.[4]; Passarella, Daniele[4]; Bakota, Lidia[2]; Brandt, Roland[2]; Rastelli, Giulio[1]
1: Department of Life Sciences, University of Modena and Reggio Emilia, Modena, Italy.; 2: Department of Neurobiology, Osnabrück University, Osnabrück, Germany.; 3: Department of Neurobiology, Heidelberg University, Heidelberg, Germany.; 4: Department of Chemistry, University of Milan, Milan, Italy.

14:45 - 15:00

FAR-PZ-02. Premio Divisione di Chimica Farmaceutica. Identification of new small molecule nsp13 inhibitors as pan-Coronavirus antiviral agents

Madia, Valentina Noemi[1]; Albano, Aurora[1]; Ruggieri, Giuseppe[1]; Ialongo, Davide[1]; Patacchini, Elisa[1]; Arpacioglu, Merve[1]; Messore, Antonella[1]; Scipione, Luigi[1]; Corona, Angela[2]; Emmolo, Roberta[2]; Amatore, Donatella[3]; Faggioni, Giovanni[3]; De Santis, Riccardo[3]; Lista, Florigio[3];

Crisponi, Guido[2]; Nurchi, Valeria Marina[2]
1: Università di Sassari, Italia; 2: Università di Cagliari; 3: Università di Dublino; 4: Università di Lisbona

15:30 - 15:45

ANA-OR-065. Thermodynamic Insights into Trans-Aconitate Interactions with different cations of biological and environmental importance

Bretti, Clemente; Milea, Demetrio; Lando, Gabriele; Cardiano, Paola; Crea, Francesco; Gattuso, Giuseppe; Cigala, Rosalia Maria; Irto, Anna; De Stefano, Concetta
Università di Messina, Italia

15:45 - 16:00

ANA-OR-066. An overview of the speciation and antioxidant ability of morin, quercetin and their M2+-, M3+-complexes under physiological conditions

Abate, Chiara[1]; Giuffrè, Ottavia[1,2]; Foti, Claudia[1]
1: Università degli Studi di Messina; 2: CNR-IPCF

16:00 - 16:15

ANA-OR-067. Beyond the thermodynamics of metal-peptide complexes: new perspectives for antimicrobial agents

Bellotti, Denise[1]; Leveraro, Silvia[1]; Garstka, Kinga[2]; Rowińska-Żyrek, Magdalena[2]; Remelli, Maurizio[1]
1: Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via Luigi Borsari 46, 44121 Ferrara, Italy; 2: Faculty of Chemistry, University of Wroclaw, ul. F. Joliot Curie 14, 50-383 Wroclaw, Poland

16:15 - 16:30

ANA-OR-068. Speciation Investigation of Gadolinium Based Contrasting Agents in Wastewater and Seawater of the Northern Adriatic Sea

Chenet, Tatiana[1]; Costa, Valentina[1]; Sarti, Elena[2]; Fabbro, Cinzia[3]; Stevanin, Claudia[1]; Spadafora, Damiana Natasha[2]; Cescon, Mirco[2]; Ciuffreda, Elena[2]; Cavazzini, Alberto[2,4]; Pasti, Luisa[1]
1: Department of Environmental and Prevention Sciences, Science), Italia; 3: Politecnico di Bari, Italia

15:30 - 15:45

ANA-OR-079. Quantitative XPS analysis: the case of NiP alloys

Biggio, Deborah; Elsener, Bernhard; Fantauzzi, Marzia; Rossi, Antonella
Dipartimento di Scienze Chimiche e Geologiche, Università di Cagliari, Cagliari, Italia

15:45 - 16:00

ANA-OR-080. NIR-Hyperspectral Imaging as an analytical tool to identify adulterations in dried oregano leaves

Calvini, Rosalba[1]; Ferrari, Veronica[1]; Menozzi, Camilla[1]; Ulrici, Alessandro[1]; Bragolusi, Marco[2]; Piro, Roberto[2]; Tata, Alessandra[2]; Suman, Michele[3,4]; Foca, Giorgia[1]
1: Dipartimento di Scienze della Vita, Università di Modena e Reggio Emilia, Pad. Besta, Via Amendola 2, 42122, Reggio Emilia; 2: Istituto Zooprofilattico Sperimentale Delle Venezie, Laboratorio di Chimica Sperimentale, Viale Fiume 78, 36100, Vicenza; 3: Analytical Food Science, Barilla G. e R. Fratelli S.p.A., Via Mantova, 166, 43122, Parma; 4: Department for Sustainable Food Process, Catholic University Sacred Heart, Piacenza

16:00 - 16:15

ANA-OR-081. TD-NMR spectroscopy and chemometrics for determining cross-linking density in compounds for the tyre industry.

Voccio, Riccardo[1,2]; Malegori, Cristina[1]; Oliveri, Paolo[1]; Arimondi, Marco[3]; Luciano, Giorgio[4]; Cettolin, Mattia[3]
1: University of Genova, Department of Pharmacy (DIFAR), Viale Cembrano, 4. Genova, 16148, Italy; 2: University of Genova, Department of Chemistry and Industrial Chemistry (DCCI), Via Dodecaneso, 31. Genova, 16146, Italy.; 3: Pirelli Tyre SpA, Viale Piero e Alberto Pirelli, 25. Milano, 20126, Italy.; 4: Istituto di Scienze e Tecnologie Chimiche “Giulio Natta”, Consiglio Nazionale delle Ricerche, SCITEC-CNR,

Perina, Maria Luisa[1]; Calcagno, Damiano[2]; Zingale, Gabriele Antonio[1]; Pandino, Irene[2]; Tuccitto, Nunzio[1]; Oliveri, Valentina[1]; Parravano, Maria Cristina[2]; Grasso, Giuseppe[1]
1: Università degli Studi di Catania, Italia; 2: ICCS-Fondazione Bietti, Via Santo Stefano Rotondo 6, Roma, Italia

15:30 - 15:45

CSB-OR-018. New Curcumin Mimics based on Ethyl Phosphonates: Neuroprotective or Anticancer Activity depending on Aromatic Moiety

Pagano, Rita[1]; Romanucci, Valeria[1]; Koeberle, Solveigh[2]; Di Gaetano, Sonia[3]; Capasso, Domenica[4]; Sciacca, Michele Francesco Maria[5]; Lanza, Valeria[5]; Zarrelli, Armando[1]; Koeberle, Andreas[2]; Milardi, Danilo[5]; Di Fabio, Giovanni[1]
1: Department of Chemical Sciences, University of Naples "Federico II", Naples, Italy; 2: Michael Popp Institute, Center for Molecular Biosciences Innsbruck (CMBI), University of Innsbruck, Tirol, Innsbruck, Austria; 3: Institute of Biostructures and Bioimaging, National Research Council, Naples, Italy; 4: Department of Physics "Ettore Pancini", University of Naples Federico II, Naples, Italy; 5: Institute of Crystallography, National Research Council, Catania, Italy

15:45 - 16:00

CSB-OR-017. A drug-repurposing strategy to target DNA G-quadruplexes in breast cancer

Arciuolo, Valentina[1]; Marzano, Simona[1]; Moraca, Federica[1]; Malfitano, Anna Maria[2]; Pagano, Bruno[1]; Amato, Jussara[1]
1: Dipartimento di Farmacia, Università degli Studi di Napoli Federico II; 2: Dipartimento di Scienze Mediche Traslazionali, Università degli Studi di Napoli Federico II

16:00 - 16:15

CSB-OR-021. Computational Multiscale Approach applied to NDM-1 to better understand the inhibition mechanism promoted by Ebselen

Manelfi, Candida[4]; Iaconis, Daniela[4]; Talarico, Carmine[4]; Tramontano, Enzo[2]; Di Santo, Roberto[1]; Costi, Roberta[1]
1: Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, “Sapienza” Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy; 2: Department of Life and Environmental Sciences, University of Cagliari, Cittadella Universitaria di Monserrato, SS554 -09042 Monserrato (CA) Italy; 3: Army Medical Center, Scientific Department, p.za Celimontana 50, Rome 00184, Italy; 4: EXSCALATE – Dompè Farmaceutici SpA, via Tommaso De Amicis 95, 80131, Napoli, Italy

15:00 - 15:30

Inverse design for the generation of targeted libraries in drug discovery

Ciriaco, Fulvio[1]; Gambacorta, Nicola[2,3]; Trisciuzzi, Daniela[2]; Togo, Maria Vittoria[2]; Mastrolorito, Fabrizio[2]; Belgiovine, Valentina[2]; Cutropia, Francesca[2]; Catto, Marco[2]; de Candia, Modesto[2]; Amoroso, Nicola[2,4]; Altomare, Cosimo Damiano[2]; Nicolotti, Orazio[2]
1: Dipartimento di Chimica, Università degli Studi di Bari 'Aldo Moro', Italia; 2: Dipartimento di Farmacia-Scienze del Farmaco, Università degli Studi di Bari 'Aldo Moro', Italia; 3: Divisione di Genetica Medica, IRCSS Casa Sollievo della Sofferenza, Viale Cappuccini, S.C., San Giovanni Rotondo (FG), 71013, Italy.; 4: Istituto Nazionale di Fisica Nucleare, Sezione di Bari, 70125, Bari, Italy

15:30 - 16:00

Integrated Phenotypic Strategies for Unlocking Challenging Biological Pathways

Radi, Marco
Università di Parma, Italia

16:00 - 16:15

FAR-OR-011. Identification of small molecules affecting the interaction between human hemoglobin and Staphylococcus aureus IsdB hemophore

Spyrakis, Francesca[1]; Cozzi, Monica[2]; Failla, Mariacristina[1]; Gianquinto, Eleonora[1]; Kovachka,

University of Ferrara, Via L. Borsari 46, 44121 Ferrara; 2: Department of Chemical, Pharmaceutical, and Agricultural Sciences, Via L. Borsari 46, University of Ferrara, 44121 Ferrara; 3: National Institute of Oceanography and Applied Geophysics – OGS, via A. Piccard 54, 34151 Santa Croce, Trieste; 4: Council for Agricultural Research and Economics, CREA, via della Navicella 2/4, 00184 Rome

FIS-1C: Divisione di Chimica Fisica - Parte 1C
Luogo, sala: **Yellow1 (level +1)**
Chair: **Elena Selli**, Università degli Studi di Milano; elena.selli@unimi.it

14:30 - 15:00

Opportunities and Challenges for the development of solar to fuels technologies: a photochemist's viewpoint

Durrant, James
Imperial College London, Regno Unito; Gran Bretagna

15:00 - 15:15

FIS-OR-017. BiVO4-based Photoanodes for Solar Energy Conversion

Dozzi, Maria Vittoria; Polo, Annalisa; Nomellini, Chiara; Grigioni, Ivan; Selli, Elena

Via De Marini 6. 16149, Genova, Italy.

16:15 - 16:30

ANA-OR-082. Enhancing Congenital Heart Disease Prediction: A Comparative Study of Machine Learning Approaches in Metabolomic and Lipidomic Data Analysis

Caponigro, Vicky[1]; Mires, Stuart[2]; Marini, Federico[3]; Sommella, Eduardo[1]; Campiglia, Pietro[1]; Caputo, Massimo[2]
1: Department of Pharmacy, University of Salerno, Via Giovanni Paolo II, 132, 84084 Fisciano, Italy; 2: University of Bristol, Bristol, UK; 3: Department of Chemistry, University of Rome "La Sapienza", Piazzale Aldo Moro 5, 00185 Rome, Italy

IND-1C: Divisione di Chimica Industriale - Parte 1C
Luogo, sala: **Yellow3 (level +1)**
Chair: **Martino Di Serio**, Università di Napoli Federico II; diserio@unina.it
Chair: **Emilia Paone**, Università Mediterranea di Reggio Calabria; emilia.paone@unirc.it

14:30 - 14:45

Structural Characterization of Olefin-based Multiblock Copolymers by Chain Shuttling Technology

Urciuoli, Gaia[1,2]
1: Università degli Studi di Napoli "Federico II", Italia; 2: DPI, P.O. Box 902, 5600 AX-Eindhoven, the Netherlands

14:45 - 15:00

IND-OR-017. From biomass valorisation to new biomaterials

Ciardullo, Giada[1]; Parise, Angela[2]; Prejanò, Mario[1]; Marino, Tiziana[1]
1: Dipartimento di Chimica E Tecnologie Chimiche, Laboratorio PROMOCS Cubo 14C, Università della Calabria, Rende (CS); 2: Consiglio Nazionale Delle Ricerche (CNR)-IOM C/O International School for Advanced Studies (SISSA/ISAS), Via Bonomea 265, Trieste (TS)

16:15 - 16:30

CSB-OR-022. Role of the metal ion and of the coordinating residues in the metallo-protein Ros as model of the prokaryotic zinc finger domain

Dragone, Martina[1]; Turelli, Michele[2]; Caputo, Gaetano[1]; Shitaye, Getasew[1]; Iacovino, Rosa[1]; D'Abrosca, Gianluca[3]; Russo, Luigi[1]; Makgieri, Gaetano[1]; Fattorusso, Roberto[1]; Ciofini, Ilaria[2]; Adamo, Carlo[2]; Isernia, Carla[1]
1: Department of Environmental, Biological and Pharmaceutical Science and Technology, University of Campania Luigi Vanvitelli, Caserta, Italy; 2: Chimie ParisTech, PSL Research University, CNRS, Institut de Recherche de Chimie Paris, Paris, France; 3: Department of Clinical and Experimental Medicine, University of Foggia, Italy

INO-1C: Divisione di Chimica Inorganica - Parte 1C
Luogo, sala: **Blue2 (level +1)**
Chair: **Barbara Milani**, Unviersità degli Studi di Trieste; milaniba@units.it

14:30 - 14:45

INO-OR-041. MNPs@Captisol® assemblies for magnetic water remediation

Nocito, Giuseppe[1]; Burduja, Nina[1,2]; Trapani, Mariachiara[1]; Riminucci, Alberto[3]; Di Corato, Riccardo[4]; Gulino, Antonino[5]; Nicosia, Angelo[5]; Mineo, Placido[5]; Mazzaglia, Antonino[1]
1: CNR-ISMN URT of Messina at Dept. ChiBioFarAm, University of Messina, Viale F. Stagno d'Alcontres 31, Messina; 2: Dept. ChiBioFarAm, University of Messina, Viale F. Stagno

Sandra[3]; Buoli Comani, Valeria[2]; Compari, Carlotta[2]; De Bei, Omar[4]; Giaccari, Roberta[2]; Marchesani, Francesco[4]; Marchetti, Marialaura[4]; Ronda, Luca[4]; Rolando, Barbara[1]; Baroni, Massimo[5]; Cruciani, Gabriele[6]; Campanini, Barbara[2]; Bettati, Stefano[4]; Faggiano, Serena[2]; Lazzarato, Loretta[1]
1: Department of Drug Science and Technology, University of Turin, Turin, Italy; 2: Department of Food and Drug, University of Parma, Parma, Italy; 3: The Herbert Wertheim UF Scripps Institute for Biomedical Innovation & Technology, Jupiter, Florida, USA; 4: Department of Medicine and Surgery, University of Parma, Parma, Italy; 5: Molecular Discovery Ltd, Kinetic Business Centre, Elstree, Borehamwood, Hertfordshire, UK; 6: Department of Chemistry, Biology and Biotechnology, University of Perugia, Perugia, Italy

16:15 - 16:30

FAR-OR-012. Exploiting new medicinal chemistry trends to fight the antimicrobial resistance big challenge

Diamanti, Eleonora[1]; Hirsch, Anna[2]; Bolognesi, Maria Laura[1]
1: Universita´ di Bologna, Italia; 2: Helmholtz Institute for Pharmaceutical Research (HIPS) − Helmholtz Centre for Infection Research (HZI), Saarbrücken, Germany

ORG-1C: Divisione di Chimica Organica - Parte 1C
Luogo, sala: **Red1 (level +1)**
Chair: **Emanuela Licandro**, Università degli Studi di Milano; emanuela.licandro@unimi.it
Chair: **Cristiano Zonta**, Università di Padova; cristiano.zonta@unipd.it

14:30 - 14:45

ORG-PZ-11. Premio Tesi di Dottorato. Chalcogens: a Powerful Tool for Helicenes Construction, Organocatalysis and Materials

Lupi, Michela; Menichetti, Stefano; Viglianisi, Caterina
Department of Chemistry "Ugo Schiff" (DICUS) & INSTM Research Unit, University of Florence, Via della Lastruccia 3-13, Sesto Fiorentino 50019, Italy.

Università degli Studi di Milano, Italia

15:15 - 15:30

FIS-OR-018. Semi-Transparent Perovskite Solar Cells with Dielectric/Metal/Dielectric Electrodes

Ferrara, Vittorio; Arrabito, Giuseppe; Principato, Fabio; Vetri, Valeria; Scopelliti, Michelangelo; Pignataro, Bruno
Università degli Studi di Palermo, Italia

15:30 - 15:45

FIS-OR-019. Copper tungstate-based thin film photoanodes for solar water oxidation

Polo, Annalisa; Dozzi, Maria Vittoria; Grigioni, Ivan; Nomellini, Chiara; Selli, Elena
Dipartiemento di Chimica, Università degli Studi di Milano, via Golgi 19, 20133 Milano, Italia

15:45 - 16:00

FIS-OR-020. The C treasure in agrifood wastes for solid state hydrogen storage

Milanese, Chiara[1]; Paraboschi, Sara[1]; La Cognata, Sonia[1]; Conti, Emanuele[1]; Amendola, Valeria[1]; Girella, Alessandro[1]; Rinaldi, Alessia[2]; Pontiroli, Daniele[2]; Magnani, Giacomo[2]; Riccò, Mauro[2]; Ridi, Francesca[3]; Miglietta, Maria Lucia[4]
1: Università di Pavia, Italia; 2: Università di Parma, Italia; 3: Università di Firenze, Italia; 4: ENEA Portici

16:00 - 16:15

FIS-OR-021. Fast microwave-assisted syntheses for layered oxides as positive electrodes in conventional and solid-state batteries

Murgia, Fabrizio[1]; Caggiu, Laura[1]; Foddai, Aurora Francesca[1]; Berthelot, Romain[2]; Garroni, Sebastiano[1]; Mulas, Gabriele[1]; Enzo, Stefano[1]; Černý, Radovan[3]
1: DSCFMN, Università di Sassari, Italia; 2: ICGM, Université de Montpellier, France; 3: DQMP, Université de Genève, Switzerland

Cappitti, Alice[1]; Bianchini, Emanuele[1]; N. Fernandes, Susete[2]; Martella, Daniele[1]; Parmeggiani, Camilla[1]; Salvini, Antonella[1]
1: Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino, Italy; 2: i3N/CENIMAT, Department of Materials Science, NOVA School of Science and Technology, 2825-516 Caparica, Portugal

15:00 - 15:15

IND-OR-018. Levulinate esters valorization: the production of γ-valerolactone and consecutive products through an innovative gas-phase continuous flow process

Visentin, Luca[1]; Zappalorti, Pietro[1]; Albonetti, Stefania[1]; Dimitratos, Nikolaos[1]; Ardemani, Leandro[2]; Scotti, Nicola[2]; Cavani, Fabrizio[1]; Tabanelli, Tommaso[1]
1: Department of Industrial Chemistry "Toso Montanari" and Center for Chemical Catalysis-C3, University of Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy; 2: CNR Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", via Golgi 19, 20133 Milano, Italy

15:15 - 15:30

IND-OR-019. High accuracy DLP printing of porous γ-Al2O3 catalysts: a revolutionary approach to catalyst shaping

Mastroianni, Luca[1,2]; Russo, Vincenzo[1]; Di Serio, Martino[1]; Eränen, Kari[2]; Murzin, Dmitry Yu.[2]; Salmi, Tapio[2]
1: Università degli Studi di Napoli Federico II, via Cintia, IT-80126 Napoli, Italy; 2: Åbo Akademi, Laboratory of Industrial Chemistry and Reaction Engineering (TKR), FI-20500 Turku/Åbo, Finland

15:30 - 15:45

IND-OR-020. Solvent-free condensation of ethyl levulinate with phenol promoted by Amberlyst-15: kinetics and modelling

Orabona, Federica[1,2]; Capasso, Salvatore[2]; Taddeo, Francesco[2]; Eränen, Kari[1]; Pérez-Sena, Wander[1]; Verdolotti, Letizia[3]; Tesser, Riccardo[2]; Di Serio, Martino[2]; Murzin, Dmitry[1]; Salmi, Tapio[1]; Russo, Vincenzo[2]
d'Alcontres 31, Messina; 3: CNR-ISMN Bologna, Via P. Gobetti 101, Bologna; 4: CNR-IMM Lecce, SP Lecce-Monteroni km 1,200, Lecce; 5: Dept. of Chemical Sciences, University of Catania, Viale A. Doria 6, Catania

14:45 - 15:00

INO-OR-044. Exchange bias in metal-doped single-phase ferrites induced by defect engineering of core@shell nanoparticles.

Muzzi, Beatrice
CNR-ICCOM, Italia

15:00 - 15:15

INO-OR-047. Towards the full atomic-to-nanometer characterization of CdSe Quantum Dots

Dengo, Nicola[1]; Dirin, Dmitry N[2,3]; Cervellino, Antonio[4]; Pedersen, Jan Skov[5]; Kovalenko, Maksym V[2,3]; Masciocchi, Norberto[1]; Bertolotti, Federica[1]; Guagliardi, Antonietta[6]
1: Università degli Studi dell'Insubria, Italia; 2: ETH Zurich, Switzerland; 3: Empa-Swiss Federal Laboratories for Materials Science and Technology, Switzerland; 4: SLS, Laboratory for Synchrotron Radiation-Condensed Matter, Switzerland; 5: Aarhus University, Denmark; 6: Istituto di Cristallografia CNR, Italia

15:15 - 15:30

INO-OR-050. Polymerisable ligands: the route to phosphorescent Ir(III)-based metallapolymers

Previati, Eleonora[1,2]; Vigarani, Giulia[2]; Fiorini, Valentina[2]; Massi, Massimiliano[3]; Pucci, Andrea[4]; Giorgini, Loris[2]; Stagni, Stefano[2]
1: Department of Applied Science and Technology, Politecnico di Torino, Italia; 2: Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italia; 3: Department of Chemistry, Curtin University Bentley, Australia; 4: Department of Chemistry and Industrial Chemistry, University of Pisa, Italia

15:30 - 15:45

INO-OR-053. Atomistic modeling for the chirality

14:45 - 15:00

ORG-OR-017. Gold-catalyzed allylation of derivatized tropolones

Gallorini, Giulio[1,2]; Bertuzzi, Giulio[1,2]; Bandini, Marco[1,2]
1: Università di Bologna, Italia; 2: Center for Chemical Catalysis -C3-

15:00 - 15:15

ORG-OR-018. Synthesis of a Novel Fluorinated Climacostol Analogue via DAST-Promoted Reaction

Lupidi, Gabriele[1]; Adamo, Mauro F. A.[2]; Catalani, Elisabetta[3]; Cervia, Davide[3]; Gabrielli, Serena[1]; Gentili, Dario[1]; Ortenzi, Claudio[4]; Petrellini, Alessio[1]; Marcantoni, Enrico[1]
1: Università di Camerino, Italia; 2: Royal College of Surgeons in Ireland, Dublin, Ireland; 3: Department DIBAF, della Tuscia University of Viterbo, 01100 Viterbo, Italy; 4: ECHT, University of Macerata, 62100 Macerata, Italy

15:15 - 15:30

ORG-OR-019. Oxidative anionic homo-Fries rearrangement under bench-type aerobic conditions

Gnavi, Riccardo; De Nardi, Federica; Meazzo, Carolina; Ghinato, Simone; Maranzana, Andrea; Prandi, Cristina; Blangetti, Marco
Università di Torino, Italia

15:30 - 15:45

ORG-OR-020. (L)-Mono-methyl Tyrosine (Mmt): new synthetic strategy via bulky 'forced-traceless' regioselective Pd-catalyzed C(sp2)–H activation

Illuminati, Davide[1]; Trapella, Claudio[2]; Zanirato, Vinicio[2]; Guerrini, Remo[2]; Albanese, Valentina[3]; Sturaro, Chiara[4]; Stragapede, Simona[4]; Malfacini, Davide[5]; Compagnin, Greta[2]; Catani, Martina[2]; Fantinati, Anna[3]
1: Università degli studi di Modena e Reggio Emilia, Department of Life Sciences; 2: Università degli studi di Ferrara, Department of Chemical, Pharmaceutical and Agricultural Sciences; 3: Università degli studi di Ferrara, Department of Environmental and Prevention Sciences; 4: U.O. Neurological Clinic of the University of

16:15 - 16:30

FIS-OR-022. Metal-organic frameworks as solid state conductor for energy storage

Martello, Valentino Gabriel[1,2,3]; Piovano, Alessandro[3]; Bonomo, Matteo[2]; Dinca, Mircea[4]; Gerbaldi, Claudio[3]; Bordiga, Silvia[2]

1: University School for Advanced Studies IUSS Pavia, Italia; 2: Università di Torino, Italia; 3: Politecnico di Torino, Italia; 4: Massachussets Institute of Technology, USA

ORG-2C: Divisione di Chimica Organica - Parte 2C
Luogo, sala: **Green2 (level -1)**
Chair: **Anna Bernardi**, Università degli Studi di Milano; anna.bernardi@unimi.it
Chair: **Lucia Panzella**, Università degli Studi di Napoli Federico II; panzella@unina.it

14:30 - 15:00

ORG-PZ-04. Premio alla Ricerca "Chimica organica per lo sviluppo di processi e prodotti nell'industria".

1: Åbo Akademi, Laboratory of Industrial Chemistry and Reaction Engineering, Henrikinkatu 2, FI-20500 Turku/Åbo; 2: Università degli Studi di Napoli Federico II, Dipartimento di Scienze Chimiche, via Cintia, IT-80126 Napoli; 3: Institute of Polymers, Composites and Biomaterials, National Research Council, IT-80055 Portici, Napoli

15:45 - 16:00

IND-OR-021. Process Intensification in Green Extraction of Agri-Food By-Product: Bioactive Potential Applications and Sustainability Assessments

Capaldi, Giorgio; Grillo, Giorgio; Aimone, Clelia; Cravotto, Giancarlo

University Of Turin, Italia

16:00 - 16:15

IND-OR-022. Kinetic and catalytic aspects involved in the esterification of oleic acid with trimethylolpropane to produce bio-based lubricants

Fortunato, Michele Emanuele[1,2]; Russo, Vincenzo[1,2]; Vitiello, Rosa[1,2]; Di Serio, Martino[1,2]

1: Università di Napoli "Federico II", Dipartimento di Scienze Chimiche, 80126 Napoli, Italy.; 2: CIRCC, Consorzio Interuniversitario di Reattività Chimica e Catalisi,, 70126 Bari, Italia

16:15 - 16:30

IND-OR-023. MW-assisted Anisole Hydrogenation over Commercial Supported Catalysts

Bruschetta, Chiara; Verdini, Federico; Tabasso, Silvia; Manzoli, Maela; Calcio Gaudino, Emanuela; Cravotto, Giancarlo

Università degli Studi di TORINO, Italia

ORG-3C: Divisione di Chimica Organica - Parte 3C
Luogo, sala: **Green3 (level -1)**
Chair: **Antonella Fontana**, università "G. d'Annunzio"; antonella.fontana@unich.it
Chair: **Francesco Nicotra**, Università degli Studi di Milkano-Bicocca; francesco.nicotra@unimib.it

14:30 - 14:45

ORG-PZ-09. Premio Tesi di Dottorato. Carbon Nanodots: transfer study in chiral hybrid perovskites

Fortino, Mariagrazia

Università "Magna Graecia" di Catanzaro, Italia

TEC-C: Divisione di Chimica per le Tecnologie - Parte C
Luogo, sala: **Yellow2 (level +1)**
Chair: **Cristina Leonelli**, Università degli Studi di Modena e Reggio Emilia; cristina.leonelli@unimore.it
Chair: **Andrea Melchior**, Università di Udine; andrea.melchior@uniud.it

14:30 - 14:45

TEC-OR-019. Unlocking the potential: green strategies for rapeseed meal

Ferrara; 5: Università degli studi di Padova, Department of Pharmaceutical and Pharmacological Sciences

15:45 - 16:00

ORG-OR-021. aquoDESs Dilutions: Cluster Formation of Water-Based Deep Eutectic Solvents in Water

Lepore, Elison[1]; Ciancaleoni, Gianluca[2]; Perinelli, Diego Romano[1]; Bonacucina, Giulia[1]; Gabrielli, Serena[1]; de Simone, Gaia[1]; Gabbianelli, Rosita[1]; Bordoni, Laura[1]; Tiecco, Matteo[1]

1: Università di Camerino, Italia; 2: Università di Pisa, Italia

16:00 - 16:15

ORG-OR-022. Organolithium-induced Kinetic Resolution and Anionic Fries Rearrangement of O-aryl Carbamates

Marra, Francesco[1]; Coldham, Iain[2]; Blangetti, Marco[1]

1: Università degli Studi di Torino, Italia; 2: Università di Sheffield, Regno Unito

16:15 - 16:30

ORG-OR-023. Electrochemical Organocatalytic Asymmetric Radical Functionalization of Aldehydes

Mazzarella, Daniele[1]; Qi, Chun[1]; Vanzella, Michael[1]; Sartorel, Andrea[1]; Pelosi, Giorgio[2]; Dell'Amico, Luca[1]

1: Department of Chemical Sciences, University of Padova, Via Francesco Marzolo 1, 35131, Padova (Italy); 2: Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Parco Area delle Scienze 17, 43124, Parma (Italy)

TEO-C: Divisione di Chimica Teorica e Computazionale - Parte C
Luogo, sala: **Orange3 (level -1)**
Chair: **Marco Mendolicchio**, Scuola Normale Superiore; marco.mendolicchio@sns.it

14:30 - 14:45

TEO-OR-017. Exploring glyoxal acetal-based electrolytes for next-generation batteries with polarizable molecular dynamics

Expect the Unexpected: How Understanding Reaction Mechanisms Can Lead to More Efficient Production Processes in the Fine Chemical Industry

Marchioro, Carla
Consultant, Italia

15:00 - 15:15

ORG-PZ-07. Premio alla Ricerca junior "Chimica organica per le scienze della vita". Exploring the Boundless Utility of Chelation Agents: From Therapeutics to Catalysis

Floresta, Giuseppe
Università di Catania, Italia

15:15 - 15:30

ORG-PZ-10. Premio Tesi di Dottorato. Ring-opening reactions of unstrained cyclic aminals with Grignard reagents

Comparini, Lucrezia Margherita; Gallorini, Giulio; Sardelli, Francesca; Favero, Lucilla; Pineschi, Mauro
Università di Pisa, Italia

15:30 - 15:45

ORG-OR-052. From design to in vitro evaluation, through synthesis: a new way of being an organic chemist.

Fortuna, Cosimo Gianluca
Università di Catania, Italia

15:45 - 16:00

ORG-OR-053. Analyzing the interaction between RNA and RBPs (RNA-binding proteins) by NMR spectroscopy: the introduction of small molecules as third wheel

Gado, Irene[1]; Garbagnoli, Martina[2]; Listro, Roberta[2]; Cauteruccio, Silvia[1]; Linciano, Pasquale[2]; Collina, Simona[2]; Vasile, Francesca[1]
1: Università degli studi di Milano, Italia; 2: Università degli studi di Pavia, Italia

16:00 - 16:15

ORG-OR-054. Synthesis of stereoisomeric cannabidiols

Lanaro, Daniele; Allegrini, Pietro; Gambini, Andrea
Indena, Italia

16:15 - 16:30

a bright trip from individual particles to superstructures

Bartolomei, Beatrice[1]; Prato, Maurizio[1,2,3]
1: Department of Chemical and Pharmaceutical Sciences, University of Trieste, via Licio Giorgieri 1, 34127 Trieste, Italy; 2: Centre for Cooperative Research in Biomaterials (CIC BiomaGUNE), Basque Research and Technology Alliance, Paseo de Miramón 194, 20014 Donostia San Sebastián, Spain; 3: Basque Fdn Sci, Ikerbasque, 48013 Bilbao, Spain

14:45 - 15:00

ORG-OR-080. Water soluble Ir-complexes for ECL signal amplification in pathogens detection

Menduti, Luigi[1]; Quadrio, Nicolò[1,2]; Lazaro, Ariadna[2]; Facchetti, Giorgio[1]; Rimoldi, Isabella[1]; De Cola, Luisa[1,2,3]
1: Department of Pharmaceutical Science, Università degli Studi di Milano, Milan 20133, Italy; 2: Institut für Funktionelle Grenzflächen (IFG), Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen 76344, Germany; 3: Department of Biochemistry, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan 20156, Italy

15:00 - 15:15

ORG-OR-081. Functionalization of carbon nanostructures with organic moieties affords composite scaffolds for tissue engineering and regenerative medicine

Ceroni, Ludovica; Benazzato, Stefania; Brun, Linda Maria; Calvillo, Laura; Mba Blazquez, Miriam; Menna, Enzo
Università di Padova, Italia

15:15 - 15:30

ORG-OR-082. Ionic Liquids as Efficient Media in Organic Synthesis and Geothermal Applications

Aloia, Andrea[1]; Nacci, Angelo[1]; Casiello, Michele[2]; Liotta, Domenico[1]; Gentile, Luigi[1]; Monopoli, Antonio[1]
1: Università degli Studi di Bari Aldo Moro, Italia; 2: CNR-ICCOM

15:30 - 15:45

Allevi, Dario[1]; Iazzetti, Antonia[1]; Cairone, Francesco[2]; Fabrizi, Giancarlo[2]; Goggiamani, Antonella[2]
1: Università cattolica del sacro cuore, Roma; 2: Sapienza università di Roma

14:45 - 15:00

TEC-OR-020. Molecular recognition of aromatics in spherical nanocages

Martí-Rujas, Javier[1]; Elli, Stefano[1]; Zanotti, Alessandro[1]; Famulari, Antonino[1,2]; Castiglione, Franca[1]
1: Politecnico di Milano, Italia; 2: INSTM Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Italia

15:00 - 15:15

TEC-OR-021. Engineered Amino Acid-based Supramolecular Architectures

Dichiarante, Valentina; Veronese, Eleonora; Terraneo, Giancarlo; Metrangolo, Pierangelo
Politecnico di Milano, Italia

15:15 - 15:30

TEC-OR-022. Eco-design of recycling/reuse channels for biobased and biodegradable plastics

Romano, Susanna[1]; Orsini, Monica[1]; Sotgiu, Giovanni[1]; De Santis, Serena[1]; Guigo, Nathanaël[2]; Peyron, Stéphane[3]; Gaucel, Sébastien[3]; Aouf, Chahinez[3]
1: Department of Industrial, Electronic and Mechanical Engineering, University of Roma Tre, Rome (Italy); 2: Institute of chemistry, University Côte d'Azur, Nice (France); 3: INRAE-University of Montpellier, UMR IATE, Montpellier (France)

15:30 - 15:45

TEC-OR-023. From biowaste to functional nanodevices: green design of colloidal carbon quantum dots with tunable physicochemical features for bio/chemo-sensing

Russo, Simone[1]; Appavou, Marie-Sousai[2]; Polcak, Josef[3]; Colpo, Pascal[4]; Vitiello, Giuseppe[1,5]

Pierini, Adriano[1]; Piacentini, Vanessa[1]; Brutti, Sergio[1,2]; Bodo, Enrico[1]
1: Università di Roma La Sapienza, Italia; 2: Consiglio Nazionale delle Ricerce, Istituto dei Sistemi Complessi

14:45 - 15:00

TEO-OR-018. Computational Study of Glassy Solid Electrolytes for All-Solid-State Batteries

Bertani, Marco; Pedone, Alfonso
Università di Modena e Reggio Emilia, Italia

15:00 - 15:15

TEO-OR-019. DFT and Experimental study of FeOx/Au heterostructures: insights and relevance as electrochemical water splitting heterogeneous catalysts

Ascrizzi, Eleonora[1]; Goniakowski, Jacek[2]; Yang, Jijin[3]; Agnoli, Stefano[3]; Ferrari, Anna Maria[1]
1: Dipartimento di Chimica, Università di Torino, via Giuria 5, 10125 Torino, Italy; 2: CNRS, Sorbonne Université, Institut des NanoSciences de Paris, UMR 7588, 4 Place Jussieu, F-75005 Paris, France; 3: Department of Chemical Sciences, University of Padua, via Francesco Marzolo, 1, Padua 35131, Italy

15:15 - 15:30

TEO-OR-031. A graph theory-based order parameter for the structural and dynamic characterization of supercooled water

Di Fonte, Nico[1]; Faccio, Chiara[2]; Zanetti-Polzi, Laura[3]; Daidone, Isabella[1]
1: Università Dell'Aquila, Italia; 2: Scuola normale Superiore di Pisa, Università di Padova, Italia; 3: CNR Istituto Nanoscienze (Modena), Italia

15:30 - 15:45

TEO-OR-021. Nickel Oxide/ DiRh(II,II) interface complexities dissected with ab-initio calculations

Fasulo, Francesca; Muñoz-García, Ana Belen; Pavone, Michele
Università degli studi di Napoli Federico II, Italia

ORG-OR-055. Old methods, new applications: light-promoted triterpenoids skeleton interconversion in the synthesis of complex natural products

Minassi, Alberto[1]; maioli, chiara[1]; caprioglio, diego[1]; ingallina, cinzia[2]; lauro, Gianluigi[3]; bifulco, Giuseppe[3]
1: università del piemonte orientale, Italia; 2: università la sapienza, italia; 3: università di salerno,italia

ORG-OR-083. Lipid Nanoparticles: encapsulation of Polysaccharides

Nizzolo, Sofia[1,2]; Gianelli, Michele[3]; Ravaglia, Valerio[3]; Zanoni, Filippo[1,2]; Cosentino, Cesare[1]; Guerrini, Marco[1]; Bertini, Sabrina[1]
1: Istituto di Ricerche Chimiche e Biochimiche G. Ronzoni, Italia; 2: Università degli Studi di Milano-Bicocca, Piazza dell'Ateneo Nuovo 1, Milano (MI); 3: LabService Analytica S.r.l., Via Emilia, 51 Anzola dell'Emilia (BO)

15:45 - 16:00

ORG-OR-084. 2-Benzylideneindan-1-one as Photoswitchable Scaffold for the Design of Light-Driven On–Off AChE Inhibitors

Paolino, Marco
Università degli Studi di Siena, Italia

16:00 - 16:15

ORG-OR-085. A new supramolecular calix[5]arenes-based systems for the binding of primary ammoniums in organic an aqueous environment

Pappalardo, Andrea[1,2]; Testa, Caterina[1]; Jabin, Ivan[3]; Bartik, Kristin[4]; Carpentier, Romain[3,4]
1: Dipartimento di Scienze Chimiche, Università di Catania, Italia; 2: National Interuniversity Consortium for Materials Science and Technology (I.N.S.T.M.) Research Unit of Catania; 3: Laboratoire de Chimie Organique (LCO), Université Libre de Bruxelles (ULB); 4: Engineering of Molecular NanoSystems, Université libre de Bruxelles

16:15 - 16:30

ORG-OR-086. Circular Integration of Carbon Dots: From Waste to Value Across Multiple Sectors

Pasini, Mariacecilia; Squeo, Benedetta Maria; Turco, Federico
Istituto di Scienze e Tecnologie Chimiche “Giulio Natta” (SCITEC),CNR, Italia1

1: University of Naples Federico II, Italia; 2: Forschungszentrum Jülich GmbH, Jülich Centre for Neutron Science at MLZ, Lichtenbergstraße 1 D-85748 Garching, Deutschland.; 3: CEITEC-Central European Institute of Technology, Brno University of Technology, Technická 3058/10, 61600 Brno, Czech Republic; 4: European Commission, Joint Research Centre (JRC), Ispra, Italy; 5: CSGI, Center for Colloid and Surface Science, Via della Lastruccia 3, I-50019, Sesto Fiorentino (FI), Italy.

15:45 - 16:00

TEC-OR-024. Innovative clay based hybrid materials for thermochemical energy storage applications

Previti, Emanuele[1]; Calabrese, Luigi[1]; Coronado, Juan Manuel[2]; Mastronardo, Emanuela[1]; Milone, Candida[1]
1: Università degli Studi di Messina, Italia; 2: Instituto de Catálisis y Petroleoquímica (ICP-CSIC), Madrid, Spain

16:00 - 16:15

TEC-OR-025. Multifunctional Shape Memory Epoxy Nanocomposites Containing Carbon Dots

Bifulco, Aurelio[1]; Imparato, Claudio[1]; Climaco, Immacolata[1]; Mazzuoccolo, Immacolata[1]; Battegazzore, Daniele[2]; Perrella, Michele[1]; Vitiello, Giuseppe[3]; Aronne, Antonio[1]; Malucelli, Giulio[2]
1: Università degli Studi di Napoli Federico II, Italia; 2: Politecnico di Torino, Italia; 3: Università degli Studi di Napoli Federico II, Consorzio Interuniversitario per lo sviluppo dei Sistemi a Grande Interfase, Italia

16:15 - 16:30

TEC-OR-026. Sustainable valorisation of industrial black mass through circular solvometallurgy

Mannu, Alberto; Di Pietro, Maria Enrica; Bosello, Viviana; Mele, Andrea
Department of Chemistry, Materials and Chemical Engineering “G. Natta” – Politecnico di Milano

15:45 - 16:00

TEO-OR-022. A DFT study on the Red-Light Photocatalytic Activation Of Pt(IV) Anticancer Drugs Using Methylene Blue

Scoditti, Stefano[1]; Salassa, Luca[2]; Sicilia, Emilia[1]
1: Department of Chemistry and Chemical Technologies, University of Calabria, Arcavacata di Rende (CS), 87036, Italy; 2: Donostia International Physics Center, Paseo Manuel de Lardizabal 4, Donostia, 20018, Spain

16:00 - 16:15

TEO-OR-023. Modelling Single-Atom Catalysis

Di Liberto, Giovanni; Pacchioni, Gianfranco
Università degli Studi di Milano - Bicocca, Italia

16:15 - 16:30

TEO-OR-024. Using photons to control the properties of molecules: an ab-initio study

Ronca, Enrico
Università degli Studi di Perugia, Italia

14:30 - 17:30

TEF-2: Divisione di Tecnologia Farmaceutica - Parte 2
Luogo, sala: **Meeting4+5 (level -1)**
Chair: **Paola Minghetti**, unimi; paola.minghetti@unimi.it
Chair: **Paolo Caliceti**, Università di Padova; paolo.caliceti@unipd.it

14:30 - 15:00

Nano/micro composite polysaccharide-based stimuli-responsive hydrogels for release of antimicrobial agents in the treatment of skin wounds

Fiorica, Calogero; Biscari, Giuseppina; Palumbo, Fabio Salvatore; Pitarresi, Giovanna
Università Degli Studi di Palermo, Italia

15:00 - 15:30

Rational design of intra-articular drug delivery systems

Selmin, Francesca; Frigerio, Giorgia
Università degli Studi di Milano, Italia

15:30 - 15:45

TEF-OR-007. Importance of Dissolution testing for IVIVC in drug product development

Mansuroglu, Yaser
SOTAX AG, Switzerland

15:45 - 16:00

TEF-OR-008. Formulation strategies for pulmonary delivery of biopharmaceuticals

Bianchera, Annalisa[1,2]; Bettini, Ruggero[1,2]
1: Food and Drug Department, University of Parma, Italy; 2: Biopharmanet-TEC, University of Parma, Italy

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16:00 - 16:15

TEF-OR-009. A heat-generated polymeric matrix technology transferred to drug delivery and cell culture systems

Baldassari, Sara[1]; Ailuno, Giorgia[1]; Caviglioli, Gabriele[1,2]
1: Dept. of Pharmacy, University of Genova, Viale Cembrano 4, 16148 Genova, Italy; 2: IRCCS Ospedale Policlinico San Martino, Largo R. Benzi 10, 16132 Genova, Italy

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16:15 - 16:30

TEF-OR-010. Probiotic Microencapsulation: Exploring with Spray Drying and Prilling/Vibration Techniques to Enhance Performance Through Precision Polymeric Mixtures

Lopedota, Angela Assunta; D'Amico, Vita; Arduino, Ilaria; Lopalco, Antonio; Iacobazzi, Rosa Maria; Franco, Massimo; Denora, Nunzio
Department of Pharmacy-Pharmaceutical Sciences, University of Bari "Aldo Moro", Via E. Orabona, 4, I-70125 Bari, Italy

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16:30 - 16:45

TEF-OR-011. Challenges in microfluidic production of nanomedicine

Ottonelli, Ilaria[1]; Duskey, Jason Thomas[1]; Cuoghi, Sabrina[1]; Anderlini, Alessandro[1]; Rodà, Francesca[1,2,3]; Caraffi, Riccardo[1,2]; Vandelli, Maria Angela[1]; Ruozi, Barbara[1]; Tosi, Giovanni[1]
1: NanotechLab, Università degli Studi di Modena e Reggio Emilia, Italia; 2: Clinical and Experimental Medicine PhD Program, Università degli Studi di Modena e Reggio Emilia, Italy; 3: IRCCS Fondazione Don Carlo Gnocchi ONLUS, Milano, Italia

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16:45 - 17:00

TEF-OR-012. Prolamin-Based Formulations for Drug Delivery Applications

Gagliardi, Agnese; Voci, Silvia; Ambrosio, Nicola; Cosco, Donato
Università Magna Graecia Catanzaro, Italia

17:00 - 17:15

TEF-OR-013. Dual function surfactants for pharmaceutical applications: the case of alkyl biguanides

Perinelli, Diego Romano; Del Bello, Fabio; Vitali, Luca Agostino; Nabissi, Massimo; Bonacucina, Giulia
University of Camerino, Italia

16:00 - 18:30

FAR-2A: Divisione di Chimica Farmaceutica - Parte 2A
Luogo, sala: **White2 (level +2)**
Chair: **Giancarlo Aldini**, Università degli Studi di Milano; giancarlo.aldini@unimi.it
Chair: **Isabella Romeo**, Università Magna Graecia di Catanzaro; isabella.romeo@unicz.it

16:00 - 16:15

ORG-4A: Divisione di Chimica Organica - Parte 4A
Luogo, sala: **Green1 (level -1)**
Chair: **Luigi Lay**, Università degli Studi di Milano; luigi.lay@unimi.it
Chair: **Walter Cabri**, University of Bologna; walter.cabri@unibo.it

16:00 - 16:15

ORG-PZ-08. Premio alla Ricerca junior "Chimica organica per lo sviluppo di processi e prodotti nell'industria ". Azides Manipulation: Danger is not our Middle Name

FAR-OR-021. Development of Synthetic Chemical Methods for Advanced Molecular Functionalization in Medicinal Chemistry

Giustiniano, Mariateresa
Università degli Studi di Napoli Federico II, Italia

16:15 - 16:30

FAR-OR-022. Chemoenzymatic approach towards the synthesis of the antitumor and antileishmanial marine metabolite (+)-Harzialactone A via the stereoselective, biocatalyzed reduction of a prochiral ketone

Artasensi, Angelica[1]; Bassanini, Ivan[2]; Ferrandi, Erica E.[2]; Feni, Lucia[1]; Vistoli, Giulio[1]; Fumagalli, Laura[1]; Gandolfi, Raffaella[1]
1: dipartimento di Scienze Farmaceutiche, Università degli Studi di Milano, Italia; 2: Istituto di Scienze e Tecnologie Chimiche ''Giulio Natta'', Consiglio Nazionale delle Ricerche

16:30 - 16:45

FAR-OR-023. Chemo-enzymatic flow synthesis of nature-inspired phenolic carbonates and carbamates as antimicrobial and antiradical agents

Annunziata, Francesca[1,2]; Vicinanza, Sara[2]; Mombelli, Lara[2]; Donzella, Silvia[1]; Borsari, Chiara[3]; Contente, Martina Letizia[2]; Meroni, Gabriele[1]; Martino, Piera Anna[3]; Conti, Paola[2]; Pinto, Andrea[1]; Dallavalle, Sabrina[1]; Tamborini, Lucia[2]
1: Department of Food, Environmental and Nutritional Sciences, University of Milan, via Celoria 2, 20133 Milan, Italy; 2: Department of Pharmaceutical Sciences, University of Milan, via Mangiagalli 25, 20133 Milan, Italy; 3: Department of Biomedical, Surgical and Dental Sciences, One Health Unit, University of Milan, via Pascal 36, 20133 Milan, Italy

16:45 - 17:00

FAR-OR-024. Targeting the TPP1-Telomerase Complex: Ligand Discovery, Experimental Validation, and Therapeutic Implications in Cancer

Santoro, Federica[1]; Aureli, Simone[2]; Colucci, Manuel[3]; Alimonti, Andrea[3]; Amato, Jussara[1]; Brancaccio, Diego[1]; Limongelli, Vittorio[4]
1: Department of Pharmacy, University of Naples "Federico II", 80131 Naples, Italy; 2: Institute of Pharmaceutical Sciences of Western Switzerland, University of Geneve, 1205 Geneva, Switzerland; 3: Institute of Oncology Research (IOR), Oncology Institute of Southern Switzerland (IOSI), 6500 Bellinzona, Switzerland; 4: Faculty of Biomedical Sciences, Euler Institute, Università della Svizzera italiana (USI), 6900 Lugano, Switzerland

17:00 - 17:15

FAR-OR-025. A Valuable Computational Approach to Identify Structural Requirements for Sigma-1 Receptor Ligands

Lombardo, Lisa[1]; Gitto, Rosaria[1]; Ortuso, Francesco[2]; Mirabile, Salvatore[1]; Alcaro, Stefano[2]; Marrazzo, Agostino[3]; Amata, Emanuele[3]; De Luca, Laura[1]
1: Department of CHIBIOFARAM, University of Messina, Viale Ferdinando Stagno d'Alcontres 31, 98166, Messina; 2: Department of Health Sciences, University "Magna Graecia" of Catanzaro, Viale Europa, 88100, Catanzaro- Net4Science srl, c/o University "Magna Graecia" of Catanzaro, Catanzaro; 3: Department of Drug Sciences, Medicinal Chemistry Section, University of Catania, Viale A Doria 6, 95125 Catania

17:15 - 17:30

FAR-OR-026. Investigating the protective effects of grape seed proanthocyanidins: an integrated approach revealing the paraormetic mechanism via metabolic, in silico and proteomic analyses

Zuffo, Michela[1]; Razzetti, Gabriele[1]; Simons, Lloyd[2]; Stewart, Cate[2]; Loertscher, Brad[2]
1: Dipharma francis srl, Italia; 2: Dipharma Inc, US

16:15 - 16:30

ORG-OR-032. Regioselective Nitration of Polyaromatic Systems at Room Temperature

Yousif, Dawod[2,3]; Vaghi, Luca[3]; Daniliuc, Constantin[2]; Po, Riccardo[4]; Papagni, Antonio[3]; Rizzo, Fabio[1,2]
1: Consiglio Nazionale delle Ricerche (CNR), Italia; 2: Universität Münster, Germany; 3: Università degli Studi di Milano-Bicocca, Italia; 4: ENI, Istituto Guido Donegani, Italia

16:30 - 16:45

ORG-OR-033. Catalyst-free Visible-Light Promoted Thiol-ene Reaction of Alkenes

Rusconi, Marco; Renzi, Polyssena; Ghigo, Giovanni; Deagostino, Annamaria
Università di Torino, Italia

16:45 - 17:00

ORG-OR-034. Characterization of disulfide bonds in the rat VDAC3 protein by high resolution mass spectrometry

Pittalà, Maria Gaetana Giovanna; Di Francesco, Antonella; Conti-Nibali, Stefano; Reina, Simona; Cunsolo, Vincenzo; Cucina, Annamaria; Lanzoni, Aldo; Foti, Salvatore; De Pinto, Vito; Saletti, Rosaria
Università di Catania, Italia

17:00 - 17:15

ORG-OR-035. Chirality sensing by chiroptical dithienyl probes

Caporale, Marilena; Scafato, Patrizia; Superchi, Stefano
Università della Basilicata, Italia

17:15 - 17:30

ORG-OR-064. Type-II Kinase Inhibitors- synthetic access and strategies to overcome drug resistance

Zambon, Alfonso
Università degli Studi di Modena e Reggio Emilia, Italia

17:30 - 17:45

ORG-OR-096. Molecular interaction between heparan sulfate mimetics and the recognition spike protein of SARS-CoV-2 virus

Mandalari, Marco[1,2]; Civera, Monica[1]; Elli, Stefano[2]; Parafioriti, Michela[2]; Guerrini, Marco[2]
1: Università degli Studi di Milano, Dipartimento di Chimica, Via Golgi 19 20133 Milano, Italy.; 2: Istituto di Ricerche Chimiche e Biochimiche 'G. Ronzoni' via Giuseppe Colombo 81, 20133 Milano, Italy

17:45 - 18:00

ORG-OR-097. Infrared Irradiation as Sustainable Energy Source in transition metal-catalyzed direct arylation reactions

Martina, Matteo Renato[1]; Albano, Gianluigi[2]; Cotugno, Pietro[1]; Ragni, Roberta[1]; Farinola, Gianluca Maria[1]
1: Università degli studi di Bari Aldo Moro, Italia; 2: Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia

18:00 - 18:15

Baron, Giovanna[1]; Altomare, Alessandra[1]; Della Vedova, Larissa[1]; Gado, Francesca[1]; Quagliano, Oscar[1]; Casati, Sara[2]; Tosi, Nicole[3]; Bresciani, Letizia[3]; Del Rio, Daniele[3]; Roda, Gabriella[1]; D'Amato, Alfonsina[1]; Lammi, Carmen[1]; Macorano, Alessio[1]; Vittorio, Serena[1]; Vistoli, Giulio[1]; Fumagalli, Laura[1]; Carini, Marina[1]; Leone, Alessandro[4]; Marino, Mirko[4]; Del Bo', Cristian[4]; Miotto, Giovanni[5]; Ursini, Fulvio[5]; Morazzoni, Paolo[6]; Aldini, Giancarlo[1]

1: Department of Pharmaceutical Sciences, Università degli Studi di Milano, Via Mangiagalli 25, Milan, Italy; 2: Department of Biomedical, Surgical and Dental Sciences, Università degli Studi di Milano, Via Mangiagalli 37, Milan, Italy; 3: Human Nutrition Unit, Department of Food&Drug, University of Parma, Via Volturno 39, Parma, Italy; 4: Department of Food, Environmental and Nutritional Sciences, Università degli Studi di Milano, Via Mangiagalli 25, Milan, Italy; 5: Department of Molecular Medicine, Viale G. Colombo, 3, University of Padova, Padova, Italy; 6: Divisione Nutraceutica, Distillerie Umberto Bonollo S.p.A, Mestrino, Italy

17:30 - 17:45

FAR-OR-027. Integrating MS proteomics in the Medicinal Chemistry pipeline as powerful tool to overcome drug resistance issues in colorectal cancer

Tagliazucchi, Lorenzo[1]; Piazzi, Manuela[2]; d'Arca, Domenico[3]; Marverti, Gaetano[3]; Moschella, M Gaetana[3]; Bedeschi, Martina[4]; Tesei, Anna[4]; Passardi, Alessandro[4]; Costi, M Paola[1]

1: University of Modena and Reggio Emilia (Università degli Studi di Modena e Reggio Emilia), Italia; 2: CNR Bologna 4Science Laboratory, IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST) “Dino Amadori”,47014 Meldola, Italy;; 3: Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Via Campi 287, 41125 Modena, Italy; 4: Medical Oncology Unit, IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST) "Dino Amadori", 47014 Meldola, Italy

17:45 - 18:00

FAR-OR-028. Development of advanced experimental and in silico methods for the characterization of biopolymers in complex matrices

Carotti, Andrea; Macchiarulo, Antonio; Sardella, Roccaldo; Di Michele, Alessandro; Puglia, Debora

Università di Perugia, Italia

18:00 - 18:15

FAR-OR-029. Exploring the interactions of small molecules with RNA in drug discovery and development

Sosic, Alice

Università degli Studi di Padova, Italia

18:15 - 18:30

FAR-OR-030. Advanced analytical approaches for the evaluation of small molecules as G-quadruplex stabilizers

Giannangeli, Matteo; Anyanwu, Margrate; Ribaudo, Giovanni; Gianoncelli, Alessandra

Università degli Studi di Brescia, Italia

ORG-OR-099. Pd-Catalyzed Carbonylative Double Cyclization to a New Class of Tricyclic Heterocycles

Ziccarelli, Ida; Mancuso, Raffaella; Gabriele, Bartolo

Laboratory of Industrial and Synthetic Organic Chemistry (LISOC), Department of Chemistry and Chemical Technologies, University of Calabria, Via Pietro Bucci 12/C, 87036 Arcavacata di Rende (CS), Italy

16:30 - 18:30

ABC-D: Divisione di Chimica dell'Ambiente e dei Beni Culturali - Parte D
Luogo, sala: **White1 (level +2)**
Chair: **Luca Rivoira**, Università degli Studi di Torino; luca.rivoira@unito.it
Chair: **Daniele Cespi**, Alma Mater Studiorum – Università di Bologna; daniele.cespi2@unibo.it

ALI-1B: Divisione di Chimica degli Alimenti - Parte 1B
Luogo, sala: **Turquoise1 (level -1)**
Chair: **Eugenio Aprea**, University of Trento; eugenio.aprea@unitn.it
Chair: **Paola Dugo**, Università di Messina; pdugo@unime.it

16:30 - 16:45

ANA-1D: Divisione di Chimica Analitica - Parte 1D
Luogo, sala: **Red2 (level +1)**
Chair: **Marco Giannetto**, Università di Parma; marco.giannetto@unipr.it
Chair: **Luisa Torsi**, Università degli Studi di Bari Aldo Moro; luisa.torsi@uniba.it

16:30 - 16:45

ANA-2D: Divisione di Chimica Analitica - Parte 2D
Luogo, sala: **Orange1 (level -1)**
Chair: **Concetta De Stefano**, Università degli Studi di Messina; cdestefano@unime.it
Chair: **Raffaela Biesuz**, Università di Pavia; raffaela.biesuz@unipv.it

16:30 - 16:45

16:30 - 16:45

ABC-OR-017. Two-step pyrolysis biochar from industrial sludge and its application for removal of steroid hormones from wastewater

Fichera, Michelangelo[1]; Guedes Alonso, Rayco[2]; Santana Rodríguez, Josè Juan[2]; Camisa, Roberto[3]; Fibbi, Donatella[3]; Del Bubba, Massimo[1]

1: Department of Chemistry "U. Schiff", University of Florence, Via della Lastruccia 3, Sesto Fiorentino, 50019, Florence (Italy); 2: Instituto Universitario de Estudios Ambientales y Recursos Naturales (i-UNAT), Universidad de Las Palmas de Gran Canaria, 35017 Las Palmas de Gran Canaria, Spain; 3: Gestione Impianti di Depurazione Acque (G.I.D.A.) S.p.A., Via di Baciacavallo 36, Prato, 59100 (Italy)

16:45 - 17:00

ABC-OR-018. Determination of oxidative potential on particulate matter filters of different origins: outdoor, indoor, and fixed-source emissions

Bergomi, Andrea[1]; Carrara, Elena[1]; Festa, Elisa[1]; Migliavacca, Gabriele[2]; Colombi, Cristina[3]; Cuccia, Eleonora[3]; Biffi, Beatrice[3]; Comite, Valeria[1]; Fermo, Paola[1]

1: Università degli Studi di Milano, Italia; 2: Innovhub Stazioni Sperimentali per l'Industria, Italia; 3: Agenzia Regionale Protezione Ambiente, Italia

17:00 - 17:15

ABC-OR-019. Antibiotic resistance genes and antibiotic contamination in real water samples along the "water pathway": from wastewater to marine environment

Stevanin, Claudia[1]; Chenet, Tatiana[1]; Costa, Valentina[1]; Sarti, Elena[2]; Cescon, Mirco[2]; Cavazzini, Alberto[2,3]; Pasti, Luisa[2]

1: Department of Environmental and Prevention Sciences, Via L.Borsari 46, Ferrara; 2: Department of Chemical, Pharmaceutical and Agricultural Sciences, Via L.Borsari 46, Ferrara; 3: Council for Agricultural Research and Economics, CREA, via della Navicella 2/4,00184 Rome

ALI-OR-006. Chemical and rheological profile of fermented animal milks and isolation and characterization of exopolysaccharides from kefir grains

La Torre, Chiara; Fazio, Alessia

Università della Calabria, Italia

16:45 - 17:00

ALI-OR-023. Exploring the potential of ulvan from Ulva lactuca L.: extraction optimization by design of experiment, chemical characterization, and evaluation of in vitro prebiotic activity

Zonfrillo, Beatrice[1]; Bellumori, Maria[1]; Digiglio, Irene[1]; Innocenti, Marzia[1]; Orlandini, Serena[2]; Kathib, Mohamad[1]; Ambrosio, Carmen M.S.[3]; Zoccatelli, Gianni[4]; Mulinacci, Nadia[3]; Rubert, Josep[5]

1: Department of NEUROFARBA, University of Florence, Via Ugo Schiff 6, Sesto Fiorentino (Italy); 2: Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3, Sesto Fiorentino (Italy); 3: Division of Human Nutrition and Health, Wageningen University & Research, Stippeneng 4, Wageningen (The Netherlands); 4: Department of Biotechnology, University of Verona, Str. Le Grazie 15, Verona (Italy); 5: Food Quality and Design Group, Wageningen University & Research, P. O. Box 17, 6700 AA, Wageningen, The Netherlands

17:00 - 17:15

ALI-OR-005. Potential antihypertensive effects of environmentally sustainable glucosinolate-extracts from radish microgreens

Maisto, Maria; Marzocchi, Adua; Piccolo, Vincenzo; Tenore, Gian Carlo

Department of Pharmacy, University of Naples Federico II, Italy

17:15 - 17:30

ALI-OR-010. Exploring the potential of lentil by-product extracts for managing IBD symptoms: investigating spasmolytic properties

Mattioli, Laura Beatrice[1]; Budriesi, Roberta[1]; Corazza,

ANA-OR-055. Conductive-Ink Formulations for Flexible and Wearable Enzyme-based Biosensors for Alcohol Abuse Detection

Marchianò, Verdiana[1,2]; Tricase, Angelo[1,2]; Gentile, Luigi[2,3]; Macchia, Eleonora[1,2,4]; Torsi, Luisa[2,3]; Bollella, Paolo[2,3]

1: Dipartimento di Farmacia-Scienze Del Farmaco, Università degli Studi di Bari Aldo Moro,70125 Bari Italy;; 2: CSGI – Unità Bari, Università degli Studi di Bari Aldo Moro, 70125 Bari Italy;; 3: Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, 70125 Bari Italy;; 4: Faculty of Science and Engineering, Åbo Akademi University, 20500 Turku (Finland)

16:45 - 17:00

ANA-OR-056. Single-Stroke laser scribing of optical-active nanostructures on cellulosic substrates for colorimetric and photoluminescent-based sensing strategies

Scroccarello, Annalisa; Della Pelle, Flavio; Di Battista, Paolo; Compagnone, Dario

Department of Bioscience and Technologies for Food, Agriculture and Environment, University of Teramo, Via R. Balzarini, 1, 64100 Teramo TE, Italy

17:00 - 17:15

ANA-OR-057. Are there any valuable alternatives to antibodies when developing (bio-)sensing architectures for protein cancer biomarkers and therapeutic drugs?

Polo, Federico[1,2]; Moro, Giulia[1]; Sossich, Elena[1]; Mazzocato, Ylenia[1]; Angelini, Alessandro[1,2]; Severin Sfragano, Patrick[3]; Palchetti, Ilaria[3]

1: Università Ca' Foscari di Venezia, Italia; 2: European Centre for Living Technology; 3: Università di Firenze

17:15 - 17:30

ANA-OR-058. Development of a reconfigurable optical sensor for metal-ion mediated biomolecule sensing

Gagliani, Francesco[1]; Di Giulio, Tiziano[1]; Malitest, Cosimino[1]; Barca, Amilcare[2];

ANA-OR-069. Rare Earth Elements Translocation in Soil-Rice Systems

Langasco, Ilaria[1]; Spanu, Antonino[2]; Mara, Andrea[1]; Deroma, Mario Antonello[2]; Barracu, Francesco[2]; Pilo, Maria Itria[1]; Spano, Nadia[1]; Sanna, Gavino[1]

1: Dipartimento di Scienze Chimiche, Fisiche, Matematiche e Naturali, Università degli Studi di Sassari, Via Vienna 2, 07100-Sassari, Italia; 2: Dipartimento di Agraria, Università degli Studi di Sassari, Viale Italia 39A, 07100-Sassari, Italia

16:45 - 17:00

ANA-OR-070. ICP-MS analysis of trace and ultra-trace metals in agricultural goods for a multivariate geographical identification of products of the Chianti wine and EVOO supply chain

Nardin, Raffaello[1]; Tamasi, Gabriella[1]; Bisozzi, Flavia[1]; Consumi, Marco[1]; Baglioni, Michele[1]; Tozzi, Cristiana[2]; Riccaboni, Angelo[2]; Rossi, Claudio[1]

1: Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy; 2: Santa Chiara Lab, University of Siena, Via Valdimontone 1, 53100 Siena, Italy Italy

17:00 - 17:15

ANA-OR-071. Chemical fingerprints of European tea gardens: advancing authenticity and traceability

Girolametti, Federico[1]; Annibaldi, Anna[1]; Illuminati, Silvia[1]; Ajdini, Behixhe[1]; Fanelli, Matteo[1]; Massi, Lorenzo[2]; Damiani, Elisabetta[1]; Carloni, Patricia[3]; Truzzi, Cristina[1]

1: DiSVA, Università Politecnica delle Marche, Italia; 2: DAIS, Università Ca' Foscari Venezia, Italia; 3: D3A, Università Politecnica delle Marche, Italia

17:15 - 17:30

ANA-OR-072. Valorization of a variety of historical wheat (San Pastore) along the bread production chain using omics and multivariate methods

Robotti, Elisa[1]; Belay, Masho[1,2]; Goggi, Eleonora[1]; Fabbris, Alessia[1]; Ghignone,

17:15 - 17:30

ABC-OR-020. Quantification of Plastic Particles in Sewage Sludge via Py-GC-MS Analysis

Coralli, Irene[1]; Vassura, Ivano[2]; Baldelli, Tommaso[2]; Fabbri, Daniele[1]

1: Dipartimento di Chimica "G.Ciamician". Università di Bologna, Italia; 2: Dipartimento di Chimica Industriale "Toso Montanari". Università di Bologna, Italia

17:30 - 17:45

ABC-OR-023. Phytoremediation potential of epiphytic Tillandsia (Bromiliaceae): evaluation of removal efficiency of Formaldehyde

Palmisani, Jolanda[1]; Di Gilio, Alessia[1]; Fortunato, Stefania[1]; Michieli, Paolo[2]; De Pinto, Maria Concetta[1]; de Gennaro, Gianluigi[1]

1: Università degli Studi di Bari Aldo Moro, Italia; 2: Michieli Floricoltura, Vescovana (PD), Italia

17:45 - 18:00

ABC-OR-027. Green composites obtained by PCL melt blending with Diatomaceous Earth

Carotenuto, Maria Rosalia[1]; Cavallaro, Giuseppe[1]; Lazzara, Giuseppe[1]; Chinnici, Ileana[2]

1: University of Palermo, Italy; 2: INAF-Astronomical Observatory of Palermo, Italy

18:00 - 18:15

ABC-OR-028. Natural Clays for the Removal of Inorganic and Organic Pollutants from Leachate of Waste Collection Centers

Canaletti, Vanessa; Bonetto, Alessandro; Brunelli, Andrea; Semenzin, Elena; Marcomini, Antonio; Badetti, Elena

Ca' Foscari, Italia

18:15 - 18:30

ABC-OR-030. Modelling the photodegradation of acetaminophen, carbamazepine, bentazone and clofibric acid in a river under water scarcity conditions

Ivan[2]; Ferraro, Valeria[3]; Corbo, Filomena[3]; Lentini, Giovanni[3]; Cavalluzzi, Maria Maddalena[3]

1: Department of Pharmacy and Biotechnology, Food Chemistry and Nutraceutical Lab, Alma Mater Studiorum-University of Bologna, Italy; 2: Department of Medical and Surgical Sciences (DIMEC), Alma Mater Studiorum-University of Bologna, Italy; 3: Department of Pharmacy—Pharmaceutical Sciences, University Aldo Moro-Bari, Via Orabona 4, 70126 Bari, Italy

17:30 - 17:45

ALI-OR-017. Preparation of natural compounds via flow biocatalysis

Contente, Martina Letizia; Colacicco, Agostina; Bigliardi, Martina; Annunziata, Francesca; Tamborini, Lucia; Molinari, Francesco; Pinto, Andrea

University of Milan, Italia

17:45 - 18:00

ALI-OR-020. MS-IMAGING: IN SITU INVESTIGATION OF SECONDARY METABOLITES OF ORYZA SATIVA L. VARIETIES BEFORE AND AFTER COOKING

Zecchi, Riccardo[1]; Di Napoli, Antonella[1]; Romoli, Riccardo[2]; Pieraccini, Giuseppe[2]; la Marca, Giancarlo[2]; Innocenti, Marzia[1]; Mulinacci, Nadia[1]

1: Department of NEUROFARBA, University of Florence, V.le G. Pieraccini 6, 50139, Firenze, Italy; 2: Mass spectrometry service centre (CISM), University of Florence, V.le G. Pieraccini 6, 50139, Firenze, Italy

Verri, Tiziano[2]; Corsi, Martina[3]; Barillaro, Giuseppe[3]; Mazzotta, Elisabetta[1]

1: Laboratorio di Chimica Analitica, Dipartimento di Scienze e Tecnologie Biologiche e Ambientali (Di.S.Te.B.A.), Università del Salento, via Monteroni 73100 Lecce - Italy; 2: Laboratorio di Fisiologia, Dipartimento di Scienze e Tecnologie Biologiche e Ambientali (Di.S.Te.B.A.), Università del Salento, via Monteroni 73100 Lecce – Italy; 3: Dipartimento di Ingegneria dell'Informazione, Università di Pisa, via G. Caruso 16, 56126 Pisa - Italy

17:30 - 17:45

ANA-OR-059. Chemiluminescence biosensors for H2O2 and oxidases substrates quantification employing DNAzyme-mimicking activity self-assembled guanosine-hydrogel

Calabria, Donato; Pace, Andrea; Lazzarini, Elisa; Zangheri, Martina; Guardigli, Massimo; Pieraccini, Silvia; Masiero, Stefano; Mirasoli, Mara

Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Italia

17:45 - 18:00

ANA-OR-060. Light-up DNA nanostructures as programmable imaging sensors for enzymatic substrates

Del Grosso, Erica; Gentile, Serena; Ricci, Francesco

Università degli Studi di Roma "Tor Vergata", Roma

18:00 - 18:15

ANA-OR-061. Liposomes-based Biosensing: innovative electrochemical characterization strategies for vesicle encapsulation, functionalization, and sensing mechanisms

Cancelliere, Rocco; Micheli, Laura

Università degli studi di roma tor vergata, Italia

18:15 - 18:30

ANA-OR-062. Towards magneto-assay approaches for the electrochemical

Arianna[1]; Cerruti, Simone[1]; Marengo, Emilio[1]

1: Department of Sciences and Technological Innovation, University of Piemonte Orientale, Viale Michel 11, 15121 Alessandria, Italy; 2: Department of Chemistry, Mekelle University, Mekelle P.O. Box 231, Ethiopia

17:30 - 17:45

ANA-OR-073. Metabolomic Profiling of 'Patata di Montese': Authenticity Assessment and Regional Discrimination Using uHPLC-MS and ROI-MCR Method

Strani, Lorenzo; Durante, Caterina; Pellacani, Samuele; Cocchi, Marina

Università degli Studi di Modena e Reggio Emilia, Italia

17:45 - 18:00

ANA-OR-074. Application of high pressure liquid chromatography coupled to mass spectrometer in isolation procedure of ovatoxin-a

Miele, Valentina[1]; Varra, Michela[1]; Varriale, Fabio[1]; Tartaglione, Luciana[1]; Kulis, David[2]; Anderson, Don[2]; Dell'Aversano, Carmela[1,3]

1: UNINA DF, University of Naples Federico II, School of Medicine and Surgery, Department of Pharmacy, Napoli, Italy; 2: WHOI, Woods Hole Oceanographic Institution, Woods Hole, MA, USA; 3: NBFC, National Biodiversity Future Center, Palermo, Italy

18:00 - 18:15

ANA-OR-076. Development of analytical platforms based on FFF coupled with On-chip sample detection for extracellular vesicles-based liquid biopsy

Marassi, Valentina[1,2,3]; Chiriacò, Maria Serena[3]; Romano, Alessandro[4]; Giordani, Stefano[1]; Placci, Anna[1]; Roda, Barbara[1,2]; Zattoni, Andrea[1,2]; Reschiglian, Pierluigi[1,2]

1: Department of Chemistry "G. Ciamician", University of Bologna, Via Piero Gobetti 85, Bologna; 2: byFlow srl, Viale Giuseppe Fanin 48, Bologna; 3: CNR NANOTEC - Institute of Nanotechnology, Via per Monteroni, 73100 Lecce, Italy; 4: Institute of Experimental Neurology, San Raffaele

Bertolotti, Silvia[1,2]; Carena, Luca[3]; Minella, Marco[3]; Fenoglio, Stefano[1,4]; Vione, Davide[3]
1: Dipartimento di Scienze della Vita e Biologia dei Sistemi, Università di Torino, Torino, Italy; 2: Université Clermont Auvergne, CNRS, Clermont Auvergne INP, ICCF, F-63000 Clermont-Ferrand, France; 3: Dipartimento di Chimica, Università di Torino, Torino, Italy; 4: ALPSTREAM - Alpine Stream Research Center, Ostana (CN), Italy

ANA-3D: Divisione di Chimica Analitica - Parte 3D
Luogo, sala: **Orange2 (level -1)**
Chair: **Nicola Cioffi**, Università degli Studi di Bari Aldo Moro; nicola.cioffi@uniba.it
Chair: **Paolo Oliveri**, Università degli Studi di Genova; paolo.oliveri@unige.it

16:30 - 16:45

ANA-OR-083. Estimation of structural disorder degree from carbon materials' Raman spectra by Multivariate Curve Resolution and Partial Least Squares Regression

Cerruti, Simone[1]; Robotti, Elisa[1]; Cagna, Laura[1]; Gatti, Giorgio[2]; Croce, Alessandro[1]; Polliotto, Valeria[3]; Marengo, Emilio[1]
1: Department of Science and Technological Innovation, University of Piemonte Orientale, Viale Teresa Michel 11, 15121 Alessandria (Italy); 2: Department for Sustainable Development and Ecological Transition, University of Piemonte Orientale, Piazza S. Eusebio 5, 13100 Vercelli (Italy); 3: ITT Italia S.R.L., Motion Technologies Innovation Center, Via Molini 19, 12032 Barge (Italy)

16:45 - 17:00

ANA-OR-084. Chemometric Treatment of UV-Visible Spectra of Acetonitrile Extracts: A Novel and Simple Approach for Detecting Plant-Derived Adulterants in Saffron (Crocus sativus L.)

Foschi, Martina[1]; Biancolillo, Alessandra[1]; Maggi, Maria Anna[2]; D'archivio, Angelo Antonio[1]
1: Dipartimento di Scienze Fisiche e Chimiche, Università degli Studi dell'Aquila, Via Vetoio, 67010 Coppito, L'Aquila, Italy; 2: Hortus Novus, Via Campo Sportivo 2, 67050 Canistro, L'Aquila, Italy

ANA-4A: Divisione di Chimica Analitica - Parte 4A
Luogo, sala: **Orange3 (level -1)**
Chair: **Paola Agata Eustochia Donato**, Università degli Studi di Messina; padonato@unime.it
Chair: **Marco Vincenti**, Università degli Studi di Torino; marco.vincenti@unito.it

16:30 - 16:45

ANA-OR-091. Hair analysis as an epidemiological indicator to assess the drug situation in Europe

Salomone, Alberto
Università di Torino, Italia

16:45 - 17:00

ANA-OR-092. HPLC method for extracellular Guanosine 5′-triphosphate and tetrahydrobiopterin pathway products analysis from cadaveric samples and human biofluids

Locatelli, Marcello[1]; Perrucci, Miryam[2,3]; De Laurenzi, Vincenzo[3]; Santangelo, Carmen[4]; Bondi, Danilo[4]; Pietrangelo, Tiziana[4]; Savini, Fabio[5]; Catena, Antonio Maria[6]; D'Ovidio, Cristian[7]
1: Department of Pharmacy, University of Chieti–Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy; 2: University of Teramo, Department of Biosciences and Agro-Food and Environmental Technologies, Teramo, 64100, Italy; 3: Department of Innovative Technologies in Medicine and Dentistry, University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy; 4: Department of Neurosciences, Imaging and Clinical Sciences, University of Chieti–Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy; 5: Pharmatoxicology Laboratory—Hospital "Santo Spirito", Via Fonte Romana 8, Pescara 65124, Italy; 6: Institute of Legal Medicine, University of Rome 2

FAR-1D: Divisione di Chimica Farmaceutica - Parte 1D
Luogo, sala: **Blue1 (level +1)**
Chair: **Stefano Alcaro**, Università Magna Graecia di Catanzaro; alcaro@unicz.it
Chair: **Paola Conti**, Università degli Studi di Milano; paola.conti@unimi.it

16:30 - 16:45

FAR-OR-013. AlkylGuanidino Ureas as Promising Weapons to Fight Antibacterial Resistance

Ardino, Claudia[1]; Sannio, Filomena[2]; Poli, Giulio[3]; Galati, Salvatore[3]; Dreassi, Elena[1]; Botta, Lorenzo[4,5]; Docquier, Jean-Denis[2,4]; D'Agostino, Ilaria[1,3]
1: Department of Biotechnology, Chemistry and Pharmacy, University of Siena, via Aldo Moro 2, I-53100, Siena, Italy; 2: Department of Medical Biotechnologies, University of Siena, Viale Mario Bracci, 16, I-53100, Siena, Italy; 3: Department of Pharmacy, University of Pisa, via Bonanno Pisano 6, I-56126, Pisa, Italy; 4: Lead Discovery Siena s.r.l., Via Vittorio Alfieri 31, I-53019, Castelnuovo Berardenga, Italy; 5: Department of Ecological and Biological Sciences, University of Tuscia, Largo dell'Università, snc, I-01100, Viterbo, Italy

16:45 - 17:00

FAR-OR-014. Discovery of α9α10 nicotinic acetylcholine receptor ligands: a SAR study on MG624

Giraudo, Alessandro[1]; Pallavicini, Marco[1]; Tae, Han-Shen[2]; Richter, Katrin[3]; Gotti, Cecilia[4]; Grau, Veronika[3]; Adams, David J.[2]; Bolchi, Cristiano[1]
1: Department of Pharmaceutical Sciences, University of Milan, via Mangiagalli 25, I-20133 Milano, Italy; 2: Illawarra Health and Medical Research Institute, Scientific Institute, 20132 Milan, Italy

FIS-1D: Divisione di Chimica Fisica - Parte 1D
Luogo, sala: **Yellow1 (level +1)**
Chair: **Maria Luisa Saladino**, University of Palermo; marialuisa.saladino@unipa.it

16:30 - 16:45

FIS-OR-023. Green consolidants for cultural heritage: physico-chemical aspects of the new materials developed within GREENART

Poggi, Giovanna; Chelazzi, David; Andrea, Casini; Piero, Baglioni
Dipartimento di Chimica & CSGI - Università degli Studi di Firenze, Italia

16:45 - 17:00

FIS-OR-024. A sustainable approach for corrosion protection of concrete heritage

Fratello, Chiara[1,2]; Messina, Elena[1]; Boccaccini, Francesca[1]; Riccucci, Cristina[1]; Pascucci, Marianna[1]; Di Carlo, Gabriella[1]
1: Institute for the Study of Nanostructured Materials (ISMN), National Research Council (CNR), SP35d, 9, 00010 Montelibretti (Rome); 2: Department of Chemical Engineering Materials Environment, Sapienza University of Rome, Via Eudossiana, 18, 00184 Rome

17:00 - 17:15

FIS-OR-025. "Twin-Chain" gels with tailored tortuosity and cleaning abilities

Mastrangelo, Rosangela[1]; Bandelli, Damiano[1]; Guaragnone, Teresa[2]; Casini, Andrea[2]; Baglioni, Piero[2]
1: Dipartimento di Chimica, Università degli Studi di Firenze, Italia; 2: CSGI - Consorzio Interuniversitario per

17:00 - 17:15

ANA-OR-085. Analysis of Parchment, inks, and lead seals of ancient PApal BuLLs from the hystorical archive of Santuario della Beata Vergine di Saronno (APPALLA project)

Fermo, Paola
Università degli Studi di Milano, Italia

17:15 - 17:30

ANA-OR-086. The dark side of optoelectronic and photovoltaic devices: preliminary results of the ROBERTA project

Barreca, Salvatore[1]; Contino, Annalinda[1]; Giuffrida, Alessandro[1]; Orecchio, Santino[2]; Amorello, Diana[2]; Fiore, Tiziana[3]; Arrabito, Giuseppe Domenico[3]
1: Department of Chemical Sciences (DSC), University of Catania, Viale Andrea Doria n 6, building 1, 95125 Catania, Italy; 2: Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF), University of Palermo, 90128 Palermo, Italy; 3: Department of Physics and Chemistry - Emilio Segrè, University of Palermo, Viale delle Scienze, building 17, 90128 Palermo, Italy

17:30 - 17:45

ANA-OR-087. PVDC sorting challenge: A spectroscopy study and on field application

Radice, Stefano Vincenzo[1]; Ferrari, Domenico[1]; Millefanti, Stefano[1]; Gregori, Marco[2]
1: Syensqo; 2: Tomra Sorting GmbH

17:45 - 18:00

ANA-OR-088. High-precision Cd isotopic analysis using MC-ICP-MS equipped with 1013 Ohm faraday cup amplifiers and application to biological samples from Terra Nova Bay (Antarctica)

Vecchio, Maria Alessia[1,2]; Abou-Zeid, Lana[2]; Vanhaecke, Frank[2]; Grotti, Marco[1]
1: Università di Genova, Italia; 2: Ghent University, Belgio

18:00 - 18:15

ANA-OR-089. Optimization of a GeLC-MS/MS approach for

"Tor Vergata", Rome 00133, Italy; 7: Department of Medicine and Aging Sciences, Section of Legal Medicine, University of Chieti–Pescara "G. d'Annunzio", Chieti 66100, Italy

17:00 - 17:15

ANA-OR-093. Determination of F2-Isoprostanes in oral fluid employing PALME followed by UHPLC-MS/MS analysis.

Bartolini, Francesco[1]; De Chirico, Paola[1]; Bracaglia, Ilenia[2]; Croce, Martina[2]; Di Francesco, Gaia[1]; Pezzuti, Gianmarco[1]; Fanti, Federico[3]; Compagnone, Dario[3]; Montesano, Camilla[1]; Sergi, Manuel[1]
1: Sapienza Università di Roma, Dipartimento di Chimica; 2: Sapienza Università di Roma, Dipartimento di Sanità Pubblica e Malattie Infettive; 3: Università degli Studi di Teramo, Dipartimento di Bioscienze e Tecnologie Agro-alimentari ed Ambientali

17:15 - 17:30

ANA-OR-094. Dried blood spot long-chain polyunsaturated fatty acids and Heart Failure disease

Biagini, Denise[1]; Bertazzo, Giulia[1]; Ghimenti, Silvia[1]; Lenzi, Alessio[1]; Oger, Camille[2]; Galano, Jean-Marie[2]; Balas, Laurence[2]; Durand, Thierry[2]; Pugliese, Nicola Riccardo[3]; Armenia, Silvia[3]; Taddei, Stefano[3]; Masi, Stefano[3]; Di Francesco, Fabio[1]; Lomonaco, Tommaso[1]
1: Department of Chemistry and Industrial Chemistry, University of Pisa, Moruzzi 13, Pisa, Italy; 2: Institut des Biomolécules Max Mousseron IBMM, UMR 5247 CNRS, Université de Montpellier, BP 14 491 15 av Charles Flahault, 34090, ENSCN, France; 3: Department of Pathology, Cardiology Division, University of Pisa, Savi 10, Pisa, Italy

17:30 - 17:45

ANA-OR-095. Quantifying N-Acylethanolamines: Unveiling Their Role in Pain and Metabolism with Isotope-Labelled Probes

Greco, Valentina; Giuffrida, Alessandro
Università di Catania, Italia

University of Wollongong, Wollongong, New South Wales, Australia; 3: Department of General and Thoracic Surgery, Justus-Liebig-University, Giessen, Germany; 4: Institute of Neuroscience, CNR, I-20129 Milano, Italy

17:00 - 17:15

FAR-OR-015. HDAC enzymes to treat retinitis pigmentosa: identification of a potent inhibitor preferentially targeting HDAC6 with in vitro and in vivo efficacy

Panzeca, Giovanna[1]; Carullo, Gabriele[1]; Vincenzi, Fabrizio[2]; Kennedy, Breandan[3]; Brogi, Simone[4]; Gargini, Claudia[4]; Strettoi, Enrica[5]; Gemma, Sandra[1]; Butini, Stefania[1]; Campiani, Giuseppe[1]
1: University of Siena; 2: University of Ferrara; 3: University College Dublin; 4: University of Pisa; 5: Italian National Research Council

17:15 - 17:30

FAR-OR-016. In silico assisted design of pyrrole-based derivatives as CB2 agonists: a comprehensive analysis of CB2R role in memory and cognition

Ciaglia, Tania[1]; Musella, Simona[1]; Ostacolo, Carmine[1]; Ligresti, Alessia[2]; Di Sarno, Veronica[1]; Di Micco, Simone[3]; Campiglia, Pietro[1]; Bertamino, Alessia[1]
1: University of Salerno, Italia; 2: Institute of Biomolecular Chemistry ICB, National Research Council of Italy; 3: Fondazione Ebris, Via S. De Renzi 50, 84125, Salerno, Italy

17:30 - 17:45

FAR-OR-017. Targeting the Sigma-1 Receptor and the TSPO protein with bivalent ligands: exploring a new way against neurodegeneration.

Rossino, Giacomo[1]; Gazzano, Andrea[2]; Linciano, Pasquale[1]; Rossi, Daniela[1]; Schepmann, Dirk[3]; Wünsch, Bernhar[3]; Peviani, Marco[2]; Collina, Simona[1]
1: University of Pavia, Department of Drug Sciences, Via Taramelli 12, 27100 Pavia, Italy.; 2: University of Pavia, Department of Biology and Biotechnology "L. Spallanzani", Via Ferrata 9, 27100 Pavia, Italy.; 3: Institute of Pharmaceutical and Medicinal Chemistry, University of

lo sviluppo dei Sistemi a Grande Interfase, Firenze, Italia

17:15 - 17:30

FIS-OR-026. New Flexible Metal-Organic Frameworks for carbon dioxide capture

Guiotto, Virginia[1]; Cavallo, Margherita[1]; Notari, Maria Sole[2]; Morelli Venturi, Diletta[3]; Perego, Jacopo[4]; Nardelli, Francesca[5]; Calucci, Lucia[5]; Signorile, Matteo[1]; Comotti, Angiolina[4]; Bordiga, Silvia[1]; Lessi, Marco[6]; Costantino, Ferdinando[2]; Taddei, Marco[6]; Crocellà, Valentina[1]
1: University of Torino, Italia; 2: University of Perugia, Italia; 3: University Kiel, Germany; 4: University of Milano Bicocca, Italy; 5: Consiglio Nazionale delle Ricerche, Italy; 6: University of Pisa, Italy

17:30 - 17:45

FIS-OR-027. Extraction and valorization of natural bioactive compounds from agri-food matrices

Maurelli, Anna Maria[1]; De Leo, Vincenzo[2]; Nazzaro, Filomena[3]; Pascale, Michelangelo[3]; Catucci, Lucia[2]
1: Institute of Food Sciences, National Research Council of Italy, Bari Research Unit, via Orabona 4, 70126 Bari, Italy; 2: Department of Chemistry, University of Bari, Via Orabona 4, 70126 Bari, Italy; 3: Institute of Food Sciences, National Research Council of Italy, Via Roma 64, 83100 Avellino, Italy

17:45 - 18:00

FIS-OR-028. Hybrid swellable silicas as adsorbent for the removal of organic dyes from water media

Maccarino, Lorenzo[1]; Marchese, Leonardo[1]; Bisio, Chiara[1,2]
1: Università del Piemonte Orientale, Italia; 2: CNR-SCITEC Institute of Chemical Science and Technology, Italia

18:00 - 18:15

FIS-OR-029. Mechanistic insights into C mineralization over Si-based materials driven by mechanical energy

Mulas, Gabriele; Murgia, Fabrizio; Garroni, Sebastiano; Enzo, Stefano; Poddighe, Matteo; Vecciu,

analysis of ancient proteins from medieval "Pietra Ollare" vessels

Brandi, Jessica[1]; Monaco, Dario[2]; Sorio, Daniela[3]; Saggioro, Fabio[2]; Cecconi, Daniela[1]
1: Department of Biotechnology, Strada Le Grazie 15, University of Verona, Verona, Italy; 2: Department of Cultures and Civilizations, Viale dell'Università 4, University of Verona, Verona, Italy; 3: Centro Piattaforme Tecnologiche, Piazzale Scuro 10, University of Verona, Verona, Italy

18:15 - 18:30

ANA-OR-090. Ultra-high performance liquid chromatography-ion mobility-high-resolution mass spectrometry for untargeted metabolomics of raw milk using multivariate data analysis

Riboni, Nicolo'[1]; Bianchi, Federica[1]; Mattarozzi, Monica[1]; Piergiovanni, Maurizio[1]; Robotti, Elisa[2]; Cipolat Gotet, Claudio[3]; Summer, Andrea[3]; Careri, Maria[1]
1: Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma; 2: Department of Sciences and Technological Innovation, University of Piemonte Orientale; 3: Department of Veterinary Science, University of Parma

IND-1D: Divisione di Chimica Industriale - Parte 1D
Luogo, sala: **Yellow3 (level +1)**
Chair: **Paolo Vacca**, Saes Getters Spa; paolo_vacca@saes-group.com
Chair: **Giorgio Ferrari**, Mapei S.p.A.; g.ferrari@mapei.it

16:30 - 16:45

IND-OR-024. Precursor Strategies for the Preparation of High-Molecular Weight

17:45 - 18:00

ANA-OR-096. Green method for triacylglycerol analysis by subcritical fluid chromatography

Donato, Paola[1]; Satira, Antonella[1]; Rigano, Francesca[1]; Trovato, Emanuela[1]; Bonaccorsi, Ivana[1]; Mondello, Luigi[1,2]
1: Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy; 2: Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy

18:00 - 18:15

ANA-OR-097. Deep Eutectic Solvents: innovative green strategies to analyze tomato pesticides

Della Posta, Susanna[1]; Gallo, Valeria[1]; Gentili, Alessandra[2]; De Gara, Laura[1]; Fanali, Chiara[1]
1: Università Campus Bio-Medico di Roma, Italia; 2: Sapienza Università di Roma

18:15 - 18:30

ANA-OR-098. Development and application of two LC-MS methods for the determination of several pharmaceutical substances in wastewater and assessment of their sustainability

Massano, Marta[1]; Alladio, Eugenio[1]; Minella, Marco[1]; Vincenti, Marco[1,2]; Salomone, Alberto[1,2]
1: Università degli studi di Torino, Italia; 2: Centro Regionale Antidoping, Orbassano (TO), Italy

IND-2A: Divisione di Chimica Industriale - Parte 2A
Luogo, sala: **Turquoise2 (level -1)**
Chair: **Federica Menegazzo**, Università Ca' Foscari Venezia; fmenegaz@unive.it
Chair: **Paolo Ciambelli**, Università di Salerno; pciambelli@unisa.it

16:30 - 16:45

IND-OR-032. Experimental investigation on biomass

Münster, Corrensstraße 48, 48149, Münster, Germany.

17:45 - 18:00

FAR-OR-018. Discovery of novel derivatives as high selective sigma-1 receptor ligands

Cosentino, Giuseppe; Dichiara, Maria; Costanzo, Giuliana; Raffa, Alessandro; Pasquinucci, Lorella; Marrazzo, Agostino; Amata, Emanuele
Università di Catania, Italia

18:00 - 18:15

FAR-OR-019. Multitarget Neuroprotective Potential of Novel BChE-Selective Inhibitors 6-Alkyl-Bridged 4-Arylalkylpiperazin-1-yl Azepino[4,3-b]indol-1(2H)-ones

Samarelli, Francesco; Rosa, Purgatorio; Caterina, Deruvo; Marco, Catto; Antonio, Carrieri; Orazio, Nicolotti; Modesto, de Candia; Cosimo Damiano, Altomare
Università degli Studi di Bari "Aldo Moro", Italia

18:15 - 18:30

FAR-OR-020. NOVEL NICOTINAMIDE PHOSPHORIBOSYLTRANFERASE (NAPRT) MODULATORS AS POTENTIAL NEUROPROTECTIVE OR ANTITUMOR AGENTS

Matteucci, Federica[1]; Cappellacci, Loredana[1]; Del Bello, Fabio[1]; Giorgioni, Gianfabio[1]; Petrelli, Riccardo[1]; Quaglia, Wilma[1]; Angeletti, Carlo[2]; Raffaelli, Nadia[2]; Sorci, Leonardo[2]
1: Università degli Studi di Camerino, Camerino, Italia; 2: Università Politecnica delle Marche, Ancona, Italia

INO-1D: Divisione di Chimica Inorganica - Parte 1D
Luogo, sala: **Blue2 (level +1)**
Chair: **Silvia Gross**, Università di Padova; silvia.gross@unipd.it

16:30 - 16:45

INO-OR-057. Transition metal complexes of Schiff base ligands as G-quadruplex DNA binders

Barone, Giampaolo
Dipartimento di Scienze e Tecnologie Biologiche,

Benedetta; Simula, Maria Domenica; Cau, Costantino
Dipartimento di Scienze Chimiche, Fisiche, Matematiche e Naturali, Università degli Studi di Sassari, Italia

18:15 - 18:30

FIS-OR-030. Geographical origin characterization of agrifood products from olive oil and wine production chains via 1H NMR and fluorescence spectroscopy combined with multivariate analysis

Tatini, Duccio[1]; Bonechi, Claudia[1]; Baglioni, Michele[1]; Tamasi, Gabriella[1]; Costantini, Sara[1]; Fattori, Giacomo[1]; Boldrini, Amedeo[1]; Tozzi, Cristiana[2]; Riccaboni, Angelo[2]; Rossi, Claudio[1,2]
1: Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Italy; 2: Santa Chiara Lab, University of Siena, Italy

ORG-1D: Divisione di Chimica Organica - Parte 1D
Luogo, sala: **Red1 (level +1)**
Chair: **Giovanni Piersanti**, Università degli studi di Urbino Carlo Bo; giovanni.piersanti@uniurb.it
Chair: **Raffaele Saladino**, Università della Tuscia; saladino@unitus.it

16:30 - 16:45

ORG-OR-024. Electrochemical

Conjugated Polymers with Tailorable Redox Properties

Carlotti, Marco[1,2]
1: Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italy; 2: Center for Materials Interfaces, Istituto Italiano di Tecnologia, Italy

16:45 - 17:00

IND-OR-025. BiOBr/LECA as novel sunlight-driven device for drug photodegradation: harnessing sustainability as a keystone to help vulnerable communities

Galloni, Melissa Greta[1]; **Falletta, Ermelinda**[1]; **Fabbrizio, Vincenzo**[1]; **Cerrato, Giuseppina**[2]; **Giordana, Alessia**[2]; **Boffito, Daria C.**[3]; **Bianchi, Claudia L.**[1]
1: Dipartimento di Chimica, Università degli Studi di Milano, via Golgi 19, 20133 Milano, Italia; 2: Dipartimento di Chimica, Università degli Studi di Torio, via Giuria 7, 10121 Torino, Italia; 3: Polytechnique Montréal – Génie Chimique 2900 Boul, Edouard Montpetit – H3T 1J4, Montréal, Québec, Canada

17:00 - 17:15

IND-OR-026. Sustainable Luminescent Solar Concentrators with Superior Photodegradation Resistance Employing Heptagon-Embedded Polycyclic Aromatic Dicarboxyimides as Emitters

Picchi, Alberto[1]; **Kantarod, Kritchasorn**[2]; **Ilarioni, Massimo**[3]; **Carlotti, Marco**[1,4]; **Leowanawat, Pawaret**[2]; **Pucci, Andrea**[1,5]
1: Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Via Moruzzi 13, 56124 Pisa, Italy; 2: Department of Chemistry, Faculty of Science, Mahidol University, Bangkok 10400, Thailand; 3: I&S srl, Via F.lli Chiaruffi 12, 50067 Rignano sull'Arno, Firenze, Italy; 4: Center for Material Interfaces, Istituto Italiano di Tecnologia, Via R. Piaggio 34, 56025 Pontedera, Italy; 5: INSTM, UdR di Pisa, via Moruzzi 13, 56124 Pisa, Italy

17:15 - 17:30

IND-OR-027. Process intensification for removal of new pharmaceutical compounds from water

Paparo, Rosanna[1]; **Trifuoggi, Marco**[1]; **Uggeri, Fulvio**[2];

pyrolysis: a study on devolatilization and speciation

Benedetto, Eleonora[1]; **Piazza, Veronica**[1]; **Frassoldati, Alessio**[1]; **Lietti, Luca**[1]; **Chen, De**[2]; **Faravelli, Tiziano**[1]; **Beretta, Alessandra**[1]
1: Politecnico di Milano, Italia; 2: Norwegian University of Science and Technology, Norway

16:45 - 17:00

IND-OR-033. Valorization of Char from Chemical Recycling of Plastics

Longo, Lilia[1]; **Vecchini, Nicola**[2]; **Galeotti, Armando**[2]; **Gradella, Cecilia**[2]; **Signoretto, Michela**[1]
1: Università Ca' Foscari Venezia, Italia; 2: Versalis S.p.A.

17:00 - 17:15

IND-OR-034. Valorization of Olive Mill Wastewater: From Waste to Biopesticides and Biofertilizers

Iebole, Andrea; Comite, Antonio; Banfi, Luca
Department of Chemistry and Industrial Chemistry, University of Genoa, Genoa (GE), Italy

17:15 - 17:30

IND-OR-035. Optimization of catalyst acidity for the catalytic pyrolysis of plastic wastes

Offidani, Michele[1]; **Tabanelli, Tommaso**[1]; **Giorgini, Loris**[1]; **Benelli, Tiziana**[1]; **Nodari, Mirco**[2]; **Melloni, Mattia**[2]; **Ferrando, Angelo**[2]; **Cavani, Fabrizio**[1]
1: Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Bologna, Italia; 2: Centro di ricerca "C. Buonerba", Versalis s.p.a., Mantova, Italy

17:30 - 17:45

IND-OR-036. Adsorption Technologies for Sustainable Reduction of CH4 and CO2 from Agricultural Livestock

Gramegna, Alice[1]; **Tommasi, Matteo**[2]; **Degerli, Simge Naz**[1]; **Rossetti, Ilenia**[1,2]
1: INSTM Unit MIlano-Università, Via C. Golgi 19,20133 Milan, Italy; 2: Chemical Plants and Industrial Chemistry Group, Dip. Chimica, Università degli Studi di Milano, Chimiche e Farmaceutiche, Università degli Studi di Palermo, Italia

16:45 - 17:00

INO-OR-058. Solar to chemical energy conversion with plasmonic photocatalysts

Naldoni, Alberto
Universita' di Torino, Italia

17:00 - 17:15

INO-OR-059. Mesoporous bioactive glasses with tailorable antioxidant and therapeutic properties

Lusvardi, Gigliola; Fraulini, Francesca; Nicolini, Valentina; Cavazzoli, Chiara; Zambon, Alfonso
Università di Modena e Reggio Emilia, Italia

17:15 - 17:45

INO-MD-03. Medaglia Nasini. Sodium: the journey of a "diffusion catalyst" from the surface to the bulk of Cu(In,Ga)Se2

Colombara, Diego
IMAGO Research Unit, Università degli Studi di Genova, Italia

17:45 - 18:00

INO-PZ-02. Premio tesi di Dottorato. Bonding and Reactivity in Heterobimetallic Bridging Hydrides Across the Transition Series

Landrini, Martina
Università degli Studi di Perugia

18:00 - 18:15

INO-PZ-03. Premio tesi di Dottorato. Metal oxide photocatalysts: the role of surface and nanostructure

Liccardo, Letizia[1,2]; **Moretti, Elisa**[1]
1: Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Via Torino 155, 30172 Venezia Mestre, Italy; 2: Istituto di Struttura della Materia-CNR (ISM-CNR), SS 14, Km 163.5, 34149 Trieste, Italy

18:15 - 18:30

INO-PZ-04. Premio tesi di Dottorato. Discovery of antibacterial manganese(I) tricarbonyl complexes

Stereoselective Pinacol coupling: an Easy Access to Chiral Diamines

Medici, Fabrizio; Gazzoti, Margherita; Resta, Simonetta; Benaglia, Maurizio
Università degli Studi di Milano, Italia

16:45 - 17:00

ORG-OR-025. Unusual Reactivity of N-alkoxyamides in the Presence of Silylating Reagents.

Miele, Margherita[1,2]; **Castoldi, Laura**[3]; **Beccalli, Egle**[3]; **Pace, Vittorio**[1,2]
1: University of Torino, Italia; 2: University of Vienna, Austria; 3: University of Milano, Italia

17:00 - 17:15

ORG-OR-026. Oxetanes as nucleophiles for the synthesis of pharmaceutically relevant key building blocks

Natho, Philipp; Luisi, Renzo
Universita degli studi di Bari Aldo Moro, Italy

17:15 - 17:30

ORG-OR-027. A Lewis Acid-Catalyzed Unconventional Behavior of Oxazolines with Aldehydes

Papis, Marta; Broggini, Gianluigi
Università degli Studi dell'Insubria, Italia

17:30 - 17:45

ORG-OR-028. Deep Eutectic Solvents for Eco-Sustainable Synthesis of APIs: A Promising Approach

Perna, Filippo; Capriati, Vito; Vitale, Paola; Cicco, Luciana
Università degli Studi di Bari "Aldo Moro", Italia

17:45 - 18:00

ORG-OR-029. Triangulenium ions: Versatile Organic Photocatalysts for Metallaphotoredox protocols

Pinosa, Emanuele[1,2]; **Calogero, Francesco**[1,2]; **Fermi, Andrea**[1,2]; **Gualandi, Andrea**[1,2]; **Ceroni, Paola**[1,2]; **Cozzi, Pier Giorgio**[1,2]
1: Alma Mater Studiorum – Università di Bologna, Italia; 2: Center for Chemical Catalysis – C3, Alma Mater Studiorum– Università di Bologna

Nicolais, Luigi[3]; Di Serio, Martino[1]; Russo, Vincenzo[1]
1: University of Naples Federico II, Napoli; 2: Bracco SpA, Milan, Italy; 3: Materias Srl, Naples, Italy

17:30 - 17:45

IND-OR-028. Purge ratio vs Spike & Purge, who wins? A real case during an API production

Rossi, Roberto
Dipharma Francis S.r.l., Italia

17:45 - 18:00

IND-OR-029. A comparison between the solar photoreforming of natural and synthetic polymeric derivates for the H2 production

Armeli Iapichino, Maria Teresa; Fiorenza, Roberto; Scirè, Salvatore
Università degli studi Catania, Italia

18:00 - 18:15

IND-OR-030. Innovative Cu-based polymers to recover dissipated heat at low-temperature

Galliano, Simone[1,2]; Franzini, Marcello[1,2]; Barbero, Nadia[1,2]; Bonomo, Matteo[1,2]; Sasitharan, Kezia[3]; Morritt, George Harvey[3]; Borri, Marco[4]; Filiddani, Gianluca[4]; Freitag, Marina[3]; Reale, Andrea[5]; Barolo, Claudia[1,2]
1: Department of Chemistry, NIS Interdepartmental Centre and INSTM Reference Centre. University of Turin, Torino, Italy; 2: National Interuniversity Consortium of Materials Science and Technology (INSTM), Firenze, Italy; 3: School of Natural and Environmental Science, Newcastle University, Newcastle upon Tyne,UK; 4: Martur Italy srl, Grugliasco (TO), Italy; 5: Department of Electronic Engineering, University of Rome Tor Vergata-CHOSE, Roma, Italy

18:15 - 18:30

IND-OR-031. New generation of PVDF membranes preparation using γ-Valerolactone (GVL) as a green solvent for Membrane Distillation

Russo, Francesca[1]; Carnevale, MariaConcetta[1]; Galiano, Francesco[1]; via C. Golgi 19, 20133 Milan, Italy

17:45 - 18:00

IND-OR-037. Removal of chromium (VI) from water exploiting maltodextrin-based cationic adsorbents

Cecone, Claudio; Ginepro, Marco; Trotta, Francesco
Università di Torino, Italia

18:00 - 18:15

IND-OR-038. From Waste to Feedstock: BHET-driven Integration for Closing the Loop in Eco-Friendly Polyurethane Resins

Viada, Gabriele[1]; Galliano, Simone[1]; Menozzi, Alberto[2]; Tammaro, Federica[2]; Barolo, Claudia[1]; Bonomo, Matteo[1]
1: Università degli studi di Torino, Italia; 2: Demak Polymers Srl, Torino

18:15 - 18:30

IND-OR-039. Enhancing Safety in Academic Laboratories: A Combined HAZOP and LOPA Approach for Risk Assessment in Fischer-Tropsch Synthesis Experiments

Grainca, Arian[1]; Gasparotto, Francesca[2]; Mocellin, Paolo[2]; Pirola, Carlo[1]
1: Università degli studi di Milano, Italia; 2: Università degli studi di Padova, Italia

through combinatorial chemistry

Scaccaglia, Mirco[1,3]; P. Birbaumer, Michael[3]; Pinelli, Silvana[2]; Pelosi, Giorgio[1]; Frei, Angelo[3]
1: Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, 43124 Parma, Italy; 2: Department of Medicine and Surgery, University of Parma, Via Gramsci 14, 43126 Parma, Italy; 3: Department of Chemistry, Biochemistry & Pharmaceutical Sciences, University of Bern, Freiestrasse 3, 3012 Bern, Switzerland

18:00 - 18:15

ORG-OR-030. A microfluidic photo-induced platform to tune the synthesis of functionalized gold nanoparticles

Polito, Laura; Marelli, Marcello
National Research Council, CNR-SCITEC, via G. Fantoli 16/15, Milan, Italy

18:15 - 18:30

ORG-OR-031. Exploring the fascinating properties of Bombyx mori Silk fibroin in catalysis

Ricciardelli, Carola; Rizzo, Giorgio; Cotugno, Pietro; Farinola, Gianluca M.
Dipartimento di Chimica Università degli Studi di Bari, Via Orabona 4, 70126 Bari, Italia

Gordano, Amalia[1]; Conti, Roberto[2]; Aquino, Marco[3]; Curcio, Efrem[3]; Criscuoli, Alessandra[1]; Figoli, Alberto[1]
1: Institute on Membrane Technology (CNR-ITM), Via P. Bucci 17/C 87036 Rende (CS), Italy; 2: GVS S.p.A., via Roma, 50, 40069 Zona Industriale, Zola Predosa (Bologna), Italy; 3: Dept. of Environmental Engineering (DIAm), University of Calabria, Via P. Bucci 45, 87036 Rende (CS), Italy

ORG-2D: Divisione di Chimica Organica - Parte 2D
Luogo, sala: **Green2 (level -1)**
Chair: **Daniele Passarella**, Università degli Studi di Milano; daniele.passarella@unimi.it
Chair: **Antonio Molinaro**, Universita di Napoli Federico II; molinaro@unina.it

16:30 - 16:45

ORG-OR-056. Synthesis of a novel 4th generation of TKI targeting L858R/T790M EGFR: exploring the reversible drug binding dynamics by plasmonic nanoantenna-based SEIRA structures and atomistic simulations

Minnelli, Cristina[1]; Mobbili, Giovanna[1]; Romagnoli, Elena[1]; Laudadio, Emiliano[1]; Sorci, Leonardo[1]; Birarda, Giovanni[2]; Piccirilli, Federica[2]; Galeazzi, Roberta[1]; Toma, Andrea[3]
1: Università Politecnica delle Marche, Italia; 2: Elettra Sincrotrone Trieste, Basovizza, Trieste, Italy; 3: Italian Institute of Technology (IIT), Genova, Italy

16:45 - 17:00

ORG-OR-057. A functional proteomics-based multidisciplinary strategy for the Drug-Target Deconvolution of a novel cytotoxic thiadiazolopyrimidone

Morretta, Elva[1,2]; Ruggiero, Dafne[2]; Belvedere, Raffaella[2]; Petrella, Antonello[2]; Bruno, Ines[2]; Terracciano, Stefania[2]; Monti, Maria Chiara[1]
1: Università degli Studi di Napoli Federico II, Italia; 2: Università degli Studi di Salerno, Italia

17:00 - 17:15

ORG-OR-058. Biomimetic synthesis of oligomeric compounds derived from

ORG-3D: Divisione di Chimica Organica - Parte 3D
Luogo, sala: **Green3 (level -1)**
Chair: **Alessandro Pezzella**, Università di Napoli Federico II; alessandro.pezzella@unina.it
Chair: **Raffaella Mancuso**, Università della Calabria; raffaella.mancuso@unical.it

16:30 - 16:45

ORG-OR-087. Barium Alginate Gel Beads: A Homochiral Porous Material from Brown Algae for Heterogeneous Asymmetric Catalysis

Pecchini, Pietro[1]; Aguilera, Daniel Antonio[1,2]; Soccio, Alberto[1]; Lombardi, Alessio[1]; Sanz Azcona, Fatima[1]; Santarelli, Nicoló[1]; Fochi, Mariafrancesca[1]; Gaudin, Pierrick[2]; Tanchoux, Nathalie[2]; Bernardi, Luca[1]
1: Universitá di Bologna, Italia; 2: University of Montpellier

16:45 - 17:00

ORG-OR-088. Developing Triarylamine-Based Materials for Optoelectronic Technologies: A Step Towards Sustainability

Raglione, Venanzio[1]; Palmeri, Federica[1,2]; Zanotti, Gloria[1]
1: Istituto di Struttura della Materia (ISM), Consiglio Nazionale delle Ricerche, Italia; 2: Dipartimento di Chimica, Università di Roma "La Sapienza"

17:00 - 17:15

ORG-OR-089. Hybrid cellulose nanocrystal–gold nanoparticles as a new generation of multifunctional and programmable glyconanomaterial

Richichi, Barbara; Biagiotti, Giacomo
Department of Chemistry 'Ugo Schiff', University of Florence, Italia

TEC-D: Divisione di Chimica per le Tecnologie - Parte D
Luogo, sala: **Yellow2 (level +1)**
Chair: **Candida Milone**, Università di Messina; cmilone@unime.it
Chair: **Fabio Ganazzoli**, Politecnico di Milano; fabio.ganazzoli@polimi.it

16:30 - 16:45

TEC-OR-027. CaMnO3: a promising material for low temperature hydrogen storage

Calabrese, Giulia; Mastronardo, Emanuela; Proverbio, Edoardo; Milone, Candida
Università degli Studi di Messina, Italia

16:45 - 17:00

TEC-OR-028. Molecular Tweezer based on Zn(salen)-type complexes: role of spacer flexibility on aggregation and sensing properties towards biogenic amines

Oliveri, Ivan Pietro; Attinà, Agostino; Consiglio, Giuseppe; Failla, Salvatore; Di Bella, Santo
Università di Catania, Italia

17:00 - 17:15

TEC-OR-029. Monitoring of contaminants in irrigation water by electrochemical sensors

Celesti, Consuelo; Giofrè, Salvatore Vincenzo; Calabrese, Luigi; Gugliandolo, Concetta; Zammuto, Vincenzo; Neri, Giovanni; Iannazzo, Daniela
Università di Messina, Italia

17:15 - 17:30

TEC-OR-030. Recovery of strategic metals from NCM-lithium battery black mass through a microwave hybrid heating process

natural neolignans as metabolic enzyme inhibitors

Muccilli, Vera[1]; Sciacca, Claudia[1]; Pulvirenti, Luana[2]; Cardullo, Nunzio[1]
1: Università di Catania, Italia; 2: CNR-ICB

17:15 - 17:30

ORG-OR-059. An improved mRNA delivery system for injury repair and regeneration therapy

Ni, Qianqian
National University of Singapore, Singapore

17:30 - 17:45

ORG-OR-060. State-of-the-art molecular docking and computer aided methods in the study of natural products, from single molecules to complex matrices

Pulvirenti, Luana; Strano, Tonia; Siracusa, Laura
CNR, Italia

17:45 - 18:00

ORG-OR-061. Structure optimization of Cycloastragenol (CAG) derivatives as novel anticancer agents

Romano, Maria Preziosa[1,2]; Abbatiello, Lucia[1]; Bruno, Ferdinando[1,2]; Filosa, Rosanna[1,2]
1: Department of Science and Technology, University of Sannio, Benevento, Italy; 2: Advanced Medical Pharma (AMP-Biotec), Healthcare Research and Innovation Center, Benevento, Italy

18:00 - 18:15

ORG-OR-062. How D-amino acids embedded in the protein sequence modify digestibility: behaviour of digestive enzymes on a D-amino acids-containing model peptide used as target

Tedeschi, Tullia; Accardo, Francesca; Prandi, Barbara; Sforza, Stefano
Department of Food and Drug Sciences, University of Parma, Italia

18:15 - 18:30

ORG-OR-063. A dimeric receptor for the recognition of adenine derivatives via triplex-like interactions.

17:15 - 17:30

ORG-OR-090. From models to Lignin depolymerization. Photocatalysis using V-aminotriphenolate complexes.

Sanz Azcona, Fátima; Escudero-Casao, Margarita; Bertoluzzo, William; Cesprini, Emanuele; Licini, Giulia
Università di Padova, Italia

17:30 - 17:45

ORG-OR-091. "Enzyme-Driven Nanostructured Materials: A Promise for Biocatalyst Immobilization and Activation"

Spagnuolo, Laura[1]; Beneventi, Davide[2]; Dufresne, Alain[2]; Micheli, Laura[3]; Operamolla, Alessandra[1]
1: Dipartimento di Chimica e Chimica Industriale, Università di Pisa, via Giuseppe Moruzzi 13, 56124, Pisa ; 2: Université Grenoble Alpes, CNRS, Grenoble INP, LGP2, F-38000 Grenoble, France; 3: Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata, via della Ricerca Scientifica, 00133 Roma

17:45 - 18:00

ORG-OR-092. Pine needles as a sustainable source of natural phenolic compounds to be used as green corrosion inhibitors for aluminium alloys

Viggiano, Sara[1]; Salzano de Luna, Martina[2]; Ambrogi, Veronica[2]; Panzella, Lucia[1]
1: Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Italia; 2: Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università degli Studi di Napoli Federico II, Italia

18:00 - 18:15

ORG-OR-093. Valorization of natural biomasses and exhausted industrial composites via bioorganic approaches

Vona, Danilo[1]; Othman, Nadine[1]; De Mastro, Francesco[1]; Di Cosmo, Domenico[1]; Porfido, Carlo[1]; Cicco, Stefania Roberta[2]; Spagnuolo, Matteo[1]; Gattullo, Concetta Eliana[1]; De Miccolis Angelini, Rita Milvia[1]; Cornelio, Antonella; Zanoletti, Alessandra; Scaglia, Matteo; Bonometti, Alessandro; Bontempi, Elza
INSTM e Laboratorio di Chimica per le Tecnologie, Dipartimento di Ingegneria Meccanica e Industriale, Università di Brescia, Italia

17:30 - 17:45

TEC-OR-031. Rosin-modified titanium oxide active in radical-mediated degradation of microplastics under ambient conditions

Imparato, Claudio[1]; Bifulco, Aurelio[1]; Fantauzzi, Marzia[2]; Amato, Paola[1]; Vitiello, Giuseppe[1]; Sannino, Filomena[3]; Rossi, Antonella[2]; Aronne, Antonio[1]
1: Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università di Napoli Federico II, Napoli, Italia; 2: Dipartimento di Scienze Chimiche e Geologiche, Università di Cagliari, Monserrato (Cagliari), Italia; 3: Dipartimento di Agraria, Università di Napoli Federico II, Portici (Napoli), Italia

17:45 - 18:00

TEC-OR-032. Catechol as Sensitizer for Visible Light Absorbance Enhancement of TiO2 Nanorods

Lo Porto, Chiara[1]; Grisorio, Roberto[1]; Conelli, Daniele[1]; Suranna, Gian Paolo[1,2]
1: Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari, Via Orabona 4, 70125 Bari, Italy; 2: CNR NANOTEC – Istituto di Nanotecnologia, Via Monteroni, 73100 Lecce, Italy

18:00 - 18:15

TEC-OR-033. Deep Eutectic Solvents for HMF valorization

Righetti, Grazia Isa Carla; Di Pietro, Maria Enrica; Rossetti, Arianna; Mele, Andrea
Politecnico di Milano, Italia

18:15 - 18:30

TEC-OR-034. Spectroscopic fingerprinting for early detection of Xylella fastidiosa infection and insights into the resistance mechanisms

Musio, Biagia[1]; Ahmed, Elhussein[1,2]; Saponari, Maria[3]; Saldarelli, Pasquale[3];

Volpi, Stefano; Rivi, Nicola; Neri, Martina; Korom, Sasa; Corradini, Roberto
Department of Chemistry, Life Sciences and Envirnmental Sustainability, University of Parma, Italy

Cocozza, Claudio[1]; Terzano, Roberto[1]; Brunetti, Gennaro[1]
1: Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli studi di Bari Aldo Moro, via Amendola 165/a, Bari, Italy; 2: Istituto di Chimica dei Composti Organometallici (ICCOM), CNR, via Orabona 4, 70126 Bari, Italy

Gualano, Stefania[2]; Santoro, Franco[2]; Mastrorilli, Piero[1]; Gallo, Vito[1]
1: Polytechnic University of Bari, Italia; 2: International Centre for Advanced Mediterranean Agronomic Studies of Bari (CIHEAM); 3: Institute for Sustainable Plant Protection, National Research Council (CNR)

18:15 - 18:30

ORG-OR-094. Quinoxaline-Based Organic Dyes for Dye-Sensitized Photoelectrochemical Cells (DS-PECs)

Yzeiri, Xheila
University of Siena, Italy

17:30 - 18:30

CSB-3: Divisione di Chimica dei Sistemi Biologici - Parte 3
Luogo, sala: **Meeting4+5 (level -1)**

17:30 - 18:00

Multi-eGO: molecular modelling of biomolecular self-assembly processes

Camilloni, Carlo
Universita' degli Studi di Milano, Italia

18:00 - 18:15

CSB-OR-023. Amino Acid Chirality to Design Functional Superstructures

Marchesan, Silvia
Università di Trieste, Italia

18:15 - 18:30

CSB-OR-024. Exploring nano-plastics supramolecular interactions in biological systems by combined in vitro and in vivo techniques

della Valle, Maria[1]; D'Abrosca, Gianluca[2]; Gentile, Maria Teresa[1]; Russo, Luigi[1]; Isernia, Carla[1]; Di Gaetano, Sonia[3]; Avolio, Roberto[4]; Castaldo, Rachele[4]; Cocca, Mariacristina[4]; Gentile, Gennaro[4]; Madheswaran, Manoj[1]; Ghebretinsae Tewelde, Awet[1]; Malgieri, Gaetano[1]; Errico, Maria Emanuela[4]; Fattorusso, Roberto[1]
1: Dipartimento di Scienze e Tecnologie, Ambientali, Biologiche e Farmaceutiche, Università degli Studi della Campania "Luigi Vanvitelli", Italia; 2: Dipartimento di Medicina Clinica e Sperimentale, Università di Foggia, Italia; 3: Istituto di Biostrutture e Bioimmagini - CNR, Italia; 4: Istituto di Polimeri, Compositi e Biomateriali - CNR, Italia

18:30 - 23:00

DINNER: Gala Dinner with Happy Hour and Exclusive Guided Tour of the Museum
Luogo, sala: **Museo Nazionale Scienza e Tecnologia Leonardo da Vinci (MUST)**
6:30 - 8:00 PM: Happy Hour and Guided Tours
8:00 - 11:00 PM: Gala Dinner

An exciting discovery of the Museum's highlights awaits you: the Leonardo da Vinci Galleries, the Space exhibition with lunar rocks, the Vega launcher, the Enrico Toti submarine, the Conte Biancamano ocean liner, locomotives and airplanes.

Tours depart continuously upon reaching a predetermined number of guests and guide participants from the Happy Hour hall to the cloisters where the dinner will take place, passing through the most interesting areas of the Museum.

For further details, visit: https://www.museoscienza.org/en

Venerdì, 30 agosto 2024

8:30 - 9:30

MD-B: Medal Session B
Luogo, sala: **Silver Plenary (level +2)**

8:30 - 9:00

MD-02- Medaglia Natta. Analytical chemistry in front of the curtain: a personal experience of the last 40 years

Roda, Aldo
Università di Bologna, Italia

9:00 - 9:30

MD-01. Medaglia Cannizzaro. From Li clusters to nanocatalysis: a personal tour of 40 years of cluster chemistry

Pacchioni, Gianfranco
Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, Italia

8:30 - 17:00

Silent room August 30th: Silent room programme August 30th
Luogo, sala: **SilentRoom (main hall; level +1)**
Chair: **Alessandro Minguzzi**, Università degli Studi di Milano; alessandro.minguzzi@unimi.it
Chair: **Emanuela Licandro**, Università degli Studi di Milano; emanuela.licandro@unimi.it

9:30 - 10:00

PL-C: Plenary Session C
Luogo, sala: **Silver Plenary (level +2)**
9:30 - 10:00

PL-08. Elements of Future for Sustainable Energy Storage

Manthiram, Arumugam
University of Texas at Austin, United States of America

10:00 - 10:45

NB: Nobel Session
Luogo, sala: **Silver Plenary (level +2)**
10:00 - 10:45

NB-1. From Supramolecular Towards Adaptive Chemistry

Lehn, Jean-Marie
University of Strasbourg, Francia

10:45 - 11:15

COFFEE-BREAK2: Coffee Break & Expo
Luogo, sala: **Hall B (main hall; level +1)**

11:15 - 11:45

PL-D: Plenary Session D
Luogo, sala: **Silver Plenary (level +2)**
11:15 - 11:45

PL-09. The Periodic Table's Women

Venturi, Margherita
Università di Bologna, Italia

11:45 - 12:45

TOPIC-E: Outreach & Dissemination
Luogo, sala: **Silver Plenary (level +2)**
11:45 - 12:45

Sei donne che hanno cambiato il mondo

Greison, Gabriella
Me stessa, Italia

12:45 - 14:15

LUNCH4: Lunch & Expo
Luogo, sala: **Hall B (main hall; level +1)**
Check the registration area in ConfTool for any lunch booking options at the congress center or nearby.

14:15 - 17:00

TOPIC-F: Arts & Music
Luogo, sala: **Silver Plenary (level +2)**
14:15 - 14:45

PL-10. Between Materials and Meanings: Research at the Interface of Chemistry and Art.

Leona, Marco
The Metropolitan Museum of Art, United States of America

14:45 - 17:00

Arts & Music

De Cola, Luisa
Universita' degli Studi di Milano, Italia

17:00 - 18:00

CLOSING: Closing Ceremony
Luogo, sala: **Silver Plenary (level +2)**
Chair: **Gianluca Maria Farinola**, Società Chimica Italiana; gianlucamaria.farinola@uniba.it

Società Chimica Italiana

XXVIII Congresso Nazionale

MILANO, 26 - 30 Agosto 2024

SCI 2024

Chimica

ELEMENTI DI FUTURO

Poster list

Lunedì, 26 agosto 2024, ore:
POSTER-A: Poster Session A
Luogo, sala: **Hall B (main hall; level +1)**

INO-PO-007. Alfa-diimines ligands with fluorinated skeleton: coordination chemistry to palladium and relevant catalytic activity

Abdel Hady, Karim[1]; Guzzo, Beniamino[1]; Quattrin, Daniele[1]; Balducci, Gabriele[1]; Daugulis, Olafs[2]; Milani, Barbara[1]
[1]Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, via Licio Giorgieri 1, Italia; [2]Depertment of Chemistry, University of Houston, Houston, Texas 77204-5003, US

During the last two decades Pd(II)-based Brookhart type complexes, of general formula [Pd(Me)(MeCN)(N-N)][PF6] (N-N = α-diimines, DAB or BIAN), have been extensively studied as homogeneous catalysts for the copolymerization of ethylene with polar vinyl monomers, such as acrylic esters, to obtain functionalized polyolefins (FPO), very interesting macromolecules that could represent an environmental-friendly improvement with respect to simple polyolefins.

We have now studied a new series of alfa-diimine ligands characterized by halogenated aryl substituents on the backbone (Figure 1). In contrast to DAB derivatives, the coordination to palladium of the fluorine substituted ligands 3 - 5 resulted to be rather difficult and new synthetic strategies are under investigation. For instance, we have now found that ligand 5 does not react with [Pd(cod)(Me)Cl], unless [Pd(PhCN)2Cl2] is present in the reaction mixture, leading to [Pd(5)(Me)Cl] thanks to the transfer of the diolefin to the latter palladium precursor. In the case of ligand 3, which is also inert towards [Pd(cod)(Me)Cl], the synthesis of [Pd(3)(Me)Cl] was tentatively achieved through the transmethylation reaction performed on [Pd(3)Cl2] that, in turn, was obtained from the reaction of 3 with [Pd(PhCN)2Cl2].

The catalytic behaviour of the corresponding cationic complexes [Pd(1)(Me)(MeCN)][PF6] and [Pd(2)(Me)(MeCN)][PF6] in the ethylene/methyl acrylate copolymerization will be also presented.

MAS-PO-004. Sustainable food packaging solutions from tea waste: mass-spectrometry based analysis for molecular fingerprinting and safety assessment

Acquavia, Maria Assunta[1]; Heredia-Guerrero, Josè Alejandro[2]; Guzman-Puyol, Susana[2]; Bochicchio, Rocco[3]; Laurenza, Saverio[3]; Di Capua, Angela[1]; Bianco, Giuliana[1]
[1]Department of Sciences, University of Basilicata, Via dell'Ateneo Lucano 10-85100, Potenza; [2]Department of Plant Breeding and Biotechnology, Institute for Mediterranean and Subtropical Horticulture "La Mayora" (IHSM-UMA-CSIC), Campus de Teatinos, Bulevar Louis Pasteur 49, 29010, Málaga; [3]Comando Provinciale dei Vigili del Fuoco Basilicata, Via Appia 321/b, 85100, Potenza

Packaging plays a crucial role in facilitating modern food systems. Although conventional plastics find wide applications in the field of food packaging, the negative environmental impact caused by the disposal of "single-use plastics" is currently driving the market towards alternative solutions1. Consequently, the demand to develop and produce eco-friendly alternatives for food packaging is increasing. The most recent research concerning bioplastic production focuses on by-products and waste materials from food industries2. In this work, tea waste (TW) extract has been added to a polylactic acid (PLA) polymeric matrix in order to fabricate new active bio-materials for packaging applications, able to extend food shelf-life avoiding moisture loss and colour and textural changes. Liquid chromatography coupled to tandem mass spectrometry with electrospray ionization in negative ion mode (LC-ESI(-)-MS/MS) has been used to provide an untargeted characterization of the bioactive compounds occurring in TW extract, which could be freely released in the head-space of packaging, acting as antioxidants. Data-dependent acquisition offered the possibility to get selective MS/MS spectra, allowing the identification of several metabolites with well documented biological activity that accounted for the high antioxidant properties of the fabricated bioplastics (radical scavenging activity up to 60% against DPPH radical). As food contact materials should comply with the specific conditions described in the EU Regulation 10/2011, which lists all the permitted substances that can migrate into food or food simulants3, an evaluation of the non-intentionally added substances (NIAS) released from TW based plastics was carried out. An HS-SPME-GC-MS method, using a polydimethylsiloxane fiber (100 µm), was optimized to analyse the volatile organic compounds released from PLA and PLA/TW composites. The results obtained from the molecular fingerprint of PLA volatiles, mainly comprising aldehydes and few substances of health concerns, showed that VOC emission was reduced by TW extract addition, thus increasing the safety of the fabricated materials for food contact purposes.

References:

[1] Cruz R. M. S. et al., Foods, 2022, 1–39,

[2] Acquavia M. A.et al., Food Chem., 2023, 1-12

[3] Riboni N. et al., Separations, 2023, 1-21 ,

INO-PO-057. Structure and photochemical properties of single nickel atoms on the surface of carbon nitride

Actis, Arianna
Università di Torino, Italia

Current research in the field of solar energy conversion is focusing on photocatalysts constituted by earth-abundant inexpensive elements and with good absorption properties in the visible range. These properties are key to foster a greener and sustainable photochemistry. Carbon nitride (CN) is a semiconductor which has raised much interest over the past few years because it possesses all these features and has proved to be active in a variety of chemical processes [1]. Recent studies have shown that it is possible to couple the visible-light-activated photoredox activity of CN with the nickel-based catalysis, which is involved in the synthesis of high-value chemicals [2]. Though this Ni-CN system is frequently described as a single-atom catalyst, a site-specific characterization of the active species is still lacking, as well as a description of the mechanism underlying the supposed energy transfer between the light-excited CN semiconductor and the nickel species.

I will present an investigation of the coordination environment of nickel species on CN and the evolution of their oxidation state upon light excitation of the CN semiconductor or in the presence of chemical reductants (H2, CO, C2H4) [3]. In all cases evidence is provided for the formation of reduced paramagnetic Ni(I) single ion species. Electron paramagnetic resonance spectroscopy (EPR) provides a detailed description of the coordination environment and redox activity allowing to probe the electron transfer from CN to nickel and to pinpoint the excitation wavelengths able to optimize this process under reactive conditions.

References:

[1] A. Actis, P. Fornasiero, M. Chiesa, E. Salvadori, ChemPhotoChem 2024, e202300203.

[2] M. Marchi, G. Gentile, C. Rosso, M. Melchionna, P. Fornasiero, G. Filippini, M. Prato, ChemSusChem 2022, 15, e202201094.

[3] M. Marchi, E. Raciti, S. Manoj Gali, F. Piccirilli, H. Vondracek, A. Actis, E. Salvadori, M. Chiesa et al., Advanced Science 2023, 10, 2303781.

FIS-PO-003. Effect of Anchored Phosphonium Cations on Cu nanoparticles in the electrochemical CO2 reduction

Adranno, Brando; Gazzotti, Stefano; Grigioni, Ivan; Ortenzi, Marco Aldo; Dozzi, Maria Vittoria

Università degli Studi di Milano, Italia

In the field of CO2 reduction reaction (CO2RR), there are multiple strategies to increase the process selectivity towards desired C-containing products. In particular, the use of additives with anchored ionic liquids, binding ionomers and N-based cationic species (i.e. ammonium, pyridinium, imidazolium) on metal electrocatalysts has been successfully exploited in order to limit the competitive and undesired hydrogen evolution reaction and modify the product selectivity.1-3 Less attention has been devoted to the use of P-based cations, though these species positively affect the stabilization of reaction intermediates of CO2RR and chemical fixation of CO2 in solution.4,5

In this work, we prepared and characterized styrene-based copolymers containing phosphonium groups to be employed as functionalized binding additives mixed with Cu nanoparticles (NPs) to assemble gas diffusion electrodes (GDEs) for electrochemical CO2RR in flow cells (Figure 1). We carefully compared the CO2RR results attained by using commercial Cu NPs and Nafion® as binding agent with those achieved with our home-made GDEs with different substituents and amounts of phosphonium groups, seeking for selectivity changes. Preliminary results show the GDE's high hydrophobicity and higher selectivity towards C1 gas products.

Figure 1: Home-made functionalization of Cu NPs with phosphonium loaded styrene-based copolymer to be used in electrochemical flow cells for CO2RR.

References:

[1] M. Zhuansun, Y. Liu, R. Lu, F. Zeng, Z. Xu, Y. Wang, Y. Yang, Z. Wang, G. Zheng, Y. Wang, Angew. Chem. Int. Ed., 2023, 62, e202309875.

[2] Z. Gao, L. Xue, X. Hu, J. Yin, L. Xiao, G. Wao, J. Lu, L. Zhuang, Electrochim. Acta, 2023, 458, 142509.

[3] O. Coskun, S. Dongare, B. Doherty, A. Klemm, M. Tuckerman, B. Gurkan, Angew. Chem. Int. Ed., 2024, 63, e202312163.

[4] Y. Li, X. Yao, Y. Liu, M. Li, Q. Su, Y. Liu, Y. Li, Z. Yang, ChemistrySelect, 2023, 8, e202301449.

[5] C. Jiang, S. Zeng, X. Ma, J. Feng, G. Li, L. Bai, F. Li, X. Ji, X. Zhang, AIChE J., 2023, 69, e17859.

ABC-PO-035. Photo-/Electro-chemical CO2-recycling: from disposal to resource

Agnes, Marco[1]; Saavedra Moncada, Alejandra[1]; Barbero, Alice[2]; Nervi, Carlo[2]; Damiano, Caterina[3]; Gallo, Emma[3]; Armaroli, Nicola[1]

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The most distressing task of Anthropocene is to find an effective process to convert renewable feedstocks of otherwise disposable materials into exploitable, cheap fuels and chemicals via sunlight-driven processes. This project targets the production of small, transportable molecules with high energy content, starting from CO2 as raw material. The overarching goal is to simultaneously target the mitigation of climate change and the principles of circular economy.

The strategy is based on the synergistic action of orthogonal photo- and electro-catalysts able to drive the photoelectrochemical (PEC) conversion of CO2. In particular, an array of metal-coordinating porphyrin-derivatives with appended amine groups has been synthesized and tested in homogeneous phase as plausible electrochemical (EC) catalyst,1 whereas organometallic Mo-/Mn-based complexes bearing terminal amino moieties have been tested as photosensitizers (PS).2

A screening of the selected porphyrins showed a promising EC behaviour. Cyclic voltammetry data exhibit values of standard reduction potential (E°) for these molecules between -1.155 and -0.097 eV, i.e., compatible with CO2 reduction. Further, the photochemical and photophysical characterization of the substrates suggests the possibility to exploit both catalysts simultaneously without facing electron transfer (ET) processes.

These preliminary results suggest the possibility to covalently link the tested molecules on an inert matrix in order to perform heterogeneous catalysis in view of a further optimization and scalability of the system.

ABC-PO-045. Nanostructured MgB2 for the conservation of Archival and Librarian Materials

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The conservation of archival and librarian objects represents a continuous challenge especially for what concerns the protection of paper and parchment from bacterial and fungal biological attacks.

The development of biocidal materials produced using green techniques or associated with circular-economy processes represent a unique opportunity to safeguard these goods.

The synthesis of MgB2 nanostructured through microwave techniques has shown the possibility of exploiting this material as a biocide in biomedical and, in this case, cultural heritage contexts.

The use of inorganic nanomaterials is definitely an advantage over traditional antibiotics, due to the low cost of production and the chemical inertia towards organic media to be preserved [1, 2].

The advantage resides in their different mode of action comparatively to antibiotics, therefore, the chemotherapeutic effect of NM is driven by processes that take place at the interface and two major lethal groups of interdependent mechanisms are presented in literature [3]: (i) disruption/damage of membrane integrity and potential [4]; (ii) production of Reactive Oxygen Species (ROS) [5], far away from an optimum level reached during the cellular metabolism. At low doses, ROS can cause severe DNA damage and mutations, while at higher concentration, ROS lead to the imminent cell death, caused by the severe oxidative stress and macromolecules modification via lipid peroxidation, alteration of proteins, inhibition of enzymes, and RNA and DNA damage

The results of in vitro, in vivo and in situ application of MgB2 and MgB2 - fulleren doped nanocompounds in the contrast of mycetes and cellulositic bacteria or that attack collagen fibers in parchment will be presented here.

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CSB-PO-020. Molecular Dynamics Simulations Elucidate the Molecular Basis of Pre-mRNA Translocation by the Prp2 Spliceosomal Helicase

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The following abstract is based on a recently published paper:

S.N. Agrò, et al. "Molecular Dynamics Simulations Elucidate the Molecular Basis of Pre-mRNA Translocation by the Prp2 Spliceosomal Helicase." J. Chem. Inf. Model. (2023) 63(13), 4180-4189.

The spliceosome is a dynamic molecular machinery essential for precursor-messenger RNA (pre-mRNA) splicing, orchestrated by specific RNA-dependent ATPases/helicases. In the study cited above, we delve into the functional dynamics of Prp2, a member of the DExH-box ATPase/helicase family, which harnesses the energy of ATP hydrolysis to translocate a single pre-mRNA strand in the 5′ to 3′ direction, thus promoting spliceosome remodeling to its catalytic-competent state1.

Through extensive molecular dynamics simulations, we uncovered the functional coupling between ATPase and helicase activities of Prp2. Our findings reveal a typewriter-like rotation of the Prp2 C-terminal domain, driven by pre-mRNA selection, ATP binding, hydrolysis, and dissociation. This rotational movement is facilitated by the swing of interactions between Prp2 residues and nucleobases at the 5′- and 3′-ends of pre-mRNA, ultimately driving the translocation of pre-mRNA. Moreover, our results suggest a conserved translocation mechanism across the DExH-box helicase family, with implications for understanding splicing regulation in diverse cellular contexts.

Dysregulation of DExH-box ATPase helicases can often be associated with tumorigenesis and genetic diseases, as they are involved in vital biological functions2. The molecular mechanism of Prp2 described in this study provides a basis for the therapeutic development of RNA helicase inhibitors for the treatment of several human diseases.

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ANA-PO-004. Integration of Electrochemical and Photoelectrochemical Modes for Enhanced Nitrate Ion Sensing: A Bimodal Sensor Approach

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Bimodal sensors can provide built-in self-calibration by eliminating interferences and normalizing environmental errors with dual-signal readout mode. This approach piqued the interest of researchers in analytical sensing with the potential to achieve more accurate

analyses[1]. In recent years, researchers have succeeded in developing a variety of sensors that incorporate various transduction modes, such as electrochemical-photoelectrochemical (EC-PEC), electrochemical-electrochemiluminescence, electrochemical-colorimetry, electrochemical-fluorescence[2]. Clearly, combining the EC and PEC modes to build a dual mode detecting platform is a promising strategy for accurate, rapid, and sensitive detection, especially when using the same instrumentation. Thus, developing nanomaterials with high electrical conductivity and photoactivity plays a vital role.

Herein, we propose copper doped graphitic carbon nitride (Cu/g-C3N4), where nominal copper is dispersed on the nanosheets. In fact, pristine g-C3N4 demonstrates poor conductivity and a high electron hole recombination rate, restricting the electron transportation and electro-catalytic activity along with low quantum efficiency which reduces the photocatalytic efficiency[3]. Therefore, nanostructuring and doping g-C3N4 with copper assisted in overcoming these flaws and improving its catalytic performance due to the synergetic effect of both Cu and g-C3N4. Cu/g-C3N4 nanomaterial proved to be an effective photo-electrocatalyst. The sensor was developed by depositing the nano-catalyst on a fluorine-doped tin oxide coated glass and served as an active electrode for the electro/photoelectroreduction of nitrate ions at neutral pH.

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FAR-PO-058. Advanced bioanalytic analyses of lipids with artificial intelligence: lipidomic landscape of inflammaging

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Lipids are increasingly recognized as valuable markers for the early detection and assessment of various inflammatory diseases. This study aimed to identify lipid-signatures within an inflammatory cell model by employing HR-mass spectrometry and machine learning techniques. Overall, 469 lipids were identified in TNF-α inflamed cells. Notably, 20% were phosphatidylcholines (PCs) and phosphatidylethanolamines (PE), 10% were sphingomyelins (SM), and other such as phosphatidylinositols (PI) and ceramides (Cer) The TNF-α inducer impacts several cellular pathways as shown by network analysis. The TNF-α inflamed cells were then treated with polyphenols from thinned young apples, known for their anti-inflammatory effects. Arachidonic acid and TNF signaling pathways were modulated by these polyphenols. Lipids were analyzed using an artificial intelligence framework to pinpoint significant signatures and clusters that influence cellular conditions.

ANA-PO-013. Selective extraction of patulin in apple juice samples using a hydrophilic molecularly imprinted polymer as dispersive solid phase extraction sorbent

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Patulin (PAT) is an α,β-unsaturated γ-lactone mycotoxin generated as a secondary metabolite by at least 60 different species of fungi1. Penicillium expansum species is the most threatening one for people's health and market security2. This species is often associated with a post-harvest disease affecting apples3, although other fruits can be contaminated, including pears4, citrus5, and grapes6. A PAT-specific molecularly imprinted polymer was successfully synthesized, utilizing dopamine and melamine as functional monomers, along with formaldehyde as the cross-linker. This resulting material displayed numerous hydrophilic groups, including hydroxyls, imino groups, and ether linkages. For the first time, uric acid was used as a dummy template for its structural similarity to PAT. Comprehensive characterization and analysis of the adsorption process were conducted through adsorption isotherms and kinetics studies. Separation, identification, and quantification of PAT were achieved using ultra-high performance liquid chromatography coupled with both photodiode array detection and tandem mass spectrometry, which was crucial for confirming PAT presence in real samples. The methodology was validated with 20 apple juice samples, demonstrating the polymer's high selectivity and specific adsorption capabilities, with mean recoveries ranging from 85 to 90% and a relative standard deviation below 15%. The developed molecularly imprinted polymer exhibited good linearity within the concentration range of 1–100 ng mL−1, with a coefficient of determination (R2) > 0.99. Furthermore, the method displayed a low limit of detection (0.5 ng mL−1) and quantification (1 ng g−1). The hydrophilic nature of the developed polymer facilitated efficient purification of apple juices, owing to the polar interactions established with the target analyte.

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FAR-PO-123. RNA controlled release from porous silicon nanoparticles coated with hyaluronic acid

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The RNA delivery is emerging in the last century as a new class of therapeutic for a wide range of diseases. Delivering RNA is a very interesting strategy for cancer therapy and rare diseases,1 but remains a great challenge because of its low cell uptake, instability in blood.

For this reason, the use of lipidic nanoparticles has been recently witness as the solution for COVID 19 and the use of other type of nanocarriers is a promising approach for the RNA delivery and its controlled concentration over time. The problem is: what type of nanoparticles can be biocompatible, degradable and able to load enough RNA for therapeutic efficacy? Porous silicon nanostructures are of particular interest because of they fulfill all the requirements to allow in vivo applications, and they are easy to functionalize. The high porosity of these structure also allow a large amount of RNA entrapment and the structures prevent the degradation of the biomolecule and allow the specific drug release in a targeted area.2 However, due to the fast degradability of the silicon, a coating with a polymeric layer is necessary to increase its stability and control the time of release.

Here, we report a strategy to load a high amount of RNA and, to avoid its early release, the use of hyaluronic acid (HA) wrapped around the particles. The presence of HA also helps to be selective towards the tumor environment due to the presence of overexpressed CD44 receptors specific for the polymer. Also the release of the RNA is achieved by the HA degradation promoted by an enzyme called hyaluronidase.3

In this work, is achieved a loading higher than 50% in weight thanks to the use of a calcium silicate reaction and we demonstrate the difference in the time release of RNA between nanoparticles coated and uncoated with HA.

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FAR-PO-104. NEW NITROGEN BASED DERIVATIVES AS SARS-CoV-2 NSP13 INHIBITORS

Albano, Aurora[1]; Madia, Valentina Noemi[1]; Ruggieri, Giuseppe[1]; Ialongo, Davide[1]; Patacchini, Elisa[1]; Arpacioglu, Merve[1]; Messore, Antonella[1]; Scipione, Luigi[1]; Corona, Angela[2]; Emmolo, Roberta[2]; Maloccu, Stefania[2]; Amatore, Donatella[3]; Faggioni, Giovanni[3]; De Santis, Riccardo[3]; Lista, Florigio[3]; Tramontano, Enzo[2]; Di Santo, Roberto[1]; Costi, Roberta[1]

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The coronavirus disease 19 (COVID-19) is a highly transmittable and pathogenic viral infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which spread around the world and caused the 2019–2020 pandemic. Even though successful vaccination programs to combat COVID-19 are available worldwide, little has been accomplished in the development of antivirals to treat the disease. The disparity in COVID-19 vaccination coverage, vaccine resistance, the emergence of several SARS-CoV-2 variants, and the increased transmission ability emphasize the importance of developing antiviral drugs to treat SARS-CoV-2 infections.1 The development of new antiviral agents is, therefore, of utmost importance. The SARS-CoV-2 non-structural protein 13 (nsp13) has been identified as a promising drug target for the development of antivirals due to its crucial role in viral replication. The CoVs nsp13 is a multidomain enzyme that targets the natural nucleotides and deoxynucleotides as substrates when performing its adenosine triphosphatase (ATPase) activity, utilizing the energy of nucleotide triphosphate hydrolysis to unwind DNA or RNA. Moreover, nsp13 is the most conserved non-structural protein within the coronavirus family.2 Several compounds have been reported to inhibit SARS-CoV-1 nsp13 and, very recently, also SARS-CoV-2 nsp13 has been actively explored as drug target, with some reports describing small molecules as inhibitors of SARS-CoV-2 nsp13. Among them, aryl diketo acids (DKAs), have been reported as inhibitors of SARS-CoV-2 nsp13.3 On the other hand, the DKA chain suffers from several limits related to the pharmacokinetic and pharmacodynamic profiles. Therefore, to overcome the limits of the DKA moiety, a variety of compounds were developed by transferring the DKA chain to scaffolds characterized by improved druglike qualities. Therefore, we carried out a semi-random screening on our in-house library of non-DKA derivatives, identifying a promising hit compound as micromolar nsp13 inhibitor. We synthesized a set of derivatives structurally correlated with the hit, obtaining a new series of dual inhibitors of both the SARS-CoV-2 nsp13-associated activities. The data coming from the biological assays will be shown and discussed.

ORG-PO-160. IR irradiation-assisted Pd-catalyzed cross-dehydrogenative coupling of polyfluoroarenes with heteroarenes: proving the role of thermal and non-thermal effects

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Infrared (IR) irradiation has recently attracted significant attention as non-conventional energy source for organic reactions. IR light sources are able to reduce energy requirement, shorten reaction time, increase product yields and avoid undesired by-products compared to traditional thermal heating with a thermostatic bath.[1] Despite all these advantages, the actual role of IR irradiation as energy source for promoting organic reactions has never been investigated in-depth, and it has been simply considered as a highly efficient form of heating.

Herein we present the use of IR irradiation to assist Pd-catalyzed cross-dehydrogenative coupling reactions.[2] The protocol, performed under solvent-free conditions, is applied to the coupling of polyfluoroarenes with five-membered heteroarenes, affording products with excellent yields in only 30 minutes.

For the first time, the ability of IR irradiation to directly affect the mechanism of a chemical reaction, rather than to simply act as an efficient heating source, is demonstrated by spectroscopic and kinetic studies: while the rate-determining step (RDS) under conventional thermal heating involves Pd(II)-mediated C−H bond activation on the heteroarene ring, the use of IR light shifts the RDS to the oxidation of Pd(0) by Ag(I) oxidant.

The unexpected role of IR irradiation in the reaction mechanism has been evaluated through a series of control experiments and theoretical calculations, concluding that it results from a combination of thermal and non-thermal effects. This finding is highly significant: IR irradiation can be considered as a new powerful enabling technology for synthetic organic chemistry.

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Study of phenol compounds as functionalized agent for active packaging

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The processing of agricultural products inevitably leads to large amounts of waste, which is a serious disposal problem. In particular, the fruit and vegetable supply chain results in approximately 90 million tonnes of residues per year in Europe, a volume that is expected to increase in the coming years. For example, a large part of the total berry production is processed for juice production, of which approximately 20–30% ends up as waste. Additionally, a large amount of fruit is wasted in the field due to unforeseen weather conditions exacerbated by climate change.

In a circular economy approach, also considering the high value due to the presence of active compounds, it is crucial to recover fruit wastes, rich in phenols and active substances. Taking into account the principles of "green chemistry," the development of a polyphenol valorization process requires the identification of environmentally friendly solvents. From this perspective, polyphenolic extracts obtained by green approach can be used as active agents (antimicrobial and antioxidant) in cosmetics and packaging.

Polyphenols known for their antimicrobial and antioxidant properties can be used as functionalizing agents in active packaging: ‘materials and articles designed to deliberately incorporate components that release substances into or absorb them from the packaged foodstuff or its environment' (EC Regulation 450/2009).

Small fruit sector (e.g. raspberries, blueberries) is one of the Italian markets with high product losses caused by the early onset of senescence phenomena related to microbial contamination. Reason why the active packaging systems currently used for the marketing of fresh fruit and vegetables are based on the control of microbiological contamination.

The aim of this work is to recover bioactive compounds from food waste using green extraction solvents and techniques. The extracted polyphenol will be used as functionalized agent in active packaging produced from bio-based and/or biodegradable polymer. The interaction of phenol compounds and different polymers matrices and the mechanical properties of final products will be evaluated. Finally, the release of bioactive compounds using food simulant will be verified and the antimicrobial properties of active packaging will be tested on fruit samples (i.e. raspberries).

TEO-PO-014. Linear Response Equations Revisited: A Simple and Efficient Algorithm

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Light-matter interaction plays an essential role in many aspects of life and technology, including biologically relevant photochemical processes (e.g., photosynthesis, bioluminescence, vision), light-induced chemical reactions, photovoltaics, photonics, materials engineering. The advent of spectroscopy provided chemists and physicists with a powerful tool to investigate the interaction between matter and electromagnetic radiation.

An accurate study of such interaction, however, is also possible with the application of rigorous ab-initio electronic structure methods which are employed to perform computer simulations of molecular systems. These studies are particularly important for the interpretation of complex experimental spectra and a better understanding of electronic properties of matter.

The most common procedure used to calculate molecular properties is based on linear response theory[1], which allows for the direct simulation of spectroscopic properties. The computation of these quantities requires the solution of the so-called “response equations” which are casted in the form of a generalized eigenvalue problem. However, the determination of its solutions can become expensive and, in many cases, could lead to numerical instabilities[2][3].

In this talk, I will present an improved version of the well-established Davidson direct diagonalization approach [4], able to fix those instabilities at a reduced computational cost. This new algorithm is referred to as Swapped Metric-Orthogonal Generalized Davidson (SMO-GD) [5].

In its first formulation it has been applied by us to simulate spectra at the CASSCF level of theory but it can be also applied, without lack of generality, to time-dependent density functional theory (DFT) and Hartree-Fock (HF)[6] approaches.

This algorithm represents a stable and efficient eigensolver that can be, in principle, applied to the solution of response equations both for molecules and solid state systems.

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ALI-PO-005. Vitamin D3 enrichment from fish waste: green extraction optimization and nutraceutical development

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In recent years, vitamin D has become increasingly important for human health due to its crucial role in maintaining bone and neuromuscular system homeostasis1. However, vitamin D deficiency is nowadays a concerning issue, with approximately 40% of the population estimated to have insufficient levels2. The ability of fish to store large quantities of Vitamin D3 in their tissues, makes them an excellent dietary source of Vitamin D3 for humans. Considering the activities related to the fishing sector, including fishery, aquaculture and the fish processing industry, significant amounts of fish waste are daily produced, leading to a significant environmental impact3. These precious wastes are often discarded because they do not meet market specifications, but they can serve as an excellent natural substrate for producing Vitamin D3-rich extracts.

This research is part of the “VITADWASTE—Innovative and sustainable processes for the development of Vitamin D nutraceutical from fish waste: extraction, formulation and clinical study for the evaluation of its bioavailability and clinical equivalence” project, a PRIN (Research Projects of Significant National Interest) funded by Italian Ministry of University Education and Research (MIUR).

The final goal is to use fish production waste as a substrate for the extraction, enrichment, characterization and formulation of Vitamin D3 nutraceuticals. An innovative approach is being tested to convert pure waste into a valuable resource for the pharmaceutical and food industries in accordance with the principles of the circular bioeconomy. For this purpose, a green and non-conventional technique, such as Supercritical Fluid Extraction (SFE), has been tested to obtain vitamin D3-rich extracts. Extraction parameters were optimized using the Design of Experiment tool of XLSTAT software (2023.1.4.1408) in Box-Behnken design mode. Preliminary data showed the significant potential of supercritical carbon dioxide in extracting the lipophilic fraction from fish waste. The quantification of vitamin D3 and its precursor, 7-dehydrocholesterol, which is highly concentrated in fish, was performed using a high-performance liquid chromatography coupled with a diode array detector, through a specifically developed method. After the optimization, a formulation study based on microencapsulation followed by a bio-accessibility study will be conducted to obtain a nutraceutical to be tested in pharmacokinetics and bioequivalence in comparison with a standard Vitamin D supplement.

ORG-PO-161. Preparation of selenoderivatives of tyrosol endowed with multi-defense activity

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Nowadays, molecular scaffold manipulation of natural phenols represents a largely pursued, effective approach to boost or modulate their antioxidant properties and bioactivity. For example, the insertion of S/Se/Te containing substituents on phenols/polyphenols scaffold may increase/decrease their H-donor/acceptor ability by electronic and stereoelectronic effects related to the site of substitution and geometrical constrains, which thus make them ideal prototypes of novel multifunctional compounds combining diverse scavenging and inhibitory activities against oxidative stress.1-3

In this frame, we herein report recent studies focused on the development of straightforward procedures for the preparation of selenoderivatives of tyrosol, a natural phenolic compound endowed with many beneficial properties for human health, such as antioxidant, anticancer, antinflammatory, and cardioprotective activities.

In particular, a mild selenylation procedure based on the use of selenium tetrachloride, followed by purification, allowed the isolation of two main products identified as the 3,3’-selenobistyrosol and the 3,3’-diselenobistyrosol based on MS and NMR analysis.

The selenoderivatives so obtained showed antioxidant activities up to 30-fold higher than that of tyrosol as evaluated by commonly used chemical assays. The results of the investigation of the peroxyl radical scavenging properties of the selenoderivatives using an integrated kinetic, EPR, and computational approach will also be presented. The efficacy of the diselenobistyrosol as potential glutathione peroxidase mimics to destroy H2O2 generated in the inflammatory processes will be illustrated.

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ORG-PO-162. 1,3-Dipolar Cycloaddition Reaction for Regioselective Synthesis of Variously Substituted 1,2,3-Triazoles with Powerful Biological Activity

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1,2,3-triazoles are five-member heterocyclic compounds bearing three nitrogen atoms in the ring. They are important nucleus for development of drugs because they are resistant to oxidation, reduction, and hydrolysis in both acidic and basic conditions for their aromatic nature. Thanks to active participation in hydrogen bond formation, dipole–dipole and π-stacking interactions they can mimic peptide bonds, enhancing their binding ability with different biological targets. Therefore, triazoles have important biological properties, such as antibacterial, anticancer, antivirus, antimalarial, anti-inflammatory and antituberculosis. In particular, 1,2,3-triazoles found a broad spectrum of biological applications such as β-lactum antibiotic tazobactum, cefatrizine, and anticancer compound carboxyamidotriazole, which are some drugs available on the market.1

In this work, our research group has designed and synthesized a new class of disubstituted 1,2,3-triazoles (Scheme 1) through 1,3-dipolar cycloaddition reaction using organic azides as 1,3-dipoles and several dipolarophiles. The reaction was catalyzed with metal Lewis acid and the products were obtained with high yields and excellent regioselectivity because only a single regioisomer was obtained in all proposed cases. In addition, some synthesized triazoles were tested on porcine aortic endothelial cells (pAECs) to evaluate their biological activity and demonstrated a very strong cardioprotective action in in-vitro and ex-vivo models of cardiovascular pathologies (i.e., hypoxia-reoxygenation and hypertension).2

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INO-PO-026. Synthesis, Characterization, and Evaluation of the Cytotoxic Properties of Novel Water-Soluble Monofunctional Platinum(II) Complexes Incorporating Imidazole Derivatives and Phenanthroline

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Platinum-based drugs such as cisplatin, carboplatin, and oxaliplatin, are commonly used in clinics to treat various cancers. However, due to their limited success, there is a significant need to develop nonclassical platinum complexes. Among these, monofunctional platinum(II) complexes are particularly interesting due to their unique chemical properties, water solubility, and potential biological significance [1]. This study aims to enhance the solubility and anticancer activity of a novel class of compounds that combine imidazole and phenanthroline derivatives. Interestingly, the new complexes [Pt(η1-C2H4OEt)(NH3)(phen)]Cl (2), [Pt(η1-C2H4OEt)(1-hexyl-1H-imidazole)(phen)]Cl (3), and [Pt(η1-C2H4OEt)(1-hexyl-1H-benzo[d]imidazole)(phen)]Cl (4) can be synthesized from the precursor [Pt(η1-C2H4OEt)Cl(phen)] (1). These complexes are particularly intriguing as they may serve as substrates for cell plasma membrane transporters due to their cationic nature and water solubility, unlike cisplatin [2]. As observed with other monofunctional Pt(II) complexes, these compounds may form sterically hindered adducts with DNA, thereby interacting with DNA-RNA polymerases [3]. Mass spectrometry and Nuclear Magnetic Resonance (NMR) spectroscopy were used to characterize these Pt(II) derivatives. The anticancer activity of the newly synthesized complexes was evaluated using the sulforhodamine B (SRB) assay on both healthy (HK-2) and malignant (HeLa and Caki-1) cell lines. Notably, complex 3 exhibited the highest level of cytotoxicity in both normal and malignant cell lines. However, when compared to healthy cells (HK-2), complex 2 showed the highest selectivity for malignant cells (Caki-1) among the studied complexes.

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ORG-PO-001. Predicting PROTAC-mediated ternary complex structures through in silico approaches

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Degradation of proteins by PROteolysis TArgeting Chimera (PROTAC) technology has recently emerged as a promising new approach with more advantageous over occupancy-based inhibitors. PROTACs are heterobifunctional compounds featuring two binders connected by a chemical linker: one binds the protein of interest (POI) and the other recruits an E3 ubiquitin ligase1. Hijacking POI in close proximity to E3 ligase, a PROTAC molecule promotes the degradation of the target protein by the ubiquitin-proteasome system (UPS). In this mechanism, the formation of a stable ternary complex is essential to have an efficient POI ubiquitination and therefore,

the knowledge of its 3D structure is a key aspect for the rational design2. To date, structural data (e.g., by X-ray) of few ternary complexes are available and they are limited to small number of target proteins, e.g., BRD4, SMARCA2/4, BTK, and WDR5.

We here propose an innovative computational methodology to predict PROTAC-mediated ternary complex structures. Our method uses protein-protein docking experiments to determine all possible interactions between POI and E3 ubiquitin ligase, then inserts the PROTAC molecule so that each ligand reproduces its binding mode in the respective target binding pocket. Finally, the obtained ternary complex models are refined by multiple rounds of metadynamic simulations, which show the conformational changes of the two proteins and PROTAC occurring until they converge to a thermodynamically favoured state. The applicability and the accuracy of this approach is evaluated reconstructing a series of experimentally determined ternary structures, which differ by both target protein and E3 ubiquitin ligase. This computational methodology could be a useful tool to guide and accelerate the rational design of new PROTACs related to proteins undruggable or not extensively studied. In addition, it could elucidate the mechanism of actions of already developed PROTACs whose 3D structures have not been resolved, aiding the design of novel derivatives with improved pharmacological features.

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ANA-PO-128. Chemical characterization of Citrus australasica peel essential oil by using different chromatographic techniques

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Finger lime (Citrus australasica L.) is a Citrus species endemic to Australia but it is also cultivated in other parts in the world. This fruit, whose interior is characterized by spherical vesicles, is widely used in cooking to embellish fish dishes and in making cocktails.

In addition to its function as a flavoring agent, this fruit can be used also for the production of juices and essential oils, which contain a good amount of bioactive molecules: these and other characteristics classify finger lime as a functional food.

The fruits used for the present study were collected in Calabria (South Italy) throughout the entire productive season, from October 2022 to June 2023.

The aim of this research was to investigate volatile and non-volatile fraction of the essential oil obtained by cold pressing extraction of the finger lime peels, also allowing the evaluation of differences in chemical composition during the production season.

The volatile fraction was investigate by gas chromatography coupled to mass spectrometry (GC-MS) and flame ionization detector (GC-FID). The enantiomeric distribution of some volatile components was studied by employing a multidimensional GC (MDGC) system and a chiral column in the second dimension, with an approach based on the heart-cut mode.

Additionally, the oxygen heterocyclic compounds (coumarins, furocoumarins and polymethoxyflavones) were analysed by liquid chromatography coupled to a triple quadrupole as mass spectrometer (HPLC-MS/MS).

The results reported in the present study were compared to the literature and provides new elements, in particular referred to the quali-quantitative profile of OHCs in cold-pressed finger lime essential oil and about the investigation of thirteen chiral couples, more than half never studied so far.

CSB-PO-007. Towards Peptidase Mimicry by Supramolecular Tripeptide Assemblies

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The ability of some peptide sequences to self-assemble into functional nanostructures is an appealing alternative to the industrial use of natural enzymes, such as hydrolases.1 Common designs incorporate sequences with a β-sheet conformation, and, in this regard, L-His-D-Phe-D-Phe is the first example of an unprotected tripeptide that gels at physiological conditions and catalyses ester hydrolysis.2 C-terminal amidation yields L-His-D-Phe-D-Phe-CONH2, which displays an improved catalytic ability.3

Our aim is to further enhance the catalyst performance through co-assembly with other sequences bearing residues commonly found in enzyme catalytic sites, such as L-Asp-D-Phe-D-Phe-CONH2. The resulting nanostructured materials are being characterized by several techniques and will be tested for catalytic hydrolysis of chromogenic substrates, also under suitable conditions to apply the Michaelis-Menten model.

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IND-PO-002. Ketonization of bio-based hexanoic acid for the synthesis of 6-undecanone: a possible alternative route to produce sustainable aviation fuels (SAFs)

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The ketonization of a bio-based hexanoic acid (BIO-HA) was investigated with the aim of selectively synthesizing 6-undecanone (6U), a symmetric ketone that has various industrial applications, such as serving as a solvent, flavour or could be utilized as a precursor for sustainable aviation fuels (SAFs).1 This synthetic approach, in respect to the traditional fossil-based jet fuel production, would benefit from utilizing bio-based feedstocks. Our raw material was obtained through an effective fermentative process able to produce renewable hexanoic acid from waste grape pomace, which is obtained with high purity by exploiting its immiscibility with acidified water, as recently reported.2 Moreover, the catalytic tests were carried out in the gas-phase using a continuous-flow fixed-bed reactor at 350 °C. Unreacted reactants and products were quantified by means of GC-TCD (online) and GC-FID (offline). Unknown products were identified by means of GC-MS. The yields and selectivities of various products in the presence of different catalysts such as ZrO2, TiO2 and a mixed oxide (Zr/Ti/O) were analysed and compared. The effect of the main impurities contained in the BIO-HA, such as butyric acid, valeric acid and water, on the catalytic activity and performances was also investigated in detail. Long term tests have clearly underlined the negative effect of these impurities on catalyst lifetime compared with commercially available, highly pure, hexanoic acid. Interestingly, the results showed that ZrO2 is the best catalyst for the ketonisation of anhydrous medium chain acids, however water strongly inhibits its activity even in small quantities. On the other hand, TiO2 is less active than ZrO2 when tested with anhydrous acids, but its activity is not strongly influenced by the presence of water in the feed. All in all, the results indicate that BIO-HA can be used as raw materials for the synthesis of bio-6U, nonetheless the presence of unknown impurities lead to catalyst deactivation after around 50 hours of reaction.

ORG-PO-002. Chitosan-Supported Calcium Hydroxide Hybrid Material as New, Efficient, and Recyclable Catalyst for Biodiesel Production

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Recent dramatic geopolitical situations have shown that the only winning strategy for an industrially competitive country is to diversify energy sources to resist any asymmetries in the supply chain. In this context, biofuels can be crucial in achieving the right energy supply mix. Among them, fatty acid methyl esters (FAMEs) are certainly the most studied, being ideal substitutes of petro-diesel as they can be used without any engine modification, giving also reduction of emissions of SOx, NOx, particulate matter, dangerous aromatic compounds, and sulfur derivatives into the environment. The major drawbacks of biodiesel production are the threatening of food storages, due to the lands use changes, the high energy costs of the transesterification process and the use of strongly acidic or alkaline homogeneous catalysts, often employed under stoichiometric conditions and hard to be recycled. In this work, a novel supported catalyst was prepared starting from calcium chloride and chitosan flakes using a very mild approach in an aqueous medium without final calcination. The catalyst was fully characterized and proved to be very efficient in biodiesel production. The catalyst was also recycled ten times without any loss of activity.

ANA-PO-107. Development and validation of a UHPLC-MS/MS method for selected organophosphate esters flame retardants in gas-phase and aerosol of urban and mountain areas

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Organophosphate esters (OPEs) have emerged as alternative flame retardants due to strict regulatory measures (Regulation (UE) 2019/1021) that have banned or restricted more hazardous substances such as polychlorinated biphenyls (PCBs) and the major brominated flame retardants (BFRs). These compounds are included in the Stockholm Convention as persistent organic pollutants (POPs) both in Annex A to eliminate their production and use and in Annex C to reduce their unintentional release. These regulatory measures have been motivated by the recognized toxicity of these compounds to both the environment and human health, their tendency to bioaccumulate in the fatty tissues of organisms, their ability to biomagnify and to undergo long-range atmospheric transport even in remote areas1. OPEs also act as plasticizers and defoamers, expanding their potential scope of production, consequently increasing their diffusion into the environment2. Those compounds have been found in various matrices such as water, dust, sediment and air and are proving to be emerging environmental contaminants due to their various side effects and bioaccumulation potential, becoming a threat of exposure to human health and the environment3. The aim of this study is to develop and validate a highly sensitive and rapid UHPLC-MS/MS method for environmental matrix to determine with high selectivity six OPEs: tris(2-chloroethyl)phosphate (TCEP), tris(2-chloroisopropyl)phosphate (TCPP), tris(1,3-dichloro-2-propyl) phosphate (TDCP), triphenyl phosphate (TPP), triethyl phosphate (TEP), trimethyl phosphate (TMP). Isotope patterns have been investigated due to the presence of different combination of 35Cl and 37Cl in chlorinated OPEs. This analytical method allow to determine the presence of these emerging analytes in gas-phases and aerosols collected in urban (Mestre, Venice, 0 m a.s.l.) and mountain (Col Margherita, Falcade, Belluno, 2543 m a.s.l.) areas and to study their distribution and evaluate regional differences. Gas-phase and aerosol sampling was carried out using both high and low volume impactors. OPEs were found in urban samples with higher concentrations than at the mountain site; however, this confirms the potential for long-range transport to regions uncontaminated by human action4.

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ORG-PO-159. Synthesis of Novel Chiral Supramolecular Architectures Based on Heptazine Derivatives

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S-Heptazines are a class of molecules within the carbon nitrides family. They are primarily synthesized from s-triazine, and these molecules exhibit remarkable optical and electronic behaviour, largely attributed to their conjugated π-system with a low-lying π* orbital, which arises from the electronegativity of the nitrogen atoms embedded in the skeleton[1].

However, their high stability and poor solubility pose significant challenges for the functionalization of these molecules[2].

The project aims to develop novel chiral and achiral derivatives of s-heptazines (Figure 1) with potential applications as OLED (Organic Light Emitting Diode) emitters.

In this poster we will show the various post-functionalization of these molecules and their optical properties.

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TEO-PO-034. Novel Theoretical and Computational Approaches for Modelling Photoinduced Proton-Coupled Electron Transfer Reactions in Complex Environment

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Proton-Coupled Electron Transfer (PCET) reactions represent an important class of reactions of fundamental importance in both biological and technological contexts [1,2]. In these reactions, a transfer of electrons and protons between two molecular species occurs, which may involve different sites. A challenging case regards the proton transfer from a solute towards a solvent molecule. A reasonable classification of PCET reactions is based on the degree of electronic, vibrational and vibronic adiabaticity between the transferred electron and proton [3]. Recently, our research group [4] has introduced an innovative procedure to discriminate between different degrees of adiabaticity in mechanisms.

In this contribution, we aim to characterize the mechanism of photoinduced PCET reactions between tyrosine and tryptophan in oligopeptide models [5] in solvent. In this context, theoretical/computational methodologies significantly contribute to the atomistic/molecular-level interpretation of the processes involved. The solvent plays a key role as proton acceptor species, thus requiring an accurate description of the solute/solvent interaction potential and the main configurations assumed by it around reactive sites. We therefore aim to develop a generalized protocol based on hybrid multiscale methods, where the solute is described at the quantum mechanics level, the first two/three solvation shells at the molecular mechanics level, while the bulk properties of the solvent are described using a continuum dielectric model (QM/MM/Continuum) [6]. For the QM/MM clusters thus described, we will assess the possibility of characterizing stationary points of the potential energy surface and finally address the development of a new flexible methodology for ab initio molecular dynamics simulations of solute/solvent systems using non-Periodic Boundary Conditions in non-spherical cavities (e.g., elliptical) for the description of non-spherical solutes such as oligopeptides and linear polymers. The high computational efficiency of this procedure promises to analyze and provide evidence on PCET mechanisms that regulate the reactivity of numerous biological systems.

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ORG-PO-003. Expanding the scope of a new bio-orthogonal templated reaction

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The desire to explore biomolecules and biological processes within their natural contexts has driven the development of reactions that are compatible with such environments. This pursuit presents a substantial challenge owing to the complexity of cellular systems. Reactions capable of proceeding within a biological system without disrupting native biological processes are termed “bioorthogonal reactions”. Components involved must exhibit rapid and selective reactivity in water under phisiological conditions, in contexts of high molecular crowding.

Despite the remarkable advancements in bioorthogonal chemistries, so far very few ligation reactions have proven to be efficient at cellular level. Within current methodologies, challenges related to interference amidst the numerous functionalities present in vivo, and the requirement to remain non-toxic to the biological system, persists.

Our aim is to improve a recently discovered bio-orthogonal templated reaction which requires “proximiy” as sole trigger and expand his reactivity, ultimately extending its applicability to cellular studies [1,2]. The chosen reaction involves the ligation between 2,5-dioxopentanyl (DOP) moiety and an alpha nucleophile, resulting in the formation of piridazinium or pyrrole linkage (Fig.1). This reaction, which has been successfully tested in cell lysate, has demonstrated its ability to proceed exclusively under the guidance of a template, such as (peptide) nucleic acids or coiled-coil system formation, with high specificity and without off-target reactivity.

Here, we will present preliminar results regarding the synthesis of various alpha nucleophiles building blocks and preliminary ligation experiments performed on peptide nucleic acids (PNAs) models.

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TEO-PO-024. GPU Acceleration in First Principle Computational Materials Science for Enhanced Efficiency and Scalability

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We present a new version of the CRYSTAL ab initio simulation software designed to use graphics processing units (GPUs) and meet the escalating computational demands of theoretical materials science. CRYSTAL is a solid-state simulation software that allows to perform calculations on materials, making use of the Density Functional Theory (DFT) framework, including hybrid functional approaches.

In present days, the accurate description and prediction of material properties rely heavily on the computational power and efficiency of simulation programs. Traditional CPU-based approaches encounter substantial challenges in terms of hardware demand and execution time. In this regard, a valuable alternative is to use GPUs, which are the most powerful components in computers and HPCs. Our work leverages their high throughput capabilities to significantly accelerate the execution of DFT simulations, particularly for large-scale systems encountered in real-world applications.

Employing publicly available GPU-accelerated libraries for linear algebra operations, we achieve remarkable performance enhancements. In the case of the Metal Organic Framework ZIF-8 (supercell containing 2208 atoms, 22176 atomic orbitals), we reduced single-point energy calculation time by 86% (128 CPU cores vs 1 NVIDIA A100 GPU) while maintaining numerical precision. The incorporation of GPUs into CRYSTAL not only enhances computational efficiency but also expands the scalability, enabling the handling of huge size system that were previously prohibited with the conventional CPU-based approach.

ORG-PO-163. Synthesis of Luminescent Indolizine Derivatives by Pd-Catalyzed Aminocarbonylation

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The indolizine core is present in many molecules that display a wide range of pharmacological properties.[1] Moreover, some interesting organic fluorophores possess the indolizine core as the key structural unit.[2] Here we present a multicomponent approach to novel N,N-disubstituted 2-(indolizin-3-yl)acetamide derivatives with fluorescent properties starting from simple and readily available building blocks [2-(pyridin-2-yl)pent-4-yn-1-carbonyl compounds, CO, amines, and oxygen] through a sequential PdI2/KI-catalyzed oxidative aminocarbonylation[3] – cyclization – aromatization process (Scheme 1).

Scheme 1

As shown in Figure 1, the tested indolizine absorb (λabs) in the UV region (374.5–386.0 nm), and emit (λem) in the visible or blue region (442–448.6 nm).

Figure 1. UV-Vis absorption spectra in DCM and PL emission spectra in cyclohexane, toluene and DCM.

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ORG-PO-004. Electrochemical enantioselective α-chlorination of aldehydes

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Organic electrochemistry offers several advantages over traditional chemical oxidation methods, such as the possibility to avoid the use of stoichiometric oxidizing agents and toxic or hazardous reagents. Typically, organic electrochemistry transformations require milder reaction conditions compared to traditional oxidation approaches, since electrons are used as traceless redox equivalents to perform the process without the need for additional redox reagents. In this context, we focused our attention on the development of a stereoselective synthesis of α-chloroaldehydes by organo electrochemical approach, taking advantage of linchpin catalysis.

α-chloroaldehydes have been synthetized with high level of enantioselectivity starting from unactivated aldehydes using a chiral amine as organocatalyst in the presence of a cost-effective and environmentally friendly Cl- source. The α-chloroaldehydes could be rapidly converted (in-situ) into several significant building blocks such as aziridines, epoxides, and amino acids.

Desired products were obtained in good yields (from 75 % to 95 %) and up to 97% ee (determined on the corresponding chlorohydrin derivatives) . The methodology was also investigated under flow conditions, to enhance productivity and space-time yields for gram-scale production

ABC-PO-040. Performic acid pre-treatment of poplar biomasses from green remediation to obtain fine-products

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Lignocellulosic biomass is the most abundant and cheap carbon-based feedstock on earth and is the main candidate for the purchasing of bioderived added value compounds namely biofuels and biochemicals. The valorisation of the lignocellulosic biomasses generally occurs through bio-chemical transformations of polysaccharides (cellulose) into simple soluble sugars (glucose). The use of enzymes (cellulases)1 has proven to be more advantageous, thanks to the higher specificity towards the substrate which leads to the selective production of glucose. To make the enzymatic processes more efficient a pretreatment is necessary to destroy the complex structure of hemicellulose and lignin that act as shields for cellulose by preventing its hydrolysis2.

In this research work a sustainable pre-treatment for the valorisation of a poplar matrix (pruning residues) recovered with Plant-Assisted BioRemediation (PABR) technology was studied3. Pre-treatment was carried out using mixtures of formic acid and hydrogen peroxide to make the lignocellulosic structure simpler to make cellulose more available for the consequent enzymatic process. The synergic action of formic acid and hydrogen peroxide was greatly efficient and yields a solid phase enriched in cellulose (56% of cellulose) with a total recovery equal to 70–80% of the starting cellulose. The recalcitrant molecules such as hemicelluloses and lignin, potential platform molecules for biorefinery4, were almost completely recovered in the liquid phase.

The resulting biomass was subjected to enzymatic hydrolysis through a commercial cellulase (from Trichoderma reesei): the enzymatic digestibility was proven to be already effective on samples pre-treated with 3.5 M performic acid at 55 ◦C since the cellulose in the residual biomasses was completely hydrolysed in glucose. The produced monosaccharide was then used as feedstocks to produce levulinic acid in presence of $AlCl_3 \cdot 6H_2O$ (1%) and sulphuric acid (0.5%) at 150 ◦C for 45 min. A final yield of 68.2% of levulinic acid and 4.8% of HMF was obtained. These results are comparable to those obtained with other heterogeneous5 and homogeneous catalytic systems6 reported in more extreme operative conditions.

INO-PO-039. Tetrapyrazinoporphyrazines Carrying Externally o-Carboranedithiolate Groups. A Route to Potential Bimodal PDT/BNCT Anticancer Drugs

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In our previous extensive studies the synthesis, physicochemical properties and photoactivity as anticancer drugs in photodynamic therapy (PDT) were reported of pentanuclear octa(2-pyridil)tetrapyrazinoporphyrazines complexes, carrying externally eight units of m-carborane-1-thiolate (CBT) formulated as [{Pd(CBT)2}4Py8TPyzPzM]·xH2O, where Py8TPyzPz = tetrakis-2,3-[5,6-di(2-

pyridyl)pyrazino]porphyrazine and M = MgII(H2O), ZnII, PdII (Figure 1A)1. The photosensitizer activity for the generation of singlet oxygen, 1O2, the cytotoxic agent in PDT was explored in DMF solution. These species have high quantum yield values (ΦΔ = 0.6−0.7) which are higher than those obtained for the parent [(PdCl2)4Py8TPyzPzM], and [Py8TPyzPzM] complexes2. Moreover, the presence of high boron content can open perspectives for their use in Boron Neutron Capture Therapy (BNCT), an experimental radiotherapy studied against aggressive and penetrating cancerous pathologies3.

In an extension of our work on new TPyzPzs it was thought interesting to open additional perspectives of application in a bimodal anticancer therapy PDT/BNCT. For this purpose new homo/eteropentanuclear tetrapyrazinoporphyrazines having externally four units of 1,2-dithiolate-o-carborane, formulated as [{Pd(CBdT)}4Py8TPyzPzM]·xH2O (CBdT = 1,2-dithiolate-o-carborane; M = MgII(H2O), ZnII, PdII) (Figure 1B), have been synthesized and characterized. The photosensitizer activity for the generation of singlet oxygen, 1O2, was explored for the ZnII and MgII complexes in DMF. The high ΦΔ value obtained for the ZnII macrocycle (0.58) falls within the range 0.4-0.7 obtained for numerous phthalocyanines and ZnII porphyrazines. These results qualify the ZnII complex [{Pd(CBdT)}4Py8TPyzPzZn] as an excellent photosensitizer for the generation of singlet oxygen and in addition its high boron content suggests the possibility to be used as bimodal anticancer agent (PDT/BNCT).

ORG-PO-226. Chemo-enzymatic synthesis of the HDAC inhibitor vorinostat

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Thanks to its ability to chelate metal ions, hydroxamic acid is one of the most interesting functional groups in medicinal chemistry, especially in the context of metalloenzyme inhibition. Vorinostat, also known as suberoylaniline hydroxamic acid (SAHA), is a pan HDAC inhibitor approved by the FDA in 2006 for the treatment of relapsed/refractory cutaneous T cell NHL, inhibiting cell proliferation and selectively inducing apoptosis in hematologic and solid tumor malignancies.1 Its large-scale preparation has been widely studied and essentially consists of the cyclic suberic anhydride opening by aniline, followed by acid activation with highly reactive

chloroformates and condensation with hydroxylamine. Herein, we report the design of a new chemoenzymatic pathway for the synthesis of vorinostat. The preparation of the suberoylaniline acid was performed in water, in presence of Mycobacterium smegmatis acyl transferase (MsAcT),2 and further functionalized with an O-protected hydroxylamine, via lipase-catalyzed condensation. Final deprotection in presence of acidic cationic resins afforded pure vorinostat in 60% total yield. In order to improve the productivity of the process, all the steps were performed testing several solvent mixtures, based on the most recent guidelines about solvent sustainability. In the best case, pure vorinostat was obtained in a 3-step-5-hour synthesis of in 79% overall yield. Finally, the entire procedure was further optimized and transferred to a continuous flow system, where the final product was obtained in a time-saving automated way, large scale, high yield and high purity, paving the way for a more sustainable preparation of pharmacologically active hydroxamic acid derivatives.

TEC-PO-022. Issue of nanomaterial migration in food packaging

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The target of food packaging experts is to leverage the merits of nanomaterials (NMs) to obtain sustainable and efficient solutions. However, along with the functional properties of NMs, safety concerns exist in their application in food contact materials (FCM). The toxicological studies have shown the negative impacts on human health due to nanoparticle (NP) exposure through inhalation, skin contact, or ingestion1. Based on accumulated migration data, regulatory bodies of the US and EU have laid down specific protocols for migration measurement, but these accumulated data refer to only chemical compounds. The application of theoretical and experimental models developed for ions and molecules requires a significant revision when dealing with nanoscale products. A model based on Stokes-Newton equation to predict specific migration has been proposed by Simoneau C2. However, it ignores the chemistry of the surrounding environment and the possibility of dissolution. It only considers the theoretical diffusion phenomenon based on the polymer's dynamic viscosity, the diffused particles' size, and the exposed area. Utilizing ICP-MS analysis methods for monitoring elemental concentrations can aid in evaluation. However, details about the migrant's form (dissolved species or single particles) are not retained when the sample undergoes the inductively coupled plasma. SP-ICP-MS can solve this issue since it can distinguish the migrant form, but the issue with this technique is that it requires a uniform liquid base, indicating that either the sample needs to be digested or the NMs need to be extracted. Similar to traditional ICP-MS, SP-ICP-MS is probably not as effective for organic NMs because the polymer matrix might have a very similar carbon-based composition. AgNPs have been detected in a migration solution by TEM/EDS. Still, distinguishing between diffusion or in situ synthesis of AgNPs is not clear. Enzyme-linked immunosorbent assay (ELISA) was used to quantify nano gelatin in fruit juices3. This approach requires developing antibodies specific to only the target NMs. Since different NMs have different enzyme-linked antibodies, the problem arises with no scope for comparison. In summary, most studies on nanomaterial migration have high variance and are mostly based on metallic nanoparticles and their oxides; the data available on NMs, such as nanocellulose, nanochitin, nanoclays, etc., which have a high potential in the food packaging application, are very scarce. The objective of this poster presentation aims to highlight these issues. Solutions that are currently available and ones that could be conceivable suitable for FCM will be analysed highlighting the opportunities and criticalities related to their use. Furthermore, the initial findings on nanocellulose migration from barrier coated paper-based substrates will be outlined.

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ORG-PO-005. Synthesis and Characterization of Luminescent Iridium Complexes for Electrochemiluminescence Applications

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The current developments of optoelectronics and bionanoscience (including electrochemiluminescence -ECL- technology) take great advantage from the ability of organic, organometallic and hybrid compounds to fulfill specific needs and requirements. Phosphorescent transition-metal complexes, in particular octahedral iridium(III) ones, have been the target of intense researches given their high thermal and chemical stability and the excellent photophysical properties, such as high luminescence quantum efficiency and short radiative lifetime1. Furthermore, due to the potential of Ir(III) complexes to emit in the whole visible (from blue to red) and near-infrared (NIR) range there is a growing interest in their use in ECL applications, which today mostly rely on orange/red emissive Ru(II)polypyridine complexes2,3.

In this contribution, we present the synthesis of a family of cyclometalated heteroleptic Ir(III) complexes with emission centered in the blue, green and NIR spectral regions according to the nature of the C^N ligand (Figure 1a) while carrying an ancillary N^N ligand that enables to anchor the complex to an electrode surface or to a particle. Moreover, we present the synthesis of a new CN-functionalized ligand, accomplished exploring an innovative palladium-free cross-coupling reaction that allows to reduce the number of steps from three to one (Figure 1b) 4.

ORG-PO-006. Improving ligand affinity through covalent strategies: the case of BC2L-C bacterial lectin

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The opportunistic Gram-negative pathogen Burkholderia cenocepacia is a globally spread multidrug-resistant bacterium that causes severe lung infections in immunocompromised or cystic fibrosis patients.1 This bacterium employs lectins as virulence factors to target host tissues through recognition of and adhesion to the glycoconjugates on the host cells' surface. Among these lectins, the superlectin BC2L-C has been proposed as a major player in the adhesion process and in the formation of bacterial biofilm.2 In particular, its N-terminal fucose-binding domain (BC2L-C-Nt) represents an interesting target for the design of new antimicrobials that may prevent lectin-mediated bacterial adhesion to the host cells.

Recently, we reported the development of a first generation of synthetic ligands targeting BC2L-C-Nt, based on fragment- and structure-based design studies.3,4 Despite the promising results shown by these ligands, the affinity for the N-terminal domain of the target lectin remains in the sub-millimolar range.4,5

With the aim of improving the binding affinity, a new generation of ligands was designed to covalently target specific nucleophilic amino acid residues (Cys72 and Lys108) located near the fucose binding region of BC2L-C-Nt. The new glycomimetics, which contain a L-fucose scaffold connected through a linker to a spacer bearing an electrophilic warhead, were screened in silico through non-covalent and covalent docking protocols, and the most interesting ones were synthetized and subjected to biophysical studies displaying promising results.

In particular, the new ligands showed up to a 100-fold affinity gain over the parent monosaccharide resulting in the first synthetic BC2L-C-Nt ligands that reach the micromolar affinity of the fucosylated histo-blood oligosaccharides.

ALI-PO-026. In-depth metabolite characterization of complex food samples using different separation properties in comprehensive two-dimensional liquid chromatography

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Attaining comprehensive characterisation of complex food samples often requires the employment of advanced chromatographic platforms.

In this context, comprehensive two-dimensional liquid chromatography is one of the most widely used approaches to achieve high-quality data acquisition for unequivocal identification.

The characterization of polar compounds in food analysis is typically carried out by reversed-phase liquid chromatography (RP) and hydrophilic interaction liquid chromatography (HILIC) separation mode. The aim of this contribute is to compare different platforms (HILIC × RP, RP × HILIC, RP × RP) for the analysis of complex polyphenols samples.

Their performance was evaluated in terms of peak capacity, orthogonality and maximum number of identified compounds.

In particular, one of the most complex phenolic compounds mixtures is represented by herbal liqueurs, typically produced by macerating several herbs, roots, flowers, bark, and/or citrus peels in alcohol, either neutral spirits or wine, mixing the filtrate with sugar syrup, and allowing the mixture to age in barrels or bottles. The huge varieties of botanical families used in their production, make herbal liqueurs a perfect matrix to evaluate the different comprehensive set-ups, mentioned above, on several phenolic matrices at the same time. Moreover, hyphenation with PDA and MS/MS detectors and chemometric approaches allowed discriminating between the several isomers presents in the different botanical families.

INO-PO-086. Electrochemiluminescent compounds in confined space

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Electrochemiluminescence (ECL) – the production of molecular excited states without light excitation but through the recombination of charges – is a well-known process. This method presents diverse advantages due to the absence of excitation light, thus resulting in a sensitive enhancement of the signal-to-noise ratio.1 Thus, ECL can be exploited for the design of diagnostic tools and it is used extensively in immunoassays. As ECL emitters the most well known compounds are ruthenium and iridium compounds. However more recently also organic molecules have been reported. The emission of heavy metals compounds is strongly influenced by the quenching due to the presence of dioxygen in solution and many attempts have been made to protect the complexes by such detrimental process, such as denritic compounds and encapsulation in silica particles.

The use of the confinement of the emitters in scaffold and nanoparticles can also improve their solubility and stability in aqueous environments, such as biological ones.2

Here we report a set of organic and organometallic compounds which have been chemically and spectroscopically characterized. Their ECL and emission properties have been performed in solution and compared with their behavior once they are encapsulated in silica nanostructures that possessing different porosity can affect the photophysical properties and ELC signal.

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ORG-PO-174. Asymmetric reduction of cyclic imines by Imine Reductase enzymes in non-conventional solvents

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Biocatalysis became a powerful tool for the synthesis of relevant high-added value molecules with excellent chemo-, stereo- enantioselectivities but also allow to perform greener chemical transformations. However, the low solubility of many organic substrates or products in aqueous solutions, commonly used in enzymatic reactions, often hampered the application of enzymes in synthesis, mainly because of substrate concentration restrictions. In this context, non-conventional solvents are acquiring increasingly relevance and, in recent publications, they were demonstrated to improve the yield and selectivity of enzymatic reactions in an economical, health-safe, and environmentally-friendly manner.1 In this field, Deep Eutectic Solvents (DESs) have rapidly emerged as a promising class of green reaction media as a promising class of green reaction media due to their unique properties.2 In these work we report a successful example of non-conventional solvents used for the synthesis of cyclic chiral amines by bio-reduction of the starting cyclic imines.3 The transformation was realized by means of a novel class of NADPH-dependant enzymes, namely Imine Reductases (IREDs). We performed the reduction of cyclic imines in a mixture of phosphate buffer/glycerol (50% v/v). Pyrrolidines, piperidines, and azepines were produced in good yields and excellent S-enantioselectivities (up to >99% ee). Also, the use of non-conventional solvents allows to increase the concentration of the starting material up to 100 mM. It is worth mentioning that applying a fed-batch strategy, we were able to work at mmol scale with 80% yield and excellent ee, which formally corresponds to a seven-fold use of the same enzyme. Our findings in terms of enantioselectivity, substrate scope and scalability will be presented.

TEC-PO-013. Synthesis of nanostructured nonlinear optical materials for quantum sources

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The development of nanostructured nonlinear optical (NLO) materials play an increasingly key role in photonics, due to their advanced functionalities.The ability to generate NLO processes in nanostructures should allow improving the efficiencies pointing toward the realization of photonic sources operating at the nanoscale. In this work sol-gel nanomaterials belonging to Nb2O5-SiO2 and ZrO2-SiO2 binary oxide systems, with variable contents of high polarizable element, will be synthesized using cost-effective sol-gel routes inspired to sustainability and circularity criteria of Green Chemistry, such as the use of green solvents, safe, cheap and available materials, and energy-efficient protocols. The final goal will be the synthesis of NLO nanostructured materials in form of powders or transparent thin film containing the active component, in amorphous or crystalline form, embedded in a silica matrix.

FAR-PO-115. New Thiazolidine-4-one Derivatives Capable of Inhibiting SARS-CoV-2 Mpro

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Having caused a great socioeconomical impact worldwide since 2019, SARS-CoV-2, is still a major public health issue. Despite benefits obtained with vaccination campaigns, SARS-CoV-2 has been still mutating for potential immune escape pathways. Among viral targets, the main protease (Mpro) represents a strong candidate due to various reasons: (1) the pivotal role of Mpro in the proteolytic cleveage of viral proteins, (2) the absence of human homolog of this protein,1 (3) high conservation among Coronaviruses, especially in those domains crucial for its enzymatic activity – a potential for broad-spectrum activity.2 One SARS-CoV-2 Mpro inhibitor has been approved so far by the FDA, namely Nirmatrelvir, but this drug has major issues.3 Most recently, Petrou et al. also reported the antiviral activity of thiazolidine-4-one scaffold against SARS-CoV-2 Mpro.4 All these facts rightfully highlight the pivotal importance of seeking out new Mpro inhibitors, more particularly deepening the SAR studies of thiazolidine-4-one class. Herein, we report the synthesis of new thiazolidine-4-one analogues as SARS-CoV-2 Mpro inhibitors. They were designed by derivatizing the thiazolidine-4-one scaffold with a 4-nitrophenyl ring and a variously substituted phenethyl moiety. Followingly, we assayed the enzymatic activity of the newly synthesized derivatives in in vitro assays against SARS-CoV-2 Mpro, showing inhibitory values within the low micromolar range. To deepen our understanding, we have further applied a molecular docking protocol to predict the possible binding mode of the compounds in complex with SARS-CoV-2 Mpro, shedding light on the main structural features involved in the enzymatic inhibition. An in-depth discussion of the data coming from the biological assays will be shown and described.

FAR-PO-077. Exploring Substituent Effects on π-π Stacking Interactions: Investigation of Benzene Dimers

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Noncovalent interactions are pivotal factors in controlling structural and energetical aspects of molecular recognition/sensing and self-assembling/engineering1,2. Particularly, π-π stacking stands out in the biological context, where these interactions commonly occur among the nucleobases and the aromatic amino acid residues. Despite their biological significance, our knowledge of these fundamental nonbonded interactions is still far from being complete, and our ability to predict their strength is limited. In this context, we are yet unable to correctly parametrize the role of aromatic substituents although they can influence the energy interaction and may provide a way to tune π-π interactions. Such insights may also help the design of new bioactive molecules and materials with desired physical and chemical properties. Thus, we decided to analyze these intramolecular interactions with high-level theoretical methods in order to determine the contribution of each substituent to the energy landscape. In this study, we used ab initio and density functional theory (DFT) to study π-π stacking interaction energies of benzene dimers. Specifically, we assessed substituent effects by introducing various electron-donating and -accepting groups on one benzene ring, examining the dimer across three configurations (T-shaped, sandwich, and parallel display) throughout its potential energy curves. The energies of the π-π interactions were compared with those of couple cluster (CC) one, widely considered the "gold standard" in quantum chemistry. Concomitantly, the influence of aromatic substituent on π–π interactions was also experimentally investigated. For this purpose, we performed HPLC analyses of the analytes on different chromatographic stationary phases.

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ELE-PO-003. Metal Organic Frameworks (MOFs) as catalysts for CO2 conversion

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The overreliance of fossil fuels has determined a rapid rise in atmospheric CO2 concentrations and disrupted the natural balance of the carbon cycle, leading to global warming and its consequences in terms of extreme climatic events. The protection of the ecological environment by developing advanced technologies and methods to close the carbon loop is a key to this solution. Among them, a cost-effective process for the electrochemical conversion of carbon dioxide to value-added products could be an interesting way for the carbon capture. Aside from the advantage of working at room temperature and ambient pressure, the carbon dioxide reduction reaction presents many problems related due to the thermodynamic stability of the CO2 molecule whose standard formation enthalpy is -393.5 kJmol-1. Significant efforts are due to the limited solubility of CO2 in water under the working conditions. Furthermore, the CO2 reduction reaction (CO2RR) mechanism involves (multi) proton coupled electron transfer (PCET) pathway generating many different reaction intermediates resulting in a large variety of products which means to poor selectivity. However, recent advancements have been made in designing catalysts that exhibit high efficiency and selectivity, resulting in significant progress in the field. Metal Organic Frameworks (MOFs) used as catalysts show promising results due to their structure and organization in the space. They are composed by metal ions coordinated by organic ligands forming a highly porous and crystalline coordination polymers which exhibit a facilitated exposure to active sites, a certain structural order easy to be tuned [1]. Herein, a copper-based coordination polymer (Cu2+-CP) using (E)-4-aminocinnamic acid (4-ACH) as organic ligand was synthetised and deposited onto the Gas Diffusion Layer (GDL) used as working electrode of a MicroFlowCell with a three electrodes configuration. This innovative design could be a strategic way to achieve high current densities and overcome both mass transport limitation and CO2 solubility and the added value of the used set-up is the online detection of gaseous products (H2, CO and CH4) using a Gas-Chromatograph. The performances toward CO2RR are evaluated by changing some experimental parameters. This is done to optimize the used set up in order to achieve the highest current density and faradic efficiency (FE%) used as quantifiers of catalyst efficiency. Among them, particular insight is given to gas flow rate, loading, Nafion and potential effects to end up with the best combination of these three. Three gas flow rates were analysed (5, 8 and 10 standard cubic centimetre square, cm3 · min-1) at a costant loading of 505 µg · cm2 and potential of -0.8 V vs RHE. The best results were obtained at the lowest flows reaching current densities of -6.9 mA · cm2. Then, three different loadings (505, 1000 and 1500 µg · cm2) of the catalyst deposited on the gas diffusion layer were studied both with and without the addition of the nafion in the used ink. It was demonstrated that the ionomer has an effective impact on the performances especially of the competing Hydrogen Evolution Reaction (HER) and the best results as achieved at higher loading.

Further evaluations of experimental parameters and electrolysis tests are still in progress to be able to effectively make advantages of the unique properties of this kind of structures and materials and give a real contribution in the field of global warming and climate change.

TEC-PO-043. A paper-based vapoluminescent chemosensor based on a Zinc(II) salen-type complex for the selective and sensitive detection of n-butylamine vapours

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Aliphatic amines are widely involved in chemical industries and their presence in food products is often related to food spoilage processes. Furthermore, aliphatic amines with short chain length (C2 – C6) possess high volatility and toxicity at low concentrations (ppm). Among them, n-butylamine (BA) is used in chemical industries as reactant, or intermediate in many synthetic routes. Because of its high volatility (93 mmHg at 25 °C) the main risk for human health is the inhalation. Prolonged exposure to this amine vapours can cause nausea, vomiting, and, in some cases, damage to the nervous system. For this reason, its quantitative detection is very important for human safety.

To this end, a Lewis acidic Zn(salen)-type complex1,2 was chosen for the development of a new molecular material with vapoluminescent properties, as potential chemosensor for vapour-phase detection of BA. A paper-based sensor, fabricated by the dip-coating technique using THF solutions of the complex, was used for the quantitative detection of BA vapours. Static exposure experiments, show a linear response between 0 and 50 ppm, with a limit of detection of 2.0 ppm, below the permissible exposure limit (5 ppm) established by OSHA for BA. The effect of exposure time, exposure temperature and relative humidity on the sensor performance was also evaluated. Competitive experiments demonstrate the high selectivity of this sensor towards BA. In summary the

developed paper-based sensor of the Zn(II) complex represents a simple, disposable, and cost-effective chemosensor for the selective and sensitive direct in-situ detection of BA vapours.

This research is funded by European Union (NextGeneration EU), through the MUR-PNRR project SAMOTHRACE (ECS00000022).

MAS-PO-003. Pea plants communication mediated by volatile organic compounds

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Plants are members of communities inhabiting an environment within which they can share or compete for resources as well as communicate. Plants have evolved various mechanisms to explore the environment and interact with neighbouring plants. Among these the most effective being the release of arrays of volatile organic compounds (VOCs) from their leaves, flowers, and fruits into the atmosphere and from the roots into the soil.

These communicative responses are well documented, but what precedes them and the mechanisms that are actively involved, have yet to be identified. To fill this gap the present work will measure the changes in VOC emission of pea plants acting with either a cooperative or competitive attitude.

Two varieties of Pisum sativum, L. (sativum sativum and sativum macrocarpon), were chosen as model plants, to compare the behavior and emissions within the same or different genotypes belonging to the same species or genus. Pea plants were grown in a phytotron with eight climatic chambers. An untargeted metabolomics approach was applied using a Proton Transfer Reactor - Time of flight - Mass Spectrometer (PTR-MS-TOF) analysis. Preliminary results reveal differences in VOC emissions when comparing cooperating and competing pea plants. This study shed definite light on the physiological and molecular events occurring in interacting plants.

TEC-PO-003. Carbon nanotubes as advanced catalysts and catalytic supports in hydrocarbon oxidation processes

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Carbon nanotubes (CNTs) have gained substantial importance in catalysis due to their unprecedented properties [1]. Functionalization of CNTs is another advantageous approach for modifying the interaction between the support, catalyst, and guest molecules [2]. In this study, carboxylated MWCNTs were functionalized with copper(II) ions (MWCNT-COO-Cu) and then coated with dissolved N-hydroxyphthalimide (NHPI) in an ionic liquid (IL) ([emim][OcOSO3]). The resultant catalytic system represented both the SCILL (solid catalyst with an ionic liquid layer) and SILP (supported ionic liquid phase) systems; therefore, it was identified as a novel SCILL-SILP hybrid catalytic system (Figure 1). The catalysts were evaluated for solvent-free oxidation of ethylbenzene using molecular oxygen as a greener oxidant. The recyclability and reusability of the MWCNT-COO-Cu and the SCILL-SILP hybrid catalytic system were thoroughly investigated [3]. In the subsequent study, novel SILP and SCILL-SILP hybrid catalytic systems were synthesized by coating NHPI dissolved in various ILs onto MWCNTs and MWCNT-COO-Cu, respectively. The effect of lipophilicity of ILs on the catalytic activities of the SILP systems was investigated. Furthermore, the recyclability and reusability of the catalytic systems were thoroughly investigated.

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TEO-PO-002. Design and set up of Machine Learning force fields of characterization and development of next generation solid state battery electrolytes

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All-solid state (ASSB) batteries are one of the most promising alternatives of Li-ion liquid technology. ASSB have several advantages1, such as greater stability, better safety, and higher energy density2, but also an intrinsic, and still unsolved, problem caused by their solid nature, the low ion mobility. Amorphous Lithium thiophosphates, LPS (xLi2S-(1-x)P2S5) and their oxidised form LPSO (with Li2O and/or P2O5) are among the most promising3 electrolytes. Optimizing their performances by tuning their composition in order to achieve high ion conductivities (at least 10-3 S/cm to be competitive with liquid electrolytes) is an extremely complicated task because we do not yet know the structure-properties relation and the optimization process require laborious trial-and-error laboratory procedures. Using molecular modelling we can help making this process much quicker. Typically, computational approaches to electrochemistry involve ab-initio molecular dynamics (AIMD) methods, that, despite their accuracy, are very slow and computationally intensive, compared to classical molecular dynamics (MD), that instead relies on parametric force fields (FF). Classical MD calculations on LPS and LPSO are, at the moment, difficult to perform because they would need the development of a suitable FF whose analytical form is complicated due to the different states of chemical coordination that Li+ assumes in the amorphous solid. Nevertheless, it is important for the electrochemical community to have access to a quick and efficient way to model electrolytes such as LPS and LPSO.

We have used deep learning molecular dynamics4, to generate the FF. The deep neural network5 has been trained using accurate ab-initio data and a deep learning force field (DLFF)7-8 has been produced. The FF has the high accuracy6 of the ab-inito level chosen

for the training set and, being parametric, a high efficiency (classical MD level). Using this DLFF we have performed fast ed accurate simulations on model systems beyond the actual limits of AIMD. This approach will be crucial to determine electrochemical properties of LPS and optimize their composition to make this technology competitive in a large-scale industry environment.

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FIS-PO-054. Investigation of the luminescent properties of silicate-based phosphors

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Luminescent materials can emit photons after the absorption of energy. Among these, inorganic emitters, also known as “phosphors”, are of great interest due to their excellent stability, if compared to their organic counterparts. Usually, phosphors consist of an inorganic host matrix in which luminescent ions are located as dopants1. Silicates, along with aluminates, are widely studied as host to produce high efficiency phosphors, displaying great chemical stability, high water resistance and relatively low calcination temperature2. Rare-earth ions are often used as luminescent ions in phosphors due to their capability to emit visible light under UV-Visible excitation, with very high quantum yields3. Europium is a very fascinating element and it is widely studied since its luminescent properties can be tuned by engineering the surrounding media4. In this work we focused our attention on silicate-based phosphors, choosing europium as luminescent centre. We investigated different synthetic strategies, trying to rationalize how the properties of europium are dependent on the crystal environment, with the purpose of achieving the best performances. The as-synthesized phosphors are then included into different matrices and the mutual effects of the interactions between the two components have been investigated. The final goal is to develop innovative luminescent devices to be used as lighting sources.

ORG-PO-007. Quadrupolar dyes for non-linear optical imaging of cardiac cells

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Fluorescent potential-sensitive probes (voltage sensitive dyes) are widely used in mapping myocardial contraction. Most of the commercially available systems exploit two mechanisms: electrochromism or photoinduced electron transfer. Despite the great time resolution provided by these systems, they are affected by a low signal to noise ratio. Our project aims to overcome this problem by developing a non-linear optical method to study cardiomyocytes contraction with four-dimensional resolution (in space and time). We decided to use quadrupolar fluorescent molecules1 that can stain the phospholipidic bilayer of cardiac cells. These molecular sensors are based on a double mechanism: first, a variation in the potential of the cell should result in a different fluorescent response. Second, the cell contraction should lower the symmetry order, with the consequence that the resulting non-centrosymmetric system would be able to generate non-linear second order responses, such as second harmonic generation.2

In this poster presentation, we report the synthesis and spectroscopic properties of a selected library of quadrupolar dyes. They all contain a central fluorescent core, asymmetrically functionalized via a statistical Sonogashira coupling, with two electron-donating arms, one bearing a lipophilic and the other a polar end, to ensure a homogeneous orientation of the probe within the cell membrane.

ANA-PO-028. PAM-Engineered Toehold Switches as Input-Responsive Activators of CRISPR-Cas12a for Sensing Applications

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The RNA-programmed CRISPR effector protein Cas12a has emerged as a powerful tool for gene editing and molecular diagnostics. Nonetheless, additional bio-engineering strategies are required to achieve precise control over Cas12a activity.1 Here, we introduce a novel class of Cas12a regulators termed PAM-engineered Toehold Switch DNA, featuring re-engineered locked protospacer adjacent motif (PAM) within the loop.2 This design enables precise control of Cas12a activities in response to specific molecular targets via structure switching and PAM complementation. Reconfiguring the Toehold Switch DNA from a hairpin to a duplex conformation through a strand displacement reaction provides an effective means to modulate the accessibility of the PAM, thereby controlling the binding and cleavage activities of Cas12a. This approach demonstrates the potential to initiate downstream Cas12a activity by exploiting proximity-based strand displacement reactions upon target binding (Figure 1). By utilizing Cas12a trans-cleavage activity as a signal transduction mechanism, our approach shows versatility in sensing applications. Our system facilitates rapid, one-pot detection of IgG antibodies and small molecules with high sensitivity and specificity, even within complex matrices. Beyond its bioanalytical utility, the

switchable PAM-engineered Toehold Switches serve as programmable tools, allowing precise regulation of Cas12a-based targeting and DNA processing in response to molecular inputs, thus holding promise for diverse biotechnological applications.

Figure 1: PAM-engineered Toehold Switch DNA reconfiguration enables precise control of Cas12a activities in response to specific molecular targets via structure switching and PAM complementation within a proximity-based reaction network.2

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ABC-PO-009. The anthropic impact on Antarctica: a biennial study on emerging contaminants' occurrence

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Human activities influence (often negatively) the environmental processes. The most visible consequences occur in highly-impacted regions, where industries and residences are more abundant. Still, even small settlements in remote areas can have an impact on the surroundings, like the Mario Zucchelli Italian research Station (MZS) in Terra Nova Bay (Antarctica). The PNRA (National Research Program in Antarctica) project called 'MATISSE' (Emerging contaminants in the Ross Sea: occurrence, sources and ecotoxicological risks) is devoted to assess such an impact1. In this work, the results of the samplings performed in the outlet of the MZS's wastewater treatment plant (WWTP) and the surrounding Road Bay seawaters (where the WWTP discharges) during two consecutives campaigns (37th and 38th Italian expedition in Antarctica) were compared. Samplings were carried out by following two approaches: (i) spot sampling and consequent solid-phase extraction and (ii) passive sampling (exploited by the first deployments of Polar Organic Chemicals Integrative Samplers – POCIS –in this remote region for 2-3 weeks), which encompasses an in-situ pre-concentration during the sampling itself. The final extract of each sample processed was properly diluted and analysed by LC-MS/MS, targeting approximately 40 emerging contaminants, belonging to various classes and presenting different physico-chemical properties. The first campaign involved an intensive sampling, which was reorganized during the second one according to the obtained results1: the processing method was slightly modified to increase the recovery of the most polar analytes, and the sampling point at Road Bay was moved closer to the WWTP outlet to reduce the seawaters' dilution effect. This allowed to double the number of compounds detected in marine samples, while the analytes within the WWTP effluent were more or less the same from one year to the following one. Detected substances included food- and recreational activities- related compounds (methylxanthines, artificial sweeteners, taurine, nicotine), pharmaceuticals (non-steroidal anti-inflammatory drugs, β-blockers, β-agonists…), hormones, UV-filters and industrial additives (like PerFluoroAlkyl Substances and BisPhenol-A) at concentrations ranging from dozens of ng L-1 to dozens of µg L-1. During the two campaigns, most of these analytes were quantified at comparable levels. In order to get a more comprehensive evaluation and interpretation of the results, both principal components analyses and correlation matrices were implemented, highlighting the relations among the compounds and those with the number of personnel in the base, as well as between the two sampling approaches, whose quantifications resulted correlated for many compounds1.

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ABC-PO-043. Hydrogels for controlled release of glucosinolates extracted from Brassicaceae – A sustainable treatment for agricultural soils

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The extensive use of synthetic pesticides in agriculture has a significant environmental impacts and poses severe health risks to living organisms, including the human population. Hence, exploring effective alternatives to current pesticide practices is one of the main research goals in agrifood chemistry. A potential solution lies in the controlled release (CR) of bioactive compounds. In the frame of the Profood-IV Project (PON ARS01:0755), the use of two biocompatible and biodegradable polymers, i.e. sodium alginate and sodium carboxymethylcellulose (CMC), was investigated to synthesize crosslinked hydrogel beads for encapsulating and releasing glucosinolates-rich extracts from Brassicaceae. Glucosinolates are secondary metabolites of plants, which can be hydrolyzed by the mirosinase enzyme to isothiocyanates, a class of compounds with a renowned biocide activity towards fungi, bacteria and insects. The physicochemical properties of the developed CR systems was performed using several analytical techniques, including Attenuated Total Reflectance-Fourier Transform Infrared (ATR-FTIR) spectroscopy, thermogravimetry (TGA), Differential Scanning Calorimetry (DSC), and rheometry. The encapsulation efficiency was assessed and the release kinetics was analyzed both in water and in a model soil. Preliminary microbiological tests were conducted to evaluate the efficacy of this approach, both in laboratory and on field. These systems represent a cost-valuable, sustainable and scalable alternative solution to the use of traditional pesticides, which exploits the by-products of the agrifood industry in agricultural practices.

FAR-PO-120. SUSTAINABLE JOULLIE'-UGI AND CONTINUOUS FLOW IMPLEMENTATION LED TO NOVEL CAPTOPRIL-INSPIRED BROAD-SPECTRUM METALLO BETA-LACTAMASE INHIBITORS

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Antimicrobial resistance represents one of the major issues for the healthcare system. The β-lactam antibiotics including penicillins, cephalosporins and carbapenems are the cornerstones of antimicrobial chemotherapy. ESKAPE pathogens (Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa, and Enterobacter spp) have become highly resistant to most available antibacterial drugs by exploiting different mechanism of resistance. The COVID-19 pandemic has increased the antibiotic resistance, since COVID-19 patients were treated with broad-spectrum antibiotics, including extended-spectrum cephalosporins, quinolones, and carbapenems. One of the main mechanism of resistance is due to the presence of metallo beta-lactamases (MBL), that are bacterial enzymes able to cleave the beta-lactam ring of the antibiotics. Since no clinically relevant MBL inhibitors have yet been approved, the quest for novel compound with a broad-spectrum activity against several MBL, represents a necessary although challenging task. Captopril, an angiotensin converting enzyme inhibitor used for the treatment of hypertension showed weak activity against some MBL isoforms. Therefore, our driving idea was to modify the structure of the captopril to improve potency and possibly extend the spectrum of inhibition towards MBL by increasing the hydrophobic features of the molecule generating an indoline system. We employed a Joullié-Ugi multicomponent reaction protocol for the synthesis of two indoline-based subseries generating a novel class of potent MBL inhibitors through a convenient continuous flow protocol for the rapid, efficient and diversity-oriented generation of analogues. Among the compounds tested against different MBL isoforms two derivatives stood out for their broad-spectrum inhibition profile against all the isoforms tested, namely NDM-1, VIM-1, and IMP-7. Furthermore, activity in clinical isolates in synergy with beta-lactam antibiotics was assessed for the best performing compounds, thus paving the way to further optimization for the newly disclosed inhibitors.

IND-PO-003. From Waste to Catalyst: Pyrolysis-Based Valorization of Biomass

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A way to valorise agricultural and other organic waste is thermolytic transformation via pyrolysis, resulting in different products: biogas, bio-oil and biochar, corresponding to the gas, liquid and solid fractions, respectively1. The solid phase, biochar, is a promising carbon-rich material that can be applied to various fields, such as wastewater treatment, soil remediation, as a material for electrodes, and catalysis, replacing other carbon materials from less sustainable sources2. The properties of biochar are influenced by the nature of the biomass and pyrolysis parameters such as temperature, heating rate and residence time. Moreover, its physicochemical features can be enhanced through activation with different agents, such as steam, CO2, KOH, or ZnCl2. In this study, different biochars have been activated with steam as a more sustainable activating agent to obtain high surface area carbons suitable as supports for metal nanoparticles3. Two different biomasses, one of vegetal origin (rice husk) and one of animal origin (leather tanning scraps), were used to produce steam-activated biochar s (AR, AL). A 1:1 wt% mixture of the two (ARL) was also investigated. The three samples were employed as a support for Pd nanoparticles using a deposition-precipitation method. The synthesized catalysts (Pd/AR, Pd/AL, Pd/ARL) were characterised with N2 physisorption, CHNS elemental analysis, SEM, XPS, Raman spectroscopy, CO chemisorption and MP-AES to investigate the physicochemical properties of the carbonaceous supports and their interaction with the metal phase. They were also tested in benzaldehyde hydrogenation, evaluating reactant conversion and hydrogenation product yield. The results of the reaction show that the catalyst supported on the biochar produced from the mixture yields a more active catalyst than the one produced from leather scraps and a more selective catalyst than the one produced from rice husk, showing a synergic interaction between the biomasses constituents during the pyrolysis process . These results will be discussed with respect to the data from characterizations.

ABC-PO-007. Development of chemical organogels and sponges for modern and contemporary artworks cleaning

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Polydimethylsiloxane (PDMS) organogel sponges were prepared and studied in order to understand the role of pore size in an elastomeric network on the ability to uptake and release organic solvents. PDMS organogels sponges have been produced according to sugar leaching techniques by adding two sugar templates of different forms and grain sizes (a sugar cube template and a powdered sugar template), in order to obtain materials differing in porosity, pore size distribution, solvent absorption and liquid retention capability. These materials were compared to PDMS organogel slabs that do not contain pores. The sponges were characterized by Fourier Transformed Infrared spectroscopy in the Attenuated Total Reflectance mode (FTIR-ATR) and compared with PDMS slabs that do not contain pores. Scanning Electron Microscopy (SEM) provided information about their morphology. X-ray Micro-Tomography (XMT) allowed us to ascertain how the form of the sugar templating agent influences the porosity of the systems: when it was in the form of cubes, the porosity was 77% and the mean size of the pores was ca. 300 µm; when it was in the form of powder, the porosity decreased to ca. 10% and the mean pore size was reduced to ca. 75 µm. These materials, porous organic polymers (POPs), are able to absorb many solvents in different proportions as a function of their polarity. The absorption capacity, as measured by swelling of eight solvents, covering a wide range of polarities, was investigated. Rheology data established that solvent absorption did not have an appreciable impact on the gel-like properties of the sponges, suggesting their potential for applications in cultural heritage conservation. Application tests were conducted on the surfaces of two different lab mock-ups that simulate real painted works of art. They demonstrated further that PDMS sponges are a potential innovative support for controlled and selective cleaning of works of art surfaces.

FIS-PO-019. Valorization of dairy waste stream: chemoenzymatic synthesis of bio-based emulsifiers

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Sugar fatty acid esters (SFAEs) are a class of non-ionic surfactants characterized by excellent interfacial tension reduction capability, low toxicity, and biodegradability. These properties make SFAEs extremely promising for cosmetic and food applications as emulsifiers, alongside to the fact that they can be obtained from renewable sources, thus answering the need for evermore sustainable and circular chemistry.1 Herein, cheese whey permeate (CWP), the main waste stream of dairy industry, was used as starting material to produce bio-based surfactants. Specifically, CWP was enzymatically hydrolysed into a mixture of glucose and galactose which was then submitted to a two-step chemoenzymatic synthetic protocol.2 The first step (Fischer glycosylation) was not straightforward since several parameter influenced both yield and isomeric ratio. Therefore, the reaction conditions were optimized by means of a chemometric study. In the second step an enzymatic esterification reaction was conducted to obtain an isomeric mixture of n-butyl 6-O-palmitoyl-D-glycosides and its surfactancy was deeply investigated in terms of static/dynamic interfacial tension and water-in-sunflower oil (W/O) emulsion stabilization capacity over time. Computational studies were conducted on isolated couples of anomers, namely pyranosides- and furanosides-based compounds, to study the role of the ring size on the final emulsifying properties of the isomeric mixture.

ORG-PO-009. Dual Emission of Fluorinated beta-diketonate Sm(III) Complexes: Effect of the Bidentate Ancillary Ligands

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Samarium complexes have attracted significant attention across various fields due to their diverse applications and unique properties. Research has demonstrated the synthesis and characterization of different samarium complexes, showcasing their potential in catalysis, luminescence, biological studies, and materials science.1 The luminescent properties of samarium(III) complexes, characterized by an orange-reddish emission, make them particularly attractive for bioimaging and optoelectronic applications.2 Despite the modest luminescence quantum yields, typically not exceeding 5%, samarium complexes have shown unexpected efficiency for combined visible and near-infrared biphotonic microscopy.3 In fact, these complexes exhibit emission bands in both the visible (4G5/2 to 6H5–11/2) and NIR (4G5/2 to 6F1–11/2) spectral ranges, making them valuable for imaging purposes.4

Here we report on the design, synthesis, chemical and photophysical characterization of a large series of samarium(III) beta–diketonate complexes of general formula [Sm(hfaa)3(L)n], where hfaa is 1,1,1,5,5,5-hexafluoroacetylacetone and L is a polypyridine co-ligand.

Figure 1: Scheme of the synthetic pathway and the polypyridine co-ligands.

Acknowledgements: This research was partially funded by the European Union – NextGeneration EU NRRP M4, C2, I1.1 MUR–PRIN P2022ACY8P MUSES; MUR-PRIN 2022FWAF2M CADIVAPE; The Italian Ministry of Economic Development (MiSE) – Mission Innovation Programme (Italian Energy Materials Acceleration Platform, IEMAP).

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ORG-PO-010. Investigating novel dyes for indoor DSSCs : study of the devices long term performance upon hydroxamic acid pre-adsorption

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With the development of the Internet of Things and the emergence of self-powered devices operating under ambient light conditions, indoor photovoltaics (PV) have been developed to meet these new energy requirements. Among the various PV technologies developed thus far, Dye Sensitized Solar Cells (DSSCs) have quickly emerged as one of the most efficient and practical solutions. Consequently, there is now significant industrial-scale development of DSSCs, with considerable effort dedicated to achieving optimal efficiency and stability under low illumination.

SL9 and SL10 are two recently published dyes that have shown high Power Conversion Efficiency (PCE) in co-sensitized devices. In this study, these dyes were synthetised and characterized using NMR, HRMS, UV-Vis absorption and cyclic voltammetry. They were then integrated in industrially processed DSSCs to evaluate their long-term stability and performance under white LED light. As a result, co-adsorbed SL9 and SL10 displayed high PCE at 1000 lux of more than 25% after 2000 hours, making them comparable to benchmark dyes. Even at 130 lux, more than 22% PCE was recorded, exceeding most of other commercialized technologies.

Additionally, the effect of bufexamic acid on cell stability was investigated, since it has been shown to improve the dense packing of the dye monolayer at the surface of the titania mesoporous film. Consistently with previous findings, BPHA pre-adsorption contributed to enhance the Jsc, with no detrimental effect on other PV parameters. Furthermore, a noticeable increase in electron lifetime was also observed by using intensity modulated photovoltage spectroscopy (IMVS), suggesting that bufexamic acid has an interfacial passivating effect toward charge recombination. Finally, the long-term stability of the cells under harsh light soaking and temperature conditions is being monitored. Preliminary results show that bufexamic acid has a beneficial effect regarding fill factor retention under stressing conditions, which contributes to slow down the decrease of cell performance.

ALI-PO-025. Enzyme-Assisted Extraction of Antioxidants from Vegetable Wastes: Optimization by Surface Response Methodology.

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Circular economy and recovery of mixtures of bioactive compounds from agri-food wastes and by-products is a well-known goal within UN Agenda 2030 [1] for sustainable development. Many different strategies have been developed to achieve this task with attention also to other topics and targets, mainly that one known as Green Chemistry. Thus, aqueous buffers and solutions and strategies for enhancing the extraction of antioxidant compounds from vegetable matrices (i.e., microwaves, ultrasounds, pressurised liquid extraction, supercritical fluids, enzymes, or their practicable combinations) [2] .

In this work, an enzyme mixture, made of mainly Pectolytic and Cellulolytic enzymes (known as Viscozyme), was applied for the degradation of asparagus hard-stem (Asparagus officinalis L.) and red grape pomace (Vitis vinifera L.) samples and improve the extraction of phenolic substances. Asparagus hard-stem is the non-edible terminal part discarded after packaging asparagus edible stems with a given

commercially defined length; red grape pomace is the most common by-product after grape pressing for must extraction and grape pomace is a mix between grape skin, seeds and green stem and it is also known as “marc”. Amount of enzymatic mixture (% w/w), incubation temperature and incubation time (hours) were the experimental variables studied for extraction optimization. Measured parameters in extracts were the antioxidant capacity (i.e., mM TE, trolox equivalents, by DPPH assay), total polyphenols content, TPC (i.e., mg CE, catechin equivalents, per g of dry sample, by Folin-Ciocalteu assay), total flavonoids content, TFC (i.e., mg CE, catechin equivalents, per g of dry sample, by AlCl3 assay) and condensed tannins content, CTC (i.e., mg CE, catechin equivalents, per g of dry sample, by vanillin assay). A two-factors central composite design approach was used for finding the best extraction conditions and experimental data were fitted to a second order polynomial model with interactions between the independent variables. Results evidenced that the amount of antioxidants that can be recovered is quite different from the two waste matrices and optimum ranges for enzyme mixture quantity, temperature and incubation time can be identified in each case.

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ALI-PO-023. Preliminary investigations about protein insects bioaccessibility

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Edible insects are becoming a new protein source in order to feed a growing number of consumers, at the same time keeping environmental friendliness first1. Recently, after the positive safety evaluation by the European Food Safety Authority (EFSA) and their inclusion in the group of Novel Foods, it is mandatory to investigate their nutritional and toxicological profile that are generated during their intake. In this contest, the Italian National Recovery and Resilience Plan financially supported “OnFoods” which is a foundation including twenty-six public and private organizations taking sustainability, working on safety, security, and health actions. The University of Pavia is part of this foundation, and our research group aims to study the bioaccessibility, absorption, metabolism, and safety of selected components of novel foods, including Locusta migratoria, Acheta domesticus, and Tenebrio molitor proteins. Firstly, the proteins digestibility and amino acids bioaccessibility have been investigated using adapted Infogest 2.0 digestion protocol, a simulated in-vitro digestion process 2. Digested fractions are being processed, according to protein precipitation and hydrolysis procedures under acid and basic conditions, to recovery macronutrients for subsequent investigations (e.i. protein content and digestible essential amino acid scores) 3,4. In addition, changes occurring as a result of the digestion process will be monitored through Caco-2 cells biocompatibility tests. These preliminary investigations on insects underlines their potential nutritional value; in fact, they might be considered auspicious choices to overcome the future demands of new functional sources.

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INO-PO-014. Electrochemical Reduction of Carbon Dioxide to Formate with Electrodeposited Catalyst

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The increase of carbon dioxide in the atmosphere and the continued use of fossil fuels are two very important problems in nowadays society, the electrochemical reduction of carbon dioxide for the production of high value chemicals can be a partial solution to both of those problems1. Catalysts are very important in the development of a system that can be efficient and convenient with this technology, in particular copper catalysts have been studied for a long time because of the multiple shape this metal can assume and also because of the catalysts’ versatility and great numbers of possible products obtained2.

In this work we show how we approached a copper catalyst, Cu2Se, with a synthesis made via electrodeposition, this type of synthesis was already studied3, but the resulted catalyst was never tested for carbo dioxide redction. The synthesis of the catalyst and its deposition on conductive support happens at the same time, reducing both the time and the cost necessary for the catalyst’s production.

We studied different materials as substrates, noticing a different catalytic activity depending on the subrate. The obtained systems have been tested for the catalytic reduction of carbon dioxide in water, the production of formate as a liquid product was identified and quantified.

ORG-PO-011. Synthesis of functionalized benzodithiophene derivatives for nanofabrication of ordered monolayer surfaces

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Nanofabrication of long-ordered structures displaying specific functional properties is extremely relevant in nanotechnology and electronics miniaturization. The intense scientific research on this subject is driven by new potential applications, especially in organic electronic devices and sensors. The peculiar properties of a molecular system can be enhanced at monolayer level, where the control on the spatial arrangement and orientation of the molecules is of fundamental importance. We present new molecular systems able to be used in bottom-up nanofabrication of long-range ordered monolayer surfaces through a two-step approach: a first in-plane pattern of metal porphyrins that coordinate a second out-of-plane monolayer of functional organic molecules guided by metal-ligand interaction. A linear and planar conjugated BDT (benzo[1,2-b:4,5-b']dithiophene) unit will be used to mimic the structure of the DPNDI (naphthalene diimide derivative) already exploited by the proponents,1 while a chiral tetrathia[7]helicene core2 will be chosen for the preparation of homochiral surface. The two scaffolds have been asymmetrically functionalized at the α-positions of the thiophene rings to fulfil the specific requirements: i) the head of the molecule has been engineered to guarantee axial coordination at the metal atom of the porphyrin, ii) the tail has been decorated with functional groups able to provide information on molecular orientation by X-ray and photoemission spectroscopies.

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TEO-PO-025. Anharmonic Assignment of the Water Octamer Spectrum in the OH Stretch Region

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Spectroscopic characterization of water clusters is a powerful tool to gain insight into the hydrogen bonding structure of water. New experimental advances have made it possible to record the vibrational spectrum of clusters of increasingly higher dimensionality,[1] such as the water octamer,[2] which exhibits a behavior characteristic of the solid-liquid phase transition of water.

On the theoretical side, anharmonicity has to be taken into account to correctly assign the vibrational features of water clusters.[3]

In this work, we study the OH-stretch region of the water octamer spectrum using the quasi-classical trajectory (QCT) technique,[4] which is a computationally affordable classical method capable of providing very accurate anharmonic frequencies. Differently from the conclusions of the previous scaled harmonic assignment,[2] which invoked the contribution of 5 conformers and a solvated form of the water heptamer in the spectrum, we find out that the spectroscopic features can be related to the 4 lower energy conformers of the octamer.[5]

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ANA-PO-093. Detailed characterization of phenolic compounds in medicinal plants by means of ultra-high performance liquid chromatography coupled to high-resolution mass spectrometry

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Hypericum perforatum L. and Sideritis scardica (commonly known as Mountain tea) are two medicinal herbs widespread throughout the European Mediterranean region and commonly used for brewing herbal teas. These plants are known to possess a range of soothing properties1,2, which can be attributed to the high abundance of polyphenols within the extracts obtained from these plants.

Polyphenols constitute an extremely heterogeneous class of metabolites produced by plants both for their growth and for protection against oxidative stress. These compounds are known to have various beneficial effects on human health, particularly due to their antioxidant activity3. For this reason, the analysis of the polyphenolic profile in products for human use has become increasingly sought.

Given the number of phenolic compounds present within the plant kingdom, their extreme variability, and the low quantities produced for some of these molecules, obtaining such results via conventional target methodologies is not feasible. Hence, the utilization of untargeted approaches based on ultra-high-performance liquid chromatography (UHPLC) coupled with high-resolution mass spectrometry (HRMS) becomes necessary4.

The objective of this work is the characterization of Hypericum perforatum L. and Sideritis scardica extracts from Albania in terms of phenolic content by using a UHPLC-Q-Orbitrap system operated in untargeted data dependent acquisition (DDA) scan mode. To achieve orthogonal information, both C18 and Hydrophilic Interaction Liquid Chromatography (HILIC) columns (Waters, Milford, MA, USA) with the same geometry and particle size were employed.

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ANA-PO-012. Photochemical-driven dissipative metal-coordinated gels for transient controlled release and autonomous mechanical actuation

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Transition-metals, such as Fe3+, can strongly coordinate carboxymethyl cellulose (CMC),1 leading to the formation of stimuli-responsive Fe3+-CMC hydrogels for a variety of applications.2 However, the lack of mechanical robustness is a major issue for the implementation of these polymer networks in advanced applications, such as soft robotic. Here we report an innovative strategy to fabricate redox responsive Fe3+-CMC gels, which can retain the high loading capacity of the porous network, while accessing enhanced mechanical properties, for photochemical-driven, transient controlled release and mechanical actuation under aerobic conditions (Figure 1). Cryogels of Fe3+-CMC are obtained by multiple cycles of freezing and defreezing, which induce the formation of a Fe3+-crosslinked cryogel matrix, displaying enhanced stiffness properties.3 The cryogel matrix is redox responsive and the photosensitized reduction of Fe3+-CMC, mediated by Ru(II)-tris-(bipyridine) complex, leads to the lower stiffness Fe3+/2+-CMC gel. In the presence of oxygen, the aerobic re-oxidation of Fe2+ in the matrix restores the initial high-stiffness Fe3+-CMC gel, leading to the development of a dissipative functional matrix with transient stiffness properties.

The light-induced transient release of a model payload from the cryogel matrix is reported. In addition, the light-triggered, transient mechanical bending of a bilayer construct, made of poly-N-isopropylacrylamide (p-NIPAM)/Fe3+-CMC, is demonstrated (Figure 1), providing the potential use of dissipative metal-coordinated gels for developing the next-generation self-regulative, autonomous materials.

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ELE-PO-026. Electrospun membranes of poly ethylene furanoate derivatives for multi – purpose applications

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Polymers are a leading class of functional material suitable for high-value applications, prized for their adaptability and suitability for a wide range of high-value applications, including biomedical engineering, food packaging, and electrochemical energy storage (EES) sectors1. In the pursuit of reducing environmental impact and diminishing reliance on fossil fuels, there has been a significant drive to replace synthetic polymers with biopolymers, composed of repeated chemical blocks derived from renewable resources that may also be degraded in the environment. As a result, numerous types of natural or biopolymers have been developed to address the growing needs across the various applications2. Among the different classes of biopolymers, poly ethylene furanoate (PEF) derivatives has attracted increasing attention from the scientific community due to its potential to replace poly(ethylene terephtalate) (PET), mainly used in the packaging, film and fibre sectors. PEF can be 100% bio-based since both its monomers can be produced from biological resources, and exhibits superior mechanical properties compared to PET3. The purpose of this study has been to develop electrospun membranes of PEF derivatives, and perform a physico – chemical and electrochemical characterization, to evaluate the potential applications of this biopolymers in both biomedical and EES fields.

Acknowledgements:

L.B and C.A acknowledge partial funding from the National Recovery and Resilience Plan (NRRP), Mission 04 Component 2, Investment 1.5 – NextGenerationEU, PE2 NEST - Network 4 Energy Sustainable Transition, Spoke 6 Energy Storage.

This research activity has been funded by Fondazione Cassa di Risparmio di Trento e Rovereto (CARITRO, grant number 2020.0265).

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MAS-PO-010. Method optimization for the analysis of thyroid hormones and their main metabolites

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Thyroid hormones and their derivatives are structurally related to the non-essential amino acid tyrosine (4-hydroxyphenylalanine). In recent years, the number of athletes subjected to doping control who have declared the use of thyroid hormones has significantly increased. There appears to be a necessity to investigate and assess whether the use of thyroid hormones could constitute a substance of abuse in sports, along with the potential consequences that this may provoke. The present study aims to develop an analytical method with an adequate recovery of all the components of the thyroid metabolic pathway and then apply it to real urine and serum samples from individuals who have assumed thyroid hormones. However, there are physicochemical differences that make it difficult to apply an analytical method for their simultaneous detection. In. this work, the evaluation of different organic solvents, with or without additives, for the mobile phases, comparison between liquid-liquid extraction, with different solvents and at different pH, and solid phase extraction, with different types of cartridges, were evaluated and an LC-MS/MS method was optimized to detect TH and derivatives with a unique pretreatment procedure and in a single chromatographic-mass spectrometric run.

TEC-PO-041. Formulation of new biodegradable films for food packaging based on Polybutylene Succinate (PBS)

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Food waste, marine and environmental pollution are global problems that have been of particular interest to the scientific community in recent years. The increase in world population and the consequent consumption of non-reusable materials are amplifying these problems.

In this communication we present a series of bioplastics, which are completely biodegradable and environmentally friendly, with the goal of replacing fossil fuel-based packaging and slowing the degradation of food.

In fact, thin films based on Polybutylene Succinate (PBS) have been prepared and different weight percentages (1.2 and 3%wt) of extra virgin olive oil (OO) and extra virgin coconut oil (CO), were added to improve the chemical and physical properties of the polymer and slow down the aging of fruit and vegetables. Attenuated total reflectance Fourier transform infrared (ATR/FTIR) spectroscopy was used to evaluate the interactions between the polymer and oil. Furthermore, the mechanical properties and thermal behaviour of the coating films were evaluated as a function of the oil content. SEM images showed the surface morphology of the materials. Finally, food-contact tests were carried out to assess the performance of the oil-enriched films.

ANA-PO-118. SPE extraction coupled to HPLC-ESI-MS/MS for the screening and determination of short chain fatty acids

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Short-chain fatty acids (SCFAs) are generated as end products by the degradation and fermentation of indigestible carbohydrates by the gut microbiota, a process termed saccharolytic fermentation1. They can act as signaling molecules as ligands of G-protein-coupled receptors and they are implicated in the increase of anorexic hormone production and energy expenditure2. Consequently, SCFA production has been linked to preventing the progression of obesity and related complications, such as type 2 diabetes mellitus and nonalcoholic fatty liver disease (NAFLD)3. SCFAs are typically quantified by gas chromatography (GC), liquid chromatography (LC), nuclear magnetic resonance (NMR), and capillary electrophoresis (CE)4. The detection of the low-molecular weight fatty acids in negative-ion ESI, without chemical derivatization, is often problematic. LC coupled with mass spectrometry (MS) with electrospray ionization (ESI) is now the most widely used analytical technique in metabolomics and reversed-phase LC–MS with post-column neutralization, previously used also for the determination of SCFAs in the pig colon and blood. The complex instrument setup for these two methods, however, makes them unsuitable for routine analysis in most laboratories. This work aimed to develop a new analytical method for SCFA based on 3-nitrophenylhydrazone (3-NPH) derivatization followed by SPE clean-up, we decided to derivatize the molecular markers with the aim of improving their chromatographic retention, the ionization efficiency and the fragmentation behaviour. While the SPE clean-up was used to minimize the matrix effect and improve extraction selectivity. The LC-MS/MS method was performed both in Multi Reaction Monitoring (MRM) for quantitative analysis and in precursor ion scan analysis (PIS) to achieve semi-targeted analysis for an extended range of SCFA compounds based on derivatization reactions. This approach can be used for putative identification and screening of SCFA compounds in biological samples. Moreover, the derivatization process allows for greater stability of the analytes in the sample over the course of storage time.

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FAR-PO-026. Synthesis of CK1δ covalent inhibitors: fascinating molecules to investigate the therapeutic role of the enzyme

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Casein Kinase (CK) 1δ is a protein that belongs to the class of serine-threonine kinases. A dysregulation in the activity of CK1δ can bring to hyperphosphorylation of substrates potentially related to the development and progress of pathological conditions including cancer and neurodegenerative diseases.1 Among pharmacological tools useful to investigate the potential therapeutic role of CK1δ inhibition, covalent inhibitors, which could have some advantages respect to reversible inhibitors, are still missing. To bridge the gap, a series of covalent CK1δ inhibitors were designed, starting from the already known inhibitor reported in Figure 1a,2 with the aim to target the catalytic Lys38 residue (Figure 1b).

Figure 1: (a) Known reversible inhibitor used for the synthesis of CK1δ covalent inhibitors; (b) Representation of the hypothetical covalent bond formation in CK1δ; (c) Designed CK1δ covalent inhibitors.

Different electrophiles, chosen among the most common used to covalently bond a lysine residue, were introduced at the 2 position of the phenyl ring of compound I (Figure 1c).3 Obtained results allow to point out a strict steric control at the 2 position, with most of the common electrophiles giving clashes in the CK1δ binding cleft. This has been confirmed both from enzyme activity assays and from computational studies. On the most promising compounds further characterization have been performed to prove the covalent nature of the binding between the molecule and the target enzyme.

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INO-PO-005. Pd(II)/phosphine/curcumin complexes as potential anticancer agents

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Palladium(II) complexes have stimulated the research interest mainly due to their in vitro cytotoxicity against various cancer cell lines, and their low cytotoxicity in healthy cells1,2. Thus, in this work, we combined Pd(II)/phosphine systems with the natural product, curcumin, as a ligand, obtaining a series of complexes, which were characterized by elemental analysis, molar conductivity, cyclic voltammetry, mass, NMR (1H, 31C, 31P{1H}), UV-vis, and IR spectroscopies, and four of them (A1, A2, A4, and A5) by X-ray crystallography. The [Pd(cur)(PPh3)2]PF6 (A1), [Pd(cur)(dppe)]PF6 (A2), [Pd(cur)(dppp)]PF6 (A3), [Pd(cur)(dppb)]PF6 (A4) and [Pd(cur)(dppf)]PF6 (A5), where dppe = 1,2-bis(diphenylphosphino)ethane, dppp = 1,3-bis(diphenylphosphino)propane, dppb = 1,4-bis(diphenylphosphino)butane, and dppf = 1,1'-bis(diphenylphosphino)ferrocene (P-P). The in vitro cell viability of the complexes A1-A5, cisplatin, and the free ligand curcumin were evaluated by the MTT colorimetric assay against the MDA-MB-231 (human triple-negative breast tumor cells), SK-BR-3 (human breast tumor cells), A549 (human lung tumor cells), A2780 (human ovarian carcinoma cells), A2780cis (cisplatin-resistant human ovarian carcinoma cells), and MRC-5 (non-tumor human lung cells). For the tumor cell lines tested, the complexes showed good anticancer activities. The results showed that in general the complexes had lower IC50 values than free curcumin and the precursors [PdCl2(P-P)]. In the MDA-MB-231 cell line, complexes A1 and A5 stood out, with their lowest IC50 values, around 5 μmol/L, and the complexes showed to be more active (lower IC50 values) against the ovarian cell lines. Complex A1 was 23- and 22-fold more cytotoxic than cisplatin, against the A2780 and A2780cis cells, respectively. The A1 complex was studied on A2780cis cells and it was found that this complex inhibits colony formation and induces cell cycle arrest in the G1 phase in a concentration-dependent manner and leads to cell death by apoptosis. The DCFDA assay revealed a potent ROS induction for complex A1.

Acknowledgments:FAPESP(2017/15850-0;2023/02475-8), CAPES and CNPq

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ORG-PO-164. One-pot applications of 1-phenylsulphonyl-1-cyano epoxides for the asymmetric synthesis of heterocycles and building blocks

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The enantioselective synthesis of epoxides is of considerable interest, as these compounds are used as highly versatile intermediates to obtain bioactive compounds useful in medicinal chemistry.[1] Recently, a new class of molecules, 1-phenylsulfonyl-1-cyano epoxides, has been disclosed and employed for the synthesis of enantioenriched dihydroquinazolinones, via a one-pot Knoevenagel/epoxidation/DROC (Domino Ring Opening Cyclization) reaction sequence, using a quinine-based organocatalyst and commercially available reagents.[2] In this contribution, an additional application of this one-pot sequence is reported, employing 2-aminobenzylamine in the DROC step to obtain the corresponding 7-membered cyclic products, 1,4-benzodiazepinones, privileged scaffolds in medicinal chemistry.

Further iteration of this one-pot strategy afforded α-aryl glycines,[3] through the epoxides opening according to a DROE (Domino Ring Opening Esterification) mechanism, employing two different nucleophiles such as aromatic amines and methanol. Similarly, enantioenriched mandelic acids, which represent important building blocks to obtain drugs such as S-Clopidogrel and Cyclandelate, have been prepared using water as a nucleophile in the final DROH (Domino Ring Opening Hydrolysis) step.

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ORG-PO-012. Tuning αvβ6 vs αvβ8 Integrin Selectivity: New Small Molecule Cyclopeptide Ligands

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In the vast family of integrin receptors, the αvβ6 and αvβ8 integrins are members of high clinical interest.1,2 These integrins are mainly expressed in epithelial cells and fibroblasts, and both belong to the RGD integrin subfamily, and recognize, among others, the matrix ligand fibronectin and the ECM-bound latent TGFβ complex. Their overexpression and dysregulation have been recognised as valuable prognostic biomarkers of pathological conditions: αvβ6, for example, binds and activates the pro-TGFβ1 promoting deposition of collagen in chronic pulmonary inflammation, lung cancer and fibrosis, while αvβ8 integrin dysfunctions in neuronal cells are associated to brain pathologies. Compounds that can discriminate between homologous αvβ6 and αvβ8 and other RGD integrins, could have considerable utility in the development of new therapeutic agents or diagnostic probes according to the modern paradigm of precision medicine.

Figure 1: Design of RGD-Amp-based cyclopeptides selectively targeting αvβ6 and/or αvβ8 integrins.

Starting from our previous results on αvβ6 integrin-targeting ligands,3 guided by in-solution NMR-based conformational analyses and molecular modeling studies, we designed the structural features within the RGD-Amp-based cyclopeptide family (Figure 1) to gain the desired high affinity and selectivity profile.

ORG-PO-013. Biomass valorization through an ortho-alkylation of phenols strategy using primary alcohol.

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The decrease in the availability of oil resources, combined with the increase in demand for oil from emerging economies and environmental concerns regarding the use of fossil fuels,1 has led to the need for the development of efficient processes to produce fuels and chemicals from renewable resources. In this context, plant biomass, particularly lignocellulosic biomass, is currently the best sustainable source of organic carbon.2 Lignin, one of the constituents of lignocellulosic biomass, can be seen as a renewable source of functionalized aromatic units and, above all, phenols.3 Phenols are present as structural motifs in a wide variety of molecules of both natural and industrial origin. Whitin aromatic starting materials and phenols are simple precursors for the synthesis of other value-added chemicals.4 Consequently, the synthesis of site-specifically substituted phenols is challenging, and the development of new methods for this purpose would be highly desirable. Herein, we present an acid- or basic-5 catalyzed ortho-alkylation of phenols strategy using primary alcohol and a Pd catalyst.

TEC-PO-007. Fluorinated lipids for development of gene delivery carriers

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RNA based therapies have gained strong interest for the treatment of various diseases, but their in vivo applications require delivery systems to prevent the degradation of the nucleic acid (NA), facilitate cellular uptake and enable NAs release. Lipid nanoparticles (LNPs) have already been used in the clinic to deliver NAs as vaccines against SARS-CoV-2 and treatment for polyneuropathy.1 Aiming

to enhance LNPs efficiency as NA carriers, we developed fluorinated ionizable lipids, which will be used for the preparation of LNPs to promote encapsulation of NAs, improve interaction with cellular membranes and encourage intracellular NA release.2 Furthermore, the inclusion of a fluorinated tag makes the obtained LNPs active in 19F-MRI, hence potentially traceable in vivo.3 Here we will describe the synthesis and characterization of two distinct ionizable lipids with different polar heads, focusing on their behaviour in physiological conditions with regard to self-assembly and their impact on LNPs structure.

ABC-PO-051. Life Cycle Assessment of landfill leachate treatment

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The landfill remains one of the most frequent final destinations for the end-of-life of waste today. Waste permanence in landfill generates a heavily polluted liquid fraction (leachate) that could constitute environmental and human health concerns. A full-scale facility, composed of a chemical-physical and a biological treatment designed for the abatement of several compounds and pollutants, treating landfill leachate was studied. The study is performed following the principles of LCA using ReCiPe 2016. 1m3 of leachate entering the plant is used as FU. Many impacts have been analysed including in the system boundaries the production and transport of the chemical, electricity, maintenance, sludge disposal and law-compliant discharge of the clarified residues into seawater (including PFAS). The results show that chemicals and electricity are major contributors in most of the impact categories while regarding eutrophication the discharge of the final clarified is the most impacting one.

ORG-PO-165. Mechanochemical N-alkylation of amines with alcohols: A green and sustainable approach

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N-alkylation of amines is a crucial transformation for pharmaceutical and fine chemical industries. The general synthetic procedures for N-alkylation of amines involve harsh reaction conditions such as high temperature and inert atmosphere, harmful reagents like alkyl halides, and prolonged reaction times. These processes also use large quantities of solvents for the reactions. Borrowing hydrogenation (BH) strategies to obtain N-alkylated amines using alcohols has gained significant attention due to its intrinsic atom economy and selectivity. Although it is a significant step to avoid alkyl halides, borrowing hydrogenation strategies often comes with the same drawbacks of harsh reaction conditions, longer reaction times, and use of solvents.

Mechanochemistry, a field that offers tools to perform reactions without the involvement of solvents and sometimes uses a very low amount of liquid for enhancing the milling procedures, has been instrumental in our innovative approach. Thus, in this project, we describe an efficient methodology for borrowing hydrogenation for N-alkylation of amines using mechanochemistry at solvent-free, room temperature, under normal atmosphere, and low catalyst loading conditions. Our procedure offers significant reduction in time and energy along with propounding a greener and more sustainable pathway for the accessibility to N-alkylamines.

ANA-PO-150. Activity-based biosensors for the monitoring of MutyH DNA glicosylase

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DNA is continually subject to interactions with mutagens which can lead to structural damage of the molecule, affecting human health. The most frequent oxidation-induced lesions in DNA are 8-oxo-7,8-dihydroguanine, often resulting in G:C to T:A transversion mutations. When this modified base pairs with cytosine on the double helix, it is recognized by the DNA glycosylase OGG1 and removed, initiating the base excision repair (BER). However, if OGG1 fails or the damage occurs during replication, it leads to a mismatch of 8-oxo-guanine:A, recognized by a specific glycosylase, MUTYH, which removes the adenine. The literature presents various molecular methods for assessing DNA repair activity, primarily centred on the use of indirect techniques. However, these methods have a variety of issues, including long analysis times, limited applicability in clinical settings. To enable direct monitoring of MUTYH activity, only few examples using chemically modified DNA probes with fluorescence readout have been reported. Although they offer advantages as simplicity, rapidity, good specificity, and sensitivity. Here I propose developing a synthetic biology toolkit for real-time analysis of MUTYH activity. I will design programmable nucleic acid capable of transducing glycosylase activity into downstream CRISPR-powered ultrasensitive detection. This is achieved by using a rationally designed DNA-based hybridization network based on the switching activity of a DNA probe called "DNA activator module" whose structural switch is controlled by glycosylase activity. Only when the DNA activator module populates an ON state the CRISPR/Cas12a is activated, thus generating a fluorescence signal output.

IND-PO-004. The HYDREAM project: Tailoring the Hydrophilic-Hydrophobic Reaction Zone for the Electrochemical Nitrogen Reduction Reaction to Ammonia

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The preservation of our planet is the most urgent issue in the world and the scientific community is pushing a lot of researchers to work on technologies for the storage/conversion of CO2 into chemicals. However, it is easier not to produce CO2 than setting-up plants to treat it. Therefore, new industrial processes have to be conceived with a new perspective.

In this framework, the HYDREAM project focuses on the development of a gas/liquid/solid three-phase interface (TPI) that endows electrodes with enhanced performance for target electrochemical reactions involving gases, due to its ability to mediate local interfacial environments and inhibit side reactions. Such a TPI concept is starting to be considered by the scientific community due to its promising potentialities in several strategic research fields, e.g. electrocatalyzed reduction of CO2, O2 and N2, fuel cells, sensors for liquid and gas substrates, anti-corrosion systems, etc.

The main goal is to tailor the TPI within a double hydrophilic-hydrophobic reaction zone, bearing a controlled grade of hydrophilicity at the microscale. The achievement of the co-existence of hydrophilic-hydrophobic conditions within the electrocatalyst/electrode will permit a compromise between efficient gas transport to the electrocatalyst and good contact of the electrocatalyst with the electrolyte (i.e., to provide the needed protons for the reduction reaction).

HYDREAM activity is exploring these key experimental points:

- Design of heterogeneous electrocatalysts able to show hydrophobic-hydrophilic conditions in the reaction zone.

- Formulation of non-aqueous liquid electrolytes showing optimal electrode wettability, reactant solubility and mass transport.

- Advanced physico-chemical characterization to assess specific materials features and electrochemical reaction aspects at the nanoscale.

- Exploitation of TPI concept in a highly significant case study, i.e. the electrochemical N2 reduction reaction (E-NRR) to NH3 under mild conditions.

Acknowledgements:

This study was carried out within the «HYDREAM» project – funded by European Union – Next Generation EU within the PRIN 2022 program (D.D. 104 - 02/02/2022 Ministero dell'Università e della Ricerca). This manuscript reflects only the authors' views and opinions and the Ministry cannot be considered responsible for them.

INO-PO-037. Synthesis and catalytic activity of a β-η1-Pd(II)-thioethyl porphyrazine complex

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Porphyrazines, structural hybrids of porphyrins and phthalocyanines, represent a fascinating class of tetrapyrrolic compounds characterized by unique molecular structure and diverse array of potential applications. In particular, thioalkyl porphyrazines feature alkyl groups substituted with sulfur atoms, adding a distinct chemical functionality to their structure. Their synthesis and functionalization offer intriguing avenues for exploration in fields ranging from materials science to biochemistry. In recent years we disclosed a novel class of asymmetrically aryl substituted thioalkyl porphyrazines endowed with interesting applications in optoelectronics.1-3 During the preparation of these compounds by Pd catalyzed cross-coupling reactions, we serendipitously isolated the β-η1-Pd(II)-thioethyl porphyrazine complex 1, i.e. the oxidative addition intermediate between the parent β-bromo porphyrazine and the [Pd(PPh3)4] catalyst. Meso ring-metalated porphyrins have been reported in the past,4 but 1 represents the first example of isolable βeta ring-metalated tetrapyrrole. Therefore, we considered worthwhile to investigate its direct preparation and employment as catalytic precursor in cross-coupling reactions of porphyrazines. The results and the crystallographic structure of complex 1 will be reported.

ORG-PO-014. Nanocomposite hydrogels for tissue engineering applications

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Carbon nanomaterials including carbon nanotubes (CNTs), reduced graphene oxide (rGO) and carbon nanohorns (CNHs) possess exceptional mechanical, electrical and thermal properties, and for this reason, they can be inserted into biomaterials for tissue engineering applications, improving the mechanical properties and conductivity of the resulting materials. [1] The properties of carbon nanostructures can be tuned by chemical functionalization. The functionalization allows them to be dispersible in the matrix, introduce biocompatibility, and reduce the toxicity issues related to unfunctionalized carbon nanostructures. [2]

The purpose of this project is the compatibilization of different carbon nanostructures with hydrogel phases through surface functionalization with different moieties. Hydrogels are ideal matrices for biomedical applications due to their biocompatibility and ability to mimic natural tissue.

Carbon nanostructures have been functionalized with different functional groups by diazotation reaction and characterized through TGA, IR, Raman, DLS and Z potential measurements; the resulting derivatives have been successfully inserted into different types of hydrogels based on self-assembling peptides and on gelatin/chitosan. The obtained materials have been characterized by rheometric measurements and TEM. On the basis of these promising results, tests for cell adhesion and growth shall be taken into consideration.

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ORG-PO-015. Arylazo Sulfones as Photoacid Generators (PAGs) in Fischer Esterification

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Photoacid generators (PAGs) are compounds designed to generate acid upon exposure to light. In the last decades, PAGs have gained importance in different fields as photolithography, 3D printing, chemistry and material science. They play an important role in the fabrication of microelectronic devices, in microfluidics, and to generate acids that can promote different chemical reactions. PAGs are classified into two different groups, according to their characteristics: ionic, and non-ionic. The first are sulfonium, iodonium, phosphonium or diazonium salts, they have excellent PAG properties but restricted application due to the limited solubility in organic media. On the other hand, non-ionic PAG have been extensively used as their high solubility in organic solvents and polymer matrices, especially for polymer initiation and surface curing. In this work Arylazo Sulfones have been employed as non-ionic PAG, for their ability to generate sulfonic acid after visible-light absorption in presence of oxygen, to catalyze one of the most renowned reactions employed in organic synthesis: Fischer Esterification. Different carboxylic acids were tested, including aliphatic and aromatic derivatives, dicarboxylic acids and amino acids, as well as saturated and unsaturated long-chain fatty acids and esterification proceeds efficiently in the presence of a wide range of differently substituted alcohols.

ORG-PO-016. Metal complex polymers as hole conductors for perovskite solar cells

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Perovskite solar cells (PSCs) have surged in the past 12 years as the most promising third generation solar cell technology, capable or rivaling with silicon solar cells in lab-scale devices and only requiring a fraction of the energy for their fabrication. Although several companies are nowadays conducting research on them and larger-scale modules and panels are being manufactured, commercialisation of this technology is still impeded by the poor long-term stability of the perovskite light absorber. The hole transporting layer is one of the main causes of this instability. Organic small molecules, which allow PSCs to reach top performances, require hygroscopic additives that degrade the perovskite material to reach the desired conductivity, and can migrate into the light absorbing layer.1 Polymeric materials are intrinsically more conductive and can avoid the use of dopants. Although they can work efficiently in PSCs, their synthesis remains complex, which reflects into their commercial prices.2 Metal complexes are a viable alternative to organic molecules, as their energy levels can be fine-tuned by tweaking the ligand environment or changing the metal centre.3 They can be intrinsically doped by adding two different oxidation states of the metal centre to the hole transporting layer, being able to overcome state-of-the-art organic small molecules both in efficiency and stability.4

In this work, I developed covalent polymers based on metal complex monomers to use as hole transporters in perovskite solar cells. These materials take advantage of the higher conductivity of metal complexes compared to organic compounds and couple them with the greater stability of polymers compared to small molecules. Careful design of the ligand environment allows the formation of robust macromolecules that can be dissolved in perovskite-compatible solvents and that present a good degree of hydrophobicity, to help with the preservation of the light abosrbing layer over time.

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ORG-PO-017. Light-driven regioselective [2+2] cycloaddition of aryl-enones by eosin y

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The use of light as energy source for organic synthesis has been emerged as a powerful tool to both explore new reactivity and have environmentally friendly processes.1 In the same way, the development of flow chemistry in combination with light-driven processes allows to enhance the efficiency and the scalability of the reaction.2 In this context, photocyclization of aryl-enones promoted by visible light in the presence of photocatalysts provides an innovative strategy for the synthesis of cycloalkanes, through radical intermediates.3 After exploiting reactivity of different substituted aryl-enones to effort the [2+2] photocycloaddition by the use of Eosin Y as photocatalyst using visible light irradiation, we decided to transport this reaction under flow conditions in order to have a more efficient process.

Different reaction conditions have been tested using symmetric and asymmetric substrates to achieve the bicycle products in good yields as a mixture of isomers. With our delight, for the symmetric aryl-enone, it was possible to find the conditions to selectively drive the cycloaddition towards one or the other isomer. Also, the best reaction conditions have been used in flow leading to reduced reaction time, increased productivity and selectivity towards the cis isomer preferentially, both for symmetric and asymmetric substrates. The cis isomer can be quantitatively converted into the trans isomer under basic conditions.

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FAR-PO-031. Identification of drug repurposing candidates against prostate cancer through integration of chemoinformatics and machine learning approaches

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Prostate cancer (PC) is often associated with poor outcomes in advanced stages, primarily due to the emergence of drug resistance which limits current therapies efficacy, emphasizing the need for novel treatments.1 Drug repurposing (DR) is a viable strategy to leveraging existing drugs with known safety profiles for new applications and bypassing traditional issues of drug development (i.e., timelines, costs and failures).2 Notably, integrating synergic techniques like chemoinformatics and machine learning (ML) offers advantages in DR processes.3 To identify potential DR candidates, we performed in depth similarity screenings on DrugBank, identifying 138 ligands significantly similar to compounds with potent antiproliferative activity of PC cell lines. Interestingly, some of the identified ligands resulted to be previously tested against PC cells with favourable outcomes, but had never been considered for therapeutic repositioning.4 More importantly, 90 ligands have not been evaluated against PC cells, thus representing new repurposing possibilities. These candidates have been tested on in-house developed ML classifiers to predict their antiproliferative activity of PC-3 cell lines.5 The performed analyses allowed the selection of 11 drug candidates, that were tested in vitro on PC cells with different aggressiveness. Remarkably, several of the selected candidates showed marked antiproliferative activity, and represent valuable candidates for further experimental testing.

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ORG-PO-018. Development of supramolecular catalysts containing N hydroxyphthalimide for the selective functionalization of C-H bonds

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Selective functionalization of C-H bonds in hydrocarbons represents an outstanding challenge in synthetic organic chemistry. In this contest, N-hydroxyphthalimide (NHPI) has attracted increasing interest as an effective organocatalyst for C-H activation by hydrogen abstraction (HAT) [1]. NHPI acts as a precursor of the phthalimide N-oxyl (PINO) radical, which is the effective catalyst promoting hydrogen abstraction processes. C-H bonds with similar electronic and steric environments exhibit a comparable intrinsic reactivity making selective functionalization extremely difficult [2]. This is particularly true for the positions located far away from other functional or directing groups (remote sites). A supramolecular, geometric approach can provide a way to overcome these challenges. In this context, we developed different catalysts based on N-hydroxyphthalimide with a crown or aza-crown ether as a supramolecular recognition site.

The 18-crown-6 or the 1-aza-18-crown-6 receptors recognize the heads of primary, linear alkylammonium chains and, when coordinated to Ba2+ ions, can also establish electrostatic interactions with substrates containing carboxylates, sulfates and sulfonates functional groups. In this way, by an intramolecular HAT, it will be possible to selectively abstract H atoms from specific C–H bonds that are properly oriented towards the in situ-generated N-oxyl radical.

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IND-PO-009. Study of promoters for Ni/Al2O3 catalyst in Methane Dry Reforming

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Dry Reforming of Methane (DRM) is the process of simultaneous conversion of CH4 and CO2 to obtain syngas (CO and H2). The process enters in the field of green energy transition, since it uses CO2 to produce hydrogen in a more sustainable way.

In this work, vanadium and calcium are studied as promoters for a Ni-based catalytic system and tested for the DRM reaction.

Both fresh and spent catalytic materials are characterized using various techniques.

IND-PO-005. A versatile polymer scaffold for the preparation of polymer cathodes for metal ion-organic batteries

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With the energy transition, the energy world is moving toward more sustainable, renewable sources, which offer several advantages such as a reduced CO2 emissions, an improvement in the general public health, and promotes energy independence and security. However, they also suffer several drawbacks due to their cyclic, seasonal, and regional characteristics. Efficient energy storage technologies, such as batteries, can mitigate this problem and will cover a prominent role in the energy infrastructure of the future.

Currently, Li-ions batteries (LIBs) are among the best performing batteries commercially available, as they offer good stability toward charging-discharging cycles, large power densities and large conversion efficiency. However, they currently rely on the use of specific metals (Li, Ni, Co) the production of which is not sustainable and localized in geopolitically unstable areas of the world. Redox-active polymeric materials as electrode materials can circumvent these issues, as they are obtained from more available resources, they can have a greener footprint, and easily allow for various modifications via chemical synthesis. In addition, thanks to their light weight, organic materials can reach very high specific capacity values compared to the inorganic counterparts.

Materials proposed so far show limited lifetime, due to solubility in the electrolyte, and slow/incomplete discharging. To overcome these limitations, we propose a novel strategy based on processable precursor polymers which can be employed to prepare high molecular weight (disfavouring the solubilisation process), fully conjugated polymers (characterized by a higher charge mobility), comprising either in chain or pendant redox units. In this study, we report an example of such systems consisting in polymeric precursors comprising aromatic moieties separated by 1,4-dicarbonyl fragments which break the conjugation. These units can then be used as scaffold for pyrrole formation in the Paal-Knorr reaction, allowing the insertion of different redox units and, at the same time, making the structure of the polymer flat and conjugated, reducing the solubility.

This study was carried out within the POLiBATT project – funded by European Union – Next Generation EU within the PRIN 2022 PNRR program (D.D. 1409 del 14/09/2022 Ministero dell'Università e della Ricerca).

TEC-PO-006. Bio-Extracted Feather Keratin-based Functional Materials

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In 2019, global poultry meat production reached 130 million tons, with Europe contributing 13.4 million tons annually, resulting in 3.1 million tons of feather waste.1 Despite this abundance, the current recovery of valuable raw materials, particularly keratin, from feathers remains minimal. Existing technologies repurpose only a fraction of feathers, mainly as low-nutrient animal feed or organic fertilizers, while the majority is incinerated or landfilled. This not only represents a loss of a renewable resource but also poses environmental and health risks.2

Implementing eco-friendly approaches to managing feather waste could mitigate biological hazards and enable the valorization of keratin-based materials. These materials have shown potential in various high-end applications, including biomedical ones, offering a sustainable alternative to conventional resources.3,4 As part of the KARATE project, we developed new technologies for converting waste feather fractions into high-value materials aligning with a circular economy approach. Our primary objective is to reduce the environmental impact of the poultry supply chain, while driving innovation. Specifically, we isolated a novel microbial strain capable to efficiently degrade feather wastes to extract keratin enzymatically. The resulting peptide and protein samples were fully characterized, with a particular emphasis on their self-assembly properties. These samples were subsequently engineered to create innovative keratin-based materials with substantial added value.

ANA-PO-048. Elemental characterization of PM2.5 from two alpine locations of Aosta Valley

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The interest on high mountain sites as observatory for the study of atmosphere composition is growing in the last years. In fact, the use of these sites has many advantages, among which to get insight about the background atmospheric composition, highlight the influences of surround anthropized regions on remote areas, to study the long-range transport of substances in the free troposphere (e.g., Saharan dust events).

In this work we present the inorganic elemental composition of aerosol PM2.5 collected in 2022 at two different sites of Aosta Valley. The first site was near the village of La Thuile (1637 m a.s.l.) and can be classified as medium-mountain rural site; the sampling activity were performed in May and July. The second site was the CNR laboratory Testa Grigia on the Plateau Rosà (3480 m a.s.l.), that can be considered a glacier site of high mountain, and the sampling activity was performed in the month of August. In our knowledge this is the first attempt to study the elemental composition of PM at this site. The prospective of this work would be to extend the monitoring network of PM in high mountain supporting the other national observatories (e.g., Monte Cimone, Col Margherita, Monte Martano).

The sampling of PM2.5 was performed by a low volume aerosol sampler on quartz filters with a daily resolution. The filters have been mineralized according to UNI EN 14902:2005 by microwaves acid digestion. The elements (Ca, K, Mg, Al e Sc, Ti, V, Mn, Fe, Co, As, Sr, Ba, Cr, Ni, Zn, Mo, Cd, Pb, and rare Earth elements) were analysed by ICP-AES or SF-ICP-MS according to their concentration. Crustal enrichment factors have been calculated respect Al revealing that Cu, Ni, Mo, Cr, Pb, Cd, Zn, and Sc are affected by sources different from the crustal one, most probably linked to anthropogenic emission. Multivariate analysis (PCA, cluster analysis) has been performed to extract information from the whole dataset about correlation among the elements' behaviour and differences and

similarities between the samples. Events of incoming air masses with higher amounts of aerosol than background level have been recorded at both the sites. Back trajectory analysis will be performed to infer about the provenience of these air masses.

INO-PO-090. C-H bond activation in laccases investigated with molecular modelling

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It is known that laccases, both bacterial and fungal, catalyze the activation of Csp2-H bonds through monoelectronic oxidation1, the mechanism of which is not fully known in detail. This process is generally assisted by a mediator, which is a small molecule with a higher redox potential than laccase and a strong affinity with it. Recent experimental results highlight that some laccases would also be able to oxidize Csp3-H bonds and moreover in the absence of a mediator. What could be the molecular-level mechanism of this process? A possible approach is to study the oxidation process at the classical and quantum molecular modeling level using a model aliphatic and aromatic hydrocarbon substrate linked to the laccase binding pockets.

ORG-PO-019. Aerobic oxidative C-C bond cleavage of 1,2-diols: photoactivated Vanadium-driven catalysis

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This research group has developed a new methodology for the aerobic oxidative cleavage of 1,2-diols based on homogeneous catalysis employing vanadium aminotriphenolates.1,2 In this communication we will report results obtained in the aerobic C-C-bond cleavage of 1,2-diols yielding bis-carbonyl derivatives under photo-induced conditions at room temperature. The influence of different reaction parameters (temperature, solvent, wavelength, substrate) on the reaction course will be reported as well as the scope of the reaction.

Preliminary results on mechanistic studies on the photoactivated mechanism of the reaction will be also reported. Radical trapping experiments confirmed the radical nature of the reaction, and the role oxygen is playing in the conversion of the substrates, while computational methods are being used to shine light on the photoactivation process of the catalyst-substrate adduct.

ORG-PO-166. Novel Strategies for CO2 Fixation in Organic Scaffolds: Electro-, Nickel- and Carbo-catalyzed Processes

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An overview of the latest strategies developed by our group for the valorization of CO2 through fixation into organic scaffolds is presented, employing three different approaches. Initially, we have devised Ni-catalyzed methodologies to effect carbonylation reactions using CO2 as a CO surrogate, facilitated by the presence of AlCl3 as an oxygen scavenger, thereby addressing the formation of cyclic ketones and amides. Subsequently, leveraging electrochemistry as a tool for generating reactive nucleophilic species capable of capture CO2, we are presently advancing carboxylation processes of olefins, including Morita-Baylis-Hillman acetates and electron-deficient allenes, in a metal- and additive-free fashion. Lastly, we are investigating the use of Graphene-Oxide (GO) functionalized with natural amino acids, such as arginine, for the realization of "smart" materials capable of executing CO2-Capture and Utilization (CCU) strategies.

TEO-PO-037. How Machine Learning enhances simulation of energy transfer in Light-harvesting Complex II

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In plant photosynthesis, the harvesting of solar energy is made possible by aggregate of pigments embedded in specialized membrane proteins, called light-harvesting complexes (LHCs)1. Specific interactions with the protein and electronic couplings with other chromophores alter the optical properties of individual pigments, and light absorption in the aggregate is followed by a cascade of energy transfer processes. Because of the complex nature of LHCs, the simulation of such excited state dynamics is challenging and requires expensive multiscale methods2 to estimate all the involved parameters. Structural disorder adds on top, requiring calculations to be repeated over many configurations of the system. Machine learning (ML) can represent a valuable alternative to traditional approaches in the simulation of the energy transfer events. Here, we show that a ML strategy3 can be applied to estimate excitonic quantities of LHCII of higher plants with accuracy comparable to standard multiscale methods, with the advantage of an extremely higher speed which allows wide sampling of the configurational space of the system when coupled to molecular dynamics. The resulting estimated parameters are robust and allow simulation of the excited state dynamics which closely reproduces the experimental one, as demonstrated by comparison to transient absorption4,5. New insights on the most relevant pathways and associated characteristic times are achieved through this integrated model.

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TEF-PO-002. Scaffolds enriched with magnetite for the mechanotransduction stimulation in tendon tissue regeneration

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Nowadays, tendon injuries represent a global health issue that annually affects millions of individuals. An innovative approach for the treatment of these injuries is represented by the development of tissue engineered bio-mimetic scaffolds able to support the host cells adhesion, differentiation, and proliferation. However, the scaffold alone is insufficient to guarantee a complete healing control. Recently, magnetic nanoparticles, such as magnetite (Fe3O4), have gained great interest due to their biocompatibility and unique magnetic properties. In particular, the combination of the scaffolds and Fe3O4 nanoparticles should lead to the cells mechano-stimulation, improving the tenogenic differentiation and the cell alignment and allowing a deeper tissue reparation.

The aim of this work was the study and the development of fibrous scaffolds based on polyhydroxybutyrate and gelatin and doped with Fe3O4 nanoparticles. The scaffolds were characterized by an aligned fibrous shape able to mimic the tendon fascicles. The Fe3O4 was successfully embedded into the fibrous matrix, leading to an increase of the scaffolds' rigidity, while the gelatin led to an increase in the surface wettability. The scaffolds were also characterized by a superparamagnetic behavior, that should allow a precise magnetic stimulation, and a slow degradation rate that should guarantee structural support during the whole tissue regeneration. Finally, the scaffolds doped with Fe3O4 and gelatin promoted the cell proliferation and the cell alignment onto the 3D matrix, in particular when combined with the application of an external magnetic field.

ORG-PO-020. Antibacterial nanocellulose for the production of new anti-biofilm materials

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Cellulosic nanomaterials have stimulated interest in the scientific community thanks to their properties that make them particularly promising among nanostructured materials. Nanocellulose-based materials are naturally available, from waste materials, at low price and are, generally, characterized by a high biocompatibility.1 Moreover, nanocellulose can be easily functionalized to produce materials with new properties and applications. In this work we focused on materials with antimicrobial properties. Actually, the antibiotic resistance in the treatment of chronic infections related to the chirurgical introduction of medical devices, generates in Europe almost 25.000 thousand deaths per year.2 The develop of medical devices, such as catheters, coated with nanocellulosic materials with antibacterial properties, may prevent the formation of biofilms, a kind of aggregation of bacteria that makes them insensitive to antibiotic treatments.

Our project aims to the production of a multilayered material composed by differently functionalised nanocellulose to obtain an efficient antibiofilm device. Finally, we developed a catheter prototype made with a base in polydimethylsiloxane (PDMS) covered by a plastic polymeric layer made of Evatane® 40-55 and two nanocellulosic layers kept together by electrostatic interactions

ANA-PO-136. Development of ion mobility-high-resolution mass spectrometry-based untargeted metabolomics for food safety assessment

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The growing demand for an antibiotic-free food chain requires both the use of effective analytical strategies in monitoring raw materials and the improvement of production processes. To date, many analysis methods are based on targeted approaches1; however, the comprehensive evaluation of the metabolomic changes related to the use of antibiotics requires the development of untargeted strategies.

In this context, ultra-high-performance liquid chromatography-ion mobility-high-resolution mass spectrometry (UHPLC-IMS-HRMS) currently represents the best tool to address the challenges related to the complexity of the metabolome. UHPLC provides fast and efficient separation of compounds, whereas HRMS is characterized by enhanced specificity, sensitivity and availability of large spectral databases. In addition, IMS offers great potential for improving throughput and depth of coverage in metabolomics studies, being able to separate ions according to their collisional cross-section (CCS)1.

In the present study, UHPLC-IMS-HRMS is proposed for the evaluation of the metabolomic response of the different organs from antibiotic-treated and untreated pigs. Spectra were acquired in both positive and negative electrospray ionization modes, operating in data independent High-Definition MSE acquisition mode, allowing for the simultaneous acquisition of CCS values, precursor and fragment ions which are key parameters for univocal identification of the metabolites2. Relative standard deviation within QCs samples <30%, percentage of missing values (cut-off of 40%) and a minimum 3-fold change compared to the method blanks were used for data filtering. A supervised Partial Least Squares-Discriminant Analysis pattern recognition approach was applied on the autoscaled data allowing for the annotation of features responsible for the discrimination between antibiotic-free and antibiotic-positive samples.

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Acknowledgements: Project funded under the National Recovery and Resilience Plan (NRRP), Mission 4 Component 2 Investment 1.3 - Call for tender No. 341 of 15/03/2022 of Italian Ministry of University and Research funded by the European Union – NextGenerationEU Award Number: Project code PE0000003, Project title “Research and innovation network on food and nutrition Sustainability, Safety and Security – Working ON Foods” (ONFOODS). University of Parma, Bando di Ateneo 2022 per la ricerca co-funded by MUR- D.M. 737/2021-PNR-PNRR-NextGenerationEU

ANA-PO-023. Rice husk ash precursor of a new sorbent material for the preconcentration of perfluoroalkyl substances in environmental waters

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Per- and poly- fluoroalkyl substances (PFAS) are a class of anthropogenic chemicals that have been in use since the 1950s and have received increased public attention in recent years. These environmental contaminants contain an aliphatic fluorinated carbon chain of variable length and a hydrophilic end group which, together with the extremely strong C–F bond, confer unique properties such as thermal and chemical stability, resistance to hydrolysis and microbial degradation but also make them non-degradable resulting in their accumulation in the environment.1

Rice husk (RH) is a non-food waste biomass containing approximately 40% cellulose, 30% lignin, 20% silica in amorphous form, pigments, pectins and proteins.2 The main byproduct from RH combustion is RH Ash (RHA), with highly porous structure that can be used, opportunely treated, as Solid-Phase Extraction (SPE) sorbent for many emerging organic pollutants3, and in this work for the preconcentration of 12 PFAS in environmental waters. In the framework of Green Chemistry and Green Sample Preparation, the original synthesis3 of this sorbent, which involved 8-hour ultrasound-assisted oxidation in sulfonitric mixture followed by 10-hour heating at 200° C, has been greatly improved moving on a very short microwave-assisted oxidation (10 min) with a few millilitres HNO_3. The final thermal treatment was optimized by an experimental design evaluating two temperatures (150° C and 250° C) and two times (2 hours and 10 hours). Each one of the four materials obtained was tested for the sorption capacity in SPE cartridges (250 mg) in tap water samples (50 mL, native pH) enriched with 1 µg L^{-1} of each fluorinated analyte. The most performing material (250° C, 2h) showed quantitative adsorption and elution (by 2 mL MeOH 0.1% v/v NH_3) of the 12 PFAS examined (recovery from 82% to 115%, RSD% < 10%, n = 3), analysed by UPLC-ESI-MS/MS with deuterated internal standards quantification.

The procedure was then successfully tested in tap water samples fortified at lower environmentally significant concentration (100, 50 and 10 ng L^{-1}) with recoveries between 70 and 111% (RSD% < 15%, n = 3). Tests in river waters and wastewater treatment plants effluents at the same concentration levels are ongoing.

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ANA-PO-097. Waste biomass reuse for preconcentration of emerging pollutants in environmental waters

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Industrialisation and population growth lead to the release of various types of pollutants from different sources into the environment, such as untreated municipal waste and effluents, agricultural releases, and industrial chemical discards. At this regard, among pharmaceuticals, the widespread of steroid hormones (SHs) and fluoroquinolone antimicrobials (FQs) residues in the environment, their fate, effects, and threats associated with their occurrence are reasons of great concern.1 Proper analytical methods should be developed for their monitoring, possibly combining sensitivity and accuracy with sustainability, in the perspective of green chemistry.

Biochar is a carbon material produced by thermal decomposition of biomass in absence of oxygen, in the circular economy approach. It is distinguished by its unique characteristics such as high specific surface area, porous structure, and many surface functional groups (carboxylic, hydroxyl, and carbonyl units). Biochar is a relatively inexpensive and environmentally friendly sorbent because it can be produced from agricultural wastes that are abundant and do not have an economic value.2

In this work, biochar prepared from pumpkin, melon, and orange peels, packed in cartridge for Solid-Phase Extraction (SPE), were tested for antimicrobials and steroids preconcentration in environmental waters. Biochar was home-made obtained by a pyrolysis treatment performed at 650° C for 6 hours in a tubular furnace under N_2 flow and characterized by TGA, XRPD, IR, SEM and BET.

SPE tests were carried out to evaluate the adsorption of those analytes. Preliminary trials were performed on 50 mg of each material in tap water samples (50 mL, native pH) enriched separately with 5 µg L-1 of 16 SHs (8 glucocorticoids, 3 estrogens, 2 progestins and 2 androgens) or 11 FQs (6 for human and 5 for veterinary use) as bioactive compounds representative of water emerging contaminants.

Adsorption was quantitative for all FQs and SHs on all prepared biochar. Quantitative elution was obtained for antimicrobials with 2 mL of 10 mM TBAH-ACN (85:15, v/v) and for steroids using 2 ml EtOH, even if with a lower recovery for glucocorticoids. Quantification was performed by HPLC-ESI-MS/MS, MRM mode.

Immobilization of biochar on other supports to simplify the extraction procedure is ongoing to avoid the packed cartridge setting and increase the sample preparation throughput.

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ANA-PO-119. Comparison of colorimetric methods for the online measurement of hydrogen peroxide in a photo-Fenton process.

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The scale-up of a photocatalytic process for the removal of pollutants from water encompasses several relevant aspects, among them, the timely analytical control and the optimization of operational parameters, to maximize efficiency and minimize reagent consumption. Indeed, when running Advanced Oxidation Processes, reagents consumption represents one of the main costs; in the specific case of photo-Fenton processes, that rely on the generation of hydroxyl radicals through the reaction between hydrogen peroxide and Fe(II) ions, an excess of H2O2 could even hinder the pollutant degradation kinetics, making therefore its proper dosage a key issue.

The automation of H2O2 concentration control and dosage is therefore worth to be implemented, seeking for reliable, fast and cheap devices.

In this work two different colorimetric methods were applied and compared for the online determination of H2O2 ; moreover, the role of H2O2 dosage on the photo-Fenton degradation of paracetamol and caffeine was studied.

The kinetics of substrate degradation, organic carbon mineralization and H2O2 consumption were compared to define the most suitable H2O2 dosage procedure to maximize process efficiency.

A peculiar H2O2 consumption trend was observed during caffeine degradation; HPLC-MS preliminary test suggest the formation of intermediate degration products capable to generate H2O2.

The results obtained in the present work evidence two opposite trends for kinetics and overall H2O2 consumption when moving from single, stoichiometric H2O2 dosing approach to a fractioned dosing one. In fact, both substrate and DOC removal rates were higher when a single and stoichiometric H2O2 dose was added at the beginning of the process, while H2O2 consumption took advantage from small successive H2O2 addition as long as the previously added H2O2 was consumed before the following dose was added.

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ANA-PO-106. Environmental impact assessment of e-fuels – a review of LCA studies

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The IPCC declares that achieving net zero emissions by 2050 is necessary to keep the global temperature rise below +1.5°C by 2100 compared to preindustrial levels.1 In 2019, the transportation sector in the European Union (27) accounted for about 25% of total greenhouse gas emissions, contributing significantly also to NOx and PM 2.5 emissions, notably in urban areas.2

E-fuels, which are produced by combining captured CO2 with (green) H2, are commonly relied as a potential alternative to reduce CO2 and pollutants emissions caused by the use of fossil fuels in private and commercial vehicles.

Several LCA studies examined the manufacturing/use of e-fuels and indicated they can lower GHG emissions compared to fossil fuels; yet, only a few took into account other impact categories like acidification or eutrophication potential.

In this work, we reviewed several LCA publications discussing the environmental impacts of e-fuels production in order to emphasize both the potential benefits and drawbacks originating from their integration in the current transportation network.

ANA-PO-156. Exploring the Mineral Composition of Niche Celery Varieties: A Multi-Elemental Analysis of Torricella Peligna Black and Trevi Black Cultivated in an Experimental Field

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The objective of this study was to evaluate the elemental composition of four distinct Italian celery varieties, with a special interest for two traditional cultivars, Torricella Peligna Black and Trevi Black, protected by the Slow Food Presidia. All samples were cultivated in an experimental field in Torricella Peligna (Abruzzo). Celery leaves were frozen, dried (85°C, 24 h), ground, mineralized and then analysed using Inductively Coupled Plasma-Mass Spectrometry. Accuracy and precision were assessed through spiking recovery analysis. 70 observations were available for the subsequent analysis. Covariance Selection-Linear Discriminant Analysis, Partial Least Squares-Linear Discriminant Analysis, and Soft Independent Modelling of Class Analogies, validated through double cross-validation, were employed to identify the most discriminating elements, with the aim of evaluating the potential of the multi-elemental profile to distinguish and authenticate these varieties from the common ones.

FAR-PO-015. Effects of Redox Alterations on Ligand Binding Properties of IDO1 Inhibitors

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The heme-containing indoleamine 2,3-dioxygenase 1 (IDO1) catalyses the O2-dependent oxidation of L-tryptophan (Trp) to the immunosuppressive metabolite L-kynurenine (Kyn). This reaction is the rate-limiting step in the kynurenine pathway, which leads to the formation of NAD+ and regulates the immune response in host-pathogen interactions. Dendritic cells (DCs) exploit IDO1 activity to create an immuno-tolerogenic microenvironment and to maintain tolerance to self-antigens. These functions occur in tissues and organs that may feature variations in metabolic factors such as nutrients and growth factors, as well as chemical factors such as pH and redox conditions. Early studies highlighted altering redox conditions, independent of oxygen levels, controls the expression and catalytic activity of IDO1 in DCs. At the protein level, this may occur through redox conditions that regulate the oxidative turnover of the heme cofactor and/or disulfide bridge formation of cysteine residues in IDO1.

Several types of inhibitors have been developed to modulate IDO1 catalytic activity, with different binding modes that may engage or not the heme group through a coordination bond to the iron atom.

In this study, we have tested the hypothesis that redox conditions may affect the binding properties of inhibitors to the enzyme. At this aim, we have investigated the effect of reducing agents on the interaction between IDO1 and its inhibitors in clinical trials, using MicroScale Thermophoresis (MST) and nano Differential Scanning Fluorimetry (nanoDSF) techniques. Our results show that redox conditions have different effects on the dissociation constant (Kd) of distinct types of inhibitors to the enzyme and suggest how redox imbalances in the tumour microenvironment may contribute to drug resistance mechanisms against specific classes of IDO1 inhibitors, making them ineffective for clinical benefits.

FIS-PO-013. Charge Instability in Multimodular Push-Pull Systems: Excited-State Symmetry Breaking Under the Gaze of Ultrafast Time-Resolved Infrared Spectroscopy

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The interest for symmetric multi-branched electron donor–acceptor dyes has considerably increased over the last decade. These compounds are usually characterized by a large two-photon absorption cross-section and have also been introduced as promising chromophores for thermally activated delayed fluorescence providing low singlet–triplet gap. Additionally, these multibranched dyes can be viewed as simple models of organic conjugated polymers and are particularly useful for understanding the electronic excited-state properties of these materials. Whereas, as expected for compounds that do not possess a permanent electric dipole moment, their absorption spectra show almost no solvent-dependence, their fluorescence spectra display a strong solvatochromism suggesting a dipolar S1 state. This behavior was rationalized in terms of a break-up of the symmetry in the excited state driven by structural and solvent fluctuations.1,2 In this regard, the aim of our research has been the investigation of three symmetric and multidonor-acceptor compounds bearing one or two C-C triple bonds per branch.3

Specifically, in this work, these compounds were investigated in a wide set of organic solvents, to evaluate the impact of the medium, the nature of the donor group and the presence of multiple C-C triple bonds on their excited state dynamics. The first part of this study was carried out by means of steady-state and advanced spectroscopic techniques, such as nanosecond and femtosecond UV-Vis transient absorption and femtosecond broadband fluorescence up-conversion as well as non-linear two-photon excited fluorescence. Despite useful information on the excited-state lifetime, the data collected by electronic spectroscopies do not present any clear feature that could be assigned to the transition from a symmetric and quadrupolar excited state to an asymmetric dipolar state. For this reason, we decided to employ, for the first time in this kind of multimodular push-pull compounds, the Time-Resolved Infrared Spectroscopy to resolve the spatial distribution of the excitation within the molecules and then to follow the occurrence of the Excited-State Symmetry Breaking.

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ANA-PO-159. Unveiling the mechanism of action of additives in copper electrodeposition: A spectroscopical-computational approach

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Acid copper (AC) electroplating is a fundamental process both in technological and decorative fields. AC electroplating is a necessary step for Ni-free production cycles which are trending given the increased awareness of the toxicity of Ni and Ni2+ salts1. Commercial AC baths are made by CuSO4, H2SO4, NaCl and a set of three organic additives (suppressor, brightener, and leveller) that are needed to obtain shiny and adherent deposits. Despite the widespread use of those in industrial processes, their mechanism of action and the role of NaCl during the deposition are not clear yet. An in-depth understanding of this topic is essential to achieve the environmental sustainability goals of reducing organics in wastewater and replacing toxic additives (e.g. thiourea) with eco-friendly alternatives such as L-cysteine2. This work aims to develop a protocol where analytical spectroscopy is intimately aided by microscopy and computational chemistry to characterize the mechanisms of action of additives during industrial electroplating processes. X-ray photoelectron spectroscopy (XPS) experiments were implemented to study the surface composition of the deposits, and to define the correct oxidation state and spin multiplicity of Cu clusters in simulations. Thanks to the XPS results and Raman experiments it has been possible to define the type of adsorption (chemical or physical) of species on top of the Cu surface. Moreover, the effect of additives on morphology (grain dimension and roughness) was investigated by Scanning Electron Microscopy (SEM) and Atomic Force Microscopy (AFM). X-ray diffractometry (XRD) was employed to verify and quantify the magnitude of preferential orientation due to the additives and, linking XRD with AFM and SEM imaging, it was possible to unveil the influence of brighteners on the very first step of growth and to identify a seminal 2D structure3. All the hypotheses and doubts coming from empirical experiments were validated and dissipated thanks to a computational approach. Classical molecular dynamics, within the gaff2016 protocol, were performed to study how electrolytes behave under an electric field and if physisorption was possible. Finally, ab-inito calculations at CAM-B3LYP(D3BJ) level, employing a mixed 6-31G(d,p)-LANL2DZ basis set, where needed to define the chemisorption and explain the influence of additives on the shifting in preferential growth direction of copper nuclei.

The authors acknowledge for the support offered by Fondazione CR Firenze, Fondazione per la Ricerca e l’Innovazione dell’Università degli Studi di Firenze and Confindustria Firenze within the FABER4 project.

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ALI-PO-012. Transferase and lipase catalysed synthesis of N-fatty acylalkanolamine derivatives

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Unlike lipases and esterases, the acyltransferase from Mycobacterium smegmatis (MsAcT) is able to catalyze acylation reactions of primary alcohols and amines in aqueous solutions at room temperature and with a high acyltransferase/hydrolase ratio.1 Since nothing has been reported in literature on the use of MsAcT with amino alcohols, a screening with a collection of difunctionalized compounds was conducted for the development of a biocatalytic chemo-selective acylation tool.

In order to optimize reaction conditions, batch biotransformations were initially carried out with different substrates including amino alcohols, secondary alcohols and amines, using EtOAc as acyl donor. The enzymatic acylation of model amino alcohol substrates has been carried out to evaluate the chemo-, regio- and stereo-selectivity of the glyoxyl-immobilized MsAcT with the advantage of simplifying the downstream process by eliminating the work up step.1 In all the cases studied, using EtOAc as acyl donor, a preference towards N-acetylation over the O-acetylation has been observed.

Finally, MsAcT has been tested for the synthesis of N-fatty acylalkanolamines starting from the ethyl esters of linoleic, arachidonic and oleic acids with various alkanolamines. MsAcT has been compared with Candida antarctica B (CAL B) lipase immobilized on an acrylic resin (Fig.1), the latter showing higher yields in the amidation steps.2 Therefore, CAL B was applied as a biocatalyst in flow reactors for the development of a sustainable and continuous enzymatic preparation of the endocannabinoid anandamide (1) and a small collection of analogues.3

ORG-PO-021. Synthesis of original open-shell luminescent derivatives

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Open-shell molecules possessing doublet ground states such as organic radicals have attracted growing interest as a unique class of molecular emitters. They can exhibit properties which are difficult to achieve with conventional closed-shell molecules. Improvement of luminescence efficiency, electroluminescence with nearly 100% electron–photon conversion, absence of heavy atom effects, magnetoluminescence are the principal characteristics of these type of systems. Therefore, these emitters have great potential to expand the variety and design strategies of luminescent molecules to broaden their utility for photofunctional applications.

Perchlorotriphenylmethyl radical (PTM) and tris(2,4,6-trichlorophenyl) methyl radical (TTM) are typical examples of stable radicals that show distinct photoluminescence in solution at r.t. By fine tuning the substituent groups, it is possible to change the photochemical properties of the system and lower the energies of the frontier molecular orbitals, increasing their photostability over time. For example, pyridyl bis(2,4,6-trichlorophenyl) methyl radical (PyBTM) family shows a significantly increased stability.

This contribution will describe the preparation of selected derivatives in order to expand the spectrum of open-shell emitters.

TEC-PO-042. Recyclable bio-based epoxy/acrylate blends for Liquid Crystal Display 3D printing: design, preparation and characterization

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Bio-based epoxy resins are widely utilized in various application fields such as adhesives, coatings, composites, and electrical components, offering comparable performance characteristics to conventional epoxy resins, including high strength, durability, and chemical resistance [1-3]. The use of bio-based materials in 3D printing has been receiving increasing attention as a means of reducing the environmental impact of this technology, because most formulations available for stereolithography (SLA) and digital light processing (DLP) are generally non-renewable [4-6]. This study aimed to explore the potential of blending a bio-based epoxy resin with a commercial daylight-curable resin at various weight percentages to enhance the thermomechanical properties of 3D-printed parts while adhering to the working principle of LCD (Liquid Crystal Display) printers. The prepared formulations were initially characterized in terms of their thermo-mechanical properties both before and after post-treatments like photo- and thermal-curing. This procedure facilitated a comparison of the various blends based on their mechanical strength, glass transition temperature, and other pertinent properties. Upon identifying the optimal formulation, 3D-printed samples were produced using LCD printing technology. Calorimetric and morphological tests were then carried out to evaluate the thermal stability and microstructure of the printed parts. Overall, the findings of this study indicate that blending recyclable bio-based epoxy resins with commercial ones can lead to enhanced properties in additive manufactured parts. This approach has the potential to promote sustainability in 3D printing by reducing the consumption of non-renewable resources, while still meeting the standard performance required for numerous applications.

ORG-PO-167. Structure-property correlations in polyhalogenated Thiele hydrocarbons

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Molecules with open-shell electronic configurations are crucial in modern molecular material science. Singlet diradicaloids (SDs) belong to this category. They are molecular compounds with two unpaired electrons that are coupled antiferromagnetically, resulting in a singlet spin state. Their significance in organic chemistry stems from their unique electronic properties, which can lead to intriguing magnetic, optical, and conducting behaviors. One prominent group of SDs is represented by para-quinodimethanes (pQDMs). By utilizing polychlorination as a synthetic tool, we successfully stabilized the Thiele hydrocarbon.1 This new species, named TTH (Figure 1), exhibited intense photoluminescence (with a quantum yield of 0.84 in toluene), a red-shifted emission (Stokes' shift of 193 nm in cyclohexane), and solvatochromic properties. Through transient spectroscopic techniques and supported by multireference quantum-chemical calculations, we demonstrated that this emission arises from a zwitterionic doubly excited state, typically found at low excitation energies in SDs. This state gains dipole moment and intensity through state mixing via twisting around the strongly elongated exocyclic CC bonds of the excited pQDM core, akin to sudden polarization in olefins. While previous studies focused on the influence of para-halogens on the electro-optical properties of Thiele fluorocarbons,2 our current work delves into the effects induced by structural variations. We synthesized new polyhalogenated Thiele hydrocarbons with different halogenation patterns to showcase the relevance of molecular geometry on the photophysical properties of these derivatives, thereby providing fresh insights into the molecular design of SDs.

ABC-PO-025. Novel and sustainable materials based on chitosan for the protection of metal surfaces of artistic and cultural interest

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Metal objects of cultural and artistic values are detrimentally affected by corrosion processes, which induce changes in the aesthetic and structural properties of precious surfaces. To hinder degradation and to preserve the artefacts, protective coatings are usually applied on metal objects. Traditional protective coatings are based on petroleum-derived materials and require harmful solvents for their application, representing a serious threat for both conservators' health and the environment. Recently, an increasing research interest has been addressed to the development of sustainable and effective protective materials for cultural heritage applications1.

In the framework of the European GREENART project, research activities, aimed at the development of new solutions for the sustainable conservation of cultural objects, are currently ongoing. One of the main goals is the formulation and validation of polymeric coatings, starting from renewable sources and waste materials, to ensure a reliable and long-term protection of metal surfaces.

To achieve these challenges, we focused on coatings based on chitosan, an eco-friendly biopolymer derived from crustacean shells (as waste of fishing industry). Chitosan was used to prepare and optimize highly transparent and removable anticorrosive coatings. Water-based formulations were produced and applied on different metal surfaces, such as polished and patinated bronze and silver substrates, with the aim of studying the coating/metal interactions. To this purpose, both accelerated corrosion tests and long-term treatments reproducing natural indoor environments were performed and the structural and chemical properties of the coatings before and after the tests were deeply investigated. Results pointed out that chitosan show excellent protective properties toward different metal substrates. The coatings behaviour during the tests strictly depends on the composition of the metal surfaces and on the duration of the aging, proving that both accelerated and long-term treatments are required to evaluate the polymer/metal interactions as they provide complementary information2. The alteration of the films observed after a prolonged exposure to uncontrolled environmental conditions was used to optimize the formulation and enhance the long-term stability of the coatings.

The research activities were carried out within the GREENART project (GREen ENdeavor in Art ResToration, grant agreement n. 101060941) which is kindly acknowledged for financial support.

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FAR-PO-078. Modulation of the aspartic acid scaffold to identify a new septin-4 covalent binder with anti-metastatic activity in a mouse model of melanoma

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Tumour metastases are still the leading cause of cancer-related death, being often responsible for the failure of current therapies.1 In our previous work, we have developed a compound, AA6, that proved able to counteract the metastatic spread in a mouse model of breast cancer.2 To identify the essential structural elements and the cellular target involved in the activity of our lead compound, a new series of AA6-derivatives was designed and synthesised. New compounds were tested for the inhibitory activity on tumour cell invasion, migration and adhesion in B16-F10 melanoma cells. From the in vitro results, compound CM365 was selected as the most promising derivative, showing good efficacy and most likely able to interact with the target through covalent binding. To pinpoint the cellular target, a proteomic analysis was carried out and this allowed to select septin-4 as the most likely protein involved. Septins are GTP-binding proteins, able to assemble into large filaments on the plasma membrane, modifying its rigidity in migrating cells and promoting tumour metastasis.3 To study and compare the binding modes of the two derivatives, AA6 and CM365, with the molecular target, computational analyses were performed. Finally, the anti-metastatic properties of CM365 were evaluated in vivo in a murine model of metastatic melanoma. This compound proved capable of reducing metastases dissemination at different times of administration and of enhancing the antitumour effect of a known anticancer drug, paclitaxel, when administered in combination. The discovery of septin-4 as a new molecular target for the prevention of metastatic spread may encourage the future development of more specific inhibitors.

IND-PO-006. Advancements in Amino Acid Ionic Liquids for Enhanced CO2 Capture: Navigating Challenges and Opportunities

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The pressing need to reduce atmospheric CO2 has spurred the search for carbon capture and sequestration technologies. Ionic Liquids (ILs) have shown promise for CO2 capture due to their properties such as minimal vapor pressures, high thermal stability and the capacity to dissolve CO2.. Their tunability enables the enhancement of CO2 absorption allowing their application in gas separation and industrial capture efforts. Nevertheless, challenges such as high production costs, increased viscosity compared to traditional solvents, and uncertain long-term environmental impacts hinder their widespread. Research efforts are now focused on the realization of more economical ILs with reduced viscosity and improved CO2 selectivity, alongside evaluating their ecological effects.

Amino Acid Ionic Liquids (AAILs), noted for their superior CO2 absorption, low vapor pressure, and thermal stability, are being extensively studied. This research traces the development from our initial studies on biobased ILs to recent advancements [1,2], highlighting significant progress in AAILs for industrial CO2 capture.

Starting from the utilization of choline-based amino acids ([Cho][AA]) in solutions with DMSO to mitigate the intrinsic high viscosity of AAILs throughout the development of other solutions were described emphasized the role of solvents for the improvement of absorption rates while presenting an environmentally benign and economically viable alternative to traditional carbon capture methodologies.

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ORG-PO-022. Ultrasound-assisted iodination of anilines

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Aromatic iodination plays a significant role in the realm of synthetic organic chemistry. Iodo compounds find frequent application in cross-coupling reactions, copper-catalyzed reactions, and Grignard reactions, where C-C bonds are formed. Due to this versatility, they hold immense utility across various chemical disciplines. Additionally, these compounds assume an important role in medicine, either as integral components of pharmaceuticals or as radioactive diagnostic markers. Throughout history, multiple methods have been developed for conducting electrophilic iodination. A large number of electrophilic iodinating agents have been devised and implemented in organic synthesis, including N-iodosuccinimide or iodochloride (ICl). In our current study, we present a novel approach to electrophilic iodination. Our focus lies in waste reduction and the adoption of reaction conditions aligned closely with the principles of green

chemistry. Our aim is to maintain a sufficiently high concentration (1 M), employ a non-toxic solvent derived from biomass (2-MeTHF), and utilize a non-toxic acid additive (AcOH). Furthermore, we seek to minimize energy consumption by employing sonication instead of temperature control.

FIS-PO-017. New computer models for passive permeation through the lipid bilayer and protein channels

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The transport of substances across lipid membranes, either passive or active, is of vital importance for any living organism.1 The permeability of the membrane determines which substances can pass through it and depends on the physicochemical properties of both the membrane components and the permeating substance. Being able to predict permeability is fundamental in therapeutic agent design, because even the most active one becomes ineffective if it is unable to cross the membrane(s) and reach the target. Our work is focused on passive transport and aims at providing a mathematical model that explicitly considers all the main processes that are involved. Mathematical models presented in the literature2 are either too simplistic, by focusing on a few physicochemical parameters, or too complex, by including so many parameters to result of low human interpretability. Others are too time and resource demanding making them unsuitable for screening campaigns. Despite the model, consistent experimental data are needed to check it. However, methods for permeability measurement are only a few, each one with its own limitations. Starting from previous studies of the research group,3 we measured the permeability of antibiotics and other substrates (40 in total) through E. coli outer membrane porin OmpF. We used the liposome swelling assay,4 which although dates back to the 80s, it provides direct evidence of permeation while being simple and focused on the channel translocation. The results have been used to build a machine learning model with the smallest possible number of descriptors to preserve interpretability. We have also investigated the direct passive transport across the lipid bilayer, by using the same experimental protocol but removing the protein channel. Both non-permeant and permeant species have been investigated, thus, obtaining water and substrates apparent permeability coefficients. Good repeatability was achieved even by reducing substrate concentration as much as possible. We observed that vesicle swelling offers too low sensitivity, whereas working in the direction of shrinkage gave the best results. We built a mathematical model able to reconstruct the experimental curves by including all the relevant processes, namely, partition, diffusion, and osmotic pressure, with the corresponding parameters. Simulated curves were fitted to the experimental data through a Monte Carlo scheme. This approach allows to compare different substrates more precisely. The model allows to investigate in-silico the effect of each parameter separately.

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ORG-PO-023. Synthesis and Investigation of Naphthalene-based Chromophores as a Down-Color Converter in Hybrid White LED

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Down-color converters, also known as down-conversion materials or phosphors, are substances that absorb light of shorter wavelengths, such as ultraviolet (UV) or blue light, and re-emit it at longer wavelengths in the visible spectrum. These materials play a crucial role in various lighting applications, including solid-state lighting, display technologies, and fluorescence-based sensing. Organic chromophores have emerged as promising candidates for down-conversion color converters in various optoelectronic applications, owing to their tunable optical properties, cost-effectiveness, and environmental friendliness.

This study explores the synthesis and characterization of naphthalene-based chromophores tailored for their potential application as down converters in hybrid white light-emitting diodes (LEDs). The design and synthesis of these chromophores were thoroughly carried out to optimize their photophysical properties, aiming at efficient energy absorption and subsequent emission at longer wavelengths. Through a systematic approach, the photophysical properties of the synthesized chromophores were thoroughly investigated employing various techniques, including UV-Vis absorption spectroscopy, fluorescence spectroscopy, and quantum yield measurements. The results unveil successful tuning of absorption and emission wavelengths, alongside enhancements in fluorescence quantum yields, achieved through strategic structural modifications of the naphthalene core and its substituents. However, challenges such as photostability, aggregation-induced quenching, and limited thermal stability still need to be addressed to realize the full potential of naphthalene-based converters. The findings underscore the promising potential of naphthalene-based chromophores in bolstering the efficiency and color quality of hybrid white LEDs, thereby fostering advancements in energy-efficient lighting technologies. This research lays a foundation for further exploration and development of novel chromophores for next-generation lighting applications.

Acknowledgements: The authors acknowledge the European Union's Horizon 2020 research and innovation FET-OPEN under grant agreement ARTIBLED No. 863170. This research acknowledges support from the Project CH4.0 under the MUR program "Dipartimenti di Eccellenza 2023–2027" (CUPD13C22003520001).

ANA-PO-063. Novel low-cost sensor for water pollution monitoring based on Raspberry Pi

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Dissolved organic matter refers to a large pool of molecules present in freshwater environments, a major fraction of which are optically active, allowing them to be used as proxies for the analysis of changes in water quality1. Monitoring typically involves in-situ sampling and laboratory analysis (using spectrophotometer and fluorometer) or calibrated sondes, both of which present a number of analytical (scattering, transport) and practical (cost, calibration) challenges for large scale studies. Although different low-cost sensors working in the UV-Vis range have been recently developed, their performance have not been sufficiently validated and the results of the analysis still require additional equipment for data sharing2. Herein, we present a Raspberry Pi based low-cost sensor with a light emitting diode (LED) as RGB light source and light dependent resistors (LDR) for the visible light while for the ultraviolet region a modular UV-light sensor. The single-board computer (Raspberry Pi Zero W) performs calibration, data processing and datasharing, allowing for real-time in-situ measurements of chromophoric and fluorescent dissolved organic matter for water quality assessment. Data acquired from the sensor were compared with a laboratory spectrophotometer, showing high accuracy and precision. The low-cost organic matter sensor is currently at a technology readiness level 4.

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CSB-PO-025. Expression of the Nucleocapsid Protein (N) from SARS-CoV 2 and its Characterization through High-Field NMR Spectroscopy

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The Nucleocapsid protein (N) of SARS-CoV-2 is a complex protein with 419 amino acids, including an N-terminal RNA binding domain (NTD), a C-terminal dimerization domain (CTD), and three intrinsically disordered regions (IDRs)1. N is highly expressed, and during viral infection plays a crucial role in organizing the RiboNucleoProtein complex, essential for viral replication. Our central aim is to characterize the Full-Length (FL) N protein and study its interaction with RNA. We want to understand how this interaction evolves with increasing system complexity, from NTD (44-180) to FL (1-419), including a construct comprising the NTD and the two flanking IDRs (NTR 1-248). Studies on NTR have highlighted that the NTD's affinity for nucleic acids is augmented by the presence of the two positively charged disordered regions2. The FL protein, which forms a dimer through its CTD domain, is expected to further increase N's affinity for RNA due to synergistic effect. Therefore, we have chosen to enlarge our focus moving our attention from the smaller NTR construct to the more complex and interesting FL protein. Here I will present the latest results on FL protein, starting from its challenging expression and purification. Its structural and dynamic features are obtained through Nuclear Magnetic Resonance (NMR) and compared with those of smaller constructs.

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This work was supported in part by the project "Potentiating the Italian Capacity for Structural Biology Services in Instruct-ERIC" (ITACA.SB, Project no. IR0000009)

INO-PO-016. Lanthanide based emitters as quantum light sources

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In recent years, research has focused on optimizing light sources for use in the latest technology optical devices, such as linear photonic integrated circuits and telecom optical fibers. Recently, quantum photonics is becoming increasingly popular in view of the potentialities of single-photon emitters and entangled photons in data communication and security. In this framework, luminescent lanthanide ions offer a promising alternative to current quantum light sources based on inorganic bulk materials, in view of the long-lived and highly coherent emission provided by intra-shell f-f transitions. These ions can be combined with suitable organic ligands able to behave as antennas, that is, they absorb light, transfer the absorbed energy to the metal via an intersystem crossing process and induce enhanced sensitized lanthanide emission. In this work, we investigate novel lanthanide-based complexes to be proposed as flexible quantum light sources. Tripodal benzimidazole[1] organic ligands derivatives have been reacted with lanthanide ions (Eu, Tb, Sm, Er, Yb, Nd, Gd), to afford highly crystalline materials showing luminescent properties in the visible and near-infrared spectral ranges. The correlation between the observed emission and the geometry and symmetry of the compounds is investigated. This research is performed in the framework of the EIC Pathfinder Challenges "ARTEMIS " GA 101115149 and PRIN2022 PNRR "QuantaMol" Prot. P2022PKW4T projects.

ANA-PO-011. Innovative On-line Pressurized Hot Water Extraction with Solvent Recirculation Coupled with Liquid Chromatographic-Tandem Mass Spectrometric Analysis of Pharmaceuticals in Soil

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In this study, a new self-assembled apparatus for the extraction of solid samples was built, using suitably modified standard chromatographic equipment, in order to develop a recirculated pressurized hot water extraction directly coupled to liquid chromatography-tandem mass spectrometry. In order to investigate the potential of this new extraction apparatus, the proposed system was applied to the analysis of 34 target pharmaceuticals compounds characterized by heterogeneous physicochemical properties (e.g., -0.05 ≤ log D ≤ 4.31) in three soils with different textural characteristics (i.e., loam, silt-loam and silty-clay-loam). A multivariate strategy based on the design of experiments1 (DoE) was used to identify the best extraction conditions for the target analytes by studying temperature, pressure and number of extraction cycles. The optimization procedure successfully demonstrated that the number of cycles, in combination with the high temperature, had a favourable impact on the recovery of target analytes. The application of DoE set point to the three reference soils provided average semi-quantitative recoveries (≥ 60% for most target analytes in all soils) and good precision (< 25% in almost all cases), regardless of the textural differences among samples.

ORG-PO-024. Cyanine Dyes for Dye-Sensitized Solar Cells: Synthesis and Spectral Characterization

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This study focuses on the synthesis and characterization of cyanine dyes derived from carboxy indole, featuring cyclopentene and cyclohexene central moieties. These dyes exhibit notable differences in their absorption properties, with the cyclopentene-based dye showing a pronounced red shift and higher extinction coefficient compared to its cyclohexene counterpart1. Our research aims to elucidate the structural influences on the optical properties of these dyes and explore their potential application as sensitizers in dye-sensitized solar cells (DSSCs). By leveraging the distinctive absorption characteristics of these cyanine dyes, we seek to optimize their performance for enhanced light harvesting and photovoltaic efficiency in DSSC devices. DSSCs offer several benefits, including low production costs, ease of fabrication, and flexibility in design and integration2. Furthermore, DSSCs exhibit excellent performance under low-light conditions and have the potential for use in a wide range of applications, including portable electronics, building-integrated photovoltaics, and off-grid power generation in remote areas. This investigation contributes to the development of efficient and cost-effective solar energy conversion technologies, with implications for sustainable energy production and expanded access to clean energy solutions.

Acknowledgements: This study is a result of the research project CANVAS, Project CH4.0 under the MUR program “Dipartimenti di Eccellenza 2023–2027”(CUPD13C22003520001), Horizon 2020 IMPRESSIVE (Grand Agreement n° 826013)

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ELE-PO-017. Advancements in Atomically Precise Catalysts for Oxygen Reduction Reaction: Insights into Electrochemical Activity and Structural Dynamics of a Pd(II) Complex Catalyst Supported on Multi-Walled Carbon Nanotubes

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The design of efficient catalysts for the Oxygen Reduction Reaction (ORR) continues to be a crucial point in the development of clean energy technologies, particularly in fuel cells. Here we present our latest findings on an innovative atomic precision catalyst, called MWCNT-LPd. This catalyst consists of a Pd(II) tetraazacycloalkane complex anchored to multi-walled carbon nanotubes (MWCNTs) obatained through a supramolecular approach1. Our investigation explores the structural and electrochemical characteristics of MWCNT-LPd, to elucidate its catalytic mechanism and performance. Through comprehensive analyses, including quantum-mechanical calculations, electrochemical and spectroscopic techniques, we examine the role of coordination geometry in catalytic activity, shedding light on the need for unoccupied coordination sites for efficient ORR. A tetraazacycloalkane ligand was intentionally chosen to occupy all four coordination sites of the conventional square planar coordination geometry of Pd(II). This choice was made to investigate a fundamental question: whether the metal ion requires unoccupied coordination sites to effectively catalyse the oxygen reduction reaction (ORR) or whether, as suggested by quantum mechanical calculations, catalytic activity may result from O2 interactions occurring at the fifth coordination position2. Remarkably, our results show that the tetracoordination of Pd(II) within the complex does not compromise its catalytic activity, achieving ORR performance comparable to that of Pt commercial bulk electrodes and introducing new notions of the structure-function relationship in ORR catalysis. In this way, the results obtained open new possibilities for the design of inexpensive and highly efficient catalysts that are crucial for the advancement of sustainable energy technologies. Authors thank Project 2022NW4P2T CUP B53D23013890006 “From metal nanoparticles to molecular complexes in electrocatalysis for green hydrogen evolution and simultaneous fine chemicals production (FUTURO)” PRIN2022 Progetti di Ricerca di Rilevante Interesse Nazionale funded by the Italian Ministry of University and Research and NextGenerationEU.

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ELE-PO-023. Sodium Chloride/Glycerol.based Deep Eutectic Solvents as ubiquitarius electrolyte in electrochemical energy storage devices

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Nowadays, the integration of renewable energy sources (e.g. photovoltaic) with efficient electrochemical energy storage systems (EESS), such as batteries and supercapacitors, is dramatically important to store the possible excess of energy produced and supply additional power in case of insufficient electricity supply [1]. Yet, EESS are usually based on not sustainable electrolytes, which should be progressively phased out [2].

Here, the exploitation of Deep Eutectic Solvents (DES) based on NaCl as Hydrogen Bond Accpetor (HBA) and glycerol as hydrogen bond donor (HBD) as sustainable [3] and effective alternative to conventional electrolyte is proposed [4]. Indeed, the establishment of the supramolecular hydrogen bond network typical of DES seems to dramatically impact the electrochemical stability of the electrolyte: the 1:10 HBA:HBD molar ratio shows an extremely wide electrochemical stability window (up to 3 V) and faradic efficiency close to 100% when implemented as electrolyte in supercapacitors. Additionally, this system was also fruitfully tested in thermoelectric devices.

Reling on these very promising results, we developed a multi-technique approach also taking advantages of measurement campaigns at large-scale facilities) to thoroughly characterize our electrolytes and to get meaningful insights toward the design of a second generation of Deep Eutectic Electrolytes. As a result, we decided to further widen the chemistry of our solvent by the (i) engineering of the HBD and/or (ii) the replacement of the sodium salt with the zinc counterparts. The former was reached by selective etherification of one or two hydroxyl moieties of the glycerol with alkyl chain (e.g. methyl, ethyl, trifluoromethyl…)[5].

This study could be seen as a thoughtful effort in the design, characterization and implementation of innovative and sustainable electrolytes in line with the 7th sustainable development goal of the United Nations.

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ABC-PO-036. Ecclesiastic heritage safeguarding: a monitoring campaign in the Saronno Sanctuary

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Ecclesiastic heritage is a tangible testimony of artistic vocations among history. Despite hosting such masterpieces, churches' purpose differs from museums' one; thus, controlling microclimatic and pollutant levels can be challenging. Monitoring is essential to possibly suggest improvement measures1.

Here is presented a monitoring campaign in the "Beata Vergine dei Miracoli" Sanctuary in Saronno (VA), which hosts frescoes and wood works from some of the most relevant 1500's artists of northern Italy. Temperature and relative humidity were measured by a 6 low energy Bluetooth nodes network, innovative in the power supply systems, ranging from vibrations to light. Particulate Matter (PM) was measured with a custom start-go-stop energy-saving GPRS system placed near the "Last Supper" woodwork. The application of innovative sensors allowed to guarantee the less-invasive setup, from the visual, acoustical and operator-dependent point of view. The monitoring campaign was performed between February and October, 2023.

Temperature and RH followed seasonal trends, and, comparing results with the normative suggestions2, the values were in conformity mainly in spring and autumn. Besides absolute values, source of concern rises from the variation from the "historical microclimate" of the artworks3. There weren't problems with temperature, while, regarding RH, a mechanical-stressing 10% 24-hours variation (more than doubling the limit) was frequently observed during all the seasons, yet variations up to 35% were observed in summer. PM showed a season-dependent baseline with significant peaks related not only to worshippers' presence but rather to specific indoor sources as the use of incense, which acutely exposes the artworks to soiling and future chemical stress, as PM2.5 and PM1 were 90 and 70% of PM10 mass. Interestingly, peak correlation could be observed between RH and PM values all along the year. RH peaks could be thus linked to people presence, and it was possible to distinguish between celebrations with a lot of or a few people and with or without the use of incense.

This study will be crucial for the Sanctuary to better understand its point of weakness, to adopt corrective actions and to cut future restoration costs. It contributes to the awareness of the safeguarding theme, also by underlining the respectfully approach the scientific research has towards churches purpose.

FAR-PO-030. Synthesis and biological evaluation of Hsp90/HDAC6 dual inhibitors bearing a 2-aminopyrrolopyrimidine and purine scaffold as potential anticancer drugs to treat prostate cancer

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Prostate cancer (PC) is the second common tumor diagnosed in men. Although current treatments are effective at the early stage of the disease, they lack efficacy in advanced stage and metastatic castrate-resistant prostate cancer (CRPC). HDAC6 and Hsp90 play a significant role in cellular processes and are involved in tumor genesis, metastasis and drug resistance.1-2 Therefore, the possibility to simultaneous inhibit HDAC6 and Hsp90 would represent a promising strategy to treat CRPC. Recently, we identified potent pyrrolo-pyrimidine/purine HDAC inhibitors with excellent antiproliferative activity and anti-migration properties on PC.3-4

The 2-amino-pyrrolopyrimidine scaffold is also present in potent Hsp90 inhibitors. Thus, in the search of Hsp90/HDAC6 dual inhibitors we designed two series of 2-amino-pyrrolopyrimidine and purine derivatives carrying an hydroxamate or 3 hydroxyisoxazole as Zinc Binding Group required to coordinate the catalytic zinc ion present in the small hydrophobic pocket of HDAC6, and a benzyl linker of variable length with different decorations (Figure 1).

Two efficient synthetic routes were identified, allowing the obtainment of the desired products. The compounds were tested in vitro to assess their ability to inhibit recombinant HDAC6 and Hsp90. The results of the in silico design, chemical synthesis, and biological evaluation of the two series of compounds will be presented.

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ORG-PO-025. Water-soluble photosensitizers for application in X-ray promoted photodynamic therapy

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Photodynamic therapy (PDT) is a clinical approach to treat cancer by activating a photosensitizer (PS) through light exposure ranging from UV to near-infrared. This activation induces the production of reactive oxygen species (ROS), particularly singlet oxygen ($^1O_2$), well known for its cytotoxic impact on cancer cells.

Studies reported in the literature highlighted the possibility to enhance singlet oxygen production by combining photosensitizers with metal nanoparticles under laser irradiation. The principal drawback of conventional PDT lies in the limited penetration of visible light in biological tissues, impeding effective photosensitizer excitation in deeper tissues. Consequently, substantial efforts have been directed towards overcoming this limitation through X-ray irradiation. Metal nanoparticles with elevated Z values exhibit efficient X-ray absorption, facilitating energy delivery to surrounding tissues. It has been reported that the presence of photosensitizers and metal nanoparticles (NPs) enhances singlet oxygen and ROS generation. Gold nanoparticles (AuNPs) have gained prominence due to their biocompatibility, making them widely used as contrast agents.

This study presents the synthesis of new water-soluble nanosystems achieved by conjugating either a porphyrin derivative or a rose bengal (RB) derivative to AuNPs. The water soluble porphyrin was synthesized by modifying tetra(4-hydroxyphenyl)porphyrin (THPP) with three PEG chains and a short linker terminating with a thiol or disulfide group. The RB derivative was prepared by reacting a thiol or disulfide ending linker with the carboxylic moiety of RB. The thiol or disulfide moiety is needed for effective binding to the watersoluble AuNPs due to the strong affinity between sulfur and gold. A preliminary investigation was conducted to evaluate singlet oxygen and ROS production by the nanosystems under X-ray irradiation, using different probes.

ORG-PO-026. Visible Light Driven Ring-Opening Polymerization (photoROP) of Lactones by using Arylazo Sulfones as Photoacid Generators (PAGs)

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Photopolymerization offer several advantages over classical thermal polymerizations such as rapidity of execution, solvent-free conditions and thus reduced emission due the room temperature used. Photopolymerization is currently dominated by non-degradable UV-curable resins based on acrylates, methacrylates and epoxides that are usually polymerized by radical or cationic pathways, mainly due to their fast reaction rates. In the last decade, biodegradable polymers such as poly(ε-caprolactone) (PCL), polylactic acid (PLA) and polyaminoacids (PAA) have found applications in several fields including, among the others, nanomedicine, tissue engineering and 3D printing.1 In this context, ring-opening polymerization (ROP) of the cyclic monomers in the presence of an initiator (usually an alcohol or amines) and a Bronsted/Lewis acid as the catalyst may induce a spatial and temporal control, and controlled polymerizations in term of polymeric architectures and polydispersity indexes.2

Arylazo sulfones are thermally stable derivatives of aryl diazonium salts previously used as photoinitiators in free-radical polymerization of methacrylates,3 as well as visible light Photoacid Generators (PAGs) in organic synthesis.4 Herein, we present an efficient protocol for the ring-opening polymerization of different cyclic monomers (eg. ε-caprolactone) upon visible light irradiation, initiated by various

alchools and using differently substituted arylazo sulfones as the PAGs (an example is illustrated in Scheme 1). The efficiency of the designed procedure will be discussed in terms of polymerization yields, dispersity and degree of polymerization.

ORG-PO-168. N-lactam radicals in light-promoted reactions

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Nitrogen-containing structures are ubiquitous in natural and in synthetic organic compounds, such as pharmaceutical and agrochemicals products. The development of new synthetic methodologies to build C-N bonds in a mild, sustainable, and possibly stereoselective manner is a topic of great interest for synthetic organic chemists. In the last two decades, photoredox catalysis emerged as a powerful tool for the generation of radical species under such conditions. Among the different radical species, we focused on amidyl radicals, which are electrophilic nitrogen radical species where the single electron is in a p orbital.

Our research group has studied the formation of amidyl radicals through the homolytic cleavage promoted by light of N-O and N-N bonds and the reactivity of these radicals with nucleophiles like enamines and heteroarenes. We also managed to successfully form and react the γ, δ and ε-N-lactam radicals, which are not known in literature. For these transformations, we have done an extensive reaction conditions screening by changing the light source, the photocatalyst, the stoichiometry and the solvents; in Scheme 1 the best conditions are summarized.

With the best conditions in hand, we have studied the addition of these N lactam radicals to different arenes and heteroarenes, collecting 19 different substrates with isolated yields up to 95 %. Gladly, we were also able to directly functionalize N-Boc-OMe-L-tryptophan obtaining the addition product in 50 % yield. Then, we performed a wide mechanistic investigation comprehensive of Cyclovoltammetry, X ray analysis, Stern-Volmer and Life-Time studies, Quantum Yield measurements, kinetic analysis and DFT calculations. In the end, we succeeded to run the photocatalytic radical addition of γ-N lactam radical in water in 44 % yield, opening the pathway to possible biological applications

ORG-PO-169. Porphycenes networks, chemosensing properties of 2D and 3D thin films

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Photoactive organic-based molecular materials hold a great deal of potentials in many technological and biomedical fields. Porphycenes (H2Po), tetrapyrrole 18π electron conjugated chromophore macrocycles constitutional isomers of porphyrins,1 are an intriguing class of molecular materials which can serve as multipurpose scaffolds. They have two H atoms in the inner cavity which are subject to fast tautomerism while, as tetradentate ligands, they can also host almost all the metal ions. Being chemically and thermally stable, their periphery (meso and β positions) can be functionalized for specific scopes and applications. The different pattern of connection of the four pyrrole rings with respect to porphyrins, reflects in H2Po different molecular symmetry and inner core size which favours optical behaviour suitable for ultrafast responsive material.

We previously reported the first study on vacuum deposited H2Po continuous and compact 2D/3D thin films2,3 via a combination of UV-Vis-NIR optical spectroscopies (absorption, emission, surface differential reflectivity-SDR and reflectance anisotropy spectroscopy-RAS) and surface microscopies (i.e. AFM). We demonstrate a spectacular chromatic change when the film is exposed to acid and we verified the fast reversibility of the process. We now further investigate this behaviour in porphycenes functionalised with alkyl and aryls substituents in both the β pyrrole and meso positions as those reported in Figure 1.

MAS-PO-017. Blood microsampling for untargeted metabolomics: a preliminary study on patients affected by myocardial infarction

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Blood microsampling is a promising tool for blood collection as it is simple and minimally invasive. It allows multiple sampling and is optimal for longitudinal studies. For these reasons, it has gained attention and has been applied to metabolomics studies. Physical activity induces metabolic changes and a correlation between metabolism and cardiovascular risk has been demonstrated. For example, physical exercise has been shown to improve the catabolism of branched-chain amino acids (BCAA). The involvement of BCAA in ischemic cardiomyopathy is well known: their plasma levels correlate with the presence and severity of the disease. In this preliminary study, blood samples were collected with Dried Blood Spots (DBS) from patients affected by myocardial infarction participating in a physical rehabilitation program. Blood was collected at 7 time points: before the start of the rehabilitation protocol, before and after the first training, before and after training halfway through the rehabilitation protocol, and before and after the last training. Untargeted metabolomic analysis was performed to assess exercise-induced changes, correlation with clinical outcome and cardiovascular risk factors in these patients. Polar metabolite analysis was performed on DBS with UHPLC-MS. The results showed the most altered metabolic pathways were associated with purine metabolism and histidine metabolism. In particular, xanthine and histidine levels were high at the beginning of rehabilitation and gradually decreased with the training time. Comparing the metabolic phenotype at the beginning and at the end of rehabilitation highlighted a reduction of xanthine, urocanic acid and C5-carnitine. Overall,

the use of DBS simplified longitudinal blood sampling and allowed the investigation of metabolic changes during the physical rehabilitation program after myocardial infarction.

IND-PO-007. TiO2-loaded MCM-41 for surface stone protection

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Stone materials have been extensively used in the past as primary materials for construction due to their high strength and good durability. Nevertheless, when exposed outdoors they undergo a gradual decay caused by environmental agents, such as pollutants or microbiological species responsible for the colonization of surfaces. In order to preserve these materials and to prevent their decay, it is common practice to apply protective coatings of various nature, that form a physical barrier on the stone surface making it hydrophobic and inhibiting microbial growth. Current stone surface coatings are often harmful to the environment and to operators, thus innovative solutions are needed.

This work aims to develop a sustainable protective coating for stone surfaces based on a mesoporous silica (SiO2), MCM-41, loaded with titanium dioxide (TiO2). In this multifunctional system, the structure of

MCM-41 can host antimicrobial products, while TiO2 gives self-cleaning properties to the surface thanks to its photocatalytic activity. In particular, the photocatalyst will degrade atmospheric pollutants such as VOCs and NOx, which interact with the surface of stone causing chemical degradation and altering its aesthetic appearance. Self-cleaning properties could also help in the degradation of vandalic stains.

Specifically, MCM-41 nanocontainers were synthesized and subsequently enriched with three different types of TiO2 nanoparticles (i.e., P25, Kronos, Mirkat) to test the photocatalytic activity changes of the materials. The obtained composite materials were characterized through several analytical techniques: N2 physisorption, FT-IR, SEM-EDS and HRTEM.

To investigate the photocatalytic activity of the synthesized nanomaterials methylene blue was employed as a model stain compound. This test was conducted both in liquid, with subsequent monitoring by UV-visible spectrophotometry, and on plaster mock-ups exposed outdoors to visible light.

In summary, the synthesis and characterization of TiO2-loaded MCM-41 nanoparticles were pursued to develop a coating for stone surfaces, aiming to extend protection duration and enhance self-cleaning action.

TEC-PO-029. A circular approach to flexible electronics: biobased chain extenders for the control of the macrostructure of recycled polyesters

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Recycled PET, chosen as the polyester for mechanical recycling, underwent regradation utilizing a dianhydride derived from a biobased C6 building block. The biobased derived component was sourced from a 2-pyrone, extracted from lignocellulosic materials to produce mellophanic dianhydride (MEDA)1, as illustrated in Figure 1. MEDA represents an alternative to the conventional oil-based pyromellitic dianhydride2. In the context of mechanical recycling of rPET, MEDA functioned as a chain extender. Chemical and rheological characterization of the recycled materials was performed.

This study, conducted as part of the European ECOTRON3 project, specifically addressed the end-of-life considerations of polymers employed as substrates for flexible printed electronics, emphasizing circular, biobased, and biodegradable solutions. The key principles applied to the substrate in this research were:

• Recycle the used materials for integration into new products.

• Incorporate renewable, biobased, or plant-derived chemicals to reduce the use of fossil-based chemicals.

The authors would like to thank ECOTRON project for the support provided for this work.

TEF-PO-004. Circadian and dopaminergic influence on chlorogenic acid intestinal permeability

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Chlorogenic acid (CGA) is a natural polyphenol potentially health promoting along the gut-brain axis, even if limited by poor oral bioavailability. As components of therapeutic drugs or functional food, polyphenols can influence each other their absorption from the gut according to circadian rhythms.

Therefore, we have evaluated, via HPLC-UV analysis, how the permeability of CGA across IEC-6 cell monolayers, as a model of intestinal barrier, is influenced by the presence of arbutin, gallic, caffeic and ferulic acids and by circadian cycles entrainment by horse serum shock. Moreover, dopaminergic neuronal influence on CGA intestinal permeability was investigated by co-culture with rat pheochromocytoma PC12 cell line mimicking dopaminergic component of enteric nervous system (ENS).

Our results indicate the presence of a circadian-dependent active efflux for CGA permeation across IEC-6 monolayers, suggesting its higher bioavailability in the evening rather than in the morning. Among the natural polyphenols tested, only gallic acid was able to influence the CGA permeation, causing its reduction. Finally, (60 mM KCl)-evoked dopamine release from PC12 cells induced a significant CGA permeation increase across IEC-6 monolayers, probably by downregulation of efflux transporters expression/activity. Dopamine ENS-evoked may therefore enhance the CGA oral bioavailability dependence on circadian rhythms.

Although this is a preliminary study in this field, the results obtained allow us to suggest that the absorption of CGA from an oral administration of a food supplement is not influenced by arbutin, caffeic acid and ferulic acid, whereas it can be enhanced in the absence of gallic acid and by evening intake.

ANA-PO-111. Development of innovative analytical strategies for the identification of New Psychoactive Substances

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The detection and analytical recognition of New Psychoactive Substances (NPSs) is one of the main challenges in the clinical, toxicological and forensic field due to their rapid development and structural similarity to illicit substances already widely monitored [1][2]; for the latter reason, they are often not detectable with immunological tests and targeted methods that are designed for traditional drugs. They are not controlled by Single Convention on Narcotic Drugs (1961) or by Convention on Psychotropic Substances (1971), but represent a threat to public health, also because the purity and composition of such substances are still unknown. This situation underlines the need to develop new analytical strategies for their identification; actually, the development of new detection methods is also not easy due to the lack of analytical standards.

For this purpose, this study, carried out in collaboration with the Italian Scientific Police Service, was aimed to the development of an analytical UHPLC-HRMS workflow for target and untarget determination of classic and newly introduced abuse substances in law enforcement seizures. UHPLC-HRMS has been used to perform target analyses both in Full Scan mode and MS/MS of known analytes belonging to the most common illicit substance classes, such as synthetic cannabinoids, synthetic opioids, stimulants, dissociative, hallucinogenic,

sedative/hypnotic but also classical drugs; in this way, the information obtained from such analyses have been used for the creation of a chemometric model, based on their fragmentation spectra and neutral losses in a reasoned range of collision energy according to the chemical characteristics of the examined molecules.

The chemometric analysis represents the basis for the creation of a model capable of predicting the class of an unknown substance based on its fragmentation pattern, including neutral losses, thus allowing to perform untarget analysis on seized substances and potentially detect even unknown NPS. This approach promises to

be interesting in addressing the growing number of new drugs flooding the market and at the same time in reinforcing existing sources of interest (such as opensource databases) with analytical information useful for the identification of new identifiable chemical structures with untargeted screening.

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ORG-PO-028. Enzymatically crosslinked hydrogels for meniscal regeneration

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The menisci are crescent-shaped fibrocartilaginous cushions found in the knee articulation between the femoral condyles and the tibial plateau which main function is weight distribution. Their extracellular matrix is highly hydrated and mainly composed of collagen, glycosaminoglycans (GAGs), adhesion glycoproteins and elastin. They are composed of three distinct regions with different cell populations, extracellular matrix (ECM) components and morphological features. Meniscal injuries are very common, but this tissue has a low vascularization, thus regeneration potential is limited.

Here in this work, bioprintable hydrogels were formulated using the horseradish peroxidase phenol coupling to crosslink gelatin and hyaluronic acid both functionalized with tyramine. The effectiveness of the oxidative coupling was checked with NMR, UV-VIS and FTIR analyses. Then, different formulations of the hydrogel were compared with a SEM analysis to investigate the morphology and the porosity and with an amplitude sweep test to determine the storage modulus (G'), the loss modulus (G''), yield and flow points. FTIR (Fourier-transform infrared spectroscopy) was then performed to qualitatively confirm the hydrogels formation. Comparing these results, the most suitable hydrogels for meniscal regeneration were determined to mimic the outer and inner zones of the tissue: a viability test was finally performed with mesenchymal stem cells on them to investigate their interaction and cytocompatibility.

INO-PO-035. Subcritical hydrothermal process for the recovering of polymeric components of car fluff

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The European Green Deal is Europe's growth strategy, which aims to ensure by 2050 a climate neutral, clean and circular economy, where the management of resources is optimised and pollution minimised. The Circular Economy Action Plan contains a commitment to review the legislation on end-of-life vehicles (ELVs) with the aim to promote more circular business models by linking design issues to end-of-life treatment, improving the recycling efficiency.

In this context, it becomes imperative to reevaluate waste streams exploring different approaches for their efficient recycling and reuse. Car fluff (light shredder residues of vehicles) is an inevitable by-product of end-of-life vehicles and it is mainly composed of a heterogeneous mixture of plastics, rubber, textile and fiber material, wood, glass and traces of ferrous and non-ferrous metals. It poses challenges for its disposal and recycle; hence on its environmental impact mitigation as required by the European Union's Regulation.

The hydrothermal liquefaction is an efficient and low-energy-demanding approach potentially capable to solve this problem, it is highly flexible in dealing with both pure waste streams and mixed ones.

The present work aims at developing a sustainable wet-chemistry subcritical hydrothermal process for the recovering of some polymeric components of car fluff which have reactive sites suitable for hydrolysis to depolymerize them into small molecules. Initially, the received car fluff is characterised by FT-IR determining its composition. Therefore, the degradation of polymers is tested in subcritical water varying the experimental parameters (time and temperature of the treatment, presence and amount of catalyst), and the depolymerization products are then characterized.

ANA-PO-036. DNA-based dynamic combinatorial library as a multi-analyte sensing tool

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Complex intracellular networks that dynamically respond to different biological and chemical cues play a fundamental role in regulating signalling transduction pathways. Researchers have recently explored the possibility of developing artificial systems that, mimicking such dynamic networks, allow to build synthetic systems that respond to different targets with high sensitivity and specificity.

Dynamic combinatorial libraries can be promising tools to engineer artificial networks. In these systems, a set (Pool) of building blocks forms reversible bond and are allowed to reach thermodynamic equilibrium in the presence of external inputs, resulting in a variety of output libraries.1

Synthetic DNA has emerged as a versatile biomaterial to engineer nanodevices with potential applications in different fields, like sensing, imaging, and drug-delivery. Taking advantage of the high programmability and predictability of DNA-DNA interactions, several strategies used to design synthetic receptors for a wide range of different targets (Antibody, protein and small molecule) have been reported.2

Motivated by the above considerations, here we propose to develop a DNA-based dynamic combinatorial library (DNA-DCL) as a sensing tool able to respond to the presence of multiple targets. To achieve this, we have designed a DCL composed of short reactive DNA strands (Pool) that can interact with each other leading to the generation of a library of products (Output). The presence of specific external inputs (Target) can sequester reactive DNA strands from the pool, inducing the upregulated formation of only a specific product.

To prove the versatility of our approach, we have also designed a DNA-DCL to orthogonally control the assembly and disassembly process of DNA-based nanostructures.

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ORG-PO-170. N-Rich Chemical Platforms: Continuous Flow Synthesis via Sustainable Ru-Supported Hydrochar-waste derived

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The utilization of biomass waste for a catalytic approach and the subsequent synthesis of valuable products through catalytic reactions are pivotal endeavours addressing pressing energy and environmental concerns. In line with sustainability objectives, this study explores the application of hydrochar derived from hydrothermal treatment of brewing industry waste as a support for a Ru-based catalyst (Ru-HC) in the improvement of reductive amination processes. Employing an efficient continuous flow method, alongside a hydrogen source, has yielded remarkable results, achieving up to 99% conversion in the hydrogenation of biomass-derived molecules such as levulinic acid (LA) and n-butylamine into pyrrolidones compounds. The catalytic ability of Ru-HC extends to a wide array of substrates, including various carbonyl-containing compounds and amines, encompassing green molecules such as furfural, 5-hydroxymethylfurfural, and furfurylamine, leading to the production of valuable N-containing products. Mechanistic insights are elucidated through intermediate formation and recyclability studies, demonstrating the stability and reusability of Ru-HC. The selection of solvents and optimization of key parameters, such as flow rate, temperature, and pressure, significantly influence selectivity.

Adopting a continuous process not only reduces reaction times but also eliminates the requirement for hazardous gaseous hydrogen, ensuring enhanced selectivity while minimizing environmental impact. This research underscores an eco-friendly approach to the production of high-value compounds from biomass, contributing to sustainable amine synthesis through the utilization of biomass-based catalysts.

ANA-PO-134. New insights into iron speciation in the soluble fraction of atmospheric particulate matter

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The constituents of the atmosphere, and in particular the particulate matter (PM), play important roles in the geochemical cycles of the metal cations. The atmospheric deposition of mineral dust from continental regions is a significant source of both iron and aluminium to the ocean1,2, and Fe is essential to control of biomass production in ocean water. To better understand the biogeochemical cycles of the elements, it is important to evaluate their distribution between solid phase and solution as well as to define the main species that can be formed, because chemical processes occurring in the soluble fraction of the aerosol may affect the photo-reactivity and the bioavailability of metal cations3-5. In a previous work6 the main ionic components occurring in water extracts of Artic atmospheric depositions were quantified, and a chemical model was applied to identify the main species occurring in the samples. The speciation models suggested a significant role of oxalate as ligand for Al3+, Fe3+, and Cu2+, but the chemical model used was just a first approximation of the chemical speciation of the real samples, because the formation constants used were referred to 25 °C and infinite dilution. In this work the model capability was enhanced, by considering formation constants defined in the temperature range 5 – 25 °C and at ionic strength 0.05 – 3 mol/L in NaCl medium, especially for iron – oxalate complexes that mainly affect the chemical system. Hence, new models were proposed varying the temperature and the ionic strength, and highlighting the role of both parameters on Fe(III) speciation. Moreover, the formation constants here defined allow for improving the reliability of the modelling process, thereby making the chemical model more suitable to describe the chemistry of the PM soluble fraction in real environmental conditions.

TEC-PO-032. Adducts of graphene layers with pyrrole derivatives of 2-pyrone as catalysts for water remediation

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Pyrroles are essential compounds in biological systems and are utilized in drug synthesis and material chemistry. They are typically formed through the Paal-Knorr reaction, in which 1,4-dicarbonylic compounds react with amines. Here we present a sustainable approach to the synthesis of N-substituted pyrrole derivatives via the reaction of primary amines with 3-hydroxy-2-pyrones.1 These latter compounds are easily prepared from renewable sources and can effectively mask 1,4-dicarbonylic functionalities, enabling the efficient synthesis of substituted pyrrolic rings (Figure 1).2

Based on the research conducted by the research group,3 these pyrroles have been employed to decorate graphene layers with the aim of obtaining catalysts for sustainable water remediation (Figure 2), through the catalytic ozonation of recalcitrant pollutants.4

ORG-PO-029. Chemo-enzymatic approaches for recovery and valorization of stilbenoids from agri-food waste

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Food loss and waste (FLW) currently represent one of the most pressing public and economic challenges, since negatively impact food security and nutrition and significantly contribute to greenhouse gas emissions.1 Agri-food industries produce significant amounts of FLW, especially from fruit and vegetable processing,2 including peels, seeds, leaves, and stems which are known for their high content of bioactive molecules. The development of extraction and processing procedures of these high value natural products for different industrial sectors (i.e., nutraceutical, cosmetic and pharmaceutical industries) is a valid solution to the social and environmental issue represented by agri-food waste.

Resveratrol, a stilbenoid found in grapes, is a natural phytoalexin.3 It has been intensively studied for its variety of biological activities, together with its metabolites. However, these biological investigations have to deal with the scarce quantity and difficult isolation of pure compounds present in the natural matrices.

In this context, we focused our attention on the development of sustainable chemical processes ("green" extractive chemical approaches and/or enzymatic bioconversions) for the recovery, valorization and production of high value-added molecules starting from vine-wine supply chain. The proposed strategy aims to the search and chemical characterization of active antimicrobial and antioxidant stilbenoids in a "circular economy" approach,4 allowing at the same time a stable and consistent source of supply.

FAR-PO-036. Towards the development of a machine learning potential for Mg metal binding sites in proteins and nucleic acids.

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Rational drug design is facilitated by computational tools that enable precise predictions of interactions between small molecules and biological targets, including proteins, DNA, and RNA. In this context, a particular challenge is the modelling of metal ions, among which magnesium ions are of particular interest due to their essential role in numerous biological processes such as RNA folding and enzymatic catalysis. Molecular mechanics (MM) force fields often fall short in correctly representing the interactions of magnesium ions with their ligands, while quantum mechanics (QM and QM/MM) methods remain computationally demanding1,2. In recent years, machine learning demonstrated to be a powerful approach to constructing various forms of atomistic potentials. However, the extension of this approach to include metal ions is challenging, due to the highly diverse nature of the ligands and coordination geometries. To

address this gap, we assembled a comprehensive dataset of magnesium organometallic complexes collected from the Protein Data Bank and the Cambridge Structural Database. Quantum chemical calculations at the wb97x/6-31g* DFT level of theory allowed to complement publicly available datasets of molecules built from second row elements. This data is used to run a first transfer learning experiment on a new network, dubbed OBIWAN3, that we recently developed.

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ORG-PO-030. Covalent functionalization of reduced graphene oxide improving its dispersibility in P3HT to obtain composite Hole Transporting Materials for Perovskite Solar Cells

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Enhance the efficiency and device's reproducibility of perovskite solar cells (PSC) is a largely pursued goal. Improving the long-term stability of hole transporting materials (HTM) is a key strategy to bring PSC closer to their practical application.

We synthesized and characterized reduce graphene oxide (RGO) derivatives with the aim of increasing the stability and homogeneity of their dispersion within a poly(3-hexylthiophene) (P3HT) HTM. In principle, RGO and P3HT have the potential to establish π–π stacking interactions between their individual delocalized π electrons clouds, which can make their composites highly stable, but unfortunately this does not often occur due to the stronger tendency of pristine nanostructures to self-aggregate compromising the homogeneity of their dispersion within a polymer matrix.

Goal of chemical functionalization of RGO is therefore to promote interactions with P3HT, by choosing appropriate functional groups, while avoid an excessive disruption of the RGO native electronic structure.

ABC-PO-013. Safe by design assessment of a multi-component nanomaterial embedded in a cement mortar for photocatalytic NOx degradation

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Within the European Green Deal, the Chemicals Strategy for Sustainability (CSS) identified several actions to reduce negative impacts to human health and the environment related to chemicals, materials, products and services in the European Union (EU). The EU CSS action plan envisions the development of a framework to define Safe and Sustainable by design (SSbD) criteria for chemicals and materials with the aim to reduce greenhouse gas emissions by 55% by 2030 from 1990 levels. Therefore, according to a SSbD framework developed by the Joint Research Centre1, the safety assessment of the SiO2@ZnO multi-component nanomaterial (MCNM) embedded into a cement mortar for NOx degradation was performed, defining specific safety criteria highlighted here below. First, in line with step 1 of the framework, the hazard assessment of the MCNM was carried out by i) investigating the physico-chemical identity of both the individual NMs and the MCNM, ii) assessing the hazard of the precursors for the MCNM synthesis and iii) evaluating the cytotoxicity of both the individual components and the MCNM through in vitro testing. Physico-chemical characterization showed that the mesoporous SiO2 core present an incomplete coating of a thin layer of ZnO, did not impacting on the overall SiO2 size, but reducing the surface area covering the surface pores. As far as the hazard assessment of MCNM precursors is concerned, while SiO2 NM powder was considered a non-hazardous substance according to the present classification, ZnAc2·2H2O showed both health and environmental hazards, (i.e., acute toxicity, serious eye damage and long-term chronic aquatic hazard). Moreover, the in vitro hazard screening using THP-1 cells to inform the early innovation stages suggested the hazard of the MCNM was comparable to ZnO NM. Afterwards, according to step 2 of the framework, human health and safety aspects of the MCNM-based material were also investigated. Starting from the very early stage of the design phase, a questionnaire-based standard industrial hygiene survey showed that a release of nanoscale particles into the workplace air could not be excluded during synthesis. This required an occupational exposure assessment of three different exposure scenarios selected through the survey, i.e., material synthesis, calcination and MCNM-based mortar formulation. The results showed that particles concentration was always lower than the recommended limit values (Recommended Benchmark Level – RBL, or nano reference values – NRV) proposed by international bodies2. Lastly, as proposed in the final application/use phase of step 3 of the framework, an environmental exposure assessment was carried out, investigating the potential release of inorganic elements constituting the MCNM-based mortars in ultrapure water, following ISO 2812:2018 for mortars' immersion conditions and EN 12457-3:2004 for leaching evaluation. No or negligible release of Zn and Si was recorded, indicating that their potential exposure is unlikely once the MCNM is embedded into the mortars. In conclusion, the safety assessment of this MCNM through the SSbD framework helped in identifying safety criteria, providing useful information on their risk profile for future assessment of their sustainability.

FAR-PO-018. Isocyanide: A Paradigm Shift in Medicinal Chemistry

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The isocyanide stands out as an intriguing entity, owing to its chameleonic reactivity that has made it a widely utilized reactant in organic synthesis, especially in multicomponent reactions (MCRs). Despite its pivotal role in the biological activity of natural compounds, isocyanides have historically been overlooked by medicinal chemists due to misconceptions about their toxicity, reactivity, and metabolic instability. Additionally, the structural complexity and limited availability of natural isocyanides have contributed to this neglect. However, our recent investigations have revealed that, under specific molecular contexts, the isocyanide group can resist human metabolism and show promise as a pharmacophoric group in medicinal chemistry.1 Notably, its unique attributes, such as its ability to act as a hydrogen bond acceptor with a high dipole moment, to serve as a π hole acceptor, and to function as a metal coordinating agent, coupled with its chemical inertness to major nucleophiles present in the organism at room temperature, render it an aggressive pharmacophore.

Therefore, our aim is to systematically utilize the isocyanide as a pharmacophoric group, integrating it into chemically straightforward and expeditiously synthesized structures, with the goal of deploy them in medicinal chemistry screening campaigns, particularly within the domains of antimicrobial and oncological research.

As a demonstration of the potential of the isocyanide group in drug discovery, we have developed a one-pot synthetic strategy to generate molecules containing an isocyanide warhead group using either a Ugi or Passerini MCR. Many of these isocyanides demonstrated potent antibacterial activity against the multidrug-resistant strain Staphylococcus aureus MU50, which is resistant to vancomycin, the antibiotic of last resort. These compounds do not exhibit any cytotoxicity on human cell lines at concentrations up to 100 times their MICs values and preliminary in vivo studies on a C. elegans model have confirmed their efficacy and safety.

In the oncological field, we are employing isocyanides to hit various targets important for tumors. For instance, by harnessing their significant ability to coordinate heme iron, we have developed isocyanides capable of inhibiting cytochrome CYP4A11, implicated in different types of cancer. Some of these compounds, besides demonstrating potent inhibitory capacity (IC50 = 57 nM), have also shown excellent selectivity towards other cytochrome isoforms.

Therefore, the use of the neglected isocyanide as a pharmacophoric group could potentially determine a paradigm shift in the treatment of multidrug-resistant infections and it can provide new treatment opportunities for oncological pathologies.

ORG-PO-171. New Electrochemical Manipulations of Tropones: Selective Alkylation Strategies

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Tropones are seven-membered-ring ketones belonging to the class of non-benzenoid aromatic molecules, that can be encountered in a variety of naturally occurring compounds and constitute a unique platform in the total synthesis of complex scaffolds.Despite this undoubted interest, direct and site-selective protocols for the tropone skeleton decoration are still rare and scattered in scope.

Herein, as part of our ongoing interest on electrochemical organic transformations, we present two different innovative electrochemical strategies for the direct functionalization of tropones. Firstly, we have developed a general α-alkylation of tropones via a “radical approach”, utilizing a metal-free C(sp2)-C(sp3) cross coupling manifold. This process relies on an activated form of tropolone undergoing the addition of nucleophilic radicals, generated by the electrochemical reduction of N-hydroxyphthalimide esters. Secondly, we are currently pursuing an α-benzylation of tropones through a Ni-catalyzed electrochemical cross-electrophile coupling between aldehydes and substituted tropones.

FAR-PO-110. FPR2 and brimstone: a novel approach for the treatment of neuroinflammation

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Neurodegenerative diseases like Parkinson’s Disease and Alzheimer’s Disease involve several pathological phenomena that result in a diffuse neuroinflammatory state, exacerbating tissue damage via oxidative stress. Neuroinflammation is a multifaceted pathological factor involving several cell types, receptors, and mediators, and its resolution could help alter disease progression [1].

Formyl Peptide Receptor 2 (FPR2) is a G protein-coupled receptor (GPCR) expressed in microglia. It controls several aspects of the immune response and could thus be a key target for the resolution of neuroinflammation. Our research efforts have resulted in developing the ureidopropanamide class of FPR2 agonists [2].

We have set out to enhance the anti-inflammatory capabilities of these compounds by incorporating an H2S-releasing moiety into their scaffold. H2S is a gaseous neuromodulator and neuroprotector, regulating calcium influx and exerting anti-inflammatory and antioxidant effects at low doses [3]. Thus, the ureido and amide moieties of our compounds were converted into the corresponding thioureas or thioamides.

These compounds were tested as FPR2 agonists, for their capacity as H2S releasers, and their neuroprotective activity in models of neuroinflammation, showing a promising activity profile and demonstrating their potential as lead compounds for a new generation of anti-neuroinflammatory drugs.

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ALI-PO-006. Phenolic fraction from palm oil and grape seed oil

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Palm oil (PO) derives from the palm tree fruit (Elaeis guineensis) and it is the most widely produced and consumed vegetable oil in the world. The palm tree accounts for the smallest percentage (5.5%) of all the cultivated land for oils and fats globally, but produces the largest percentage (32%) of total output. It is strongly debated due to environmental and nutritional issues, as it has a 1:1 ratio of saturated and unsaturated fatty acids. However, there are a number of studies in literature that do not support some of these assumptions.1 Grapeseed oil (GSO) is extracted from grape seeds. The percentage of extractable oil varies according to the cultivar. It is particularly known for its beneficial properties, attributable to its high content of polyunsaturated fats and antioxidant compounds.2 Herein, the phenolic fractions extracted from PO and GSO samples were investigated and their characterization is reported.

The extraction of the phenolic fraction from POs and GSOs was achieved in an ultrasonic bath by using a methanol/water solution (80/20, v/v) as the extraction solvent. Total phenolic content (TPC) was evaluated by using Folin-Ciocalteu method, and the results are expressed as mg GAE (gallic acid equivalents) / 100 g oil. The analyses for the determination of phenolics were carried out using an HPLC system, equipped with a Discovery C18 chromatographic column, coupled to an MSD API 4000 Q-Trap model mass spectrometer.

A higher amount of phenolics was observed in POs than in GSOs. In fact, TPC values were in the range 8.74 – 30.54 mg GAE / 100 g oil for PO samples and 0.21 – 0.90 mg GAE / 100 g oil for GSO samples.

Among the individual phenolics, simple phenols, phenolic acids and flavonoids were identified and quantified in both series of samples. The most abundant were: hydroxytyrosol, whose amount ranged 13.80 – 42.8 mg / kg oil for POs and 0.9 – 1.3 mg / kg oil for GSOs, while tyrosol ranged 2.74 – 8.12 mg / kg oil for POs and 1.25 – 1.4 mg / kg oil for GSOs; caffeic acid, whose amount ranged 11.08 – 45.58 mg / kg oil for POs and 1.013 – 1.3 mg / kg oil for GSOs (and it was lower than LOD in same GSO samples); apigenine, whose amount ranged 7.68 – 43.5 mg / kg oil for POs, while it was never found in GSOs; m-coumaric acid, whose amount ranged 7.82 – 45.20 mg / kg oil for POs (and it was lower than LOD in many PO samples) and 5 – 11 mg / kg oil for GSOs.

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FAR-PO-100. In-Silico Research of σRs/HDACs Multi-Target Ligands

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Multi-Target-Directed ligands (MTDLs), with more than one pharmacological activity, are more efficient than single-target ligands, particularly for the treatment of multifactorial diseases such as cancer and neurodegenerative diseases. Sigma receptors (σRs) and histone deacetylase enzymes (HDACs) are under much attention due to their involvement in these diseases.Therefore, the design and synthesis of multi-target σRs/HDACi ligands were conceived for their possible use in addressing these pathologies.

The project uses computational tools to research molecules with hybrid activity for σRs and HDACs. First, the docking procedure was validated, ensuring that it reproduces the experimental Ki of known molecules, testing the method with decoys, and calculating the simulated Ki of other reported σRs and HDACs ligands.

Meanwhile, the Pharmacophore-Based Virtual Screening (PBVS) of many databases was accomplished using the Pharmit server; for all targets, the results were filtered through the Lipinski rule of five and ADMET properties and collected in a database for σRs and one for HDACs. The resulting databases were further analysed through PBVS to the other target. Molecules matching both σRs and HDACs PBVS were processed through docking simulation with YASARA. Results were carefully analyzed visually through BIOVIA Discovery Studio and selected for their fundamental interactions.

One hundred compounds were found with a high score for σRs and HDACs. From the literature some of the resulting molecules have already correlations with the σRs or HDACs, but none was studied for multi-target activity on both targets, and many of the resulting compounds are unrelated to these targets. These results will be further validated with molecular dynamic simulation, and best three compounds will be tested in vitro.

ORG-PO-031. Pirfenidone-Containing Dual Conjugates Targeting αVβ6 Integrin as New Potential Antifibrotic Agents

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Idiopathic Pulmonary Fibrosis (IPF) is a rare, chronic, and fibrotic lung disease, characterized by a median survival after diagnosis around 3-5 years. Pirfenidone is one of the two drugs approved for the treatment of IPF, although i) its mechanism of action is not completely clear; ii) it just slows down the disease progression; iii) it causes several off-target side-effects.1 Thus, research in finding new drugs against IPF is widely active, and several biological targets are currently under investigation as new markers. The αVβ6 integrin is one of these targets, as it is overexpressed in IPF being involved in activation of the principal pro-fibrotic mediator, TGFβ, and it may be exploited both for the selective delivery of an antifibrotic drug, and as therapeutic target.

Based on this evidence and on the promising results of our previous work on integrin-based conjugates as antifibrotic agents,2 the aim of this project is the construction of new covalent conjugates embedding an αVβ6 integrin-targeting ligand and a pirfenidone unit. Three covalent conjugates (Figure 1) were designed and synthesized, constituted by a pirfenidone-like moiety (depicted in blue), which is linked to the integrin-targeting aminoproline-based cyclopeptide (depicted in red) by means of a robust triazole-based linker (depicted in black). The synthesized compounds will be tested towards activated fibroblasts, also with the aim of better elucidating the mechanism of action of pirfenidone, paving the way to the development of potential targeted antifibrotic drugs.

ORG-PO-241. In-vitro and in-vivo Antifibrotic Efficacy of a Nintedanib-Containing Dual Conjugate Targeting αVβ6 Integrin

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Idiopathic Pulmonary Fibrosis (IPF) is a fibrotic lung disease in which the deposition of collagen within the pulmonary interstitium causes stiffness in the lungs and compromises the respiratory function. The decline is progressive and irreversible. Nintedanib, a tyrosine kinase inhibitor able to block the signaling of several growth factors receptors (GFRs), is one of two drugs nowadays approved as pharmacological treatment of IPF, that only slows down the progress of the fibrotic process. The αVβ6 integrin is overexpressed in fibrotic tissue and is the major activator of transforming growth factor-β (TGFβ), the principal pro-fibrotic mediator, that stimulates proliferation of fibroblasts, their transition into myofibroblasts and the deposition of collagen. For this reason, αVβ6 integrin has been recently recognized as a possible IPF marker and therapeutic target1. Our group recently synthesized six dual conjugates2 in which the αVβ6 integrin-recognizing moiety c(AmpLRGDL) and a nintedanib portion were connected through different types of uncleavable linkers, with the aim of delivering nintedanib to the fibrotic tissue and inhibiting TGFβ activation. In particular, compound 1 (Figure 1) gave promising results in preliminary biological assays, thanks to the contribution of both active units (nintedanib and integrin ligand).

This communication will report on recent advances in the biological evaluation of dual covalent conjugate 1 both in-vitro on human fibroblasts from IPF patients and in-vivo on IPF-like mouse model.

Figure 1: Dual conjugate 1 and its schematic interactions with αVβ6 integrin and GFRs.

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IND-PO-050. Innovative and recyclable magnetic catalyst for the development of a sustainable reductive catalytic fractionation process of raw poplar wood sawdust

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Fractionation of 2nd generation lignocellulosic biomasses is an essential step for biorefinery strategies to isolate and fully exploit cellulose, hemicellulose and lignin for the production of materials, fuels and chemicals. One of the most promising strategies aimed to lignin valorisation is based on the extraction, depolymerisation and simultaneous stabilisation of this fraction towards the production of low molecular weight lignin oil through the so called Reductive Catalytic Fractionation (RCF).1 RCF is a catalyst dependent process capable of producing phenolic compounds and hemicellulose-derived polyols while preserving the carbohydrate cellulose pulp in the presence of a reducing agent, generally hydrogen. Supported noble metal catalysts over carbons or Al2O3 were found to be active;1 however, one major issue, often underestimated, is represented by the inefficient catalyst recovery from the fibrous cellulose pulp which limits catalyst recyclability thus dramatically impacting the economic sustainability of the entire process at larger scale.2

For this reason, we developed a novel magnetic catalyst based on supported ruthenium oxide over maghemite (RuO2/γ-Fe2O3), which behave as suitable precursor of the actual, in situ obtained, 5%wt Ru/Fe3O4 active phase for the RCF. The performances of this system, in terms of delignification of cellulose, lignin oil yield and catalyst recovery, were compared with the one obtained with a commercial 5 wt% Ru/C, considered as a benchmark. A simple, lab-scale, magnetic recovery procedure allows to obtain around 94% of recovery efficiency after the first reaction cycle (while the liquid-liquid extraction reported in literature to recover the Ru/C catalyst only led to 10% of recovery). Ru/Fe3O4 allows to obtain excellent delignification efficiency, with the concomitant formation of a highly pure cellulose pulp. On the other hand, both the lower surface area and bigger Ru nanoparticles compared to Ru/C, limit lignin depolymerisation efficiency to phenolic monomers. Preliminary recyclability tests have proven the stability of our catalyst for at least 3 RCF cycles. This innovative approach through the implementation of an active, magnetic, catalyst, never reported in literature in a RCF processes, shows great potential thanks to its good recyclability and its ability to produce very high-quality cellulose pulp together with relatively low MW lignin oil, therefore it was patented.

MUR is acknowledged for the financial support provided through the ENCAPSULATE project, PRIN-Bando2022 (2022KTAH2L).

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ORG-PO-032. Synthesis and Characterization of New Mono- and Bis-Alkylated Iminosugars to Study Their Endo-Cavity Complexation with Water-Soluble Prismarene Hosts as pH-Responsive Pharmacological Chaperones

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Gaucher disease (GD), the most prevalent lysosomal storage disorder, arises from a genetic anomaly in the GBA gene, causing misfolding of acid-β-glucosidase (GCase) enzyme. The mutation in GCase perturbs its trafficking to the lysosomes leading to substrate accumulation which in turn determines severe systemic symptoms. A promising therapeutic approach is the Pharmacological Chaperone (PC) Therapy1, which utilizes enzyme inhibitors, such as iminosugars, as folding templates to restore GCase trafficking and thus endogenous enzyme activity. The affinity of the PC to the enzyme should be higher in the endoplasmic reticulum (pH = 7) and lower in the lysosome (pH = 4.5) to allow the natural substrate entering the catalytic site, thus maximizing the therapeutic efficacy. Aim of this study is to develop innovative PCs for GD based on smart host-guest systems responsive to the physiological pH fluctuation (Figure 1). In this context, the synthesis of mono and bis-alkylated-iminosugars with piperidine and pyrrolidine skeletons was carried out, starting from cost-effective carbohydrates. The alkylation was carried out either on the nitrogen atom, on the alpha carbon neighbouring the nitrogen atom, or on both positions (bis-alkylated) to guarantee the affinity with GCase. The endo-cavity complexation of these bioactive compounds with water-soluble prismarenes2 will be studied at different pH values by NMR or Fluorescence titration experiments.

ALI-PO-009. Fortified food: chemical characterization of pressed ovine cheese added with different percentages of Moringa oleifera powder

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Moringa oleifera is a plant distributed in many tropical and subtropical countries and represents a precious source of bioactive molecules with numerous health benefits 1,2. The experimental plan involved the production of a control cheese and two experimental fortified cheeses, obtained by adding commercial Moringa powder to the curd at a percentage of 1% and 2% (w/w). The samples (Moringa powder, freeze-dried ovine's milk, freeze-dried control and 1% - 2% fortified cheeses) were subjected to chemical characterizations on the lipid, phenolic, microbiological and sensorial profile. The microbiological analyses highlighted the absence of the main pathogens of dairy interest and the dominance of Lactococcus lactis added as starter cultures. Analyses carried out on samples, showed promising values of antioxidant activity, with a range of values equal to 0.82 – 1.35 mmol TEAC/100g for the ABTS test and 0.99 – 1.21 mmol TEAC/100g for the DPPH test, highly superior to cheese control (0.11 – 0.06 mmol TEAC/100g, respectively). Interesting values regarding the total phenolic content (TPC), equal to 2.01 and 2.72 mgGAE/g for the 1% and 2% fortified cheese, respectively, and higher than the control (1.19 mgGAE/g), were highlighted. GC/MS analyses did not reveal a particular increase in unsaturated fatty acids compared to the control cheese. The UHPLC-ESI MS/MS analyses involved the search for phenolic compounds in the freeze-dried cheese samples; cheese fortified with 2% Moringa powder was richer in polyphenols than the control; in particular, chlorogenic (23.62 mg/100g), caffeic (3.07 mg/100g), ferulic acid (14.38 mg/100g) and quercitrin (34.79 mg/100 g) were higher than cheese produced only with ovine's milk, which had lower concentrations of chlorogenic acid (0.51 mg/100g), caffeic acid (1.15 mg/100g), ferulic acid (0.254 mg/100g). Quercitrin was not detected in control cheese. The addition of Moringa powder did not negatively impact the judges' overall level of appreciation. This fortification therefore represents an optimal strategy to enhance Sicilian sheep's milk through the production of innovative dairy products, rich in bioactive molecules and with a longer shelf-life thanks to the presence of antioxidant compounds.

ANA-PO-019. Differential proteomics from blood cells of long-lived individuals: identification of molecular determinants related to aging and related diseases.

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In recent years the growing interest on human aging and longevity has promoted the establishment of an international scientific pole for research on aging. The main objective of this research network is to prolong human life and preserve its quality in term also of biological state. Understanding the molecular mechanisms of aging is crucial for developing new therapeutic approaches to improve health and quality of life. Changes associated with aging may involve alterations in protein structure and function, accumulation of harmful or altered proteins, post-translational modifications, and changes in the composition and activity of protein complexes. These

alterations can impact various essential biological processes, such as metabolism, cellular homeostasis, stress responses, inflammation, and immune system function.

This study aims to identify such potential blood cell biomarkers conduct a differential proteomic analysis of erythrocytes from cohorts of individuals of different ages. The goal is to characterize the differences and similarities of each group qualitatively and quantitatively at the molecular level.

Extraction protocols and analysis were first carried out on Mus musculus as animal model system. Whole blood cells from the blood samples of young (6 months), middle-aged (12 months), and aged (30 months) mice were collected, and the proteinaceous content of membrane was extracted and fractionated. Identification of potential biomarkers related to membrane proteins was performed using untargeted LC-MS/MS Proteomics Analysis. Raw data were processed by using MaxQuant software and output files were subsequently processed using STRING to integrate all known and predicted associations between up- or down-regulated proteins.

Several of the identified proteins differentially expressed play a key role in physio-pathological processes, such as PSMD3 that is involved in maintenance of protein homeostasis by removing misfolded or damaged proteins. Finally, a similar strategy was set up on human blood samples to confirm the accuracy of the model.

Overall, this study reveals potential blood cell-protein biomarkers of aging and explains the possible correlation between the biomarkers and some processes related to immune system or metabolic pathways. The reported data provide a piece to unravel the complex puzzle related to aging processes and to assist basic research that requires multiple, interdisciplinary approaches on the study of human longevity.

ALI-PO-029. Direct Analysis in Real Time: untargeted vs targeted approaches for the preservation of high-quality Italian Extra Virgin Olive Oil

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One of the most significant sources of "healthy" fats and bioactive compounds in the Mediterranean diet is extra virgin olive oil (EVOO). Due to its unique nutritional and sensory characteristics and high commercial value, it remains a primary target for fraudulent activities. Within this context, the present study aimed to establish a fast and reliable method to differentiate and valorize top-quality Italian EVOOs, thus preserving the national product against mislabeling practices. A cost-effective and user-friendly approach has been developed using an ambient mass spectrometry (AMS) ion source, specifically Direct Analysis in Real Time (DART) coupled with a compact single quadrupole MS analyzer, to characterize major and minor compounds in EVOOs. An untargeted approach based on the analysis of EVOOs in their native form and a targeted method involving a solid phase microextraction (SPME) of phenolic compounds prior of the analysis, were explored and evaluated in terms of rapidity of the analysis, cost-effectiveness, “greenness profile” and type of delivered information. Moreover, MS spectra were used to create a spectral database and statistical models useful to clusterize and classify EVOOs according to geographical origin and cultivar, as main factors determining their nutritional and sensory profiles. Targeted and untargeted strategies were also compared in terms of sample clusterization into the chemometric space and prediction capability of the statistical models as well as correctness of the real-time and playback identification of “unknown” samples. The targeted method provided the model with the highest correctness score, higher than 90%, despite the high intra-class variability (more than one olive cultivar, in different ratio, can be used for the production of the same PDO EVOO or the same PDO EVOO can come from different close territories) and low inter-class variance (all Italian top-quality EVOOs).

ANA-PO-132. A fast RP-HPLC-QqQ-MS method to identify and quantify 36 Oxygen Heterocyclic Compounds in Citrus-based products

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Oxygen Heterocyclic Compounds (OHCs) are a group of secondary plant metabolites mainly represented by coumarins (Cs), furocoumarins (FCs) and polymethoxyflavones (PMFs). These molecules are characteristic of Citrus fruits, often employed to flavour foods and cosmetics. Unfortunately, these molecules can cause harmful effects by ingestion and following exposure to UVA. So, coumarin content is regulated both in food and cosmetic, while FCs content is regulated only in cosmetic products1,2,3. For these reasons, over the years differents analytical approaches were applied to determine OHCs in Citrus products (GC-FID, HPLC and SFC coupled with UV, fluorimeter, or mass detectors). These methods involve long analysis times or the use of toxic solvents.

Therefore, this work will focus on the development of a fast and more eco-sustainable liquid chromatography tandem mass spectrometry method (HPLC-QqQ-MS) to determine OHCs in complex matrices. The analyses were carried out on a liquid chromatographic Nexera X2 system coupled with a triple quadrupole mass spectrometer LCMS-8060 (Shimadzu Europe, Germany) via an APCI interface, set in positive ionization mode. Water and Ethanol were employed as mobile phase A and B, respectively; the column was an Ascentis Express C18 (50 x 2.1 mm, 2.7 µm) (Merck, Darmstadt, Germany). The quantitative characterization was based on calibration curves built in Multiple Reaction Monitoring (MRM) acquisition mode for each target. Method validation was performed in terms of linearity range, limit of detection (LoDs), limit of quantification (LoQs), repeatability, and accuracy.

The proposed analytical method allowed to determine 36 OHCs in 3.5 minutes with a consumption of about 3 mL of ethanol per analysis. LoDs and LoQs were less than 1 ppb for most target compounds. So, this method can be used to quantify OHCs, contained also at trace levels, in Citrus products.

FIS-PO-045. Perovskite-based high-entropy materials by solid-state microwave-assisted synthesis

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In the last decade the high-entropy materials (HEM) aroused hype in the scientific community1 due to their versatility and properties tunability for a wide range of application, such as energy storage, catalysis, solar energy harvesting2 among others. We refer to “high-entropy material” as a defined compound obtained by the combination of five or more elements (not as dopant), whose synergistic interaction, i.e. cocktail effect confers original properties respect to a pure metal or precursor3. However, the further addition of atoms in a crystalline structure causes a distortion of the lattice, due to the difference in the atomic radii. Therefore, the formation of HEM, should lie on crystalline structures that are more prone to perturbation, in order for new atoms to be host. Perovskites (general formula = ABO3) come to the rescue, since they feature two cation sublattice sites, which make the structure more flexible and therefore they could be employed as building block for the HEM.

HEM are usually prepared by solid-state reactions, through mechanical treatment, sintering or a combination of both4. Especially for high-entropy oxides, the sintering step is necessary, which is indeed the most energy-consuming process. Alternatively, the heat treatment could be replaced by the microwave-assisted heating that dramatically decreases the amount of required power, given the reduced processing time5. In addition, such a high-heating-rate process provided by solid-state microwave syntheses (MWS) promotes non-equilibrium reactions, effectively achieving metastable phases such as the HEM.

In this work, the MWS is employed to obtain various perovskite-based HEM. The reference structure is BaTiO3, where the perovskite B site (Ti) was partially substituted from three different elements in the same ratio: Ba(Ti0.25Zr0.25Y0.25Hf0.25)O3. To get to this phase, a crucial role is played by the tuning of the MWS parameters, such as heating rate, dwelling time, and final temperature, which could also provide multiple formation pathways, through intermediate phase as Ba1.08Y0.11Hf0.91O3, as confirmed by ex situ X-ray powder diffraction (PXRD). The effects of syntheses conditions are also investigated by scanning electron microscope (SEM) and Energy Dispersive X-ray Analysis (EDX), to evaluate both morphology and homogeneity of the final products, which are key parameters for the overall performance of the HEM.

INO-PO-018. Unexpected assembly of hexanuclear macromolecular complexes obtained under ball-milling conditions

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IUPAC defines a mechanochemical reaction as “a reaction that is induced by the direct absorption of mechanical energy” and lists mechanochemistry as one of the "Ten Chemical Innovations That Will Change Our World"[1]. The popularity of mechanochemistry is rapidly growing owing to its low environmental impact deriving from the reduced amount of solvent employed and the possibility of reaching new compounds isolable only under mechanochemical conditions [2]. Herein, we present the unexpected self-assembly of hexa-nuclear Zn-complexes synthesized using ball-mill grinding techniques, along with their solid-state structural characterization.

The reaction between zinc acetate, isonicotinamide, and a 4-X-substituted benzoic acid (X = Cl, Br, I) were conducted by means of a vibrating ball mill resulting in the formation of species containing six tetrahedrally coordinated zinc nuclei arranged in a crown fashion.

Isonicotinamide and benzoate ligands act as monodentate ligands, while the acetate bridges two metal atoms. This unprecedented type of assembly is a clear example of how mechanochemistry can give access to unexpected reaction routes and new types of products that are difficult to isolate by solution based synthesis.

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ANA-PO-021. Multiplexed biosensing with smartphone-based bioluminescent tissue on-a-chip

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Living cells used as sensing systems have proved to be valuable tools for prediction of the physiological response to drugs, chemicals, and samples in complex matrices, which toxic effects and specific biological activities can be evaluated in a straightforward manner. Thanks to their predictivity, 3D cell models (i.e. spheroids, organoids and microtissues) are replacing conventional 2D cell cultures, enabling to recapitulate the extracellular matrix and cell cell interactions, creating an architecture that reflects native morphology of organs and tumors. Bioluminescent reporter assays represent the gold standard for high throughput screening assays employed in drug discovery and BL proteins showed a formidable tool for elucidating the biological mechanisms underlying morphogenetic and pathogenetic processes and for unravelling molecular pathways involved in the etiopathogenesis of several diseases.

According to the three key pillars of the organ on a chip technology, we developed a bioluminescent tissue on a chip with different cell lines (i.e., human embryonic kidney (HEK293T), human cervical cancer (HeLA)) genetically engineered with newly developed luciferase mutants emitting at different wavelengths and characterized by high stability,1,2 implemented in a microfluidic system for multiplexed

biosensing. Thanks to 3D printing technology a cell cartridge and an adaptor were developed to provide a mini dark box interfaced with portable light detectors for BL signal acquisition.

The proposed biosensing platform could become a useful tool for multiple bioactivity analysis, for on-site screening of toxic substances, prioritizing samples for more accurate chemical analyses.

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ORG-PO-033. Application of quinoxaline emitters, through luminescent downshift (LDS), in photovoltaic devices

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The aim of moving towards a sustainable global economy and a future without fossil fuels has driven researchers to seek new methods for producing and storing energy. Harnessing solar energy to generate power through photovoltaic technology is an economical, stable, and clean method. However, currently available photovoltaic panels are black or blue and therefore not suitable for all environments. In this work, we report the synthesis of new organic fluorophores with LDS properties, which once dispersed in PMMA can be used as Luminescent Solar Concentrator (LSC), colored optical devices that can be used in alternative contexts to traditional photovoltaics. With this in mind, a series of quinoxaline emitters was designed for maximum absorption wavelength between 500 and 600 nm.1 The emitters were expeditiously prepared following a direct arylation protocol and extensively characterized by spectroscopic analyses and computational studies. They present high light harvesting ability in the green region of the visible spectrum and good emission properties, which were fully retained in the solid state when embedded into a PMMA matrix. Devices constructed with these materials could thus be used in greenhouses because they are transparent in the radiation used by plants and they can convert the remaining visible radiation into electrical energy. The tailored properties of these materials allowed us to prepare LSC devices with promising efficiencies, ηdev up to 0.43%. More broadly, this study highlights the use of organic emitters as a convenient strategy in the development of green-light selective LSC devices for their integration into agrivoltaic technologies.

FAR-PO-052. Antioxidant-based 8-amino-1,2,4-triazolo[4,3-a]pyrazin-3-ones: new adenosine A2A receptor antagonists as neuroprotective agents in cerebral ischemia

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Adenosine A2A receptor (AR) antagonists and antioxidant derivatives showed neuroprotective activity in animal models of cerebral ischemia.1,2 Thus, to obtain new neuroprotective agents endowed with potentiated effect, a set of 8-amino-1,2,4-triazolo[4,3-a]pyrazine-3-ones were designed as hybrid compounds of our previously reported human (h)A2A AR antagonist A3 (Ki= 13 nM) and antioxidants, such as edaravone (EDA), a drug clinically used after ischemic stroke, and lipoic acid (LA). On the whole, the new derivatives proved to be potent hA2A AR antagonists (Ki= 2.4-91 nM), and selective versus A1, A2B and A3 ARs. The EDA-hybridized compounds showed antioxidant activity comparable to EDA (DPPH test). Selected triazolopyrazines proved to be effective in preventing irreversible blockade of neurotransmission and in decreasing neuronal damage induced by oxygen and glucose deprivation in the CA1 region of rat hippocampal slices. Molecular docking studies showed the best binding pose of these derivatives with the 2-phenyl ring positioned in the depth of the receptor cavity and the 6-substituent at the entrance, and oriented toward the extracellular environment.

Figure 1

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ABC-PO-019. Exposure assessment of plant protection products in the Northern Adriatic Sea: emission inventory and environmental modelling

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Plant protection products (PPPs) are formulations mainly used to keep crops healthy and prevent them and their products from being destroyed by diseases and/or infestations, thus contributing maintain high levels of food production. These products include fungicides, herbicides, insecticides, plant growth regulators, and pest repellents. The toxicity of these chemicals towards humans and animals is quite lower with respect to that against target organisms, but there are still direct and indirect toxic effects on non-target organisms that

are not fully understood yet. Moreover, the monitoring of the most recently developed PPPs in the environment is still limited, especially for coastal waterbodies. The use of predictive exposure models has been identified as a complementary, cost-efficient tool to support the investigation of the behaviour and environmental fate of these contaminants and the assessment of associated risks.

The Northern Adriatic is a narrow and shallow sea, where the variety of temperature, salinity, and sedimentation patterns leads to the presence of different and unique habitats for marine species. This area is also subjected to pollution loads from both point and diffuse source. In particular, agricultural activities can affect water and sediments quality due to both nutrients and chemical pollutants loads.

The aims of this work, developed within the iNEST project, are: (i) to develop an emission inventory of several PPPs in the study area, (ii) to use state-of-the-art modelling tools to investigate the environmental distribution and fate of these contaminants in the Northern Adriatic Sea, with particular attention to the processes involved in their natural attenuation, and (iii) to define a risk-based priority list of contaminants specific to the case study area, taking into consideration the overall mass balance of the target pollutants.

The emission inventory was developed by integrating PPPs sales data obtained from Regional authorities within the Northern Adriatic drainage basin with river flow, land-use and geographical information through statistical data treatment and GIS-based spatial analysis. In addition, a preliminary modelling exercise was carried out by applying the newly-developed ChemicalDrift model1, a chemical transport module part of the open-source Lagrangian framework OpenDrift.

ORG-PO-034. Prismarene macrocycles as chirality sensors

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Chiral recognition is gaining significance across multiple fields such as biochemistry, clinical and medicinal chemistry, natural product chemistry, and environmental chemistry. Identifying the structure and enantiomeric composition of chiral molecules is crucial for their detection and comprehension of their behaviour in both the environment and living organisms. One of the most promising methods for chirality sensing and detection is the use of stereodynamic chiroptical probes.1 These probes consist of achiral or racemic compounds which adopt a preferred chiral conformation when interacting with a chiral analyte, thereby generating a CD signal from which the absolute configuration and/or enantiomeric excess of the analyte can be determined.2 Some of us recently introduced prismarenes,3 a novel class of macrocycles able to form inclusion complexes with cationic guests. These macrocycles can assume enantiomeric chiral conformations and it has been shown that inclusion of chiral enantiopure guests induces formation a preferred host enantiomer, as evidenced by characteristic CD spectrum features.4 The presence of numerous aromatic chromophores on the macrocycles facilitates the detection of UV and CD silent chiral compounds, termed “cryptochiral”, due to their ability to produce easily detectable CD signals. We report herein the study of the chiral induction in the host-guest complexes between different chiral compounds and prismarenes PrS[5]Me and PrS[6]Et using CD spectroscopy, eventually applying this approach to determine the enantiomeric composition of scalemic mixtures.

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ORG-PO-035. Applications of carbon nitride-perovskite composite materials as heterogeneous photocatalysts in C-C bond formation and oxidation processes

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Grafitic carbon nitride-based materials (general formula: g-C3N4) are commonly used as photocatalyst (PCs) working via single-electron transfer (SET) in several applications, ranging from fuels production to synthesis due to their ease of preparation, low cost and light absorption in the visible light range.1 Heterojunction design can improve the redox properties of g-C3N4 (in particular, the carrier lifetime) and metal halide perovskites (MHPs) resulted to be effective semiconductors to be coupled to g-C3N4 in composites.2 Herein, we devised and prepared the g-C3N4/Cs2AgBiCl6 and g-C3N4/CsPbCl3 composite systems, considering the good energy alignment between the two semiconductors and the efficient photocatalytic activity of Cs2AgBiCl6 and CsPbCl3.3,4 In this work, we have tested the prepared composites (including the parent derivatives) in the role of heterogeneous photocatalysts for synthetic purposes under visible light irradiation. Specifically, we have tested their competency in the 1,2-difunctionalization of olefins via Atom-Transfer Radical Addition (ATRA; see Figure 1, left part)5. Moreover, we have placed our attention on different kind of benzylic oxidation processes (see Figure 1, right part).

ORG-PO-172. Chemical decoration of phages for the development of viral-based theranostic platforms

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Viral capsid can be considered as a chemically addressable structure, providing a synthetic way to decorate the external surface of a virus with molecules of interest. Phages are ubiquitous viruses that infect bacteria but are inactive against eukaryotic cells.

We developed an orthogonal nanoarchitectonics approach (genetic/chemical) to engineer the M13 phages as innovative theranostic platforms [1]. M13 phages were genetically refactored to display on their tip a peptide, a nanobody or a single chain antibody, retargeting them to any type of cell. Using an orthogonal approach to the genetic display, the refactored phages were then chemically modified, conjugating hundreds of imaging tags/therapeutic molecules/biosensing labels on the capsid surface [1-4]. Natural amines present on the surface of the protein capsid allow the direct functionalization of the virus [1-4] or the introduction of abiotic chemical functionalities for “click chemistry” or “supramolecular chemistry”. The M13 phage platform can be conjugated with hundreds of molecules without impinging upon the targeting moiety [1-3]. Thereby, many more molecules can be delivered to the cellular target per binding event as compared to one/few molecules for antibodies. In principle, any kind of molecules can be attached to the surface of the phage.

Using this strategy, we developed phototheranostic platforms able to simultaneously detect, image and kill selectively cancer cells at picomolar concentration of the phage vector [1-3]. These platforms are active in photodynamic (PDT) and sonodynamic (SDT) therapy of cancer [1-3] and in antimicrobial PDT/SDT [4]. We also demonstrated the ability to use these bioconjugated viral platforms as receptor-targeted delivery system or for the analytical sensing of pathogens, replacing antibodies with an improvement in the therapeutic/imaging/sensing efficacy of two-order of magnitude.

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ABC-PO-037. Development of a new biomimetic biosensor based on Molecularly Imprinted Bio-Polymers coupled with Surface Plasmon Resonance for the detection of amelogenins

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Amelogenins are structural proteins of the dental enamel matrix, playing a key role in archaeological and forensic fields due to their relative abundance and relevance for sex determination. Currently, the detection of amelogenins mainly relies on liquid chromatography (LC) and tandem mass spectrometry (MS/MS)1 and only few studies have involved immunoassays based on antibodies2, but the application of fast, reusable and cost-effective biomimetic systems has not yet been explored. We present an innovative biosensor based on Molecularly Imprinted Bio-Polymers (MIBPs) coupled with Surface Plasmon Resonance (SPR), capable of detecting and binding amelogenins from standard solutions and protein extracts from human teeth samples. The protein sequence was studied by machine learning methods to select suitable peptide sequences to be used to molecularly imprint polynorepinephrine (PNE). The imprinting efficiency of the PNE-based biosensor was evaluated by performing single cycle kinetic (SCK) analyses, allowing the characterisation of the system in terms of kinetic rates and binding affinity parameters, towards both the peptide template and protein. The demonstration of the applicability in real cases was achieved optimising a suitable extraction protocol and performing measurements of extracts from human dental enamel. The results prove the effectiveness of the biosensor, which was specifically tailored on the target protein sequence and requires a quick and simple preparation process involving natural, 100% green, and biodegradable reagents. The application of state-of-the-art MIBPs offers a low-cost, highly effective, and environmentally friendly alternative to the use of antibodies in the development of label-free detection systems that allows the possibility to select and design the epitope to be printed with high precision, therefore deciding the protein capture target.

Acknowledgments

SS acknowledges MUR-Dipartimenti di Eccellenza 2023–2027 (DICUS 2.0) to the Department of Chemistry “Ugo Schiff” of the University of Florence and Univ. of Florence for partially funding Biacore X100 instrumentation with the project “Surface Plasmon Resonance (SPR) for chemical research: broad-spectrum applications, SPR Instrumentation Acquisition”. VC thanks INSTM for hospitality and access to offices, resources and specific operational and scientific facilities to conduct the research activities.

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FIS-PO-052. Fabrication of Solid-like Capsules for Air-Tolerant Luminescent Quantum Dots

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Semiconductor quantum dots (QDs) have become highly adaptable materials, possessing distinct physico-chemical properties that can be tuned through a variety of methods including morphological control and surface passivation. The groundbreaking advancements in QDs research were recently recognized with the Nobel Prize in Chemistry in 2023, underscoring their profound impact on technology and society.

Generally, QDs are treated and studied under nitrogen conditions since their optical characteristics could be irreversibly degraded when they are exposed to oxygen for long time. Considerable focus has been directed towards the investigation of QDs in solution; however, there is a discernible lack of established methodologies for their integration into solid-state systems. The aim of this study is to develop oil-core silica-shell microcapsules, thereby establishing a compartmentalized solid-like system dispersible in water and potentially

capable of tolerating air exposure. Through this strategy, a dual protection mechanism against oxygen is achieved, where the silica shell constitutes a physical barrier against oxygen diffusion while unsaturated fatty acids can act as oxygen scavengers.

We studied CdSe- and PbS-QDs in oleic acid with different capping ligands. The oily dispersions were then encapsulated in silica microcapsules and characterized via steady-state PL, time-resolved PL, SEM, SAXS, and EDX to determine optical and morphological properties of the core-shell systems. After solid-state analyses, dispersions of CdSe/capsules and PbS/capsules were prepared in water to determine the influence of the medium. Through this approach, successful QDs encapsulation was achieved for the two different nanocrystals exhibiting remarkable stability in aqueous environment when working in air-balanced environment.

ORG-PO-036. Design and synthesis of new BRD9 inhibitors as potential anticancer agents

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Bromodomains (BDs) are protein modules of ~110 amino acids that recognize acetylated lysine, particularly in histones, and thereby they have important roles in the regulation of gene expression. Following the most recent structure-based classification, the human BRDs are grouped into eight families that span all 61 domains.1 Bromodomain-containing protein 9 (BRD9), an epigenetic reader, has received increasing attention in the scientific community for its role in gene regulation and its overexpression in many human tumours highlighting it as an attractive target for cancer therapy.2,3

The identification of selective BRD9 inhibitors could disclose new epigenetic chemical probes useful to elucidate its biological function, as well as for discovering new anti-cancer drugs.

Following a multidisciplinary protocol that involves virtual combinatorial screening, chemical synthesis and preliminary pharmacological assay, we afforded to the identification of a new chemotype of BRD-9 inhibitors, endowed with an indolyl 2-pyrazole scaffold.

These outcomes pave the way toward a medicinal chemistry optimization campaign of the disclosed hits in order to obtain new BRD-9 inhibitors endowed with high affinity and selectivity.

ORG-PO-173. Sulfonated pine needles derived biochar as efficient heterogeneous catalyst for alkyl levulinates synthesis

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The exploitation of lignocellulosic urban waste represents nowadays an alternative and innovative way toward the constitution of a circular and residues-free economy. In particular, in certain Mediterranean areas such as the Italian coastal zone, Pine needles pose a serious issue being among the major responsible for forest fires contributing to greenhouse gases in the atmosphere. This lignocellulosic material, in addition to its use as a source of value-added products (cellulose, bioethanol, bio-oils, etc), can be also converted into biochar, whose further functionalization can provide a series of heterogeneous catalysts.

In the present work, we aim to highlight the most significant results obtained in the esterification reaction of levulinic acid with a plethora of alcohols, exploiting a homemade sulfonated pine needle-derived biochar as an acidic heterogeneous catalyst, named Pine-SO3H.

Our study wants to demonstrate that green chemistry and modern technologies can give access, exploiting biobased derived starting materials, to a series of valuable and atoxic products such as alkyl levulinates, useful as fuel additives, solvents, and fragrances.

This work has been funded by the European Union – NextGenerationEU under the Italian Ministry of University and Research (MUR) National Innovation Ecosystem grant ECS00000041 – VITALITY. We acknowledge Università degli Studi di Perugia and MUR for support within the project Vitality. The University of Perugia is acknowledged for financial support to the university project “Fondo Ricerca di Ateneo, edizione 2022”

ALI-PO-031. Accelerated solvent extraction/UHPLC-Q-Orbitrap-MS-based lipidomic workflow for comprehensive study of lipids in X-ray irradiated Camembert from raw cow's milk

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Food irradiation is a clean and safe non-thermal technology used worldwide for different purposes such as improving safety and extending the shelf-life of several foodstuffs, eliminating pathogenic and spoilage microorganisms, parasites, insects and/or viruses1,2. This process was regulated by the Community Directives 1999/2/EC and 1999/3/EC, according to which only Camembert can be irradiated, at a dose maximum of 2.5 kGy3. In this study, an optimized accelerated solvent extraction (ASE) procedure4, employing the temperature of 60 °C, three extraction cycles and isopropanol/methyl-tert-butyl ether/cyclohexane (20:30:50 v/v/v) as solvent mixture, was applied to X-ray treated and non-treated samples of Camembert cheese produced from raw cow’s milk. The recovered lipid fraction was analized by ultrahigh-performance liquid chromatography quadrupole Orbitrap high-resolution mass spectrometry (UHPLC-Q-Orbitrap-MS), to obtain the lipid fingerprints of the samples. Three different irradiation dose levels, namely 1.0, 3.0 and 4.0 kGy were chosen to investigate the variation of lipids in relation to the X-ray irradiation treatment. In particular, 1.0 kGy was within the range of authorized doses, while 3.0 and 4.0 kGy were considered to explore what type of lipid changes may occur when the cheese has been treated at unconventional levels. More than 400 lipids were identified and characterized, hence the collected data were studied using chemometric approaches, in particular principal component analysis and partial least square-discriminant analysis, to discriminate

irradiated respect to non-irradiated samples. The results of our proposed ASE/UHPLC-Q-Orbitrap-MS-based lipidomic workflow confirm its effectiveness for deepening knowledge on the effects of X-ray irradiation on foods and for the evaluation of its safety aspects.

This work was supported by the Italian Ministry of Health who funded the Projects code GR-2018-12367064 and IZS PB 05/23 RC.

Keywords: food quality, food safety, metabolomic.

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FIS-PO-053. 3D Ordered Metallic-NCs Superlattice: investigating the capping-agent role

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Metallic nanocrystals (M-NCs) are of great interest due to the possibility of controlling the plasmonic band through three-dimensional self-assembly arising from the interactions between neighboring NCs, which can result in new properties non-present in the original constituents of the superlattice. That is because the Localized Surface Plasmon Resonance is highly affected by the surface-surface distance between the NCs. Capping agent shell plays a key role in this kind of structuring particularly the interactions between the carbon chains of such shell and the organic solvent in which are dispersed the NCs. To better understand if this kind of interaction can influence, we carried out an extensive study on recently obtained Au-NCs capped with oleylamine.

ANA-PO-135. Profiling of seized Cannabis flowering tops by means of gas chromatography analyses

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The present study aimed to support police forces in their battle against illicit drug trafficking by means of a multi-technique approach, based on gas chromatography. The research was carried out in collaboration with the Scientific Investigation Department RIS Carabinieri of Messina, which provided 25 essential oils extracted from the seized Cannabis flowering tops. All the samples were distilled by using microwave-assisted hydro-distillation (MAHD) system. In a first step, the Δ9-tetrahydrocannabinol (THC) content, useful to classify cannabis plant as hemp (≤ 0.2% of THC) or as marijuana (> 0.2%), was investigated. On the other hand, the terpene profile was determined by GC-MS and GC-FID analyses. Lastly, a heart-cutting multidimensional gas chromatography (MDGC) approach was implemented, based on the combination of apolar and chiral stationary phases in the first and second dimension, respectively. The system was coupled in parallel to an isotope-ratio mass spectrometry (C-IRMS) and MS detection, for studying the enantiomeric and carbon isotopic ratios of selected chiral compounds. Finally, all the data were combined in a statistical model, to demonstrate the existence of useful parameters to be used for the classification of confiscated samples.

ANA-PO-009. CRISPR-Cas12a Amplification of Transcription Factor DNA-Binding Activity by Using Dynamic DNA Translators

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The field of nucleic acid diagnostics has undergone a transformation with the application of CRISPR-Cas12a-based biosensing technologies, which enhance signals by causing collateral target-induced cleavage of tagged DNA reporters. However, interfacing the CRISPR-Cas machinery with non-nucleic acid targets has been limited due to the intrinsic difficulty of converting non-nucleic acid targets, such as proteins and small molecules, into nucleic acid inputs for CRISPR-Cas activation. Our main goal was to tackle this challenge and look at new ways to integrate CRISPR-Cas12a signal amplification into protein sensing. We specifically focused on transcription factors (TFs), a class of DNA-binding protein that play a central role in biological processes and are significant targets in diagnostic, therapeutic and bioengineering strategies. We leveraged the inherent DNA-binding activity of target TFs to integrate an activity-based approach with DNA nanotechnology, demonstrating that CRISPR-Cas12a nuclease activity can be triggered by a range of different transcription factors in a programmable manner. We have engineered libraries of conformation-switching DNA structures that act as dynamic translators. These rationally designed translators undergo a controllable conformational change when they bind to their cognate transcription factor, exposing a CRISPR-Cas12a target sequence only upon TF binding. This allowed for converting the DNA-binding activity of transcription factors such as TATA-binding protein (TBP), Myc-Max, EGR1 and EGR4 into a trigger input for the activation of CRISPR-Cas12a, generating an amplified optical signal proportional to the protein concentration. This study paves the

way for new modalities of protein-controlled CRISPR-Cas molecular computation and exemplifies how CRISPR-Cas12a signal amplification may be successfully incorporated into protein sensing.

TEO-PO-030. Multi-path Primary Charge-Separation in Photosystem II

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Photosystem-II (PSII) is a multi-subunit protein complex that harvests sunlight to perform oxygenic photosynthesis. Initial light-activated charge separation takes place at a reaction center consisting of four chlorophylls and two pheophytins. Understanding the processes following light excitation based on experimental results remains elusive due to spectral congestion as well as to the ultrafast nature and multi-component behavior of the charge-separation (CS) process. Using advanced computational multiscale approaches, based on all-atom molecular dynamics simulations coupled with the Perturbed Matrix Method2, we were able to achieve the first direct calculation of the kinetics of the charge separation processes in the reaction center (RC) of PSII1. Our results indicate the presence of a multi-path scenario for the primary charge separation that, eventually, leads to the formation of the SP+PheoD1− pair. We identified two primary radical-pair formation components that considerably differ in their respective time constants. The dominant faster channel starts from ChlD1* and leads to the formation of a ChlD1+PheoD1− charge-separated pair subsequently evolving to the SP+PheoD1− couple. In the second and slower path a long-range ET event occurs starting from SP* and leading directly to SP+PheoD1− . We also found an energy transfer pahtway between the ChlD1* and the SP* localized excited states, the efficiency of which is tuned by the protein environment. This observation can also explain the experimental heterogeneity measured for PheoD1− formation ranging from picoseconds to tens of picoseconds. The presence of a preferential channel for CS and shortcuts from different localized excited states in the RC, consistently leading to the same rapidly formed radical pair, is crucial for efficient light harvesting.

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ORG-PO-037. A novel approach to the stereoselective total synthesis of four stereoisomers of the fungal phytotoxin ascaulitoxin aglycone.

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Agriculture faces a significant challenge in safeguarding crops against weed competition while minimizing their spread. To this end, natural biopesticides like phytotoxins, offer promising traits, having low persistence in the environment and highly targeted modes of action, thus minimizing pest resistance issues and environmental impact. Ascaulitoxin and its aglycone (AscA), derived from the Ascochyta Caulina fungus1, stand out as potent phytotoxins with potential for controlling weeds2. The absolute configuration of natural AscA was unknown and its relative configuration uncertain. Therefore, aim of this work was the total synthesis of stereoisomers of ascaulitoxin aglycone to both determine its absolute configuration and provide quantities necessary for large-scale applications and structure-activity relationship studies. AscA can display up to 16 possible stereoisomers but, at beginning, we assumed (S) absolute configuration of the terminal aminoacid moieties thus limiting the search to four of them. Therefore, this report details the approach to the diastereo- and enantioselective synthesis of four ascaulitoxin aglycone stereoisomers. The synthesis of anti isomers of the central amino and hydroxy groups was carried out by an asymmetric dihydroxylation-Mitsunobu azidation sequence, while the syn isomers were obtained through direct asymmetric aminohydroxylation. Both methods originate from the same olefin, readily prepared from commercially available Boc-L-allylglycine through self-metathesis. Furthermore, the phytotoxic activity of synthetic intermediates of ascaulitoxin aglycone diastereomers was tested on host and non-host weed plants.

CSB-PO-018. Design of new inclusion complexes between cyclodextrins and fungal compounds increasing antiviral activity against Bovine Coronavirus

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Funicones and structurally related compounds represent a homogeneous group of fungal polyketides that were initially characterized as determinants of the antagonistic abilities by the producers against other microorganisms but were later found to possess remarkable biological properties that have promoted their consideration as drug prospects1. Furthermore, their low toxicity, high bioavailability, low molecular weight, and chemical structures make them compatible for designing various pharmaceutical formulations. Within our recent activity aimed at studying the antiviral properties of 3-O-methylfunicone (OMF), a member of this group of secondary metabolites obtained from Talaromyces pinophilus, were studied. The results showed that OMF is able to reduce the infectivity of bovine herpesvirus and canine coronavirus. (CCoV), in addition two additional funicon-like compounds, penimplicixin and vermistatin, were also tested in CCoV2. Cyclodextrins (CDs) are used in pharmaceutical formulations for their ability to improve the pharmacokinetic characteristics of

the species included3. In particular, OMF has a low solubility, therefore the formation of inclusion complexes between CDs and OMF can improve this aspect, also increasing its bioavailability, allowing for better administration in animal organisms. In view of their potential application as novel drugs against coronaviruses (CoV), inclusion complexes involving the use of β-cyclodextrin (β-CD) as a complexing agent have been designed. The affinity that funicons have towards β-CD was evaluated by Molecular Docking. UV-Vis analysis of the complex was used to determine the stoichiometry of the complex and binding affinity. Finally, following CoVs (Bovine, Canine, and Feline CoVs) infection in vitro, cytotoxicity analysis and antiviral activity of inclusion complexes will be performed.

ANA-PO-030. Improving the reliability of Single-Molecule-with-a-large-Transistor (SiMoT) platform with a multivariate quality control based on principal component analysis

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Biosensors performance can be affected by many factors, such as stability, temperature, or fluid matrix interferences. The validation of the biosensor performance is the process of verifying and demonstrating that the biosensor meets the predefined specifications and requirements for its intended use. This is essential for ensuring the reliability, reproducibility, and quality of the biosensor results. In this study, we developed a multivariate Quality Control (QC) based on Principal Component Analysis (PCA) method1,2 to improve the reliability of SiMoT platform3. Due to the complexity of the device and the use of different human fluids, the biosensor performances can be affected by nonspecific interactions due to matrix effects, characteristic of complex biological samples. To this end, it was necessary to define a statistical model to identify and evaluate all experiments that exhibit abnormal biosensor performance and therefore cannot be considered acceptable. Current changes registered with reference gates and with 7 negative control experiments, have been used as variables for QC. Initially, a dataset called 'Normal Operating Conditions' was defined, including samples in which all sensors operate according to the electronic specifications established. The reliability of the NOC dataset as a reference dataset was evaluated by performing the PCA and verifying the absence of outliers. All other samples were used as test datasets. The latter were compared with the NOC dataset to assess the possible presence of faulty samples. Q residuals and Hotelling's T2 statistics have been analyzed to spot the presence of outliers. To demonstrate the reliability of this QC model, an automatic classification model was built with the same training and test datasets. It emerged that all samples with abnormal biosensor behaviors identified in the test dataset of the QC analysis, were misclassified by the classification model. This underlines the importance of using real-time process monitoring when using biosensors to improve the reliability of such devices.

ELE-PO-010. Electrochemical synthesis of "MIB"-inspired gadolinium-based contrast agents

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Gadolinium-based contrast agents (GBCAs), which are gadolinium complexes, are used worldwide in magnetic resonance imaging (MRI) to enhance the contrast of images and have a clearer visualization of the disease [1]. In the present research, the advantages of electrochemistry are exploited for the synthesis of a new possible GBCA. The project was inspired by the research on metal-ion batteries (MIBs), for which Prussian blue analogues (PBAs) are among the most promising cathodes, thanks to their simple synthesis, non-toxicity, stability, and their high capacity for the electrochemical-driven insertion of several metal ions [2]. For their biocompatibility, they have been considered also in the medical field [3]. The aim of this study is to electrochemically intercalate Gd3+ ions into nanometric spherical Zinc-hexacyanoferrate (s-ZnHCF), which was synthesized with a high-temperature coprecipitation method found in literature [4]. After its characterization by XRD and TEM (Fig. 1), it was deposited on FTO (Fluorine-doped Tin Oxide) and used as working electrode in cyclovoltammetries. Successive chronoamperometries in a solution of gadolinium ions allowed to create gadolinium-rich particles.

Since electrochemistry allows a fine control of experimental parameters, with further studies the amount of intercalating gadolinium could be controlled, and so its ability to enhance the MRI signal. Furthermore, the presence of Gd3+ in the superficial layer of nanoparticles would improve its interaction with H2O, which is essential for the functioning mechanism of contrast media.

FAR-PO-092. NOVEL FOCAL ADHESION KINASE INHIBITORS INDUCING IMMUNOGENIC CELL DEATH IN PANCREATIC CANCERS

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Focal adhesion kinase (FAK) is a nonreceptor tyrosine kinase overexpressed in numerous solid cancers playing a crucial role in regulation of cell adhesion, migration and invasion. Additionally, FAK modulates both cellular and molecular composition of the immunosuppressive tumour microenvironment. Recently, we described the synthesis and the antiproliferative activity of a series of 3-(imidazo[2,1-b][1,3,4]thiadiazol-2-yl)-1H-indole derivatives, which showed potent in vitro antiproliferative and antimigratory activity against numerous cancer cell lines belonging to the NCI full panel and PDAC panel, with GI50 values ranging from micromolar to sub-micromolar level.1 Further studies identified the inhibition of phosphorylation of PTK2/FAK as the mechanism of action of this class of compounds. Based on the interesting antiproliferative activity observed for the imidazothiadiazole scaffold and the FAK inhibitory activity

described in literature for pyridine compounds2 we synthesized new derivatives bearing 3-pyridinyl and 4-pyridinyl nucleus at position 6 of the imidazothiadiazole nucleus, with the aim to obtain new anticancer agents targeting FAK.

Interestingly, some of the synthesized compounds exhibited an outstanding antiproliferative activity against several human cancer cell lines, being able to induce cancer immunogenic cell death (ICD).

INO-PO-073. Green Zinc/Galactomannan-based hydrogels push up the photovoltage of Quasi Solid Aqueous Dye Sensitized Solar Cells

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In the present work, we implement environmentally friendly water-based Quasi-Solid Electrolytes (QSE) for Dye Sensitized Solar Cells (DSSCs), displaying an unprecedent open circuit voltage (VOC) as high as 750 mV. The production of the hydrogel for QSE-DSSCs is achieved by exploiting the concept of fully green design and fabrication, through the selection of components such as the natural polysaccharide galactomannan (GM), the biocompatible zinc salts, and the employment of eco-friendly synthetic procedures to afford the hybrid gelating agents. In the process, moderate temperature (< 40 °C) and only aqueous solutions are employed. Depending on the type of the initial salt, either zinc hydroxysulfate lamellae or zinc oxide nanoparticles are created within the gel matrix, with a more extended nanoporous structure in the latter case (See Figure 1). Upon addition of the redox mediator I-/I3- and ensuing assembling of the device, aqueous QSE-DSSCs are achieved with state-of-the-art PhotoConversion Efficiency. The latter couples a 2% efficiency (limited by charge diffusion as proved by Electrochemical Impedance Spectroscopy) with a good Average Visible Transmittance (AVT) (See Figure 1), and Light Utilization Efficiency (LUE), a couple of coveted features in wave-selective or semi-transparent devices [1].

ORG-PO-175. Emissive nucleobases in PNA chemistry

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Peptide nucleic acids (PNA) are key candidates in chemical biology. They are synthetic oligonucleotide mimetics which are capable of interacting with DNA and RNA due to common nucleobase alphabet, although presenting a pseudopeptide backbone.[1,2] They have been already studied in antisense and antigene therapies, gene editing, nucleic acid sensing and imaging.[2] The substitution of natural occurring nucleobases with fluorescent isomorphic analogues into PNA is a unique strategy to impart intrinsic luminescence while maintaining efficient paring, aiming to overcome structural limitations of fluorophores' tagging.[3] Isomorphic fluorescent bases have shown significant emissive read-outs upon variation of pH and polarity and in the imaging of biological relevant events like duplex formation.[3,4] In this work we have prepared and investigated thieno[3,4-d]pyrimidine nucleobases and their incorporation into PNA.

Our studies confirm how the synthesized bases are compatible for insertion along PNA sequences of different length to deeply understand the emissive traits and to evaluate the ability to form stable heteroduplex with complementary DNAs. These preliminary results highlight that these fluorescent analogues can be easily used for PNA synthesis while conferring significant modular luminescence.

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ORG-PO-066. Hydrophilic emissive NDIs and DNA: a tale of love and hate

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Naphthalenediimides (NDIs) are versatile fluorophores developed throughout the last century.[1] The first synthetic report on substituted NDIs dates to 1937 and useful synthetic strategies to modify the chemical structure and photophysical properties have been published in the early 2000s. [2,3] NDIs have been investigated for several applications spanning from supramolecular chemistry, catalysis through anion−π interactions, organic electronics and chemical biology. [1] NDIs in biological chemistry have been mainly used for targeting biomolecules as well as for cell imaging. [4,5] NDIs have been proposed as DNA intercalators: their small size and flat morphology allow the allocation between base pairs in DNA duplexes (Figure 1).[4]

Here, we present the synthesis of a small library of substituted NDIs and preliminary evaluations as emissive probes for nucleic acids visualization. NDI's ability to intercalate in different DNA duplexes was monitored by fluorescence and related to their molecular variations on the core, as well as, on the imide edges to point out the best candidate for the visualization of nucleic acids.

ANA-PO-138. Characterization of bergamot, grape and olive pomaces using different analytical techniques

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In the last years, agrifood processing wastes have been used for the development of multifunctional materials possibly capable of effectively and selectively interacting with organic (pesticide, dyes) and inorganic (metals, anions) pollutants, through adsorption mechanisms1. This contribution presents the preliminary results of an investigation focused on the characterization of bergamot (BP), grape (GP) and olive (OP) pomace samples from different cultivars, representative of various harvesting seasons. The waste biomasses were provided after juice and essential oil extraction, berries pressing for the must production and olive oil extraction, respectively. Aliquots of the pristine pomaces were mechanically ground using a grinder, dried in an oven at T = 333 K until constant weight and blended again to gain a fine powder. The resulting solids (raw) were divided in diverse portions and pretreated for 6 hours at T = 303 K using deionized water and nitric acid solutions, according to procedures reported in literature2. The raw and pretreated samples were characterized by means of BET and SEM-EDX techniques to get information on the superficial area and the particles sizes distribution. The TG-DTA and the FT-IR ATR spectroscopy were used to study the pomaces thermal properties and to confirm the presence of functional groups possibly capable to interact with metal cations, respectively. The acid-base properties of the biomasses active sites were potentiometrically investigated at I = 0.10-1.00 mol dm-3 in NaNO3(aq) and T = 298.15 K. To confirm the obtained results, some checks were also carried out on grape and olive pomaces pretreated with H2O by using the classic volumetric method with calcium acetate3. Lastly, the dependence of protonation constants on ionic strength was modelled using an extended Debye-Hückel type equation.

Acknowledgements: we thank MUR: PNRR - Missione 4, Componente 2, Investimento 1.1 - Bando Prin 2022 - Decreto Direttoriale n. 104 del 02-02-2022. Project title: "Wastezilla: Recycled waste biomass for efficient recovery of critical elements". CUP: J53D23007540006, G53D23002970006, H53D23003860006, project code: PRIN_2022HYH95P_001.

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ABC-PO-005. Degradation of chloramphenicol and acid orange using nanoparticles of Fe^0

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Worldwide water pollution has become one of the most prominent problems over the past decades. The so-called contaminants of emerging concern (CECs) are a broad group of anthropogenic pollutants detected in the environment, that cannot be properly removed by conventional wastewater treatment plants and tend to accumulate ubiquitously in ground and surface water, causing damage to the ecosystems and human health[1]. The use of zero valent iron (Fe^0) has been proposed to remove a wide range of recalcitrant pollutants[2]. In this work, the removal of two CECs, a chlorinated nitroaromatic antibiotic (chloramphenicol succinate sodium salt, CAP) and an azo dye (Acid Orange 7, AO7) by Fe^0 has been investigated, also evaluating the effect of initial pH on degradation. Additionally, ecotoxicity surveys were carried out on samples after the treatment using Artemia franciscana, as indicated by the Italian regulatory authorities for wastewater monitoring[3].

In each test, 100 mL of CAP or AO7 solution (20 mg/L) were treated with a certain amount of Fe^0 (0.1125 g/L, 0.225 g/L,0.45 g/L, and 1 g/L). Each test lasted 80 minutes and samples were collected at regular intervals. CAP or AO7 residual concentration was monitored through UV-Vis spectroscopy, by following the intensity of their characteristic peaks at 275 nm and 484 nm, respectively. The degradation of both contaminants improved with increasing Fe^0 dosage, allowing to reach removal rates up to 50%, 75%, 93%, and 95% for CAP and 25%, 43%, 65%, and 96% for AO7. In both cases, the degradation kinetic can be divided in two stages: a rapid discoloration happened in the first 10-15 minutes of treatment, then the reaction slowed, reaching a plateau. The efficiency of the contaminants' removal was also evaluated adjusting the starting pH to ≈3 or ≈9, using 0.225 g/L of Fe^0. In both cases Fe^0 efficiency was higher at acidic pH, achieving up to 87% and 84% removal of CAP and AO7, respectively. In alkaline conditions, the reactions yielded similar results to natural (≈7) pH. Untreated CAP and AO7 solution caused 100% of mortality in all life stages of A. franciscana. The treatment with Fe^0 greatly reduced the toxicity of the starting solutions, decreasing the mortality of ~65-85%. The residual toxicity observed can be ascribed to the Fe^0 that remained in the effluents.

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FIS-PO-028. Plasmonic thin films fabrication by additive manufacturing for biomedicine

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Lab-on-a-chip (LOC) devices have become widespread to study cellular processes and to implement disease modelling. They merge microfluidic, microelectrodes and sensors, and make it possible to grow and monitor living cells. The core of the architecture is about the microelectrodes design. The established technique for thin film patterning is physical vapor deposition (PVD). Despite being able to produce detailed microelectrodes, it is an expensive and time-consuming method. The spray coating technique, on the other hand, allows thin metallic layers to be produced easily and quickly. The advantages of this technique are manifold: a large area deposition can be achieved using less material and at the same time keeping the material properties unchanged. Furthermore, by using appropriate shadow masks, it is possible to obtain microelectrodes with resolutions of a few µm. It is herein presented the application of inkjet printing technology to produce water-soluble shadow masks, which will be used to produce thin nanostructured plasmonic films with a thickness of a few hundred nanometers. The presented approach is used for fabrication of metal microelectrodes with desired geometry, in an easy, fast, and greener way than traditional PVD techniques. In addition, spraying gold nanoparticles (AuNPs) produced by laser ablation in solution (LASiS) enables the formation of nanostructured films suitable for the occurrence of the SERS effect, allowing the detection of surface-adsorbed molecules. This would make it possible to exploit a further method - in addition to the established electrical and optical methods - to monitor the health and growth of living cells cultured on the surface of these devices.

ORG-PO-176. New natural-based hybrids as tyrosinase inhibitors

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In mammals, tyrosinase is responsible for melanin biosynthesis, which can protect the skin cells against the harmful effects of ultraviolet (UV) irradiation, oxidative stress, and DNA damage. However, melanin overproduction can cause several aesthetic problems and even severe diseases related to hyperpigmentation and malignant melanoma onset. Consequently, tyrosinase inhibitors can effectively inhibit excessive melanin formation and be employed as whitening agents in cosmetics, which have a broad space for market prospects, as well as for hyperpigmentation diseases and malignant melanoma, which is a promising therapeutic strategy.

In the design of new tyrosinase inhibitors, many research groups have employed bioactive natural products as scaffolds to achieve more effective inhibitors.1 In doing that, molecular hybridization can be an efficient way to include two pharmacophore moieties into a new molecular species with specific and selective activity, and/or less toxicity, and/or improved bioavailability.

The synthesis of new hybrid molecules based on natural tyrosinase inhibitors such as resveratrol, azelaic acid, and others is reported herein (Figure 1), keeping the m-hydroxyphenol moiety unchanged, as SAR studies revealed this portion to have significant influence on the inhibitory activity of tyrosinase.2The new hybrids will be in-vitro evaluated as tyrosinase inhibitors.

Figure 1: Scope of the work: synthesis of natural-based hybrids as tyrosinase inhibitors.

Acknowledgement: This work was financed by MUR ITALY PRIN 2022 PNRR (Project No. P2022MWY3P).

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TEO-PO-035. Unraveling the photorelaxation of a light-driven molecular rotary motor by means of excited state ab-initio dynamics

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Artificial molecular machines represent a hot research topic directly linked to the development of nanoscale devices.1 Among the molecular machines synthesized, the light-driven molecular rotary motors represent an elegant way to transform the electromagnetic radiation in a unidirectional rotary motion. In this work, we focused on a Feringa-type motor.2 This molecule is characterized by two parts, the stator and the rotor, connected by a carbon double-bond axle, and performs a full unidirectional rotation about this latter, in an isomerization cycle characterized by two photochemical and two rate-limiting thermal steps. In order to unveil the photophysics of the system and providing a molecular interpretation of the photorelaxation process, we performed ab-initio molecular dynamics simulations3-7 in both the ground and excited electronic states, within density functional theory and its time-dependent version formalism8,9 along with a transient vibrational analysis based on the Wavelet transform10,11 of specific quantities. An accurate, calibration of the potential with a detailed balance of the environment effects, was carefully addressed. Then, relying on the electronic excited state trajectories, we extracted generalized normal modes and collective structural rearrangements to shed light on the main molecular determinants involved in the vibrational dynamics. Within the early stages upon excitation, a clear mechanism emerges, a bi-phasic energy decay from the Franck-Condon region occurs and is modulated by coupled vibrations involving the central carbon-carbon double bond. Our findings contribute to expanding the knowledge of processes that underlie the photorelaxation and provide a detailed interpretation of time-resolved spectroscopic experiments.

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ORG-PO-038. New molecular cages for chiroptical sensing

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Metal complexes of tris(2-pyridylmethyl)amine (TPMA) ligands have gained interest in sensing applications due to the seminal contributions of Canary1,2 and Anslyn.3 Recently, these complexes have been exploited by our research group as building blocks for the synthesis of novel molecular cages.4 These architectures are obtained through imine bond formation from the self-assembly of a modified TPMA-based metal complex bearing three aldehyde groups and diamine linkers.4,5

The present work illustrates the synthesis of new TPMA-complexes and the corresponding novel molecular cages. Furthermore, the synthesis of new chiral hydrolytically stable cages, exploiting a method recently published by our research group,6 is described. The goal of this project is to obtain new chiroptical properties like, for example, an amplification of circular dichroism (CD) and circularly polarized luminescence (CPL) signals. In order to achieve these aims, chiral cages could be employed together with fluorophore guest molecule appropriately functionalised. Otherwise, the fluorophore could be embedded in the chiral cage structure as in the case of the 9,9-dihexylfluorene unit (Figure 1).

ANA-PO-077. Low-cost Inkjet-Printed nanostructured biosensor based on CRISPR/Cas12a system for pathogen detection

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The escalating global incidence of infectious diseases caused by pathogenic bacteria, especially in developing countries, emphasises the urgent need for rapid and portable pathogen detection devices. As traditional techniques are time consuming, expensive and do not allow for a point-of-need analysis, biosensors represent a valid alternative, because of their low-cost, portability, ease of use and availability for point-of-care/need applications. This study introduces a sensitive and specific electrochemical biosensing platform utilising cost-effective electrodes fabricated by inkjet-printing gold and silver nanoparticles on a plastic substrate. The biosensor exploits the CRISPR/Cas12a system for detecting a specific DNA sequence selected from the genome of the target pathogen. Upon detection, the trans-activity of Cas12a/gRNA is triggered, leading to the cleavage of rationally designed single-strand DNA reporters (linear and hairpin) labelled with methylene blue (ssDNA-MB) and bound to the electrode surface, leading to the decrease of the square wave voltammetry (SWV) MB associated signal. In principle, this sensing mechanism can be adapted to any bacterium by choosing a proper guide RNA to target a specific sequence of its DNA. The biosensor's performance was assessed for two representative pathogens (a Gram-negative, Escherichia coli, and a Gram-positive, Staphylococcus aureus), and results obtained with inkjet-printed gold electrodes were compared with those obtained by commercial screen-printed gold electrodes. Our results show that the use of inkjet-printed nanostructured gold electrodes, which provide a large surface area, in combination with the use of hairpin reporters containing a poly-T loop can increase the sensitivity of the assay corresponding to a signal variation of 86%. DNA targets amplified from various clinically isolated bacteria, have been tested and demonstrate the potential of the proposed platform for point-of-need applications.

ORG-PO-039. Metal-free synthesis of selenoglycosylated eumelanin monomers

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Eumelanins are dark insoluble pigments,1 arising by oxidative polymerization of 5,6-dihydroxyindole (DHI) and DHICA 5,6-diacetoxy-indole-2-carboxylic acid, involved in important biological functions (e.g., photoprotection, homeostasis). Due to their natural origin and peculiar physical-chemical properties, eumelanin can play a key role in biomedical applications and bioelectronics2. In a previous study, the first water-soluble eumelanin monomer 3-thiogalactoside-DHI (S-GAL-DHI) allowed noteworthy insights in structural investigations of DHI melanin3. In the view of the emerging interest of soluble glycosylated eumelanin in materials science and in glycobiology, the synthesis of new glycosylated melanins involving diverse saccharide precursors represents a field of research of high relevance. In this work, a series of 3-selenoglycosylated eumelanin derivatives (figure 1) were prepared through a practical and efficient approach exploiting a metal free, simple, and scalable synthetic route. The strategy is feasible for installing both mono- and disaccharide units for the first time on both O-protected eumelanin precursors and relies on the exploit of easily accessible glycosyl diselenides4 as selenium source.

INO-PO-050. Large Pores Mesoporous Bioactive Silica: a New Candidate for Delivery of Big Therapeutics Molecules. A Study of its Behavior in Terms of Drug Loading/Release and Bioactivity

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Large Pores Mesoporous Silica (LPMS) could be an innovative support suitable to accommodate big pharmaceutical molecules, shield them and maintain their biological activity. Large pores allow the loading of bioactive molecules inside the structure, their stabilization and protection.1 Indeed, for Classical Mesoporous Silica (MS) only pore blocking occurs. To obtain a synergistic effect between a proper structure and bioactive/pharmaceutical activity, ions with a physiological effect can be added, such as Ca2+ (for bioactive activity) and Ga3+ (for anticancer action).2 LPMSs have been synthesized (Figure 1) starting from an acidic water solution of tetraethyl orthosilicate reacting with pore agents (Pluronic® F127 and mesitylene), performing hydrothermal and microwave-assisted reactions. Time and surfactant optimization was performed.Pore structure characterization has been performed using N2 adsorption/desorption and Hg-porosimetry, demonstrating that LPMSs have pores in the range of 20–60 and 200–600 nm. Nisin (antibacterial peptide) has been used for load and release tests. Tests performed highlight a doubled loading and releasing for LPMSs if compared to MSs. To confirm the maintenance of the structure of LPMSs, Scanning Electron Microscopy images were acquired before and after release tests. Ca and Ga release in Simulated Body Fluid has been studied through inductively ICP-OES, showing a high release of these ions achieved with LPMSs. The bioactivity of Ca-containing structures has been confirmed using FT-IR, SEM-EDS, and XRDP. In conclusion, LPMSs showed better loading and releasing properties compared with classical MS and better release in terms of active ions. It has also been demonstrated that LPMSs have bioactive behavior.

FAR-PO-112. Targeting AKT1 in Cancer Therapy: Novel Inhibitors for Acute Myeloid Leukemia

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Acute myeloid leukemia (AML) is a heterogeneous hematopoietic cancer characterized by an abnormal proliferation of the progenitor cells of myeloid strains. In more than 60% of AML cases, the PI3K/AKT/mTOR signaling pathway becomes overactive, resulting in changes that are exacerbated by chemotherapy, leading to drug resistance.1 Particularity, a pivotal role in this pathway is shown by the serine/threonine kinase (AKT or PKB), making it a particularly interesting drug target for precision cancer therapy. Against this backdrop, our research group has focused on the development of AKT1 inhibitors in AML treatment. In particular, compound 5,6,7,8-tetrahydrobenzo[4,5]thieno[2,3-d]pyrimidin-4(3H)-one (T126) has emerged as the most interesting compound with an IC50 = 1.99 ± 0.11 μM and a ligand efficiency (LE) of 0.35.2 Further investigation of T126 showed its ability to bind the AKT1 ATP-binding pocket preventing growth and inducing apoptosis in a panel of AML cells in the low micromolar range.2

In this work, we focused our attention on the identification of AKT1 allosteric inhibitors. In particular, the most potent AKT1 allosteric inhibitors reported in the literature were used to build a pharmacophore model. Then, the pharmacophore features and T126 core were joined to generate a small set of AKT1 allosteric inhibitors (Figure 1). Among the synthesized compounds, one showed a very interesting profile, exhibiting an IC50 value in the low micromolar range and strong inhibitory activity against two mutated AML cell lines over wild-type.

INO-PO-074. Pesticides detection through ZnO-based fluorescent nanoprobes

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In modern agriculture, the application of chlorinated pesticides plays a critical role in managing pests affecting crops, herbs, and spices. However, the extensive use of these organochlorines rises concerns regarding potential residues in food products and their impact on human health1. In response, regulatory bodies have established maximum residue levels to ensure adherence to safety standards. Conventional detection methods, like high-performance liquid chromatography, though effective, involve labour-intensive and costly processes. Considering this, is worth exploring alternative techniques for faster, on-field detection. A potentially successful approach is fluorescence-based detection, involving intrinsic fluorophores. Zinc oxide is suitable for these methods, as it is safe and biocompatible. A surface functionalization of the ZnO nanoparticles (NPs) ensures the interaction between the former and the pesticides, resulting in a quenching or enhancing of the fluorescence signal intensity, thus providing the detection3,4. In a previous related paper (3-aminopropyl) trimethoxysilane (APTMS) was used as the coating agent and its interaction with the organochlorine penconazol was studied2. In this current study, the potential of various amino-silanes is explored. Also, a double functionalization is performed, using tetraorthosilicate (TEOS) to increase the dispersibility of the NPs in aqueous solutions; and then the amino-silane as the outermost layer providing the -NH2 tail that serves as a hook for the -Cl of organochlorines.

FAR-PO-096. Exploring Novel Strategies for Targeting NDM-1: Integrating PPI-FIT Technology in Drug Discovery to Identify Non-Conventional Degraders

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Metallo-β-Lactamases (MBLs) are enzymes able to catalyze the hydrolysis of a broad range of β-lactam antibiotics, including carbapenems.1 Among these, the New Delhi Metallo-β-lactamase-1 (NDM-1) variant confers resistance to a wide variety of antibiotics, such as penicillins, cephalosporins, and carbapenems. The rapid global dissemination of NDM-1 is causing growing concern in the scientific community due to its wide spectrum of action, ability to select variants, and transferability, posing a significant risk of a new bacterial pandemic. Despite the availability of various Serine-β-lactamase mechanism-based inhibitors in therapy, there is currently a lack of specific and effective inhibitors against NDM-1 in clinical practice.2 Consequently, there is an urgent need to identify clinically useful inhibitors of MBLs that can be co-administered with existing β-lactams to restore their antibacterial activity. To address this emerging challenge, we employed the Pharmacological Protein Inactivation by Folding Intermediate Targeting (PPI-FIT) technology to discover non-conventional degraders of NDM-1.3 PPI-FIT represents a novel and advanced drug discovery approach based on the concept of regulating protein levels by targeting folding intermediates. Using this approach, we identify potential druggable pockets within a relevant folding intermediate of NDM-1, distinct from its native conformation and catalytic site. Subsequently, a structure-based virtual screening was exploited, leading to the identification of virtual hits. In this study, we outline our strategy, which integrates medicinal chemistry, structural biology, biochemical testing, and microbiological profiling, to identify novel non-conventional degraders of NDM-1.

ORG-PO-040. π-Conjugated Functionalized Wood towards Sustainable Optoelectronics

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Highly transparent materials are pivotal for the development of energy saving budling.1 Among these materials, transparent wood (TW) offers exceptional optical properties, UV blocking and low thermal conductivity,2 in combination with a rapid fabrication process and impressive mechanical strength, reducing building energy consumption and construction industry's environmental impact. Transparent wood is made in a two-step process. First, delignification using an oxidant solution of hydrogen peroxide and sodium hydroxide in combination with heat, resulting in bleached wood that has empty channels (lumens) deprived of chromophore molecules.3 The second step involves the filling of these channels with of thermo- or photocurable polymer resins.

In this work, we introduce a novel approach to enhance the optical and optoelectronic properties of these materials. Lumen filling is done utilizing three methods: 1) chromophore adsorption followed by polymer infiltration, 2) covalent chromophore anchoring to the lumen wall followed by polymer infiltration, and 3) synthesis of monomers inclusive of pendant chromophores for a single-step infiltration and polymerization. Two types of class of compounds were investigated: light-responsive azobenzene and electron-rich arylamine derivatives. The resulting wood-optoelectronic materials were characterized through UV-vis and IR spectroscopy, X-ray diffraction (XRD), SEM, TEM, moreover tensile strength and fracture mechanics tests were carried out to complete the mechanical investigation of the new material.

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FAR-PO-075. Epigenetics and myocardial Ischemia-Reperfusion Injury: novel insights into the role of SIRT5

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Myocardial infarction (MI) is the leading cause of morbidity and mortality worldwide. Its pathomechanism includes the oxygen/nutrients deprivation of the myocardium, leading to cardiac damage1. Timely restoration of coronary flow is necessary to decrease the infarct size (IS) and to rescue the hypoxic myocardium. Paradoxically, reperfusion leads to additional cardiac injury leading to cardiomyocyte dysfunction, referred to as "reperfusion injury"2,3. Sirtuins are epigenetic enzymes that catalyze the removal of acetyl groups from both histones' tails and non-histone proteins via a NAD+-dependent mechanism4. Several studies reported the implication of sirtuins in ischemia/reperfusion injury (IRI)5,6,7. However, their cardioprotective potential is elusive and is based primarily on studies exploiting non-specific SIRT agonists. Therefore, we chose to test three novel SIRT agonists that we previously synthesized, namely MC2606, MC2789 and MC3215, exhibiting SIRT1, SIRT3 and SIRT5 agonism respectively, as confirmed by the Mass Spectrometry (MS)-based assay8. We tested the compounds in vitro, in cardiomyoblasts (H9c2 cells) and human endothelial cells (EA.hy-926 cells), in order to identify the cytoprotective effect of our compounds in hypoxia/reoxigenation conditions and to assess their target engagement in the selected cell lines with western blot analysis. Furthermore, we assessed the cardioprotective potential of SIRT agonists in an in vivo model of IRI (30min Ischemia/2h and 24h reperfusion) in C57BL6/J male mice and assessed the IS. Among the three compounds, the SIRT5 agonist exhibited the greater cardioprotective potential, by reducing IS compared to controls both at 2 and 24h of reperfusion. Therefore, SIRT5 agonist was selected for further molecular experiments in order to identify its underlying cardioprotective mechanism, providing useful and novel insights on the role of SIRT5 in IRI.

ANA-PO-029. Early detection of Xylella fastidiosa in olive sap of infected plants using wide-field electronic biosensor

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The early detection of pathogens is essential for timely diagnosis and implementing preventive measures and treatments. One particularly concerning pathogen is the bacterium Xylella fastidiosa, known for its detrimental effects on various crops and plants crucial for both ecosystems and agriculture. Responsible for diseases such as Pierce's disease of grapevine, phony peach disease, plum leaf scald, citrus variegated chlorosis disease, and olive scorch disease, X. fastidiosa is among the most harmful plant bacteria globally. In this study, we employed the Single Molecule with a Large Transistor (SiMoT) technology, utilizing an Electrolyte gated Organic Field-effect transistor (EG-OFET), to detect Xylella fastidiosa with high sensitivity. Achieving a limit-of-quantification (LOQ) of 2±1 bacteria in 0.1 mL (20 colony-forming units/mL), the assay utilized a bio-functionalized millimeter-wide gate with Xylella-capturing antibodies. Importantly, this detection was performed directly on saps obtained from naturally infected plants. Furthermore, we demonstrated the selectivity of the SiMoT system against a non-target bacterium, Paraburkholderia phytofirmans. To assess the biofunctionalization protocol and antibody capture efficiency, Surface Plasmon Resonance (SPR) technique was employed. SPR offers label-free detection and real-time monitoring of bio-affinity reactions, providing valuable insights into the assay's performance. Additionally, we compared our bio-electronic platform with the established qPCR gold-standard method. Remarkably, our label-free electronic assay proved to be faster (30 minutes) and more precise (with false-negatives and false-positives below 1%) than state-of-the-art technologies, obtaining a limit of quantification two orders of magnitude lower than rt-PCR. This suggests the potential of our platform for large-scale screening of asymptomatic plants, paving the way for efficient plant pathogen detection at the point of care.

ORG-PO-041. Engineering of giant unilamellar vesicles via development of light-switchable amphiphiles

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Nowadays the responsiveness of supramolecular entities toward applied stimuli is fuelling a compelling area of research. Being inspired by the reactivity of living cells to encountered inputs, the interest of researchers has rapidly spread towards the development of systems able to accomplish complex and specific tasks upon a controllable stimulus.1 Mirroring the features of living cells might potentially be the key to shaping new future technologies, widening from groundbreaking strategies for pollution remediation to novel therapeutic tools in the frame of drug delivery.2

In this work, a library of artificial azobenzene-based amphiphiles was designed and synthetized, further to their incorporation in the bilayer of giant unilamellar vesicles (GUVs). Given the photo-triggered E-Z isomerization of the azobenzene moiety, unconventional behaviours were highlighted on the supramolecular scale via microscopy experiments. Remarkable shape and size alteration were confirmed upon light exposure in our engineered GUVs, as well as the opening of pores through the bilayer. All the observed phenomena were readily reverted by interrupting the irradiation.3 In light of the positive results attained, novel amphiphilic molecules were developed further on by integrating the photo-switch feature with fluorescence.

TEC-PO-018. Antimicrobial and chemical characterization on waste glass activated with KOH or NaOH at low molarity

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The pressing need to decrease global CO2 emissions is driving research and advancement in creating new materials and technologies that have a minimal carbon footprint, while still providing beneficial properties and long term durability1. Alkali-activated materials have shown great potential not only because of their performance, but also because various types of waste and by-products can be used in their production, resulting in both environmental friendliness and cost effectiveness. Sustainability can be further enhanced by minimizing the use of additives and/or their concentration, i.e. alkaline activators with low molarity.

Glass waste was alkaline activated with 2.50 M KOH or NaOH solutions. Fourier transform infrared spectroscopy was used to study the covalent bonds in the hardened materials. Leaching tests (EN12457) were also carried out to assess the possible presence of metals from the starting materials. In addition, antimicrobial activity was evaluated using the Kirby-Baur method2,3. Four microbial strains were used for this purpose, namely Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus and Enterococcus faecalis. The result was a well-formed material with interesting antimicrobial activity.

Fundings: PRIN 2022 PNRR project #P2022S4TK2 GLASS-based TREAtments for Sustainable Upcycling of inorganic RESidues (GLASS_Trea.S.U.Res).

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ELE-PO-007. Effect of Innovative Carbon Additives in Positive Active Mass of AGM Lead Acid Battery on Dynamic Charge Acceptance

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Battery-based energy storage systems with high power / energy densities and excellent cycle efficiency are expected to play a key role in our everyday life. Even though Lead-Acid Batteries (LABs) are the oldest electrochemical energy storage technology, they still attract a lot of interest thanks to their properties: stability, reliability, recyclability and low cost of raw materials. Precisely for these reasons, LAB technology will retain its strong position at least until 2030 and it remains very competitive, but ongoing investments are needed in order to improve production and performances.

A well-known problem of LABs is the limited charge efficiency and cyclability, due to an important degradation of electrodes during the discharging-charging process. It was observed that small addition (0.5 – 2 %wtPbO) of carbons in the Positive Active Mass (PAM) of LABs improves the battery performances and specifically the weight, mechanical strength, and conductivity, which is beneficial for uniform current distribution during the charge-discharge process.[1] A series of carbon-based materials were selected and they were screened on the bases of physicochemical and electrochemical properties such as surface area, porosity, graphitization degree, conductivity, contact angle (wettability), and the overpotential versus the hydrogen evolution reaction.[2] The best candidates were mixed and tested at different loadings in the positive active mass to prepare positive plates from scratch.

A 1+/2- test cell was developed for the electrical, electrochemical, and chemical characterization of the novel electrodes in AGM configuration. The prepared cells were tested under standard charge-discharge protocol and then tested with a homemade procedure for waterloss using coupled electrochemical polarization and gas analysis, adapted for the AGM configuration, in accumulation mode instead of flux mode.[3] The incorporation of carbonaceous materials is evaluated as impact in the charge/discharge performances, in oxygen recombination and plate corrosion of LAB cell under test, when compared to commercial plates. The effect of increased carbon loading was also considered.

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Progetto finanziato dall'Unione Europea – NextGenerationEU – Piano Nazionale di Ripresa e Resilienza (PNRR) – Missione 4 Componente 2 Investimento 1.3 – Avviso N. 341 del 15.03.2022 del Ministero dell'Università e della Ricerca (MUR). Si ringrazia l'Università degli Studi di Padova per il sostegno finanziario attraverso la sovvenzione UNIMPRESA (numero di progetto: DAMA2021).

FAR-PO-068. Looking for new active metabolites: how to merge drug discovery and biodiversity conservation

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The 83% of the chemical scaffolds found in nature are unique, due to the lack of commercially available synthons or prohibitive synthetic procedures.1 This data prompted many researchers to consider libraries of secondary metabolites as the starting point of the drug discovery process. As a result, more than one hundred databases of NPs have been developed, among which 85% focus on data concerning terrestrial plants. Among this 85%, only 1% reports on plants from Europe, making clear how Europe's biodiversity is largely under-considered in the Nature-Aided Drug Discovery scenario.2

In this work we built a library containing almost 6000 secondary metabolites produced by plants growing in Pavia countryside and linked them to their SMILES code and producing organism. Thus, one of our purposes was to promote biodiversity conservation in Lombardy, particularly in Pavia countryside, being it a very underestimated hotspot of biodiversity. Next, we set up a pharmacophoric model exploiting Ligand Scout software to identify potential proteasome inhibitors and so potential anti-cancer agents. This target was selected being already available proteasome inhibitors associated with several side effects, which can cause a dose limitation or a complete suspension of the therapy. The following virtual screening allowed us to identify seven new potential proteasome inhibitors, which were next purchased or extracted to validate their activity via in vitro assays. These metabolites can be considered hit compounds in the fight against cancer and further research is ongoing to improve their pharmacokinetic and pharmacodynamic profiles. Of note, the herein presented approach allows merging the conservation of biodiversity and the identification of new active metabolites. This is due to the preliminary computational studies that avoid concerns related to harvesting high amounts of natural matrices for preliminary screening.

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INO-PO-002. Development of advanced biomedical devices for hard and soft tissue applications

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Phosphate-based glasses (PGs) are promising bioresorbable materials for controlled delivery of therapeutic species. In this work different synthesis techniques are used: sol-gel (SG) and coacervation (COA).1 Cerium mesoporous PGs (Ce-MPGs, SG synthesis), in the system P2O5-CaO-Na2O-(CeO2)x (x = 0, 1, 3, 5, 10 mol %), have been developed. Cerium, like superoxide dismutase (SOD) enzyme, is able to destroy highly reactive oxygen or nitrogen species.2 To increase antioxidant properties, Ce-MPGs were loaded with polyphenols (Quercetin, Morin Hydrate and 3-Hydroxyflavone).2 The studied loaded glasses show a relevant SOD-mimetic activity, these PGs are able to reduce post implantation inflammation and reduce the recovery time. Manganese and copper powders (Mn-PGPs, Cu-PGPs, COA synthesis), in the system P2O5-CaO-Na2O-(YO)x (Y=Mn or Cu. x = 0, 1, 3, 5, 10 mol %), have been also studied.3 Bioactivity tests performed on PGPs, Mn1-PGPs and Cu1-PGPs into different medium, show the formation of hydroxyapatite-like precursor, after few days of immersion (Figure 1 red marked). Mn-PGPs and Cu-PGPs have great potential in hard tissue regeneration, not only as a drug delivery system. Copper is also able to mimics the activity of SOD enzyme and Cu-PGPs show a very high antioxidant capability.

INO-PO-043. Copper complexes with adamantane ring-conjugated ligands as promising agents for the treatment of glioblastoma

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Platinum drugs are the mainstay of the metal-based compounds in the treatment of cancer, even if their use is limited by severe side effects and resistance phenomena. These weaknesses stimulated scientific research to develop new metallodrugs with lower cytotoxicity and acting on different targets. Since copper is a trace element that is essential to all aerobic life forms, and tumour tissues require more copper, Cu complexes may modulate cancer cell survival by generating reactive oxygen species, accumulating excess copper, inhibiting proteasome activity and inhibiting angiogenesis. Cu-based complexes have recently shown interesting antitumor and anti-metastatic properties on several kinds of solid tumours [1].

We designed and synthesized new Cu(I) and Cu(II) complexes and evaluated them as potential agents for the treatment of glioblastoma (GBM) [2]. The bis(pyrazol-1-yl)- and bis(3,5-dimethylpyrazol-1-yl)-acetic acids were selected as bifunctionalizable agents and conjugated to the drug amantadine to obtain the synthesis of the new chelating ligands LAd and L2Ad. Amantadine was selected because of its recently proven antiproliferative effects in different human tumour cell lines, including hepatocarcinoma, melanoma, and glioblastoma cells. Phosphane co-ligands were employed for the synthesis of the Cu(I) complexes to stabilize copper in the +1 oxidation state and wisely tune solubility properties of the corresponding complexes. The electronic and molecular structures of the new complexes were investigated by X-ray photoelectron spectroscopy, near-edge X-ray absorption and for [Cu(L2Ad)2]Br2 by X-ray diffraction analysis. Interesting results emerged from the biological studies of the new complexes and of the corresponding uncoordinated ligands, investigated for their antitumor potential on different GBM cell lines and for their ability to enhance the chemosensitivity to temozolomide, the standard post-surgical treatment of GBM [2].

Acknowledgements: NextGenerationEU - D.M. 737/2021 “INVIRCuM” University of Camerino FAR 2022 PNR

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ANA-PO-117. Innovative Electroanalytical Platforms for Wearable Sensor

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During the past years, the increasing need to monitor biophysical parameters and enhance quality of life has led to the spreading of Internet of Things (IoT) and the development of smart and wearable devices. While these types of devices, which monitor physical parameters, are now part of our everyday life, the development of wearable electroanalytical platform for the monitoring of chemical parameters is more complex. Indeed, they need to be flexible, thin, conformable, but simultaneously resistant and low cost, possibly using sustainable and biodegradable materials.1 Since urgent actions are required to ensure sustainable consumption and production patterns, a new revolution concerning the use of green technologies in the manufacture of electrochemical platforms is taking place.

This study aims to investigate the application of sustainable materials and technologies in the production of electroanalytical devices, such as biodegradable and flexible polymers 2 and thin graphitic carbon electrodes. Indeed, we explored different techniques to draw the conductive traces, such as graphitization of the surface using a CO2-laser 3, the use of conductive inks 4, or a graphene-based paper 5, facilitating the manufacture, and reducing the costs of the electrodes.

The electrochemical performances of these innovative platforms were demonstrated through Cyclic Voltammetry (CV), Chronoamperometry (CA), and Electrochemical Impedance Spectroscopy (EIS). Their applicability as an amperometric sensor was assessed using glucose oxidase as a benchmark enzyme in the biosensing strategy. Furthermore, the electrocatalytic effect of these platforms for the detection of biomolecules belonging to the class of catecholamine was also evaluated, due to their importance in the biomedical field.

In conclusion, all the investigated platforms give promising results, making them suitable to replace commercial ones. Indeed, they also are flexible, thin, low cost and have low environmental impact that make them attractive candidates for sustainable and wearable sensing platforms.

FAR-PO-124. Silica nanoparticles functionalized with natural compound derivatives as novel anti-biofilm agents

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The widespread formation of biofilms plays a significant role in human health, representing an important aspect in the development of infectious processes. To overcome the increasing antimicrobial resistance, the focus is to find new stategies to trigger the dispersal of biofilm or inhibit its initial formation.

To prevent biofilm development, we decided to consider novel antimicrobial-free strategies based on compounds acting at sub-lethal concentration, leading to biofilm inhibition while avoiding bactericidal effects. Starting from our previous studies1,2, we explored the functionalization of inorganic nanoparticles with natural compound derivatives endowed with antifouling properties. The goal was to achieve novel nanoparticles suitable for surface coating, limiting the drawbacks of current anti-biofilm coverings, particularly the selection of resilient strains. Therefore we designed and synthesized two series of new silica nanoparticles (1s,l - 2s,l and 3s,l - 4s,l). After their characterization, the sanples exhibiting the higher degree of functionalization (1l -4l) were used to coat glass coverslips by spin-coating. The coated surfaces (A-D, respectively) were tested against P. aeruginosa biofilm, and the results highlighted that surfaces B and D (Figure 1) showed promising anti-biofilm properties (percentage reduction of biofilm formation ranging from 59.2 ± 2.2 to 83.7 ± 3.4, respectively).

Figure 1: Atomic force microscopy (AFM) topographic image (40 × 40 µm), 3D rendering of the 40 µm image for perspective, and height histogram of surface D.

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FAR-PO-076. PPARγ non-agonists: a new frontier in the treatment of metabolic diseases

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Insulin resistance is a pathological condition characterized by attenuated tissue response to normal or elevated insulin production. Type 2 diabetes mellitus (T2DM) and Metabolic Syndrome are the most common clinical pathologies associated with IR [1]. Most of glitazones, the traditional anti-diabetic drugs, which act as Peroxisome Proliferator-Activated Receptor γ (PPARγ) agonist, have been withdrawn from the market. To avoid the serious adverse effects related to the PPARγ agonism profile, a new opportunity is represented by the development of inhibitors of the PPARγ phosphorylation by the cyclin-dependent kinase 5 (Cdk5). Their mechanism of action is mediated by the stabilization of the PPARγ β-sheet containing Ser245 [2].

Recently, we disclosed the PPARγ non-agonist activity of 4-(4-bromophenyl)-3-hydroxy-5-(3-hydroxyphenyl)furan-2(5H)-one (1), which is able to block the phosphorylation of the enzyme without direct inhibition effect of both CDK5 and PPARγ [2]. We combined computational strategies and crystallographic experiments to deeply investigate the interaction of 1 with PPARγ and design innovative candidates, endowed with higher affinity for the target. The new derivatives, characterized by KD values in the nanomolar range, improved the affinity for PPARγ of more than ten times compared to that of 1. Furthermore, we successfully employed a bioisostere strategy to effectively improve the biostability of our compounds, thereby optimizing their pharmacokinetic profiles and therapeutic potential.

Of note, an innovative green synthetic approach was tackled in several steps, where the traditional organic solvents were replaced with bio-based solvents derived from biowaste, or from very cheap and easily accessible natural sources [3].

Overall, these outcomes, obtained combining computational, crystallographic, and innovative synthetic approaches, proved that the γ-hydroxy-lactone scaffold may provide a promising template for the development of novel anti-diabetic agents targeting PPARγ, without any transactivation potential or agonist activity. This innovative strategy could transform the treatment landscape for millions of individuals suffering from metabolic disorders, allowing the development of a safe treatment of insulin resistance.

ORG-PO-177. Lewis acid-catalyzed synthesis of B,B',B"-substituted borazines under microwave irradiation

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Borazine, valence isomer of inorganic benzene, is nowadays a well-known precursor for ceramic materials. Since its first synthesis in 1926 by Stock and Pohland1 much progress has been made both in the synthesis and application field2 of this substrate owning to its features that differ from those of benzene. While borazine is isoelectronic with benzene, it is less aromatic and has a higher HOMO-LUMO bang gap (6.2 eV vs 6.0 eV for benzene). Despite the progress made to date, borazine synthesis remains a challenge for scientists. Regarding B-aryl substituted borazines, only few synthetic protocols are available. In 2005 Nöth and Troll3 afforded to synthesize 2,4,6-Triphenylborazine in 98% yield after a 10-day reaction between PhBCl2 and HMDS at 55°C. Successively, Engels

and Helten4 attempted the synthesis of B,B',B"-trimesityl-N,N',N"-trimethyl borazine but they could obtain the product only in traces after 14 days.

Keeping in mind these challenges, we developed a new synthetic protocol to access B,B',B"-substituted borazines. In this context greener, easier to handle and more accessible boronic esters are used instead of harmful boron halides. Moreover, by combining the Lewis acid-catalysed protocol with the known advantages of Microwave Assisted Organic Synthesis, we could synthesize a variety of B-substituted borazines in higher yields in 1h while reducing the quantity of waste generated.

IND-PO-010. Modulation of redox property of Cu complexes based on bipyridine ligands substitution

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We recently reported on a new application for the [Cu(6,6'-dimethyl-2,2'-bipyridine)2][PF6] (coded CuBPA) system as an active catalyst for allylic oxidation of cyclohexene by tert-Butyl hydroperoxide (TBHP) in dichloromethane1. Such a redox cycle was not observed for [Cu(2,2'-bipyridine)2][PF6] (coded CuBPD) system where the oxidation by TBHP is a fast but irreversible process, and the back-reduction with cyclohexene is not observed. The slow kinetic of the oxidation of CuBPA by TBHP, in contrast with the almost immediate oxidation of CuBPD, prompted us to explore the system [Cu(6-methyl-2,2'-bipyridine)2][PF6] (coded CuBPAD), aiming at a complex with intermediate redox and catalytic properties: it is known that the backbone substitution is crucial for the properties of these systems2. Preliminary computational study showed an encouraging linear correlation between the grade of methyl substitution and the ΔE and ΔG of the two oxidation reactions. Thus, we synthesize the BPAD ligand and prepared the corresponding Cu complex. The good match between computed and experimental Raman spectra confirmed the good quality of the models, corroborating the computational result, cyclic voltammetry confirmed the intermediate redox potential of CuBPAD, while UV-Vis study monitored the oxidation for CuBPAD in the same conditions used for CuBPA, confirming an intermediate behaviour that we expect to be reflected in the catalytic performance3.

ABC-PO-052. Toxins of freshwater microorganisms, from bio- to chemodiversity

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A certain number of cyanobacteria (prokaryotic microorganisms present in all waters) produce toxic secondary metabolites. The massive growth of these cyanobacteria can lead to high concentrations of toxins in the water, thus posing a threat to human health. Cyanobacterial toxins (cyanotoxins) are secondary metabolites with a huge chemical diversity due to the high flexibility of their biosynthetic pathways.

Biosynthetic pathways are common to all toxigenic cyanobacteria, but that the resultant toxic molecules are dependent on the species: Planktothrix rubescens and Microcystis aeruginosa for istance have the same gene cluster of the hepatotoxic microcystins (MC), but they synthetize different variants of MC. These examples show how an integrated biological and chemical approach can be very effective in studying toxigenic cyanobacteria. This approach has demonstrated to be very useful in addressing the toxic potential of cyanobacteria in different natural lakes.

ANA-PO-060. Highly sensitive chemoresistive sensors based on pristine and doped CeO2 for H2 detection

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Chemoresistive sensors utilizing metal oxide semiconductors represent one of the most prevalent technologies for gas detection. These sensors are simple and low-cost devices but at the same time capable of rapidly detecting extremely low gas concentrations; on the other hand, they lack sensitivity and need to operate at high temperatures1. They are widely employed in various fields such as environmental monitoring, industry safety, and medical diagnostics2. In this study, we conducted a comparative analysis of the response exhibited by chemoresistive sensors based on pristine and doped CeO2 prepared following two distinct fabrication methodologies. The first approach utilized Flame Spray Pyrolysis (FSP), enabling the synthesis and direct deposition of CeO2 nanoparticles onto interdigitated electrodes (IDEs) through the combustion of liquid precursors in a flame. Additionally, CeO2 nanoparticles were also synthesised via conventional wet-chemistry and sol-gel processes and deposited onto IDEs via drop-coating and spin-coating. CeO2 nanoparticles were chemo-physically characterised using XRD, IR, DLS, BET, TGA, UV-Vis and ICP techniques to investigate their composition, dimensions, surface area, thermal stability, and band gap. Subsequently, the sensors were subjected to various gaseous analytes, and their performance was evaluated by comparing the outcomes of the different synthesis and deposition approaches. The most promising sensors showed selectivity to methanol over ethanol and to xylene over toluene and benzene; furthermore, Pd-doped CeO2 sensors were found to be able to detect down to 150 ppb of hydrogen at room temperature.

FIS-PO-010. Efficient removal of perfluorooctanoic acid (PFOA) from water with magnetic metal-organic frameworks (MOF)

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Poly- and Per-fluoroalkyl substances (PFAS) are a class of hazardous and bio accumulative compounds that have an impact on both the environment and human health. The safety threat posed by Perfluoroalkyl acids (PFAAs) in drinking water is a growing concern, in particular perfluorooctanoic acid (PFOA) is widely diffused in Northern Italy. Many degradation techniques have been developed over the last decade to address this issue; unfortunately, they have the downside of releasing further environmentally toxic molecules or short-PFAS. Some adsorption methods have been studied, such as activated carbon or ion exchange resin filters, however they are not selective, saturate fast or are expensive. Magnetic particles functionalized with metal-organic frameworks coatings represent an innovative solution that could adsorb PFOA selectively without the need for filtration steps or the production of undesired byproducts.

In this work, a zirconium-based (UiO-66) and an iron-based (Fe-MIL-100) metal–organic frameworks have been synthetized and employed to functionalize magnetic particles. The obtained magnetic powders have shown great adsorption capacity, capturing up to 99% of the PFOA dissolved in water, offering a sustainable and efficient solution to PFAS contamination.

FAR-PO-013. Expanding the chemical space to discover new Mycobacterium avium Efflux Pump Inhibitors

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Antimicrobial resistance (AMR) is one of the most complex threats to human health. In the field of nontuberculous mycobacteria (NTM), especially Mycobacterium avium complex (MAC), high intrinsic multidrug resistance (MDR) is observed due to decreased permeability of the mycobacterial cell wall and drug efflux mediated by efflux pumps (EPs). Treatment of such infections is a clinical challenge due to the long duration, cost, and high likelihood of failure. M. avium EPs can extrude macrolides, leading to the emergence of macrolide-resistant phenotypes. Therefore, the development of efflux pump inhibitors (EPIs) represents a strategy to restore the efficacy of already approved antibiotics that are substrates of EPs, such as clarithromycin (CLA).1 Figure 1: Schematic representation of the present work

Due to the lack of in-depth knowledge of the structure of NTM EPs, only a few molecules characterized by a narrow chemical diversity have been reported as NTM EPIs.2 In this study, with the aim of expanding the chemical space of NTM EPIs, a selection of compounds from an in-house library was screened to evaluate their NTM EPI activity against M. smegmatis mc2155 and the clinical isolates M. avium 2373. Compounds 1b and 9b emerged as promising hits capable of synergizing with CLA at low concentrations and exhibiting a good safety profile. Analogues were designed with the aim of obtaining more information on the structure-activity relationship and improving potency as NTM EPIs, as was the case for compound 13b (Figure 1). The synthetic procedures together with the biological data will be presented in this study.

ORG-PO-178. Enhanced Adsorption of Water Contaminants on Chemically Functionalized Multi-Walled Carbon Nanotubes

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Carbon nanomaterials are promising adsorbents for the removal of organic pollutants from wastewater due to their nanometer size, high surface-to-volume ratio as well as possible chemical modification of the surface. The introduction of selected functional groups through surface functionalization can in principle allow the dispersion in water and establish specific interactions with the pollutant, thus enhancing the adsorption rate and enabling a regeneration strategy. Here we report on a derivative of multi-walled carbon nanotubes (MWCNT) bearing benzenesulfonate groups (MWCNT-S) for the adsorption of methylene blue dye (MB).

MWCNT-S was synthesized through diazotization reaction and characterized with IR, TGA, TEM, XPS and DLS measurements. The obtained material demonstrated to have more than double adsorption capacity and significantly higher adsorption rate than that of the pristine insoluble MWCNT. Surface functionalization ensured the dispersibility of the derivative in water, providing more available surface area, and the possibility of electrostatic interactions between the cationic MB and the anionic sulfonate groups.

Additionally, the reversibility of ionic interactions disclosed the possibility to release the adsorbed cationic pollutant through competition with salts, not only regenerating the adsorbent, but also recovering the dye.

ORG-PO-042. Hydrochars as soil amendments for heavy metals removal from soil

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In the last years, mankind faced problems associated to depletion of non-renewable resources and the rise of demand for raw materials; lignocellulosic biomass and circular economy principles can help to solve this issue. Biomass is a renewable and carbon neutral resource, that can also be exploited starting from its waste form; according to circular economy waste biomass valorisation is a better option than waste disposal. Biochars are carbonaceous materials that can be derived from waste lignocellulosic biomass. They are often employed in several fields, such as electrochemistry, water, soil purification, and as catalytic support1,2. Biochars are usually obtained from pyrolysis, which requires deep drying, which is energy-intensive, particularly for biomass with high-moisture content. A more sustainable thermochemical process is hydrothermal carbonization (HTC), which operates in water-rich environment under autogenous pressure generated from water and at moderate temperature conditions, about 200-260°C3. The final solid product is called hydrochar, a particular class of biochars, that retains volatile organic matter and functional groups that are crucial for adsorption. This study investigates the effectiveness of hydrochars from different biomass waste sources in the adsorption of lead, zinc, and cadmium from soil, both as single metals and simultaneously.

ORG-PO-043. Unlocking the Potential of Lignin: Integrating Extraction and Depolymerization Strategies for Sustainable Biomass Valorization

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Lignin, the second most abundant natural polymer, holds immense value in the biorefinery sector, offering diverse opportunities for innovation and sustainability across industries. However, the complex and irregular structure of this biopolymer presents challenges in achieving specific target molecules. Firstly, the focus is on obtaining unaltered lignin, known as "lignin first," which closely resembles its natural composition. Protective agents like aldehydes and ketones have been explored to mitigate lignin denaturation during extraction processes1. Additionally, lignin depolymerization often relies on harsh catalytic methods with limited selectivity. However, recent advancements in photocatalysis with earth-abundant metal offer a promising avenue for gentler lignin depolymerization.

This study integrates those approaches to enhance lignin's suitability as a natural feedstock for obtaining target aromatic molecules such as aryl aldehydes, carboxylic acids, and formates. Therefore, formaldehyde is chosen as a protective agent to stabilize α,γ-diols, such as β-1 and β-O-4, during the 1,4-dioxane extraction process, facilitating acetal formation. Subsequently, acetals are removed to recover formaldehyde and restore vicinal diol functionalities. Indeed, the presence of α,γ-diol is essential for the vanadium(II) aminotriphenolate complex in order to catalyse aerobic oxidative cleavage of C-C bonds under ambient conditions and visible light 2,3. In summary, this study provides a comprehensive perspective on biomass utilization, focusing on enhancing lignin as a platform for aromatic derivatives.

ANA-PO-006. Self-Powered Flexible and Sustainable Electrochemical Sensor for Oxygen Detection

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Food packaging is a well-known practice to primarily safeguard and encase food items. However, with the advancement and increasing complexity of society, there has been a rising demand from various finally users, including food producers, retailers, and consumers, for ensuring food safety and quality within the packaging. This growing emphasis on food safety and quality has led to the emergence of intelligent food packaging as an innovative packaging solution 1.

Intelligent food packaging refers to a packaging system equipped with smart sensors to monitor the condition of packaged food by the detection of several physical and chemical parameters, such as temperature, humidity, and gas concentration.

In this regard, oxygen has the potential to cause food spoilage via the i) oxidation of food components, ii) enzymatic reactions that accelerate ripening and browning, and iii) proliferation of aerobic microorganisms. In this context, it is crucial to monitor oxygen levels within the food packaging to ensure food quality and safety.

In this overall scenario, we are under development of a flexible miniaturized self-powered electrochemical sensor for oxygen monitoring in intelligent food packaging. In detail, the device encompasses i) a cathode layer based on silver ink screen-printed on oriented polypropylene substrate, acting as oxygen diffusion layer, ii) a sustainable deep eutectic solvent gel electrolyte2 characterized by high ionic conductivity, low-cost, and biodegradability, and iii) an anode based on pure metal. The three layers were pressed giving rise to a solid-state self-powered electrochemical sensor. The whole detection system is based on the oxidation of anodic metal ions by oxygen, allowing it to diffuse through a gas diffusion layer from the air at the cathode. The final quantification of oxygen is carried out by means of open circuit voltage (OCV).

For the development of the self-powered sensor, optimization studies were first conducted on the cathode silver layer deposition, the anodic material layer, and finally on the DES composition. The electrochemical sensor will be applied for oxygen monitoring in simulated packaging for real-time oxygen measurement

FAR-PO-074. Carbon monoxide: a new ally against Multidrug Resistance

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Despite all the efforts in recent decades cancer remains the second leading cause of death worldwide. Several types of treatments are available for tumours, among them, chemotherapy is still the method of first choice. However, the emergence of drug resistance could seriously undermine its effectiveness.1 Indeed, cancer cells can develop cross-resistance to several drugs with a different mechanism of action, giving rise to MultiDrug Resistance (MDR) that represents a serious obstacle to the use of chemotherapeutic agents. Different approaches were proposed to deal with the MDR. In the past, we have found that gaseous signalling molecules, such as nitrogen monoxide (NO) and hydrogen sulfide (H2S), could help overcoming the resistance of cancer cell to chemotherapeutics. Here we present the use of another gaseous messenger – CO, as a sensitizer of cancer cells.

The use of gaseous CO is dramatically complicated by its toxicity due to inhibition of oxygen transport and lack of selectivity for any tissue. In this context, the controlled delivery of CO to target tissue remains a challenge in medicinal chemistry. Several CO-releasing molecules (CORMs) have been proposed as alternatives to direct CO administration.2 Here we decided to use non-metallic CORM (1) that release carbon monoxide after hydrolytic activation (Scheme 1).

The toxicity of 1 alone and in combination with chemotherapeutic was evaluated in tumour cell lines known for their intrinsic resistance to chemotherapy caused by the high levels of different ABC transporters as well as in non-transformed cells. We have found the 1 itself reduced the viability of tumour cells at 0.1 – 1 μM concentration, while its toxicity in corresponding non-transformed cells was significantly lower. When 1 was co-incubated with increasing concentrations of cisplatin, doxorubicin, docetaxel or gemcitabine, i.e.,

the first line-treatments for corresponding tumour types a pronounced decrease in cell viability, significantly higher than the decrease exerted by the chemotherapeutic drug alone was observed.

It seems that the mechanism responsible for sensitizing of resistant tumour cells include the mitochondrial damaged with a high level of mitochondrial ROS production due to CO production. Indeed, the toxicity could be reversed by treating cancer cell with mitochondrial ROS scavenger mitoquinol or by co-incubating them with red blood cells (scavengers of CO).

This work demonstrated that CO donors can rescue the efficacy of several chemotherapeutic drugs in solid cancers that express ABC transporters and are refractory to clinically used chemotherapy, opening new combinatorial strategies to achieve chemosensitization.

CSB-PO-016. Anticancer effects of Tilorone Dihydrochloride in DMBA induced breast cancer

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Breast cancer is one of the most commonly diagnosed cancers in females globally [1]. Type 1 interferons (IFNα and β) are known to have considerable inhibitory impact on cancer cells' survival and growth. IFN1 induction stimulate cell intrinsic apoptotic pathways while simultaneously priming the immune cells to exert their cytotoxic effects on cells producing the IFN1 by activating the immune cells including the natural killer (NK) cells [2,3]. Further, IFN1 induction also suppresses oxidative stress and inhibit the release of tumor promoting pro-inflammatory cytokines [4]. Also, the presence of a repressed IFN/STAT1 signature is correlated with the progression of breast cancer characterised by an increased epithelial to mesenchymal (E-M)/cancer stem cells (CSC) plasticity [5]. Tilorone dihydrochloride (Tilorone) is an orally active interferon inducing agent that is used as an over-the-counter broad spectrum antiviral agent [6]. Apart from its antiviral effects, tilorone has been shown to have anticancer effects that are mediated by multiple mechanisms including DNA intercalation and promotion of anticancer immunity mediated by interferon induction and activation of NK cells and cytotoxic lymphocytes [7]. On account of its interferon inducing effects, we hypothesized that tilorone can have tumor suppressing effects on breast cancer by virtue of its opposing effects on tumor promoting pro inflammatory cytokines and oxidative stress. Therefore in the current studies, the relationship between oxidative stress, pro-inflammatory cytokines and tumor growth in response to treatment with tilorone in cell and animal model of breast cancer will be presented.

ANA-PO-129. Impact of microplastics on the lipid metabolism in Trematomus bernacchii from the Ross Sea, Antarctica.

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Research studies have showed that exposure of marine specimens to microplastics (MPs) induces a variety of toxic effects, including oxidative stress, metabolic disorder, changes in immune response, neurotoxicity, reproductive and developmental toxicity [1, 2]. The purpose of the present study was to evaluate for the first time the effects of MPs on the muscular lipid component in specimens of wild Trematomus bernacchii. The fish were caught during the 37th Italian Antarctic Expedition (2021-2022) for the SBAM - PNRA project. In Italy, the gastrointestinal tracts (GITs) of each fish were digested in order to isolate the MPs. Twenty T. bernacchii specimens were classified in positive (samples found to be contaminated by MPs in their GITs) and negative (samples MPs free) groups according to RAMAN spectroscopy analyses. The lipid fraction of the selected T. bernacchii samples was analyzed by gas chromatography technique coupled to mass spectrometry and flame ionization detectors. A total of fifty fatty acids methyl ester (FAME) compounds were identified and quantified in the analyzed samples. The lipid distributions among the positive and negative fish groups were correlated in order to evaluate the impact on the metabolic activities of fatty acids in muscle tissues. This is the first research study in which the effects of MPs are used for establishing the nutritional quality of wild marine species.

Acknowledgments: This study has been funded by the Italian National Antarctic Research Program (PNRA, SBAM project, 2020–2023) PNRA18_00041 - B2 - Study of Bacteria resistant to Antibiotics and heavy Metals (water, sediment and Trematomus bernacchii) and detection of heavy metals", funded by Italian Minister of University and Research (MUR). The research was conducted within the PON Research and Innovation 2014–2020 project funded by Italian Ministry of University and Research (MUR). The authors thank Maurizio Azzaro and Francesco Smedile for the sampling activities in Antarctica.

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ANA-PO-145. Immobilized Lipases on Spent Coffee Grounds for Enhanced and Sustainable Oil Hydrolysis

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Free fatty acids (FFAs) play a fundamental role in industry as they are used in various sectors, from the food and pharmaceutical industry to biofuels production. Traditionally these molecules are produced employing aggressive chemicals and high temperatures [1], so, the use of immobilized lipases has recently emerged as a promising alternative. Also, the use of lignocellulosic wastes as lipase supports has aroused great interest [2] due to their wide availability, non-toxicity, renewability, etc. [3,4]. For these reasons, this work aimed to use spent coffee grounds (SCG) for the synthesis of solid biocatalysts capable of synthesizing FFAs from olive oil. Three solid biocatalysts derived from the immobilization of commercial lipase from Candida rugosa (C-CRL), lipase (isoenzyme 1) from Candida rugosa (Lip1), and lipase from Rhizopus oryzae (ROL) were studied. The solid biocatalysts were obtained through adsorption [5] on the treated waste material and immobilization parameters such as time, pH, and initial activity in the immobilization mixture were optimized for all three types of enzymes. The aim was to obtain the solid biocatalyst with the highest possible activity and the success of the immobilization procedures was evaluated by considering the activity recovery (%), immobilization efficiency (%), and activity of the solid biocatalyst (U/g). The synthesized solid biocatalysts were also characterized in terms of pH and thermal stability and each was found to be more stable than the starting free enzyme. Finally, all optimized solid biocatalysts were used in the hydrolysis of olive oil at 30 °C. Operational stability was also tested by repeating the hydrolysis procedure for several cycles and washing the solid biocatalyst after each use. All three solid biocatalysts demonstrated excellent operational stability, being able to be reused for up to 6 consecutive cycles. However, immobilized C-CRL showed the best hydrolysis percentage (23%) and the best specific Space-Time Yield (STY) [6] (8.8 g L−1 d−1).

In conclusion, this study addressed the pressing need for sustainable methods of raw material production using lipases immobilized on a lignocellulosic waste. The procedure was proved to be a promising alternative to traditional methods, offering advantages such as eco-friendliness and enzyme reuse.

ORG-PO-179. Allenamides: a powerful substrate for the visible- light dearomatization of simple aromatics

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The extreme development of reactions between sp2 carbons has generated a bias in modern chemistry: the dependence of flatness. In this scenario, dearomatization reactions are extremely useful. We found out that allenamides can be sensitized in presence of visible light. When R is a benzyl or naphthyl, we achieved a dearomative 1,4 para-cycloaddition obtaining a [2.2.2] bicyclooctene(diene). By tuning the R group, we developed two intermolecular dearomatizations. If the amide is substituted with an alkyl moiety, a para-cycloaddition on naphthalene occurs. On the contrary, when R is an allyl group, we got a very complex product with the formation of four new C-C bonds in one step. Allenamides have therefore proven to be an excellent substrate to allow challenging synthetic transformations, with extremely mild conditions, cheap setups and complete atom economy.

FAR-PO-042. Discovery of novel Tazemetostat analogs as dual inhibitors of EZH2 and HDAC

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It is well known that many pathways leading to cancer involve the overexpression of numerous epigenetic targets and/or depend mechanistically on their functions. Consequently, the epi-polypharmacological approach emerges as an effective tool to counteract cancer1. An interesting approach in this context is represented by the simultaneous inhibition of two or more targets involved in cancer pathogenesis, using hybrid molecules that possess different moieties and the ability to hit at the same time different targets. Epigenetic regulators like histone deacetylase inhibitors (HDACi) and EZH2 inhibitors have surfaced as potent instruments in cancer investigation, also in combination2. We based our work on Tazemetostat, a clinically approved EZH2 inhibitor, to develop new dual hybrids by incorporating HDAC enzyme inhibiting groups (EIG) such as ortho-aminoanilides and hydroxamic acids in its structure, and obtaining respectively the two lead compounds MC4343 and MC4355. These compounds showed promising IC50 values in biochemical evaluation on both targets and were tested for their inhibition of proliferation in various B-cell lymphoma lines, including KARPAS422, Pfeiffer, SUDHL4, Toledo, and WSDL CL2. In particular, they showed a greater antiproliferative effect than Tazemetostat on SU-DHL-4 and Toledo, while maintaining comparable activity on other B-cell lymphoma lines. We also investigated the effect of such compounds on cell cycle using B-cell lymphoma lines and both compounds led to concentration-dependent increase in the pre-G1 phase, indicating potential apoptosis induction. Thus, we decided to merge the Tazemetostat scaffold with various both aromatic and aliphatic linkers, and then decorate them with hydroxamic acid and ortho-aminoanilide groups obtaining derivatives 1c-h and 2c-f. We also attempted to confer selectivity towards HDAC1-3 isoforms with two o-aminoanilides enriched with a fluorine atom in the meta position of the 2'-amino group and with a thiophene which, in the pharmacophoric model of HDACs inhibition, is able to confer selectivity for HDAC1/23, obtaining respectively 2a and 2b. Regarding EZH2, the new compounds showed inhibitory potency in the low nanomolar to single-digit picomolar range. Regarding HDAC isoforms, compound 2e exhibited IC50 values in the low micromolar range for HDAC1-2, whereas 2c demonstrated efficacy in specifically inhibiting HDAC6 at the nanomolar level. The most powerful compound was found to be 1e, displaying selective inhibition against HDAC6 and 8 with IC50 values in the nanomolar range. Our new most potent inhibitors will be tested on various tumor lines to evaluate their antitumor potential.

TEO-PO-016. Four component relativistic calculations at reduced cost: a Cholesky decomposition implementation

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Including relativistic effects in the computational description is paramount when dealing with molecules containing heavy-metal atoms. Such effects can be divided into scalar relativistic and spin-orbit effects. The former have a large impact on the overall energy, while the latter are responsible for fine effects on the electronic states. In this contribution, we pursue a computationally efficient, but rigorous description of scalar relativistic effects by adopting the four-component spin-free Dirac-Coulomb Hamiltonian in combination with Coupled-Cluster with single and double excitations (CCSD) as an electronic structure method. A four-component treatment introduces a major computational bottleneck, because the 4-component structure of the wave function leads to a sizeably larger number of two-electron integrals that need to be computed and processed when compared with the non-relativistic case. The additional two-electron integrals are not only affecting all computationally intensive step of a quantum chemistry calculation, but are also per se expensive to compute. However, they are numerically smaller than the non-relativistic integrals, which makes them an ideal problem for rank reducing techniques. In this contribution, we apply the Cholesky Decomposition (CD) to the spin-free, relativistic two-electron integrals to accelerate the computation. We present an efficient, two-step implementation of the CD, and discuss possible approximations that can be adopted when selecting the Cholesky basis, and in particular, the neglect of pivots stemming from the small component integrals. Using the CD has several advantages: it reduces the cost of computing the integrals themselves, accelerates the SCF and integral transformation computations, which further become trivially parallelizable, and, due to the effective compression of the two-electron integral tensor achieved by the technique, allow for an efficient MO implementation of the CCSD treatment that is not memory limited. This is particularly attractive, as it allows to use the same machinery used for non-relativistic CD-CCSD calculations, making thus it possible to perform the correlation calculation, which is the most expensive overall computational step, at no additional computational cost with respect to the non-relativistic counterpart. Various numerical experiments are presented to show in detail the possibilities and performance of the CD-SFDC-CCSD implementation.

ABC-PO-028. Green nanostructured composites for the consolidation and protection of Street Art: formulation, characterization, and application

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Street art is increasingly influencing world artistic production, but its conservation is challenging due to constant exposure to environmental conditions such as light, pollution, temperature, and relative humidity fluctuations. Furthermore, biological agents are non-negligible in urban art degradation1. Unlike traditional wall paintings, graffiti are made with synthetic organic paints on inorganic substrates such as concrete, brick walls, and mortars. Therefore, it is necessary to study the degradation processes and develop appropriate conservation products and methods.

Organic-Inorganic Hybrid Materials (OIHM) can be an effective strategy for the formulation of protective coatings that can act both as a barrier layer and a consolidating product, considering the physicochemical properties of urban art materials.

Chitosan (Chs) is an abundant, and sustainable biopolymer obtained by partial deacetylation of chitin from the industrial waste processing of marine shells and crustaceans. It has been selected as the organic component for its good film properties as it forms mechanically resistant and semi-permeable films. Additionally, it shows good optical, and antimicrobial properties, it is non-toxic, and it has already been studied as a new biopolymeric treatment on porous limestones in historic architecture to inhibit the crystallization of hazardous salts2.

The main objective of this project is to develop a hybrid coating that combines Chs and nano-silica (NS) to improve the compatibility and the adhesion of the coating to the inorganic substrate. The new formulation would act as a barrier layer and a consolidating product by introducing innovative green materials that can best mitigate the degradation effects on Street art. The hybrid formulation was designed and investigated by ATR-FTIR, SEM, DLS, and zeta potential analysis. Alkyd and acrylic spray-painted concrete mockups were prepared to mimic street art techniques.

Chemical stability, color and gloss variations, water vapor permeability, and hydrophobicity are evaluated on the mockups before and after the application of the Chs-NS-based coating, and its long-term stability is assessed through accelerated aging tests.

ORG-PO-044. Buckwald-Hartwig goes greener. An effective heterogeneous protocol to access the synthesis of Csp2 – N bond under microwave irradiation.

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Buchwald-Hartwig coupling is a powerful tool allowing the formation of Csp2-N bonds. Compared to traditional synthetic strategies, offers the advantages of being a one-step reaction, using relatively mild reaction conditions and having greater tolerance to functional groups. This versatile method has a strong impact in both academic and industrial sectors: agrochemicals, natural products, sensors, ligands, polymers, and e Active Pharmaceutical Ingredients (API) heavily rely on this type of bond. Despite its applicability, improving energy efficiency and environmental friendliness remains an ongoing endeavour. To address these challenges, the use of recoverable, low-energy-consuming, biomass-derived 2-MeTHF, presents a promising solution. Herein, a comparison between traditional and microwave heating is reported in combination with Pd/C as a recoverable catalyst. To the best of our knowledge, there are few examples of applying this technology in this field. The synergy between microwave technology, heterogeneous catalysts, and recoverable reaction media enhances the accessibility of diversely functionalised arylamines, key intermediates in API synthesis.

ORG-PO-045. Halloysite/Pyrazole[3,4-d]pyrimidine nanomaterials for potential local treatment of prostate cancer

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Prostate cancer is the second most common tumor and the fifth cause of cancer death in men. Recent studies showed that different types of human tumors, as for example prostate cancer, present an overexpression of a protein kinase, c-Src, which downregulation could be a useful strategy for their treatment. Over the years several c-Src inhibitors have been developed that possess in their structure some heterocyclic rings, such as pyrazolo[3,4-d]pyrimidine derivatives. However, these molecules present a very poor aqueous solubility that requires high dosage to be efficient worsening the patience compliance. Halloysite, a clay minerals belonging to kaolin group with a typical hollow tubular structure, because of its biocompatibility and low cost represents a valuable carrier system for the local delivery of such drugs. Herein, we report the design of halloysite based nanomaterials covalently or supramolecular modified with some pyrazolo[3,4-d]pyrimidine derivatives ad hoc synthetized. The obtained nanomaterials were thoroughly investigated from a physico-chemical point of view to assess the successful modification and their morphology was imaged by transmission electron microscopy. Furthermore, their antiproliferative activity was also assessed by in vitro studies on RT112, UMUC3 and PC3 cell lines as model of bladder and prostate cancer cells.

ORG-PO-180. Sustainable synthesis of tacrine and analogues for Alzheimer's disease in deep eutectic solvents: a green approach

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In this communication, we introduce a green synthetic protocol for the synthesis of tacrine and analogues, which are utilized in the treatment of neurological disorders, achieving yields of 90–95%. We employ Type I and IV Lewis Acid Lewis Acid DESs (LADESs) as solvent and catalyst. Quantitative metrics confirm the eco-friendliness of these novel approaches.

ABC-PO-032. Their Dark Materials: Discovering the Black Shades of the Naselli Sarcophagus

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In the framework of a conservation intervention -promoted and supported by the Superintendence of Cultural Heritage of Ragusa, the Prefecture of Ragusa and the Diocese of Ragusa-, the opening of a 15th Century sandstone sarcophagus, conserved in the Church of San Francesco all'Immacolata in Comiso, revealed a set of precious findings: several bones were found, belonging to twelve human bodies, among adults and children, along with various textiles. These were likely part of the grave goods of deceased members of Naselli nobles; however, they have been dated to the 16th Century, one hundred years after the sarcophagus.

Among these, several textile fragments showed technical features of luxurious goods, representing important evidence for the history of costume. In particular, three textile fragments, likely representative of a gown and a pair of trousers, captured the attention of the anthropologists for the preciousness of both fabric and colours. The brown and the black of these silk samples evidenced a refined manufacturing, while the complexity of dyeing processes for obtaining dark shades1 and the issues related to their conservation2 pushed the conservators to investigate the composition of these ancient matrices by means of an empowering collaboration with scientists and anthropologists, aimed to reconstruct the history of the ancient Naselli sarcophagus.

In this study, we present the results of an extended diagnostic campaign on these textiles, which exploited a multi-analytical approach covering dating, microscopic and spectrometric techniques. A particular focus was dedicated to Raman scattering, through the combination of the most solid and the newest strategies of this spectroscopy3. The achieved data allowed for an insight, helpful in unveiling the palette of ancient dyes used to colour the garments of this ancient Sicilian family in the darkest shades.

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ALI-PO-003. RES2OX - Investigating Specialized Metabolism as an integral factor to improve oxidative stress resilience in native plants exposed to metalloid naturally contaminated soils

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Global climate change (GCC) has altered the frequency of climate change, determining much more severe environmental disruptions than occurred in the past. The presence of abiotic stresses, such as drought, heat, salt, or heavy metals and metalloids, like arsenic (As), exacerbates GCC effects. Flavonoids are a representative group of secondary metabolites with various functions in plants, protecting them from abiotic and biotic stresses through antioxidant activity1. However, flavonoid function remains to be determined experimentally in naturally tolerant wild plants living in stressful soils. Soils developed on the volcanic substrate, as a considerable part of the Campanian region and Etna surroundings, are rich in neo-formed amorphous alumino-silicates and organo-mineral compounds and have a high binding capacity for trace metals, such as As. The Brassicaceae family comprises several plant species with agronomic and economic significance, such as Brassica rapa, which was reported to show significant tolerance to As-rich soils2. However, the role of flavonoids in the oxidative stress tolerance of B. rapa remains to be addressed, although the tolerance mechanisms, as adaptive traits, evolved in this species can become a knowledge milestone for future phytoremediation. In the present project, through untargeted transcriptome and metabolome approaches, we aim to investigate the role of flavonoids as ROS scavengers within the tolerance strategy of wild B. rapa naturally growing in soils affected by arsenic, assessed through geochemical approaches, by performing transcriptome and metabolome profiling analyses.

Funding:

The RES2OX project has been funded by the Italian Ministry of Research and University in the PRIN: PROGETTI DI RICERCA DI RILEVANTE INTERESSE NAZIONALE – 2022 PNRR Call.

It includes three research partners from the National Research Council of Italy (Principal Investigator), the University of Messina, and the University of Sannio. CUP J53D23014350001- ID. P2022HAMX9

ORG-PO-046. Study of methods, enviromentally sustainable abatement of organic fraction responsible for Chemical Oxygen Demand in wastewater of industrial plants

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This research aims to conduct a comprehensive large-scale analysis, focusing on exploring advanced and sustainable methods to reduce the presence of the organic component associated with Chemical Oxygen Demand (COD) in industrial effluents. The main objective is the identification, evaluation, and implementation of innovative protocols, with particular emphasis on the application of the Fenton reaction as an Advanced Oxidation Process (AOP).

The Fenton reaction, based on the generation of highly reactive free radicals through the interaction between hydrogen peroxide and iron, emerges as a promising perspective for wastewater treatment, also mediated by other metals such as copper, cobalt, and manganese. This approach is particularly important in the context of treatment using activated sludge, a traditional methodology that employs microorganisms to simulate purification processes observed in nature in water bodies. However, an intrinsic limitation of this approach lies in its inefficacy in treating toxic pollutants, as microorganisms may not completely degrade them.

In the presence of toxic pollutants challenging the efficacy of activated sludge treatments, advanced oxidation processes such as the Fenton reaction emerge as an alternative and complementary solution. These processes, characterized by their ability to generate highly reactive free radicals, offer a more robust and efficient oxidation mechanism. Therefore, the integration of innovative approaches in industrial wastewater management aims to overcome the limitations of conventional treatments, more effectively addressing the presence of recalcitrant contaminants.

A distinctive aspect of this research lies in the synthesis of metallic catalysts employed in the Fenton reaction, obtained through the recovery of metallic waste from various industrial sources. This synergy between the power of the Fenton reaction and the recycling of waste materials highlights a sustainable approach that not only aims to reduce COD but also seeks to transform waste into valuable resources through the production of metallic catalysts.

The studied reaction conditions include the concentration of hydrogen peroxide (0-0.2 mol/L), pH (1-8), quantity of metallic waste (0-15 mg/mL), temperature (25-80 °C), and reaction time (0-24 hours). Decolorization tests using methylene blue and methyl orange were conducted, showing complete decolorization and dye removal at room temperature after 5 hours. Subsequently, decolorization tests were carried out on industrial wastewater samples, also showing complete decolorization at short reaction times.

FIS-PO-009. Agri-food wastes as new resource: Kiwi Peels as adsorbent material for water remediation

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In recent years, population growth has caused the increase in supply demands, like water and food 1. That represents the source of the different global issues, particularly the management of water resources, including pollution, treatment, and protection concerns, and handling of agri-food wastes end-life 2. In contrast with linear economy approach, which enhances these problems, by following the principles of Circular Economy, the same agri-food wastes can represent a solution for water treatment 3,4. In this context, the use of Kiwi Peels, an agri-food waste, was proposed as an adsorbent material to remove various Concern Emerging Contaminants and textile dyes from water. The adsorbent substrate was characterized by adopting FTIR-ATR, TG and SEM analyses, before and after its use, proposing it as a recyclable material. UV-VIS spectroscopy analyses were performed for the purpose. Ciprofloxacin and Direct Blue 78 were selected model contaminants to infer information about the behaviour of Kiwi Peels during water treatments; so, the role of several parameters affecting the process was assessed. The study encompassed thermodynamics, adsorption isotherms, and kinetics.

To extend the lifetime of Kiwi Peels, desorption experiments were carried out by using hot water or salt solutions. 10 cycles of adsorption/desorption were studied, evidencing the recycling of both pollutants and Kiwi Peels. Moreover, the solid-state pollutant photodegradation was proposed as a possible alternative for the adsorbent regeneration.

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ANA-PO-120. Development of Glucose Amperometric Biosensor operating in Industrial Bioreactors

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The advancement of disposable and cost-effective electrochemical devices for biomedical uses has seen a notable rise alongside the spread of remote diagnostic technologies. This surge can likely be attributed to the necessity of rejuvenating traditional sensor surfaces and the demand for manufacturing processes enabling the creation of disposable and portable electrochemical devices. These devices facilitate sample volume reduction, on-site detection, and cost reduction.

Conductive inks play a crucial role in fabricating disposable electrochemical sensors, enabling the construction of screen- or stencil-printed electrodes with comparable efficiency to solid electrodes. Specifically, eco-friendly conductive inks are formulated and stencil-printed onto a flexible substrate, facilitating their integration into smart devices for continuous and monitoring of substances like lactate and glucose. The optimization of conductive ink formulations is achieved through electrochemical and rheological measurements, utilizing a multivariate analysis model. Subsequently, active carbon electrodes are modified with osmium redox polymers (ORPs) to establish an electronic connection with enzymes, as glucose oxidase (GOx) cannot directly transfer electrons. Finally, the prepared biosensors undergo testing in model solutions and industrial bioreactors sludges to determine various analytical parameters such as limit of detection (LOD), limit of quantification (LOQ), linear range, sensitivity, selectivity, reproducibility, stability, and storability.

ANA-PO-016. Chemometric-assisted electrochemical SPE measurements: towards quality control platform for drug delivery

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Lipid nanocarriers (LNCs) are powerful and versatile tools in the field of drug delivery for a wide range of medical purposes, from cancer treatment to vaccines1. Despite efforts to optimize the efficiency of drug encapsulation and minimize drug loss during the encapsulation process, challenges persist, so during formulation development, techniques such as chromatography, mass spectrometry, and UV-Vis absorption are employed to evaluate the effectiveness of encapsulation2. In this paper, we present an innovative and "portable," easy-to-use and inexpensive strategy to rapidly assess LNC quality. This work involves the use of an electrochemical strip using a screen-printed electrode to detect methylene blue (MB) as a representative cargo encapsulated in various liposomes (used as model LNCs), including distearoylphosphatidylcholine, dipalmitoylphosphatidylcholine, and hydrogenated soybean phosphatidylcholine. The experimental setup, including the release of MB content and its electrochemical detection, was fine-tuned through a multivariate design of experiments (DoE), a d-optimal design, which allowed optimization of the 4 variables with only 19 experiments. In addition, using principal component analysis and linear discriminant analysis (PCA-LDA), the lipid bilayer compositions of liposomes were distinguished by analyzing their voltammetric profiles. n this work, therefore, we highlight the synergy between portable electroanalysis and multivariate analysis as a powerful tool for enhancing quality control in the context of pharmaceutical technologies. In addition, this approach also shows promise in the field of diagnostics, especially in its application to naturally occurring lipid nanoparticles, such as exosomes.

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ANA-PO-047. A RPLC-APCI-FTMS method to identify and quantify major free sterols in Brassicaceae innovative vegetable products

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Plant sterols (PSs) are secondary metabolites originating from isoprene, occurring in plants in various forms, including free sterols (FSs), esters of fatty acids, steryl glycosides and acyl steryl glycosides. Particularly, PSs are principal components of raft-domains of plasma membrane, in which they exhibit self-association properties with sphingolipids; through these interactions, they can regulate membrane fluidity and permeability. PSs are considered bioactive substances due to their ability to lower blood cholesterol levels and to exert anti-obesity, anti-diabetic and anti-inflammatory activities. In the last decade, with the increasing attention to healthy eating and lifestyle, the interest in fresh, ready to eat innovative vegetables, such as microgreens and baby leaves, including compounds with a nutraceutical potential, like PSs, has been on the rise. The characterization of FSs using reversed-phase liquid chromatography coupled to high-resolution Fourier-transform mass spectrometry with atmospheric pressure chemical ionization (RPLC-APCI-FTMS) has thus been recently undertaken in our laboratories. The attention has been focused on microgreens and baby leaves of Brassicaceae species such as broccoli raab and kale, already known as sources of bioactive compounds, including PSs, recently identified in these products using GC-MS. In the present work, the ability of RPLC to enhance the separation of PSs and of APCI to efficiently ionize these compounds will be demonstrated. The developed RPLC-APCI-FTMS method enabled the detection of major FS, such as campesterol, β-sitosterol and stigmasterol, its isomers isofucosterol and Δ7-avenasterol, brassicasterol and cholesterol, in the extracts of broccoli raab and kale microgreens and baby leaves. Moreover, the RPLC-APCI-FTMS method was validated to quantify FSs in these innovative vegetables and, for comparison, in corresponding adult forms. The obtained results show that β-sitosterol and campesterol are the most abundant FSs in the examined vegetables; other FSs are principally present in microgreens while their concentration levels are below the method detection limits in adult forms, thus corroborating the nutraceutical potential of innovative vegetable products.

ORG-PO-047. Halloysite/heteroaryl ethylene nanomaterials for potential biomedical applications

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Biomedical science has long been looking for innovative systems for diagnostic and therapeutic applications. In the last years, particular interest has been given to heteroaryl ethylene molecules, which have both anti-tumor and antibacterial activity, as well as excellent pH-sensitive fluorescent properties, useful in the diagnostic field.1,2 However these molecules show a very low aqueous water solubility and short lifetime that hamper their use. Halloysite nanotubes (HNTs), a phyllosilicate clay mineral, represent appealing nanomaterial because of their high biocompatibility, low cost and the peculiar capability to cross cellular membrane, localizing themselves in the perinuclear area, that together the presence of an empty lumen, make them excellent systems for the loading and delivery of different biologically active species.3,4

Herein we report the synthesis and characterization on HNTs based nanomaterial loaded with 2,6-Bis{(E)-2-[4-(Dimethylamino)phenyl]vinyl}-1-methylpyridinium iodide (HNTs/PB4). Furthermore, the luminescent properties of HNTs/PB4 were also studied by fluorescent spectroscopy both in solution and in solid state. The data obtained show the potentiality of the obtained nanomaterial for future application in biomedical field.

MAS-PO-008. EXPLORING THE INTERACTION BETWEEN GONADS AND SEX CHROMOSOME COMPLEMENT ON PLASMA, HIPPOCAMPUS AND HYPOTHALAMUS NEUROACTIVE STEROID LEVELS.

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Neuroactive steroids are steroid hormones, such as pregnenolone, progesterone, testosterone, and their metabolites, with important modulatory actions on behavior and nervous functions. They are produced both in peripheral glands (i.e. adrenals and gonads) and in the nervous system (i.e. neurosteroids) through the steroidogenic process.

Previous studies have reported that plasma neuroactive steroid levels do not exactly reflect what occurs in the central nervous system and, moreover, those levels are different based on the brain region analyzed. Furthermore, neuroactive steroids show sexual dimorphism. These concepts have been described in physiological and in pathological situations, and even after a period of gonadectomy, suggesting that other factors may be involved in the regulation of their levels.

Interestingly, it was recently demonstrated that sex steroid levels are influenced by sex chromosome complement. However, the effect of sex chromosomes on neuroactive steroids in the two sexes has not yet been evaluated.

The four core genotype (FCG) mouse is an experimental model in which the sex chromosome complement (XX vs. XY) is unrelated to the animal 's gonadal sex.

Therefore, this experimental model allowed us to investigate the effect of gonads in relation to chromosome complement on the levels of neuroactive steroids in plasma, hippocampus, and hypothalamus assessed by liquid chromatography coupled with tandem mass spectrometry.

Data obtained showed a tissue-specific involvement and a regional-specific interaction of sex chromosomes and gonads, resulting in neuroactive steroid level differences in plasma, hippocampus, and hypothalamus based on the genotype. For example, it is interesting to note that in all the three compartments analyzed, only testosterone presents an influence of gonads and of chromosome complement, while the other steroids are mainly under the gonadal influence.

Due to the high number of neurological and psychiatric disorders associated with sex- and regional-specific alterations of neuroactive steroid levels and the implication of sex chromosome genes in pathological conditions, this model and the results of this study may help to improve the knowledge of related brain disorders.

FAR-PO-121. Modulating 14-3-3 protein interaction network: a challenge for the next generation of cancer therapy

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Lymphoma is a type of cancer that affects the lymphatic system, exist more than 70 cancer subtypes originating from both B- and T-cells. Beside the traditional chemotherapy and radiotherapy treatment options, recently have been developed kinase inhibitors targeting the Bruton's tyrosine kinase (BTK), BCL2 inhibitor Venetoclax and immunotherapeutics anti-PD1, affecting cell cancer growth and progression. However, the development of resistance to these inhibitors poses a significant challenge to successful treatment. Most Lymphomas are in need of new therapeutics and for this reason is constantly growing the interest in identifying alternative small synthetic molecules with targeted therapeutic potential. Starting from the oxindole scaffold widely used for the synthesis of kinase inhibitors1,2, we synthesized new derivatives of general structure A. Then, following a phenotypic drug discovery (PDD) approach we screened a library of synthesized oxo-indole derivatives against a panel of lymphoma cell lines. Few molecules, across the library tested, showed nanomolar range antiproliferative activities in six lymphoma cell lines. To prioritize the identification of key targets, we set up a kinome profiling, DARTS (Drug Affinity Responsive Target Stability), CETSA (Cellular Theraml Shift Assay) and SPR (Surface Plasmon Resonance) experiments. Collected results led us to the discover of original modulators of 14-3-3 proteins.

This work presents the synthesis of new chemical entities endowed of potent anticancer activity and the campaign of drug target identification that highlighted their role as modulators of 14-3-3 proteins.

Figure 1: General structure A

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TEC-PO-059. Microwave assisted biodiesel production from waste cooking oil using steel slags as catalyst

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Lignocellulosic biomass is an abundant and renewable resource which can be converted into valuable products such as biofuels, biochemicals, and biomaterials. Lignocellulosic biomass, which includes materials like wood, agricultural residues, and dedicated energy crops, is composed of cellulose, hemicellulose, and lignin. These components can be broken down and transformed into various high-value products through different biorefinery processes.

Herein, we report on the microwave-assisted treatment of carpentry waste wood flour with deep eutectic solvents under different conditions for employing the cellulose-enriched solid residue obtained as source for nanocellulose production and as novel material for water decontamination from organic pollutants.

IND-PO-011. Physical-Chemical Characterization of Hydrochars from HTL of Waste Polyurethane Foams

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Polyurethanes are one of the most versatile and requested polymers on the market. In particular, rigid polyurethane foams (PUR) are widely used in thermal insulation, furniture and automotive applications. Because of their commercial success, million tons of polyurethane waste are produced every year. Landfilling and incineration are still the most common ways of processing polyurethanes in Europe, while mechanical and chemical recycling remain limited due to the thermoset nature of polyurethanes and the high energy demand requested for the processes. According to the 12th goal of the 2030 Agenda for Sustainable Development, it is necessary to identify efficient methods for the recycling of plastic waste. In this study, a promising valorization of PUR by thermochemical recycling was evaluated via hydrothermal liquefaction (HTL), to obtain a solid product, named hydrochar, with high added value. A rigid and thoroughly characterized PUR for model making, was used as feedstock for the tests. Reactions were carried out using a Parr reactor 4576 and ultrapure water in subcritical conditions, with temperature ranging from 250°C to 345 °C and different reaction times (from 20 min to 120 min). Moreover, for the first time in literature an acidic environment was experimented, using a mixture of water and acetic acid, with a volume ratio of 2,5:1 (pH =2,06). The hydrochars thus obtained were characterized by ultimate analysis, ICP-MS, FTIR, porosimetry and SEM to evaluate the influence of the reaction parameters on the hydrochar properties such as elemental composition, degree of functionalization, morphology, and porosity.

This in-depth characterization of the hydrochars will make it possible to evaluate their applicability in different industrial fields according to a circular economy perspective.

INO-PO-001. Fluorine activation of promising platinum compounds as anticancer drugs against orphan tumors

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Glioblastoma (GBM) and pancreatic cancer are classified as orphan tumors. For both, the only available treatment includes maximal safe surgical resection, followed by radiotherapy and chemotherapy based on platinum drugs. Unfortunately, neither of these therapies can offer a high survival rate (5-6% maximum).1,2

For this reason, nowadays, many studies have been focused on the synthesis of new platinum compounds with the aim to increase the efficacy against these kinds of tumors. Since one of the main issues in cancer treatment is the bioavailability, starting from an already published complex (Pt-IV)3 we decided to synthesized two new molecules (1 and 2) in which we modified the diamine core adding a fluorine in different positions in order to change the solubility of the complex and its biological activity.4

Pt-IV was already tested for its antitumoral activity against glioblastoma cell lines (U87-MG) and the IC50, evaluated in terms of ability to affect cell proliferation, was 5.3 ± 0.55 μM.5

The influence of introducing the fluorine atom in the diamine skeleton will be evaluated in terms of cytotoxicity against orphan tumors.

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ABC-PO-033. Artificial ageing methodology for the assessment of a new cutin-based polyurethane coating for bronze

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Innovative, eco-friendly coatings allow to implement sustainable treatments with low impact on the environment and operators1. Their efficacy can be assessed via accelerated ageing tests that simulate outdoor exposure conditions. In order to decrease discrepancies between the predicted behaviour of protective treatments and their performance in real conditions, the chosen environmental parameters should reflect current environmental conditions.

Two sets of bronze coupons, coated and uncoated, underwent artificial ageing in order to assess the anti-corrosion properties of an innovative cutin-based polyurethane coating. The cutin used in its production is extracted from tomato peels and reused, consistently with a circular economy approach2.

The quaternary bronze G-85 or UNSC83600 was chosen to produce the coupons, as this alloy is commonly used in cultural heritage for artistic casting. Two kinds of substrates were considered: unaltered i.e. the new, non-degraded material, and pre-aged i.e. patinated bronze. The second substrate was used to test the coating on an oxidized metal surface, with chemical and morphological features similar to those met during a realistic conservation treatment. Patinated bronze was obtained by cyclical immersion of the bronze coupons in a synthetic rain solution with pH = 4,2 for 30 days.

The artificial ageing phase was carried out in two subsequent steps to systematically observe the effects of rainwater, both in stagnant3 and runoff4 conditions, and then of other environmental parameters such as temperature, relative humidity and solar radiation. In order to recreate conditions as representative as possible of real ones, the chosen environmental parameters were based on environmental monitoring data. Specifically, pH and ionic concentration values for the synthetic rain solution reflect rainwater composition data gathered in various locations in southern Europe and northern Italy in the last decade5. Moreover, T, RH and UV parameters chosen for the climatic chamber aimed to simulate combined day-night and seasonal conditions, alongside average irradiance on a clear day in southern European regions.

Following a multi-analytical approach, the coupons were characterized by scanning electron microscopy coupled with energy-dispersive X-ray spectroscopy (SEM-EDS), infrared spectroscopy, micro-Raman spectroscopy, UV-Vis spectrophotometry for colour analysis, and electrochemical impedance spectroscopy (EIS). The analyses were performed before ageing and were repeated after each step of the ageing procedure in order to observe the evolution of the degradation processes. Moreover, the solutions in contact with the coupons were sampled throughout the ageing period and later analysed by microwave plasma atomic emission spectroscopy (MP-AES) in order to know the concentrations of ions coming from the substrates, whose presence is diagnostic for the corrosion process.

After the first step of the ageing procedure, colour changes were characterized by $\Delta E<5$ (i.e. the threshold for acceptable colour change in cultural heritage) for coated coupons and uncoated patinated bronze, while pristine bronze showed $\Delta E>20$ as it underwent oxidation. Raman analyses indeed showed cuprite in various stages of formation. SEM-EDS analyses on pristine bronze after ageing also showed, as expected, a decrease of Cu due to the decuprification process occurred, alongside a relative enrichment of Sn at surface level. This phenomenon was more pronounced on coupons subjected to the action of leaching rain, evidenced also by backscattered electron images showing a more pronounced dendritic microstructure. On the other hand, the layer of coating on the surface of all coated coupons after ageing still appeared homogeneous and without defects, indicating its good resistance. Spectra acquired by Raman and infrared spectroscopies didn't show significant differences in the coating structure after ageing with respect to the coating

subjected to natural curing. EIS analyses showed that, after ageing, polarization resistance remained higher in coated coupons with respect to uncoated ones.

Finally, concentration values of the alloying elements in the sampled solutions allow to better understand the degradation mechanism caused by rainwater and to assess the severity of the corrosion process in uncoated coupons in comparison to coated ones.

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ALI-PO-014. Flow-biocatalytic production of aglycones from glycosides found in citrus residues

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As the global population is approaching 8 billion and lifestyles and dietary habits change, a significant rise in agri-food industrial waste is expected, posing both environmental and economic challenges. Many of these residues demonstrated to contain a plethora of bioactive compounds.

The recovery and processing of such molecules to generate value-added products for applications in the pharmaceutical, cosmetic, and food industries can represent a promising strategy for saving relevant resources and reducing bio-waste1. In this context, biocatalysis can offer important advantages over traditional synthetic methods in terms of efficiency and selectivity.

Extremophilic glycosidases, capable of cleaving glycosidic bonds, are essential tools due to their ability to withstand harsh reaction conditions. We particularly focused on rutin (RT) and hesperidin (HES), glycosides commonly found in citrus fruits and residues (Figure 1). By using a commercially available α-rhamnosidase (RN) and a homemade halo-thermophilic β-glycosidase (HOR), we aimed at obtaining their aglycones, hesperetin (HP) and quercetin (Q), which exhibit higherx bioavailability and membrane permeability. By developing a continuous process using flow reactors and enzyme immobilization techniques, we enhanced reaction yields and sustainability. Co-immobilizing both enzymes on the same matrix and employing a biphasic system with an unconventional green solvent, 2,2,5,5-tetramethyloxolane (TMO)2, further reduced costs and addressed substrate solubility issues. By recovering and reusing all materials involved in the flow biotransformation, this approach can be claimed as a zero-waste procedure3.

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ORG-PO-181. Photoredox Hydroxyalkylation of Unsaturated Partners in Batch and Continuous Flow: An Opportunity to Overcome Polarity Mismatch

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Approximately 37% of marketed drugs contain at least one hydroxyl group in their structure. The introduction of a single hydroxyl group can dramatically influence the drug−receptor binding affinity through the creation of an extensive hydrogen bond network. Moreover, the -OH group can serve as a handle for further derivatizations. In the polar domain, hydroxyalkylations can be accomplished via different reaction pathways. However, retrosynthetically, the possibility to obtain γ-hydroxy substituted derivatives is precluded from polar mechanisms due to a polarity mismatch. α-hydroxyalkyl radicals have emerged as suitable intermediates to promote radical hydroxyalkylations. Despite extensive research into the chemistry of ketyl radicals, we hypothesised that a more direct approach to accessing these intermediates was feasible using readily available feedstocks. In this context, the prospect of utilizing α-hydroxy acids (AHAs) as readily available linchpins for radical hydroxyalkylations seemed particularly promising. In this communication, we demonstrate AHAs can serve as a platform to deliver ketyl radicals via visible light-mediated oxidative CO2-extrusion. In particular, we developed a photoredox-based γ-hydroxyalkylation via the coupling of α-hydroxy radicals with unsaturated acceptors. Furthermore, flow technology facilitates the scaling of this photochemical methodology.

FAR-PO-038. Tackling Hepatocellular Carcinoma with Targeted Degraders of eIF6

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Translational control is the selective and regulated translation of specific mRNAs from the pool of the transcribed mRNAs. According to several studies, it is the major regulator of gene expression. eIF6 is a translation initiation factor that acts downstream the insulin pathway. Seminal work from Biffo's group has shown that mice heterozygous for eIF6 fail to upregulate protein synthesis in postprandial conditions, and simultaneously show a reduction in the accumulation of white fat. Subsequent studies have shown that translation factors amplify lipid accumulation by acting at the translational level. Increased lipid accumulation in the liver is known as non-alcoholic fatty liver disease (NAFLD), a prevalent condition in Western countries. Notably, fatty liver is the fastest growing cause of liver failure and hepatocellular carcinoma (HCC), the second leading cause of cancer-related death worldwide. Recently, it was observed that genetic eIF6 inhibition reduces lipid metabolism and the progression of NAFLD to HCC.

We hypothesize that eIF6 inhibition is an effective strategy for impairing the pathological evolution from a fatty liver (NAFLD) to non-alcoholic steatohepatitis (NASH) and then HCC, and the progression of HCC. To challenge this hypothesis, we aim to generate a set of small molecules able to selectively degrade eIF6, based on the emerging proteolysis targeting chimera (PROTAC) technology. Docking, molecular dynamics simulations and ligand binding free energy (by MM-GBSA approach) have been accomplished on compounds displaying promising in vitro activity on eIF6. The top scoring candidates are currently under development. The design strategy, chemical synthesis, and pharmacological investigation of this novel class of targeted protein degraders will be presented and discussed.

FAR-PO-047. Selective extraction of bioactive compounds from Olea europea L. and Curcubita moschata leaves

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The agronomical and the food industries produce massive amounts of wastes, usually discarded although rich in bioactive and potentially used for nutraceutical and cosmeceutical purposes1. Leaves especially, one of the most abundant waste generated in this sector, are characterized by the presence of health-promoting functional components granting them antioxidant, antihypertensive, antiatherogenic, anti-inflammatory, hypoglycemic, and hypocholesterolemic properties2.

Thus, leaves from Olea europea L. and Curcubita moschata have been selected to further evaluate the possibility to selectively extract some biologically active secondary metabolites. To this regard, an aqueous microwave assisted extraction of the olive leaves led us to obtain an oleuropein enriched extract, which was selectively isolated through solid phase adsorbtion (SPA) thanks to the use of lamellar solids. Finally, an eco-friendly, readily available, and reusable catalyst for the hydrolysis of Oleuropein in its two main components, hydroxytyrosol and elenolic acid . An extract enriched in the monoaldehydic dihydropyran form of elenolic acid was obtained by an acid-base work up and later characterized by GC-MS and NMR.

Different pumpkin leaf extracts of Curcubita moschata were tested in vitro for their pro-osteogenic properties and for their effects on intervertebral disc (IVD) degenerated cells. The acetone extract showed the most promising results, and after fractionation, the three most active subfraction were identified through GC-MS and NMR as 13-OH-9Z,11E,15E-octadecatrienoic acid, ferulic acid and p-coumaric acid .

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TEC-PO-019. Mechanochemical synthesis of fluorinated perovskites KCuF3 and KNiF3

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This study focuses on the solvent-free mechanochemical synthesis of two fluorinated perovskites, KCuF3 and KNiF3, that can be seen as a practical green alternative to the classical solvothermal synthesis.3The process has been optimized to find the refined milling time at constant rotational speed.4 The main outputs of the process are KCuF3 and KNiF3 in the desired crystalline phase2, which are present after 6 hours of milling. Other crystalline phases have been found at greater milling durations for Cu- and Ni-based perovskites, known as K2CuF4 and K2NiF4, respectively. The fluorinated perovskites were characterized by using X–Ray Diffraction Spectroscopy (XRD), X–Ray Photoelectron Spectroscopy (XPS) and Scanning Electron Microscopy (SEM), confirming the selective formation of the fluorinated perovskites. The mechanochemical route was also compared to a new mild solvothermal method. The promising results coming from this innovative method opened the research to the use of solvent–free mechanochemical syntheses as suitable approach also in the field of crystal engineering.

TEO-PO-009. Hydrogen Complexes on Single-Atom Alloys: A combined DFT-Kinetic Monte Carlo Study

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Single-atom alloys (SAAs) are emerging in the field of catalysis, offering a new paradigm for enhancing catalytic performance. These materials, composed of isolated metal atoms dispersed on a metal substrate, represent a class of single-site catalysts with exceptional properties[1], exhibiting enhanced catalytic activity by breaking the Brønsted–Evans–Polanyi relationship[2].

SAAs are widely studied for processes involving hydrogen, such as water splitting or hydrogenation reactions. Previous studies have shown that dihydrogen and dihydride complexes can form on SAAs, indicating the potential for non-conventional intermediates in

catalytic reactions. These complexes play a crucial role in modelling studies aimed at screening new materials, identifying descriptors, and predicting novel catalysts[3].

The combination of DFT calculations with kinetic modelling makes it possible to capture trends in activity and selectivity. The Kinetic Monte Carlo (KMC) approach is attracting growing interest for the study of catalytic reactions, due to its versatile framework and its ability to provide unique insight, by bridging molecular scale processes (micro) and observable phenomena[4].

In this work we investigate the adsorption of hydrogen on a set of 14 SAAs. We show that in 4 cases: CoRh(111), PdRh(111), CoAu(111), NiAu(111) the formation of the dihydrogen intermediate (H2*) is observed. Importantly, the H2 adsorption process necessarily passes through that intermediate and it is barrierless. On the other hand, the breaking of the bond and the formation of H* ad-atoms entail a sizeable reaction barrier.

The static information is used as input for KMC simulations to capture information about overall reaction rate and hydrogen coverage and to provide insight into the role of the H2* kinetics in H2 adsorption.

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ORG-PO-048. Direct enantioselective photocatalytic α-functionalization of aldehydes with nitrogen-lactam radicals

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Lactams can be considered some of the most significant heterocycles in medicinal chemistry and drug discovery. They are a privileged structure common to a large variety of natural products and drugs, to which they lend a potential therapeutic effect for the treatment of different disorders, spanning from cancer, diabetes, and infectious diseases. Typically, lactam rings are introduced in organic molecules by ring-closure reactions, while no example of direct introduction is reported.

In this context we report the development of a photocatalytic strategy that enables the direct stereoselective introduction of lactam rings, via nitrogen radicals. In the last decades, light emerged as one of the most powerful synthetic tools to assist the organic synthesis, enabling challenging transformations under mild conditions, via radical intermediates. Its combination with organocatalysis allowed us to point out a stereoselective version of the reaction, that opened the door to the synthesis of chiral molecules of synthetic interest.

To the best of our knowledge, no example of nitrogen lactam radical is reported in the literature, therefore we first studied the development of a N-aminopyridinium salt as radical precursor. Inspired by a work of MacMillan and coworkers, we tested the reactivity of the radical with the nucleophilic enamine of aldehydes, obtaining good results in the α-functionalization of a wide range of substrates. The scope of lactam rings and of the substrates was studied, obtaining the desired products in moderate to good yield and with good enantiomeric excess. In the end, the strategy was exploited for the synthesis of an orphan drug, Levetiracetam, to demonstrate the synthetic applicability of the method.

ORG-PO-027. Synthesis of the first Epothilone Analogue Utilizing Amide–Triazole Bioisosterism

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Epothilones are 16-membered macrolides that can act as microtubule-targeting agents to tackle cancer. Many synthetic analogues have been investigated for their activity, yet often based on macrolide structures. A notable exception is Ixabepilone, an azalide representing the only epothilone-like molecule approved by the FDA as a chemotherapeutic. Exploiting the amide-triazole bioisosterism, in this work we report the synthesis of the first generation of epothilones lacking the macrolide or azalide structure, with the ester or amide linkage replaced by a triazole unit. Together with the synthesis of this new analogue, computational and biological evaluations have been performed too.

ANA-PO-056. Multi-analyte method for biomonitoring studies: legacy and emerging pollutants in human serum

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Environmental research and public health in the 21st century face numerous challenges including the widespread use of substances potentially harmful to humans. Among the various anthropogenic pollutants present in the environment, persistent organic pollutants (POPs) such as polychlorinated biphenyls (PCBs), are particularly concerning due to their adverse effects on human health and wildlife1. However, restrictions have led to the emergence of new chemicals now referred to as "emerging contaminants" (ECs), such as novel brominated flame retardants (nBFRs).

The urgent need to gain a comprehensive understanding of everyone's exposome intersects with the necessity to assess how and how much chemicals are absorbed from the environment into the organism itself, along with the practical question of the methodology applied to measure the exposome. In this context, human biomonitoring (HBM) plays a crucial role in establishing exposure and risk assessment2.

To contribute to the full characterization of the exposome, a new gas chromatography-mass spectrometry (GC-MS) method was developed to analyze target compounds in serum samples. A broad spectrum of legacy and emerging contaminants, such us PCBs and nBFR, were included.

The Design of Experiments (DoE) concept was utilized to optimize the MS assay, as well as critical methodological aspects such as chromatography separation, method sensitivity, and the extraction procedure of the contaminants. A validated model allowing the estimation of conditions for optimal chromatographic analysis was constructed through chemometric evaluation of the data. The proposed method was validated to achieve high analytical performance in terms of selectivity, linearity (R2 >0.995), accuracy (bias%≤ 10%), precision (CV%≤ 10%), robustness, ruggedness, limit of detection, limit of quantitation, recovery, matrix effect, and repeatability according to the international guidelines.

The developed method represents a powerful tool that can be used in HBM to investigate the impact of pollutants on human health and to expand the still limited knowledge on ECs. This method will be useful in future applications in the field of HBM, for example, involving subjects at high risk of exposure, to assess potential correlations between pollutant levels and disease development.

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ANA-PO-005. Sustainable Cannabinoids Purification Through Twin-Column Recycling Chromatography and Green Solvents

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Cannabidiol (CBD), a non-psychoactive cannabinoid, has become a focus of research due to its beneficial effect in many areas, i. e. medicine, cosmetic and food industry. The depletion of tetrahydrocannabinol (THC) or purification of other cannabinoids from CBD rich samples is a challenging task due to their similar chemical structure and physical properties. The separation of two substances characterized by close retention times, like several cannabinoids, is one of the largest challenges in HPLC. There are many strategies to overcome the coelution issue, for example changing the flowrate, the solvent gradient and/or the column bed length. When decreasing the flowrate and changing the gradient do not result in separation of the target peaks, a longer column bed length might be the solution. Recycling chromatography could be an interesting alternative strategy to increase the column bed length. This process enables an equivalent separation capacity of a long column using one or two identical short columns and a valve. In the one column system (close loop recycling), the eluted target peaks are re-injected in the same column through the pump. In a twin-column system (alternate pumping recycling), a 2-position valve is placed between the two columns and, by the switch, the eluted target peak from one column is re-injected into the second column without passing through the pump. In both cases a recycling circuit is formed, which can be repeated several times until desired separation is achieved.

In this work, twin-column recycling chromatography has been employed for the purification of a real Cannabis extract by using a green solvent, ethanol, as the mobile phase. The performance of the method, in terms of purity, recovery, productivity and solvent consumption, was compared to that of traditional batch operations showing the potential of the twin-column recycling approach. The employment of a theoretical model to predict the band profiles of the two compounds during the recycling process has facilitated method development, thus further contributing to process sustainability by avoiding trials and errors or suppressing their numbers significantly.

TEC-PO-037. Scalable Ligand-Free Synthesis of High-Efficient CsPbBr3 Photocatalyst for Degradation of Organic Dyes

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In recent years, cesium lead halide perovskites have made a significant breakthrough in photocatalysis due to the straightforward modulation of their chemical composition, structure, energy levels, and bandgap. In this study, we propose a room-temperature supersaturated ligand-free recrystallization approach for the obtainment of CsPbBr3 photocatalysts by using three different antisolvents: ethyl acetate (EA), isopropanol (IPA), and acetone (ACE). The corresponding synthesized materials (namely EA-CsPbBr3, IPA-CsPbBr3, and ACE-CsPbBr3) have morphologically, structurally, and optically been characterized and tested in the methylene blue (MB) photodegradation under visible-light irradiation (lambda > 420 nm). The evaluation of the pseudo-first-order rate constants for the selected degradation revealed the best performances of the series for the EA-CsPbBr3 material, highlighting the impact of synthetic conditions on the specific surface area of the photocatalyst and the efficient generation of active species (superoxide and hydroxyl radicals) in the degradation. The EA-CsPbBr3 material was systematically employed in the photodegradation of differently structured organic dyes, resulting extremely efficient in degradation of model hazardous xanthene-based structures (EoB and RhB). Furthermore, we observed that the EoB degradation kinetics remained unaltered for at least five times using the recovered photocatalyst after each cycle. The investigations on the photocatalytic mechanism of EoB degradation evidenced the key role of the superoxide radical along with the important contributions of injected electrons and hydroxyl radicals. In perspective, beyond the reported catalytic study, this work not only establishes the potential of CsPbBr3 materials in dye degradation but also provides new insight into the impact of the synthetic methods on their photocatalytic activity.

ANA-PO-158. Optimizing a sustainable approach: green extraction of anthocyanins from Apulian pigmented wheat landraces

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Among the most common staple cereals, bread (Triticum aestivum L.) and durum wheat (Triticum durum Desf.) are broadly employed to produce several wheat-based food items. While conventional varieties of grains are scarce in anthocyanins, thus lacking a pillar in fighting the metabolic syndrome, pigmented ones were found to provide significant burdens of these secondary metabolites. To meet the current market needs, Granomischio® offers a wide product lining of grain derivatives based on three wheat landraces harvested in Foggia (Apulia, Italy). The most promising genotypes have already received attention as potential primary commodities to produce nutraceutical supplements. Although the use of acidified methanol with high amounts of HCl (MeOH/HCl) has led the way for the extraction of anthocyanins from pigmented grains, novel green approaches have extensively been explored to pursue food security. At first, an analytical method relying on reversed-phase liquid chromatography in conjunction with UV–diode-array detector and electrospray ionization high-resolution mass spectrometry (RPLC-DAD/ESI-HRMS) was developed for the detection of three of the most abundant anthocyanins occurring in pigmented wheat, namely cyanidin-3-glucoside, peonidin-3-glucoside, and cyanidin-3-rhutinoside. To find the most sustainable green extraction approach of anthocyanins from Apulian wheat landraces, we used a computer-aided plan called D-optimal design. This helped us identify key factors like acid content, solvent mix, solvent amount, and temperature. We also investigated whether using ultrasound waves during extraction could be beneficial. Next, we fine-tuned these factors to see if this new method could outperform the traditional one using MeOH/HCl. This communication will discuss the results, focusing on the trade-offs between different extraction strategies and how they can be used to maximize the value of these unique wheat varieties.

IND-PO-012. Exploring the structure-activity relationship and coke poisoning resistance in Nickel-Lanthanum catalysts for Methane Dry Reforming

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Methane dry reforming (DRM) stands as an innovative catalysed process pivotal in sustainable fuel alternatives development, efficiently transforming CH4 and CO2 into syngas (CO+H2), thus reducing greenhouse gases concentration unto the atmosphere.1 Despite the interest to environmental issues, the reaction faces challenges due to side reactions, such as methane decomposition, Boudouard reaction, and CO reduction, leading to catalyst deactivation due to carbon deposits accumulation.2 Nickel-based catalysts are commonly used in DRM due to their affordability and robust performance,3 but they undergo deactivation due to carbon deposition and sintering process at high temperatures. To address these issues, different catalysts compositions and various preparation conditions have been explored, aiming at enhancing structural properties, phase composition, distribution of nickel phases, and overall catalytic activity.

In this study, a comparison of catalytic performances of Ni-La catalysts prepared with microwave-assisted precipitation synthesis (MW) and hydrothermal method (HT) has been performed. The differences in CH4 and CO2 conversion over the investigated catalysts have been explained by a comprehensive structural analysis, which suggests differences in Ni-La crystal phases and particle sizes. TGA and HR-TEM have been carried out to evaluate coke formation and the influence of time on the stream on Ni particle size, suggesting for MW catalysts good stability and the possibility to regenerate such samples from carbon deposition with limited Ni sintering.

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Acknowledgments:

The Projects “NEST - Network 4 Energy Sustainable Transition” (CUP B53C22004060006) and PNRR AdP ENEA-CNR (CUP B93C22000630006) are acknowledged for financial support.

ALI-PO-038. Biocatalytic approaches to enhance exploitation of rice waste

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Rice production generates huge amounts of byproducts. It is estimated that around 80% of these residues are burnt in situ or incorporated in soil. These strategies not only fail to exploit the full potential of organic material, but also actively contribute to atmospheric pollution and GHG emissions. Rice straw and husks, the primary components of non-food biomass deriving from rice production, contain a combination of cellulose, hemicellulose, and lignin, along with appreciable amounts of silica and other minor

components. Our research activities aim at boosting the valorization of rice waste streams, by developing a biocatalyst covalent immobilization strategy onto silica micro- or nanoparticles, obtained from rice husk with different chemical procedures, and pretreated with 3-aminopropyltriethoxysilane (APTES) and glutaraldehyde. The preliminary results of the immobilization of the lipase B from Candida antarctica (CaLB) are promising, as with two different enzymatic loadings (1 mg or 10 mg of enzyme/g of carrier) we obtained up to 100% immobilization yield with a recovered activity ranging from 50 to 100%, depending on the type of silica used as carrier. The immobilized lipase will be used for the acylation of lignin-based low molecular weight species (LIMO), obtained by a laccase-catalyzed oxidative depolymerization of lignin from rice straw residues, to obtain molecules with enhanced antioxidant activity. These compounds will be ultimately used for the preparation of a bioactive packaging system, whose polymeric skeleton will be constituted by medium chain lignin oligomers containing OH functionalities (MCLO) and commercially available biobased building blocks.

ELE-PO-025. Tailoring the self-assembly properties of Au25(SR)18 atomically precise clusters in the solid state

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The manipulation of Atomically Precise Clusters (APCs) stands as a key objective in the quest to deliver responsive nanomaterials for catalysis, sensing, and optoelectronic applications.1-4 A pivotal breakthrough in this pursuit involves the precise adjustment of ligand within Au25(SR)180, enabling the modification of cluster assembly properties in the solid state.5-7 Through deliberate variation of the ligand length (SC4H9, SC10H21, SC18H33), we achieved a precise control over cluster interactions, inducing consequential alterations in their aggregation properties of Au25(SR)180. Notably, we found, employing scanning electron microscopy (SEM) and atomic force microscopy (AFM), that Au25(SC18H33)180 exhibited anisotropic self-assembly in the solid state, thus forming ultralong fibers having a length of hundreds of micrometers and an average diameter of 850 nm. Moreover, XRD and Selected Area Electron Diffraction (SAED) analysis suggested that the Au25(SC18H33)180 fibers displayed crystallographic order and a high degree of symmetry in the three dimensions. This study not only provides insights into the fundamental principles governing cluster self-assembly in the solid state but also offers a pathway to engineer tailored materials with customized properties. By gaining the ability to fine-tune APCs' self-assembly through ligand manipulation, a new era of nanomaterials design emerges, promising enhanced performance and versatility in diverse applications.

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ELE-PO-035. Enhancing Lithium-ion Battery Anode Performance: Challenges and Solutions

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The quest for optimal anode materials in lithium-ion batteries has led to extensive exploration of various elements, with lithium metal, offering a theoretical capacity of approximately 3860 mAh/g, standing out as an ideal choice. However, practical constraints hinder its widespread adoption. Silicon emerges as a promising alternative due to its abundance and high nominal capacitance (3579 mAh g^{-1}), promising enhanced anode performance. However, its significant volumetric expansion (> 300%) during lithiation poses a major challenge, limiting its industrial viability[1]. Graphite, despite its lower capacity, remains favored for industrial applications owing to its abundance, cost-effectiveness, and satisfactory electrochemical properties. Recent efforts have concentrated on augmenting graphite's performance, with combined graphite-silicon electrodes gaining traction. Nonetheless, the integration of silicon introduces swelling issues, leading to the pulverization of electrode materials and subsequent performance degradation[2]. The current study aims to propose strategies for mitigating silicon-induced swelling and enhancing the performance of graphite-silicon composite electrodes. Proposed approaches include using graphene cages, surface modification, and specific binders. For instance, preliminary investigations suggest that electrodes incorporating a polymer composed of 5% by weight of a poly rotaxane (PR) and linear polyacrylic acid have shown promising results, achieving an areal capacity of 2.68 mAh cm^{-2} [3]. Furthermore, combining such binders with ionic liquid electrolytes containing lithium salts, such as LiVSi, has shown potential in significantly enhance the performance of this anode material to a capacity of 3.5 mAh cm^{-2}.

ORG-PO-183. Novel organic dyes for indoor dye-sensitized solar cells: a machine learning and density functional theory study

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Recently, dye-sensitized solar cells (DSSCs) have emerged as the technology of choice for indoor applications and Internet of Things (IoT) devices [1,2]. In this context, extensive research has been carried out to design novel organic dyes whose absorption properties match a variety of artificial light emissions at different intensities [3,4]. Nevertheless, this process is often costly and time-consuming. To address this issue, we have combined Machine Learning (ML) and Density Functional Theory (DFT) methods to accelerate the discovery of potentially novel organic dyes with D-π-A architecture for indoor DSSCs. In particular, a two-stage screening approach has been developed by predicting the power conversion efficiency (PCE) of the dye candidates under different light sources and intensities. Additionally, the evaluation of the synthetic accessibility (SAscore) of the dye candidates has been assessed. Our findings demonstrate that the integration of ML and DFT methods offers an effective way to accelerate the discovery of organic dyes for indoor DSSCs, helping to address the growing demand for sustainable power sources for IoT devices.

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ANA-PO-127. Univocal discrimination of hydrocarbon isomers by means of a novel integrated GC-FTIR/MS approach

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Hydrocarbons are the principal constituents of petroleum, which represents a very important raw material, as it can be used to produce fuels lubricants, plastics, fibers, rubbers, solvents, industrial chemicals, etc. Understanding the composition of such complex samples is particularly challenging because of the huge number of chemical compounds they have.

The hyphenation of gas chromatography and mass spectrometry (GC-MS) with electron ionization (EI) source is the gold standard for identification of unknown volatile compounds. However, for hydrocarbons, the high number of possible geometric and positional isomers makes the identification challenging because of the identical molecular weight as well as their similar fragmentation pattern. On the other hand, Fourier Transform Infrared Spectroscopy (FTIR) provides a wealth of molecular information of GC-separated analytes, related to the vibration of molecular functional groups which are complementary to the MS ones.

In this research, a new GC-sd-FTIR/MS instrument was developed, based on post-column GC flow splitting to GCMS-QP2020 NX mass spectrometer (Shimazdu, Kyoto, Japan) and DiscovIR-GC solid phase FTIR detector (Spectra-Analysis Instrument Inc., Marlborough, MA, USA). By means of this integrated instrumentation, it was possible to obtain three complementary information from a single analysis: the linear retention indices (LRI) of the separated compounds, their m/z spectra and IR fingerprint. Therefore, the definitive discrimination of hydrocarbon isomers was achieved.

Acknowledgment:

The research was performed within the framework of the Research Project PRIN 2022: Unique analytical workflow involving COMPLEmentary TEchniques for the reliable molecular identification of hydrocarbons (CompleTe), supported by the Italian Ministry of University and Scientific Research, no. Prot. 2022KC2BRL.

ANA-PO-059. Combining asymmetrical flow field-flow fractionation and analytical pyrolysis to explore model nanoplastics in pollen media

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Microplastic (MP) contamination has been extensively studied, while smaller particles known as nanoplastics (NPs, 1 nm – 1 µm) have been less investigated due to analytical challenges. NPs are generating more concern than MPs because of their potential to interact with organisms at cellular level. Furthermore, they are characterised by a high surface area and strong binding affinity, which enable the absorption of substances. This process can alter the particle's identity within the exposure media trough the formation of the so called eco/bio-corona (EC), a matrix-dependent layer strongly bound to the particle's surface, which may amplify their affinity with organisms. To date, the nature, formation and consequence of the EC on particle's identity remain largely unexplored. However, the investigation of these aspects is of outmost importance to trace M/NP's biodistribution. The present study aims to advance the understanding of the interaction between NPs and pollen. Recent findings indicated the presence of MPs on honeybees, suggesting that M/NPs may be transported by bees along with pollen. To the best of our knowledge, a limited number of studies involve NPs analysis in complex matrices and no studies have been conducted on pollen. To fill this gap, we propose a multi-technical approach. Asymmetrical Flow Field-Flow Fractionation (AF4) allowed hydrodynamic size-based fractionation of species, enabling the separation of fractions of NPs, pollen and their mixture. On-line multi-detection using Diode Array, differential Refractive Index and Multi Angle Light Scattering (MALS DAD-dRI-MALS) provided a size, morphological, and spectroscopical characterization of the fractions. Pyrolysis coupled with Gas-Chromatography and Mass Spectrometry (Py-GC-MS) provided the off-line chemical characterisation at molecular level of NP/pollen media. The development of appropriate pre-treatments of AF4 fractions to obtain samples amenable for quali-quantitative Py-GC-MS was the most challenging aspect. The on-line approach has allowed us to characterize the size modification

that NPs undergo in the presence of the water-soluble macromolecular pollen species, as well as to assess the formation of EC around the particles. The off-line coupling with Py-GC-MS enabled the chemical characterization of pollen species and NPs, showing the potential to provide insight of the EC composition. Overall, this work represents the first effort in studying how NPs change in a complex matrix, such as an aqueous pollen environment, rather than their mere identification. Increasing and deepening the information in this field can help in elucidating the impact of the EC and NP/matrix interactions on the behavior of NPs in the environment.

Acknowledgement: Financed by the European Union – NextGeneration EU through the Italian Ministry of University and Research under PRIN 2022 PNRR DOMANI, No. P2022SET7C.

ORG-PO-184. C(sp)3-C(sp)3 heterocyclic alpha-alkylation via organometal/metalloid reagents: a robust strategy to exploit the molecular three-dimensional space

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FAR-PO-020. Novel Opportunities to Fight Pancreatic and Prostate Cancer Exploiting 1,2,4-Oxadiazole-Bearing Compounds

Corfu, Alexandra Ioana[1]; Gallo, Raffaella[2]; Pacchiana, Raffaella[3]; Poles, Maria[3]; Scarano, Antonio[4]; Tamborini, Lucia[1]; Mazzolari, Asia[1]; Gul, Sheraz[5]; Bruno, Stefano[4]; Donadelli, Massimo[3]; Conti, Paola[1]; Borsari, Chiara[1]

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Pancreatic ductal adenocarcinoma (PDAC) is one of the most lethal malignancies, with an average 5-year survival rate of 11%, mainly due to the lack of early diagnosis and limited response to treatments. Prostate cancer is the second most frequent cause of cancer death in men, with around 1.2 million of new cases diagnosed each year. Chemoresistance is a key impediment for treating both diseases, and drugs with innovative mechanisms of action could allow to overcome resistance to therapies. The 1,2,4-oxadiazole ring is considered a privileged scaffold in drug discovery, and it constitutes the pharmacophore moiety of several anticancer agents. Starting from an in-house library of 1,2,4-oxadiazole derivatives, we evaluated the antiproliferative activity towards two different human prostate cancer cell lines, DU-145 and LNCaP. In addition, we investigated the ability of the two most active compounds (11 and 16) to inhibit cell migration using wound healing assays in DU-145. Compounds 11 and 16 were also tested in two different pancreatic cancer cell lines (PANC-1 and MIA PaCa-2) and they showed low micromolar IC50s. Early ADME-Tox investigation were performed to exclude drug-drug interaction, cardiotoxicity and cytotoxicity. In addition to the 1,2,4-oxadiazole ring, compounds 11 and 16 contain a 3-Br-4,5-dihydroisoxazole (BDHI)[1] nucleus, which is known to behave as a moderately reactive warhead. Thus, these compounds are expected to act as covalent inhibitors. Target(s) identification via mass spectrometry under denaturing conditions is currently ongoing, using PDAC cell lysates exposed to compound 16 under conditions mirroring those inducing antiproliferative effects. Overall, we identified novel agents for the treatment of pancreatic and prostate cancers, and their novel mode of action is currently being elucidated.

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Acknowledgements:

This work was supported by the Guido Berlucchi Foundation Mini Grant CANCERCOPE, number G43C23002440001 (to C.B.).

FAR-PO-099. Discovery of 1,3,4-Oxadiazole Derivatives as Broad-Spectrum Low-Toxicity Agents for the Treatment of Vector-Borne Parasitic Diseases

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Vector-borne parasitic diseases (VBPDs) pose a significant threat to public health on a global scale. Collectively, Human African Trypanosomiasis (HAT), Leishmaniasis and Malaria threaten millions of people particularly in developing countries. Climate change might alter the transmission and spread of VBPDs, leading to a global burden of these diseases. Thus, novel agents are urgently needed to expand the therapeutic options and limit the spread of drug-resistance parasites.

We screened an in-house library of antileishmanial and antimalarial compounds1 towards Trypanosoma brucei (T. brucei) and we identified a 1,3,4-oxadiazole derivative as an anti-T. brucei hit compound, with predicted blood-brain-barrier permeability. Subsequently, extensive Structure-Activity-Relationship studies around the lipophilic tail of our hit compound, led to a potent antitrypanosomal and antimalarial compound, with moderate potency also towards Leishmania infantum (L. infantum) and L. tropica. In addition, we discovered a pan-active antiparasitic molecule, showing low micromolar IC50s towards T. brucei and Leishmania spp. promastigotes and amastigotes, and nanomolar IC50 against Plasmodium falciparum, together with high selectivity for the parasites over mammalian cells (THP-1). Early ADME-toxicity assays were used to assess the safety profile of the newly discovered compounds.

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ALI-PO-007. The added value of natural flavourings: characterization of bioactive compounds in Calabrian chili pepper flavourings obtained with different extraction techniques

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Flavourings are defined as all those substances with a high impact on food flavour, while the term “natural flavourings” specifically refers to flavouring preparations of which at least 95% is obtained from a material of plant, animal or microbiological origin, by appropriate physical, enzymatic or microbiological processes, as described by the European Regulation 1334/2008. In particular, the aim of the present work is to compare natural flavourings obtained from Calabrian chili peppers by two extractive techniques and different parameters, both in terms of their volatile molecules, linked to specific sensorial properties, and through the characterization of their important bioactive compounds 1. This research is part of a broader project aimed at the valorisation of natural flavourings from Calabrian chili pepper variety, considering the initiated procedure to obtain the PGI mark, and at the reuse of chili peppers, that are not suitable for a direct sale, for flavouring preparations, with a view to a circular economy. In this work Soxhlet extraction and Ultrasound Assisted Extraction (UAE) techniques were compared especially in terms of bioactive compounds recovery. Thus, hydroalcoholic solvents in different percentages were used, since they are environmentally friendly and permitted in food flavouring production. The extracts were then analysed in terms of pungency, related to the concentration of the two main capsaicinoids (capsaicin and dihydrocapsaicin), vitamin C, vitamin E, polyphenols, and carotenoids 2,3. Analyses were performed using different methods and instruments such as HPLC-DAD and UHPLC-MS/MS. The volatile molecules were analysed by HS-SPME-GC-MS and compared to that of the original matrix. An accurate statistical analysis was then applied to compare all the obtained data. The most impactful parameter turned out to be the ethanol/water percentage of the extraction solvent, since, for example, capsaicinoids and vitamin E were more present in chili extracts from anhydrous ethanol, while polyphenols, vitamin C and antioxidant activity were more related to extractions with a higher water percentage, as expected. In particular, both for Soxhlet and UAE ethanol 70% was a good compromise, since it assured the most heterogeneous chemical composition of volatile extracted compounds, with a high similarity to the original matrix. Besides, in both the involved techniques, ethanol 70% extracted a high concentration of the analysed bioactive molecules, compared with the literature 4.

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TEF-PO-008. Bile acid-based nanosystems for the delivery of budesonide

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In this study ursodeoxycholic acid (U), sodium cholate (C) and sodium taurocholate (T) were selected to prepare bile acids-based vesicles and nanoparticles (i.e. bilosomes and biloparticles) to improve the solubility, the absorption and to preserve the activity of budesonide, used as a model lipophilic drug. It is well known that bile salts are physiologically involved in the digestion of lipids therefore they can affect the absorption of poorly soluble drugs in different ways1.

Bilosomes and biloparticles were prepared following standard protocols with minor changes2. The obtained systems showed good encapsulation efficiency and dimensional stability. Particularly, biloparticles showed an increase in encapsulation efficiency following the order U < C < T.

The in vitro release of budesonide from both bilosystems was performed by means of dialysis using either a nylon membrane or a portion of a Wistar rat small intestine and two receiving solutions simulating gastric or intestinal fluid (i.e. FASSGF and FASSIF). Both in gastric and intestinal fluid, budesonide is released from bilosystems more slowly than the reference solution, while biloparticles showed a significant improvement of budesonide passage into aqueous solution. On the other hand immunofluorescence experiments indicated that budesonide-containing U-bilosomes are able to decrease the inflammatory response induced by glucose oxidase stimuli and to counteract the ox-inflammatory damage within intestinal cells.

In conclusion the obtained bilosystems can efficiently encapsulate budesonide while preserving its properties. However, the influence of different bile acids (i.e. U, C, T) on the performance of the bilosystem needs to be studied in depth to understand their contribution

to the specific drug release properties. Future studies will be carried out to delve deeper into the reasons for the different behaviours expressed by the different bile acids used. The encouraging results showing the efficient antioxidant effect by a complete restoring of IL-1β basal level after U-bilosomes treatment, suggest the possibility to further investigate the use of bilosystems to counteract the ox-inflammatory damage within intestinal cells especially for those intestinal pathologies correlated to the development of an oxidative stress status.

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ALI-PO-033. Enzymatic deglycosylation and lipophilization of soy glycosides into value-added compounds for food and cosmetic applications

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Soybean is one of the most important crops worldwide, being placed 8th on the chart of the most cultivated species.1 Its high level of production correlates with a huge amount of waste produced. These residues could be of great interest due to the presence of high value-added molecules. Among these compounds, glycosides (e.g., daidzin, genistin and glycitin) have been widely studied for their potent antioxidant properties.2

In the present work two parallel approaches have been followed: enzymatic hydrolysis to the corresponding aglycones and CaLB mediated glycoside lipophilization to obtain derivatives with increased bioavailability and/or stability for potential applications in food, nutraceutical and cosmetic sectors. Firstly, Escherichia coli strain BL21 (DE3) STAR was utilized to heterologously produce an extremophilic β-glucosidase from Halothermotrix orenii (HOR). This was then exploited for the production of aglycones starting from soybean glycosides. Subsequently, lipophilization reactions of daidzin with butanoic, hexanoic and octanoic acids have been carried out with Candida anctarctica lipase B under continuous flow conditions. This work contributes to evidence the possibility of using agri-food residues to produce high value-added compounds through eco-friendly biocatalytic methodologies.

This study was carried out within the Agritech National Research Center and received funding from the European Union Next-GenerationEU (PIANO NAZIONALE DI RIPRESA E RESILIENZA (PNRR) – MISSIONE 4 COMPONENTE 2, INVESTIMENTO 1.4 – D.D. 1032 17/06/2022, CN00000022).

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ORG-PO-185. Aminocatalytic enantioselective [2 + 2] dearomative photocycloaddition for the synthesis of indoline polycyclic scaffolds

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The direct transformation of readily available aromatic feedstocks into structurally diverse three-dimensional molecules makes catalytic asymmetric dearomatization (CADA) reactions of broad interest. Indeed, they provide a sustainable and straightforward route to medicinally relevant archetypes. However, the inherent difficulty of the disruption of aromaticity demands a large energy input during the dearomatization process, which could be incompatible with the typical conditions required by asymmetric catalysis. One promising approach to overcome this issue is the investigation of the excited-state reactivity of (hetero)arenes, which may display different reactivity patterns compared to the original ground-state ones. In this contribution, the successful combination of asymmetric aminocatalysis with the direct activation of visible light (or the use of a photocatalyst) to develop an interesting catalytic asymmetric [2 + 2] dearomative photocycloaddition of the indole core is presented. This methodology relies on the excited state reactivity of transiently generated organocatalytic intermediates, thus enabling the construction of optically active polycyclic products in high levels of yield and stereoselectivity.

INO-PO-053. Ferritin-Au(I) bioconjugates as anticancer agents

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Human heavy-chain ferritin (HuHf) is a recombinant protein composed of 24 H-subunits, forming a nanocage with a hollow globular structure. The H-chain is recognized by the transferrin receptor-1 (TfR1), overexpressed in many cancer cell lines. HuHf is a suitable nanocarrier due to its versatility, excellent safety profile and nano-range size1. Gold compounds are potential anticancers with antiproliferative and proapoptotic properties2. Here, I worked on the development of human heavy chain ferritin conjugates with different gold(I) compounds, i.e. Auranofin3, Aurothiomalate and a monocarbene, for the production of ferritin-based nanocarriers and their selective delivery toward cancer cells. Five human-H chain ferritins were expressed in E. coli cells: the wild type, three different mutants, where I replaced with Alanine one or two cysteines (C130A, C90AC102A and C90A) and a 19F labelled- human ferritin (5-F-Trp93). I exploited the use of recombinant wild type HuHf for the targeted delivery of the gold(I) compounds, the three mutants to determine their binding sites on the protein and the 19F-labelled ferritin as a probe for cellular uptake via 19F NMR studies. For all the HuHf-gold(I)

adducts: ESI-MS spectrometry (measuring the disassembled subunits) confirmed the adducts formation and provided information on the chemical nature of the species present in solution. ICP determined the total amount of gold per cage. Also, biological experiments were performed to evaluate the cytotoxicity of the free drugs and their bioconjugates with ferritin against A2780 ovarian cancer cells; moreover, the cytotoxicity of the free compounds was evaluated together with the TfR1 expression in four different cell lines i.e. U87MG glioblastoma cells, MCF-7 breast cancer cells, HCT-116 colorectal cancer cells and MRC-5 fibroblast cells.

ANA-PO-151. A preliminary evaluation of the physico-chemical and sensorial properties of Sicilian hemp seed cake flour, with a focus on the VOCs distribution

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Hemp seed cake flour (HSCF) is obtained by industrially processing the press cake derived from the extraction of the oil from the seeds of Cannabis sativa L. The hemp market has today grown exponentially, becoming distant from that of a decade ago or so, when it was bound to the textile, biofuel, and papermaking fields. The proven health-promoting effects of hemp and hemp-based products have become strongly appealing to the public interest. As an example, hemp seed oil (HSO) represents an active ingredient in the formulation of food supplements and cosmetic products, useful for the relief from a variety of ailments, such as psoriasis, dermatitis, hypertension, dyslipidemia. Hemp seed cake has been widely demonstrated to contain important bioactive molecules: up to 50% proteins, 9-20% lipids, 6-7% dietary fiber, considerable amounts of minerals [1]. On November 2023 the European Commission has published a revised version of the Novel Food Catalogue which includes cannabinoids and cannabidiol as new entries, confirming the importance acquired by hemp products in the Union. Furthermore, the use of HSCF fits a virtuous model of circular economy: only in 2018 the amount of press cake produced in Europe from HSO processing was estimated to be 2.18 Mtons [2]. Recovering hemp by-products meets therefore the criteria of environmental protection, both in terms of waste removal and of providing functional ingredients with no further depletion of natural sources. In this scenario, scope of the present study was the evaluation of the physical, chemical and sensorial properties of some samples of HSCF produced in Sicily. Beyond the flour, bread samples were prepared by using mixtures of wheat flour and HSCF at different ratios - 0%, 10%, 20%, and 30% HSCF, respectively. Moisture, ashes, fiber, carbohydrates, proteins, polyphenols, tocopherols, sterols, and fatty acids were assessed in HSCF samples. Additionally, Headspace-Solid-Phase Microextraction (HS-SPME) was applied to the analysis of the volatiles released by bread samples; alongside, a panel test was carried out by trained personnel in order to evaluate the sensory quality of bakery products containing HSCF, hence, consumer's acceptance.

FAR-PO-109. OneHealthdrugs, a new perspective for environmentally friendly NID drugs

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Nearly 75% of emerging human infections worldwide originate from animals. Current drugs for both human and animal (H&A) vector-borne diseases (VBD) are in short supply and have limited efficacy, potential toxicity, and limited resources. Emerging environmental issues in pharmaceutical use/manufacturing are increasing attention in this area. Currently, the two drug pipelines are being developed independently. Collaboration and research between different expertise is therefore essential to define how new drugs can be developed using a more sustainable approach. OneHealthdrugs [1], a COST Action, is dedicated to the development of innovative strategies for the supply of drugs with a more environmentally friendly profile and low environmental impact [2]. The new drugs aim to combat H&A VBD while maintaining the principles of an optimal profile for both organisms, improving the quality of the drugs and associated delivery technologies. R&D experts from various fields, including chemical/biological/human/veterinary and earth sciences, are working together to propose guidelines and improve existing drug discovery tools in the field of NID discovery. The platform includes preclinical drug discovery, animal studies and drug delivery. Approaches such as compound and target database generation, bioinformatics and omics studies, medicinal chemistry strategies and nanotechnology tools will be implemented.

We expect the results of OneHealthdrugs to have a significant impact both in Europe and in disease-endemic countries. The latest advances in the compound database, including the greener principles derived properties [3] and the drug targets database managed by adopting reduced off-target species filtered with appropriate software, as well as the sustainable drug profiles in H&A health, will be presented together with the progress made within the OneHealthdrugs initiative.

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Acknowledgment

COST Action CA21111: One Health Drugs against Parasitic Vector-Borne Diseases in Europe and Beyond (OneHealthDrugs).

FAR-PO-034. Investigation of Tau-Dependent Epigenetic Reprogramming in Alzheimer's Disease

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Tau is an intrinsically disordered protein mainly expressed in neuronal cells and has a crucial role in a group of neurodegenerative disorders, including Alzheimer's disease (AD). Targeting nuclear Tau or its cofactors might prevent nuclear accumulation and subsequent chromatin remodeling, which could lead to neuronal toxicity. TRIM28 is the only deeply investigated nuclear factor interacting with Tau, mediating its nuclear translocation. Moreover, the TRIM28 complex interacts with several enzyme families, such as histone deacetylases, and specific drugs can target this interaction. Specifically, Tau interacts with TRIM28, displacing HDAC1 from the complex, and consequently, HDAC1's nuclear function on chromatin remodeling is impaired.1 Our research aims to reveal the nuclear Tau molecular mechanisms mediating gene expression alteration during AD disease's onset and progression. To address this goal, the design and functionalization of small molecules as modulators of the pathological Tau-dependent chromatin remodeling mechanisms are ongoing. A potent activator of HDAC1-mediated deacetylation, Exifone, with neuroprotective activity, was recently identified.2 So, the work initially focused on identifying the allosteric binding site of Exifone in HDAC1 (Figure 1).The protein was studied using molecular dynamics (MD) simulations and docking calculations, and the allosteric binding site was identified. In-silico selection of candidate molecules and designed derivatives was performed. The novel-identified molecules will be screened to confirm their HDAC1 activation activity and, more generally, their neuroprotection activity.

ORG-PO-186. Green production of Biofuel from Organic Fraction of Municipal Solid Wastes

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The Organic Fraction of Municipal Solid Wastes (OFMSW) can play a key role in the frame of Circular Economy, having great potential as a renewable energy source of biofuel. OFMSW is mainly composed of carbohydrates (50%) and lipids (13%) that are both valuable for the production of bioethanol and biodiesel, respectively.[1] Biofuels have recently gained attention as a sustainable alternative to fossil fuels, allowing to overcome the current environmental issue related to the depletion of raw materials.[2] Moreover, biofuels have higher biodegradation rates, low toxicity and no sulphur content with respect to fossil fuels.[3] Their production from OFMSW can also overcome the problem related to soil and water consumption due to the cultivation of vegetable biofuel sources. Moreover, it can contribute to reduce municipal waste disposal, favouring recycling processes.[4] Indeed, the largest part of OFMSW is disposed at landfills causing environmental and human issues.[5] Here we report an innovative method of biofuel production from OFMSW, based on the use of supercritical carbon dioxide (sc-CO2) as a green solvent for lipid oils extraction and subsequent conversion into fatty acid methyl esters (FAMEs), suitable as biodiesel. A systematic study, via Central Composite Design (CCD) of Response Surface Methodology (RSM), was performed to identify the optimal operating conditions leading to maximum extraction yields. In particular, the effects of extraction temperature, pressure and supercritical CO2 flow rate were investigated in the ranges 40-70°C, 150-450 bar and 5-10 l/min, respectively. The obtained FAME mixtures are mainly composed of saturated and unsaturated C10-C18 alkyl chains, being promising for applications as biodiesel.

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ORG-PO-049. Para-aminomethyl calixarenes as ligands for biologically relevant G-quadruplexes

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G-quadruplexes (G4s) are DNA and RNA four-stranded secondary structures generated by the stacking of guanine tetrads. Due to their presence in key regions of the human genome, such as telomeres and gene promoters, and their association with cancer and neurodegenerative diseases, several classes of ligands have been developed to study and modulate their biological functions.1

Here, we present a small library of calix[n]arenes, which were synthetized as potential new ligands for G4s (Fig. 1). The upper rim of these compounds was decorated with various amines to promote their association with the negatively charged surfaces of their targets, while their aromatic scaffold was expected to provide hydrophobic and stacking interactions. Also, we tuned the size and conformational mobility of the tested compounds through a different valency of the macrocycles (n = 4, 6, 8) and the functionalization of their lower rim (free vs methylated phenolic OHs).

The binding features of these compounds were assessed via Förster Resonance Energy Transfer

(FRET)-melting assays, using the human telomeric G4 as a substrate. In this assays, the target DNA sequence was labelled with a FRET couple of fluorophores, and ligand-induced variations of its melting temperature were monitored through fluorescence measurements.2 This approach enabled the automated screening of the tested ligands, evidencing the ability of some of them to affect the stability of their target. Then, the interaction between the tested G4 and the most promising calixarenes was further characterized via CD spectroscopy.

Funder: Project funded under the National Recovery and Resilience Plan (NRRP), Mission 4 Component 2 Investment 1.1 - Call for tender No. 104 of 02.02.2022 of Italian Ministry of University and Research funded by the European Union – NextGenerationEU. Award Number: Project code 2022N9E847, Concession Decree No. 1064 of 18.07.2023 adopted by the Italian Ministry of the University and Research, CUP D53D23010430006, Multifunctional compounds for a multitarget approach against neurodegenerative disorders - MULTIFUN

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CSB-PO-028. Unrevealing NLP cytolysin dynamics: All-Atom Simulation of pore formation in plant Plasma Membrane

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Global food security is constantly threatened by plant pathogens that cause crop diseases. This is mainly due to the ability of pathogens to develop new invasion strategies through their effective co-evolution with hosts. Microbial plant pathogens secrete a wide range of effector proteins to facilitate infection. Necrosis- and ethylene-inducing peptide 1 (Nep1)–like proteins (NLPs) form a large family of microbial proteins produced by bacteria, fungi and oomycetes. NLP-producing pathogens infect a variety of important crops, including potatoes, tomatoes, soybeans, grapevines and tobacco1.

NLPs are the only known cytolytic pathogen effectors that can permeabilize plasma membranes of eudicot plants by forming transient small pores. Recently, major plant membrane components, glycosylinositol phosphorylceramides (GIPCs), have been identified as targets of NLP binding to plant plasma membranes. NLP has been shown to oligomerize on plant membrane, but the molecular mechanism of oligomerization and pore formation of NLPs remains elusive2.

This research aims to improve our understanding of the interaction between NLP toxins and plant plasma membranes. In particular, we aim at unravelling the molecular mechanism of membrane pore formation as induced by NLP monomers and oligomers and the behaviour of protein/lipid complexes during membrane attachment. In doing so, we employed AI-based modelling tools and all-atom computer simulations, which provide well-established support for experimental methods by allowing the determination of key interactions at the atomic level and the time-dependent monitoring of the accessible conformational space of protein-lipid complexes. These findings are expected to support the development of innovative and efficient strategies to control plant diseases caused by NLP-producing pathogens.

ABC-PO-022. Arsenic and chromium contaminated groundwaters: from geochemical analysis to treatment

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The presence of toxic elements in water is becoming a serious concern, also when it is not due to pollution related to human activities, but to the natural interactions occurring between water and rocks. In fact, this type of water contamination is usually underestimated with respect to that linked to industrial productions; however, its impact on human health is also significant, since the concentration of toxic species in groundwater is often higher than the imposed limits. In last years, an increase of the awareness for natural contaminated groundwaters has grown. In particular, in this work, the approach followed within the PNNR project (CUP B83C22003980006) to manage groundwaters contaminated by arsenic and hexavalent chromium is reported and discussed. Starting from a map of geochemical characteristics of groundwaters present in the Sila and Pollino massif areas (Southern Italy), it was possible to obtain information useful to identify the most suitable technology to treat the water, in order to obtain a stream which meets the threshold values (25 µg/L and 10 µg/L for chromium and arsenic, respectively). In this respect, membrane operations, like nanofiltration, showed interesting performance in terms of removal efficiency and purified water production.

TEC-PO-025. Sustainable rubber composite Materials by Dynamic covalent networks and BIO-fillers

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The concept of flexible electronics, evolving over decades, saw significant strides with the introduction of conductive polymers, organic semiconductors, and amorphous silicon. These materials enable devices to bend, roll, fold, and stretch, distinguishing them from conventional electronics. The pursuit of novel materials and manufacturing techniques for high-performance, scalable electronic devices on flexible substrates is ongoing.1,2

Addressing escalating environmental concerns, recyclable elastomeric materials, particularly Dynamic Covalent Polymer Networks (DCPNs), show promise. 3,6

However, the lack of reversibility in current covalent coupling reactions in rubber compounds hinders recycling efforts. This research project aims to advance recyclable elastomeric materials for flexible electronics by preparing composites with reversibly cross-linked elastomers and bio-fillers. Modified liquid rubbers for reversible curing and functionalized bio-fillers such as lignin for compatibility will be synthesized. The Diels-Alder reaction is used as the reversible system.

ORG-PO-050. Design and synthesis of chimeric antitumoral compounds Nutlin-DCA

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Chimeric compounds are used in cancer research for the treatment of distal pathways that integrate several concurrent signals responsible for tumour growth. Their structure comprises of two or more pharmacophores connected through suitable chemical linker. This dual or multi-functional drugs have the ability to interact with different biological targets for a more pronounced therapeutic effect upon administration.

In this work we designed and built novel multifunctional molecules DCA and (-)-Nutlin-3, focusing on two important pathways linked to the predominant survival and proliferative aggressiveness of malignant cells: the Warbug effect and the suppression of “the genome guardian”, p53.

Dichloroacetic acid and in particular dichloroacetate (DCA) showed to unlock cancer cells from anti- apoptosis state due to Warburg effect, via inhibition of mitochondria pyruvate dehydrogenate kinase (PDK) restoring oxidative phosphorylation metabolism.

The substitute cis-imidazolines, also known as Nutlins are potent antitumoral compounds studied in several types of cancer in clinical trials for their ability to restore the protective function of p53, by blockage of its antagonist oncoprotein MDM2.

Chimeric compounds derived from the connection of dichloroacetic acid (DCA) and the cis-imidazoline (-)-Nutlin-3 through suitable biodegradable linkers, could simultaneously inhibit mitochondrial pyruvate dehydrogenase kinase (PDK) and restore p53 function, inducing cell cycle arrest to impede tumor development and harboring normal cells.

Hence the final intent of this work is the selection of new multitargeting drugs with enhanced antitumoral efficacy given by a synergistic activity

ANA-PO-112. Multiclass analysis of psychoactive substances and NPS in oral fluid exploiting magnetic solid phase extraction (m-SPE) clean-up and HPLC-MS/MS

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The recent rapid spread of new psychoactive substances (NPS) has become a topic of interest for researchers, healthcare professionals and law enforcement. NPS are defined as new narcotic drugs that are not controlled by the United Nations Conventions on Narcotic Drugs (1961) or Psychotropic Substances (1971), but which may pose a comparable threat to public health1. In recent years, the interest in so-called "alternative" matrices to conventional ones (plasma, whole blood, serum, urine) used for toxicological analysis in the clinical and forensic field is growing sharply. Among these, oral fluid (OF) offers a series of advantages that justify its use in different fields of application. OF is a relatively clean matrix, collection is simple, non-invasive, no special skills are required in sampling which can be supervised without violation of privacy, while reducing the possibility of specimen adulteration or substitution. The aim of the present work is to develop a new method for the determination of several substances of abuse and NPS in OF. Magnetic solid phase extraction (mSPE) was applied as a sample clean-up technique and subsequently an HPLC-MS/MS analysis was performed for the determination of the analytes of interest. The magnetic nanoparticles (MNPs), designed synthetized for this work, have a core-shell structure of Fe_3O_4 -SiO_2-C_{18}2. Their characteristics of MNPs, dimensional distribution and functionalisation degree, were subsequently verified using FT-IR, DLS and microscopic techniques. The proposed procedure was then validated following the international guidelines SWGTOX showing good results in terms of recoveries and matrix effect, which proved the efficiency of the clean-up step; also, the limits of quantification and identification are low, in the order of pg/mL for almost all the analytes considered, thanks to the enrichment factor in pretreatment and the sensitivity of the HPLC-MS/MS analysis. In conclusion, this magnetic extraction in the solid phase allows the sample to be pretreated in a simple way, with benefits both in terms of time and solvent consumption, avoiding centrifugation and filtration phases and giving a "green" footprint.

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ANA-PO-003. Photolytic and photocatalytic degradation of diclofenac: identification of the transformation products by non-target LC/MS-MS approach

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The intensive use of non-steroid anti-inflammatory drugs worldwide leads to environmental problems especially related to the contamination of surface waters by emerging micropollutants (MPs). Therefore, studies focused on mitigating and controlling the occurrence of these MPs in water bodies, among which diclofenac, are becoming essential to address derived toxicity issues. Studies carried out in our laboratories have shown that diclofenac in aqueous solution does not degrade when irradiated with visible light alone, whereas it degrades completely in 120 min when subjected to UV-vis irradiation (diclofenac removal of 99%). However, in this case, the UV-vis spectrum of the pale-yellow resulting solution shows the presence of photolysis products that have absorptions in the same wavelength range as diclofenac, probably carbazoles, whose toxicity is greater than their precursor. Therefore, it is planned to try to degrade diclofenac by photocatalysis to test whether the transformation products could be less toxic than the precursor molecule.

This study aims the identification of photolysis and photocatalytic degradation products of diclofenac mediated by kesterite nanoparticles (CZTS). Kesterite is a semiconducting inorganic compound (Cu2ZnSnS4) with a band gap of 1.4-1.6 eV and a high absorption coefficient of light radiation. These characteristics make it a potential photocatalyst in the presence of sunlight. Furthermore,

this material is insoluble in water and capable of homogeneously dispersing in it, it is non-toxic, and consists of elements that are available in large quantities and at low cost.

An ultra-high-performance liquid chromatography coupled with a high-resolution quadrupole time-of-flight mass spectrometry (UHPLC-QTOF MS/MS) method was developed and fully validated. Following a non-targeted approach, several transformation products, among which 16 already reported in the literature were identified and their formation mechanisms proposed based on the high-resolution MS/MS data. Some common degradation reactions give to carbazole formation via cyclization, radical hydroxylation and oxidation followed by C-N bond scission. In addition, a toxicity and environmental persistence assessment of all the elucidated degradation products was carried out by in-silico methods. The results stated that the use of CZTS nanoparticles leads to the elimination of diclofenac (removal of 99% with UV-vis irradiation and 91% with only vis irradiation), and the formation of TP with less toxicity.

ANA-PO-055. Analytical characterization and synergic evaluation of volatile terpenes of selected β-caryophyllene containing spices for diabetes treatment

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Diabetes prevalence is steadily increasing worldwide, estimated to reach over 300 million cases by 2030. Despite the significant progress made using oral anti-diabetic agents, current treatments are far from perfect, requiring to find novel viable alternatives. In this regard, recent studies have shown that some spices and herbs are active in reducing high blood glucose, thanks to the biological activities of the volatile fraction1. In this respect, the anti-hyperglycemic effects of sesquiterpenes received attention, since they intervene on biochemical pathways deranged in diabetes mellitus1. Among this class of compounds, β-caryophyllene (BCP), a volatile sesquiterpene component, has gained interest because of its abundant occurrence, non-psychoactive nature, and dietary availability through consumption of edible plants, including spices.

In this study, an advanced analytical characterization was carried out to define the chemical composition of spices' essential oils, such as black pepper, prior to biological assays. While the quali-quantitative profiling was defined by means of gas chromatography coupled to mass spectrometry (GC-MS) and to flame ionization detection (GC-FID), a deeper investigation about the chiral components was carried out through multidimensional gas chromatography. Moreover, in order to clarify the presence of target components responsible for the therapeutic effect, a preparative GC method was developed. In order to collect the highest amount of target fractions per analysis, wide bore capillary columns were exploited, allowing a consistent reduction in terms of total time analysis. In a first step, this system allowed the efficient isolation of essential oils' sub-fractions, e.g monoterpenes and sesquiterpenes, to be tested with antidiabetic assays. Secondarily, according to the biological results, target components of each sub-fraction have been isolated by means of preparative multidimensional gas chromatography, in heart-cut mode, aiming to demonstrate synergic biological effects.

Acknowledgments: The project was funded by the Italian Ministry for the University and Research (MUR) with a "PRIN: Progetti di ricerca di rilevante interesse nazionale Bando 2022" Project n. 2022359CZA "Advanced analytical characterization and synergic evaluation of volatile terpenes of selected β-caryophyllene containing spices for diabetes treatment".

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FAR-PO-019. NR2F2 and NR2F6 as targets for drug repurposing: an insight by means of computational analysis

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Within the framework of the PNRR project "HEAL ITALIA", we focussed our interest on a small group of orphan nuclear receptors (ORFs), a small family of ligand-dependent transcriptional factors (15 members) controlling the expression of various target genes. In this context, we performed structural analyses aimed at identifying small organic molecules capable of interacting with the selected sub-group of ORFs. The ultimate goal of the study is to identify compounds available in public drug databases, which may be ready to be tested against target ORFs in view of rapid translational medicinal chemistry applications "from the bench to the bed".

Like all ORFS, NR2Fs constitute a sub-group of three receptors lacking endogenous ligands, i.e. NR2F1 (COUP-TFI, EAR-3), NR2F2 (COUP-TFII, ARP-1) and NR2F6 (COUP-TFIII, EAR-2). Structurally, the two most important regions of NR2Fs are the DBD (DNA binding domain) and the LBD (ligand binding domain), which act independently from each other. The overall structures of DBDs and LBDs are very similar in the three NR2F family members. In contrast, the structures of the N-terminal and the C-terminal regions of ORFs are variable. Indeed, the C-terminal region is missing in some ORFs and the knowledge on its functional significance is limited. Because of their central role in cell growth, NR2Fs are promising candidates as novel therapeutic targets in the treatment of cancer1. In the present study, we conducted a computational analysis on the X-ray crystal structures of the human NR2F2 ligand binding domain (PDB ID: 3CJW) and the human NR2F6 ligand binding domain (PDB ID: 8C5L). The initial aim of these analyses was to identify potential hotspot binding sites and to predict their druggability. Subsequently, we used the identified binding sites to perform a virtual screening protocol, involving pharmacophore models and docking studies, on large libraries such as Drugbank, FDA and commercial libraries for drug repurposing.

We identified a number of drug hits as possible ligands/inhibitors of the target ORFs. Currently, we are in the process of verifying the ability of these compounds to interact with and modulate the activity of NR2Fs with the use of suitable biological tests.

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The research leading to these results has received funding from the European Union - NextGenerationEU through the Italian Ministry of University and Research under PNRR - M4C2-I1.3 Project PE_00000019 "HEAL ITALIA"

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TEO-PO-015. Electronic excitations in complex and multichromophoric systems with machine learning

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Photophysical processes of biological interest occur in condensed phase, within “complex” systems where chromophore-environment interactions shape optical properties and excited-state dynamics. Faithful quantum chemical (QM) modeling of these processes requires a multiscale QM/classical strategy that accounts for all such interactions [1], as well as a thorough sampling of the configurational ensemble. The computational cost of QM methods however limits the number of calculations, forcing a compromise between statistical accuracy and feasibility. Machine learning (ML) techniques hold great promise in alleviating the computational burden of QM calculations, and have been successfully

employed for the prediction of excited-state properties and dynamics [2]. However, much less attention has been paid to environment effects on excited states [3].

Here I will outline potential ML strategies to model excited states within complex systems, showing that the effects of the environment can be incorporated in a physically sound way within ML models. I will focus on light-harvesting pigment-protein complexes, as examples of complex environments where excitations are delocalized over multiple chromophores and also tuned by the interactions with the protein [4]. The obtained ML models [5] not only can faithfully predict the effect of the environment on electronic excitations, but can be used to simulate the excited-state dynamics of large multichromophoric complexes [6]. Finally, physically sound ML models can also assist the interpretation of solvatochromic effects, effectively complementing traditional QM/classical methods [7].

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FAR-PO-035. Selective targeting of the bulge region in the (3+1) hybrid G-quadruplex of the PARP1 promoter through a Structure-Based Virtual Screening

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Poly(ADP-ribose) polymerase-1 (PARP1) has a key role in catalysing the polymerization of ADP-ribose units, connecting PAR polymers to itself or other proteins. Its structure comprises three domains that collectively manage PARP1's response to DNA damage. DNA lesions stemming from spontaneous single-strand breaks (SSBs) and base modifications can lead to alterations in base pairing and subsequent casual mutations associated with cancer. PARP1 binds to SSBs, starting the addition of PAR onto itself and the PARylation of other proteins, promoting mechanisms such as single-strand break repair (SSBR)1. Thus, in homologous recombination deficient (HRD) cancer cells, inhibiting PARP1 activity causes the increase of unrepaired single-strand DNA breaks that converge to double-stranded DNA breaks, inducing selective cell death. Consequently, several PARP1 inhibitors have been developed, showing promising outcomes in cancer treatment. However, acquired resistance to these inhibitors is a significant limitation, and alternative strategies need to be explored. A non-canonical G-quadruplex (G4) with a unique adenine bulge has been found in the promoter region of the PARP1 gene. This presents a highly selective target to disrupt PARP1 expression in cancer cells2. Therefore, through virtual screening of various databases, several compounds with a higher theoretical binding affinity to the non-canonical G4 compared to the G-quadruplex ligand RHPS4 have been identified. Further in silico analysis aimed to select compounds capable of binding to the G4 bulge region with high selectivity. Experimental studies are currently underway to validate their ability to bind to this form of G4 with this novel binding mode. If successful, these compounds could offer a promising and selective avenue for disrupting PARP1 expression in cancer cells.

ANA-PO-121. Development and optimization of analytical method for the extraction of polyphenols and phycocyanin from spirulina followed by HPLC-MS analysis

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Spirulina (Arthrospira platensis) is a cyanobacterium that is considered an environmental friendly microalga. This cyanobacterium has received significant attention because of its high protein content, which accounts for up to 70% of its dry mass. Among the various nutrients that constitute spirulina, phycocyanin, phycobiliproteins responsible for the blue-green color of spirulina and polyphenol compounds, were known as important natural antioxidants 1,2. Phycocyanin is known for its antioxidant properties and anti-inflammatory properties. It is a protein formed by an alpha chain with 162 amino acids and a beta chain with 172 amino acids, bound to three chromophore groups, called phycobilines. These monomers form a hexamer with a molecular weight of about 230 kDa. Usually, for the extraction of these bioactive compounds water is used as extractive solvent, but the obtained extract is unstable over time. For this reason, we evaluated the use of other extractive solvents. Deep eutectic solvents (DESs) are green solvents, formed by combining

two or more components, that can act as hydrogen bond donors (HBDs), sugars, amine, or as hydrogen bond acceptors (HBAs), ammonium quaternary salts, according to specific molar ratio to form an eutectic mixture. The peculiar characteristics of DES (polarity, viscosity, and solvent capacity) are easily modulated varying the molar ratios of the components and the water content. In this work an ultrasound-assisted solid-liquid extraction, using DESs, was developed to recover phenolic compounds and phycocyanin from Spirulina. Many DESs were tested and the extraction procedure was optimized based on the obtained maximum content of phycocyanin and total phenolic content (TPC), obtain through spectrophotometric method. The optimized extraction procedure, applied for phenolic compounds and phycocyanin extraction from spirulina, provided the use of a DES composed by betaine and glucose in a molar ratio of 1:2 (with 30% water), added to 0.5g of spirulina powder with a matrix-to-solvent ratio of 1:20 w/w, in an ultrasonic bath for 1 hour at 50°C. The extraction procedure guaranteed to extract an amount of phenolic compounds of 11.77 ± 1.23 g GAE/100g and 25.56 ± 2.47 mg/g of phycocyanin from spirulina powder. DES extract stability was evaluated using spectrophotometric test, resulting better than that of water extract. The profile of the polyphenol content was evaluated through high performance liquid chromatography coupled with photodiode array and mass spectrometry detection and some phenolic compounds were identified.

Acknowledgementsù: Position n.9 Accordo Innovazione Scienze della vita DM 02/08/2019 Progetto “PLATFORM - materiali, Processi e tecnoLogie Avanzate per la realizzazione il moniToraggio e la validazione FunziOnale di inteRventi di osteotoMia” - Prog n. F/260009/04/X51 - CUP: B89J23002410005 - COR: 16003172_

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ANA-PO-082. Implementation of polyaniline in biocompatible supports for sensing and energy storage

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Conductive polymers represent an affordable and reliable answer to the stiffness of conventional electronics. Polyaniline (PANI) in particular shows a peculiar doping/dedoping process, with high conductivity and exceptional tuneability. On the other hand, this material is fragile and not flexible. Different supports can enhance the mechanical properties of PANI, donating resilience, tenacity, and flexibility. This contribution would like to study the composite material based on PANI and paper or hydrogel and to report the fabrication of two different biocompatible devices, respectively a paper-like sensor for humidity1 and an all-in-one supercapacitor (SC)2. PANI was polymerized with poly (2-acrylamido-2-methyl-1-propanesulfonic acid) (PAMPSA) for a more mechanically stable structure. With the addition of PAMPSA, the emeraldine state of PANI is achieved, providing enhanced conductivity. For the fabrication of conductive paper, the polymerization was conducted in situ on cellulose fibres, which were then dried and consequently pressed. Humidity sensors were fabricated by cutting the obtained sheets in rectangles. Due to humidity (RH%), cellulose/PANI-PAMPSA conductivity increases and the considered analytical signal is the measured current flow through the material by applying a constant voltage. Another interesting application is in the medical field, as a breath or ECG sensor. We then investigated the insertion of PANI-PAMPSA in polyvinyl alcohol (PVA) hydrogel systems. PVA powder was dissolved in PANI-PAMPSA solution, inducing a physical crosslinking through freeze-thaw cycles and providing a self-healing ability to the SC. Since PANI-based hydrogel partially functions as an electrode, the need of an electrolyte is covered by PVA-H2SO4 hydrogel, with a high adhesion between the layers. The resulting structure composes the all-in-one supercapacitor.

TEC-PO-039. Mitochondria-encapsulation nanotechnologies to enhance mitochondrial transplantation

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Mitochondria are dynamic cytoplasmic double-membrane organelles that generate most of the chemical energy needed to power the cell's biochemical reactions and play crucial roles in maintaining cellular signalling. Mitochondria dysfunction has been showed to be a key factor in the pathogenesis and in the progression of many diseases from cardiovascular to neurodegenerative diseases and cancer, as well as physiological conditions such as ageing. Recent evidence of active transfer of mitochondria occurring between cells suggests that it is possible to deliver mitochondria to correct cellular dysfunction in vitro and in vivo. Mitochondrial transplantation (also known as mitochondria replacement therapy or MRT) is therefore emerging as a promising therapy for the treatment of many pathological conditions where conventional pharmacological approaches fail, and gene therapy is not feasible3. Several in vitro techniques have been developed to improve the transfer of mitochondria and evaluate its validity. With current methods, however, it is not possible to maintain the stability of the mitochondria in the long-term and/or to trace the fate of mitochondria after they have been introduced into the recipient cells and tissues. These challenges represent a stumbling block for the successful translation of this revolutionising approach to the clinical practice. Recently, chemical engineering techniques have been focused on finding a way to encapsulate mitochondria in order to improve their stability, integrity and to pilot their delivery. Despite positive data, these methods have limitations in terms of efficiency and heterogeneity. Development of mitochondrial encapsulation technologies has the potential to advance translational application of mitochondrial transplantation and provide new ground-breaking strategies for the treatment of mitochondrial dysfunctions. In summary, limitations and future perspectives will be highlighted to address long-term stability of mitochondria while improving tissue-specific mitochondrial distribution and minimising the related immune response.

TEO-PO-003. A computational approach to the study of carbon dots for the determination of their structure and properties

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Recently, carbon dots (CDs) have emerged prominently in the family of carbon-based nanoparticles for their unique properties, such as intense photoluminescence, low toxicity, excellent biocompatibility, and easy surface functionalization1. In addition, they involve simple synthetic approaches that include bottom-up and top-down methods2 that, in turn, determine the functional groups of the surface, their size, and their photoluminescence response. For all these reasons, CDs have found applications in various fields, being mostly used for biological and biomedical applications3. To date, a detailed understanding of the atomic-level structure of these compounds and the relationship between the structure and their properties has been only partially established4. Therefore, it is necessary to develop an efficient computational method to fill these gaps. Preferably, this approach should maintain an explicit description of the electronic degrees of freedom, to assess optical properties from first principles and to investigate electron density and, ultimately, the surface charge of the nanoparticle.

We present results on the application of a computational multiscale approach based on ab-initio DFT (Density Functional Theory) and semi-empirical (TB-DFT, tight-binding density functional theory) methods to the class of carbon dots. The advantage lies in reducing time and cost of the research compared to experimental methods, while considering a wide range of structures and maintaining a good level of accuracy. Our study begins with the CDs with an amorphous carbogenic core, the variant which is less explored in literature. Several model structures based on amorphous carbon functionalized with nitrogen or oxygen atoms, with a number of atoms ranging from 20 to 200 have been studied and will be presented.

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ALI-PO-011. Effects of feed supplementation of ewes with silages of prickly pear by-products (Opuntia ficus-indica) on the chemical-nutritional characteristics of their dairy products

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Industrial and technological growth has led to an increase in waste and by-products, which requires green and circular economy approaches. The waste resulting from Opuntia ficus-indica can exceed 40% up to 55% of the total weight of the fruit. These by-products lend themselves well to ensiling1 and are rich in bioactive substances such as proteins, vitamins, minerals, carbohydrates and polyphenols, and have multiple physiological activities such as antioxidant, anti-inflammatory and antimicrobial2. The aim of this study was to determine the chemical-nutritional characteristics of prickly pears by-products silages (PPS) (peels+12% of wheat bran and prickly pears peels, pulp, seeds + 12% of wheat bran), bulk milk and cheese samples from ewes fed with these PPS, in order to evaluate their effects on cheese quality. Milk, cheese and PPS samples were subjected to qualitative-quantitative chemical characterizations on the lipidic and phenolic fraction. Cheeses samples were subjected to triangular test. PPS, milk and cheese samples were freeze-dried before analysis. All the samples were analysed for their antioxidant activity by DPPH and ABTS tests, total phenolic content (TPC) by Folin-Ciocalteau test, phenolic profile by UHPLC-ESI/MS-MS analysis and fatty acid profile by GC- MS method. PPS showed considerable antioxidant activity, especially the PPS peels, which was reflected in the milk and cheese samples of the ewes fed with this by-product. In particular, cheese samples showed higher anti-radical values (0.375-0.710 mmol TEAC/100 g) respect to the control (0.122 mmol TEAC/100 g). Analyses carried out on TPC showed a higher value in milk and cheese samples (2.04-3.41 mg GAE/g), respect to the control samples (0.24 mg GAE/g). Supplementation of PPS in the sheep's diet, however, did not significantly influence the fatty acid profile of milk and cheese samples and the sensorial test (P>0.10). Therefore, the feed supplementation with PPS represents an optimal strategy to enhance Sicilian sheep's cheeses, through the production of innovative dairy products enriched with bioactive molecules and with a longer shelf-life, due to the presence of natural antioxidants without altering their sensorial aspects.

IND-PO-013. Iron Oxide Reduction using Hydrogen as green reducing agent

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The steel industry plays a key role in the world's industry and economy and the yearly production exceeded 1950 mega tons in 2020. Unfortunately, it is also emitter of carbon dioxide reduction is made by coal-based reduction; in fact, 73.7% of the production exploit Blast Furnace (BF). In the BF, the reduction is conducted with carbon monoxide obtained from coke. The coke and iron oxide are charged from the top part of the BF, descend through the shaft where they are preheated and react. The partial oxidation of coke produces CO which starts to reduce the iron oxide and liquid iron slag and CO2 are obtained. In fact, the steel production is responsible approximately 8% of industrially based global CO2 emissions, which corresponds to around 2 Giga tons yearly. The most accredited candidate for decarbonization of ironmaking is a shaft furnace where the reduction is carried out in solid state by a reducing gas, yielding direct reduced iron (DRI). In the DRI, the reduction of iron oxide is carried out at the lower temperature using reformed natural gas with a H2/CO ratio of 3. They represent the first important step towards the decarbonization of the ironmaking process, but fossil feedstock is used, and CO2 is still emitted. Recently, hydrogen reduction has attracted increasing attention to reduce the greenhouse emissions, which requires further development of the process. The focus of the present work, then, is to study the reduction kinetics of iron oxide using hydrogen as reductant. The overall reaction displays interestingly complex behaviour, which depends on gas phase,

surface and solid phase phenomena. This explains also the very versatile and partly contradictory observations and interpretations found in literature. Therefore, monolayer and bed experiments with pure hematite and commercial samples were performed in various experimental conditions in order to investigate kinetics and mass transfer phenomena. To support the interpretation of the data morphological and chemical-physical characterization has been performed. The collected data lays a strong basis for understanding the overall reduction dynamics. Finally, it provides a strong basis for developing a mathematic model to describe the overall kinetics of the reduction.

FAR-PO-017. Low molecular weight cationic lipopeptides as innovative strategy for fighting antimicrobial resistance

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Antibiotic Resistance is a global clinical issue caused by the widespread and incorrect use of antibiotics.1 In this perspective, antimicrobial peptides (AMPs) are an emerging class of chemotypes that could represent new agents against resistant bacterial infections with a broad spectrum of activity. Unfortunately, AMPs have several pharmacokinetics limitations. To address these issues, several chemical modifications have been investigated. Among them, the reduction of the AMPs size and the conjugation of lipid moieties are emerging as promising strategies to improve antimicrobial activity and metabolic stability, minimizing the host cells toxicity2. Herein, a library of short lipopeptides was de novo designed and synthesized. These are endowed with a common peptide core consisting of Arg-Pro-Arg, wherein the Arg residues interact with the negatively charged bacterial counterpart, while the Pro, a well-known structuring amino acid, reduces the freedom degree of a spacer or a cationic amino acid bearing the fatty acid. The so-obtained lipopeptidomimetics were preliminary tested in vitro and a structure-guided design was employed to improve their activity and reduce their toxicity. Among all the synthesized tested lipo-peptidomimetics we identified some promising results, which displayed MIC values in the low-µM range against gram (-) and gram (+) bacteria and low-to-moderate toxicity versus host cells, favourable stability in human serum and a considerable ability to inhibit and destroy a biofilm of Staphylococcus aureus. Finally, this candidate is now under investigation for its potential capability to serve as the potential adjuvant in combination with conventional antibiotics.

ORG-PO-051. Carbon-doped Ionic Liquid Gels for simultaneous removal of emerging pollutants from water

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Contamination of water bodies is a pressing issue of present-day society, exacerbated by their wide structural variety. It is therefore necessary to develop systems able to remove multiple pollutants simultaneously. In this context, we prepared and characterized supramolecular hybrid ionic liquid gels of 1,3:2,4-dibenzylidene-D-sorbitol (DBS), doped with carbon materials such as graphite, carbon nanotubes, graphene and graphene oxide. We employed these gels as sorbents for the simultaneous removal of pollutants of different classes, such as dyes and emerging pollutants like drugs and bisphenol A.

We firstly characterized the gels in terms of thermal stability, rheology and self-healing ability. Then, we tested them as sorbents for pollutants in aqueous mixtures, observing high removal efficiency and high recyclability, especially in the case of the graphite-doped gel, which achieved adsorption capacities as high as 117 mg/g and 66 mg/g for rhodamine B and bisphenol A in mixture, with a distinct preference towards cationic contaminants.

Acknowledgement: We thank MUR for funding, SiciliAn MicronanOTecH Research And Innovation CEnter "SAMOTHRACE" (MUR, PNRR-M4C2, ECS_00000022), spoke 3 - Università degli Studi di Palermo "S2-COMMs - Micro and Nanotechnologies for Smart & Sustainable Communities". The funding source had no role in analysis, design, interpretation of results and report writing.

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TEC-PO-023. Sustainable Perspectives in Life Cycle of Lithium Batteries

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In 2022, a global LIBs manufactured capacity of 1.5 TWh was estimated. This is expected to increase to 4 TWh by 2025 and reach 6.8 TWh by 2030, with China producing 76% of global capacity and leading the market, whose total value is projected to increase from 46.2 billion dollars in 2023 to 189.4 billion dollars in 20321,2. These figures do not take into account supply shortages which, nowadays, are increasingly more likely and have implications not only on the economic level (causing the increase of LIBs cost of production), but also on the geopolitical one since the majority of materials sources usually lies under politically unstable countries. Therefore, the Li-ion batteries (LIBs) penetration in the automotive market makes more urgent the boosting of zero-waste battery recycling. This can play a crucial role in developing a circular economy through the recovery of Critical Raw Materials, as well as non-metallic components back to use. LIBs are complex devices and do not only contain metals and graphite, but also valuable fluorinated materials. For example, fluorinated lithium salts organic solutions (e.g.: 1.0M LiPF6 in EC/DMC) are used as electrolytes; poly(vinylidene fluoride) (PVDF) is the benchmark binder for the state-of-the-art cathodes, due to its outstanding properties, such as safety, chemical stability, good adhesion to the current collectors and excellent free-standing performances3-7. In recent years, the recycling technologies for LIBs entered in a new stage focused on the development of i) advanced pre-treatment processes to separate all the valuable battery

components, and ii) more sustainable metallurgical approaches, with the aim to reduce the energy consumption in the subsequent metallurgic processes.

The recovered materials can be used to prepare and assemble a new cell using the recovered separator and characterized to evaluate the effective feasibility of the whole recycling process. The work here presented is now progressing in the frame of RENOVATE EU funded project, with several valuable Partners, especially including Polytechnic of Milan.

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TEO-PO-029. Enhancement in Raman spectroscopy? Combined theoretical and experimental investigation

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Surface-Enhanced Raman Spectroscopy (SERS) is a powerful analytical technique that has garnered significant attention thanks to its capability to amplify the Raman signals of molecules adsorbed on nanostructured metal surfaces up to the detection of a single molecule. However, one challenge to the interpretation of the data is the difficult reproducibility of the results, complicated by the multitude of effects that contribute to the enhancing factor. This complexity makes it difficult to predict both the level and the effect of enhancement on the analyzed compound. One potential enhancement factor may be purely related to the response of the molecule itself, especially when dealing with chromophores.

In this contribution, to discern this effect, we propose a combined experimental-theoretical study of enhancement processes using the methylene blue molecule as a test case. From an experimental point of view, the compound is examined under various conditions to obtain a comprehensive picture of the enhancement effects. This includes utilizing non-conventional state-of-the-art spectroscopy setups, as well as standard analytical methodologies with bench instrumentation. Concurrently, the proposed computational study relies on density functional theory (DFT) calculation are used to provide an accurate insight into the molecular nature of the Raman enhancement effect.

This work represents a step for systematic modeling of SERS spectra under real experimental conditions. Its aim is to establish a theoretical methodology that supports the interpretation of Raman enhancement phenomena.

ORG-PO-052. QM/MM investigation and rate constant evaluation of long-range electron transfer pathways in Bacteriorhodopsin and Bacteriorhodopsin-sensitized TiO2 hybrid systems

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Bacteriorhodopsin (bR) is a protein present in the purple membrane of Halobacterium salinarum. Due to its favourable chemical and photochemical properties, it has been used in photocatalysis, photoelectrochemistry, and bioelectronics fields as a sensitizer for TiO2.1,2 It has been widely employed to improve the efficiency of solar energy conversion in technological devices such as photovoltaic and photoelectrochemical cells. Nevertheless, the mechanism of the Electron Transfer (ET) from the Retinal Protonated Schiff Base (RPSB) to the surface of the protein is not yet fully understood. In this work, Quantum Mechanics/Molecular Mechanics (QM/MM) methods were applied to investigate the most probable long–range ET pathways in the isolated bR and four different bR/TiO2 hybrid systems. The goal of this work is to acquire knowledge about the intramolecular ET mechanism that leads the electron to be injected into the semiconductor conduction band. The bR/TiO2 hybrid systems were previously generated in our laboratory.3 Mulliken Population Analysis (MPA) and Spin Density (SD) values were computed to investigate the active redox amino acids involved in the long–range ET. Marcus's equation for ET rate constant (KET, eq. 1) was also solved for the isolated bR and the four bR/TiO2 hybrid systems, involving the RPSB and the amino acids identified based on the SD delocalization map.

K_ET=√(⟦4π⟧^3/(h^2 λRT)) H_AB^2 exp{-(ΔG°+λ)^2/4λRT}, (1)

The electron coupling, HAB, was unraveled from the off-diagonal terms of the Hamiltonian corresponding to the donor D and the acceptor A of the ET reaction and treated through the Green's function (HD,AgHA,D) under perturbation theory principles.4 The driving force (ΔGo) and the reorganization energy (λ) were also computed. Since the models are treated in the gas phase, λ was estimated to be the internal nuclear rearrangement and calculated as half contribution from donor rearrangement and half from the acceptor.5

Such understanding would drive the design of novel punctual mutations for bR to produce potentially more efficient bR–variants/TiO2 hybrid models with enhanced ET properties.

FAR-PO-116. Novel peptides as agonists/antagonists of FPR2 for the treatment of ulcerative colitis

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The inflammatory bowel disease (IBD), Chron's disease and ulcerative colitis are among the idiopathic colorectal inflammatory disorders. As in other inflammatory processes, neutrophils migrate into inflamed tissue in response to chemotactic signals, stimulating various antimicrobial functions including ROS production, phagocytosis, and degranulation. The interruption of this process or the excessive recruitment of neutrophils can cause a dysregulation of the inflammatory process which hinders its resolution.

The Formyl Peptide Receptors (FPRs) are human G protein-coupled receptors located on neutrophils capable of binding specialized pro-resolving mediators and participating in the resolution process. The human FPR family constitutes FPR1, FPR2/ALX and FPR3.

The synthetic hexapeptide WKYMVm, an agonist of the FPR1 and FPR 2 receptors, showed a therapeutic effect against ulcerative colitis by blocking the decrease in body weight, colon shortening and mucosal destruction induced by DSS (in a model mice). In contrast, the FPR2- receptor was inhibited by the WRWWWW peptide, indicating the crucial role of this receptor in inflammatory pathology.

The aim of this study is to design and synthesize WKYMVm agonist/antagonist analogues, testing their binding capacity to the FPR2 receptor and their anti-inflammatory activity at different concentrations in vitro. Future development comprises their encapsulation in different liposomal formulations, investigation of their absorption and possible anti-inflammatory effects in a 2D CaCo2/HT29 and CaCo2/HT29-MTX culture model used in Crohn's disease study.

The novel synthesized peptides may represent useful therapeutic agents against chronic intestinal inflammation.

IND-PO-008. Feasibility of green mechanochemical synthesis for dual function materials preparation

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A recent approach in mitigating the emissions of CO2 is the integrated carbon capture and utilisation for the synthesis of CH4 from waste flue gases by using Dual Function Materials (DFMs). The DFMs are formed by the CO2 capture component, usually an alkaline oxide, and the catalytic component, usually a transition metal. The two parts must interact in synergy to be able to convert the captured CO2 efficiently with a spillover mechanism from the adsorbent phase to the catalytic sites.

In this work, we report the preparation and performances of bimetallic RuNi DFMs with CaO and Na2O as adsorbent phases supported on CeO2-Al2O3. The DFMs have been prepared by a mild-energy solventless mechanochemical process. The materials were tested at 650 °C for the cyclic CO2 capture, both in lean conditions and with the presence of O2 in the stream, and the reduction to produce CO by the Reverse Water-Gas Shift reaction (RWGS). Compared to the conventionally impregnated samples, these DFMs show increased CO2 capture capacity and CO production. Yet, undesirable CO production is observed also during the CO2 capture step due to the strong reducibility of the milled DFMs. The presence of O2 during the capture step suppressed the formation of CO without negatively affecting the CO production by RWGS and the DFMs stability in cyclic operations, showing good potential in real flue gas applications.

INO-PO-028. A New Trimeric Palladium Scaffold only Supported by Nitrogen Ligands

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Ar-BIAN (bis(arylimino)acenaphthene) Schiff bases have found wide application as ligands for both transition and main group metals because their rigid structure imparts the correct geometry for chelation and improves the stability of the compounds against hydrolysis and rupture of the central C-C bond. We have previously reported on the synthesis of the reduced form of the BIAN compounds, Ar-BIANH2. We now report that treatment of palladium acetate with these ligands results in the reduction of palladium(II) to palladium(0) and coordination of the so formed Ar-BIAN to the latter. In the absence of other ligands, an unprecedented trinuclear complex was obtained, which is formally the first palladium(0) compound only stabilized by nitrogen ligands. Its X-ray structure shows that each palladium atom is coordinated in a standard κ2N chelating way to an Ar-BIAN ligand and in a η2 way to a C=N double bond of another Ar-BIAN ligand. The latter is itself chelating a second palladium atom and the same bonding scheme extend to a third Pd(Ar-BIAN) unit, which closes the loop over the first palladium atom

Overall, the complex has a propeller shape, with the six aryl rings divided in two inequivalent groups. Other complexes have also been obtained showing unusual structures and their synthesis will be described.

ANA-PO-045. Photoinduced oxidation of microplastics in aqueous media: a study of the degradation products

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The presence of plastic waste is recognized as a significant worldwide environmental hazard, with inadequate handling and disposal practices resulting in escalating levels in natural surroundings. Of recent interest is the breakdown of plastics into particles ranging from macroscopic to microscopic, and even to nano-sized particles measuring less than 1µm. At the nano level, plastics pose detection challenges and can be dispersed through air, soil, and water environments. Thus, studying the degradation patterns of plastics is necessary for accurate evaluation of their fate in the environment1. Among plastics, expandable plastics offer numerous advantages,

including excellent energy absorption, impressive shock and fire resistance, exceptional thermal insulation properties, resistance to water and chemicals etc. These properties make them ideal for use in protective packaging solutions, where they help minimize damage during transportation and provide thermal insulation, among other benefits2. In this study, we have acquired engineered expandable acrylonitrile based microplastics to study its UV induced degradation and (photo)-oxidation, using mass spectrometry and microscopy (scanning acoustic microscope, SAM). We observed that microplastics release organic compounds in liquid phase upon degradation and most of them are byproducts of the polymerization process. SEM analysis has been carried out to acquire the morphological information of the polymers and it has been observed that these spherical microplastics ruptured when subjected to degradation. In this presentation we will discuss the degradation of these microplastics upon irradiation using UV light and H2O2, and we present the procedures used to study microplastic degradation under environmental-like conditions.

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IND-PO-014. High-added value chemicals production by a photothermo-catalytic CO2 reduction with modified phyllosilicates

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The Carbon Capture and Utilization (CCU) processes can be efficient solutions for the CO2 emission mitigation. Here we applied the photothermo-catalysis for the CO2 conversion into solar fuels. We investigated the performance of modified phyllosilicates (ps) with the incorporation of Ni and Ce ions in their structure and subsequently coated with CeO2. The modified phyllosilicates were prepared by hydrothermal method at 160 °C and the CeO2 coating was made by precipitation with KOH. The catalysts were characterized by FT-IR, Raman, XRD, SEM-EDX, XPS, H2-TPR, CO2-TPD, UV-DRS and N2- physisorption. The catalytic activity was determined in the solar photothermal CO2 reduction both with pure CO2 and into an integrated approach where the CO2 was produced from the thermal catalytic oxidation of toluene. The photothermo-catalytic CO2 reduction was carried out inside a cylindrical batch reactor maintained at 120°C and irradiated with a solar lamp. The results showed that the Ni/Ce-ps@CeO2 catalyst achieved a CO2 conversion of 87% after 5 hours of photothermo-catalytic test using pure CO2 with a production rate of 15.8 µmol/gcat·h of CO and 5.6 of CH4. In the integrated approach, the CO2, produced in the thermo-catalytic oxidation of toluene, was converted at a lower extent (50% over Ni/Ce-ps@CeO2) into CO and CH4. The peculiar structure of the phyllosilicates permitted to efficiently expose the surface active sites of the deposited CeO2 to the solar irradiation. The high versatility of the proposed approach paves the way for the use of modified phyllosilicates (montmorillonite, bentonite) with the incorporation of different ions and with the coating of other semiconductor photocatalysts to improve the performance in the photothermo-catalytic CO2 conversion.

FAR-PO-122. Can lipidomic alterations of neuroblastoma cells caused by amyloid peptide incubation be reverted by myricetin?

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The investigation of brain lipid composition alterations observed in Alzheimer's disease (AD) can give insights into neurodegenerative mechanisms. Therefore, we wanted to validate and further explore the impact of β-amyloid (Aβ1–42) self-aggregates on lipidome alterations, building upon our prior research.1

Specifically, differentiated human neuronal cells SH-SY5Y, were treated with Aβ1–42 in the absence and in the presence of myricetin (Myr), a well-known Aβ1–42 anti-aggregating agent.2 The evaluation of in vitro toxicity confirmed that Aβ1-42 (20 µM) significantly affects cell viability compared to control (83± 12 %). Meanwhile, Myr showed to not affect the cell viability at concentrations less than 40 µM. Conversely, it seems that there is an inverse dose-response relationship regarding Myr potential effect in counteracting the amyloid toxicity.

Then differentiated SH-SY5Y were treated in three different conditions.: i) Aβ1–42 (20 µM); ii) Aβ1–42 (20 µM) in the presence of Myr (40 µM); iii) Myr (40 µM). A protocol based on solvent direct cell scraping using a cold lipid extraction mixture (MeOH/MTBE/IPA (1.3:1:1, v/v/v)) was optimized for samples collection. Then, following a validated protocol lipids were extracted after cell cryo-lysis by homogenizer and the extracts analysed by a RP-UHPLC system coupled with a quadrupole-time-of-flight mass spectrometer in a comprehensive data-independent SWATH acquisition mode.3 Data processing was achieved by MS-DIAL (version 4.24). After lipid identification we focused on the relative quantification of Glycerophospholipids and Sphingolipids classes and the results were compared with those obtained in our previous study.

By comparing lipid class profile in SH-SY5Y cells treated with Aß1-42 to untreated cells, we confirmed some alterations in PCs, LPCs profiles that might be related to cellular response mechanisms to the toxic stimuli of Aß1-42 aggregation species. According to the antiaggregating properties of Myr, in samples co-treated with this compound, changes in lipid levels seem to be restored, especially in case of O-PCs species that might be increased by the Aβ1–42 oxidant effect.

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ELE-PO-006. In-Situ Surface Activation of Polycrystalline LaNiO3 Electrocatalyst for the OER

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The efficiency of hydrogen production from water electrolysis is limited by the sluggish kinetics of the Oxygen Evolution Reaction (OER), that therefore needs a catalytic material to avoid the high overpotentials. In this work, we investigate LaNiO3 as a promising electrocatalyst for the OER in Alkaline Water Electrolysis. The material is selected to cope the requirements of cost and easy scale-up. LaNiO3, prepared by a co-precipitation method, shows good OER activity and electrochemical stability. The material is investigated by operando X-Ray Absorption Spectroscopy (XAS), showing a key role of the Ni(II)/Ni(III) redox couple. Notably, a layer of a Ni(II) compound formed at the catalyst surface is oxidized under anodic potentials and possibly becomes the active sites for the adsorption of OH- and for the OER reaction. This is confirmed by high resolution transmission electron microscopy, that clearly shows the formation of a defective outer layer during operation. Thus, we evidence the presence of disordered structure on the surface of the electrocatalyst, that increases the number of sites active for the OER.

CSB-PO-026. Characterization of different metal adducts in human Carbonic Anhydrase II for artificial photosynthesis

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Natural photosynthesis inspired the development of artificial devices aiming to convert solar energy into chemical energy. In this scenario, artificial photosynthesis (AP) might lead to more sustainable ways for energy production based on light-driven water splitting, with not-polluting gases as side-products (e.g., O2 and H2).1 The present work aims to develop and optimise novel biological catalysts for their application in AP. Human carbonic anhydrase II (hCAII) is a ubiquitous enzyme catalysing the reversible hydration/dehydration of carbon dioxide/bicarbonate.2 The Zn2+ metal ion is an essential cofactor for hCAII, being located in the protein active site where it tetrahedrally coordinated by three histidine residues. As reported in previous works, the replacement of zinc with different metal ions (e.g., Co2+, Ni2+, Cu2+, Mn2+) can modify the catalytic activity of hCAII, opening new interesting perspectives for biotechnological application.3

To this end, we focused on the development of metal-substituted hCAII to explore their role in modulating the catalytic activity of the enzyme. In particular, we focused on Ir3+-substituted hCAII, because it was formerly reported to acquire peculiar water-splitting properties.4 In this work, hCAII was expressed as recombinant enzyme in E. Coli, and the active protein was attained from multiple chromatographic stages (direct and reverse affinity, and size exclusion). Following the removal of zinc via chelation, the apo-protein was used to obtain various metal substitutions. The metal-substituted enzymes were then characterized through Isothermal Titration Calorimetry and X-ray crystallographic analysis. Furthermore, we also characterized the water-splitting capabilities of metal-substituted hCAIIs for AP applications. The structures of the metal-adducts revealed the pivotal contribution in metal binding of different His-residues. Their role in metal binding and catalysis has been recently investigated by the generation of mutants, obtained through site-directed mutagenesis. Our studies aim to obtain engineered enzymes, having increased turnover rates of oxygen production and long-term stability, exploitable for large-scale implementation in AP.

ANA-PO-074. Recycled cellulose acetate microspheres doped with graphene oxide for the determination of xenobiotics from human urine via in-syringe-dispersive-solid phase extraction

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Biopolymers are a suitable starting point for the development of sustainable sorbent materials thanks to their environmental friendliness, low toxicity, recyclability, and biodegradability. Moreover, most of them can be recovered from waste products, such as cellulose acetate from filters of cigarette butts. Although overlooked until recently, cigarette butts are harmful litter with dramatic effects on the environment being a source of contaminants and bioplastics, namely cellulose acetate. In fact, it was estimated that globally about 6 trillion cigarettes are smoked each year, 70% of which end up polluting terrestrial and aquatic ecosystems.

Looking at this worrying background, this study aimed at: i) developing an effective procedure to recover cellulose acetate from cigarette butt filters; ii) using the recovered biopolymer to prepare a microspheres in which graphene oxide can be dispersed; iii) applying the composite sorbent to isolate xenobiotics from human urine via in-syringe-dispersive-solid phase extraction.

The initial phase of the research was focused on obtaining clean cellulose acetate from cigarette filters. This was achieved by eliminating wrapping paper and unburned tobacco and washing the filters with hot water and hot ethanol to remove most impurities generated during cigarette combustion. The efficacy of the cleaning process was confirmed by characterizing the washed polymer by UV spectroscopy, attenuated total reflection Fourier transform infrared spectroscopy (ATR-FTIR), and thermal analysis (TGA, DSC), and comparing the results with those from pristine cellulose acetate (obtained from unsmoked cigarette filters) taken as a reference. The synthesis of the composite sorbent took advantage of a microemulsion-solidification process in which the organic polymer solution was first forced to a fine dispersion in a saturated water solution of NaCl and n-dodecyl-amine (2% w/v); later on, the polymer was precipitated in form of microspheres shaped by the addition of milli-Q water drop by drop. The sorbent was characterized by ATR-FTIR, TGA and SEM, confirming the graphene oxide dispersion and its morphological characteristics (average diameter = 10-100 µm).

Finally, the microbeads were applied for the determination of several potential xenobiotics (63 analytes from different chemical classes) detectable in human urine performing in-syringe solid phase extraction. In this configuration, the sorbent was packed into a syringe and the device was used to carry out a low-cost, saving-time, simple, and effective method.

CSB-PO-022. Detergent Screening for Membrane Protein Purification

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Gram-negative bacteria build a cell wall that functions as a protective envelope around their cell

membrane. Lipopolysaccharide (LPS) units are among the primary components of this wall. A

collection of membrane proteins, very unique to each bacterial strain, controls the synthesis of the LPS1. This project aims at characterizing two of these proteins, WZX and WZY, to understand their structure and function. In the long term, the goal of this research is to hamper the construction of the protective wall of Gram-negative bacteria, thus weakening their defenses.

We developed a good purification protocol that allows the isolation of significant amounts of WZX in detergent solution, a crucial step in the characterization of the protein through structural techniques. However, initial results from light scattering and circular dichroism indicate a short-term protein stability in detergent micelles.

In membrane protein (MP) structural studies, the identification of a detergent able to preserve the native conformation of the target is often a challenging process2. For this reason, we started working on the development of an in-silico approach to detergent screening. A library of detergent models has to be established by building micelles of various surfactants. These systems will be examined along time utilizing molecular dynamics. However, as traditional approaches to molecular dynamics of single proteins are not suitable for large micelles held together by hydrophobic interactions, a new protocol for relaxing the system has already been evaluated and optimized to improve the stability of the models.

The behavior of the in silico system is compared with experimental data to validate the protocol. Testing with different detergents highlights the best detergent, or detergent mixture, to stabilize the native structure of WZX and WZY.

Furthermore, mutations can enhance membrane protein stability outside of the cell membrane. We apply computational techniques to identify single-point mutations able to stabilize the protein folding. The best mutants of WZX and WZY will be expressed as recombinant proteins.

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ANA-PO-152. PERICARD: a targeted Plasmatic pEptidomic profile foR monItoring CARdiovascular Diseases

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Cardiovascular diseases (CVDs) are a group of heart and blood vessels disorders including heart failure, thromboembolism, coronary artery disease, and chronic kidney disease1. They currently stand as the leading cause of global mortality because of their challenging diagnosis and their non-specific symptoms2. Current diagnostic strategies rely on assessing risk factors and dosing biomarkers i.e., protein and peptide levels in human plasma, by using commercial immunoassays. However, the approaches are typically employed when symptoms are already present. Moreover, the analysis of CVDs biomarkers can be hampered by the high cross-reactivity with structurally similar species3.

Here we present, an ultra-high performance liquid chromatography-electrospray ionization-tandem mass spectrometry (UHPLC-ESI-MS/MS) method to determine targeted plasma peptidomics overcoming immunoassay limitations. The importance of a reliable plasma sample pre-treatment procedure for the determination of low-abundant (unit-tenths of pg/mL) intact peptides (such as endothelins, fibrinopeptides, guanylins, urotensins) is discussed. Additionally, strategies to mitigate the potential risks, such as secondary adsorption phenomena and peptide degradation have been also investigated.

Microextraction by packed sorbent (MEPS) technique has been tested as an alternative procedure for sample pre-treatment and analyte pre-concentration. Finally, the suitability of this methodology will be established for the analysis of human plasma from patients affect by CVDs.

PERICARD seeks to meet the need for an efficient, high-throughput tool for early identification of at-risk individuals. Its potential applications such as diagnosis, prognosis, prediction of disease recurrence, and therapeutic monitoring, may pave the way in the management of CVDs.

INO-PO-038. Micro-Raman detection of inorganic particulate in equine lung section

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Air quality is a main determinant of respiratory health. As for asthmatic people, veterinary species are sensitive to the effect of increased respirable dust1. Horses in particular, whose athletic performances concern their owners, are likely exposed to a large burden of inhaled particles originating from the surfaces they work on, with potentially relevant pathologic effects2. While little evidence suggests that increased levels of inhaled mineral particles characterize the air of the environments where horses train and perform, no data is currently available on the deposition and distribution pattern of such particles within the equine lungs.

The evaluation of the mineral exposome for understanding the multitude of environmental exposures of inorganic dust continuously over time is crucial3.

For this reason, understanding the qualitative and quantitative deposition pattern of inorganic dust in the lung is a pivotal step in the comprehension of the respiratory exposure pathway.

This work has been undertaken to describe the qualitative deposition pattern of mineral dust in equine lungs. Post-mortem bilateral lung sections were collected from each lung, following a cranio-caudal and ventro-dorsal gradient.

Observations were conducted with micro-Raman spectroscopy and revealed the presence of different inorganic particles in the range of 2-5 µm in diameter. The main particles found were feldspar (albite), mica (muscovite), titanium dioxide (rutile or mixed phase rutile/anatase), and magnesium calcite (Ca1-x, Mgx)CO3. Raman spectrum of an asbestos body, a fiber of asbestos covered with an iron-protein coat, was also recorded (Fig.1). Future studies will be focused on the quantitative determination of the total lung mineral load by digestion of lung tissue of the cranio-caudal sections.

ORG-PO-187. Double green strategy for the oxidative functionalization of privileged natural scaffolds

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There is an increasing need for ecologically friendly procedures in the chemical and pharmaceutical industries. In this context, photocatalytic generated singlet oxygen has attracted a great interest. Singlet oxygen is a potent and green oxidant for the functionalization of natural organic compounds in order to obtain potentially active derivatives. Here we report a double green strategy for the oxidative functionalization of estrogens, stilbenes and coumarins in a two-liquid-phase system composed by buffer and eco-certified 2-methyltetrahydrofuran (2-MeTHF) in the presence of meso-tetraphenyl porphyrin (meso-TPP) as photosensitizer. Depending on the experimental conditions, singlet oxygen can directly functionalize the selected substrate by [2+2] and [4+2] cycloaddition with high efficiency and rate constants, or in alternative, it can contribute to the activation of horseradish peroxidase (HRP) by selective formation of the hydroperoxide of 2-MeTHF. In this latter case, the selective insertion of singlet oxygen in the 2-MeTHF tertiary C-H bond was operative, avoiding enzyme inactivation due to excess of hydrogen peroxide, as well as the formation of undesirable and low selective radical species. These procedures were effective for the chemical space analysis and scaffold morphing of estrogens, stilbenes and coumarins, yielding bioactive compounds such as natural bicoumarins identified from pharmacologically active extracts of Erycibe obtusifolia Benth (Convolvulaceae).

ELE-PO-020. Sodium and calcium alginate for innovative green separators

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Bio-based separators represent an important opportunity for next-generation sustainable batteries, and, in the next years, it will become fundamental to investigate more in details these systems to guarantee the best performance of energy storage devices.

The separator is a critical component of batteries since it prevents electrical short circuits, being a physical barrier between the anode and the cathode, but it also serves for ion transportation. Traditional polyolefin-based separators are widely used in lithium-ion technologies thanks to their price and chemical stability1. However, this stability determines a high resistance to biodegradation2. Consequently, the use of these technologies increases the plastic pollution that is a formidable threat to the sustainable development of human society. To overcome this problem, the use of a bio-based separator is needed.

The aim of this work is the realization of a bio-based separator by means of a green process. After a deep evaluation of several natural polymers, calcium alginate (CA) has been chosen to realize a composite separator for green energy storage. CA is obtained from sodium alginate (SA), a cell wall component of brown algae. In presence of divalent cations (especially calcium), the low viscosity solution is turned immediately into a gel. CA was selected thanks to its thermal and chemical stability that make it a promising candidate for the realization of a new generation separator3.

Acknowledgements

Work funded by MOST—Sustainable Mobility Center Project, European Union Next-Generation EU (Piano Nazionale di Ripresa e Resilienza (PNRR), Mission 4, Component 2, Investment 1.4 and D.D. 1033 17/06/2022, CN00000023)

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ORG-PO-188. Exploring the potential of NADPH-dependent Imine Reductases in non-conventional solvents for enantioselective biocatalysis

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Biocatalysis has seen a growing adoption in both academic and industrial domains in recent years. Enzymes offer the possibility to obtain high ratios of chemo-, stereo- and enantioselectivities in chemical transformations using mild reaction conditions and without the

use of polluting reagents and solvents.1 Moreover, they can be easily produced by means of a microbial host, also in large quantities. Chiral amines are key intermediates in the synthesis of several biological active compounds and biocatalysis has emerged as an efficient method for their preparation. In this report, we propose the use of NADPH-dependent Imine Reductases (IREDs)2 from different organisms to perform the enantioselective reduction of cyclic imines and the reductive amination of simple ketones and amines. These enzymes were selected and produced in the form of lyophilized cell extracts, avoiding expensive enzyme purifications. We are also interested on the use of non-conventional solvents applied to chemical transformation and biocatalysis.3 Indeed, we envisaged the possibility of using the produced IREDs in non-conventional systems consisting of glycerol and Deep Eutectic Solvents (DES) as additives. Our findings in terms of enantioselectivity, substrate scope and applicability will be presented.

ORG-PO-081. Wittig Reaction in Deep Eutectic Solvents: Expanding the DES Toolbox in Synthesis

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The Wittig reaction is a reliable strategy that allows the chemo-, regio- and stereoselective preparation of alkenes from carbonyls and it is widely used both in academia and on industrial scale. This transformation requires the use of a phosphorus ylide that can react with a carbonylic compound via an oxaphosphetane intermediate. Traditionally the Wittig olefination is carried out in dry and aprotic solvents, under homogeneous conditions, using an organometallic base to generate a phosphonium ylide. In order to improve the sustainability of the reaction, in recent years many variations of the Wittig reaction have been studied, including catalytic versions and processes carried out in an aqueous environment. However, many organic molecules are not soluble in water or may undergo undesired chemical transformations in a protic environment.

In this context, owing to our interest in the development of sustainable synthetic strategies, we decided to investigate Deep Eutectic Solvents (DESs) as green reaction media to promote the Wittig olefination. It emerged that it is possible to carry out Wittig reactions using weak bases, at room temperature and in air. The procedure allowed us to synthesize alkenes with good to quantitative yields, starting from a wide range of non-enolizable aldehydes. In addition, experimental attempts to separate the alkenes from the phosphine oxide byproduct and from the excess of reagents without the use of chromatographic columns will be presented.

ANA-PO-017. Exploring Cannabis chemovars' floral profiles by two-stage thermal desorption coupled to comprehensive two-dimensional gas chromatography

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The floral scent is an important phenotypic characteristic of flowering plants. It plays a critical role in various areas such as attracting pollinators to enable reproduction success, defence and protection from predators or pathogens and species differentiation to reduce competition for pollinators and increase their chances of reproduction.

The floral fragrancy derives from the presence of volatile secondary metabolites, which contains various low molecular weight compounds with a low boiling point. They are mainly synthesized via the terpenoid, benzenoid, and fatty acid biosynthetic pathways1. These volatile compounds have been widely used in cosmetics, medicinal products, perfumes, and food flavorings.

Terpenoids are the main responsible for the aroma of many flowering plants, including those belonging to the Cannabaceae family. Furthermore, the synergistic relationship between different chemical compounds in cannabis, including terpenes, appears to enhance biological activity, and this result is commonly referred as the 'Entourage Effects', i.e. the ability of two or more active compounds to work together to produce a greater effect than they could achieve separately2. In this regard a more comprehensive chemical characterization is necessary to a better understanding of cannabis volatile composition and variability.

The present contribution aims at exploring, in a detailed manner, the volatile composition of different Cannabis chemovars, using state of the art comprehensive two-dimensional gas chromatography coupled to mass spectrometry (GC×GC-MS) technology3. The head-space extraction was dynamic and sorbent-based, specifically using trap tubes, packed with solid sorbent material which were properly selected for their selectivity to terpenoids. After the extraction, they were thermally desorbed online with the GC×GC-MS system using single-stage and dual-stage desorption system to understand pros and cons. Identification of the volatile compounds was carried out using mass spectral similarity and retention indices.

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ORG-PO-097. Iron-Catalyzed Aminocarbonylation of Alkyl-Boronic Pinacol Esters via SET

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The amide bond is an essential linkage in organic chemistry and, represent the key functional group in peptides, polymers and many natural products and pharmaceuticals [1]. Furthermore, alkyl-boronic acid or esters have attracted much attention due to their high stability, low toxicity, simplicity of preparation and the wide applicability [2]. For this reason, the aminocarbonylation of alkyl-boronic

pinacol esters toward amides has been developed. The reactions took place in presence of L3-FeCl2 (L3: 4,4'-di-tert-butyl-2,2'-bipyridine), TBPA (tert-butylperoxiacetate), under 20 bar of CO in DCE at 70 °C for six hours (eq 1).

Eq. 1: aminocarbonilation of alkylboronic pinacol esters via radical generation.

27 examples have been reported with yields up to 95%. The reaction radical mechanism has been confirmed through tests by using BHT as radical inhibitor, a free-radical compound (TEMPO) and a chemical able to react with free-radicals: the 1,1-diphenylethylene.

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CSB-PO-029. PROTAC-based approach to develop broad-spectrum antiviral agents triggering the proteolysis of the major viral protease

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In 2020, with the spread of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection, the PROteolysis TArgeting Chimeras (PROTACs) strategy to defeat coronaviruses (CoV) disease was also investigated1. Indeed, PROTAC degraders acting against the major viral protease 3-chymotrypsin-like protease (3CLPro) were hypothesized to be next-generation anti-CoV drugs2. 3CLPro (also named nsp5 or main protease) is shared by all coronavirus genera as well as by members of the large genus Enterovirus in the Picornavirus family3. Combining NMR spectroscopy and X-ray crystallography, we characterize the interaction between the α, β-unsaturated peptidomimetic-based PROTAC (FT235) with 3CLPro from SARS-COV-2 and 3CPro from Coxsackievirus B3 (CVB3), the latter being a cardiotropic virus belonging to enterovirus genus4. The results are compared with those obtained with the precursor molecule (FT234). We demonstrate that PROTAC molecule bind to the active site of both enzymes and the residues involved in the interaction are identified by solution NMR experiments. Furthermore, the crystal structures of SARS-CoV-2 3CLPro in complex with both FT234 and FT235 molecules are obtained. For both ligands the Cβ carbon of the α, β-unsaturated amide moiety forms a covalent bond with the catalytic Cys145. Moreover, we obtain the crystal structure of 3CPro from CVB3 in complex with FT234 molecule, revealing the covalent binding with Cys147. Finally, preliminary cellular studies show that the synthetized PROTAC molecule drastically reduces protein levels of SARS-CoV-2 3CLPro in cultured cells. In the future the interaction of PROTAC molecule with both proteases and Cereblon, the substrate receptor of the CRL4 E3 ubiquitin ligase responsible for the polyubiquitination of the target proteins, will be investigated to verify the formation of a stable ternary complex.

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TEC-PO-009. Barrier properties of cellulose nanofibers-based coating agents in paper industry

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Nowadays, packaging materials are mostly based on fossil-derived products which, differently from paper, are characterized by high barrier properties against water, water vapour, oxygen and oil. However, the non-biodegradability of petroleum-based materials has given rise to environmental concerns, promoting the development of cellulose-based materials. Cellulose is the most abundant biopolymer on Earth, which has a wide range of applications thanks to its renewability, non-toxicity and biodegradability [1]. Moreover, the hierarchical structure of this polymer allows the extraction of nanoscale constituents combining an enzymatic or chemical pre-treatment with a mechanical treatment, such as homogenization or ultrasonication [2,3]. In the last decade, nanocellulose has become one of the emerging sustainable materials that can be employed in packaging industry. Indeed, the ability to form a dense network of hydrogen bonds allows nanocellulose to be a potential coating agent able to enhance barrier properties of paper. Furthermore, due to the presence of a large number of hydroxyl groups, nanocellulose can be functionalized, giving the possibility to tune its hydrophilic nature [1]. 2,2,6,6-tetramethylpiperidine-1-oxyl (TEMPO)-mediated oxidation is the most commonly applied chemical treatment which leads to the regioselective conversion of C6 primary hydroxyls to carboxylic groups [3]. On the other hand, enzymatic hydrolysis of cellulose, conducted with endoglucanase, is used to obtain nanofibers bearing hydroxyl groups on C6 [2].

The aim of this work is to compare barrier properties of different nanocellulose-based coating agents. The formulation of coating dispersions varies in different factors: pre-treatment, concentration, pH, degree of oxidation of TOCNF and number of cycles of homogenization. The effect of cross-linking agents and functionalization with lipophilic moieties were also investigated. The application mode used was the spray coating. Barrier properties against oils and water were examined via KIT test and COBB60 test, respectively and the results obtained, notably in oil resistance properties, are promising.

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ANA-PO-139. Sorption of cortisone on polypropylene, polystyrene, and polyethylene microplastics

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Microplastics (MPs) are particles with sizes in the 5 mm – 1 µm range in their largest dimension. MPs can easily enter the environment through various routes and persist for many years in the oceans; recent studies have shown that polypropylene (PP), polystyrene (PS), and polyethylene (PE) are the most frequently detected MPs in the aquatic environment. Although MPs can already pose a risk on their own, they also have the capacity to act as carriers for many substances, both inorganic and organic. For this reason, kinetic and isotherm sorption studies involving MPs are extremely valuable assets to consider since they allow to provide information on the efficiency of the adsorption process and its nature, to know the limits of the sorption process and the performance of the sorbents, and to evaluate the maximum capacity and the rate of the sorption process. To carry out these types of studies, kinetic and isothermal models can be applied to experimental data to understand the mechanisms involved in the retention of analytes on sorbents. In this work, a complete study of the sorption behaviour of a natural glucocorticoid, cortisone, in polypropylene (PP), polystyrene (PS), and high-density polyethylene (HDPE) MPs in two different matrices (Milli-Q water and artificial seawater) was carried out, using high-performance liquid chromatography coupled to an ultraviolet detector for the determination of the analyte. Cortisone is frequently found in natural environments, especially in aquatic ones, and it could potentially become a risk if preconcentration occurs within the MPs and their migration to a living organism that has ingested them, leading to adverse health effects. Kinetic and isotherm studies were performed through batch sorption experiments under controlled conditions: 1 g of MP pellets of 3 – 5 mm diameter, magnetic agitation at 1000 rpm, and 20 ± 2 ºC. For this purpose, sorption kinetics and isotherms have been obtained and their fitting to different models (pseudo-first order, pseudo-second order, intra-particle diffusion, Langmuir, Freundlich, Temkin, Henry, Redlich-Peterson, Dubinin-Radushkevich) have been studied and commented. Despite all types of plastics showed sorption affinity towards cortisone, the comparison of results in Milli-Q water and artificial seawater revealed changes in sorption capacity and the predominant sorption mechanism involved.

ORG-PO-053. PharmaCore: automatic 3D structure-based pharmacophores development and its applications in drug discovery and repositioning

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In the last few years, the development and application of 3D structure-based pharmacophores in routine virtual screening procedures led to an improvement in the quality of the results, creating a robust selective method.1-3 However, the development of the procedure is highly time-consuming, and the time/benefit ratio was still very unfavourable. Prompted by these findings, we generated PharmaCore4: a completely automated workflow that can create 3D structure-based pharmacophores for any protein that meets specific requirements. In brief, this method is based on available experimental protein-ligand complexes, guaranteeing that the pharmacophoric hypotheses are developed, considering each molecule's binding orientation. The reliability of this method was recently extensively tested by us on well-known systems returning predictions that are in line with the biological data. Here we show the development of pharmacophore hypotheses for all the bromodomain for which more than 4 protein-ligand complexes with biological data were available (477 structures for 16 bromodomains) and for tankyrase 2 (60 structures). A retrospective study was also carried out using know inhibitors (AM879 for bromodomains and Pur1-3 for tankyrase) and the results were in line with what reported, with interesting new targets discovered for AM879. Moreover, considered the importance of the target, the same evaluation was performed considering the pharmacophores developed for SARS-CoV-2 MPro (1084 structures). PharmaCore, therefore, provides highly reliable pharmacophores that can be used for drug discovery or target identification. A web application and further details are available at www.computorgchemunisa.org/pharmacore.

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ORG-PO-189. Divergent self-deoxyfluorination of bromodifluoromethyl alcohols enabling the synthesis of fluoroamides and acylfluorides

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The introduction of fluorine atoms into organic molecules often induces significant changes in their chemical and biological properties. Consequently, organofluorine compounds have gained widespread methods for their synthesis and new applications in pharmaceuticals, agrochemicals, and advanced materials.1 Compared to direct C–F bond formation or nucleophilic introduction of a fluoroalkyl unit,2,3 the selective activation and/or functionalization of the chemically robust C–F bond have emerged as intriguing methods for manipulating fluorine-containing compounds.4 Recently, we have identified that a pre-installed bromodifluoromethyl group can function as a C1 and F1 synthon through selective multiple cleavages and atom recombination under basic conditions and in the presence of amines, facilitating the synthesis of a diverse range of valuable N-containing compounds such as α-fluoroamides and acylfluorides. This discovery introduces an innovative and promising platform for the transformation of halodifluoromethyl compounds.

IND-PO-015. Photoconversion of CO2 to fuels under high pressure

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Carbon dioxide emissions into the atmosphere are ever increasing due to the massive use of fossil fuels. To overcome this issue, an attractive strategy is photoreduction of CO2 which has the potential to transform this pollutant into useful and valuable products by leading to circular economy, avoiding the use of net CO2-producing energy sources and raw materials.

In this work, an innovative high-pressure batch photoreactor was used for the photoreduction of CO2 at a constant temperature 80°C. It allowed operating pressure up to 20 bar. The reactor was made of AISI 316 stainless with an internal capacity of 1.7 L, allowing semi-pilot scale demonstration and it is completed by a magnetic stirrer and a double-walled thermostatic system. A 250 W medium-pressure Hg vapour lamp was immersed vertically in the reactor axis as an irradiation source. The optimum reaction time was 1.5 hours. Sodium sulphite was used as a hole scavenger, leading to maximum productivity. Somehow lower performance was obtained testing widely different hole scavengers, possibly from renewable sources, such as alcohols, amines and alkanolamines. The reaction was carried out at pH=14 and this favoured 100% selectivity towards HCOOH as product.

Environmentally friendly graphitic carbon nitride (g-CN) was used as a photocatalyst to avoid toxic or rare materials. Different preparation methods were compared and its exfoliation through either thermal, chemical or ultrasound treatment was compared. The semiconductor was also functionalised with different oxides in a Z-scheme fashion, e.g. with ZnO, SnO2 and Fe2O3 with different loadings. Among the best performing examples, the hybrid 8wt% Fe2O3/g-CN photocatalyst returned ca. 8 mol/kgcat h of HCOOH, with respect to ca. 6 mol/kgcat h of the bare g-CN. The synthesized catalysts were characterized by XRD, BET, DRS, TEM and SEM. Some interesting materials were also tested by spectrofluorimetry, demonstrating interestingly that exfoliation is an important strategy to improve the lifetime of the photogenerated charges.

Acknowledgements

The research was funded by Fondazione Cariplo through the grant 2021-0855 – "SCORE - Solar Energy for Circular CO2 Photoconversion and Chemicals Regeneration", Circular Economy call 2021 and by MUR within the project "P20227LB45 - SCORE2 - Solar-driven Conversion of CO2 with HP-HT photoreactor", call PRIN2022PNRR.

ORG-PO-106. Dissipative Dynamic Covalent Chemistry based on Transimination Reaction

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This work reports the possibility to control over time the composition of a dynamic library (DL) of imines that interconvert among them through reversible equilibria of transimination.These transimination equilibria studied in organic media involve the conversion of one or more N-aliphatic imines to N-aromatic ones, and the composition of these libraries is strongly shifted toward the N-aliphatic imines, that have attached the more basic amines. A representative situation of these systems is the first minimal DL studied, between p-brome-N-benzylidenebutylamine and p-brome-N-benzylidenetoluidine.

Since this kind of DL is sensitive to acid-base stimulus, by adding an acid to the environment we can subtract from the equilibrium the most basic substance (the aliphatic amine) in order to overexpress its protonated form and the N-aromatic imine through Le Chatelier's principle. By adding a decarbossilative acid fuel like the 2-cyano-2-(4'-chloro)-phenylpropanoic one instead, this dramatic change of composition can be realized temporarily (with the creation of a dissipative dynamic library, DDL), because then through decarboxylation of the fuel coniugate base (the rate determining step) a strong carbon base would be generated in situ in order to revert the starting situation back.

ORG-PO-190. Modular and Regioselective C-H Functionalization of Electron-rich Azole Nuclei

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Heterocyclic compounds are key structural frameworks whose variety covers applications in disparate fields of modern organic, medicinal, crop and material chemistry. In recent years, many efforts were oriented on the late-Stage Functionalization (LSF) of five-

membered electron-rich azoles, aiming for the introduction of a desired moiety in a selective fashion, possibly via single step, at the end of a synthetic process. In this context, radical chemistry and transition-metal catalyzed C-H activation played a pivotal role in the rising arena of LSF. Within the framework of our research program on the C-H functionalization of electron-rich nuclei,4 we report on a series of transition-metal catalyzed, mediated and radical transformations for the selective alkylation and arylation of pharmaceutically relevant imidazole-based scaffolds. The methodologies include newly established radical pathways (Minisci-type reaction) as well as transition-metal catalyzed C-H activation and transition-metal mediated direct and selective arylation of electron-rich azole nuclei for the modular LSF of key structures with applications in medicinal and material chemistry (Organic Room Temperature Phosphorescent structures) (Figure 1).

ALI-PO-010. Chemical properties of hemp (Cannabis sativa L.) microgreens extract obtained with Natural Deep Eutectic Solvents (NADES)

Del Vecchio, Lorenzo; Agosti, Anna; Galaverna, Gianni; Chiancone, Benedetta; Campmajó, Guillem; Dall'Asta, Chiara; Cirlini, Martina

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Bioactive compounds have been regarded as desirable substances that naturally exist in plant and food items, which can promote benefits for human health thanks to biological properties including antioxidant, antimicrobial and anti-inflammatory. Natural Deep Eutectic Solvents (NADES) are used as solvent for bioactive compound recovery from different sources, such as agri-food residues and plant materials. Compared to common solvents, NADES present higher extractive capacities and are cheaper, readily prepared, safer for the environment, more biodegradable, and more sustainable alternative.1

Cannabis sativa L. is a versatile crop, whose industrial varieties can be cultivated in Europe provided they respect the 0.3 % Δ9-tetra-hydrocannabinol (THC) threshold set by the EU legislation. Consumption of food items containing hemp (such as seeds, oil extracts, and defatted flours) is rising up, particularly in Western countries, thanks to the its unique composition and significant nutritional and biological properties.2 The production of an alternative to the mature plant, such as microgreen, young seedlings of plants grown from seeds, is becoming a great opportunity because they are harvested in two weeks since germination and the chemical composition is very attractive due to their richness in both phytochemical compounds and micro/macro elements.3

This work aimed to evaluate a green-extraction method based on the use of NADES to extract phytochemical compounds from hemp microgreens. Thus, the method was compared with a conventional one, performed with an ethanolic solution. Before selecting the NADES with the higher extraction yield, different eutectic solvents were tested. The extracts were characterized in terms of total polyphenolic content (TPC) and antioxidant activity (AO), applying FOLIN-CIOCALTEAU, DPPH and FRAP assays, respectively. Moreover, the molecular profile was obtained through UHPLC-MS/MS.

To the best of our knowledge this study investigates for the first time these types of plant materials applying a NADES extraction method.

ORG-PO-137. Calixarene derivatives reduce α-synuclein-induced toxicity in a Parkinson's disease model

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Parkinson's disease (PD) is one of the most common neurological disorders, with a growing trend and a heavy impact on persons and public health systems, in particular in developed countries with elderly populations. A PD molecular hallmark is the accumulation of intracellular inclusions (Lewy bodies) containing misfolded and aggregated α-synuclein (AS) in oligomeric form. AS is a small protein abundant in the brain, primarily found in nerve terminals, involved in the regulation of vesicle trafficking network. Targeting lysine in AS, especially in its partially conserved motif KTKEGV, could prevent its aggregation due to the role of this amino acid in stabilizing toxic oligomers.1 Starting from the well-known ability of negatively-charged calix[4]arenes to complex lysine side chain,2 we prepared different anionic calix[4]arenes as potential ligands of AS. These were tested (Fig. 1) in a yeast model of PD that overexpresses AS leading to the formation of toxic oligomers associated to intracellular foci, causing global cellular dysfunction. We observed that some of the calix[4]arenes indeed counteract AS-induced toxicity, through the reduction of oligomer formation, restoring different metabolic pathways impaired by AS and hindering other damaging events such as oxidative stress.

Figure 1: Calix[4]arene 1 affects AS localization and toxic inclusion accumulations. AS oligomers in intracellular foci are observed in untreated yeast cells (CNT; left), but not in cells treated with 1 (right).

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IND-PO-016. Indirect valorization of CO2 by exploitation of NaHCO3 in the mechanochemical synthesis of high value-added compounds

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In the realm of mechanochemistry the integration of gases in solid-gas reactions has been recently unveiled as a viable synthetic strategy.1 However, storing and handling gases can lead to safety and technical concerns limiting the wide application of potentially attractive methodologies. The utilization of solid surrogates offers several benefits, such as the safe and simple handling of reagents

instead of dangerous gases.2 Furthermore, solid compounds are highly suitable for ball milling conditions, which not only helps reduce the need for solvents but also enables faster reaction times.

Carbon dioxide has been successfully employed for the synthesis of fine and bulk chemicals.3 Herein, we report NaHCO3 as an extremely cheap, safe, and easy to handle solid surrogate of gaseous CO2 for carboxylation reactions. In particular, cyclic carbamates and carbonates can be conveniently obtained from the corresponding propargylamines and epoxides, and NaHCO3 under mechanochemical conditions.

FAR-PO-027. Extraction, analytical profile and biological activity of white grape by-product: an example of circular economy

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The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials as long as possible aiming to extend the life cycle of products. In this case our goal is the valorization, from the perspective of circular economy, of distillation subproducts, to produce nutraceuticals for the consumer care. This project is conducted in collaboration with Bonollo Distillery which gave us raw material, more specifically white grape skin (WGS) as by product of grappa process. Firstly, WGS was pulverized in liquid nitrogen and the resulting matrix was extracted setting up different methods either with water and with a hydro-alcoholic solution [1]. The hydro-alcoholic extract (HAE) was further treated with a resin (Sepabeads SP207) in order to enrich its polyphenol content. The polyphenolic profile have been characterized for both the extracts with hyphenated techniques. A qualitative analysis with LC-HRMS identified 51 compounds in HAE and a total of 39 compounds in the aqueous extract (AE). A subsequent quantitative analysis and the determination of the total polyphenol content by HPLC-PDA confirmed a richer profile in HAE compared to AE. Also spectroscopic analysis have been performed to furtherly characterized the two extracts. Moreover, HAE and AE have been tested on two different cell lines with gene reporter for the transcriptional factors Nrf2 e NfkB in order to evaluate their anti-oxidant and anti-inflammatory activity, respectively. Interestingly results showed that AE, despite its less abundant polyphenolic composition, present a stronger anti-inflammatory effect (from 1 ug/ml) in respect to HAE, totally independent from the NRF2 pathway since AE resulted unable to modulate the NRF2 activity. The scale up was made from the AE since it presents an easier and greener method of extraction with a strong anti-inflammatory activity. This industrial extract is called VITUVA® and was subjected again to all the analysis and tests of the parent extract AE in order to evaluate if AE properties have been mantained after the scale up process. Further studies will focus on the polyphenolic composition of HAE and AE in order to identify the compounds responsible of AE activity.

Concluding, we demonstrated that WGS may be effectively considered as a valuable source of polyphenols to be use as nutraceuticals to prevent / treat various inflammatory conditions highlighting the importance of the circular economy and the valorization of natural by products.

FAR-PO-021. Pre-ADMET studies of 5-(3',4'-dihydroxyphenyl)-γ-valerolactone, the bioactive intestinal catabolite of proanthocyanidins.

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The interest for 5-(3',4'-dihydroxyphenyl)-γ-valerolactone (VL) has increased as it is one of the major metabolites derived from the catabolism of flavonoids by gut microbiota and is a well-known compound with health-promoting effects. However, the pre-ADMET properties have not yet been clarified due to the lack of a commercially available standard. Therefore, the purpose of this study is to understand and demonstrate the mechanism of absorption, efflux, metabolic stability, cytotoxicity, and druglike properties of synthetized VL, to fully comprehend the correlation between PACs and VL biological activities1.

To evaluate the absorption, Caco2 and Wt-MDCK monolayer models were chosen and a UPLC-QqQ platform was used to quantify VL and to calculate its apparent permeability and efflux ratio. VL is rapidly metabolized into its phase II metabolite, 5-(hydroxyphenyl)-γ-valerolactone sulfate (VLS), which was confirmed by LC-HRMS. Although VLS showed in both models an apparent permeability acceptable for the oral route of administration the efflux ratio values found are discrepant in the two models: in Caco2 it is >2 but lower in Wt-MDCK, indicating that VLS is a substrate of an efflux transporter more expressed in Caco2 cell line (BCRP)2. Phase II and I metabolism of VL was evaluated with human liver S9 and microsome fraction (HLM). VL was found to be rapidly degraded in the S9 fraction (t ½ 8.72 minutes) but degraded at a slower rate in HLM (t ½ 23.08 minutes). Most importantly, in the S9 fraction, VL forms two different phase II metabolites over time, both glucuronic adducts, on the two possible sites of the molecule; moreover, the sum of glucuronic conjugates accounts for 49% of the metabolized VL. VL has been tested for its modulation of major CYPs, demonstrating its metabolic safety.

In conclusion, VL is widely absorbed as sulfate conjugate in the intestine and reaches systemic circulation. The sulfation pathway is reversible, and reversal is presumed to be mediated by arylsulfatase3, hence the active form VL can circulate and reach the liver, where VL can be further metabolized into its glucuronide adducts. Finally, it neither induces nor blocks major CYPs and gene receptors that can alter its expression, nor efflux systems, causing no herb-drug interaction.

MAS-PO-014. Tackling the diagnostic challenge of thyroid lesions with advanced MS-based spatial proteomics

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Thyroid nodules present a diagnostic challenge due to their diverse morphological appearances, which often overlap between benign and malignant entities. In this study, we aimed to define the molecular profiles of different thyroid lesions, ranging from benign to malignant, that could aid in the better characterisation of the indeterminate thyroid lesion named as non-invasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP). Our group have previously shown the potentiality of MALDI-Mass Spectrometry Imaging (MSI) in the characterisation of NIFTP lesions using both cytological1 and histopathological tissue samples2.

In this work we analysed a tissue microarray (TMA) containing 88 cores from 44 donors, using a MALDI-MSI approach using a TIMS-TOF-FLEX instrument, and we investigated the tryptic peptides profiles of papillary thyroid carcinoma (PTC), follicular variant of PTC (FVPTC), follicular adenoma (FA), Hürthle adenoma (HA), and NIFTP thyroid lesions. Our analysis provided high-resolution proteomic profiles specific to each lesion type, along with spatial characterization within the tissue microenvironment.

Characterizing NIFTP poses a challenge due to its histological similarity to both benign FA and malignant PTC and this overlap could find confirmation in our results when comparing their proteomic signature. The subtle morphological differences between NIFTP and encapsulated follicular variant of PTC further complicate diagnosis, necessitating additional molecular markers for accurate classification. Hence, integrating molecular profiling techniques like MALDI-MSI could provide valuable insights to enhance the diagnostic accuracy of NIFTP lesions. The integration of these findings into a larger patient cohort, as part of an ongoing project initiated several years ago, promises to enrich our understanding of thyroid pathology and facilitate more accurate diagnostic and therapeutic strategies in thyroid cancer management1. This work underscores the value of molecular characterization in complementing morphological assessments for improved diagnostic accuracy in thyroid nodules.

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FAR-PO-080. Investigating the interactions between direct-acting oral anticoagulants (DOACs) and human serum albumin using surface plasmon resonance and molecular docking

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Human serum albumin (HSA) is the most abundant protein in plasma, playing an important role in drug transport and pharmacokinetics. Many nutrients and food bioactive compounds are strong HSA binders, affecting by competition the HSA binding of drugs.

Although no significant interactions with foods, dietary supplements, and herbs by direct-acting oral anticoagulants (DOACs) have been shown, some recent clinical observations suggested that food ingredients can modulate bioavailability and activity of DOACs by affecting the plasma concentration of the drugs.

Herein, applying surface plasmon resonance (SPR), and fluorescence spectroscopy in competition experiments, we investigated how some nutrients, such as flavonoids (catechin, quercetin), caffeine and saturated fatty acids (myristic and palmitic acids) interfere with the HSA binding of DOACs, namely rivaroxaban, edoxaban, apixaban and dabigatran etexilate, as compared to the classical oral anticoagulant warfarin. The binding interactions were also investigated by molecular docking calculations.

ABC-PO-046. Porcelain and Magnesian Mortars: an update on the traditional mortar formulations

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The preservation and restoration of architectural heritage has recently re-evaluated the role of traditional mortars due to their high compatibility with ancient masonry. The focus of this research relies on the study of two past mortar formulations, called "porcelain mortars" and "magnesian mortars" mixed with different percentages of metakaolin known as a supplementary cementitious material (SCM). Two sets of samples were produced, traditional and magnesian lime-based mortars with variable lime/sand ratios and variable quantities of metakaolin. The presence of metakaolin seems to not modify in an evident way the behavior of these mortars, even though, for what concerns the compression test, good results were obtained for mortar formulations containing metakaolin. Research is ongoing to test the influence of traditional and innovative additives on these mortars.

ORG-PO-192. Hydrodeoxygenation of phenols via hydrazone chemistry: a valuable solution to access arene derivatives

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Throughout the years, phenols have been considered a byproduct of biomass processing due to the difficulty of oxygen removal. Crude biomass-oil, mainly composed of lignin components, contains a large amount of oxygenated compounds, which make it non compatible with the actual oil industry. Efforts exploiting molecular hydrogen have been made to remove hydroxyl group in lignin-derived phenolic

compounds to make them appealing for the chemical industry. However, these processes rely on high pressures, elevated temperatures, and expensive catalysts, presenting challenges in terms of safety, hydrogen storage, and cost-effectiveness. This highlights the urgent demand for sustainable alternatives with safer and more accessible reaction conditions.

Our long-time interest in Green Chemistry played a key role in driving us to the formulation of a more sustainable protocol for the hydrodeoxygenation of phenols to arene derivatives that does not involve molecular hydrogen. To pursue this objective, we initiated our research from the work on the conversion of phenols to primary anilines via hydrazone chemistry. Instead of promoting the reductive cleavage of the N–N bond of the hydrazone to form the C(Ar)–NH2 bond, we focused on promoting a C–N bond cleavage to form the C(Ar)–H bond. To do this, we employed an acid additive (trifluoroacetic acid), hydrazine and heterogeneous Pd/C. This innovative method aims to convert phenols into valuable aromatic products while bypassing the challenges associated with hydrogen gas, such as safety risks and storage issues.

MAS-PO-007. Comparative proteomic analysis by shotgun approach of two cultivars of Lupinus angustifolius: “Polo” and “Boregine”

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Lupin belongs to the legume family (Fabaceae) and it has both health and commercial values in the food industry in relation to their high protein content, high concentration of essential amino acids and dietary fiber, and negligible starch contents.1 In addition, lupin seeds have many nutraceutical properties, including hypoglycemic activities or the ability to maintain low-level of both cholesterol and blood pressure. Therefore, during the last years there has been a growing interest for this legume which is considered as a target food for healthy living.2 On the other hand, with the rapid introduction of novel foods and new ingredients in traditional foods, the number of people allergic to lupin is also rising, but the frequency of sensitization and allergic reactions to lupin in the general population is still unknown.3 All legumes contain various anti-nutritional substances but, unlike other legumes, lupin has anti-nutritional components which are represented by quinolizidine alkaloids causing a bitter taste. They can be toxic and therefore are removed through specific technological processes.4 Taking into account consideration that lupin seeds are recognized as a protein-rich crop and their use as a dietary protein source is of increasing interest, in the present work a comparative proteomic analysis, both at a qualitative and quantitative level, of two different cultivars of narrow-leaf lupin (Lupinus angustifolius), namely “Polo” and “Boregine”, was carried out. Particularly, the "Polo" variety is naturally free or almost free of quinolizidine alkaloids. These cultivars show a good resistance to water stress, lodging, and are mainly, but not only, used for the production of feed and fodder. The preliminary results of this investigation highlighted that, although the two cultivars show a very similar protein composition, some differences related to the different expression level of some genes are still present. Particularly, “Boregine” shows a higher amount of a group of proteins having allergenic properties, whereas “Polo” contains a higher amount of proteins involved in antioxidant activity. These finding might be correlated to a major resistance of the cultivar for “Polo” against biotic and abiotic stresses, and to a potential major allergenic property of the cultivar “Boregine”.

ANA-PO-110. Dried Saliva Spot and Parallel Artificial Liquid Membrane Extraction – Design a combinate green microsampling and microextraction procedures for drugs of abuse

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Novel Psychoactive Substances (NPS) are a wide group of substances, principally of synthetic production, characterised by harmful pharmacological and toxicological properties. They can be grouped into different classes, according to their biological activities (e.g., hallucinogens, psychostimulants, sedatives, hypnotics) or to their chemical structures (e.g., cathinones, synthetic cannabinoids, synthetic stimulants, phenethylamines, and synthetic opioids). Oral fluid (OF) is a useful alternative biological matrix for forensic toxicology due to its correlation with blood concentration[1] and the advantages in terms of sample collection. The dried matrix spots (DMS) sampling approach is acknowledged as a useful collection technique, simplifying transport and storage, since a liquid matrix is dried on a filter paper. DMS typically involve blood samples, while there is a reduced number of studies which consider alternative matrices. Parallel artificial liquid membrane extraction (PALME) is a recent approach for liquid-phase microextraction based on a multiple-well filter plate that divides the acceptor and the donor solution by a hydrophobic polymeric flat and porous membrane. In this study, dried saliva spot (DSS) sampling and PALME were combined to develop a new method for multi-class illicit drug analysis in OF exploiting LC-MS/MS as detection technique. For the microsampling procedure a volume of 20 µL of fortified OF were deposited on a Whatman® 903 protein saver cards and let dry for ten minutes. After that the spot were cut and inserted into the PALME well with 96 positions. For what concern the microextraction, for the acceptor solution the acidic pH was achieved by adding formic acid at 0.1% v/v, acceptor volume was set at 40 µL meanwhile the basic pH in the donor solution was achieved by adding a carbonate/bicarbonate buffer (pH 10,5). The addition of 0.4 g NaCl to the donor solution was useful to increase the recovery of the procedure, ionic strength was shown to influence the partition the donor solution and organic solvent membrane (diesyl ether with 1% of trioctylamine) because of salting out effect. The results showed that PALME allowed to obtain a good clean-up removing the interferences of the matrix, enhancing the accuracy and the precision of the method. The method was validated according to SWGTOX guidelined by evaluating stability, precision, accuracy, recoveries, and matrix effect. This new approach could expand the possible application and combination of microsampling and microextracting strategies, winking to green chemistry, in the forensic toxicology field.

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TEO-PO-019. Scaling the Quantum Frontier: From PCS3 to FPCS3 in Pursuit of Thermochemical Precision

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Quantum chemistry plays an increasing role in complementing experimental studies since its accuracy and feasibility for large systems are constantly increasing. Several procedures have been developed for the generation of accurate thermochemical data [1]. For small molecules, among the most successful approaches are the Weizmann-n series (e.g. W4 [2]) and the extrapolated ab initio thermochemistry (HEAT) protocol [3], providing results with sub-chemical accuracy but with a very unfavorable scaling with the system size. Alternative protocols have been proposed, which employ explicitly correlated (F12) approaches [1], that can save some computer time thanks to their faster convergence to the complete basis set limit. For larger molecular systems, more approximate composite methods are unavoidable, which aim at reaching chemical accuracy. The most well-known are the last versions of the Gn [4] and CBS-x [5] families employing conventional methods or the W1-F12 [2] and SVECV-F12 [6] models with F12 approaches. Recently, an accurate computational protocol rooted in the F12 coupled cluster method, referred to as the Pisa composite scheme (PCS), has been developed and tested for structural and energetic data [7]. Two PCS variants with different accuracy and computational requirements are proposed, PCS3 and FPCS3, which can be employed for the study of medium-to-large molecules. Particular attention has been paid to core-valence contribution, extrapolation recipes, and optimization of the cost/performance ratio of the approach. The PCS3 variant can be applied to systems containing about 15 atoms, while the FPCS3 scheme, with the introduction of the frozen natural orbital approximation, permits to obtain accurate electronic energies for systems containing up to about 50 atoms, without the use of local correlation methods. These schemes have been benchmarked and applied to the calculations of atomization energy and heat of formation of systems of increasing size, from benzene (12 atoms) to a molecular motor (47 atoms), and open new frontiers for accurate characterizations and studies of energetic and biological interest.

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FAR-PO-118. Two innovative dried microsampling techniques for the reliable determination of cannabinoids and metabolites in peripheral blood

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The chemistry and possible therapeutic use of cannabinoids are at the forefront of current scientific research. Δ9-tetrahydrocannabinol (THC) and cannabidiol (CBD) are the most abundant and pharmaceutically significant plant phytocannabinoids. Nonetheless, pre-clinical and clinical studies are still in progress to assess their detailed pharmacokinetic and pharmacodynamic features in new applications and in different formulations, products and conditions. Thus, techniques allowing the performance of studies with minimal invasiveness to humans, and with an acceptable approach to animals, are very welcome. Microsampling is one such approaches, with many supplemental advantages, including increased analyte stability, simplified shipping and storage protocols at room conditions.1

In this study we applied and compared two innovative, new-generation dried microsampling technologies, i.e., fabric-phase sorptive extraction (FPSE) and volumetric absorptive microsampling (VAMS). The former is based on cellulose-based, functionalised, calibrated fabric patches, allowing to choose different chemistries and affinity modes, thus providing increased versatility and enhanced selectivity. The latter is based on a calibrated, porous polymeric tip collecting volumetrically accurate samples, thus obviating to the volume variability and haematocrit-dependence of classical dried blood spots. Both microsampling approaches were followed by a feasible solvent extraction procedure and coupled to HPLC-ESI-MS/MS for the determination of THC, CBN and their main metabolites (namely, 11-OH-THC, 11-COOH-THC, 7-OH-CBD and 7-COOH-CBD) in peripheral blood. Deuterated analogues were used as the internal standards.

The results obtained have shown that both FPSE and VAMS are suitable for the purpose, with each one possessing unique strengths and challenges. In particular, both provide satisfactory extraction yields and accuracy, and almost negligible matrix effect. Thus, both dried microsampling approaches appear to be effective alternatives to classical venepuncture for the minimally invasive sampling of blood in pre-clinical and clinical studies involving cannabinoids.

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ANA-PO-094. Protein-DNA Nanoswitches for the Monitoring of Therapeutic Antibody Bioavailability

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Monoclonal antibodies (mAbs) constitute a primary therapeutic avenue in the management of chronic illnesses1. Therapeutic drug monitoring (TDM) offers a promising approach for personalized treatment strategies, particularly in chronic diseases where overtreatments can lead to significant side effects. Aiming to enhance TDM strategies, the NanoHybrid (NH) platform developed by Ulisse BioMed S.p.A.2 has been re-engineered into a novel protein-DNA nanoswitch sensor. This new format leverages whole protein binding moieties to detect mAbs by exploiting the presence of different recognizable epitopes. Nanoswitch probes consisting of rationally designed DNA strands conjugated to whole tumor necrosis factor α (TNFα) proteins enabled the one-step quantification of various mAbs such as Infliximab, Adalimumab in a range between 2.4 µg/mL and 19 µg/mL directly in blood serum. Since mAbs can elicit patient-specific immune responses, anti-drug antibodies (ADAs) are often raised against biological drugs, which can significantly influence the actual bioavailability of therapeutic mAbs. Motivated by this, the nanoswitch platform was applied to the detection of Infliximab in the presence of an anti-Infliximab Ab, showing a substantial decrease in the detected concentrations of infliximab when in the presence of such ADA. These outcomes highlighted that the developed nanoswitch platform is capable of specifically discerning bioavailable antibodies, providing valuable insights for pharmacokinetic studies. Leveraging its modular design, the present nanoswitch platform holds potential as a multi-epitope nanosensor for the quantification of bioavailable mAbs and biosimilars.

FAR-PO-060. Leveraging a modular and reliable chemistry to accelerate PROTACs and hydrophobic tags synthesis

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Over the past few years, there has been a rapid expansion in the development of new chemical modalities and innovative approaches for modulating cellular pathways and addressing biological targets previously deemed undruggable. One of the most significant advancements in this field has been the emergence of targeted protein degradation technologies, which have catalysed a paradigm shift in therapeutic strategies and opened up new avenues for drug design. Among them, proteolysis targeting chimeras (PROTACs) have resulted in promising clinical candidates, unlocking opportunities for biopharmaceutical innovation. In parallel, hydrophobic tags (HyTs) have emerged as a promising platform in drug discovery, leveraging their lower molecular weight and reduced number of hydrogen bond donors/acceptors compared to PROTACs. Despite the advances achieved to date, PROTACs synthesis remains complex, often involving multi-step approaches and orthogonal protection strategies. These challenges pose a bottleneck in PROTAC development, hindering synthetic throughput and efficiency. To address this limitation, we have devised an innovative synthetic platform that capitalizes on multicomponent reactions (MCRs) to accelerate PROTAC drug discovery, leveraging the modular nature of both PROTACs and MCRs. To broaden the applicability of this platform and unlock its full potential in advancing drug discovery efforts, we have successfully applied the platform to the one-pot synthesis of novel BRD4-targeting HyTs, as well as to PROTACs targeting indoleamine 2,3-dioxygenase 1 (IDO1), a moonlighting protein that play a pivotal role in cancer immunotherapy, and against transient receptor potential vanilloid 1 (TRPV1), also known as capsaicin receptor, involved in pain and itch.

ELE-PO-032. Oxygen Reduction Reaction “Core-Shell” Hierarchical Carbon Nitride Electrocatalysts: Correlation between the Features of the Precursor and the Physicochemical Properties of the Final System

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The oxygen reduction reaction (ORR) is a major bottleneck in the operation of proton-exchange membrane fuel cells (PEMFCs). Furthermore, the electrocatalysts (ECs) exhibiting the lowest ORR overpotentials are based on Pt, a very scarce critical raw material (CRM). Hence, the development of high-performing and durable ECs for the ORR is a major stepping stone towards the large-scale rollout of PEMFCs.

Our research group developed a new approach for the synthesis of ORR ECs, consisting in the pyrolysis and subsequent treatment of a precursor obtained by coupling suitable carbon species/sacrificial supports with a zeolitic inorganic-organic polymer electrolyte (Z-IOPE). The latter comprises organic binders bridging anionic complexes including the Pt “catalyst” and other “co-catalysts”. The proposed approach is extremely flexible, especially with respect to the synthesis of the initial EC precursor. In principle, it is possible to modulate a number of crucial features of such EC precursor: (i) the chemical composition (e.g., in terms of Pt, other “co-catalysts” and N; the latter plays a crucial role to stabilize the active sites); and (ii) the morphology, that can be “templated” on suitable species. The very flexibility of the proposed synthetic process needs to be leveraged appropriately to maximize the performance of the final ORR ECs.

Herein it is elucidated how the modulation in the parameters involved in the synthesis of the EC precursor impact the physicochemical and electrochemical properties of the final ECs. An extensive characterization of the final ECs is carried out. ICP-AES and microanalysis are adopted to determine the bulk chemical composition. Near-ambient pressure XPS (NAP-XPS) elucidates the surface chemical composition and the chemical states of the surface elements. Cyclic voltammetry with the rotating ring-disk electrode method (CV-TF-RRDE) is used to clarify the “ex-situ” electrochemical performance and ORR reaction mechanism. Finally, the most promising ECs are used in the fabrication of single PEMFCs. In comparison with the Pt/C benchamark, some ECs are characterized by a much higher

intrinsic kinetic performance due to the electronic and bifunctional effects bestowed by the carbon nitride support and the “co-catalysts”. Finally, the binder has a marked effect on the stoichiometry, size, and distribution of the PtMx aggregates bearing the active sites.

Acknowledgements

(a) Project PERMANENT financed in the framework of the National Recovery and Resilience Plan (NRRP), M2C2, Investment Line 3.5; and (b) the NRRP, M4C2 Investment 1.4 - Call for tender No. 3138 of December 16, 2021 of the Italian Ministry of University and Research - NextGenerationEU [Award Number: CNMS named MOST, Concession Decree No. 1033 of June 17, 2022, adopted by the Italian Ministry of University and Research, Spoke 14 “Hydrogen and New Fuels”].

ANA-PO-076. Enhancing the specificity of CRISPR-based Sensing Platform via Triplex DNA Probe

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The last years have seen the emergence of Class II CRISPR-based diagnostic technologies as potent molecular diagnostic tool. Among the different Cas effectors CRISPR-Cas12 incorporate both DNA target recognition along with enzyme reconfiguration, activating not only the well-known site-specific cleavage activity but also the collateral a-specific cleavage. As a result, in the presence of FRET-based DNA reporters, this collateral activity generates fluorescence signal amplification upon target binding, enabling highly sensitive diagnostic assays. Cas12a-based detection, however, still exhibits limited specificity in detecting single base mutations on the DNA target.

We present a method to overcome this limitation by utilizing a carefully designed DNA-based hybridization network to switch Cas12a cleavage activity on by combining the superior selectivity of Triplex Clamp-switch probes for DNA/RNA detection. Specifically, the formation of Triplex Clamp-switch probes occurs only in the presence of a homopurine DNA/RNA target in the solution. This triggers the reconfiguration of the DNA-based hybridization network, activating Cas12a's collateral activity and generating a concentration-dependent fluorescence output. By adjusting the pH, we are able to fine control the selectivity of a single mutant base on short DNA targets. This demonstrates how crucial well-planned secondary structures are to enhancing CRISPR-based systems' detection capabilities.

FAR-PO-127. Nanogel particles for safe and effective RNA-delivery

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The delivery of RNAs remains a challenge due to the fragility of the biomolecule as well as its difficult internalization on the desired cells. Nanostructures, e.g. liposomes, have been employed termed as carriers for different type of RNAs and have the limitation of large size, stability and eventually toxicity[1]. Alternative soft nanostructures are hydrogel particles, composed of polymers and mainly water are interesting carriers for a variety of biomolecules. In my contribution the use of gelatine based hydrogels is described as potential nanovectors for RNA delivery in different cell lines. The choice of the materials is dictated by their biocompatibility, lack of toxicity, ability to entrap large amount of the mRNA and siRNA. The chemical composition of the nanogels influence the charge, size (<100 nm) and degradation of the systems. To this aim, a Gelatin-based nanogels were prepared according to the literature by the two-step desolvation method [2-3] in order to obtain positive charges capable of interacting with RNA molecules for potential drug delivery (Figure 1). The use of nanogels with these characteristics should avoid fast clearance, improve easy cargo release.

FIS-PO-025. Towards green protein-based nanohybrids as adaptive surfactants: study of protein-NP interaction for a better comprehension of interfacial properties of their films

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Proteins have surface active properties that make them able to adsorb at liquid interfaces [1] stabilizing emulsions and foams; moreover, with respect to synthetic surfactants, they are significantly more biodegradable and might also be obtained by waste materials, representing a promising eco-sustainable alternative to surfactants. However, given their large dimensions and complex multi-ordered structure, each characterized by its intrinsic flexibility and adaptability to environmental conditions, their adsorption properties dramatically depends on environmental conditions [2]. A possible strategy to stabilize protein films under dynamical conditions is based on the exploitation of nanoparticles (NPs), which when decorated by proper additives can adsorb irreversibly at interfaces thanks to their high desorption energy [3]. In this respect, protein-NP interactions and NP-induced protein structural changes in bulk solution are expected to play a crucial role in guiding adsorption at interface and determining interfacial film behaviour.

Here we present a comprehensive analysis, performed by a combination of spectroscopic and scattering techniques, of the interaction process in bulk conditions between model proteins such as Bovine Serum Albumin and negatively charged SiO2 NPs as a function of different environmental parameters such as pH, ionic strength and salt nature, aimed at understanding and rationalizing the properties of mixed protein-NP interfacial films.

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IND-PO-018. MICS: Green and sustainable products & materials from non-critical and secondary raw sources

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The Neapolitan Industrial Chemistry Laboratory (NICL) of the Department of Chemical Sciences of the University of Naples Federico II is a player in the MICS (Made in Italy–Circular and Sustainable) Extended Partnership, on the synthesis of green and sustainable products & materials from non-critical and secondary raw sources, with the aim to synthesize non-isocyanate polyurethane foams (NIPUs).

Polyurethane (PU) foams represent a wide class of polymeric materials, having implications in different sectors from automotive, packaging, cushioning/bedding to construction building. However, their synthesis requires the use of oil-based components, mostly harmful and toxic isocyanate components. On this account, NIPUs foams have been indicated as suitable candidates to replace conventional PUs, where foams can be obtained through “non-isocyanate” routes such as aminolysis between 5 or 6 membered ring-cyclic carbonates (5CCs and 6 CCs) and diamines or transurethanization between carbamates and diamines. In the present work, details on the different strategies are provided

INO-PO-060. Melanin-like polymers with chemical responsiveness for living cell display technology

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Living cells, through their intrinsic nature, can work as natural platforms exhibiting a multitude of functional groups or biomolecules. The application of an engineered chemical surface onto these cells enables bacteria, mammalian and human cells, yeasts, and microalgae to recognize their environment and incorporate both cell-to-cell and cell-to-environment interactions useful for different applications ranging from industrial to biomedical.[1]

The scientific research here has been focused on the development of a strategy to universally decorate living cells with the use of melanin-like sticky organic polymers. Polydopamine (PDA), a poly-hydroxy-indole specie, has recently been used to achieve self-assembling coating onto living cells, giving them the capability both to continue living/dividing and increase cell resistance under harsh environmental conditions.[2]

This technology is simple, one pot, yielding to allow a highly reactive surface capable to react with other xeno-functional groups to change the chemical reactivity on the living cell surfaces. Our studies are focused on the possibility to co-polymerize dopamine with boronic acid units to obtain engineered cells with new functionalities such as addressing both free and membrane-bound saccharide moieties over cell surface, holding the potential for broad biology and biomedicine.

Other studies are conducted to enhance properties of diatoms in the field of bioremediation. Co-polymerization of dopamine with polyamines trigger the pollutants removal from aqueous environment, and increase the specificity of the chemical type of these (e.g. emerging small molecules, microplastics).[3]

Moreover, redox responsive melanin-like polymers were also synthesized via co-polymerization thiol-bearing moieties with dopamine, to add disulfide bridges to the polymer bulk. In this way these bioinspired polymers resulted cleavable under specific redox inputs, ready to be removed after capturing pollutants.

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ORG-PO-055. Minisci Chemistry Applied on First Total Synthesis of Caerulomycin K

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Caerulomycins, natural pyridine-based alkaloids, have been previously synthesized starting with highly pre-functionalized starting materials or requiring many functional group interconverions. In this work, we exploit recent C-H activation methodologies of N-heterocycles for the first total synthesis of Caerulomycin K, a diversely tri-functionalized pyridine readily assembled in three steps. Starting from mono-functionalized pyridines, the first strategy looked at a double C-H activation by means of phosphonium chemistry. However, this strategy revealed unsuccessful. A better alternative was represented by a radical approach, achieved via Minisci chemistry. Firstly, an ortho-arylation on 4-chloro pyridine occurred, followed by an ortho-alkylation using trioxane. In conclusion, a one pot SNAr, trioxane deprotection and oxime formation occurred to obtain the desired final product. Compared to already reported Caerulomycin syntheses, this novel approach requires only three step and a mono-functionalized starting material.

IND-PO-019. Process intensification in acidic wastewater treatment and waste valorization

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Acidic waters often resulting from industrial processes and other activities typically comprise a range of perilous and harmful substances, including organic solvents, heavy metals, pose a significant environmental challenge with adverse effects on aquatic ecosystems, infrastructure, and public health. Traditional treatment methods have limitations in effectively neutralizing acidity and removing pollutants to mitigate these impacts and restore ecological balance. One promising method for treating acidic waters involves the use of lime (CaO), a versatile and cost-effective solution. However, this method generates large amount of sewage sludge presents its own set of threats in terms of disposal and environmental impact 1.

This research presents a general overview of the treatment of acidic waters through lime utilization and explores the potential valorization of sewage sludge in diverse processes (Fig.1). Through a comprehensive analysis of current research and practical applications, it explores underlying mechanisms and highlights the effectiveness of lime in neutralizing acidic waters by adjusting pH levels and removing pollutants through precipitation heavy metal hydroxides 2. Furthermore, this investigation delves into diverse methods, including anaerobic digestion and thermal treatment processes for the repurposing of sewage sludge. It considers its potential applications in waste-to-energy and nutrient recycling beyond conventional disposal practices, aiming to reduce landfill waste volume and environmental pollution while promoting resource recovery. The valorization of sewage sludge entails its transformation into valuable resources such as syngas, fertilizers, biofuel, and biogas 3. This integration presents synergistic benefits, including improved water quality and promoting circular economy principles.

CSB-PO-017. The Effect of Tolcapone on Metal-Free and Metal-Bound Protein Aggregation

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Emerging evidence suggests transition metal ions accelerate pathological protein aggregation. Imbalances in metal levels, notably copper, impact brain, tissue function and can worsen amyloidosis, leading to toxic protein build-up, oxidative stress, and inflammation. 1,2

Tolcapone (3,4-dihydroxy-4′-methyl-5-nitrobenzophenone, Tol), an inhibitor of COMT, stands out as one of the most commonly prescribed FDA-approved medications for Parkinson's disease (PD) demonstrating remarkable potency as an adjunct to levodopa and carbidopa for the treatment of PD patients with motor fluctuations.3 Additionally, Tol inhibits amyloidogenic protein aggregation, including Aβ and Syn, protecting against the cytotoxicity caused by their oligomers and aggregates.4

Despite the widespread use of Tol in PD treatment, its interaction with Cu2+ and Zn2+ has not been explored. To address this gap, we investigated the Cu2+ and Zn2+ complexes of Tol using various analytical techniques. Furthermore, we evaluated the ability of Tol to scavenge free radicals in the presence of metal ions and to affect the metal-induced aggregation of amyloidogenic proteins.

Our findings underscore the ability of Tolcapone to interact with metal ions and affect metal ion-triggered processes. This phenomenon offers potential to restore metal balance in amyloid diseases.

ORG-PO-056. Synthesis and test of a bipyridine-derived bifunctional photocatalyst to carry out Ni-mediated C-O cross couplings

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Base metal-mediated cross couplings represent one of the fields in which photocatalysis can unfold its potential. In this area, for example, it has been shown that it is possible to carry out Ni-catalytic C-O and C-N cross couplings with Ni under irradiation with visible light in the presence of several types of photocatalysts. In these reactions it would be highly desirable to lower the loading of Ni, considering in particular its toxicity. As a possible strategy to achieve this goal, our group envisaged the use of bifunctional photocatalysts featuring a covalent linkage between the photoactive moiety and the nickel complex. Although in visible light photocatalysis the bifunctional approach has been exploited much less than in other subareas of catalysis, there are some examples in which this approach has been used to increase the catalytic performance in terms of stereoselectivity and activity.

Our research group synthesized and tested a bifunctional ligand for C-O cross coupling reactions between aryl bromides and aliphatic alcohols, created by linking a bipyridine moiety to a donor-acceptor cyanoarene dye similar to 4CzIPN. By comparison of the bifunctional photocatalyst with a reference dual catalytic system, it is possible to observe the beneficial effect given from the proximity of the Ni metal centre to the light absorbing moiety.

ELE-PO-005. Sustainable and non-toxic hydrogel-based Dye-Sensitized Solar Cell: Performance evaluation under indoor illumination

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Indoor photovoltaics have gathered growing interest amongst researchers, as a mean to exploit the indoor lighting we use in our daily life to power small devices. Dye-sensitized solar cells (DSSCs) represent good candidates for such applications[1]. However, when it comes to indoor applications, there is an increased demand for non-toxic and non-flammable solvents for electrolytes. The implementation of water-based electrolytes is a promising way to address these issues, whilst also ensuring the eco-friendliness and sustainability of these devices[2]. In this work, aqueous gel electrolytes incorporating a iodide/triiodide redox couple were made with a bio-sourced polymer, xanthan gum[3]. DSSCs were assembled using screen-printed TiO2 semiconducting layers treated with TiCl4 and sensitized with an organic dye, D149. As counter electrode, Pt sputtered FTO was used. The performance of the cells was investigated under indoor light intensities between 500 and 2000 lux.

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ORG-PO-193. Recoverable and recyclable heterogeneous Y(OTf)3 for Michael and Diels-Alder additions

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Heterogeneous catalysts have many advantages over homogeneous ones, such as easier catalyst separation, recovery, regeneration, and reuse, even though the latter have higher selectivity and active sites accessibility.

In the present study the attention was focused on Y(OTf)3. Yttrium is a Rare Earth Element (REE), and its triflate functions as a Lewis acid in promoting a variety of reactions including Michael addition [1,2] and Diels-Alder cycloaddition [1,2]. In this work we decided to immobilize Y(OTf)3 through a noncovalent interaction between Y(OTf)3 and phosphotungstic acid (PTA) that is anchored onto amine functionalized silica nanoparticles. The PTA was found to be crucial for the preparation and the activity of the catalysts [3].

We developed an example of supported Yttrium catalyst, which demonstrated excellent activity in the Michael addition between different benzylidene malonates and indoles1 but also in the Diels-Alder cycloaddition between cyclopentadiene and (4S)-3-acryloyl-4-tert-butiloxazolidin-2-one [1,2]. The catalyst was tested in batch and in flow conditions.

Moreover, Y2O3 recovered from E-waste, such as fluorescent lamps, was supported, converted in triflate salt and successfully used as catalyst in the Michael and Diels-Alder cycloaddition.

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TEC-PO-051. From flat-sheet to hollow-fiber theophylline-imprinted membranes

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The technological progress of the modern society as well as the necessity of recovery and recycling precious resources allowed the development of more and more efficient and sustainable separation materials. In this perspective, a relevant contribution comes from the employment of membrane-based separation systems. In particular, the production of imprinted membranes offers the possibility of achieving a high separation level of targeted compounds. Some example of applications are the selective separation of ions and toxic substances from wastewaters and the recovery of bioactive compounds from food matrices or other sources1,2.

This work deals with the development of imprinted polymeric membranes for the selective recovery of theophylline (THEO) from water samples containing also the structural analogue caffeine (CAFF). Theophylline is a xanthine used in the cure of asthma, chronic obstructive pulmonary disease and chronic bronchospasm3,4. Firstly, flats-sheets imprinted membranes were prepared via the non-solvent induced phase inversion technique by dispersing different amounts of a pre-synthesized imprinted polymer in a modified poly(ether ether ketone) (PEEK-WC) polymer solution. Molecular recognition investigations carried out in aqueous environment permitted to assess the specific recognition properties of the imprinted membranes with respect to the simple (PEEK-WC)-based membranes and the non-imprinted membranes prepared under the same operating conditions. Starting from these results, the phase inversion technique was also applied for producing novel hybrid hollow-fiber imprinted membranes containing the 5% of THEO-imprinted polymer with respect to the (PEEK-WC). Membranes were prepared at two different compositions of bore fluid and using water as the non-solvent.

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ANA-PO-126. Detection of nucleic acids in food and biological samples after liquid/liquid extraction by using ionic liquids and loop-mediated isothermal amplification

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Nucleic acid analysis is rapidly becoming a pillar for clinical diagnostics [1], food safety [2], genomics [3], and microbiology [4]. Usually, nucleic acids amplification is performed by polymerase chain reaction (PCR). This method is widely known for its reliability and flexibility but requires the employment of specialized laboratories and competent personnel, the use of complex and expensive equipment, and rather long analysis times. In recent years, an alternative technology named loop-mediated isothermal amplification (LAMP) has been developed. Differently from classical PCR, this technique not requires a thermal cycler, allowing the analysis of extracted DNA/RNA directly from material collected on site.

A critical aspect of such procedures is the low tolerance to interfering constituents within complex biological, food or environmental sample matrices [5,6].

In the present study, a promising liquid/liquid extraction (LLE) method based on the use of ionic liquids (IL) was taken into consideration for DNA and RNA extraction from food and biological matrices. The optimized procedure, easy to automatize, not requires the use of any organic solvents, in line with the Green Chemistry principles. The nucleic acid amplification was performed through an innovative all-in-one molecular biology system that takes full advantage of the LAMP technology (ICgene Plus). This portable equipment, coupled with a fluorescence detector, has been employed for the rapid isothermal amplification of nucleic acids, real-time detection, and automatic interpretation of obtained data.

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Acknowledgements:

The researches were partially funded by the European Union, within the context of the National Operational Programme (PON) on Research and Innovation 2014-2020.

CSB-PO-013. CHEAP BUT RICH: Yeasts containing carotenoids and lipids as sustainable feed additives

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The global market of carotenoids, commonly included in animal feed as colorants and sources of antioxidants and vitamin A, is growing significantly together with the attention in their sustainable and green synthesis. The biotechnological production of carotenoids by yeasts emerges as a valuable strategy, also fitting the circular economy pillars when low-cost feedstocks are used as main components of culture media [1]. In the context of OnFOODS-PNRR, bioprocesses employing red yeasts were set up starting from agro-industrial residues such as potato waste, threshers, and soy okara. The enzymatic pre-treatment of waste residues was optimized to obtain a balanced and effective fermentation medium in terms of carbo and nitrogen sources. The HPLC screening of red yeast collections (including Rhodosporidium or Rhodotorula genera) revealed strains naturally rich in B-carotene but also in torulene and torularhodin, uncommon but potent carotenoids not yet commercially available [2]. The carotenoid production process on waste-derived medium was optimized in 2L bioreactor and stress conditions were applied to boost the production of carotenoid-rich biomass, reaching more then 100 mg/L of total carotenoids in 90h process, corresponding to 20 mg/gdw. In addition, some of these strains are also oleaginous, meaning that they are able to accumulate intracellular triglycerides into vesicles called lipid bodies [3]. Notably, carotenoids produced by oleaginous yeasts are stored within these lipid bodies, enhancing their stability against oxygen and light exposure and preserving their nutritional and biological properties. Therefore, this product can be introduced in animal nutrition as lyophilised whole cells, thus serving as a multifunctional feed additive source of several valuable nutrients as carotenoids, lipids, and proteins.

TEO-PO-027. Exploring the Time-Scale Complexity of Molecular Dynamical Systems: A Novel Refined Clustering Approach

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Molecular systems display both complexity and dynamism, undergoing continuous changes and interactions that are challenging to fully anticipate or comprehend. Over time, they demonstrate diverse behaviours driven by molecular interactions, feedback processes, and external factors, aligning them closely with the characteristics of complex dynamical systems.

In the quest to unravel the complexities of these dynamical systems, the ability to distinguish and categorize a wide range of signal behaviours poses a significant challenge, one that traditional clustering methods struggle to meet.

This study introduces an advanced methodology designed to enhance the classification of complex dynamical systems, specifically by refining the analysis of segments traditionally deemed non-classifiable. Building upon the foundational principles of "Onion Clustering" [1], and its feature which allow us to catch non-classified signals data, due to their high fluctuations, our approach delves deeper into the data, revealing previously obscured layers and offering a richer understanding of the system's inherent dynamics. Like its predecessor, which efficiently discerned statistically relevant fluctuations from noise through an iterative detect-classify-archive strategy, our methodology extends this paradigm by further classification and optimization of the clustering time window.

These refinements enable a precise yet comprehensive analysis, capable of uncovering subtle dynamical events across different scales. In this paper, we outline the development of our methodology, the analytical framework, and the wider implications of this sophisticated approach for revealing the complex and concealed patterns within complex systems.

ORG-PO-228. Claisen-Schmidt Synthesis of Chalcones in Micellar Solutions. The Surfactant Role and Selectivity

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Green and more sustainable synthetic approaches are urgently needed in modern Organic Chemistry. Since the pioneering works by Lipshutz,[1a,1b] the micellar catalysis emerged as an attractive opportunity to reduce/eliminate organic solvents. By now, many reactions were successfully performed but just few papers were devoted to the micellar Claisen-Schmidt aldol reaction,[2,3] and a general approach to widen its scope is lacking. Here we report the successful micellar-based Claisen-Schmidt synthesis of chalcones, considering their high interest for medicine and organic electronics,[4,5] by considerably widening the scope. Reactions in CTAB or Tween 80 solutions and with NaOH at rt for 24h gave good to excellent yields.

Reactions in CTAB solution promoted also tandem/domino reactions, such as the further Michael addition, which, conversely, was suppressed by the non-ionic surfactants. Some substrates, e.g. those with free phenolic groups, reacted with higher difficulty, giving lower yields. In specific cases, protocol modifications to improve unsatisfactory yields were needed, e.g. by working at 45°C. Heterocyclic substrates reacted better in Tween 80, while the CTAB often lead to more by-products by promoting cascade reactions. Some chalcones of interest for application in medicine and organic electronics were successfully synthesized by the here presented method and the substrate-micellar binding and localization were studied to elucidate the reactions' outcome.

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ORG-PO-057. Synthesis of natural and nature-inspired ferulic acid derivatives as antimicrobial agents

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Plant secondary metabolites play a pivotal role in defense mechanisms both as antimicrobial compounds and as substrates for cell wall reinforcement. Their accumulation is often observed after pathogen infections and wounding. Cinnamoylamides are phytoalexins containing a cinnamic acid unit coupled with biogenic amines1 and are involved in dimerization reactions under biotic or abiotic stress conditions triggered by oxygen radical species. Dimers are often endowed with higher antimicrobial activity, as reported for the ferulic acid dimer poacic acid and for hordatines2. To deepen the investigation of their biological activity, high amounts of the compounds are needed, but their recovery from the natural matrices is often laborious and low yielding. The development of efficient synthetic strategies could overcome this limitation, finally opening the possibility to enrich this collection of compounds with new analogues. A small library of feruloyl-amides was obtained by chemical condensations and enzymatic amidations using the lipase B from Candida antartica (CaL-B) in the green solvent tert-amyl alcohol. In parallel, to obtain ferulic acid dimers, radical reactions were performed employing the horse radish peroxidase (HRP) in presence of H2O2. Starting from the carboxylic intermediates shown in Figure 1, a series of natural and nature-derived analogues was synthesized. Preliminary results about their antibacterial and antifungal activities suggest the possible application of new synthetized natural compounds for a wide range of different sectors.

INO-PO-068. Ruthenium Complexes as Versatile Scaffolds for Anticancer Drugs Development

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Metal complexes are widely used in anticancer therapies, since they offer a wide range of tuning variables, including choice of metal, kind of ligands, coordination geometry, and a variety of oxidation states. This versatility permits to be notable drug design platforms.1,2

Clinically approved metallodrugs such as cisplatin, carboplatin and oxaliplatin are currently used to treat severe neoplastic diseases. Due to their versatile biochemical properties, Ruthenium compounds have emerged as promising anticancer alternatives to Platinum. Several types of Ru-based anticancer agents have been developed so far and some of them have undergone clinical trials. They can act by interacting with DNA or proteins, by producing reactive oxygen species to induce oxidative stress, ultimately affording cancer cells death.

A novel class of Ruthenium complexes has been designed by incorporating ligands such as CO, triphenylphosphine, hydride, and a variety of N- and O-donor chelate ligands, including non-steroidal anti-inflammatory drugs, hydroxy-stearic acids, pyrrole- or indole-derivatives. The selection of ligands was based on the purpose of enhancing therapeutic effectiveness of Ruthenium species against cancer cells, while retaining the option of further modification, by substituting the remaining hydride unit with N-donating ligands. Two distinct mechanisms, involving unprecedented chelate ligand exchange from k2-(O,O) to k2-(N,O) dihapto fashion mode, have been proposed and supported by DFT calculations.

NMR binding evaluations have been performed to test metal interactions to calf thymus DNA or human serum albumin biological targets. The results exhibit the organometallic species to bind by weak interactions with PPh3 apical ligands. Preliminary biological evaluations in vitro MTT assays on different human cancer cell lines have shown promising anticancer activity by inhibition of cell viability and proliferation.

IND-PO-020. Pyrene-substituted cyclic triimidazole: an attractive and versatile sensor for the detection of explosives substances

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Explosives compounds, like 2,4,6-trinitrotoluene (TNT), are still widely utilized as a blasting agent not only in controlled explosions for peaceful purposes but also in illicit and terrorist activities, such as in improvised explosive devices (IEDs). The development of novel approaches for rapid, specific and sensitive detection of explosives, based on photoluminescent compounds, represents an important tool for mitigating and preventing risks linked to these materials [1]. In the search for low-cost and user-friendly sensors, fluorimetric techniques have emerged as a promising solution thanks to their high sensitivity and selectivity, short response time, very low limit of detection (LOD) and the ability to work both in solution and in solid phase. In this study, two derivatives of cyclic triimidazole and pyrene, namely the blue emitting 3-(pyren-1-yl)triimidazo[1,2-a:1′,2′-c:1″,2″-e] [1,3,5]triazine, TTPyr, and the yellow-orange emitting 11-(pyren-1-yl)triimidazo[1,2-a:1′,2′-c:1″,2″-e][1,3,5]triazine-3,7-dicarbaldehyde, (CHO)2TTPyr, are exploited through fluorescence-quenching titrations experiments with various nitroaromatic energetic hazardous materials and proposed as sensor species for the quantitative detection of explosives. The performances of the two sensors in the fluorimetric detection of the explosives are reported in Tab. 1. (CHO)2TTPyr shows markedly higher sensitivity for nitroaromatic derivatives compared to aliphatic ones, with picric acid (PA) detection showing the most sensitive response, characterized by a Stern-Volmer quenching constant value of 1.25 × 104 M−1 and a calculated detection limit of 0.63 ppm. Such selectivity can be associated with the specific formation of dark complexes through $\pi-\pi$ interaction between the analytes and the fluorophore, and a static mechanism is recognized as responsible for the observed quenching [2].

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FAR-PO-086. A Computational Facility for Lead Identification integrated within VITALITY enabling Platform for Drug Discovery

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After the challenges posed by the Covid-19 pandemic, and by leveraging funds from the National Recovery and Resilience Plan to stimulate growth and foster resilience, universities and other institutions from Central Italy capitalised on their expertise to establish a platform to devise innovative therapeutic approaches within the context of VITALITY project. As a key objective, our research group is setting up a computational facility accessible to third parties to speed up preclinical stages of drug discovery programs through virtuous iterative design-make-analyse cycles.

At the core of the initiative, an HPC platform at the University of Urbino has been set-up consisting of a small cluster endowed with GPUs, enabling the application of deep learning algorithms and the acceleration of molecular simulations. Workflows ready for virtual screening campaigns have been devised, including ultra-large library screening approaches and post-processing tools for rescoring.

Neural networks to prioritize compounds for physics-based scoring1 and the integration of one-dimensional shape screening with structure-based techniques2 have been included as capabilities effectively enabling large-scale campaigns. For this purpose, libraries in a format suitable for docking calculations are available to end-users, including diversity sets, biomimetics, covalent ligands classified by their reactive warhead, the entire Enamine REAL stored as binary fingerprints, and a curated academic library of pre-synthesized compounds.

Semi-automated pipelines, including fast rescoring of docking poses via free-energy methods3 and a pharmacophore-based utility for covalent ligand identification, complement those assets. Finally, a series of scripts allowing for batch interrogation of online databases allow for library filtering and annotation, for target identification in phenotypic screening and for off-targets de-risking.

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CSB-PO-021. New class of contrast agents for Ultra-low field Overhauser MRI, responsive to esterases enzymatic activity.

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The assessment of enzyme activity is a critical factor in the early diagnosis of many diseases. In this study, we propose the use of the Ultra-Low field Overhauser MRI (OMRI) as an alternative diagnostic approach for the detection of enzymatic activity.1 OMRI is a double resonance imaging technique that combines the advantages of MRI with the use of stable radicals as polarizing agents to enhance the NMR proton signal.2 For this purpose, a “off/on” radical probe in micellar form was investigated to target esterase enzymes over-expressed in pathological tissues. We synthesized an Oxo-TEMPO radical derivative containing an ester group and an aliphatic chain, namely Tempo-2-C12 (T2C12).3 A new formulation with Tween 80 (T80) (20 mol %) was also investigated and in aqueous solution the two compounds self-aggregate to form EPR-silent micelles (T2C12-T80) with an enhanced stability and reduced size. But in presence of esterases, the radical becomes free in solution showing an intense EPR signal, that is correlated to the enzyme activity. Thank to this change in the EPR signal, allows the probe to act as a reporter of enzymatic activity with OMRI. The enzymatic activity was well detected with ultra-low field OMRI system at 206 μT using this OFF/ON system displaying any signal when the probe is in micellar form. On the other hand, after the hydrolysis an increase of the Overhauser enhancement is observed, giving bright images. Furthermore, preliminary tests were performed by incubating the T2C12-T80 probe with human pancreatic cancer (HS776t), human hepatocarcinoma (HepG2) and fibroblast (3T3) cytosolic cells extracts to evaluate the expression of esterases. The results confirmed a higher expression of esterases in tumour cells compared to healthy fibroblast 3T3. In summary, T2C12-T80 probes provide an excellent technique for detecting enzymatic activity in diseases characterized by esterase overexpression. For the first time, an in vitro esterase kinetic were monitored with an OMRI system that operates almost at earth field, revealing an enormous off-on change of the signal caused solely by probe hydrolysis. The results proved the technique’s great potential and its possible translation to in vivo OMRI.

INO-PO-065. Amyloid fibrils as innovative catalysts for advanced functional materials

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A fascinating class of nanostructures known as amyloid fibrils has garnered significant attention in the field of nanotechnology. Recent discoveries are now changing our vision of self-assembling peptide structures from disease related entities to functional tools for diverse biotechnological and material science applications.1,2 Particularly interesting are catalytic amyloids, which allow to combine the benefits of enzymatic and heterogeneous catalysts within peptide-based nanostructures. In this context, our research focuses on developing functional nanomaterials combining amyloid-like nanofibrils and artificial metalloenzymes, showcasing their potential in flow biocatalysis. For this purpose, we have selected the TTR(105-115) peptide, derived from human transthyretin, which is able to form non-toxic fibrils with unique structural properties.3 Exploiting click chemistry (SPAAC, illustrated in Figure 1), the synthetic miniaturized peroxidase FeMC6*a4 has been covalently bonded to TTR(105-115)-based fibrils. Subsequently, FeMC6*a@fibrils were implemented in a flow catalytic system by simple immobilization onto a PVDF filter membrane. This amyloid-functionalized filtering device demonstrated remarkable performance, enabling up to 40 reaction cycles of substrate (ABTS) oxidation. This approach not only enables enzyme recycling, but also facilitates the separation of reaction products. Overall, this research provides a starting point for exploring the catalytic capabilities of amyloid fibrils in various applications.

FAR-PO-022. Planning and development of new potential diimidazopyrimidine molecular tools for the binding on G-quadruplex structures.

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Among innovative targets for cancer research, non-canonical structures of nucleic acids like G-quadruplex (G4), have represented an interesting focus in Medicinal Chemistry with the design of new G4-ligands able stabilize them, leading to the blocking of the catalytic activity of key and eventually to cell death. A first diimidazopyrimidine core was studied as a starting point for the development of new ligands, and the use of SAR together with techniques like FRET and CD spectroscopy, were helpful to optimize the design, the activity and selectivity of the analogues affording to FG (Figure 1), a well-studied hit compound. Previous modification paved the way to a para-functionalization of the ring, making the synthesis of new potential molecular tools possible, where the FG scaffold could be enriched by other useful moieties for a later functionalization. Throughout the synthetic process we did not focus on the formation of the desired products only: mass and NMR analyses were used to characterize the byproducts formed throughout the synthesis, with the main aim of improving the yields of the reactions, optimizing the product formation. Moreover, our work will proceed with the synthesis of these candidates and with new one as well.

INO-PO-022. Synthesis of Block and Multi-Block Copolymers Based on Polyesters from ROCOP of Phthalic Anhydride and Epoxides from Renewable Sources

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Polyesters are amongst the most widely applied oxygenated polymers. Most of commercial polyesters is prepared by polycondensation, they are found in applications spanning packaging, fibres, rigid plastics and engineering materials. Other routes, like ring-opening polymerization (ROP) of lactones and ring-opening copolymerization (ROCOP) of epoxides and cyclic organic anhydrides, have been explored to synthetize polyesters1 coming from renewable source. With ROCOP the properties of the resulting materials can be easily manipulated by facile substitution of just one of the monomers and it may enable new materials based on aliphatic or semi-aromatic polyesters which are inaccessible using ROP due to thermodynamic reasons and this is interesting to increase thermal and mechanical properties.

In this context, block and multi-block copolymers possessing polyester blocks with different rigidity have been synthesized by ROCOP of phtalic anhydride and epoxides like cyclohexenoxide (CHO) and vinyl-cyclohexenoxide (vCHO) and others from renewable sources like epoxy methyl undecenoate (EMU) and glycidyl geraniol ether (GGE) respectively from fatty acids and terpene alcohols. Polymerizations were conducted resorting to insertion coordination transition metal catalysts like [OSSO]-type-Fe(III) with PPNCl, a catalytic system already demonstrated capable of promoting the synthesis of polycarbonates through ROCOP of epoxides and CO22. Different synthetic strategies have been explored, monomer conversions were monitored by NMR spectroscopy and, in all cases, block copolymers are obtained due to the different polymerization rate of the epoxides. Furthermore, to modify the thermal properties of the polymers, copolymerization tests were carried out by varying the ratios between the epoxides which influence the formation of blocks with different rigidity. The polymers were characterized by Nuclear Magnetic Resonance techniques (1H-NMR, 13C-NMR, HSQC e DOSY), Gel Permeation Chromatography (GPC), Differential Scanning Calorimetry (DSC) and their ability to separate into microphases was investigated by Atomic Force Microscopy (AFM).

For a possible application these new synthesized polymers can be investigated within the properties of TPEs.

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ANA-PO-078. Untargeted fingerprinting by UHPLC-Q-Orbitrap-HRMS to identify geographical origin and farming approach markers in L. albus L. samples from southern-center Italy

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Lupin seeds are the edible portion of lupin plants, included in the Fabaceae family. In recent years, they are gaining significant interest worldwide as a cheap alternative to other legume crops, for being stress-tolerant and climate-resilient plants and thanks to their potential nutritional value1. In fact, they are rich in proteins (>40%) and fibers (>28%), claiming a low-fat content (<6%); they also constitute a potential source of other nutrients, as minerals and vitamins. Lupins are rich in bioactive phytochemicals, such as polyphenols, phytosterols and triterpenes, providing antioxidant and anti-inflammatory properties; they are also known for a great presence of antinutritive compounds such quinolizidine alkaloids. The chemical composition of lupins could be influenced by several factors such as species or variety, geographical origin, farming practices, environmental stress, harvesting and processing methods2.

In this work, L. albus L. samples originating from four southern-central Italian regions were subjected to an untargeted metabolomics approach using ultra-high performance liquid chromatography coupled to high-resolution mass spectrometry (UHPLC-HRMS). The aim was to distinguish samples based on their geographical origin and subsequently assess the metabolic variances resulting from distinct agricultural practices (conventional vs. organic farming). Unsupervised Principal Component Analysis (PCA) on lupins fingerprints was employed to have an overview of the natural tendency of the samples clustering. Additionally, a supervised Orthogonal Partial Least Square-Discriminant Analysis (OPLS-DA) was used for discriminative purposes, revealing good clustering capability and predicting power for further samples, allowing also the putative identification of over 30 markers, across various classes: alkaloids, amino acids, glycerophospholipids, fatty acids and other miscellaneous compounds.

The results highlighted the impact of the origin and farming techniques on the metabolomic composition and distinctiveness of lupin samples; this could be crucial for cultivation optimization, traceability and quality assessment of lupins, aiming to draw consumers attention and preferences, given their potential nutritional properties.

FAR-PO-072. Characterisation Of Persistence, Bioaccumulation And Toxicity Of Biologically Active Compounds With Machine Learning-based Methods

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Assessing Persistence, Bioaccumulation, and Toxicity (PBT) is crucial for understanding the potential risk associated to the release of chemicals in the environment. Screening for PBT is still a challenging process due to the scarcity and poor quality of available data. This highlights the need for accurate and readily available methods to better predict the environmental impact of chemicals. PBT can

be concisely expressed by the PBT index, defined thanks to a traditional QSPR model based on four structural molecular descriptors. However, the accuracy of traditional QSP(A)R models tend to decrease when applied to large and heterogeneous datasets. The aim of this project is to apply advanced machine learning (ML) algorithms to predict the PBT index of pharmaceutically relevant molecules, overcoming the limitations of more traditional approaches. Chemprop, a message passing neural network (MPNN) was employed for this purpose. First, we assembled a comprehensive dataset of compounds already annotated by public agencies. After removing ambiguous and duplicated compounds, our final dataset encompassed 5129 molecules univocally labelled as PBT or non-PBT. Part of this collection (training set) was used to train a binary classification model that assigns each compound a PBT or non-PBT label based on features extracted from its structure. Once trained, the model was used to make predictions on the remaining molecules (test set). We further enhanced the robustness and stability of our PBT prediction model by increasing structural dissimilarity between training set and test set molecules by means of a clustering strategy. When applied to the test set, the figures of merit show how the model achieved an accuracy (g) of 0.90, and a recall rate (r) of 0.92. Overall, this study highlights the potential of ML models for predicting PBT properties, thereby focusing on enhancing model's generalizability. Moreover, using Chemprop's built-in 'interpret' function, we are able to extract PBT-related significant substructures that are responsible for the PBT prediction in order to provide guarantees of model explainability for the PBT assessment. Lastly, a dataset of compounds of pharmaceutical interest (619 cmpds) extracted from DrugBank database will be tested to the proposed Chemprop model in order to identify potential PBTs among pharmaceuticals defined as contaminants of emerging concern.

ANA-PO-071. Development and optimization of a method based on online-SPE coupled to UHPLC-HRMS for the determination of per- and poly- fluorinated substances in water

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Per- and poly- fluoroalkyl substances (PFAS) are a large group of synthetic chemicals, which represent an important class of emerging contaminants. These compounds are characterized by highly fluorinated alkyl chains that may also contain different functional groups depending on their use. In the last fifty years, they have been used in several industrial sectors and currently, over 9000 compounds belong to this class.

Due to their unique physicochemical properties, they are generally characterized by high persistence in the environment, making PFAS contamination a serious environmental problem. Nowadays, PFAS are widespread in the global environment, including wildlife and humans: they have now been detected at trace levels in both the environment and biota, including water. Dietary intake (from drinking water and food) is considered the main pathway of human exposure to these substances, and it can lead to immune, fertility and endocrine dysfunctions. For this reason, it is extremely important to assess the degree of PFAS contamination of waters.

The aim of this work is to develop a method based on online solid phase extraction (online SPE) and high-performance liquid chromatography coupled to high resolution mass spectrometry (UHPLC-HRMS) for the simultaneous determination of almost 40 PFAS in water. The validation was carried out according to ISO17025 and the analytical method was further applied to the analysis of real water samples. Recent studies normally found in the literature concerning the use of online SPE include the simultaneous determination of a restricted number of PFAS substances, whereas this work aims to broaden the number of compounds determined simultaneously to include more emerging substances and putting efforts in increasing the sensitivities. This may then facilitate analyses for environmental monitoring and perhaps promote future regulations, especially regarding relatively newer compounds.

The work is conceived within the framework of the SCENARIOS project, which is funded by the European Union's H2020 programme (Grant Agreement No. 101037509).

IND-PO-021. Electrochemical and photocatalytic treatments: an innovative coupled strategy for simultaneous hydrogen production and wastewater remediation

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Nowadays, the transition toward carbon-neutral energy production is imperative to mitigate climate change, ensuring a stable energy supply for the future generation1. Hydrogen (H2) is a promising energy storage medium, whose market is expected to increase exponentially due to its use as an energy vector in the transportation sector. Nevertheless, just 4% its production comes from electrochemical water splitting. In this context, the high potential required for the Oxygen Evolution Reaction (OER) constrains H2 evolution. Additionally, the use of noble metal-based electrodes complicates the practical application due to high costs and limited availability. In this frame, researchers are moving toward the development of noble metal-free electrodes mainly based on earth-abundant compounds.2 Regarding the anodic reaction, organic pollutants in wastewaters containing high level of chemical energy are excellent electrons donors and suitable candidates for producing H2 thanks to lower oxidation potential respect the one required for OER. For this reason, the electrochemical treatment of wastewater can represent a viable solution for hydrogen generation and simultaneous wastewater treatment, even if alone it is not sufficient. So, its coupling with other approaches can represent an interesting and efficient solution. Herein, we propose an innovative coupled process involving electrochemical treatment followed by heterogeneous photocatalysis for H2 generation using noble-metal free cathode and the simultaneous wastewater treatment. In general, electrochemical treatment alone resulted insufficient for wastewater complete mineralization. So, the photocatalytic step using bismuth oxychloride was exploited.2 This hybrid approach offers a novel and sustainable solution for energy generation and water purification in the face of increasing global industrialization and water scarcity.

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TEC-PO-034. TECNOLOGIE PER LA GENERAZIONE E L'UTILIZZO DI IDROGENO VERDE ED I MATERIALI INNOVATIVI NECESSARI ALLA LORO REALIZZAZIONE

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Secondo il ben noto rapporto Brundtland, pubblicato nel 1987 dalla Commissione mondiale sull'ambiente e lo sviluppo (WCED), lo sviluppo sostenibile è definito come quello sviluppo che: "soddisfa i bisogni del presente senza compromettere la capacità delle generazioni future di soddisfare i propri bisogni". In questo quadro, la scienza gioca un ruolo fondamentale nel continuo progresso di nuove tecnologie sempre più performanti e a basso impatto ambientale e richiede lo sviluppo di nuovi materiali che ne garantiscano l'implementazione.

L'idrogeno è considerato un vettore molto efficiente e versatile per la conversione e lo stoccaggio di energia, soprattutto da fonti rinnovabili, e quindi è stato recentemente rilanciato come elemento indispensabile per la transizione energetica.

In questo intervento verranno presentati i materiali innovativi fondamentali per la conversione e lo stoccaggio dell'energia attraverso la gestione dell'idrogeno, in cui Syensqo sta puntando e investendo per contribuire allo sviluppo sostenibile. Verranno presentate due diverse tecnologie per la conversione dell'energia legate all'idrogeno che impiegano tali materiali innovativi: la cella a combustibile o fuel cell (PEM FC) e l'elettrolisi dell'acqua (PEM WE e ALK WE). Verranno presentati e discussi i principi di funzionamento di tali tecnologie e i polimeri sviluppati in Syensqo che trovano utilizzo nei componenti di queste apparecchiature elettrochimiche, con speciali attenzione agli ionomeri per la fabbricazione delle membrane a scambio protonico (PEM).

TEC-PO-014. TEMPO-functionalised polyethyleneimine as a versatile material for various applications

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The nitroxyl radical 2,2,6,6-tetramethylpiperidin-1-oxyl (TEMPO) has been widely investigated due to its ability to participate in redox reactions.[1] In this work, aiming for the synthesis of novel versatile materials, different TEMPO-derivatives were synthesised and subsequently grafted to polyethyleneimine (PEI). The obtained PEI-TEMPO polymer was used as is or in the production of new materials to take advantage of the radical's properties both for biomedical and chemical applications. In particular, PEI is recognised as the golden standard for non-viral gene delivery. In this case PEI-TEMPO is used to obtain polymeric nanoparticles and polyplexes witah nucleic acids able to mitigate the intrinsic cytotoxicity of PEI thanks to the protective antioxidant activity of TEMPO radical. In the field of material science, TEMPO is already employed for the oxidation of alcohols to aldehydes and carboxylic acids, and thus extensively used in the pre-treatment of cellulose to facilitate the production of nanofibers (TOCNFs). [2] In this context, TEMPO-PEI structures are explored for the preparation of heterogeneous catalysts with the aim of innovating the process of cellulose oxidation. All the synthesised structures were completely characterised by NMR, EPR, and FT-IR techniques, successfully obtaining performing materials.

Acknowledgment: PRIN 2022 - 20227XZKBY - Superoxide responsive redox-active systems and nano smart materials to target ferroptosis – FEROX

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ORG-PO-059. Proximity Effects on the Reactivity of Nonheme Fe(IV)=O complex in C-H Oxidation

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Precise control of substrate positioning and orientation (its proximity to the reactive unit) is often invoked to rationalize the superior enzymatic reaction rates and selectivities when compared to synthetic models. Artificial nonheme Fe(IV)=O complexes react with C(sp3)-H bonds via a biomimetic Hydrogen Atom Transfer/Hydroxyl Rebound mechanism,[1] but rates, site-selectivity and even hydroxyl rebound efficiency (ligand rebound versus substrate radical diffusion) are smaller than in oxygenases.[2,3] Herein, we quantitatively analyze how substrate binding modulates nonheme Fe(IV)=O reactivity by comparing rates and outcomes of C-H oxidation by a pair of Fe(IV)=O complexes that share the same first coordination sphere but only one contains a crown ether receptor that recognizes the substrate. Substrate binding makes the reaction intramolecular, exhibiting Michaelis-Menten kinetics and increased reaction rates. In addition, C-H oxidation occurs with high site selectivity for remote sites. Analysis of Effective Molarity reveals that the system operates at its maximal theoretical capability for the oxidation of these remote sites. Remarkably, substrate positioning also affects Hydroxyl Rebound, whose efficiency increases only on the sites placed in proximity by recognition. Overall, these observations provide evidence that control of substrate positioning via weak interactions is an effective tool to modulate the reactivity of oxygenases and its models.

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ORG-PO-060. First Total Synthesis of Caerulomycin K: From Phosphonium Chemistry to Multiple Minisci C-H Functionalizations

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Caerulomycins, natural alkaloids with antineoplastic and antibiotic properties, have been previously synthesized starting with highly pre-functionalized building blocks or requiring many functional group manipulations. In this work, we report the first total synthesis of caerulomycin K, a diversely tri-functionalized pyridine readily assembled in three steps exploiting the recent advancements in the C-H activation of N-heterocycles. Starting from mono-functionalized pyridines, we attempted as first strategy a double C-H activation by means of phosphonium chemistry. We succeeded in the mono-functionalization of para-position, whereas a poor conversion of the second ortho-C-P bond formation prompted the search for a better approach. This was achieved by sequential Minisci ortho-arylation and ortho-alkylation, with the latter converted in one pot into the desired oxime. Compared to previously reported caerulomycin syntheses, this innovative strategy involves shorter synthetic route and does not demand highly pre-functionalized starting materials.

FAR-PO-003. A family of nitrogen-containing heterocycles as sirtuin inhibitors: synthesis and in vitro biological evaluation

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Sirtuins (SIRTs) are a family of NAD+-dependent deacetylases including seven members, named from SIRT-1 to SIRT-7 and characterized by diverse subcellular localizations and distinct enzymatic activities. The SIRT family is involved in translation, metabolism, and genome stability. Hence, their dysregulation is closely associated with several diseases such as cancer, diabetes, and neurological illnesses. The availability of different X-ray crystallographic structures of SIRT-2−ligand complexes made it possible to build up a structure-based investigation in the hunt for SIRT-2 inhibitors (SIRTIs). A series of in-house pyrazolo[3,4-d]pyrimidine derivatives as a class of SIRT-2 inhibitors were evaluated in silico and in vitro, leading to the identification of two effective compounds, 1 and 2 (Figure 1). Then, further modeling studies drove the synthesis of a library of analogue compounds. The identified derivatives have been tested in vitro, and an accurate structure-activity relationship study was carried out. Interestingly, few compounds showed a low micromolar/nanomolar activity towards SIRT-2. The synthesis and the biological results will be discussed.

ANA-PO-116. Optimization of enzymatic biosensor based on Horse Radish Peroxidase

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Horseradish peroxidase (HRP) has emerged as a versatile enzyme in the field of electrochemical biosensors, offering numerous advantages for sensitive and selective analysis. Its ability to catalyze a wide range of substrates makes it suitable for detecting various analytes, including small molecules, biomolecules, and environmental pollutants1. Furthermore, the enzyme exhibits high stability under a variety of conditions, enabling long-term storage and use in complex sample matrices. HRP has been widely used in the biosensing field exploiting both direct and indirect strategy of detection. Generally, establishing direct electron transfer between HRP and an electrode is difficult because the active sites of HRP are deeply embedded in the thick protein shell. The role of the mediator is to shuttle electrons efficiently between electrode and the active site of the enzyme, i.e. the heme group2. When the redox mediator (Med) is added, the reaction mechanism with the substrate, namely H2O2, can be summarized as shown in Figure 1. By selecting an appropriate mediator, sensitivity can be improved due to an optimized electron transfer kinetics3. The aim of this work is to unravel the effect of the redox mediator on the overall performance of HRP-based sensors. In particular, the study considers the storage and operational stability of the mediator, the efficiency of the catalytic enzymatic cycle and the kinetic of the enzymatic reaction with HRP through cyclic voltammetry and chronoamperometry.

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FAR-PO-001. Rational optimization of the N-adamantyl-anthranil amide structural core for the developtment of new selective ligands for the Cannabinoid subtype 2 Receptor (CB2R)

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CB2R is a Gi-protein-coupled receptor (GPCR) which, together with CB1R, the endocannabinoids and the enzymes responsible for their synthesis and degradation, forms the endocannabinoid system (ECS). The expression of CB2R at the level of immune tissues, its over-expression, and up-regulation at the level of microglia cells in the CNS in pathological states, have led to questions about its role in inflammatory and neurodegenerative diseases. In 2023, we synthesized, evaluated, and published N-adamantyl-anthranil amide derivatives as CB2R selective ligands (Fig. 1B)1

. We based our design on the proposed binding mode of the most potent CB2R antagonist AM10257, called “three-arm pose” (Fig. 1A). The best results in terms of affinity were observed in compounds presenting the phenyl ring or hydrogen on arm 1 and an alkyl chain with 5-carbon atoms as arm 2. The carboxy-adamantyl amide group as arm 3 was found to be critical for interaction with CB2R. We rationally explored a series of substitutions on the N-adamantyl-anthranil amide structural core as to assess any variations in affinity for CB2R. We also tested these synthetized compounds to evaluate their CB2R affinity and selectivity towards CB1R, obtaining interesting results. Compounds exhibiting the best pharmacodynamic profile in terms of CB2R affinity were also evaluated for the functional behavior and molecular docking simulations provided sound rationale.

Figure 1: AM10257, CB2R antagonist (A), General structure of our N-adamantyl-anthranil amide derivatives (B).

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ORG-PO-061. Investigation analysis of the phytochemical composition of Laurus nobilis L. leaves essential oil: a study of the antioxidant and anti-inflammatory properties using a combination of in vitro and in silico methods.

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This study centres on the field of natural product chemistry, specifically aiming to analyse and describe the structure of secondary metabolites obtained from plants. These secondary metabolites have been evaluated as potential "new drugs" because of their fascinating pharmacological effects shown in both laboratory and animal experiments1. The features of this substance encompass anti-inflammatory, antioxidant, anticancer, antiviral, and antibacterial actions.

The perennial Mediterranean shrub Laurus nobilis L., also referred to as bay laurel, has an extensive historical background of customary utilisation in culinary practices and traditional medicine owing to its beneficial effects on health. These features are currently being scientifically clarified through a range of biological activities.

Specimens of L. nobilis were gathered from three distinct areas in central-southern Italy. The leaves underwent hydro-distillation, and essential oils (EOs) were examined using gas chromatography (GC/FID) to quantification volatile chemicals and gas chromatography/mass spectroscopy (GC/MS) to identify them. The multivariate analysis of the principal components examines the relationships between various chemical substances and their respective antioxidant and anti-inflammatory effects.

The antioxidant activity was assessed using various methods (DPPH, ABTS, FRAP assay) in vitro. Additionally, the ability to reduce inflammation was evaluated by measuring its inhibition of specific enzymes involved in the production of eicosanoids through three metabolic pathways: cyclooxygenase (COX), 5-lipoxygenase (5-LO), and cytochrome P450 (CYP450)2.

In more detail here, the simultaneous targeting of several enzymes, specifically COXs and Soluble Epoxide Hydrolase (sEH) of the EOs, in a more detailed manner. Moreover, the in silico investigations were used to explain the biological activities in inflammatory events that were observed for the primary secondary metabolites of the various types of L. nobilis essential oils at the molecular level.

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Funding: the research activity was supported by MUR (PRIN 2022 PNRR) “P2022MWY3P—Old but Gold! Identification of molecular platforms for age-associated diseases to promote healthy and active aging”.

ORG-PO-194. The Black-Box: Investigating the Key Pathways for the Reduction of PdII to Pd0

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Palladium cross-coupling reactions represent among the most versatile and useful tools in organic synthesis for the carbon-carbon (C-C) bond formation.1 Although the general mechanism of palladium cross-coupling reactions is well known, the first step, the formation of Pd0 active catalyst from PdII pre-catalyst, is still a matter of investigation for several research groups.2

A rapid and complete pre-catalyst reduction is critical for an efficient process. Understanding exactly the mechanisms allows the possibility to lower the amount of catalyst and avoid an excess of phosphine to be used.

In addition, it enhances the overall efficiency of the process, leading to higher yields of the desired product and reducing the formation of unwanted by-products.3,4

To clarify the reduction mechanism, stoichiometric and catalytic reactions were carried out and monitored by 31P/1H NMR spectroscopy. We have studied the reduction starting from the most common and cost-effective pre-catalysts such as PdCl2 and Pd(OAc)2, employing various types of ligands. Our focus has been on identifying the most efficient reduction mechanisms utilizing bases, phosphines, and solvents, enabling us to create a versatile library of pre-catalysts and phosphines for tailored reactions. This approach not only ensures superior performance but also avoids the use of expensive Pd0 or palladacycles, thereby enhancing the flexibility and cost-effectiveness of the processes.

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TEO-PO-001. Assessing the catalytic mechanism of the horse-liver alcohol dehydrogenase with a biomimetic cofactor through a multiscale computational study

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In recent years, there has been a significant interest in redox enzymes due to their ability to exert crucial chemo and stereoselective control over the reactions they catalyze. Moreover, enzymes operate under mild conditions, making them particularly attractive for the design of green chemical processes.1 Here, we focus on horse liver alcohol dehydrogenase (HLADH), an enzyme exhibiting a wide substrate tolerance. Specifically, in its catalytic action of the reduction reaction of ketones, the enzyme mediates the hydride transfer (HT) from NADH to the re-face of the carbonyl group, resulting in the formation of S alcohols as products.1,2

The utilization of biomimetic cofactors presents an appealing strategy, given their notable advantages in versatility, efficiency, and tunability. These attributes render them invaluable instruments for propelling advancements across diverse domains of chemistry and technology1. Howevere, the catalytis reaction mechanisms are not yet known. In a previous study,1 a mechanism was proposed for the reduction of 2-pentanone catalyzed by HLADH, employing 1,4-dihydro-N-benzylnicotinamide as biomimetic cofactor. Differently from the mechanism with NADH (which implies an initial, direct HT), this mechanism involves as first step the detachment of His67 from the catalytic Zn(II) metal ion center followed by formation of a complex that involves η2-coordination of the 5,6 double bond of the biomimetic to the zinc, followed by HT.

We study the catalytic mechanism of this system here using a multiscale approach, specifically the Perturbed Matrix Method-Molecular Dynamics (PMM-MD) approach.3 By calculating the free energy changes along the possible mechanisms, we can ascertain whether the alternative mechanism (involving detachment of His67 and formation of the η2 complex) or the direct-HT mechanism is the most thermodynamically and kinetically favorable.

ORG-PO-062. Light-induced N-Lactam radicals generation under continuous flow conditions

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Nitrogen-containing structures are widespread in both natural and synthetic organic compounds, including pharmaceutical products. Finding novel synthetic approaches for forming C-N bonds in a mild, sustainable, and potentially stereoselective way is a subject that captivates synthetic organic chemists.

Over the past twenty years, photoredox catalysis and flow chemistry emerged as powerful methods for generating radical species in such conditions. The possibility to use light as traceless reagent plays a pivotal role in the development of green synthetic strategies, and flow setups can further enhance the performances of light-induced reactions. Additionally, the characteristics of flow reactors offers advantages in terms of both process scalability and safety, making flow chemistry an indispensable tool for organic chemists.

Among the various nitrogen radical species, amidyl radicals have interesting properties for synthetic purposes. The light-induced generation of N-lactam radicals, which are not know in literature, and their reactivity with aromatic substrates under flow conditions are the focus of this work.

The N-radical precursor was synthesized by taking inspiration from the literature. Different indole derivatives were successfully tested. The reaction proceeds in mild conditions, and the use of an organic photocatalyst makes this approach interesting since the use of expensive and polluting metal-based catalysts is avoided. The development of a flow setup permitted to achieve better results compared to a conventional batch reactor, significantly reducing the time required to complete the reaction.

ALI-PO-032. Protein content, fatty acid profile and antioxidant capacity of plant-based kefir milks

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Kefir is widely known as an excellent source of probiotics with potential health benefits. Existing reports

have suggested important bioactivities associated with kefir consumption, such as antimicrobial, anti-inflammatory and antioxidant activities. kefir is produced through a fermentation process using kefir grains as starter culture. They consist of a consortium of yeasts, lactic acid bacteria (LAB), and acetic acid bacteria (AAB) embedded in a branched galactoglucan matrix, named kefiran.1

Most of the reported kefir research has been focused on milk substrates from cow, sheep, goats or other type of milk.2 An alternative way to intake beneficial health effects from kefir is through of its adaptation to non-dairy substrates for the production of new probiotic products to provide vegan, lactose intolerant, and dairy-product allergic consumers.3 Thus, plant-based milks were used as medium of kefir fermentation.

Almond, coconut, hazelnut, oat, rice, soy, walnut milks were inoculated with 5% (w/v) milk kefir grains for 24 h at room temperature. Changes in protein content and fatty acid profile of the fermented samples were evaluated and compared with the starting milk values.

The fermentation led to an increase of protein content in all samples, except soy one where it was halved and walnut sample for which it remained unchanged. Beneficial fatty acids such as oleic and linoleic acid rose in all samples with the exception of soy and walnut ones. Phenolic content (TPC), determined by the Folin-Ciocalteu method, increased during fermentation in all samples: kefir from walnut milk showed the highest TPC (350.9 ± 3.0 µg GAE/mL) followed by soy sample (337.2 ± 8.4 µg GAE/mL). According to TPC results, antioxidant activity, evaluated by ferric reducing antioxidant power (FRAP) assay, showed improved activity in all probiotic fermented milks being highest in almond and walnut samples (536.0 ± 1.0 µM FeSO4/mL) followed by the kefir from soy milk (207.8 ± 5.5 µM FeSO4/mL).

The adaptation of milk kefir grains into different substrates such as plant-based milks has shown potential for the production of beverages with functional properties.

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FAR-PO-023. Second generation pyridobenzothiazolone analogues as potent anti-flavivirus agents: beyond NS5 polymerase inhibition

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The mosquito-borne viruses belonging to the Flavivirus genus, such as Dengue (DENV), Zika (ZIKV), and West Nile (WNV) viruses, are responsible for a high number of infections in humans. These infections can range from mild flu-like symptoms to severe conditions like hemorrhagic fevers, hepatitis, and neuropathies.1 Unfortunately, there are currently no effective and specific treatments available for flavivirus diseases and new anti-flavivirus drugs are urgently needed.1

For years, we have been researching pyridobenzothiazolone (PBTZ) analogues as anti-flavivirus agents targeting the NS5 RNA polymerase.2 Recently, we also developed a sustainable three-component reaction for synthesizing the PBTZ scaffold, which allowed us to efficiently create a wide range of PBTZ analogues3. Building on our previous findings, this study reports the design, synthesis, and biological evaluation of a new series of PBTZ analogues. Although these new compounds lost their ability to inhibit the NS5 polymerase, they still showed potent anti-flavivirus activity. This lack of viral RNA polymerase inhibition is likely due to the absence of the carboxylic function at the C-4 portion of the molecule. Despite this, the new compounds still exhibited valuable anti-flavivirus activity in cell-based assays, with EC50 values against DENV-2 in the low µM range, albeit with sub-optimal selectivity indexes (SIs). Further medicinal chemistry efforts were undertaken to replace the liable ester functionality present at the C-4 position and explore the chemical space around the PBTZ core. These efforts led to the identification of a new set of C-2 modified PBTZ amide analogues with nanomolar EC50 values and SIs greater than 1000. Additional studies have provided insights into the new mechanism of action of this series of PBTZ derivatives that lack the carboxylic function. These studies indicated that the derivatives acted during the viral entry phase, highlighting the difference between them and PBTZ analogues from the first series. Additionally, investigations have shown that these compounds have a broad-spectrum antiviral activity against various RNA viruses. Furthermore, PBTZ derivatives demonstrated potent anti-DENV activity in an antibody-dependent enhancement (ADE) infection model. In summary, our findings highlight the potential of PBTZ derivatives as a promising class of anti-flavivirus agents, warranting further investigation and development.

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ANA-PO-089. An IMS prototype for the detection of explosives on crime scene investigation

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Ion Mobility Spectrometry (IMS) has been proven to be a very effective analytical technique in security and police applications for the detection of explosives, chemical weapons and illicit drugs. This study focuses on a new IMS prototype, developed by MasaTech, and investigates its efficacy on the crime scene by analysing explosives within the scope of the RISEN project (Horizon 2020, Grant Agreement No 883116). The MasaTech prototype vaporizes chemical substances pointing a laser beam at different types of surfaces. Vapours are transferred into the IMS module by a pump, where molecules are ionized and separated in the gas-phase. The analytical outputs considered in this study were the drift time, ion mobility, reduced mobility and collision cross-section.

The effectiveness of the IMS prototype was established by analysing explosives and explosive products: TNT, RDX, PETN, 2,6-DNT, 2,4-DNT, and 3,4-DNT. Little amounts of chemicals were settled on different substrates, such as drywall, stainless steel, and ceramic to simulate realistic crime scenarios.

Chemometrics methods were employed for reliable data processing of plasmagrams. Multivariate data analysis was carried out using Python code within a Jupyter Notebook environment, using the following packages: NumPy, Pands, Matplot library, Plotly and Scikit-Learn. The data analysis workflow involved various pre-processing steps of raw IMS plasmagrams, unsupervised and supervised pattern recognition techniques and model evaluation through Leave-P-Out cross-validation. Moreover, following the guidelines developed by the European Network of Forensic Science Institutes (ENFSI), a complete validation of the method was carried out taking into account the repeatability, reproducibility, and sensitivity. The signal variation was assessed to evaluate each analyte's response repeatability and reproducibility. All the analytes showed a coefficient of variation lower than 1% for both repeatability and reproducibility.

Therefore, the data obtained was treated with different classification models, such as Linear Discriminant Analysis (LDA), Partial Least Squares Discriminant Analysis (PLS-DA), Logistic Regression (LR) and Support Vector Machines (SVMs), in order to establish the relevance in comparison to conventional IMS technologies. The results highlighted the importance of the data pre-processing method employed to obtain an accurate classification. A Design of Experiment (DoE) approach was used to identify the best combination of pre-processing techniques and determine which factors influence the model's response by using the accuracy of the final chemometrics model. The PCA-LDA model appears as the most effective classification model reaching an accuracy of 95% and showing satisfactory results for real implementation in forensic field applications.

Merit to its high sensitivity and ease of use, the instrument can be employed to detect latent traces on crime scenes, on small traces unsuitable to traditional approaches such as spot tests. In conclusion, the IMS prototype developed by MasaTech, coupled with the chemometrics approach, presents a promising methodology for the detection of explosives and explosive products in real forensic criminal cases.

ANA-PO-075. Synthesis of α-, β- and γ-cyclodextrin-based nanosponges as sustainable sorbents for the extraction of pesticides from water samples

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As recommended by the first principle of Green Analytical Chemistry (GAC) [1], direct analyses are the viaticum for sustainable methods. Nevertheless, in cases of analytes present at trace level and/or interfering compounds, a sample pretreatment is essential and, according to the 3rd criteria of Green Sample Preparation [2], sustainable, reusable, and renewable materials are the most attractive alternative to polymeric sorbents. From this point of view, cyclodextrin nanosponges (CD-NS) are biosorbents responding to all these requirements, being harmless, biodegradable, and biocompatible materials, based on CDs which are natural degradation products of the starch (one of the most abundant biomasses in the world) [3]. In this work, CD-NS were prepared by using α, β and γ-CD as the monomers; citric acid as the cross-linker and NaH2PO4 as the catalyst. Such reagents were homogeneously dispersed in the minimum volume of water and the polymerization was carried out at 160°C. The final products showed the distinctive morphology of a sponge and were characterised by means of thermal analysis (TGA, DSC), IR spectroscopy, and SEM imaging. Afterwards, α, β and γ-CD-NS were applied for the dispersive-solid phase extraction of pesticides from environmental water samples. In line with the 8th principle of GAC (multi-analyte or multi-parameter methods are preferred to methods using one analyte at a time) [1], eleven pesticides, belonging to different chemical classes and also including optical and geometric stereoisomers, were considered. In particular, after optimizing the best extraction conditions, the behaviour of the different sponges towards the target analytes was evaluated in terms of recoveries and reproducibility. The analyses were performed by high performance liquid chromatography-tandem mass spectrometry (HPLC-MS/MS) on a cholesteryl analytical column and on a chiral polysaccharide-column to assess the potential capability of stereo-discrimination of the different nanosponges.

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INO-PO-088. Atomically Precise Rh-In Carbonyl Nanoclusters: Synthesis, Characterization and Crystal Structures

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The chemistry of homo- [1] and hetero-metallic [2,3] rhodium carbonyl clusters has been widely investigated in the last decades. In order to further widen the chemistry of heterometallic rhodium compounds, we investigated the reactivity of the [Rh7(CO)16]3− cluster precursor with InCl3, obtaining the new Rh-In carbonyl species [Rh6(CO)15InCl3]2− and its dimeric version [{Rh6(CO)15InCl2}2]2−. Furthermore, we synthesised the In-centred icosahedral [Rh12In(CO)28]3− cluster, which parallels the species belonging to the

[Rh12E(CO)27]n− family (E = Sn, Ge, Sb, Bi), with which it shares the electron counting (170 cluster valence electrons) and the metal structure. [4]

These new Rh carbonyl clusters have been characterised by IR spectroscopy and ESI-MS spectrometry and their molecular structures fully established by single-crystal X-ray diffraction studies.

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ANA-PO-144. Biomarker discovery for precision diagnosis of mechanical ventilation-associated pneumonia (VAP)

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Ventilator-associated pneumonia (VAP) is one of the most common infections in the Intensive Care Unit (ICU) [1]. The diagnosis of VAP is complex, invasive, non-specific and slow, and results can take days; hence, it is often necessary to initiate a broad-spectrum antibiotic therapy, which in many cases leads to overtreatment of the patients [2,3]. Therefore, the need for new diagnostic biomarkers, which can limit the inappropriate use of antibiotics and contribute to the reduction of antibiotic resistance, remains very important.

Exhaled breath condensate (EBC) is the exhalate from breath which has been condensed using a cooling device. It is a promising source of biomarkers, especially for lung diseases. Several biomarkers of pathogens responsible for viral infections were already identified in the EBC through metabolomics analyses [4], while knowledges on proteins are still limited.

The aim of this work was to identify novel bacterial-derived proteins responsible for infections in the ICU, through untargeted proteomic analysis of the EBC collected by condensation with a non-invasive technique. After the collection of EBC, proteins were precipitated, then digested with trypsin and peptides were desalted and analysed using nano liquid chromatography coupled with high resolution mass spectrometry (Orbitrap Exploris 480, Thermo). Using this approach, several novel biomarkers from both GRAM+ and GRAM- bacteria were identified.

Hence, with our work, we aim to make a step forward on the non-invasive diagnosis and monitoring of VAP.

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ORG-PO-195. Development of Reusable Electrolytes for the Waste-Minimized Synthesis of 2-arylbenzoxazoles

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Using a current of electrons to replace redox reagents presents a promising route for sustainable organic synthesis. However, many sustainability challenges persist in this sector, and the effectiveness of electrosynthesis depends on the quantities of electrolytes used, influencing, for example, electron transfer and current density. Equimolar amounts of supporting electrolytes are needed, leading to a significant generation of waste. These electrolytes, typically non-recoverable, require separation from the final reaction mixture, further increasing waste production.

To find a solution to this critical sustainability challenge for electrosynthesis, we report here our commitment to developing an easily recoverable supporting electrolyte. We representatively applied our study to the synthesis of 2-arylbenzoxazoles under batch and flow conditions. Importantly, the electrochemical flow cell also allowed us to improve current efficiency and overall performance. With a comprehensive analysis of green parameters, one can also quantify how our strategy is very promising and a valuable approach to minimize the quantity and quality of waste produced in organic electrosynthesis.

INO-PO-058. Direct oxidation of cyclohexane to adipic acid on Fe-Co based catalysts

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AA is a widely used chemical with a wide range of commercial uses, as the manufacturing of polyamides, plasticizers, polyurethanes, and other products of relevant importance. Industrially, AA is obtained in a two- step oxidation of cyclohexane. The first step is the oxidation of cyclohexane to cyclohexanone and cyclohexanol (KA-oil), which proceeds through a radical mechanism starting from the activation of C-H bond performed at 150°C and 10-20 bar of air in the presence of an homogeneous cobalt-manganese catalyst. In the second step, KA oil is oxidized to AA by HNO3. The resultant formation of N2O and NOx makes the process not environmentally friendly, leading to serious environmental pollution [1]. Therefore, efforts to develop a greener method capable of directly converting cyclohexane to adipic acid under sustainable conditions is needed. In this view, the replacement of homogeneous catalyst with an heterogynous one would be beneficial facilitating the recovery and the reuse of the catalytic system.

In this study we investigated the direct oxidation of cyclohexane to adipic acid by molecular oxygen and transition metal-based heterogeneous catalysts. In particular, Co and Fe have been selected considering they easily switch between II and III oxidation states, favouring the single electrons exchange required for the C-H bond activation [2]. Fe, Co, and bimetallic Fe-Co supported on different reducible and non-reducible oxides, i.e. Al2O3, TiO2, SiO2 and CeO2, have been synthesized by sol-immobilization method [3], a suitable technique for obtaining similar metal dispersion regardless the support. Catalytic tests performed at 120°C and 4 bar of O2 showed that Fe-Co bimetallic catalysts are able to produce adipic acid directly from cyclohexane differently from the monometallic counterparts, proving the cooperative effect between the two metals. Moreover, we revealed a strong support effect being CeO2 supported catalyst the most active (AA production 0,074 mmol/h). The effect Fe:Co molar ratio was also investigated, proving a full characterization to disclose the reasons on the basis of the different catalytic behaviour.

ANA-PO-051. Facile and rapid ultrasound-assisted liquid-liquid extraction for the determination of pesticides in extra virgin olive oil followed by chromatography techniques hyphenated to tandem mass spectrometry

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According to the Food and Agriculture Organisation of the United Nations, the extra virgin olive oil world production reached 2.4 million tonnes per year in 2021. This high production is linked to its unique health claim, included in the European Union (EU) Regulation 432/2012. Pest and disease control through the application of pesticides helps to maintain the high production yields. To ensure compliance with maximum pesticide residue levels and to assess consumer exposure to pesticide residues in and on food, multi-annual pesticide residue monitoring programmes (MACPs) are in place within the EU.

The following research involved the development of an easy, rapid, and high sample throughput workflow based on an ultrasound assisted liquid-liquid extraction followed by low-pressure gas chromatography (LPGC) and high-performance liquid chromatography (HPLC) coupled to a triple quadrupole mass spectrometry detection (QqQ MS). 290 pesticide residues were determined in extra virgin olive oil. Separation was achieved in less than 10 min using the LPGC approach, while 15 minutes were necessary for the HPLC analysis. The use of QqQ MS detection guaranteed both the sensitivity and selectivity of the method.

The developed method was validated according to the SANTE/10704/2021 guidelines, showing good recovery, intra-day and inter-day precision, and accuracy results, proving to be a valid and rugged method for the analysis of pesticide residues in extra virgin olive oil. In this regard, the proposed method was applied for the analysis of 50 commercial extra virgin olive oil samples.

FAR-PO-083. Design and synthesis of Rad51-BRCA2 protein-protein interaction disruptors to trigger synthetic lethality in pancreatic cancer cells

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Synthetic lethality (SL) is a phenotypic condition in which cells do not survive due to the combination of two genetic perturbations that, taken individually, do not induce cell death. A successful application is the use of PARP inhibitors in cancer patients with BRCA2 mutations. One of the key mechanisms of BRCA2 is to recruit the Rad51 to the site of double-strand breaks where it performs homologous recombination repair.1 Our research project focuses on the development of Rad51-BRCA2 protein-protein interaction (PPI) disruptors that mimic the BRCA2 mutation to trigger fully small organic molecule SL in combination with Olaparib in BRCA2-functional pancreatic cancer cells.2,3

Through a virtual screening campaign on a PP critical “hotspot” on Rad51 surface, a quinoline-structured Rad51-BRCA2 disruptor (ARN22142, Scheme 1) has been identified. To discover more effective compounds and depict general structure-activity relationship studies, the chemical space around ARN22142 has been explored by optimizing a general synthetic strategy and building a library of quinolinic analogues modified in two moieties of interest (red and blue residues, Scheme 1). Among the synthetized compounds, ARN26912 (Scheme 1) has showed synergism on the antiproliferative efficacy with Olaparib in BRCA2-proficient pancreatic cancer cell lines. This supports the idea that small organic molecules can mimic genetic mutations. Further in vitro biological studies will be done with this promising compound.

Funding: This work is financially supported by the Italian Association for Cancer Research AIRC (IG 2018, id 21386).

ORG-PO-063. Oxazolidinone-Derived N-Centered Radicals: Unlocking Bioactive Compounds by Photoredox Catalysis

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The recent advancements in radical chemistry have paved the way for new opportunities in synthesis, solving challenges that more conventional methodologies have historically encountered. Traditional approaches used to build C-N bonds often rely on high temperatures and pre-functionalized coupling partners, such as Cu-catalyzed Ullman type coupling or Pd-catalyzed Buchwald-Hartwig amination. However, in the last few years, some of these issues have been solved by the use of N-centered radicals generated by photoredox catalysis. These radicals have proven effective for building C-N bonds under mild reaction conditions. The use of N-centered radicals, when combined with flow chemistry, have proven to be effective also for large-scale productions, overcoming issues related to limited light penetration associated to batch processes.

In this context, we focused our attention on the development of novel synthetic methodologies for the synthesis of products of pharmaceutical interest such as Linezolid and Eperezolid, involving the use of N-oxazolidinone radicals generated by photocatalytic approach. An easy protocol for the generation of N-oxazolidinone radicals have been developed, which were successfully employed in amidation reactions of various aromatic substrates performed under traditional batch and continuous flow conditions. These initial investigations mark a significant step toward devising efficient and sustainable methods for the synthesis of APIs.

FAR-PO-087. A new class of selective SARS-COV-2 nsp13 Helicase and NTP-ase inhibitors: Pyridobenzothiazolones (PBTZS)

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In COVID-19 pandemic context, the scientific community mobilized extensive efforts to speed up the discovery of effective vaccines and potent antiviral drugs to counteract the rapid transmission and infection of SARS-CoV-21. Particular attention has been devoted to SARS-CoV-2 essential targets in the viral life cycle, notably the main protease (Mpro) and polymerase, with small focus on the helicase2. Our research interest has been directed towards the helicase of SARS-CoV-2 (NSP13), the less explored target, but highly conserved across coronavirus family, indicating its potential as a target for pan-coronavirus antiviral therapies3,4.

Previous studies have reported Pyridobenzothiazolones (PBTZS) as NS5 polymerase inhibitors of different Flavivirus in cell lines with potency ranging from low to sub-μM levels, and importantly, without toxicity5. The PBTZs' activity as "pan-Flaviviruses' inhibitors" induced us to explore their potential activity as Coronaviruses inhibitors. Therefore, we set up a screening cascade for SARS-CoV-2 that consisted in: i) antiviral phenotypic screening; ii) enzymatic assays Mpro, polymerase and helicase. Remarkably, all compounds demonstrated specific inhibition of the helicase and NTPase functionalities of NSP13 with an IC50 from 0.2 to 20 μM. One of the most identified hit showed IC50 = 0.32 ± 0.22 μM in helicase assay, and 4.4 ± 1.1 μM NTPase assay, with an antiviral potency EC50 = 10.37 ± 1.3 μM in VeroE6-GFP cells, and CC50> 100 μM. We proceeded with the design of a small set of novel analogues to further investigate this new class of NSP13 helicase and NTPase inhibitors. In the absence of a co-crystal structure, our design strategy relied on a ligand-based structure-activity relationship (SAR) study. Two derivatives, namely F2F-2020406 and F2F-2020400, exhibited enhanced activity and selectivity.

Considering the current state of art of NSP13 inhibitors, this initial exploration identified a novel class of inhibitors with low μM antiviral activities of NSP13 helicase and NTPase enzymatic functionalities and importantly demonstrating activity against SARS-CoV-2 replication in cell-based assays.

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IND-PO-058. Carbon-dots-conjugated semiconductors for enhanced solar-driven photocatalysis

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In the last decades, the rising levels of carbon dioxide (CO2) in the atmosphere have been increasingly attributed to the global warming effect. Photocatalysis, which exploits the energy of light and abundant semiconductor materials, may represent a promising method to enable more sustainable catalytic reactions. However, the applicability is currently mainly hindered by design of materials able to efficiently harvest solar light to carry out photo-catalytic reactions.

In this context, the conjugation of carbon dots with semiconductor materials was studied as tool to increase the visible-light sensitivity of titanium oxide (TiO2) and barium titanate (BaTiO3). The hybrid materials were tested for their photo-activity in two distinct reactions

and upon the irradiation of either UV or solar light. Two different deposition methods were studied as to provide a scalable strategy to the design of versatile photocatalyst.

As results, only carbon-modified semiconductors were able to convert CO2 into methane upon solar light excitation. In addition, carbon-dots-BaTiO3 conjugates were proposed for the first time as valid alternative to TiO2-based photocatalysts, especially in the CO2 photo-reduction reactions.

If properly designed, carbon dots may represent a way to overcome some of the current limitations to the application of photocatalytic processes for the development solar-powered technologies.

IND-PO-023. Probing the Drug Delivery behaviour of β-Cyclodextrin Nanosponges via classical Molecular Dynamics simulations

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Cyclodextrins (CDs) are cyclic oligosaccharides constituted by α-D-glucopyranose monomeric units connected by α-(1-4) glycosidic bonds, characterized by a truncated hollow cone shape. Thanks to the marked tendency to form inclusion complexes with a large variety of substrates (e.g., pharmacologically active molecules, vitamins, etc.), CDs have been applied as Drug Delivery Systems (DDSs), both alone or in the cross-linked form of nanosponges. These porous materials are obtained through a condensation reaction of a glycosidic monomer and a cross-linking agent and offer several advantages as DDSs with respect to β-cyclodextrin alone. To shed light on the complexation mechanism, computational investigation are increasingly essential, towards a full atomistic representation of nanosponge.

The present work relies on previous benchmark Density Functional Theory calculations on monomeric β-CD and inclusion complexes with melatonin (MT) as a guest, and then proceeds with classic molecular dynamic simulations both on the inclusion complex with melatonin and on the novel nanosponge model obtained by cross-linking β-CD and citric acid.

These MD simulations carry information on the dynamics of the binding process occurring in both the single host-guest complex and the nanosponge, so as to provide an accurate theoretical model for Drug Delivery applications. Results have shown the presence of D-glucopyranose in two main conformations confirming the high flexibility of β-CD, which disappears both with the complexation and reticulation. Melatonin binding to β-CD is dynamic and not very strong, indeed the guest in some cases escapes from its host but remained enclosed inside the secondary cavities grid.

ABC-PO-008. New modified alginate gels for the cleaning of cultural heritage items

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In the field of cultural heritage conservation, the cleaning of artworks has become an essential practice as part of preservation processes, because artefacts are often affected by different unwanted materials. Cleaning of cultural heritage items usually concerns the removal of substances deriving from natural pollution (e.g., surface dirt, grime, and soil) as well as from past non-original treatments (e.g., polishing treatments, adhesives, and decayed varnishes).

Following previous research works, we focused our attention on gel materials as cleaning tools for the cultural heritage. Gels were introduced by the pioneering works of Wolbers at the end of 1980s as cleaning systems to remove dirt and degraded materials from different substrates such as metals, stones, and paper.1

Generally, the gels were prepared from different polymers loaded with solvents, including water, or organic solvent/water mixtures (e.g. emulsions). More recently, "green" gels have been prepared from natural polymers, although the rather complicated structure and composition of these matrixes may induce a more difficult control of some gel properties such as mechanical features and water content. Commonly used water-containing natural gels (hydrogels) are based on agar, gellan gum, xanthan gum, and chitosan. The hydrogels based on these natural polymers have been considered as cleaning tools by conservators over the last few decades.2, 3

The present study is focused on the preparation and characterization of new gels based on the natural polysaccharide alginate, whose structure was chemically modified in order to control the properties of the resulting hydrogels. In particular, different crosslinking materials were used to prepare a series of hydrogel characterised by different mechanical properties and water content values. The control of water content (and water release) of hydrogel is expecially important when the cleaning of potentially water-sensitive substrates is considered. Functionalization of alginate was performed by using as much as possible "green conditions", aiming to develop highly sustainable materials. A multi-analytical approach was used to characterize the structure and the properties of hydrogels. The tuning of alginate properties by its chemical modification opens the opportunity to use the corresponding gels for the surface treatment of different substrates like wood, stones, and paper.

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IND-PO-024. Low-carbon hydrogen generation via intensified and electrified biogas reforming

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Hydrogen production from biogas is an interesting option for upgrading the biogas plants that today are incentivized for producing electricity. Hydrogen production can be performed in tubular packed-bed reactors by the well-established steam methane reforming (SMR) process, whose heat demand is satisfied by burners. However, at the small scale of biogas plants, the conventional convective heat transfer is severely limited; we thus propose an innovative reactor layout, where the heat transfer is enhanced by a conductive copper structure packed with catalytic pellets, and the endothermic reaction enthalpy can be supplied from renewable electricity, which heats a resistive wire placed inside the reactor by the Joule effect. The removal of the combustion heating cuts 40% of the emissions associated with the conventional methane steam reforming. In addition, i) if biogenic CO2 is captured downstream of the reactor, the process has negative emissions; ii) with the present electrified technology, the energy required for hydrogen production is only 15 kWh/kgH2 compared to 40-55 kWh/kgH2 for electrolysers. We will report experimental and modelling results obtained in a single-wire lab-scale prototype eSMR which promise high performance in compact reactors, thanks to excellent heat management. Validated mathematical models successfully predict the temperature (see Figure 1) and composition profiles within the reactor and can be used for the design of a scaled-up unit with multiple wires.

ORG-PO-064. Thermodynamic studies on Pb(II) complexes with polydentate linear and macrocyclic ligands

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Although Pb is known to be a highly toxic element at concentrations above 0.1 ppm, the existence of Pb radioisotopes makes it of great interest for biomedical applications. 212Pb decay chain includes 212Bi, which decays mainly through the emission of β-particles and secondarily by emitting α-particles. In order to exploit the properties of the 212Pb/212Bi pair in therapy, it is necessary to identify polydentate ligands that form with both the radioactive cations complexes with high thermodynamic stability and kinetic inertness. Unfortunately, the literature often focuses exclusively on the stability properties of the complexes formed with the parent radiometal (212Pb), as in case of [Pb(DOTAm)]2+ (DOTAm = DOTA tetraamide, Figure 1) which presents several problems such as instability in basic environment and the tendency of primary amides to hydrolysis. In addition, the [Bi(DOTAm)]3+ complex is not stable enough to prevent dissociation of the complex once 212Pb has decayed to 212Bi.1 This work aims to evaluate the stability constants and the kinetic inertness of the Pb(II) complexes of a series of macrocyclic and linear polydentate chelators such as DOTA, DOTAm, DOTP and DTPA (Figure 1 and Table 1). Among them neither the macrocyclic DOTA, DOTAm and DOTP nor the linear DTPA are able to form stable and inert complexes with Bi3+/Pb2+ pair.

ORG-PO-065. Synthesis, biological evaluation and metabolic profile of BAR502/fibrate conjugates

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NASH is a hepatic manifestation of metabolic syndrome characterized by accumulation of fat, inflammation, and fibrosis in the liver. If untreated, it could irreversibly progress to liver cancer or liver cirrhosis.1 New potential therapeutic agents were developed and introduced in the market but at present, there are no approved drugs and satisfying pharmacological treatment. Therefore, there is an urgent need to discover new biological active lead structures useful for the pharmacological treatment of this disease. One of the best approaches in the fight against NASH remains the combination of different agents, that target multiple pathways involved in this pathology.2

In this poster, we propose the development of hybrid compounds, obtained by conjugation, through high-yield condensation reaction, of BAR5023,4 with three different fibrates.4 The aim was to evaluate the ability of these hybrid derivatives to be hydrolyzed in physiologic fluids releasing two active chemical entities, with synergistic action in treating NASH. Within the library of hybrids, compound 1, obtained by conjugation of BAR502 with clofibric acid, showed an interesting activity, maintaining a similar BAR502 dual behaviour towards FXR and GPBAR1 receptors. Compound 1 showed also anti-inflammatory activity, reducing the expression of IL-1β, IL-6 and CXCL2, and was able to reduce the expression of all markers of adipocyte differentiation in 3T3.L1 cells. Furthermore, we have proved by LC-MS analysis that compound 1 is hydrolyzed in mice releasing clofibric acid and BAR505, the oxidized metabolite of BAR502, endowed with retained dual FXR/GPBAR1 activity. In addition, compound 1 showed a high cell permeability in HepG2 cells and a better ability to release clofibric acid compared to clofibrate. These data suggested that compound 1 could be considered a promising pro-drug, achieving higher plasmatic concentrations of clofibric acid and BAR505.

FAR-PO-009. Multistep Flow Synthesis of HYDAMTIQ and Its Derivatives as PARP-1/2 Inhibitors

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HYDAMTIQ is a potent dual PARP-1/2 inhibitor that has been advanced in pre-clinical settings for the treatment of brain ischemia, asthma and cancer.1–3 The original medicinal chemistry route to HYDAMTIQ suffers from some limitations such as the moderate

overall yield, the low scalability and the use of hazardous chemicals.4 To bridge the gap between the initial compound discovery and development, as well as to support further medicinal chemistry investigations, in this communication we report the development of a flow chemistry approach to streamline the preparation of HYDAMTIQ and novel analogues (Figure 1).5,6 The optimized flow process resulted in a greater sustainability and simplification for both scale-up operations and lead optimization programs, enabling the development of novel PARP-1/2 inhibitors with improved properties and therapeutic potential.

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ABC-PO-004. The role of hydrogen peroxide and thermally activated persulfate in phenol removal

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This study investigates the effectiveness of a novel approach that combines hydrogen peroxide (H2O2) with thermally activated persulfate (T-PDS) for the removal of phenolic contaminants from wastewater. Diverging from previous research, this investigation adopts a comprehensive chemometric strategy, utilizing both Response Surface Methodology (RSM) and Principal Component Analysis (PCA) to fine-tune the treatment process parameters, including temperature, pH levels, and the concentrations of H2O2 and S2O82-. The investigation pinpointed the most effective conditions for the degradation process: a temperature of 70°C, a pH level of 5, and a molar ratio of H2O2 to S2O82- at 1:6, with concentrations set at 50 mg/L for each compound. Under these parameters, the degradation efficiency of phenol (PhOH) was observed to be around 89%, reducing its concentration to 1.2 mg/L (initial concentration 10 mg/L). Kinetic studies illustrated a nonlinear reduction in PhOH levels, suggesting a multifaceted reaction mechanism. A significant drop of approximately 38% in PhOH levels was recorded within the initial 15 minutes, followed by an additional 15% decrease over the next quarter-hour, indicating a brisk pace of reaction. The reaction rate then slowed, with PhOH levels plateauing between 75 and 120 minutes, potentially due to the depletion of oxidants or the accumulation of intermediates. The consumption and reactivity patterns of S2O82- and H2O2 were found to differ, underscoring their distinct roles in the reaction mechanism. The accuracy of the model was confirmed by high R2 values of 0.99 for both PhOH and S2O82-, and RMSE (Root Mean Square Error) values of 0.017 and 0.033, respectively. Hydrogen peroxide exhibited a slightly lower R2 value of 0.98 and a higher RMSE of 0.046. These results highlight the potential of the H2O2/T-PDS system for efficient and scalable phenol removal from wastewater, providing a solid foundation for its application in industrial settings. The findings underscore the significance of employing H2O2/T-PDS in broader pollutant management strategies, advocating for environmentally sustainable treatment solutions.

ANA-PO-037. Paper-sensors based on freestanding conductive films of nanofibrillar biochar from industry waste for food by-product valorization

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The circular economy model promotes the use of sustainable materials and wastes/by-products. In the analytical field, this led to new approaches in which ‘recycled materials’ are employed as building blocks for analytical devices manufacturing; these sustainable ‘materials’ often are also sources of compounds with economic/biological added value that deserve to be analyzed, closing the circularity of the process.

In this work, paper-based electrochemical sensors based on films composed exclusively of nanofibrillar biochar (BH) were manufactured and used for the determination of bioactive compounds in food by-products and derivates; the BH was produced from paper-industry waste, while paper from 100% recycled fibers was used as substrate for the sensors. Nanofibrillar BH was dispersed in water via ultrasound-assisted liquid phase exfoliation, conductive BH films were formed onto paper and defined using a laser plotter; eventually, the complete paper sensors were assembled via stencil printing. The biochar-based paper sensors (BH-PS) were employed for the analysis of phenolic compounds (i.e., caffeic acid, catechin, chlorogenic acid, and oleuropein) in exhausted coffee, coffee and cocoa bean husk, and artichoke and olive leaf based supplements. Linear dose-response curves (R2≥ 0.995) and micromolar limits of detection enclosed between 0.03 and 0.6 µM were obtained. Moreover, analysis of samples returned quantitative and reproducible recoveries (97-114%, RSD≤13%, n=3), allowing sorting samples in agreement with conventional more complex, and time-spending methods. Eventually, White Analytical Chemistry principles were used to evaluate the sustainability of the BH-PS-based approach toward traditional analytical methods1 highlighting economic and environmental advantages; on the other hand, the analytical performance obtained ensures an efficient analysis of phenols in food by-products and derivatives, allowing to valorize the residual bioactive components.

ORG-PO-196. Chemically modified and immobilized diatom microalgae for bioremediation from persistent pollutants

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In the last century, intensive human activities changed the equilibria of our planet, mainly by the increase of CO2 concentration and by the introduction of persistent pollutants in natural environments. Among all the available remediation technologies, bioremediation seems to be the most attractive, thanks to its eco-compatibility and efficacy. Several organisms (or parts of them, such as enzymes) could be involved in bioremediation activities. In this context, diatoms, a class of eukaryotic microalgae, are gaining increasing interest, thanks to their presence in quite all aqueous habitat and their adaptability to extreme conditions. Their main feature is the ability to produce a nanostructured biosilica shell, named frustule. Frustules, together with the exopolysaccharides (EPS) external matrix, represent physical and chemical structures for the interaction and sequestration of pollutants in natural environments. Our research group has recently investigated the ability of living diatoms to bioremediate contaminated seawater from heavy metals and persistent organic pollutants. We tested both the intrinsic bioremediation property of the microalgae towards pollutants and the possibility of enhancing this ability via the direct synthesis of a biocompatible coating of polydopamine (PDA) around living cells. Our studies, focused on the diatom model organism Phaeodactylum tricornutum, showed bioremediation activities in seawater model solutions against As, Cr, Pb, Cu, Zn and Sn, and a remediation activity against several biphenyls up to 47% for bare P. tricornutum and up to 97% for PDA-coated microalgae.

ANA-PO-088. Comparison of three spectral ranges in monitoring alcoholic/acetic fermentation in red wine must using FT-NIR spectroscopy

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Wine vinegar is produced through a two-phase fermentation of grape must: initially, yeast converts grape sugars into ethanol, and subsequently, acetobacteria oxidizes the ethanol into acetic acid. This process, spanning weeks, requires constant monitoring for ethanol and total acidity levels. To enhance the quality and efficiency of process monitoring, the food industry is shifting to faster, environmentally sustainable methods. Near-Infrared (NIR) spectroscopy, recognized for its non-invasiveness and speed, is ideal for online implementation in process control1.

This study tracked dual fermentation in red wine must over an extended period, monitoring two batches simultaneously to assess fermentation kinetics and reproducibility. Ethanol and total acidity were analyzed in fermenting musts for almost four months, using both classical laboratory analyses and FT-NIR spectroscopy. Principal Component Analysis (PCA) was used to explore the spectral dataset, then Partial Least Squares (PLS) was used to develop calibration models predicting ethanol and acidity.

The models for the entire spectrum were compared with those obtained for two narrower zones, where more cost-effective and easily miniaturizable sensors are available on the market2. The FT-NIR analysis effectively determined the ethanol content and acidity (R2Pred > 0.98), both over the entire range (12500-4000 cm-1 corresponding to 800-2500 nm) and in the region 10526-6060 cm-1 (950-1650 nm). Although less optimal, still acceptable results were obtained in the 12500-9346 cm-1 (800-1070 nm) region (R2Pred > 0.81), confirming the potential for cost-effective devices in real-time fermentation monitoring.

ANA-PO-149. Recycled plastics and reuse of food contact materials: outcomes from analytical characterisation and performance evaluation

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The new Regulation on Packaging and Packaging Waste encourages the diffusion of reused and recycled plastic items to replace single-use plastics. The conformity of materials for repeated use is checked according to the EU Regulation 10/2011 based on three consecutive migrations, considering that contaminant amount decreases with increasing number of uses. It is generally accounted that migrant amount is proportional to its initial concentration, according to the law of diffusion based on coefficients constant over time1. However, it is not taken into account that aged materials exhibit a different behaviour respect to new items, since washing procedures before reuse, and recycling processes, result in mechanical, thermal and chemical stress affecting additives amount, and leading to the potential formation of non-intentionally added substances (NIAS) from degradation reactions2. Therefore, there is a need for deeper analytical controls, and for performance evaluation of the material during ageing and after repeated industrial processing.

Within a collaboration with some companies, a series of experiments was performed on food contact articles for repeated use, and on virgin and industrial processed PET. To determine the identity of potential contaminants, solvent extraction was carried out before performing migration in simulants. The effect of the use of different solvents has been investigated, and showed a variable patterns of extracted analytes. Additives and NIAS have been identified by chromatographic techniques coupled to mass spectrometry, and quantification was then performed on simulants for the substances whose standards were available.

A different trend depending on the substance was observed: a decrease with ageing was shown for colorants in reused items, whereas compounds deriving from material degradation increased. As for recycled plastics, the effects of industrial processing and recycling procedures were investigated to explore if could lead to additives degradation and formation of NIAS. Preliminary results showed differences in the profile of analytes in PET virgin granules compared to processed material. Aged and recycled bottles were also investigated.

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Research supported by the project “Ecosystem for Sustainable Transition in Emilia-Romagna (Ecosister)”; code ECS00000033 funded under the National Recovery and Resilience Plan (NRRP), Mission 04 Component 2 Investment 1.5 - NextGenerationEU, Call for tender n. 3277 dated 30/12/2021, Award Number: 0001052 dated 23/06/2022

DID-PO-001. From the periodic system to the recognition of carbohydrates

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From the periodic system to the recognition of carbohydrates

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“the Periodic System” by Primo Levi, which represents a key to understanding the periodic system, table of elements. Our guys reviewed the text in an original way, through a podcast. Contents of the podcast: We are chemists, we must not surrender to incomprehensible matter. This is why we are here, to make mistakes and correct ourselves, to take hits and return them. The profession of chemist teaches us that by making mistakes we learn and improve. Making a mistake in an improvised electrolysis experience, Levi guides us through a reflection on the importance of hydrogen, the same one that burns in the sun and stars. Nature is immense and complex, but it is not impervious to intelligence. Chemistry is not an abstract subject, because it sets our reasoning in motion, both in the laboratory and in everyday life. Primo Levi talks about his first falling in love, his teenage life and his relationship with his work colleagues. Experimenting helps us analyze and predict the effects of our actions. Just as carbon, such a simple element, can be transformed into valuable and precious substances, in adverse situations we have the ability to adapt and find beauty in our environment. Chemistry serves to awaken consciences in the dark and sad context of World War II and the Holocaust. Doctor Müller was head of the chemical laboratory at Auschwitz, where Levi also worked. Müller was considered the redeemer of Nazism, he was described as a monster, but Levi knew the human side of him. At the end of the war Müller called Levi, saying he wanted to meet him; he accepted but 8 days later he received the announcement of his death. "I didn't feel capable of representing the dead of Auschwitz, nor did it seem sensible to me to see Müller as the representative of the executioners." The soft and delicate zinc, so succumbing to acids, behaves very differently when it is very pure: then it stubbornly resists attack. Two philosophical consequences can be drawn from this: the praise of purity that protects from evil; the praise of impurity that generates changes, that is, gives life. Impurities are therefore necessary, dissent and diversity are needed, but fascism does not want them, it prohibits them and for this reason you are not a fascist; he wants everyone to be the same and you are not the same. We must not conform to fashion or bad habits, we must not be alienated by prejudices, but be ourselves even when it means not being taken seriously. Impurities make us feel free. Here's what Levi says when talking about his friendship with Sandro: the diversity of our origins made us rich in goods to exchange, like two merchants who meet coming from remote and unknown areas. Our activity is part of another of an experimental nature, starting from the Chapter relating to Carbon:1 “Now our atom is inserted: it is part of a structure... a ring structure, an almost regular hexagon, which however is subject to complicated exchanges and equilibria with the water in which it is dissolved; because it is now dissolved in water, or rather, in the sap of life....It has become part of a glucose molecule... which prepares it for first contact with the world.Recognition Carbohydrates2

Laboratory activity activity 1. Compilation of the table relating to the general information of some commonly used carbohydrates, assisted by 'tasting' and solubility tests; activity 2. Bread making with different types of yeasts and flours and construction of the leavening curve; activity 3. Separation of gluten and starch from a dough of water and wheat flour; activity 4. Colorimetric test for the evaluation of the presence of starch in foods;

activity 5. Colorimetric test for the evaluation of the presence of proteins in foods;

riferimenti

[1] Primo Levi “il sistema periodico”

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IND-PO-025. CO2 photoreduction under solar light with doped perovskites

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Carbon dioxide is an abundant greenhouse gas accounting for 79% of global warming[1]. Photocatalysis is an alternative catalytic approach, exploiting solar energy as an abundant, unlimited, renewable energy source to enable carbon dioxide conversion into different solar fuels[2], without requiring additional energy input. Perovskites such as BaTiO3 and CaTiO3 are promising photocatalytic materials which show good photostability, corrosion resistance in aqueous solutions although absorbing in the UV region, which constitutes only 4% of the solar spectrum.

This study aimed at designing efficient photocatalytic materials to enable CO2 photoreduction under solar light. Perovskites were prepared via hydrothermal synthesis and doped with non-metal dopants, to be then characterized through various techniques and then tested in the CO2 photoreduction in gas phase. Doping enabled the activity of samples upon visible light irradiation, with the best producing up to 1,8 µmol/gcat of methane.

INO-PO-009. GO and RGO doped metals: new MORAL materials for catalytical applications

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Metal ORganic Alloys (MORALs) are a class of materials composed by organic molecules embedded in a metal structure. The chemical reduction of metal salts in the presence of graphene oxide (GO) suspension led us to the obtaining of GO doped metal dusts (GO@metal).

The subsequential reduction of embedded GO using thiophene in order to obtain reduced graphene oxide (RGO) allowed a further modification the materials to achieve RGO@metal.

These materials have been characterized by different analytic techniques such as TEM microscopy, XRPD, XPS and FT-IR, proving the coexistence of metal nanoparticles together with graphene oxide. Tested in different reactions, their catalytical activity emerged particularly in the nitro-group reduction and Suzuki-type C-C cross coupling.

The incorporation of GO and RGO in the metals has given the materials greater stability as catalysts in subsequential reaction runs and improved conversion when compared to the undoped metals obtained following the same protocol.

ORG-PO-067. Effect of dopants on Spiro-OMeTAD in perovskite solar cells: device preparation, characterization and sustainability aspects

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The deployment of renewable energy sources is a critical strategic lever for decarbonizing the energy sector and mitigating the effects of climate change1. Solar PV and wind power are the main tools for reducing emissions from the electricity sector, and the IEA predicts that the growing competitiveness of solar PV could lead its installed capacity to surpass that of wind power before 2025 and coal before 20402.

Perovskite solar cells are emerging as a promising photovoltaic technology due to their outstanding power conversion efficiency (PCE) and low material costs. Since the first report of a solid-state solar cell with a PCE of 9.7% in 2012, progress has led to a certified PCE (NREL) of 26.1%. A prevalent material for the hole transport layer (HTM) is Spiro-OMeTAD, often doped with metal salts of bis(trifluoromethyl-sulfonyl)imide (M(TFSI)n). These dopants play a crucial role in generating radically active cationic species within the HTM3.

In the first part of the work, carried out at Uppsala University in Professor Gerrit Boschloo's research group, perovskite solar cells were prepared and the effect of metal cations (M= Li, Zn, Mg, Cu) on the doping of Spiro-OMeTAD was analyzed by a combination of techniques, including Electron Paramagnetic Resonance (EPR), UV-Visible and photoluminescence, complemented by analysis of fabricated photovoltaic devices.

In the second part, carried out in the R2ES research group of the University of Siena, DFT (Density Functional Theory) calculations were performed on the Spiro-OMeTAD radical cation in different environments, which confirmed the good hole-transport capacity of the above-mentioned material due to the broad delocalization of the spin density over the entire molecule in all cases considered. Moreover, calculations of (Spiro-OMeTAD)•+ on CH3NH3PbI3 surface's paramagnetic properties are ongoing.

The study also delved into the criticality of raw materials and hazardous chemicals for the advancement of renewable and sustainable technologies, focusing particularly on perovskite solar cells. Several raw materials used in these cells were evaluated for their criticality and potential risks, considering their roles as electrode materials, components of electron-carrying layers, photoactive materials, and p-dopants. Some of these materials, such as indium, magnesium, and lithium, were identified as critical due to factors such as availability, import/export dynamics, price, widespread industrial use, and recycling challenges. However, it was noted that alternatives to these materials are readily available. In future research, the use of alternative materials that don't pose human health risks or supply chain issues will be explored.

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FAR-PO-113. New hydroxypyrazole inhibitors of Plasmodium falciparum dihydroorotate dehydrogenase: physical-chemical characterization and biological evaluation

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Malaria is an infectious disease caused mainly by Plasmodium falciparum that is responsible of millions of deaths every year. Although vaccines for the prevention of malaria have a suboptimal efficacy, chemotherapy approach represents the main treatment. However, drug resistance is very common and new chemoterapic approaches have been identified. One of the most promising discoveries is the targeting of the Plasmodium falciparum dihydroorotate dehydrogenase (PfDHODH). DHODH, a ubiquitous flavin mononucleotide

enzyme, acts as the pivotal rate-limiting step in de novo pyrimidine synthesis, facilitating the conversion of dihydroorotate (DHO) to orotate (ORO). This pathway is crucial for the survival of the parasite, as Plasmodium species lack the capability to utilize salvage pathway for pyrimidine acquisition, relying exclusively on de novo synthesis.

The Medsynth group, an academic research team of Turin University, previously published a work based on hydroxyazole scaffold-based PfDHODH inhibitors. Starting from the lead compound 1, a new series of hydroxypyrazole inhibitors has been synthetized and investigated. Here we present the characterization of the inhibitor activity on the recombinant PfDHODH of the new hydroxypyrazole inhibitors, their selectivity over the human isoform, their physical-chemical proprieties and their activity on Plasmodium falciparum-infected erythrocytes. Finally, co-crystallization studies of the most promising compounds are shown.

TEF-PO-006. Curcumin-loaded O/W nanoemulsions: combining pH-sensitivity with potential effect of natural active compounds

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The incidence of melanoma is rapidly increasing worldwide; improvement of both target and immune therapies against melanoma is counterbalanced by a high percentage of severe drug-related toxicity. In fact, tumour microenvironment represents a key obstacle for drug efficacy, being characterized by hypoxia, low blood pressure and acidic pH [1]. To enhance the effectiveness of cancer chemotherapy it is necessary to develop nanocarriers that can be triggered to release the anticancer drug in response to extracellular or intracellular chemical stimuli (e.g., pH, temperature) [2]. Therefore, the use of nanocarriers composed of pH-sensitive substances, like Oleic Acid [3] could exploit the physiological differences between tumour cells and normal cells.

The aim of this study was to develop oil-in-water nanoemulsions (NEs), composed of Oleic Acid, Hepes buffer (pH 7.4 – 10-2M), and Tween 80. NEs were loaded with curcumin, a natural compound useful for enhancing the existing chemotherapy treatments against melanoma [4].

A deep physical chemical characterization of NEs was carried out evaluating size, PDI, ζ-potential, fluidity, microviscosity and polarity. The pH-sensitivity of formulated nanocarrier was demonstrated through fluorometric assays employing different probes, like DPH and Pyrene and by morphological studies utilizing TEM.

Looking to pulmonary administration, NEs were coated by Chitosan, a mucoadhesive agent, to enhance the nanocarrier lung residence time and the selected formulations remained stable even during the nebulization process.

In order to confirm NEs stability and curcumin stability in terms of decomposition/degradation, all samples were analysed by DLS and UV analysis for 90 days at room temperature and 4°C.

Finally, cytotoxicity, cellular uptake and in vitro activity were investigated in order to assure the safety and the activity of characterized NEs against B16F10 melanoma cell line.

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INO-PO-027. Improved mechanochemical synthesis of MIL-100(Fe) and MIL-100(Fe)@Carbon Metal-Organic Framework composite for PFAS polluted waters remediation

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MOFs are a class of crystalline solids with permanent porosity. They are coordination polymers made up of metal ions or metal clusters linked together by organic ligands. MOFs are promising materials for application in the chemical industry of the future due to their outstanding properties. Their porosity and the high tunability of internal surface open many possibilities for their use in different fields such as catalysis, gas storage and separation4. However, their application is often hindered by the cost of the precursor and by the demanding synthetic conditions. Moreover, the manufacturing of MOFs containing materials is still in early development. One of the most promising MOF is MIL-100 (Fe): it was firstly synthetized by Férey et al. and possesses large cages with diameters of about 25 and 29 Å1 with reported Langmuir surface area up to 2800 m2/g. One big advantage of this MOF is that is built by inexpensive and non-toxic constituent such as Iron and trimesic acid. However, its synthetic procedure requires toxic organic solvents, such as DMF and hazardous synthetic additives (i.e. hydrofluoric acid or nitric acid), and high temperature and pressure1. Recently there were some attempts to prepare this material in a greener way and a water-based synthesis for MIL-100 (Fe) was developed2. However, the use of water as solvent is still problematic since it consumes an important resource and produces a lot of wastewaters rich in inorganic salts and acids. As a result, solvent free synthesis seems to offer an ideal mean to obtain this material. It was recently reported that hand grinding of the precursor powders and subsequent annealing of the mixed powder at high temperature followed by immersion in water can produce MIL-100 (Fe)3. Here we propose a new synthetic method which replaces hand grinding with the use of a ball miller to improve reproducibility and scalability of the production of MIL-100 (Fe). This process offers advantages over the previous methods since it is more rapid, preventing waste of time, and it uses lower temperature and less water, thus improving energy efficiency and reducing waste and resource consumption. Moreover, we could extent this procedure to a new method for the creation of a new composite material made of intimately bonded MIL-100 (Fe) on carbon particles. This material opens the possibility of improved manufacturing of MOFs since this powder can be formed in a pellet that better fit existing technology for adsorption of gases or

molecules from liquid phase. We assessed the crystallinity of the materials using X-ray powder diffraction and their gas adsorption properties through N2 adsorption isotherms. We also tested these materials for the removal of perfluoroalkyl substances, PFASs, from water, with promising results.

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ORG-PO-068. Sustainable cross-coupling protocol: Miyaura borylation and one-pot Suzuki-Miyaura reaction in Deep Eutectic Solvents (DES)

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Deep Eutectic Solvents (DESs) represent a sustainable alternative to common organic solvents complying with green chemistry requirements. In this work, DESs have been employed for the first time for a Miyaura borylation and Suzuki-Miyaura cross-coupling one-pot protocol.

Starting from a precedent work on direct arylations in DES, the protocol was optimized for borylation and coupling of (hetero)aromatic iodides, bromides, chlorides, and triflates in choline chloride/glycerol (1:2) and choline chloride/glucose (2:1) DESs. Robust and efficient conditions were found for electron-poor and electron-rich (hetero)aryl substrates. The boronic esters were isolated and characterized or directly exploited for cross-coupling in a one-pot fashion. The optimized protocol was successfully applied for preparing conjugated organic compounds with potential application in optoelectronics. The protocol sustainability was assessed through green metrics and compared with the literature when possible.

IND-PO-053. NH3 catalytic cracking with direct Joule heating in packed POCS

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To overcome the challenge of hydrogen storage and transportation, one possible solution is NH3, a commodity whose global production is in the range of 150 Mton/year that can be easily liquefied under moderate pressure. For its use as a hydrogen carrier, however, a substantial development of the ammonia decomposition process is needed. In this work we propose a novel electrified reactor concept were a SiSiC foam packed with a commercial Ru-based catalyst is used as a direct ohmic heating element able to achieve conversions > 95% at a GHSV of 3750 Ncc/h/gcat with thermal efficiency > 60%.

IND-PO-026. Exploring natural phenols for the synthesis of bioactive polymers

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The design of polymers from renewable sources or wastes is one of the most intense field of research in the drive towards a fully sustainable and circular bioeconomy. Substances like phenols, terpenes, vegetable oils, are eligible raw materials for the manufacture of a variety of polymeric materials, including elastomers, plastics, hydrogels, and composites. Herein we present the use of bioactive natural phenols, tyrosol (Ty) and eugenol (EU), as building blocks for the obtainment of bioactive polymers. Ty is an abundant phenol in olive oil mill wastewater while EU is a phenolic monoterpenoid obtained mainly from clove oil and lignin. Both compounds were functionalized with acrylic moieities to obtain polymerizable monomers. In the case of EU, the allyl group was submitted to epoxidation and then reacted with 2-hydroxyethyl methacrylate (HEMA) to obtain EUMA monomer.

The synthesized copolymers showed significant elastomeric properties and swellability degrees related to the phenol group content. A relationship between polymer composition, structure and biological activity was found. Currently, the synthesised phenol-based acrylic monomers are being tested in additive manufacturing processes to obtain insoluble manufacts with desired geometry and biological features.

TEC-PO-049. PVDF coated membrane for improved saline water treatment

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MEloDIZER is a European project, funded by the European Union under the Horizon Europe programme, with the overall aim of providing the necessary step to transform membrane distillation (MD) into products that benefit industry and society1.

To do this, the heart of the research will focus on providing high-performance membranes and modules through the use of components (such as polymers, solvents, functionalization materials, etc.) that can be used on a large scale but which at the same time are sustainable (replacing current potentially harmful materials with non-harmful ones and following the principles of green chemistry)2. The best design of this technology, when combined with the most appropriate mix of renewable energy resources, will be the key to its effective application in different fields, both in industry and on a domestic or community scale.

To this end, two different paths were followed in the creation of new membranes. The first involves the creation of flat PVDF-based membranes through the use of non-toxic solvents instead of classic solvents (e.g. N-butylpyrrolidone with the trade name Tamisolve). The second path involved the study of the coating of commercial PVDF membranes in order to improve MD performance. Fluorinated oligomer (PFPE) was chosen as the coating, with the trade name Fluorlink®. Fluorolinks were selected for their high chemical resistance, water-oil repellency, tendency to increase hydrophobicity and chemical energy, and low surface tension3.

The performance of PVDF membranes was evaluated in MD devices where different concentrations of salt were used as feed. Specifically, direct contact and vacuum membrane distillation were used to test coated and uncoated membranes. When the PFPE coating is present on the PVDF membranes, an improvement in hydrophobicity was achieved. For example, in the case of the commercial PVDF membrane, the contact angle increases from 132 to 150°. These results indicate an improvement in the wetting resistance of the membranes during long-term MD tests (membrane tested for 60 hours without wetting). In fact, in the case of 0.6M NaCl solution as feed, the flow obtained with the coated membrane appears more stable than the uncoated membrane (average flow of 8.42 and 8.14 L/m^2*h, respectively). Furthermore, salt rejections range from 99.99 to 100% for the uncoated membrane and 100% for the coated membrane. The results obtained, within the Melodizer project, encourage the implementation of high-performance membranes and modules in strategic membrane distillation applications, thus providing the decisive step for the success of MD.

ORG-PO-069. Synthesis and characterization of Palladium containing polymeric colloidal nanoparticles for heterogenized catalysis

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Sustainability is an important concern for the development of new organic materials. Synthetic procedures should become simpler, more efficient and less resource-intensive. Furthermore, waste must be avoided as much as possible. Hence, the combination of heterogeneous catalysis and micellar approaches can have a major impact on this field. Micellar catalysis helps in getting rid of organic solvents replacing them with water and in creating nanometric environments having enhanced reagent local concentrations to assure higher reaction rate and selectivity1. Easy recovery, reuse, and lack of toxic ligands make heterogeneous catalysts preferable with respect to homogeneous ones, although several challenges have yet to be faced: heterogeneous catalysts have lower activity, selectivity, and stability with respect to homogeneous ones, beside suffering from metal leaching phenomena. Undoubtedly the need for high surface area, reactant compatibility and homogeneous active sites distribution are the starting point for further studies2. Having all these challenges in mind, we developed a new heterogenized catalyst having π-conjugated organic colloidal nanostructures obtained through micellar polymerization as active sites support. They are designed to be intrinsically stable, water-dispersible and to embed the Pd catalyst involved into their own synthesis so that they could be directly reused as heterogenized catalyst in further micellar cross-coupling reactions. As a proof of concept, we synthetised a first-generation heterogeneous catalyst through deposition of Pd metal nanoparticles (Pd-NPs) on reprecipitated Poly(9,9-dioctyl)fluorene (PFO) nanospheres, then we tested its catalytic activity in in-water micellar Suzuki-Miyaura reactions. The efficiency of such catalyst was compared to that of the benchmark heterogeneous palladium catalyst Pd/C (Evonik hydrogenation catalyst). The initial findings show higher conversion associated to the use of the polymer-supported Pd catalyst. Furthermore, recycling of the catalyst is also possible thanks to the development of a straightforward workup procedure. The second-generation heterogenized catalyst requires the synthesis of conjugated polymer nanoparticles (CPNPs) by direct miniemulsion Suzuki polymerization. Literature examples of CPNPs synthesis always contemplate a purification step, to get rid of surfactants3. However, in this case, their entanglement within the colloidal structure is a crucial advantage: they constitute a template in which the polymeric nano-object can grow having a controlled morphology, and they make it suitable for its final application as catalyst. The synthesis produces dispersed spherical Pd-embedding polymer-surfactant semi-interpenetrated networks (sIPN). Such dispersion was then used as heterogenized catalyst showing the highest conversion rate. Encouraged by preliminary results both catalyst generalities are currently under investigation as well as the fine tuning of the structure of the polymeric support. The final big picture foresees the study and understanding of how the presence of heteroatoms, double bonds and porosity can influence the performance of these new catalyst in order to unveil the active role of the supporting part.

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INO-PO-048. Enhancing Chronic Wound Healing: Injectable Hydrogels incorporating Cerium-Doped Mesoporous Bioactive Glasses

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Bioactive glasses (BGs) have traditionally been applied in hard tissue regeneration due to their ability to induce apatitic layer (HA) formation upon exposure to biological fluids. However, research is focusing on expanding their application field to soft tissue regeneration, particularly for chronic wounds.1 This study investigates the integration of cerium-doped mesoporous bioactive glasses (Ce-MBGs) into alginate/agarose injectable hydrogels to develop delivery systems with enhanced antioxidant properties for chronic wound healing.2-3

Ce-MBGs were synthesized via a modified sol-gel EISA method with 0-3.6 mol% CeO_2, then incorporated into an optimized thermoresponsive alginate/agarose hydrogel. The HA formation was monitored via FT-IR and XRDP analyses after soaking in simulated wound fluid (SWF). These results suggested that the hydrogel matrix slowed the HA formation ability of Ce-MBGs, decreasing the possibility of wound calcination. Additionally, ICP-OES analyses demonstrated that the hydrogel matrix did not hinder the ionic release: Ce-MBGs with or without hydrogel exhibited similar Ca, P and Si leakage up to 3 days. It was also verified that the hydrogel did not interfere with Ce antioxidant properties, since all Ce-containing samples maintained their H_2O_2 scavenging ability. If Ce-MBGs were loaded with a mixture of natural polyphenols, the composite hydrogels also exhibited a fast O_2^- dismutation ability.

These findings underline the potential of Ce-MBG-containing injectable hydrogels as promising platforms for chronic wound management. Therefore, future investigations will delve into the drug releasing ability of this composite system and assess the hydrogel cytocompatibility.

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ANA-PO-085. Simultaneous quantification of indigotin and indirubin in industrially produced natural indigo pigment

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Historically, indigo has played a crucial role in textile dyeing processes[1]. Traditionally sourced from plants like Indigofera tinctoria, Isatis tinctoria, and Persicaria tinctoria[2], natural indigo consists of two main components: indigotin, responsible for the blue hue, and indirubin, contributing to the red-violet shade[3]. The combination of these compounds imparts a distinct color to the fabric, in contrast to synthetic indigo, which solely contains indigotin. The industrial, sustainable production of indigo necessitates a unique extraction process wherein calcium hydroxide is added to promote hydrolysis of the precursor inside the plant and facilitate the isolation of the pigment. Commercially accepted natural indigo is formed by approximately 80% calcium carbonate and the remaining organic components[4]; the inorganic portion poses a significant challenge for the determination of colored compounds, as it is insoluble in both water and organic solvents. It is necessary to implement a method for quality control of the industrial pigment obtained.

Presently, methods for determining indirubin are based on High-Performance Liquid Chromatography (HPLC), involving the extraction of the analyte from the powder using an organic solvent such as methanol or acetone. In these solvents, indigotin is not very soluble, requiring a different technique for its determination. Indigotin determination involves chemical reduction, forming a water-soluble leuco-indigotin subsequently determined using a spectroscopic technique. In an industrial setting, it is crucial to possess a method that can quantify both indigotin and indirubin in a sample. This allows for determining the ratio between these analytes and controlling various parameters in the industrial production process.

To address these challenges, dimethyl sulfoxide with the addition of hydrochloric acid was used as a solvent to promote the complete dissolution of analytes. This allowed for the injection of the solution into a UHPLC-PDA system. Separation of indirubin and indigotin was achieved using a reverse-phase C-18 column and a mobile phase consisting of water and acetonitrile. Identification of the two analytes was conducted by exploiting the different absorption spectra in the UV-Visible region. This novel procedure can also serve as a reference method in view of the development of faster and more cost-effective methodologies based on electrochemistry or UV-Visible spectroscopy for the characterization of natural indigo.

ANA-PO-113. Deep eutectic solvent-assisted matrix solid-phase dispersion extraction of phenolic compounds from pigmented wheat

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Wheat is a crop grown globally and consumed as a staple food in many countries1. Wheat-based foods can lower the risk of certain serious diseases, such as cardiovascular ones and some types of cancer. This work focuses on black wheat, a species that exhibits higher protein, essential amino acids, dietary fiber, vitamin K, total flavonoid (TF) and phenolic (TP) contents than soft wheat1. The incredible properties of wheat-based foods are attributed to the phytochemicals present in them, phenolic compounds in particular2.

The aim of the work was to develop a green analytical method for the analysis of phenolic compunds improving the extraction yield of these compounds, using a deep eutectic solvent (DES) during the homogenization step of a matrix solid phase dispersion (MSPD) extraction. FLORISIL® was chosen as sorbent phase, and the analytes extraction was carried out by using a MeOH:H_2O mixture, 80:20 (v/v) ratio.

Type III DESs were prepared, characterized by a strong hydrogen bond between a hydrogen bond acceptor (HBA) and a donor (HBD), mixed at a specific molar ratio. In this case, choline chloride (ChCl) and betaine (Bet) were tested as HBAs while glycerol (EG) and ethylene glycol (Gly) were tested as HBDs.

An OVAT (one-variable-at–a–time) optimization permitted to evaluate the parameters able to give the highest extraction yield. The results, evaluated by the Folin-Ciocateau spectroscopic assay, were analyzed using the Box Behnken statistical program. By means of the response surfaces, it was possible to find the following optimal conditions: 1:3 as sample:dispersant material ratio (w/w), 87.65 µL as DES volume, 1 cycle and 1.42 mL as extraction phase volume. The final extract was analyzed by means of a high-performance liquid chromatography with diode array detection (HPLC-DAD) system. Finally, comparison with standard solutions permitted the identification of the following analytes: gallic acid, protocatechuic acid, kampferol, catechin, kampferol 3-o-rutinoside, and ferulic acid.

Acknowledgements:

Funded by the European Union - Next Generation EU - NRRP M4.C2 - Investment 1.4 Strengthening research structures and creating R&D "national champions" on specific key enabling technologies (Project n. CN_00000022, “National Research Centre for Agricultural Technologies - Agritech”).

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TEC-PO-010. A branched fluorinated dendrimer as microRNA carrier in amyotrophic lateral sclerosis murine in vitro models

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In recent years, gene therapy has emerged as a promising approach for the treatment of motorneuron diseases, such as amyotrophic lateral sclerosis (ALS), a fatal neurodegenerative disease characterized by motor neuron loss associated with muscle atrophy1.

microRNAs (miRNAs) are small non-coding RNAs that modulate gene expression and they are key molecules in the onset of muscle atrophy2. Yet, the delivery of Nucleic Acids (NAs) inside the cell is a challenging task. Cationic lipids and polymers, particularly cationic dendrimers, have shown to be promising as gene delivery vectors due to their ability to complex NAs and protect them from degradation. In this context, some of us have recently developed FJD2N, a novel gene delivery vector based on a fluorinated Janus-type dendrimer3 bearing four terminal ammonium groups. This molecule is able to self-assemble in aqueous solution forming positively charged micelles that are able to interact with the negatively charged phosphate groups of NAs forming dendriplexes4. This carrier was tested on cells derived from G93A-SOD1 mice, a purported model of ALS. Immunofluorescence and molecular analysis displayed a good carrier cellular internalization, no cytotoxic effects on proliferation, as showed by caspase expression levels and a significant modulation of the selected miRNA on the target genes implicated in cell regeneration.

Based on these results, this new vector appears to be a promising carrier for gene delivery applications but further in vitro tests on a larger scale are needed to ultimately understand its complete functioning.

FAR-PO-041. New carbonic anhydrase modulators structurally related to histidine and histamine.

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Carbonic anhydrase (CA) was first discovered in 1933 by Meldrum and Roughton, who described its efficient catalysis for the reversible hydration of blood CO2 to bicarbonate and protons. This enzyme is so crucial for life that in over ninety years of studies it was found to be expressed in most if not all organisms. Eight families (α-ι) are known to date, among which the α family is the one expressed in human tissues. Many fundamental physiological processes have been correlated with the 15 human isoforms, such as electrolyte secretion, respiration, CO2 transportation, gluconeogenesis, adipogenesis, ureagenesis, and more. Accordingly, altered activity or expression of these isoforms are correlated with numerous pathologies, even if the role of some isoforms remains unclear. Several molecules behave as CA inhibitors (CAIs) by chelating the Zn2+ ion necessary for the catalytic activity, or as CA activators (CAAs) by increasing the catalytic rate of the enzyme. CAA are basic compounds that behave as proton shuttles, being part of a network formed of H-bonded water molecules and residues. Several X-ray structures of CA-activator complexes are available, including those of histamine (HST) and D- or L-histidine (HIS) with CA II. Based on this information and on our group’s effort in producing new piperazine scaffolds which already proved to generate some interesting selectivity, we synthesized a series of rigid analogues of histidine as activator and then introduced a well known zinc-binding group to switch to inhibitors. The CA modulating properties and the isoform selectivity of the new compounds will be discussed in this presentation.

TEF-PO-019. Cytotoxicity of curcumin decorated silver nanoparticles on human fibroblasts

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Silver nanoparticles (AgNPs) have been long known for their antimicrobial activity and are currently commercialized in different consumer products, medicinal products and medical devices. However, their safety has been questioned and, even though many studies on teir toxicity have been performed, the results reported in literature are often unexhaustive and contradictory.1

Here we report the results of AgNP cytotoxicity on WS1 human fibroblasts taking advantage of ptychography, a label free, high-contrast imaging technique for live cells using quantitative phase information. Ptychographic quantitative phase imaging (QPI) technology gives consistent information on cell morphology (e.g., sphericity) proliferation and growth (e.g., dry mass content, cell number), cell motility (e.g., displacement, track speed) providing much more complete information on nanomaterial cytotoxicity than conventional assays.2

AgNPs were synthesized employing a safe-by-design approach and using hydroxyethyl cellulose as reducing/capping agent (AgHEC)3 and curcumin (AgCUR) as natural occurring adjuvant, to take advantage of the potential synergistic antimicrobial and/or antiviral effect of Ag and curcumin.

The selected AgHEC and AgCUR formulations had selectivity index (SI) of 22 and 47, displaying effective antiviral concentration 50 (EC50) at concentration of 12 and 8 ppm, respectively.

On human fibroblasts, AgCUR demonstrated a reduced cytotoxicity with respect to AgHEC, probably due to the intrinsic curcumin antioxidant properties resulting in a cell protective effect. AgCUR had no significant effects on cell morphology and at 49 ppm the dry mass content and the cell number were similar to the untreated control. Cell motility was affected significatively only at the highest concentrations (e.g., 195 ppm) with no effect at concentrations lower than 97 ppm.

Taken together, these results demonstrate the potential value of AgCUR as antiviral tool with a favourable cytotoxicity profile.

ORG-PO-070. Towards the total synthesis of gnetin c

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Dihydrobenzofurans and 2,3-dihydrobenzofurans are known for their important biological properties like anticancer, anti-inflammatory and antioxidant [1]. Many of them are naturally produced by the dimerization of polyphenols as resveratrol, one of the most important stilbenes. Among them, gnetin C is particularly interesting as it is currently in III phase of clinical studies of prostate antitumor compound [2]. Up to now no synthesis of gnetin C has been performed.

To this challenging end we are investigating a strategy to synthesize it. A preliminary attempt has been conducted using a 1,3-dicarbonyl compound and an internal olefin in a [3+2] addition promoted by an oxidating agent, in order to obtain the dihydrofuran [3], which has been aromatized to the corresponding dihydrobenzofuran.[4,5]. A regioisomeric mixture has been obtained deriving from different reactivity of the two possible sites of attack to the olefin.

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INO-PO-011. Reductive cyclization of nitroarenes with CO surrogates for the synthesis of six-membered heterocycles

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Transition-metal catalyzed reductive cyclization of nitroarenes represents an efficient and versatile strategy to afford N-heterocyclic compounds in one step. In this regard, carbon monoxide emerges as an optimal reductant, allowing clean reactions and a simplified work-up, with gaseous carbon dioxide as the sole stoichiometric byproduct. Recently, the use of CO-surrogates, molecules capable to release CO during the reaction, has allowed to release the constraints for autoclaves, pressurized lines and safety measures, generally required to handle gaseous carbon monoxide.1 Our group has recently reported that phenyl formate acts as an excellent CO-source in the palladium/phenanthroline catalyzed synthesis of indoles,2 carbazoles3 and oxazines.4 A further improvement has been achieved by employing formic acid, in the presence of an equimolar amount of acetic anhydride and a base5,6 as a more atom economical and cheaper CO-surrogate. Among the various possible heterocycles obtainable by intramolecular reductive cyclization reactions, those leading to six-membered rings had proven to be more challenging. Here we report the synthesis of phenazines, an important scaffold present in several natural and synthetic products with biological activity. Despite harsher conditions are required to carry out the cyclization with respect to the five-membered ones, it was possible to employ a catalytic ratio of 4000, uncommon for these kind of reactions.

ALI-PO-018. Characterization of phenolic compounds in olive leaves of three different Olea europaea cultivars by HPLC-PDA/MS

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Olive oil production has expanded, resulting in a significant amount of solid and liquid by-products. From an economic and environmental perspective, the accumulation and management of residues represents a significant challenge. However, the valorisation of these by-products to recover and/or bio-transform their organic content is a significant potential, transforming the waste treatment process into one that produces high value products. In particular, olive leaves are one of the most important agricultural biomasses

obtained from the pruning of olive trees, which can be considered as an available industrial by-product. They are known to be a rich source of various phytochemicals, including phenolic compounds, with high potential for their antioxidant properties.

The aim of this study was to characterise the main bioactive compounds from olive leaves of three different Olea europaea cultivars. Olive leaves are subject to solid-liquid extraction and then the analyses were carried out by high-performance liquid chromatography combined with photodiode array and mass spectrometry detection. The present analytical method has already successfully been employed by our research group in the drupes and olive oil and and wastes1. Method validation was performed in terms of limit of detection (LoD), limit of quantification (LoQ), linearity range, reproducibility and repeatability. Recovery of the method was performed achieving good results.

Acknowledgments

The researches were performed within the framework of the Research Project PRIN PNRR 2022- MISSIONE 4, COMPONENTE 2, INVESTIMENTO 1.1 - BANDO PRIN 2022 PNRR - DECRETO DIRETTORIALE N. 1409 DEL 14-09-2022: REcovery and Enhancement of WAste and processing products of the olive oil industry thRough innovative analytical methods for the Development of newly developed NUTRAceutical and COSMetic prOducts (REWARD-NUTRACOSMO), supported by the Italian Ministry of University and Scientific Research, no. Prot. P20224ZHA5, CUP: J53D23014480001.

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CSB-PO-002. Screening of Inhibitors of ALR Protein–Protein Interaction Pathway using NMR spectroscopy

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MIA40 and ALR of the MIA pathway mediate the import of protein precursors that form disulfides into the mitochondrial intermembrane space. This import pathway is suggested to be a linear pathway in which MIA40 first binds to the precursor via a disulfide linkage and oxidizes it. Subsequently, ALR re-oxidizes MIA40 and then ALR transfers electrons to terminal electron acceptors. However, the precise mechanism by which ALR and MIA40 coordinate translocation is unknown. With a collection of small molecule modulators (MB-5 to MB-9 and MB-13) that inhibit ALR activity, we characterized the import mechanism in mitochondria. NMR studies show that most of the compounds bind to a similar region in ALR. Mechanistic studies with small molecules demonstrate that treatment with compound MB-6 locks the precursor in a state bound to MIA40, blocking re-oxidation of MIA40 by ALR. Thus, small molecules that target a similar region in ALR alter the dynamics of the MIA import pathway differently, resulting in a set of probes that are useful for studying the catalysis of the redox-regulated import pathway in model systems.

ORG-PO-122. Outright DFT method for determining pKa and pKb of small organic compounds.

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We have developed a method characterized by exceptional reliability, for determining the pKa of a wide panel of organic acids, such as phenols1 and carboxylic acids2. Our “easy to use methodology” returned minimum average error (MAE) lower than 0.3 for phenols pKa, and 0.5 for carboxylic acids. Further, it can predict with great reliability the pKa of difficult to model compounds (i.e. trichloroacetic acid) with a simple level of theory2. It exploits CAM-B3LYP as functional, the solvation model based on density (SMD) and 6-311G+(d,p) as basis set1-3. In our approach, we draw the very first solvation shell, adding two explicit water molecules at the reaction centre. The pKa is calculated applying the ionogenic equation, without the usage of experimental energy values for H+ nor ex post facto correction. Recently, we explored the possibility of applying this methodology in predicting the pKb of primary aromatic and aliphatic amine, obtaining impressive results, i.e. MAE=0.3. Such striking result strengthens the reliability of our approach1-3 providing, for the first time, the possibility to predict the pKa and pKb of small organic compounds with the same methodology, always ensuring trustworthy outputs.

IND-PO-027. Thermochemical Conversion of Biomass for Sustainable Energy and Materials

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The pressing environmental concerns related to fossil fuel consumption and the growing global demand for energy, chemicals and materials greatly encourage the development of technologies to replace oil with renewable carbon sources1. In this context, lignocellulosic biomass (i.e., plant-derived feedstock, particularly from non-edible sources) stands out as a promising alternative carbon source due to its high availability and versatility. The conversion of waste biomass not competing with the food industry, in compliance with the RED II Directive, offers an efficient strategy to produce biofuels for the transport sector while also playing a crucial role in generating secondary raw materials, thereby providing a viable alternative to the fossil-based economy. This work focuses on different thermochemical conversion methods (pyrolysis, HTL and HTC) in order to evaluate the most suitable strategy to obtain high value-added products and mainly bio-fuels form residual biomass. The use of different processes and reactors (microwave oven and stainless-steel autoclave), as well as the choice of appropriate reaction conditions in terms of temperature, time, and catalysts, promote the synthesis of the target fraction and affect its chemical-physical composition. Characterization of the products (solid, liquid and gas) was essential to assess the difference effects between the strategies and reaction conditions employed. Emphasis was placed on the chemical characterization of liquid fractions to assess the distribution of different classes of organic compounds, in particular aliphatic and aromatic hydrocarbons. Furthermore, the surface characterization of the solid fractions led to evaluate the most suitable conditions

for the production of bio-materials. The study explores the possibility to produce biofuels and high value-added products from waste biomass in a circular economy perspective.

ABC-PO-050. Removal of nitrogen fraction in livestock farm wastewater using an electrochemical reactor for sustainable reuse.

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Wastewater is rich in ammonium nitrogen, which is transformed into nitrate by aerobic bacteria spontaneously present in the soil. Nitrate is highly soluble in water and leaches into all environmental matrices, leading to environmental, humans, economic and social risks. Therefore, removing ammonium nitrogen is crucial. This research proposes an innovative approach based on electroxidation (EO). The research started with the design of the reactor and continued with its operation to intensify the electrochemical process and evaluate its engineered application. Applying electric current EO allows the transformation of ammonium nitrogen into gaseous nitrogen, avoiding nitrate and nitrite generation1, and without sludge production, which contribute to the pollution of the environmental matrices. The tests were performed by using an advanced flat reactor. This study also combines the application principles of sustainable development, Agenda 2030, for the reuse of wastewater.

ANA-PO-157. A study of emerging contaminants present in Antarctic matrices by means of high-performance liquid chromatography coupled with mass spectrometry

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In this study, a comprehensive assessment of Antarctic contamination was undertaken by evaluating two distinct approaches. The bioindicator species Adamussium colbecki was analysed alongside the Polar Organic Chemical Integrative Sampler (POCIS) deployed during the 2022-2023 Antarctic campaign. A. colbecki samples underwent a QuEChERS (Quick, Easy, Cheap, Effective, Rugged, and Safe) pre-treatment procedure that was optimised using an experimental design technique. POCIS sorbents were eluted with a two-step elution by using methanol and a dichloromethane-isopropanol mixture. The resulting extracts were run dry and resuspended with methanol. The extracts obtained from the two methods were analysed using high-performance liquid chromatography-tandem mass spectrometry (HPLC-MS/MS).

ELE-PO-008. Crosslinked ionogels containing active fillers for lithium-metal batteries

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Lithium-ion batteries (LIBs), despite being a rather recent invention, gained a dominant role in the field of energy storage due to their high energy density, long cycle life and low self-discharge. LIBs experienced a dramatic improvement since the first studies in this field in the past century. However, the current technology still requires further improvement to meet the market needs. Concerning next-generation anodes, lithium metal is the most promising candidate, owing a specific capacity (3860 mAh g-1), which is about ten times higher than the presently used graphite (372 mAh g-1), and a very low redox potential (-3.04 V vs. SHE). Nonetheless, lithium metal electrodes are suffering a high reactivity with commonly used electrolytes and dendritic lithium deposition, causing severe safety issues1. Polymer electrolytes can be a suitable replacement for liquid electrolytes due to their ability to limit dendrite growth and the improved stability against lithium metal anode2. An increased electrochemical performance, high thermal stability and extended electrochemical stability window have been observed when introducing ionic liquids (ILs), i.e., room temperature organic molten salt, into the polymer matrix. These ionogels (IGs) are a promising class of polymer-based electrolytes for next-generation lithium-metal batteries. Unfortunately, fast Li+ kinetics are still a challenge due to the high viscosity and low transference number of ILs3. A possible solution is given by a hybrid approach as the insertion of active and passive filler can further boost the electrochemical performances of IGs.

Herein, we present composite IGs prepared via a one-pot preparation protocol by mixing the polymer precursors butyl methacrylate (BMA) and poly(ethylene glycol) diacrylate (PEGDA) with the IL PYR14FSI and, in addition, LLZTO nanoparticles. The inorganic filler is fully integrated in the polymer matrix by using an organosilane functionalization which allows for the formation of covalent bonds during the polymerization step. Three functionalized LLZTO nanoparticles were investigated, differing by the silane content, resulting in a maximum ionic conductivity of 6·⟦10⟧^(-4) S ⟦cm⟧^(-1) at 20 °C and an anodic electrochemical stability up to 5.3 V (vs. Li+/Li). Li|IG|LFP cells delivered a stable cycling with a specific capacity of 120 mAh g-1 at room temperature for hundreds of cycles owing to a high compatibility of the IG composite with lithium-metal anode.

FIS-PO-008. Investigating Cu speciation in histidine-modified Cu-UiO-66 MOFs: a XAS-MCR study

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Successfully achieving methane-to-methanol selective oxidation present a significant catalytic challenge, one that nature efficiently masters through specific copper-histidine sites in lytic polysaccharide monooxygenases (LPMOs) enzymes. Compared to enzymatic systems, Metal Organic Frameworks (MOFs) represent promising candidates because of their stability, high surface area and selectivity. Inspired by LPMOs, two Cu-UiO-66-his MOFs samples with different Cu/his ratios (high and low histidine loading) were synthesized and characterized at the ESRF beamline BM23 by in situ X-Ray Absorption Spectroscopy (XAS). The experimental protocol consisted of an activation step in He up to 150 °C, isothermal reduction in H2 and re-oxidation in O2. Multivariate Curve Resolution (MCR) and Wavelet Transform (WT) EXAFS advanced analysis methods were applied, securing a thorough understanding of the experimental data in complex multi-component cases. MCR analysis was performed following a Waterfall systematic approach, guiding the method to yield chemically and physically meaningful outcomes.

According to XANES fingerprints, four distinct pure Cu species were identified in both samples. Notably, the CuII-histidine pure species displayed partial inertness to the overall chemistry, while the CuII-LC species underwent preferential evolution at the expenses of the more-coordinated CuII-HC (where HC and LC stands for high and low coordinated). The presence of pure CuI species suggests that both samples exhibit redox properties, albeit with preferential CuII reduction in the low-loading sample. This is attributed to the ca. 40% of CuII-histidine species present in the as-prepared high-loading sample. WT analysis indicated that in CuII-HC and CuII-LC species, Cu-Zr contributions were detectable, leading us to describe these species as cluster-derived sites. Importantly, this Cu-Zr scattering contribution was completely lost for the identified CuI species. We're currently working on EXAFS fitting analysis using DFT-derived structures, obtaining promising results aimed at validating our structural hypothesis.

FAR-PO-005. Harnessing Nature's arsenal: Virtual Screening for IL-20 Receptor Inhibitors among Natural Compounds

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Current clinical trials investigate the role of interleukin (IL) blockade as innovative cancer treatment approaches, thus targeting IL20 receptor (IL20R) which is elevated in breast cancer, might modulate TME (Tumor Microenvironment) and could be an efficient direct anticancer treatment as well. The aim of the project is to identify ligands that can simultaneously interact on both subunits (α and β) of the receptor and on IL-20. The considered ternary complex is IL20/IL201/IL20R2, deposited with the accession code 4DOH [1]. The structure was energetically optimised using the Protein Preparation Wizard [2] tool. Subsequently, the complex was subjected to 300 ns Molecular Dynamics through Desmond [2], with the aim of studying the adaptation process of the complex over time. The resulting trajectory was clustered according to the RMSD and of the resulting clusters, the most representative was chosen according to the probability estimated by the Boltzmann Population for subsequent studies. Subsequently, the selected cluster was used as an input structure for protein mapping and identification of binding pockets via SiteMap [2]. Of the eight sites identified, three were taken into account: two constituted the binding site at the interface between the α subunit and IL-20 and one constituted the binding site at the interface between the β subunit and IL-20, in accordance with what has been described in the literature. Three grids were constructed considering the same coordinates for the left side of the protein (complexA, IL-20Rα, IL-20A), and three others on the right side (complexB, IL-20Rβ, IL-20B) again using the same coordinates for all three. Virtual screening was conducted using the database downloaded from Zinc [3] and containing 307814 ligands of natural origin, which were prepared with the LigPrep [2] tool. For each of the 6 grids generated, molecular docking calculations were performed using the Glide [2] Standard Protocol (SP) algorithm to obtain the theoretical binding affinities for each ligand expressed in terms of energy values (Kcal/mol); 10 poses per ligand were generated. At the moment, analysis of the results are still in progress. This work is supported by a PRIN project4.

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MAS-PO-012. Untargeted metabolomic-guided phytochemical investigation of Morus alba L. twigs extract and evaluation of antimicrobial activity.

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In the field of public health, a pressing concern is antimicrobial resistance, a significant global threat1. Plant natural products offer promise in combating multi-drug resistance by acting as antibacterial agents through various mechanisms2. Widespread natural product classes, such as terpenes, flavonoids, alkaloids, and phenolics have demonstrated antimicrobial activity3.

Morus alba L. (Moraceae) twigs have historical use in traditional medicine for muscle-related symptoms, yet their chemical constituents and clinical potential remain underexplored4. Here, we conducted a metabolomic-guided phytochemical investigation, based on a LC-HRMS/MS and Molecular Networking combined approach, of an industrial extract of M. alba L. twigs, obtained in the field of our scientific partnership with Indena Spa (Milan, Italy). Molecular networking uncovered different clusters of prenylated polyphenols,

glycosylated phenolic compounds and Diels-Alder dimers guiding the phytochemical profiling of this extract. Our analysis allowed us to swiftly annotate and isolate 17 secondary metabolites including stilbenoids, flavonoids, and flavanones.

Isolated metabolites were tested for their antimicrobial activity against Staphylococcus spp. The most active compound resulted to be kuwanon C, exhibiting a MIC of 8 µg/mL against S. aureus ATCC 43300 (methicillin resistant, MRSA) and S. epidermidis ATCC 3598 (a biofilm producers' strain). The same concentration resulted bactericidal. We also observed an additive interaction between 4 µg/mL kuwanon C in combination with low oxacillin dosage against the MRSA. Due to the high chemical structure similarity of isolated metabolites, structure-activity relationships of these versatile scaffolds have been postulated.

ORG-PO-071. Electrochemical di-oxygenation of quinolines

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Electrochemical methods for the synthesis and transformation of organic compounds have recently received increased interest by both academic and industrial research. Electrochemistry represents a mild and green way to obtain useful molecules, avoiding the stoichiometric use of harsh and often hazardous or waste-generating oxidating and reducing agents, that can limit large-scale applications. Moreover, the highly selective nature of this method allows to avoid the sometimes tedious protection/deprotection steps. The renaissance of organic electrochemistry has been accompanied by an increased attention to flow electrochemistry, that, thanks to the small interelectrode gap, reduces the resistance and improves the mass transport of the substrates from the bulk to the electrode surface, with the advantage of reducing the reaction time.

Di-oxygenation of olefins is generally achieved with several methods including the use of transition metals, for example Sharpless reaction. In very recent years, electrochemical approach has emerged as an alternative method to perform di-oxygenation not only of olefins, but also of heterocycles, like indoles and thiophenes.

In this context, we envisioned the possibility to perform the di-oxygenation of activated quinolines. Dihydroquinolines, that can be pre-formed by classic chemical activation, are subjected to electrochemical transformation, opening new frontiers in the synthesis of highly functionalized tetrahydroquinolines. Alternatively, the one-pot procedure will be attempted.

ANA-PO-020. The effect of environmental conditions and deposition substrate on bloodstains ageing: a spectroscopic approach to target a forensic analytical problem

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Determining time since deposition of bloodstains can be a potent tool for the forensic chemist in resolving legal cases. This topic has been investigated through several analytical techniques, mainly spectroscopies, such as ultraviolet-visible (UV-Vis), Raman, mid and near infrared (MIR and NIR). In this context, the contribution of chemometrics proved to be essential to gain understanding of the subtle spectral changes ongoing during the ageing of this complex biological fluid.

Until now, reduced attention has been devoted to the contribution of environmental conditions and deposition substrate which may have a significant influence on speed and kinetics of blood degradation. Therefore, understanding which factors influence this process (and to what extent) is crucial to avoid over/under estimations of bloodstain age.

To study in depth the impact of such factors, bloodstains were subjected to ageing under controlled temperature (T) and humidity (RH%) in a constant climate chamber (KMF115 – BINDER GmbH, Tuttlingen, Germany), mimicking two environmental conditions with a proper day-night alternance: condition CW – day: T = 25°C, RH% = 75%; night: T = 10°C, RH% = 90%; condition HD – day: T = 35°C, RH% = 60%; night: T = 20°C, RH% = 75%. The effect of direct light exposure was investigated as well, performing the ageing sessions either with or without a window that filters the light going from the lamp to the samples.

Six 20-µl bloodstains (from two different donors) were deposited on each of four different substrates, namely hydrophilic fabric (cotton), hydrophobic fabric (polyblend), metal (knife) and glass, making a total of 96 samples. Their ageing was followed for 12 days with two different analytical techniques: a handheld NIR device (MicroNIR® – Viavi Solutions Inc., Santa Rosa, California, USA), working in the spectral range 900-1700 nm; a confocal Raman microscope (InVia™ – Renishaw plc, Wotton-under-Edge, Gloucestershire, UK), acquiring in the Raman shift range 150-1900 cm-1.

The obtained spectra were pre-processed for minimizing the unwanted systematic effects and subjected to chemometric analysis. Exploratory data analysis by means of principal component analysis (PCA) showed that NIR spectra are more subjected to the effect of the substrate, when compared with Raman spectra. It was observed that absorbing substrates (cotton, polyblend) yield a more efficient time trend model when analysed with NIR spectroscopy, while non-absorbing substrates (glass, metal) gave more consistent results with Raman spectroscopy. PCA also evidenced shifts between sessions carried out at different temperature and humidity, suggesting that environmental conditions may determine not only a faster/slower ageing, but also a different ageing kinetics. Then, ANOVA simultaneous component analysis (ASCA) was applied to quantify the effect of each factor (temperature, humidity, substrate, light exposure) on the ageing of bloodstains, to understand which conditions are most important to be controlled in real case scenarios.

The present study confirmed that determination of time since deposition of bloodstains is strongly related to environmental conditions and deposition substrate and, therefore, that tailoring models to take into account these factors is preferable.

ORG-PO-072. Synthesis of trifluoroborates derivates for the preparation of theranostics in Boron Neutron Capture Therapy

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Boron Neutron Capture Therapy (BNCT) is a binary therapeutic treatment based on the nuclear fission reaction of 10B. When irradiated with neutrons, 10B produces the isotope 11B in an excited state, which spontaneously decays generating a high-energy α particles and recoiling a 7Li ion. 1 The required neutron beam is nowadays generated by proton accelerators containing a lithium or beryllium target and a beam shaper to produce epithermal neutrons. 2 These neutrons have enough penetrating power to reach cancer tissues where they become thermalized reaching the right energy for the capture by 10B nuclei. 3

In perspective, this therapy will be used in addition to conventional cancer treatments such as radiotherapy or surgery and is mainly focused to treat tumours that are resistant to other types of therapy, such as glioblastoma multiforme (GBM), but also metastatic melanoma, head and neck tumours and malignant mesothelioma.4

Agents containing boron atoms, such as carboranes (clusters of ten boron atoms and two carbon atoms), boronic acids or trifluoroborate groups, are under investigation in order to deliver enough boron atoms to tumour cells. It was decided to synthesise compounds containing either a carborane or a trifluoroborate group because the last one has a dual function: it allows boron to be delivered to cancer cells and the replacement one of the fluorine atoms of the trifluoroborate group with the 18F isotope, allows its detection by PET, so generating a potential theranostic compound. Finally, it was planned to conjugate the boron-containing agent to structures that would further enhance its concentration in cancer cells exploiting known features of these cells such as overexpression of specific transporters. The strategy followed for the conjugation of the boron containing moiety and the tumour recognizing structures exploits the copper-catalysed Huisgen reaction.

ELE-PO-011. Solvent-free extrusion process of PEO-polycarbonate blends as electrolytes for Li-ion batteries

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Solid polymer electrolytes (SPEs), composed of a lithium salt dissolved in a polar polymer matrix, are promising candidates for replacing liquid electrolytes in lithium-ion batteries (LIBs)1. SPE suffer from low ion mobility at room temperature, which restricts their practical use. Polyethylene oxide (PEO) can reach, in formulation with lithium salts, high conductivity values at elevated temperatures, and its low glass transition temperature (Tg) makes it a good candidate for SPE. PEO presents some drawbacks, like the strong dipolar interaction and complexation of Li+ that prevent the migration of lithium ions and segmental mobility in crystalline phase2-4. Polycarbonates (PC) show moderate interaction between carbonate groups and Li+ that ensure ions and segmental mobility and wide electrochemical stability window, but they have high Tg values, which makes these materials semicrystalline and restricts ion transport5. We selected three PCs, characterized by an increasing chain length, to blend with PEO in different proportions. Through a design of experiment (DoE), we compared the chemical, mechanical and electrochemical properties of polymer electrolytes composed of PEO blended with PCs at fixed LiTFSI salt concentration. The study helps identifying the best PC and the ideal ratio at which the ionic conductivity, the electrochemical stability window and the elastic modulus are optimal. All formulations were prepared by exploiting a mini-extrusor, which enabled us to avoid the use of organic solvents, minimizing polymer degradation phenomena by using an inert atmosphere. Finally, UV-cured PEO and PCs matrixes are investigated to enhance the mechanical and electronic properties of the final electrolytes.

ORG-PO-073. Innovative macrocyclic friction reducer additives for lubricant oils

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Friction is the force that hinders the movement between sliding or rolling surfaces, and it is caused mainly by microscopic contact points between mechanical parts, that can cause adhesion and deformation. About 25% of the energy provided by an engine is lost due to friction; therefore, lubricants are crucial to reduce the energy waste and to ensure the optimal functioning of the machine.

To maximize the lubricating properties of an oil, friction reducing additives are needed. The typical structure of a friction reducer (FR) consists of a polar head, that allows the additive adsorption on metal surfaces in the engine, and long alkyl chains to ensure the solubility in oil and the formation of a protective multilayer matrix. The most common functional groups that can be found in friction reducers are carboxylic acids, amides, imides, amines, and phosphoric or phosphonic acid derivatives. These functionalities lead to the formation of absorbed layers anchoring the additive to the metal surface, while the hydrocarbon tails align to each other and favour the layers formation thanks to van der Waals forces.1

Macrocycles can be suitable candidates for the synthesis of FRs, thanks to their synthetic versatility and stability. Moreover, their scaffold can provide preorganization of the matrix layers, facilitating the film formation. To investigate and exploit these properties, we synthesized various resorcinarene- and calixarene-based additives with different polar functionalities.2 The products that showed the best solubility and stability in oil formulations were tested to evaluate their tribological properties.

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ELE-PO-001. Exploring the flatland of bidimensional materials for energy and (opto)electronics

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Layered materials have many potentials for use in applications requiring (semi)conducting behavior, coupled to anisotropy or preferential orientations. In our group, we try to incorporate them into energy devices of different types, ranging from solar and photoelectrochemical cells up to energy-storage and piezoresistive systems.

In general, we choose to resort to highly scalable methods for their production and their processing, mostly solution-based, through the preparation of inks that can undergo further chemical processes or be deposited via spin/spray/dip-coating.

In this talk, we will give a collective view of some of the recent projects we are carrying on: we will discuss some uses of 2D transition metal dichalcogenides in electrochemical capacitors and some recent results in the production and testing of layered heterojunctions based on two different semiconductors for use in photoelectrochemical hydrogen evolution.

ANA-PO-105. Large freestanding 2D Covalent Organic Framework nanofilms

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Covalent Organic Frameworks (COFs), a class of organic materials known for their highly ordered, porous structures extended into two or three dimensions, have gained significant attention across various fields such as catalysis, gas storage, and sensing due to their fascinating properties, which include high surface area, tunable pore sizes, and chemical stability.1 Among the different kinds of COFs, two-dimensional covalent organic frameworks (2D COFs) offer excellent platforms with high porosity for new technological applications, especially those involving film morphology. Here, we present the synthesis and characterization of freestanding imine-linked 2D COF nanofilms. 2D COF nanofilms have been successfully synthesized by condensation reactions at air-water and liquid-liquid interfaces. The develop method provides uniform centimeter-scale 2D COF films with thicknesses that can be tuned by the reaction times as well as the concentration of the monomers.2 Our approach enables the direct transfer of the synthesized large-area COF nanofilm onto patterned substrates for physicochemical and mechanical characterization. Tensile tests are conducted on three different kinds of COF films measuring about 80 nm in thickness, with a testing area extending to 0.3 mm2. The strength and the Young's modulus of the imine-linked COF nanofilms are 188 ± 57 MPa and 37 ± 15 GPa, respectively. The exceptional stiffness and strength of COF nanofilms across large areas render them suitable for applications necessitating robust mechanical performance, such as sensing and environmental remediation. This study paves the way for a fundamental understanding of the relationship between the macroscopic mechanical properties of 2D COFs with their composition and structure.

This study was carried out within the MICS (Made in Italy – Circular and Sustainable) Extended Partnership and received funding from Next-GenerationEU (Italian PNRR – M4 C2, Invest 1.3 – D.D. 1551.11-10-2022, PE00000004).

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ORG-PO-074. Development of new sterically hindered chiral phosphoric acids: synthesis and catalytic applications

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In the broad field of stereoselective synthesis, Chiral Phosphoric Acids (CPAs) have recently found widespread application in several and crucial chemical transformations, considered powerful tools for the synthesis of pharmaceuticals and natural products. Due to the important applications of chiral phosphoric acids in organic synthesis, in the last few years the design and the synthesis of new chiral phosphoric acids have attracted much attention. A new class of chiral phosphoric acids, with a two-carbon-atom-spacer between the aromatic rings bearing the acidic functional group and a decahydroquinoxaline scaffold derived from the trans-1,2-diaminocyclohexane through a diastereoselective pinacol-type coupling reaction, has been developed. Decahydroquinoxaline-based chiral phosphoric acids have been successfully applied in the model stereoselective Friedel-Crafts addition of indoles to N-tosylimines with good to excellent yields and enantioselectivities.

ORG-PO-075. Hydroxyapatite: an inexpensive and sustainable carrier for enzyme immobilization

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High efficiency and selectivity, mild operational conditions and low toxicity are some of the main features that make enzymes efficient catalysts and important tools in making chemical processes greener. However, to render the process economically viable, enzymes should be recovered and reused and sometimes their operational stability should be improved. A common strategy to tackle these problems is the immobilization of the enzyme on a solid support. Hydroxyapatite (HAP) is a biocompatible inorganic material which is suitable for this task thanks to its structural stability, non-toxicity, large surface area and ease of surface modification. Moreover, it can be obtained from waste such as ashes from waste-to-energy plants, the fish supply chain, the avian supply chain, etc., in agreement with circular economy principles.

Gamma-glutamyl transferases from both Bacillus subtilis (BsGGT) and Escherichia coli (EcGGT) were chosen as model enzymes to study the immobilization process on HAP. HAP was synthesized according to a literature-reported wet procedure of coprecipitation of

calcium nitrate and ammonium phosphate under basic conditions. Enzyme immobilization was carried out through adsorption, simply by mixing an enzyme solution and a hydroxyapatite suspension under controlled conditions (pH, temperature). Different particle sizes and experimental set-up were investigated and, after assessing that the enzyme did not desorb under reaction conditions, the supported GGTs were tested as biocatalysts in the gamma-glutamylation of L-methionine. Moreover, the enzyme reusability was tested in five consecutive reaction cycles and its storage stability was verified.

ORG-PO-076. C1 to Cn Hydroxyalkylation enabled by Photoredox Catalysis

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The introduction of a single hydroxyl group can dramatically influence the drug−receptor binding affinity through the formation of an extensive hydrogen bond network.1 Moreover, the -OH group can serve as a handle for further derivatizations. In the polar domain, hydroxyalkylations can be accomplished via different reaction pathways. However, retrosynthetically, the possibility to obtain γ-hydroxy substituted derivatives is precluded from polar mechanisms due to a polarity mismatch. α-hydroxyalkyl radicals have emerged as suitable intermediates to promote radical hydroxyalkylations.2 Despite extensive research into the chemistry of ketyl radicals, we hypothesised that a more direct approach to access these intermediates was feasible using readily available feedstocks. Naturally occurring and readily available α-hydroxy carboxylic acids (AHAs) can be utilized as a platform for visible light-mediated oxidative CO2-extrusion furnishing α-hydroxy radicals which proved to be versatile C1 to Cn hydroxyalkylating agents. In particular, we developed a photoredox-based γ-hydroxyalkylation via the coupling of α-hydroxy radicals with various SOMOphiles. Furthermore, flow technology facilitates the scaling of this photochemical methodology.3,4

ABC-PO-044. Chemical characterization of atmospheric depositions at two sites subjected to different emission sources: the case of study of urban site in the city of Lecce and suburban site near the city.

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Atmospheric depositions are the process by which particulate matter, aerosols, and atmospheric gases from both anthropogenic and natural sources reach the ground in the form of precipitation and dry deposition. The combination of these two components is referred to as BULK depositions. In this study, two sampling sites were chosen: one representing an area in the urban center of Lecce affected by vehicular traffic (Arpa site, DAP Lecce), and one representing a suburban area influenced primarily by regional background (Ecotekne site within the university campus).

Sampling and determination of pollutants in BULK depositions were carried out on a monthly basis in accordance with Legislative Decree no. 155/2010, following UNIEN standards 15980:2011 for the determination of organic micro-pollutants and UNI EN 15841:2010 for the determination of inorganic parameters. Specifically, water-soluble inorganic species were analyzed using HPIC, heavy metals in the filtered aqueous sample were determined with ICP-MS, and the filters used for filtration were analyzed with ICP-AES. Additionally, PAHs were analyzed using GC-MS.

Applying source apportionment techniques such as multivariate statistics and PMF (positive matrix factorization), common sources between the two sites were identified. It was observed that the urban site had more samples characterized by exhaust emissions from traffic, while in the suburban site, samples showed a greater contribution from crustal sources.

This study suggests the application of source apportionment techniques on samples of atmospheric depositions to identify differences between sites impacted by anthropogenic activities compared to less impacted suburban sites, in order to provide useful information for decision-makers regarding public health management and air quality in cities.

TEC-PO-033. Protein-based compostable films: from chemical modification to application in flexible electronics

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Bio-based materials, such as proteins, are considered the most promising candidates for next-generation flexible electronics due to their high sustainability and variety of chemical structures, which can be depolymerized and recycled into monomers, offering the possibility of reducing and minimizing the future environmental impact of electronics.1,2

In this work, zein was selected as the starting protein, and flexible films were developed. Therefore, some physical and chemical modifications were designed and performed based on the native structure of the protein. Two routes were explored: (i) thermoreversible Diels-Alder reactions and (ii) thermosets from bio-based acrylics. Computational studies have been carried out for the design of cross-linkers of different lengths for the Diels-Alder (DA) reaction between zein (diene) and a cross-linker molecule (dienophile). The reversibility was checked through the retro-diels alder reaction.3 Bio-nanocomposites based on proteins and chemically functionalized carbon allotropes (such as carbon nanotubes, graphene, and conductive carbon black) have been developed and studied.

The samples were characterized by DSC, FT-IR, SDS-PAGE, and NMR analysis. In addition to the mechanical properties, molecular dynamics studies were performed, which allowed us to understand the reorganization of the protein as a function of chemical modifications.

ORG-PO-197. Efficient Synthesis of 1,4,7-Triazamacrocycle Derivatives for Functionalized Polymers

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Synthetic chemists, inspired by polyazamacrocycles present in nature (such as porphyrin and corrine), have worked on the development of numerous organic molecules able to chelate a wide variety of metal ions as natural analogues make.1 The presence of nitrogen atoms in the structure of these compounds makes them very incline to associate with metal cations, forming very high stable complexes due to thermodynamic and kinetic effects.2.

In particular, 1,4,7-triazacyclononane (TACN) and its derivatives, that are isoelectronic to cyclopentadiene, compose an essential class of aza-macrocycles since they can stabilize high oxidation states of different metal cores.3 Our research group, starting from the results obtained on the synthesis of 1,4,7-trimethyl-1,4,7-triazacyclonane, used as hardener of alkyd emulsion for painting, has focused their effort to synthesize a 1,4,7-triazacyclononane functionalized with a long aliphatic chain with a terminal diol. These vital structure features will lead to the possible development of a new class of functionalized polymer4 that could be able to chelate metal present in wastewaters and/or develop a new class of heterogeneous catalyst.

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TEC-PO-020. Chelating agents in geopolymers

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Alkali activation is a room temperature process for consolidating aluminosilicate powders of various types. The resulting 3D aluminosilicate network is a good fixative for heavy metal ions and provides high mechanical strength to the final ceramic-like solid. In such treatments, physical encapsulation, ion exchange, and the formation of the gel structure were found to form compounds to stabilise heavy metals. In addition, a unique three-dimensional zeolite-like cage structure can often occur at cryptocrystalline stage and has been shown to trap anions and organic macromolecules together with heavy metal cations. This work investigated the addition of chelating agents (hydroxyapatite, tartaric acid, etc) to improve to the stabilisation of heavy metals in metakaolin-based geopolymer. The first individuated wastes are galvanic sludges and tannery wastewaters. The metakaolin powder was mixed with NaOH 8 M and sodium silicate solution, then the chelating agent and wastes were added at different percentages. The final consolidated material was tested for the geopolymerisation process by FT-IR and for the encapsulation efficiency by toxic leaching tests. The combination of geopolymer gel formation and the presence of the chelating agent resulted in the stabilisation and inertisation of not only heavy metal cations but also anions at room temperature.

INO-PO-042. Hard/Soft coupled magnetic nanocomposites for the fabrication of Rare Earth free permanent magnets

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Permanent magnets are crucial elements for the green transition as they allow storing, delivering and converting energy. Sr or Ba hexaferrites are the most popular magnet in the market but their capability to store energy is too small for many applications. Large improvements are expected by exploiting nanometric grains and realizing hard-soft nanocomposites magnetically coupled at the interface.

Here we present the synthesis and properties of single crystal, monodomain Sr-ferrite grains prepared by solid state reaction and sol-gel synthesis, with variable average size from 50 to 00. nm range and large coercivity. The best powder was employed for the fabrication of hybrid nanocomposites using, as the soft phase, iron nanowires prepared by chemical reduction of metal salts in aqueous phase.

Project funded under the NRRP, Mission 4 Component 2 Investment 1.3-Call for tender n.1561 of 11.10.2022 of MUR, funded by the EU–NextGenerationEU, Project PE0000021, CUP D43C22003090001, NEST.

INO-PO-036. Decoration of polydopamine surfaces with colloidal nanoparticles: a systematic study

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Polydopamine (PDA) is a mussel-inspired polymer enriched in catechol and amine groups, with strong adhesive properties1. Lately, it has been widely used as adhesive substrate in different fields, so we decided to study systematically the interactions between PDA and colloidal nanoparticles (NPs). Affinity of NPs for PDA surfaces is expected to depend strongly from surface Z-potential of PDA

layers and Z-potential of NPs. As Z-potential is expected to depend from medium pH, we studied the different loading of different NPs as a function of pH of colloidal suspensions of NPs.

We prepared PDA-coated glass slides (PDA@glass) and grafted on them Prussian Blue NPs (PBNPs), Silver NPs (AgNPs) and Gold NanoStars (GNS), changing the pH of the preparations. We thus demonstrated, using UV-vis spectroscopy, Dynamic Light Scattering and Scanning Electron Microscopy, that the pH controlled difference between z-potentials of PDA and NPs is crucial in determining the amount of grafted NPs.

ORG-PO-077. Sustainable approaches for Sonogashira coupling reactions in water and under air atmosphere

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Metal-catalysed cross-coupling reactions hold a pivotal role in organic chemistry, enabling the construction of carbon-carbon bonds. Among them, the Sonogashira coupling stands out as a transformative tool for synthesizing substituted and/or conjugated alkynes. Recently, noteworthy advances have been achieved from the standpoint of health, safety and environmental concerns, leading to the development of Cu-free methodologies. However, some challenges still persist.

Within this context, our project aims to address the worldwide demand for sustainable and straightforward chemical processes, focusing on reducing the catalyst loading and ensuring mild reaction conditions. Experiments are initially conducted via homogeneous catalysis using water in the presence of surfactants to enhance the dispersibility of organic substrates in aqueous environments. Synthetic procedures are easy, mild and reproducible. Additionally, the use of low amounts of commercially available and cost-effective palladium acetate addresses the challenges associated with low metals availabilities and their high costs. Simultaneously, the project explores the assembly of bio-based core-shell nanocapsules loaded with various palladium(II) sources by originally modifying the solvent evaporation encapsulation technology. In an aqueous environment, the bio-polymer selected for the external shell of our capsules, ethylcellulose, reorganizes its chains to orient the hydrophilic components towards the bulk aqueous medium, thereby creating a central hydrophobic cavity where the catalytic species localize. These innovative nanoreactors exhibit remarkable catalytic activity, operating directly in heterogeneous aqueous environments with minimal metal loadings and without additional organic cosolvents. The synergy between surfactants and our synthetic nanocapsules is essential, creating nano-confined spaces which offer enhanced control and increase local reactant concentrations at the interface of EC structures due to the hydrophobic effect.

Overall, the methodologies here presented are completely aligned with the Green Chemistry principles, representing a significant step towards more environmentally-friendly and efficient chemical processes in the field of metal-catalysed cross-coupling reactions.

ANA-PO-070. Development and optimization of a method based on UHPLC and high resolution mass spectrometry for the determination of per- and poly- fluoroalkyl substances (PFAS) in serum

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Per- and poly- fluoroalkyl substances (PFAS) are a large group of compounds consisting of a hydrophobic carbon chain, partially or fully fluorinated, and a terminal hydrophilic group, such as a carboxylic acid, sulfonic acid, amine, or other. PFAS have been used in industry and consumer products since the 1940s because of their useful chemical and physical properties1 due to their molecular structure. The highly fluorinated portion of the molecules brings them to not degrade through normal chemical, physical, or biological processes2.

Despite being an attractive industrial property, perfluorocarbon resistance to degradation raises concerns about environmental fate and human health impact3. In humans, these substances are not metabolized, but they have a high affinity for proteins and are mainly found in biological samples such as plasma, serum, milk, and tissues3. Therefore, biological monitoring of traditional and emerging PFAS is a useful approach to conduct an integrated and representative screening of human exposure to these substances.

The purpose of this project was precisely to develop and optimize an analytical method for the determination of different chemical classes of PFAS in serum, using liquid chromatography coupled with high-resolution mass spectrometry (UHPLC-HRMS, equipped with an Orbitrap mass analyzer).

A particular focus was set on sample pre-treatment, which proved to be critical in breaking the bonds between proteins and PFAS in order to achieve good recoveries (between 80% and 120%). Pre-treatment was optimized by trying different types of solvents and a washing step after protein precipitation. After this, the optimal conditions were defined using Principal Components Analysis (PCA).

Subsequently, the instrumental method (UHPLC-HRMS coupled with online-SPE) was optimized, starting with the online-SPE and the chromatographic conditions and then moving to the conditions concerning mass spectrometry. Validation of the method was performed in accordance with ISO 17025 evaluating linearity, inter- and intraday precision, LOD, LOQ recovery and matrix effect. Control charts were also used to estimate the stability of the instrument. Using this method, more than 25 traditional and emerging PFAS were determined. The method has been tested on real samples to accurately quantify the concentration of these substances in human serum.

This work has been developed in the framework of the SCENARIOS project (funding program H2020, project ID 101037509).

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ORG-PO-078. Synthesis of a new family of surfactants based on 2,2'-biindole scaffold and their application in micellar Suzuki-Miyaura reactions

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The research for replacing classical organic solvents (which are unhealthy VOCs) with greener media represents an increasingly urgent scientific challenge. Water represents a safe and sustainable alternative, with the obvious problem that lipophilic organic reagents typically do not dissolve in it. Surfactants are amphiphilic molecules characterized by a hydrophilic and hydrophobic domain and give great opportunities to perform reactions in aqueous medium making the process clean, fast and efficient with consequent remarkable overall benefits for sustainability.

A family of conjugated 2,2'-biindole derivatives functionalised in position 3,3' with bithienyl units and bearing hydroxylic groups in different positions of the heteroaromatic scaffold was synthesized as precursors for an innovative class of surfactants.

The hydroxy groups of compounds were functionalised with PEG derivatives of different length and, taking advantage of the design of the 2,2'-biindole scaffolds, which allows to introduce the hydrophilic chains in different position, a wide series of amphiphilic molecules was prepared. Their aqueous solutions were successfully employed as non-conventional media in Suzuki-Miyaura coupling reactions. The different catalytic performances of the surfactants as a function of their structural features are discussed.

FIS-PO-026. Quadruplex-forming oligonucleotides as tools in anticancer therapy: a physicochemical insight

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G-quadruplexes (G4s) are peculiar DNA structures formed by guanine-rich sequences characterised by guanine tetrads stabilized by Hoogsteen hydrogen bonds and monovalent cations. G4s have been found in many sequences of human genome, such as promoter regions of the genes, including many oncogenes, therefore representing promising anticancer drug targets. Particularly, G4 formation in oncogene promoters and their stabilization with G4-ligands can downregulate the expression of the corresponding oncoproteins. In this context, the deep understanding of the energetics of G4 structure stability and their interaction with ligands is of pivotal importance to design molecules with highest affinity for G4s and improved biological activity. In this regard, we applied calorimetric and spectroscopic methodologies in combination with biochemical and biological assays.

The energetics of molecular interactions and dynamical behaviour of G4/helicase complexes in the absence and presence of well-known G4 ligands, which can significantly interfere with several biological processes involving G4s, have also been investigated. To obtain information on G4/helicase and G4/drug/helicase interactions in vitro, complementary physicochemical and biochemical methodologies were used for this study as well.

ABC-PO-003. Recovery and quantification of polymer debris in wastewater treatment plants located in South Italy

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Contamination of water with polymer micro- and nano-metric debris (PDs) is an emerging issue in environmental chemistry and public health. Polyolefins (such as polyethylene (PE) and polypropylene (PP)) and polydimethylsiloxane (PDMS) find a wide range of practical applications in everyday life and are thus the most abundant PDs in wastewater (WW). They have densities lower than water and are typically isolated by flotation. A novel procedure to recover and quantify PE and PDMS in wastewater treatment plants (WWTPs) has been developed and herein described.1 The analytical protocol, based on quantitative NMR analysis, has been applied to a real case study (50 samples) from two campaigns of sampling in WWTPs located at Tavernola (Battipaglia (SA), Italy) and Punta Gradelle (Vico Equense, (NA), Italy) where different approaches to the WW treatment are used, namely the bed adhered biomass (MBBR) and membrane bioreactor (MBR) technologies2, respectively. Samples of influent, intermediate stage and effluent WW were collected, the PDs isolated by flotation, filtration and finally analyzed by solution 1H nuclear magnetic resonance spectroscopy (1H NMR) in 1,1,2,2-tetrachloroethane-d2 solution. Assessment of the PDs concentration at a limit of quantification (LOQ) of 1 mg/m3 level has been successfully obtained, whereas their presence is typically reported in the current literature as a number of microparticles per volume of water. As expected, PDs of PE are the most abundant, and PE concentrations of 1.80 ± 1.10 g/m3 (Tavernola Plant) and 3.48 ± 2.70 g/m3 (Punta Gradella Plant) were actually determined with this novel method after sampling the effluent water twice a week. In the same samples, PDMS concentrations of 257 ± 236 mg/m3 and 498 ± 613 mg/m3 were found in the Tavernola Plant and Punta Gradella Plant, respectively. The abatement of PE in both plants was also investigated. Higher removal yields and greater efficiency were found in the Punta Gradelle plant equipped with the MBR technology. The Punta Gradella Plant showed filtration efficiency of 97.5± 2.5% for PE and 87.8 ± 7.9 % for PDMS; by contrast, the Tavernola Plant showed values of 94.9 ± 0.7 % for PE and 67.3 ± 17.8% for PDMS. The proposed method has achieved unprecedented simplicity, rapidity and sensibility of analysis. Moreover the study of microstructure and molecular weights of the PDs allowed drawing some hypothesis of the origin of these pollutants.

FAR-PO-062. Late-stage functionalization: a green strategy for the optimization of PCSK9 inhibitors

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Late-stage functionalization (LSF) allows the chemo- and site-selective diversification of already complex and polyfunctionalized compounds, often exploiting green chemistry tools.1 We recently identified the 4-amino-2-pyridone 5c as promising lead compound for

the development of novel small molecule PCSK9 inhibitors.2 Aiming to both study the under-investigated reactivity of such 4-amino-2-pyridone scaffold and improve the pharmacokinetic profile of 5c, LSF represents the best option for achieving these two goals concomitantly. The combination of the LSF strategy with other intrinsically green synthetic tools, as electrochemistry and multi-component reaction (MCR) allowed the set-up of innovative and green procedures for the obtainment of a small collection of derivatives. Exocyclic N, aromatic C3 and benzylic C11, as likely metabolic soft spots, were selected as sites of functionalization. On one hand, electrochemically driven modifications led to the synthesis of halogenated derivatives 1, the novel bicyclic compound 2, and the Shono-type product 3. On the other hand, μW-assisted MCR allowed the synthesis of two different classes of products (4 and 5).3 Biological studies on the newly synthesized analogue of 5c are currently ongoing.

Scheme 1: LSF of compound 5c.

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ANA-PO-124. Bacteriophage-based electrochemical magneto-assay for point-of-care detection of bacterial infections

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A magnetic electrochemical assay based on the use of bacteriophages as innovative receptors was developed for rapid and point-of-care (POC) detection of bacterial infections that hospitalized patients acquire while receiving health care. Additionally, various types of foodborne, airborne and/or waterborne bacteria are responsible for moderate to severe illness. Early detection and classification of the bacterium responsible for the infection are crucial to determine the most appropriate therapy. Conventional bacterial detection techniques, such as cell culture and colony counting, PCR, and ELISA testing, are time-consuming, expensive, and typically require highly skilled operators.1 Recently, bacteriophages have been successfully used as innovative receptors for the detection of bacteria. Their advantages include high specificity, tolerance to organic solvents, high temperatures and pH, as well as ease and low cost of production in large amounts.2

To meet the demand for early detection, there is a need for portable POC diagnostics based on inexpensive, rapid, and sensitive methods for the detection of bacterial infections.

To achieve this goal, we functionalized the surface of magnetic beads with engineered bacteriophages that specifically recognize Escherichia Coli and exploited electrochemical transduction to enable portability of the sensing device.3 The analytical signal was obtained using a labelled phage that binds both the bacterium and an enzyme used for the electrochemical signal generation. Different immobilisation strategies were investigated, comparing the performance of amino-modified beads with carboxyl-modified beads. Although the former showed a more intense signal, they also showed a higher non-specific interaction. Furthermore, comparing carboxyl-modified beads of different size, smaller magnetic beads (1 μm) were more effective in capturing bacteria than larger beads (2.8 μm), showing a positive/negative ratio of 20 for the determination of for the determination of 106 CFU/mL E.Coli. The proposed magneto-assay successfully demonstrated proof-of-concept rapid and sensitive detection of bacteria at clinically relevant concentrations and could provide wide potential applications in POC testing.

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INO-PO-092. Understanding intermolecular interactions: carbon nanofibers from low and lowest molecular weight polyphenols

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Carbon nanofibres (CNFs) are seen as one of the most promising materials when it comes to high performance applications. Yet, CNFs are de facto only produced fossil-based resources, mainly in the form of polyacrylnitrile precursors. Renewable resources such as the natural polyphenolic lignin are yet struggling to convincingly perform in this field, despite interesting findings in the recent years.

Being interested to shed light into this intriguing problem, we set out to use our very detailed structural knowledge regarding natural polyphenols to mechanistically study the importance of structural features for winning intermolecular interactions such as to rationalise fibre formation.

To this end, two technical lignins, namely softwood kraft lignin (S-KL) and wheat straw organosolv lignin (WS-OSL) were fractionated by a single-step solvent extraction. The starting lignins and the resulting fractions were thoroughly characterized by means of quantitative 31P nuclear magnetic resonance and quantitative 1H-13C heteronuclear spin quantum coherence spectroscopy, gel permeation chromatography, as well as thermal analysis. Pure low molecular weight fractions of the two technical lignins were converted into fibrous matrices using optimized spinning solutions and electrospinning process parameters. Uniform and bead-free fibres in both random and aligned mode were confirmed by scanning electron microscope analyses. Fibres could be processed to obtain well-defined thermostablised and carbonized fibres on the basis of the pure low MW fractions.

The accumulated insights could be converted into a set of rationales, on the basis of which it became generally possible to determine natural polyphenols most suitable for CF formation. These rationales were ultimately tested generating for the first time electrospun nanofibers from tannic acid (TA) and mono- and dimeric proanthocyanidin, which could equally well be thermostabilised and carbonised to CNFs.

ANA-PO-133. Chemical and ecotoxicological characterization of microplastics derived from Plasmix-based materials

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The implementation of recycling techniques represents a potential solution to the plastic pollution issue. To date, only a limited number of plastic polymers can be efficiently recycled. In the Italian plastic waste stream, the residual, non-homogeneous fraction is called 'Plasmix' and it is intended for low-value uses.

However, Plasmix can be used to create new materials through mechanical recycling but, before being used, needs to be tested for its eco-safety because, once in the environment, it can interact with aquatic and terrestrial organisms, mainly after its breakage and/or fragmentation in microplastics. Naïve (Px) and additivated Plasmix-based (APx) materials obtained by mechanical recycling procedure were characterized. Then were grinded to obtain microplastics (MPs) and tested to assess their eco-safety.

The potential acute and chronic toxicities induced by the exposure to different concentrations of microplastics were evaluated on two organisms: the terrestrial earthworm Eisenia fetida and the freshwater Cladoceran Daphnia magna. The obtained results were correlated to the potential bio-disponible compounds that can migrate and up taken by the organisms.

Head-space sampling coupled to GC-MS analyses were used to determine the release via volatilization of chemical compounds from Px-MPs and APx-MPs, simulating the exposure of organisms occurring in soil.

Instead, to simulate the release that can occur in the aqueous media a water extraction of the Px-MPs and APx-MPs followed by GC-MS analyses were performed.

FAR-PO-067. The heme scavenging process in S. aureus IsdB-hemoglobin complex explained via atomistic simulations

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Staphylococcus aureus uses the Iron-regulated surface determinant (Isd) system, including the IsdB receptor, to extract heme from hemoglobin in human hosts and obtain iron for its growth. This process involves hemolysins to release hemoglobin, IsdB receptor to extract heme, and other Isd proteins to transfer and oxidize heme to release iron for the bacteria's needs. Given its key role in heme scavenging, IsdB could represent the basis for the development of new biotechnological approaches to scavenge free and toxic hemoglobin in the blood, however the specific mechanism and the pathway of heme extraction at the IsdB-hemoglobin interface has not been reported yet.

In this work we simulated, for the first time to Authors' knowledge, the heme transfer in the IsdB-hemoglobin complex, an event that cannot be trapped by structural biology, nor clarified at the atomistic level by spectroscopy. Taking advantage of a protocol we previously devised for protein-ligand binding [1], we employed enhanced sampling molecular dynamics (MD) simulations to identify key residues involved in this process as well as interdomain motions and hotspots at the protein-protein interface. Furthermore, wild-type and deficient IsdB variant were expressed and purified, and spectroscopical assays were carried out to confirm simulations outcomes. In particular, our results highlight the importance of Tyr444 residue for heme extraction from human hemoglobin, laying the bases for a molecular understanding of the staphylococcal IsdB-human hemoglobin interaction.

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ELE-PO-030. Electrochemical Nitrogen Conversion into Ammonia in the SuN2rise ERC-StG Project

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The preservation of our planet is the most urgent issue in the world and the scientific community is pushing a lot of researchers to work on technologies for the storage/conversion of CO2 into chemicals. However, it is easier not to produce CO2 than setting-up plants to treat it.

In this framework, the ERC-StG project SuN2rise proposes an alternative breakthrough based on a versatile solar-driven strategy leading to redesign industrial processes. Facing the Haber-Bosch process for ammonia production (one of the most impactful chemical processes today), we propose the electrochemical fixation of dinitrogen into ammonia, by simply using air, water and ambient conditions. The scientific aim is that of demonstrating an integrated device where a photovoltaic (PV) unit will power a regenerative electrocatalytic cell converting dinitrogen to ammonia (E-NRR). A newly proposed Li-mediated approach under mild conditions, derived from an interdisciplinary contamination between electrocatalysis and Li-batteries, will be the key towards N2 conversion, bypassing

both the competitive hydrogen reduction reaction and the complete irreproducibility of recent E-NRR approaches attributed to N-contaminations or degradation of N-based catalysts.

The team will further move beyond the state-of-the-art by fabricating transparent devices, that can be integrated in greenhouses, allowing the production of ammonia and ammonium fertilizers directly in farms, bypassing the known issues related to the massive infrastructure of ammonia plants and difficulties in reaching remote communities. The proposed approach will significantly impact also the field of liquid fuels, being ammonia safer and with higher energy density than hydrogen. Achieving these goals will require multidisciplinary expertise in the field of chemical, material, process and device engineering.

Acknowledgements

This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No. 948769, project title: SuN2rise).

CSB-PO-031. Exploring the molecular dynamics of SARS-CoV-2 nsp13 helicase: production, protocol optimisation and drug screening for COVID-19 therapeutics

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The multifunctional non-structural protein nsp13 is an helicase encoded on the ORF1b and consists of 601 amino acids. It belongs to the superfamily 1B and exhibits a high degree of conservation across all Coronaviruses. Nsp13 plays a crucial role in viral replication, initiating the first step of RNA cap synthesis. This capping process is essential for shielding the viral RNA from cellular innate immune responses, stabilising it, and facilitating its translation1,2. The installation of the type 1 cap (m7GpppNm-RNA) involves several enzymes: nsp13, nsp14, nsp16, and nsp10. Nsp13 functions as an RNA 5'-triphosphatase, catalyzing the hydrolysis of the 5' γ-phosphate of the pppN-RNA as the initial step of capping. In addition to its role in RNA capping, nsp13 exhibits NTP-dependent unwinding of RNA duplexes with a 5' to 3' polarity. This activity is enhanced by its interaction with nsp12, the RNA-dependent RNA polymerase (RdRp). Nsp13 consists of five domains: the N-terminal Zinc binding domain (ZBD) (amino acids 1-100), the stalk domain (101-150), 1B (151-261), 1A (262-442), and the 2A domain (443-601). Research indicates that the latter three domains are responsible for nucleic acid binding and NTPase activity2.

In an effort to better elucidate the molecular behaviour of the enzyme and explore potential therapeutics for COVID-19, my project involved the production of the SARS-CoV-2 nsp13 protein. To enhance existing protocols, particularly those detailed by Chen et al. 2020, adjustments were implemented, primarily focusing on the choice of expression system and the timing of zinc administration to the Rosetta PlysS strain, before induction in the protein production process. These adjustments were found to be crucial for both the quantity and stability of helicase production, a task that posed inherent challenges.

Following protocol refinement, our focus shifted to conducting a drug screening of various in-house small molecules libraries to assess their interaction with nsp13. This screening aimed to identify potential direct antiviral agents against SARS-CoV-2. Through a comprehensive approach involving both computational and experimental methods, we aimed to pinpoint promising candidates for enzyme inhibition.

FAR-PO-024. Expanding the Toolbox for the Synthesis of Protein Degraders: Spotlight on BRD4-Targeting Hydrophobic-Tags

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To address the challenge posed by undruggable proteins, researchers have developed various approaches based on the use of small molecules to induce targeted protein degradation, including the growing success of Proteolysis Targeting Chimeras (PROTACs). Another promising technology is the Hydrophobic tag (HyTag)-based protein degradation, wherein ligands containing highly hydrophobic groups bind to the protein of interest (POI), mimicking a damaged or misfolded protein state. This represents the stimulus that eventually triggers the degradation of the POI through the Ubiquitin Proteasome System or the Lysosomal Autophagy Pathway. In detail, HyTags consist of a ligand for the target protein, a linker, and a hydrophobic moiety such as adamantane, fluorene, and norbornene. Compared to PROTACs, HyTags are not subject to the so-called "hook effect" and, due to their simpler chemical structure, they are endowed with a lower molecular weight and improved drug-like properties. Despite these advantages, synthesizing new HyTags is still a considerable challenge. The linker needs to be asymmetrically diversified, which leads to a long multistep synthesis. In our recent work, we conceived a multicomponent platform based on Ugi and Passerini reactions to synthesize PROTAC degraders in a single step. To further study the scope of this methodology, we applied the platform to the one-pot synthesis of novel BRD4-targeting HyTags. In a short period, we successfully synthesized a library of HyTag-based degraders, among which a compound stands out for its effective degradation of BRD4 in MDA-B-231 cells. This finding further corroborates the potential of Hy-tags as a new approach for targeted protein degradation and points out our multicomponent platform as an efficient and versatile tool for the synthesis of new protein degraders, regardless of the technology to which they belong.

ORG-PO-198. Ultrashort Peptides-based Hydrogels Exposing Thiol Groups Forming Complexes with Peptide Nucleic Acid as Potential Tools for Smart Drug Release

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Ultrashort aromatic peptide-based multicomponent hydrogels (HGs) have been used as biocompatible matrix for tissue engineering, drug delivery, and biosensor production. One of the most explored hydrogelators is the low molecular-weight Fmoc-FF (Nα-fluorenylmethoxycarbonyl-diphenylalanine) homodimer because of its ability to gel under physiological conditions such as of pH and ionic strength.1 Additional molecules, such as proteins, chemical compounds, or different peptide sequences, can be included into the Fmoc-FF hydrogel to create unique hydrogels with enhanced mechanical and functional characteristics. From this standpoint, a collection of unique multicomponent hydrogels based on Fmoc-FF that were doped with a range of concentrations of the tripeptide Fmoc-FFX, where X can be Cys, Ser, or Thr have been examined.2 Among these tripeptides, Fmoc-FFC was chosen as it generates hydrogels functionalized with thiol groups, which can be post-derived chemically with desirable bioactive compounds, such as biosensing, therapeutic or diagnostic agents. One of the most valuable nucleic acid mimetics is Peptide Nucleic Acid (PNA).3 Hybrid hydrogels are non-toxic and can serve as scaffolds for various applications in biotechnology, such as for controlled drug release in the presence of a reducing environment, such as the tumour microenvironment.4 In this regard, the functionalization of mixed (Cys)HG at different molar ratios compared to Fmoc-FF (1/5, 1/10 and 1/20, respectively) with (Cys)PNA molecules via specific and non-specific interactions is shown here, followed by the supramolecular characterization through several techniques, such as HPLC, MS, CD, FT-IR, NMR and microscopy.

IND-PO-029. Synthesis and Solid State NMR Characterisation of new Polyketone-based Anion Exchange Membranes

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The need of a green transition requires new ways to produce and store energy. Among different possibilities, green hydrogen produced from anion exchange membrane water electrolysers (AEM-WE) is one of the most appealing. However, AEMs need substantial improvements to reach longer life cycles and higher efficiencies. Because of this issue, different polymeric backbones and charged groups can be tried to tune properties up to a satisfying level.

In this abstract, we present our research concerning AEMs for water electrolysers based on a functionalised low molecular weight polyketone (PK). We report the functionalisation of PK through a Paal-Knorr reaction using a diamine that can then be quaternised with an alkyl iodide during the casting process to obtain an AEM1 (Figure 1). Different diiodides, ranging from diiododecane to diiodobutane, have been used together with iodobutane in various ratios to explore thermal and mechanical properties of the resulting membranes.

Membranes have been characterised with common techniques coupled with Solid State NMR (SSNMR) spectroscopy and relaxometry. 1H, 13C and 2H spectra and proton spin lattice relaxation times have been used to get information on possible phase segregation and to monitor the degree of cross-linking achieved in the membranes. Moreover, SSNMR techniques were applied to membranes hydrated with either normal or deuterated water to study water mobility and the formation of ionic channels.

FAR-PO-028. Dual Inhibitors of Brain Carbonic Anhydrases and Monoamine Oxidase-B Efficiently Protect against Amyloid-β-Induced Neuronal Toxicity, Oxidative Stress, and Mitochondrial Dysfunction

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We report the first dual inhibitors of brain carbonic anhydrases (CAs) and monoamine oxidase-B (MAO-B) for the management of Alzheimer's disease. Classical CA inhibitors (CAIs) such as methazolamide prevent amyloid-β-peptide (Aβ)-induced overproduction of reactive oxygen species (ROS) and mitochondrial dysfunction. MAO-B is also implicated in ROS production, cholinergic system disruption, and amyloid plaque formation. In this work, we combined a reversible MAO-B inhibitor of the coumarin and chromone type with benzenesulfonamide fragments as highly effective CAIs. A hit-to-lead optimization led to a significant set of derivatives showing potent low nanomolar inhibition of the target brain CAs (KIs in the range of 0.1-90.0 nM) and MAO-B (IC50 in the range of 6.7-32.6 nM). Computational studies were conducted to elucidate the structure-activity relationship and predict ADMET properties. The most effective multitarget compounds totally prevented Aβ-related toxicity, reverted ROS formation, and restored the mitochondrial functionality in an SH-SY5Y cell model surpassing the efficacy of single-target drugs.

ANA-PO-108. Mercury and selenium distribution in various tissues of sperm whale (Physeter macrocephalus) stranded near Naples, Italy

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The distribution of mercury (Hg) and selenium (Se) in marine mammals is crucial for assessing potential marine pollution and biological health. Understanding the distribution of these elements in various organs provides valuable insights into the physiological processes and potential detoxification mechanisms within these marine mammals [1]. This study investigates the concentrations of Hg and Se in different tissues of a sperm whale (Physeter macrocephalus) stranded in Forio (Na), Italy, in January 2019.

Tissue samples including liver, kidney, muscle, fat, intestine, stomach, pharynx, lung, heart, and testicle were collected and analyzed using DMA and GFAAS instrumentation. Our findings reveal significant variations in Hg and Se concentrations among the sampled

tissues. Liver, kidney and stomach exhibited relatively high levels of Hg and Se, indicating these organs as potential sites for bioaccumulation of these elements. Moreover, a statistically significant positive linear correlation (p=0.0001, r=0.92) was recorded among Hg and Se concentrations.

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MAS-PO-005. NIR and HR-MS techniques for the prediction of physical, chemical and biological properties of honey

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Natural Complex Products (NCPs) based on Natural Complex Matrices (NCMs), derived from medicinal plants are used to realize substance-based medical devices. In recent years, thanks to the evolution of the regulatory framework about medical devices in EU (Reg 2017/745) is of great importance increasing the knowledge about complex systems emerging properties that can be related to their biological activity. Therefore, new analytical approaches need to be applied for a complete characterization of NCPs that is not limited to a single compound1,2.

In this scenario, an exhaustive characterisation of the physical, chemical and biological properties of honey as NCMs, which depend on its botanical origin and geographical production area, is of growing interest to monitor the quality of the product and guarantee its characteristics3.

Despite the number of studies on honey, a comprehensive approach that describes with analytical tools the specific physical, chemical and biological properties associated with its composition is still lacking.

To identify an approach that describes the complexity of honey as much as possible, in the present work NIR and HR-LC-MS fingerprint analyses on several samples of honey (blend of polyfloral and Acacia) coming from different geographical areas (Europe and South America) were carried out and their correlation with various physical, chemical and biological properties were evaluated. In particular, electrical conductivity, glucose and fructose content, antioxidant activity, abiotic adhesion were measured.

Unsupervised multivariate statistical analysis on NIR and UHPLC-qToF metabolomic fingerprint was applied for a preliminary description of the behaviour of the different types of honey.

Partial Least Square regression (PLS-r) was used to correlate electrical conductivity, glucose and fructose content, antioxidant activity, abiotic adhesion with NIR and UHPLC-qToF data. The statistical models created highlighted the presence of some different honey samples, which were further subjected to targeted analyses of phenolic compounds.

In conclusion, the studied approach is suitable for identifying the correlation existing between chemical and physical/biological characterization data.

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MAS-PO-016. Evaluation of Protein Aggregation Capture Protocol for Thermal Proteome Profiling Analysis

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Thermal proteome profiling (TPP) is an emerging strategy that combines the cellular thermal shift assay (CETSA) with quantitative proteomic mass spectrometry (MS) to investigate proteome-wide interactions of therapeutic molecules1. Ligand-target engagement is determined by detecting changes in protein thermal stability, which requires high quantitative accuracy and reproducible analysis for construction of successful melting curves2. Thermal denaturation curves are profiled by using isobaric tandem mass tags (TMT) that enable to multiplex samples and increase quantification precision1. A crucial step prior TMT labeling is to remove compounds of lysis buffer, such as detergents, chaotropic agents, and salts, which may affect the labeling efficiency. However, the removal of interferents represents a major source of sample losses and experimental variability3.

In this study, protein aggregation capture (PAC) approach3 was employed to provide a rapid and efficient sample preparation for TPP analysis and the performance of quality data was compared to the traditional in-solution digestion method. Protein identifications were comparable for both protocols, but PAC yielded an increased number of peptides (4626 protein groups; 35226 peptides) compared to in-solution protocol (4686 protein groups; 26824 peptides).

Although the melting curves were fitted for all proteins quantified with minimum 2 valid fold changes, only sigmoidal curves with a minimum coefficient of determination (R2) of 0.8, indicating how well the fold changes fit the melting curve, and a plateau of < 0.3 were included in the statistical analysis2. Thus, the number of well-modelled proteins for each experiment was investigated. PAC protocol accurately quantified melting temperature in 88% of proteins identified, versus 83% for the in-solution method. Furthermore, reproducibility was assessed by correlating the melting point (Tm) values of replicate samples. A high correlation of 0.87 was achieved with PAC protocol which outperformed 0.71 for the in-solution method.

Results showed the ability of PAC protocol to profile melting curves with high quantitative accuracy and reproducibility.

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ELE-PO-033. Repurposing discarded porphyrin wastes as electrocatalysts for the oxygen reduction reaction

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Hydrogen is a potential alternative to fossil fuels. The broad deployment of this technology requires the development of a reliable, affordable, and efficient supply chain of water electrolyzers (WEs) and fuel cells (FCs). The latter efficiently converts hydrogen into green electricity. However, the key bottleneck in their spreading out lies at the cathode where Oxygen Reduction Reaction (ORR) exhibits sluggish kinetics and requires a high loading of precious metals (e.g., Pt). In this view, Transition Metal-Nitrogen-Carbons (TM-N-Cs) are promising electrocatalysts (ECs) to replace Pt currently used for the ORR, especially for Alkaline Exchange Membrane Fuel Cells (AEM-FCs) technology.[1]

Nowadays, TM-N-Cs are typically synthesized through pyrolysis treatment mixing transition metal, nitrogen-rich organic precursors, and carbonaceous substrates of diverse nature.[2] Among the possible metal-containing precursors, metal-porphyrins are of interest as they contain already the desired structure of single-atom transition metal coordinated with nitrogen.

The Adler-Longo method is the standard and cheapest methodology widely used to synthesize porphyrins.[3] It consists of refluxing pyrrole and an aldehyde (e.g., benzaldehyde) in propionic acid, with yields in moles around 20% in the best-case scenario, and prices around 20-40 €/g. After the product purification, the remaining mass is considered waste and discarded. However, the latter is mainly composed of polypyrromethenes, molecules with chemical structures that resemble open porphyrin rings. Interestingly, they show the same chemical composition and the ability to coordinate metal cations, due to the presence of nitrogen atoms.

This study aims to synthesize both porphyrins and polypyrromethenes, integrate them into a carbon matrix, and investigate them as TM-N-C-based electrocatalysts. A comprehensive structural and morphological characterization is provided, and the electrocatalytic activity towards ORR in an alkaline environment (0.1 M KOH) is discussed. Notably, Iron-containing precursors were investigated, and the effect of a second metal, like Manganese, was studied as well. The possibility of upcycling the as-considered waste material is shown, demonstrating the capability of polypyrromethenes to be employed as a green and cost-effective alternative to porphyrins in ECs.

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ORG-PO-199. Peptide Amphiphiles From Functionalized L-Dopa: Correlating Structure And Self-Assembly Properties

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Low-Molecular-Weight Gelators (LMWGs) are a versatile class of compounds able to self-assemble into supramolecular materials thanks to non-covalent interactions. Peptide derivatives, especially those containing aromatic amino acids, such as Phenylalanine and Tyrosine, are ideal candidates as LMWGs because they are biocompatible, biodegradable, and promote the assembly in a variety of conditions.1

In our group, we focused our attention on L-Dopa (3,4-dihydroxyphenylalanine), which can be functionalized also on the catechol moiety. We reported a robust gelator, Boc-L-Dopa(Bn)2-OH, able to form strong gels under several conditions and to trap different materials, such as crystals, fragrances and antioxidants. We have recently designed a small library of amphiphilic Dopa-based gelators, substituting the Boc group with long chain fatty acids (lauric, palmitic and azelaic acid) to introduce additional Van der Waals interactions, contributing to the self-assembly process.2 The structure of the new gelators resembles that of surfactants and allows self-assembly also in basic aqueous solutions, a property which highly affects the outcome and features of the final gel, obtained by lowering the pH. The relationship between the gelator structure, the self-assembly and the gel properties was deeply investigated by means of EDC, FT-IR, XRD, SEM and rheology, demonstrating that the propensity of these compounds to form β-sheets is correlated to the final properties of the gels.

ORG-PO-079. Regio- and stereoselective arylation of L-proline

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The five-membered pyrrolidine ring and its derivatives are heterocyclic scaffolds widely used in medicinal chemistry and drug design. Among this vast class of compounds, L-proline is of particular interest, and is often employed for the synthesis and optimization of lead compounds. Among the many derivatizations that can occur to the L-proline scaffold, the stereoselective functionalisation of position 5 proves particularly challenging.

We are currently exploring this problem in an effort to obtain novel glycomimetic ligands for the N-terminal domain of the bacterial lectin BC2L-C from Burkholderia cenocepacia. The desired ligands consist of N-fucosyl amides carrying a functionalized proline residue either in the cis or trans configuration. For the synthesis of compounds with cis configuration, we are pursuing classical synthetic pathways for the preparation of cis-5-arylproline starting from L-pyroglutamic acid. The preparation of trans diastereomers is significantly more challenging. For these, we are examining a photoredox-mediated hydrogen atom transfer (HAT) process described by MacMillan et al as a single example starting from proline.

ABC-PO-047. The influence of pigment-medium interactions in the manifestation of selective degradation phenomena on modern white oil paints

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The presence of selective degradation patterns in modern oil paintings, depending on the colored area considered, has been the starting point of this research: random cracks and protrusions, can be found beside semi-connected network in the same work of art. The aim of this study was to understand the causes that led to such differential degradation phenomena by understanding the physical and chemical mechanisms involved in the damage patterns. A real case study allowed to understand that the interactions between the composition of pigments, the nature of the binding media and the products resulting from the film formation processes were the mainly responsible for the ongoing degradation phenomena. The results highlighted that random cracking and protrusions were due to zinc soaps migrated from the preparatory layer; while semi-combined cracking network was related to the interaction between lithopone and the lipidic binder causing the significant formation of dicarboxylic acids.

ORG-PO-200. Engineering Photocatalytic Protocells for Artificial Photosynthesis

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Wireless artificial photosynthetic systems, a technology at the edge of the academic research in solar fuels, envision a machinery that mimic Nature to exploit sunlight energy to convert abundant resources, such as water and carbon dioxide, into high-added value products like H2 or carbon derivatives (formic acid, methane) and O2 without any external bias or circuitry.1,2 In particular, in the design of a bio-inspired molecular-based photocatalytic artificial system, four fundamental components need to be considered: a photosensitiser (PS), a catalyst, an electron relay (ER) and a vesicle forming the reactor.3

PLANKT-ON project, part of the initiatives of the program of the European Innovation Council as Pathfinder Open 2022, inserts in this framework proposing coacervate vesicles as micro-compartmentalised protocells for artificial photosynthesis.4

Herein, we present the synthesis and characterization of protocells functionalized by the encapsulation of the artificial analogue of the natural Photosystem II (PSII), namely the artificial quantasome (QS).5-7 Artificial quantasomes are an emerging class of supramolecular systems designed for photocatalytic water oxidation reaction. QS are based on the self-assembly of bis-cationic perylene bisimide derivatives, acting as antenna, and tetra-ruthenium deca-anionic polyoxometalate, being the water oxidation catalyst.5-9 These two components readily self-assemble in water, exploiting the complementary electrostatic interactions, forming a hierarchical supramolecular system.5-7 In this work, we focused on the functionalization of innovative photocatalytic reactors to design a photoactive protocell specifically engineered to achieve the light-induced water oxidation reaction.

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INO-PO-055. Functionalization of Metallorganic Catalysts for CO2 Electroreduction

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Functionalization of Metallorganic Catalysts for CO2 Electroreduction

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Functionalization is a procedure to anchor a catalyst on a support, to improve its catalytic behavior, in our case toward the conversion of carbon dioxide into valuable products1.

Catalysts are usually required to lower the working potential for the reduction of carbon dioxide and also to enhance the selectivity toward one product or to move the possible products into more valuable ones.2 In our research, we focused on a functionalization with diazonium salt, as shown in Figure 1, on a carbon substrate named Carbon Cloth2.

Different catalysts were studied with this method, all of them belong to the bipyridinic family, as shown in Figure 2 with different metals. For Manganese we observed a great improvement in TON and Faradic Efficiency after the functionalization for the production of CO3; Tungsten gave production of liquid products such as methanol and formate and Molybdenum produced a very high quantity of methanol in water4.

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INO-PO-075. Fluorescence properties of DES borne nanometric ZnO: temperature and structure effects

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In this contribution, we describe the fluorescence properties of high purity nanometrical ZnO synthesized by precipitation in type-IV zinc nitrate-urea Deep Eutectic Solvent, a system inherently endowed with nano-homogeneities in its internal structure1, that can be easily prepared by mixing the solid components with only little heating and limited workout procedures. The observed photo luminescence (PL) is remarkably brilliant and detailed investigations pointed out that the emitted radiation has quantum yield values that decrease when temperature is increased across a broad range, being very high at low temperature (77 K) but still appreciable up to 373 K. Such behaviour is perfectly reversible upon cooling and can be profited to assess external temperature with quite good confidence2. In order to gain further insight on such response property, a series of Raman studies was performed, whose vibrational patterns were assigned according to the crystal structure revealed by XRD experiments. Additionally, the dependence on the system morphology was investigated with FE-SEM microscopy, that depicts different nanoscopical structural arrangements, unveiling the presence of nano lamellar moieties embedded into larger mesoporous domains

FIS-PO-048. Sustainability of green hydrogen production: the state-of-the-art of technologies from an eco-design perspective

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Hydrogen plays an essential role as an enabler of the energy transition as it can make a significant contribution to storing and distributing renewable energies and for the decarbonization of hard-to-abate sectors and energy-intensive industries1.

Although hydrogen can be seen as a clean energy vector, currently its global production is derived from fossil fuels. Low-emission hydrogen, better known as green hydrogen, is referred to as the hydrogen obtained using electrolysis coupled with a renewable electricity source and therefore having no associated emissions, but nowadays it accounts only for 0.7% of the total hydrogen demand (95 Mton by 2022)2.

With the aim of increasing green hydrogen production to meet the target of the growing sustainable hydrogen demand, in line with the target set by the strategic research and innovation agenda of the Clean Hydrogen Partnership3, several alternatives to water and steam electrolysis have been developed based on photoelectrocatalytic water-splitting processes and thermochemical processes using renewable or recycled carbonaceous feedstocks.

Nevertheless, challenges regarding raw materials used, equipment set-up, the energy losses during the entire supply chain, and the environmental consequences within the scaling-up process, are still critical points that require methodological scientific investigation to address the potential of green hydrogen to implement a new global economy.

In this work, we present a comparative analysis of the emerging processes for green hydrogen production in alternative to electrolysis-based technologies (currently closer to market) from an environmental life cycle assessment perspective aiming at highlighting the strengths, drawbacks, and hotspots in terms of resource and process efficiency.

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ORG-PO-080. Selenium-containing glycoconjugates as antioxidants

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Selenium (Se) is recognized as a trace element essential for human health; low Se levels are actually associated with several diseases.1 Many natural occurring Se compounds show redox and biologically capacities, thus stimulating synthesis of new molecules with the aim to spread antioxidant effects in biological systems.2 Most of these bioactive Se-containing molecules showed a strong therapeutic and biological relevance.3

In the framework aimed at discovering new efficacious antioxidants, the synthesis of new seleno-glycoconjugates, consisting of monosaccharaides containing selenium bound to polyphenols, is of our interest with the aim to overcome the poor (poly)phenol bioavailability and to provide a synergistic antioxidant effect at once.

The results herein reported open new and long- term perspectives in the seleno-sugars like antioxidants in biological medium.4

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ELE-PO-004. Electrocatalytic materials and devices for the water splitting

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Electrolytic water splitting is one of the most promising ways to harness intermittent renewable power sources, store the provided energy as a clean-burning and sustainable fuel and mitigate greenhouse gas emissions. However, in the water splitting reaction, the hydrogen evolution reaction (HER) rate is often limited by that of the oxygen evolution (OER) due to the more sluggish kinetics and the large overpotential of the latter, which lowers the overall energy conversion efficiency. In this context, nanostructured catalysts have emerged as a promising avenue to address these limitations.

This research project, in collaboration with Dr. Ferdinand Hof from the Material Science Laboratories in Bordeaux, is focused on the study and characterization of nanostructured electrocatalysts for the OER, based on non-precious metals such as Ni, Co or Cu, at different pH values, aiming to elucidate the pH-dependent catalytic behaviour 1,2. Electrochemical techniques such as CV, LSV and EIS have been used for catalyst activation, oxygen production and ohmic drop corrections.

Overall, this research has the potential to enhance the understanding of the underlying pH dependent OER mechanism, paving the way for the design of more efficient and sustainable electrochemical devices for hydrogen production.

ANA-PO-053. The dependence on medium and ionic strength of Ga(III) hydrolysis: a critical literature overview

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Gallium is widely employed in plenty of fields, being crucial in many industrial and technological, as well as medical, applications1,2. This widespread use, together with its limited availability, concurred to include Ga(III) in the list of the Technologically Critical Elements (TCEs)1. As such, its recovery is important for the reutilization in all these applications. Many Ga properties and applications, as well as some recovery processes, take place in aqueous solutions, in which it is present as trivalent Ga species. Being Ga3+ a hard Lewis acid, it undergoes strong hydrolysis in aqueous solution, which deeply affects its chemico-physical parameters and reactivity. Consequently, its speciation is dominated by the formation of several hydrolytic species, both mononuclear and polynuclear, with different stability. The most common species in literature are the mononuclear Ga(OH)2+, Ga(OH)2+, Ga(OH)3(aq) and Ga(OH)4-, while few other polynuclear species are reported by single authors. Collected literature values were critically analyzed in this work, evidencing that hydrolysis constants and solubility products are determined in a wide range of temperature, medium and ionic strength conditions. However, significant discrepancies were found concerning both the nature and the stability of hydrolytic species of Ga3+. In addition, reported data at different temperatures are usually obtained in single media and ionic strengths, and vice versa, highlighting the necessity to perform further dedicated experiments, in order to define a correct speciation model as a function of different conditions3-7. However, considering the wide number of aqueous solution studies involving this cation, an attempt of rationalization of available data is necessary. For this reason, being most of literature hydrolysis constants of Ga3+ reported at T = 298.15 K in various media (e.g., ClO4-, NO3-, Cl-, Br-) and ionic strengths ($0 < I$ / mol dm-3 ≤ 1.5), these data were used for the modeling of the dependence on medium and ionic strength, and results are reported in this contribution.

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ORG-PO-082. Study of the effect of ionic liquid on the aggregation of Nickel-tetra-(4-sulfonatophenyl) porphyrin by Density Functional Theory and UV-Vis absorption for Aqueous Organic Redox flow batteries applications

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Aqueous Organic Redox flow batteries (AORFBs) offer several advantages over other types of batteries in energy storage such as scalability, safety, long cycle life and cost-effectiveness, making them an exciting frontier to explore1. For this scope, the family compound of porphyrins was considered thanks to their well-defined redox processes. In fact, porphyrins go through four electron reactions which can be exploited to develop the redox couple. Particularly, as water-soluble electroactive species for AORFB application, the tetra-(4-sulfonatophenyl) porphyrins (H2TPPS) and nickel-tetra-(4-sulfonatophenyl) porphyrin (Ni-TPPS) were prepared and tested. The disadvantage related to these compounds is their tendency to aggregate, so a preliminary Density Functional Theory (DFT) study on H2TPPS and NiTPPS was performed. It revealed that the introduction of a metal atom inside the porphyrinic core can twist the molecular skeleton resulting in saddle structure that can reduce the normal tendency of porphyrins to aggregate (Fig.1a). This result was confirmed by a UV absorption study (Fig.1b). Efficient redox reactions within the electrolyte are essential for AORFB performance1. Improving the kinetics of charge transfer and minimizing energy losses during cycling are key objectives to enhance the overall system efficiency. One of the challenges related with these concepts concerns that the redox processes of electroactive species must occur within the stability potential window of water2. Ionic liquids (ILs) are fascinating compounds that for electrochemical applications, show good ionic conductivity, wide electrochemical potential window and high thermal stability3. For these reasons, different ILs were considered to be investigated for use as supporting electrolyte to improve stability and electrochemistry. Among the different ILs electrochemically characterized, 1-butylpyridinium tetrafluoroborate ([Bupy+][BF4-]) showed the largest water potential stability (-1.3 an +1.5 V) and was chosen as candidate to test the electroactive species.

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FAR-PO-002. DEVELOPMENT OF NEW SELECTIVE LIGANDS FOR THE CANNABINOID RECEPTOR SUBTYPE 2 (CB2R)

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Cannabinoid 2 receptor (CB2R) is a G-protein coupled receptor and it is part of the Endocannabinoid system (ECS) together with Cannabinoid 1 receptor (CB1R) , the non-canonical receptors (the TRP channels, GPR55, PPAR) the endocannabinoids (the N-arachidonoyl-ethanolamine anandamide, AEA, and the 2-arachidonoylglycerol, 2-AG) and the enzymes responsible for the endocannabinoids synthesis and metabolism. CB2R resulted overexpressed in cells of the immune system and play a key role in disorders based on an inflammatory state, such as neurodegenerative diseases, neuropathic pain and cancer. Starting from the latest released CB2R crystal structures, we designed, synthesized, and evaluated a series of new N-adamantyl-anthranil amide derivatives as CB2R selective ligands (Figure 1A).1 Interestingly, these compounds displayed high affinity for human CB2R along with an excellent selectivity versus CB1R, whose activation is not desired because strictly related to psychotropic effects. The best compounds in terms of CB2R affinity were also evaluated for their functional profile. Molecular docking simulations provided a sound rationale by highlighting the relevance of the arm 1 substitution to prompt CB2R action (Figure 1B). Moreover, the modulation of the pro- and anti-inflammatory cytokines production was also investigated to study the ability of the best compounds to modulate the inflammatory cascade (Figure 1C).

Figure 1. General structure of our N-adamantyl-anthranil amide derivatives (A), top-scored docking poses returned by docking simulations (B) and modulation of the best compound on cytokine production (C)

The promising anti-inflammatory effect exerted by these ligands prompted their investigation in different models: on gastric cancer onset and in vivo on a murine model of Alzheimer disease.

Our latest studies were principally directed to the improvement of the pharmacokinetic properties of these derivatives looking for less lipophilic ligands.

Acknowledgement: The authors gratefully thank MIUR PRIN 2022 PNRR P2022TRR3Y financed by European Union "NextGenerationEU"

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TEC-PO-036. Spectroscopy-based metabolomics for early detection of Citrus Tristeza Virus infection

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Metabolomics is a powerful tool for studying various aspects of plant physiology and biology, which regulate plant growth, development, and stress response. To protect themselves from pathogens, plants produce a wide range of secondary metabolites through a network of different biosynthetic pathways. The analysis of metabolomic data allows the identification of groups of metabolites, whose concentration significantly changes already at the first stages of disease. Metabolomics can be utilized as a tool to detect host-pathogen interaction and also to differentiate the type of compounds produced in resistant and susceptible phenotypes.1

Recently, our lab has been involved in a number of projects based on the application of spectroscopy-based metabolomics for the study of plant diseases, including Erwinia amylovora infections in pear 2 and Xylella fastidiosa infections in olive crops.3,4 Furthermore, some important clues on the resistance phenomenon against Xylella fastidiosa were obtained by investigating the composition of the xylem sap of plant species characterized by a different phenotype towards Xf subspecies pauca.5

This study focuses on Citrus Tristeza Virus (CTV) infections in citrus trees. CTV is the causal agent of “tristeza”, one of the most destructive viral diseases of citrus. The CTV is phloem-limited and its transmission into new geographic areas occurs by the introduction of infected plants or budwood, with subsequent local dispersal in a semi-persistent mode by several aphid species.6 In this study, a combined approach by nuclear magnetic resonance (NMR) and hyperspectral reflectance (HSR) spectroscopies is used. NMR is the most robust and non-destructive technique for the elucidation of unknown compounds: as it is not selective, it allows for an unbiased view of the chemical composition of the sample. HSR provides a rapid detection tool, requires limited sample preparation, and is a non-invasive technique for plant disease detection.

Among the objectives of the present study is the identification of possible biomarkers of CTV infection by NMR and subsequent correlation with specific HSR wavelengths. The latter can be advantageously exploited for the development of sensors for the early detection of CTV infections.

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IND-PO-030. High-rate electrosynthesis of liquid chemicals from CO2 and CO

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Electrochemical CO2 and CO reduction reactions (CO2RR and CORR) with renewable electricity enable the recycling of CO2 waste into energy-rich chemicals conventionally produced from fossil resources.1 Liquid hydrocarbons (e.g. formate, ethanol, acetate, and propanol) are widely employed commodity chemicals and can be produced via CO2RR and CORR. Therefore, we sought to develop electrocatalysts with high selectivity (Faradaic Efficiency, FE) to formate,2 acetate,3 and ethanol operating at reaction rates (current densities) of industrial interest.4

Upgrade of CO to hydrocarbons favors high selectivity toward long hydrocarbon (C2+) products. Additionally, the low solubility of CO in aqueous electrolytes results in increased energy efficiencies when CO2RR-to-CO is followed by CORR-to-hydrocarbons.

In one of our recent works, to exploit the advantages of CORR, we developed a carbon reservoir catalyst (CRC architecture, Figure 1) where nitrogen-doped carbon nanoparticles increase CO availability close to Cu catalytic nanoparticles, enabling electrosynthesis of ethanol with high selectivity, energy efficiency, and disfavouring hydrogen evolution from water-based electrolytes. With this CRC catalyst, we achieve ethanol FE and CE of 50% and 93% (CE*Faradaic efficiency [FE] = 47%) at 200 mA cm-2.

ORG-PO-201. Towards a Circular Future: Sustainable Strategies for Agri-Food Waste Valorization

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Minimization of waste stands as a cardinal principle within the Circular Economy framework, striving to repurpose end-of-life products into valuable resources, thus fostering closed-loop systems within industrial systems. The proliferation of sustainability consciousness underscores an escalating focus on waste reduction and pollution mitigation. In particular, processing operations within the agri-food sector often yield by-products still rich in bioactive compounds, boasting significant nutritional benefits for human health and commercial

value. Those enormous volumes of residues can serve as a source of high added-value molecules that can find applications in several fields, including functional foods, nutraceuticals, and cosmetics.1 Innovative green methodologies typically entail reduced timeframes, energy expenditure, and solvent volumes compared to traditional processes. In recent years, attention has gravitated towards those pioneering extraction methodologies geared as an answer to the sustainability issues. Microwave-Assisted Extraction (MAE) stands out among such innovations, presenting process advantages together with enhanced extraction efficiencies and yields.2

The presented study investigates MAE in water to recover metabolites from Pomegranate Peels (PP), refining extraction parameters and energy consumption.3 The total phenolics, anthocyanins, flavonoids, and tannin contents of the extract have been determined, alongside their antioxidant activity (356.35 mgGAE/gextr., 303.97 µgCy3G/gextr., 37.28 mgQE/gextr., 56.48 mgGAE/gextr., and 1.43 µmolTE/gextr., respectively). The research explores water recycling through nanofiltration (approx. 75% of water reuse), simultaneously achieving product concentration and significant energy savings. The overall sustainability of the protocol is assessed evaluating energy consumption (20.92 W/mgGAE) and main Green Metrics. Finally, the antimicrobial features of the PP extracts have been evaluated against Gram-positive and Gram-negative bacteria, as well as their antiproliferative activity towards human cancer cells (HeLa).

The collected information supports the proposed valorisation protocol as a green and sustainable approach to upcycle PP, achieving a final product with interesting biological features.

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INO-PO-006. Exploring Titanium-OSSO Complexes for Stereoselective Polymerization of 1-Vinylcyclohexene and (S)-4-Isopropenyl-1-Vinyl-1-Cyclohexene, along with Styrene Copolymerization

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The global focus on environmental sustainability has led to a shift towards using renewable resources in various industrial processes. In polymer production, significant progress has been made by using monomers derived from renewable sources to make polyolefins. This departure from traditional petrochemical-based materials signifies a move towards more eco-friendly practices in the polymer industry. Polyolefins like polyethylene and polypropylene are widely used in packaging, construction, and other applications, traditionally made from petroleum-based monomers. However, due to concerns about climate change and limited fossil fuel resources, researchers and industries are exploring alternatives, including using renewable monomers. A significant advancement in synthesizing polyolefins from renewable monomers involves using metal complexes with OSSO-type ligands, which exhibit remarkable catalytic activity and selectivity in polymerizing bio-based monomers, thus facilitating efficient production of high-quality polyolefins [1].

Two titanium complexes with OSSO-type ligands are explored for their catalytic capabilities in promoting stereoselective polymerization of (S)-4-isopropenyl-1-vinyl-1-cyclohexene (IVC), a monomer of natural origin that was synthesized starting from perillaldehyde, found most abundantly in the herb perilla [2]. Previously, the same study was conducted on 1-vinylcyclohexene (VCH) using it as a model monomer as it has the same structure as IVC except for the isopropenyl substituent. Both IVC and VCH were copolymerized with styrene (S) to obtain a perfect diblock copolymers.

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ORG-PO-083. o-Propargylphenols: A Gateway to Divergent Synthesis of 2-Substituted Benzofurans and Chromenes

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Oxygen-containing molecules represent an indispensable class of heterocyclic compounds, due to their physicochemical properties. In particular, two of the most studied scaffolds are benzofurans and chromenes, widely present in natural compounds (flavonoids, alkaloids, etc.) and synthetic drugs (antiarrhythmic, dermatological, and anticancer therapy).

Due to their importance, chromene and benzofuran core have gained enormous attention in the development of different synthetic pathways, involving a plethora of methods and types of reactions. In this context, Divergent Synthetic Strategy emerges as a promising tool, in order to obtain a variety of products under different reaction conditions, starting from similar simple and affordable substrates.

Herein, we report our recent results in the development of a divergent regioselective synthesis of benzofuran and 4H-chromene nuclei. Specifically, we describe the reactivity of substituted o-propargylphenols under two different reaction conditions, both supported by microwave heating: using a catalytic amount of base we were able to selectively obtain substituted benzofuran, while in the presence of a metal catalyst, the reactivity shifted to the formation of chromenes. We also investigated the limitations and the mechanism of our approach.

ORG-PO-084. Synthesis of enantioenriched carbocycle-fused uracils as SARS-Cov-2 RdRp inhibitors

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During a previous work, we developed a new asymmetric methodology to access chiral enantioenriched (5S,6R)-5-hydroxy-6-nitro-5,6,7,8-tetrahydroquinazoline-2,4(1H,3H)-diones of type 3 through an organocatalyzed [4+2] cycloaddition between remotely enolizable uracil carbaldehyde and nitroolefins. Using this strategy, a “first generation” set of compounds were synthetised and tested in preliminary in-vitro assays assessing a “hit compound”, showing a low micromolar activity as inhibitor of SARS-CoV-2 viral protein RNA dependent RNA polymerase (RdRp). Molecular docking studies were then performed to identify probing interactions between the “hit compound” and the crystal structure of viral RdRp: based on these observations, a “second generation” set of molecules was synthetized and here presented.

FIS-PO-006. Eco-conscious innovations in black pigments manufacturing: a path to sustainability

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In our study, we optimized a commercial black pigment containing Cr, Mn, Fe, Ni, and high amounts of Co, targeting the environmentally demanding steps required for its industrial production. This includes the use of metals classified as critical raw materials by the EU Commission1, solid state synthesis at 1300°C2, and lengthy milling to decrease the pigment’s particle size for better dispersion in the ink solvent. By employing the Design of Experiments3, we obtained a composition containing only Cr, Fe and low Co content, eliminating the other critical metals while maintaining the desired black hue of original 5-metals formulation. Further improvements included reducing both calcination temperature to 1100°C, and milling time.

The life cycle assessment is underway to evaluate the environmental impact of our pigment.

Additionally, the optimized composition was prepared via spray pyrolysis, a more sustainable procedure that ensures product formation in nanometre dimensions, potentially eliminating the need for milling.

Assessment of colorimetric performance is currently under investigation.

Our research marks a significant stride towards designing ecological pigments, aiming to reduce the overall carbon footprint.

INO-PO-067. Tungstate and bromide dicationic ionic liquids with rigid spacers: an experimental and computational study on their structure-properties relationship

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The inclusion of catalytically or electrochemically active metal-based systems in ionic liquids (ILs) is attracting a growing interest due to the versatility of this approach and the potential applications in a variety of fields.1 Molybdate and tungstate-based ILs have been reported in literature as effective catalysts for the cycloaddition of CO2 to epoxides,2,3 and other authors have also reported encouraging results concerning the use of tungstate-based ILs for the catalysis of CO2 reaction with a variety of substrates. Among ILs, dicationic ionic liquids (DILs), which display a positive ion consisting of two cationic moieties covalently connected to each other, represent quite interesting systems from a structural point of view. The type and length of the spacer chain is in fact capable of influencing both the conformation and the reactivity of the DIL, representing a further element of tunability with respect to monocationic structures.4 Nevertheless, at the best of our knowledge, no literature papers have yet considered tungstate based-DILs.

A panel of DILs with different rigid xylyl spacers (ortho, meta, para) and different anions (bromide and tungstate) has been synthesised and characterized through different experimental and computational techniques. Analogies and differences between the systems have been analysed using information derived from their DFT structures, semiempirical molecular dynamics, thermal behaviour, and catalytic properties versus the CO2 cycloaddition to epichlorohydrin. The results have shown an interesting correlation between structure, flexibility, properties and catalytic activity.

ANA-PO-001. 3D-Printed Biosensor for Nerve Agent Detection in Drinking Water Using Carbon Black/Thermoplastic Polyurethane: A Cost-Effective and Portable Solution

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Nerve agents, highly toxic substances with severe consequences for human health, are commonly associated with chemical warfare or terrorist activities, posing significant risks to public safety and environmental integrity. Detecting these hazardous compounds, especially in water sources, is paramount to safeguarding human health and mitigating environmental contamination1. Utilizing 3D printing technology, which offers cost-effective and portable solutions, presents a promising approach to developing biosensors capable of detecting nerve agents across various applications2. This study focuses on the creation of an amperometric biosensor for identifying paraoxon, a nerve agent simulant in water, by inhibiting the butyrylcholinesterase enzyme (BChE).

In constructing electrodes suitable for electroanalytical tasks, thermoplastic polyurethane (TPU) electrodes were 3D printed, with carbon black incorporated as a filler to enhance electrode conductivity. Additionally, the combination of carbon black with Prussian blue

nanoparticles (CB-PBNPs) was employed to exploit their electrocatalytic properties, particularly in the oxidation of thiol-containing compounds at low applied potentials3. The electrodes' surface characteristics were assessed through electrochemical impedance spectroscopy and cyclic voltammetry, revealing reduced charge transfer resistance, and heightened peak current intensity, attributed to the presence of CB-PBNPs.

The developed biosensor demonstrated a linear response to paraoxon concentrations up to 20 ppb, with a limit of detection (LOD) of 2 ppb. The LOD was determined as the quantity of paraoxon inducing 10% inhibition of the enzyme in drinking water. Such a biosensor holds promise for detecting and addressing the harmful effects of nerve agents in both crisis scenarios and as a preventive measure.

ABC-PO-018. An integrated approach for the site-specific identification of emerging contaminants in water resources

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The implementation of Water Safety Plans (WSPs) promoted by World Health Organization (WHO) aims to ensure safe drinking water supplies by identifying and assessing potential site-specific risks as well as developing mitigation strategies to prevent and minimize impacts on human health and the environment. One of the crucial steps in applying the WSP approach is the identification of chemicals of concern, especially those not regulated or monitored. In this study, we developed and tested an integrated approach applying on both desk-based and experimental methodologies to identify such chemicals in the deeply industrialized Province of Vicenza (Veneto Region, Italy) where significant aquifers historically subjected to severe contamination are used for water supply. The first methodology involved the use of publicly available databases (e.g., European CHemical Agency (ECHA) database) and information on the geographical distribution of the industrial plants present in the study area. We obtained a list of 46 non-regulated chemicals of concern that were further prioritized based on their Persistence, Mobility, and Toxicity (PMT) characteristics, and the quantity of wastewater associated with their use based on information retrieved from the local water utility. The second methodology involved the sampling of surface and wastewater collected within the study area followed by analysis using liquid chromatography coupled with high resolution mass spectrometry (LC-HRSM, qTOF Bruker Compact) to qualitatively assess the presence of chemical of concern. The mass spectroscopy data and retention time was compared with libraries containing information (e.g., parent ion exact mass, isotopic pattern) on more than 2000 substances including pesticides, pharmaceuticals, and illicit drugs. The analytical results showed that the highest number of chemicals was detected at the outlet of wastewater treatment plants, with pharmaceuticals being the most present class of compounds. Moreover, several of the 46 substances identified through the first methodology, including venlafaxine, diclofenac, and valsartan, were also detected during the screening analysis. The proposed approach effectively identified site-specific chemicals of concern highlighting the importance of integrating information on industrial activity with experimental data. In fact, all substances identified in this work will be further investigated through quantitative analysis to better understand their occurrence in the examined water supply area.

TEC-PO-058. Exploring Anticancer Potential: Utilizing 3-Hydroxyflavone and Ethyl Gallate as Platinum Coordinators in Biological Systems

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Cisplatin, a widely-used chemotherapy agent, has significant drawbacks, including severe side effects like kidney damage and nerve toxicity. Finding a new platinum drug with better efficacy and fewer side effects remains a key goal in cancer treatment.

The strategic substitution of ligands within cisplatin, incorporating moieties characterized by both biological activity and anticancer potential such as flavones, represents a compelling direction of inquiry. In pursuit of this objective, our research group has synthesized novel complexes aimed at realizing this dual functionality.

3-Hydroxyflavone (3-Hfl) and ethyl gallate (etga) exhibit notable antioxidant, anti-inflammatory, and anticancer properties, making them highly appealing candidates for inclusion as ligands in platinum derivatives. This highlights their potential significance in biomedical research and therapeutic development.

ANA-PO-080. Tungsten-coating as hydrogen permeation barrier on X60 steel

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Hydrogen is an environmentally friendly fuel as it does not generate CO2. Utilizing pipelines and reservoirs for hydrogen transport and storage are generally made of steel, and hydrogen can cause detrimental effects on their mechanical properties due to a phenomenon called hydrogen embrittlement (HE). Therefore, introducing a barrier in steel is essential to prevent this effect. This research aims to explore tungsten coatings as possible hydrogen permeation barriers (HPB) on X60 steel. The goal is to prevent or at least decrease the hydrogen that can penetrate into the steel and prevent HE.

In this context, physical vapor deposition (PVD) was employed to deposit tungsten onto a X60 steel substrate; the surface morphology and the composition of X60 steel and tungsten-coated X60 steel (W-coated X60 steel) were characterised by scanning electron microscopy- energy dispersive X-ray spectroscopy (SEM-EDS), X-ray photoelectron spectroscopy (XPS) and X-ray fluorescence spectroscopy (XRF). Additionally, an analytical method was optimized for performing hydrogen permeation measurements both on X60 steel and on W-coated X60 steel using Stachurski's cell.

The SEM and XPS results have indicated that a tungsten coating has been deposited on steel, with a thickness of 0.2mm. Preliminary electrochemical tests have shown that the tungsten coated X60 steel exhibits a promising reduction in hydrogen diffusion compared to uncoated steel. The findings from XPS and SEM-EDX analyses will be discussed together with the results obtained from the in-situ electrochemical measurements.

ORG-PO-085. Structure-based design and synthesis of novel HUR inhibitors.

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Human antigen R (HUR) is a master post-transcriptional regulator mainly involved in messenger RNA (mRNA) translation and turnover. HUR over-expression and cytoplasmic accumulation is well correlated to several diseases, including cancer, inflammation, cardiovascular, muscle, kidney, and liver diseases, making HUR an attractive therapeutic target.1 Reported HUR targeting strategies include the use of small interfering RNAs (siRNAs) and small molecule inhibitors.2 Regarding the latter, although several compounds have been reported,2 they still face major issues, such as limited solubility and bioavailability, as well as off-target effects against other RNA-binding proteins (RBPs). Therefore, targeting HUR remains a major challenge in biomedical research.

Based on the screening of a large, small molecule library, a hit compound has been identified as a potential HUR inhibitor with promising biochemical properties. Docking studies performed on this hit showed more insights about its interactions with HUR, giving us more room for SAR elucidation and structural optimization for analogues endowed with better affinity and pharmacokinetic profile.

Our attempts towards the rational design and synthesis of novel HUR inhibitors aimed at improving their pharmacokinetic profile will be presented together with their preliminary biochemical evaluation.

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ORG-PO-086. A novel family of photo-sensitizers: Ir-based complexes featuring radical-stabilizing ligands.

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In the last decades, light mediated processes have emerged as a new way to access novel and unparalleled transformations due to the implementation of photocatalyst in light mediated protocols, which allows for functional group tolerance and selectivity. Between all photocatalyst, Iridium organometallic complexes stands out due to their unique photophysical features, allowing challenging transformations and achieving high molecular complexity through streamlined protocols. Recently, our research group reported that the tedious formation of an open-shell intermediate can benefit form the presence of stochiometric amounts of naphthalene thanks to the stabilization of the transient triplet states through radical-π dispersion interactions. Herein we report the first class of iridium-based photocatalysts featuring pendant radical-stabilizing groups aimed to enhance the EnT-based transformations via generation and stabilization of the biradical species trough the pendant naphthyl or binaphthyl moieties.

Different degree of substitution with naphthyl pendants were explored, isolating a family of 8 new photosensitisers. Their catalytic activity was studied in isomerization, cyclization and dearomatization reactions. The results showed diradical stabilization thus achieving high reaction yields, typically only attainable in the presence of stochiometric amounts of naphthalene.

ORG-PO-202. Tailor-made heterogenous catalyst for biomass upgrading and green hydrogen production

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Although hydrogen is widely recognized for its promising improvements in clean energy applications, its still predominant supply from fossil fuels presents environmental challenges, also associated with H2 storage and distribution issues. In light of this, there is a pressing need for efficient and sustainable hydrogen production, storage and use alternatives. Liquid organic hydrogen carriers (LOHCs) are emerging as promising candidates. Among them, formic acid stands out as a green hydrogen source derived from renewable feedstocks. In addition to serving as an energy carrier, biomass-derived formic acid has potential as a “on-demand” hydrogen source in chemical hydrogen transfer reactions (figure 1).1,2 Additionally, hydrogenation processes in biomass upgrading, leading to high-value added products, have gained increased importance. Biomass, being natural, abundant, renewable, and carbon-neutral, offers a promising approach to replace fossil feedstock in producing chemicals, fuels, materials, and energy.3,4 The design of high-performance durable and reusable catalysts is one of the key challenges in hydrogenation and dehydrogenation of FA. Here, we present a tailor-made water-tolerant heterogeneous catalytic system for advancing green hydrogen production and hydrogen transfer processes in aqueous medium.

Acknowledgements

This work has been funded by the European Union – NextGenerationEU under the Italian Ministry of University and Research (MUR) National Innovation Ecosyste

m grant ECS00000041 – VITALITY. We acknowledge Università degli Studi di Perugia and MUR for support within the project Vitality. The University of Perugia is acknowledged for financial support to the university project “Fondo Ricerca di Ateneo, edizione 2022”.

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ORG-PO-087. Sustainable synthetic methods for decoration of BN modules

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Borazine, a heterocyclic analogue of benzene, is isoelectronic and isostructural with benzene. For this reason, borazine is sometimes referred to as “inorganic benzene”. Owing to the substitution of B−N bonds, the electron donation of nitrogen to boron centers contributes to the strong polar character of the B–N bonds, which makes borazine and its derivatives good UV emitters and peculiar reactivities. Based on its properties, borazine and its derivatives have wide applications including, optoelectronic organic materials, self-assembly, H2 storage, and ceramics since it was reported in 1926.

This work aims to explore more borazine derivatives about the C–H functionalization of borazine and expand the applications of borazine derivatives. In this work, the C–H functionalization of tri-substituted and hexa-substituted borazines between heterocycles and aromatics has been explored, which enables to diversify the variety of borazine derivatives and enlarges the scope of their application.

FAR-PO-071. Identification of New Heterocyclic Compounds as Protein Disulfide Isomerase A Inhibitors

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Protein disulfide isomerases (PDIs) are redox chaperone proteins that belong to the thioredoxin oxidoreductase superfamily and are able to catalyze dithiol-disulphide exchange reactions. In the last years, the scientific community paid much attention to PDIA3 isoform, because altered expression and activity of this protein has been associated with several human diseases, such as cancer, neurodegenerative diseases, and also viral infection. Indeed, the presence of PDIA3 on the cell surface has been related with the entry of different viruses in human cells. During influenza A virus (IAV) infection, PDIA3 is involved in the hemagglutinin protein maturation and IAV replication, suggesting a potential role as target to counteract IAV infection. Moreover, in human coronaviruses (HCoVs), PDIA3 is associated with the effective oxidative folding and trimerization of HCoV Spike (S) protein by catalyzing the formation of disulphide bonds that could mediate the interaction between the envelope and S protein. Therefore, PDIA3 may be viewed as an interesting pharmacological target with a huge potential for the development of innovative antiviral agents. Also considering its presence in human cells and not in the viruses, PDIA3 offers the opportunity to discovery new drugs as putative broad-spectrum antiviral agents, overcoming problems such as drug resistance. In previous studies, 16F16 was reported as a covalent inhibitor of PDIA1 and PDIA3 proteins due to the presence of a chloroacetyl group that irreversibly binds to free cysteine thiols. 3 Starting from the chemical structure of 16F16, we designed and synthesized a small set of structural analogues, characterized by a tetrahydro-β-carbolines core endowed with a chloroacetyl group in 2-position as PDIA3 inhibitors, to further explore the structure activity relationship. The data coming from the biochemical assays will be shown and discussed.

TEF-PO-014. Composite biomaterial-based microneedles for pathological scars treatment

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Abnormal scars, also known as pathological scars, refer to a variety of skin formations that deviate from the typical healing process after injury. These scars may include keloids, hypertrophic scars, or scars resulting from conditions like acne or burns1. Recent research has highlighted the potential of drug-free microneedles (MN) in reducing scar growth by inhibiting skin fibroblast proliferation2. This effect, known as the contact inhibition effect, is achieved by disrupting the mechanical communication between fibroblasts and the extracellular matrix3. The objectives of the present work are i) the development of a novel composite biomaterials consisting of whey protein isolate (WPI, Milei GmbH, DE), and chitosan (CS, Sigma Aldrich, I) or trimethyl chitosan (TMC, ChitoLytic, CAN) and ii) the design and production of composite biomaterial-based MN that employ a mechanotherapeutic approach to treat abnormal scars.

For the development of the composite biomaterials different complexes were prepared by mixing WPI 4% w/w aqueous solution with 4% w/w CS solution in 0.5M acetic acid or 4% w/w TMC aqueous solution at 1:1 weight ratio. The influence of WPI denaturation (70°C for 20 min) on complexes formation was investigated. Rheological, turbidimetric, dynamic and electrophoretic light scattering, SEM analyses were performed to characterize the complexes. Moreover, in vitro biocompatibility on NHDF cells and antioxidant activity were also evaluated.

MN patches consisting of the complexes were fabricated via a two-step centrifugation casting method, using two different polydimethylsiloxane molds containing pyramidal cavities. The MN patches were characterized for morphology and mechanical

strength. Insertion studies were also performed on model membranes. For the in vitro performance studies, a fibroblast-populated collagen lattice system (FPCL) model was used to investigate if MN were able to reduce collagen matrix contraction, modifying its viscoelastic properties.

The formation of CS-TMC:WPI complexes was significantly affected by WPI denaturation. All complexes were characterized by in vitro biocompatibility and antioxidant properties. MN showed a well-defined structure with a pyramidal morphology, evidenced by SEM analysis. The fracture force for all the MN prepared exceeded 0.058 N, that is the minimum average penetration force for normal skin. Preliminary results pointed out that MN inhibited FPCL contraction with a significant change in its viscoelastic properties. In vivo studies are on-going to evaluate the biocompatibility of the obtained composite biomaterial-based MN.

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ORG-PO-088. Harnessing light energy: photoresponsive surfactants for enhanced micellar catalysis

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In the context of green chemistry, minimizing waste and energy consumption is crucial in chemical processes. Organic solvents, known for their toxicity and hazards, pose a significant waste issue, prompting the search for non-toxic alternatives like water for organic reactions. Despite the hydrophobic nature of many organic compounds in aqueous environments, self-assembling surfactants enable "micellar catalysis", overcoming this challenge by hosting reagents in their lipophilic pockets, offering conditions for high-yield, efficient, and sustainable reactions, if appropriately chosen.

The chemical nature of surfactant-formed interphases significantly influences products distribution in competitive reactions. Within the micelle, an interfacial dipole induces selectivity between the hydrophilic and hydrophobic portions of the surfactant.

Introducing selectivity in surfactant-enhanced reactions requires controlling the non-covalent interaction between surfactant and substrates, considering: 1) regioselectivity in competitive transformations induced by the preferential orientation of reaction intermediates due to interface dipoles at the hydrophilic/lipophilic interphase; 2) product selectivity induced by specific surfactant/substrate interactions; and 3) product selectivity due to compartmentalization effects between the water and oil phases.

To enhance selectivity, we propose a novel surfactant design with a photochromic compound, specifically a spiro-oxazine. The photochromic residue is incorporated at the boundary between the hydrophilic and the lipophilic portion of the amphiphilic molecule, which consist respectively of a PEG moiety and an alkyl chain. Responsive to UV light, it switches between a neutral-low polarity and a zwitterionic-high polarity state. This tuning ability, rooted in the concept of photostatic equilibrium, determines the relative population of open (polar) and closed (nonpolar) forms of the photochromic molecules. Adjusting irradiation conditions in terms of intensity, pulse duration and temperature, tunes the interfacial dipole and the Hydrophilic-Lipophilic Balance (HLB) of the surfactants used. This innovation holds promise for improving reaction selectivity in surfactant-enhanced processes.

ORG-PO-058. Novel organic molecule designed to optimize next-generation photovoltaic components

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Recently, energy generation has become a crucial scientific and technological issue. Given the increased global demand for energy, there is an urgent need to find new strategies to get energy from renewable sources.1 In this field, among the new generation of photovoltaic systems, dye-sensitized solar cells (DSSCs) are devices that stand out for their simplicity of fabrication and peculiarities of functioning. For these reasons, those devices have recently received considerable attention with the focus on optimizing their components to improve efficiency.2

The same aim can be found in this work in which we present a novel organic photosensitizer (DYAD) designed to improve light-harvesting efficiency (LHE) containing an antenna moiety to enable the well-known Förster Resonance Energy Transfer (FRET) effect, often used to increase the LHE.3 The novelty of the compound lies in its structure containing a dye with the classical D-π-A sequence used in DSSCs and a covalently bonded antenna (donor). To achieve this purpose, two compounds were designed in order to have complementary spectroscopy properties and they were prepared to be joined together by a "click" reaction as a late-stage connection. Moreover, a model dye was synthetized to verify the increased properties and the FRET effect.

Figure1: structure of the new DYAD and the model dye

Acknowledgment: We thank the Ministry of Environment and Energy Security (POR H2, A.d.P. MASE/ENEA-CNR-RSE, CUP B93C22000630006 and "IEMAP" project, A.d.P. MASE/ENEA-CNR-IIT-RSE, CUP B82C21001820001) for funding.

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ORG-PO-089. Unveiling the Potential of Indolizines: New Chemotypes able to Modulate the Protein Quality Control System in cancer pathology

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BAG3, or Bcl-2-associated athanogene 3, is a multifunctional protein involved in critical cellular processes such as protein quality control and cell proliferation and survival. As part of the BAG protein family, it interacts with the molecular chaperone Hsp70, working as a co-chaperone to regulate protein folding, functioning, and degradation. BAG3-HSP70 interaction is crucial for maintaining cellular homeostasis under stress conditions like those experienced by malignant cells. Interestingly, both BAG3 and Hsp70 are overexpressed in different types of cancer, where they are connected to tumor progression and resistance to chemotherapy. For this reason, targeting BAG3 and HSP70 represents a promising approach in cancer therapy.

Continuing our research in the field of protein quality control system regulation using small molecules, we decided to investigate the indolizine scaffold as a new promising moiety for the design of new Hsp70-BAG3 modulators, taking advantage of innovative MCRs procedures for the synthesis. We investigated several experimental conditions for the synthesis of indolizines through the 1,3-dipolar cycloadditions of pyridine, bromide derivatives, and alkynes, and finally, we succeeded in optimizing the procedure using the caesium carbonate as base in DMF as solvent. Hence, we designed and synthesized a first set of compounds that have been tested against the targets of interest using an SPR-based assay. The results obtained allowed us to identify a compound with an interesting binding profile, being able to bind both BAG3 and HSP70 that can be considered as a starting point for further optimization process.

TEO-PO-012. Role of Key Intermediates of Oxygen Evolution on IrO2, RuO2 and TiO2 catalysts: A Computational Electrochemistry study

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Water electrolysis is a key reaction for the transition to sustainable fuels and green energy production.1 The Oxygen Evolution Reaction (OER) still needs to be improved in terms of efficiency and fundamental understanding of its chemistry. In terms of efficiency, RuO2 is considered a promising candidate. OER is typically assumed to occur through the path OH*, O*, OOH*.

Previous studies demonstrated that on RuO2 unconventional intermediates can form. For instance, instead of forming OOH*, the oxygen bond changes from hydroperoxide type (OOH) to superoxide (OO—H+) one.2

In the presentation we systematically investigate the role of key reaction intermediates on three relevant metal oxides for electrocatalytic and photoelectrocatalytic OER, TiO2, RuO2, IrO2.3-4 This study was conducted by first, investigating the stability by means of ab-initio thermodynamics, and then by looking at the critical role of solvation. Finally, static calculations were complemented by ab-initio molecular dynamic simulations.

Results allow to rationalize both the role of solvation in the stability and reactivity of OER intermediates, as well as the role of the electronic structure of the metal oxide, giving an interesting overview of the intermediates formation and stability.

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ANA-PO-095. Addressing sustainability in the electroplating industry: an all-round challenge

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Electroplating is a key process in many industrial fields such as automotive, electronics and decorative applications; it allows to provide new properties to substrates materials like corrosion resistance, hardness and aesthetic value. Nonetheless, electroplating is considered one of the most non-sustainable industries related to the manufacturing sector, both from an environmental and social point of view1.

For over two decades, sustainability in the plating industry has been one of the key concerns of the industry. This makes it critical for the industry to assess the entire sustainability of virtually every plating facilities and then come up with both short-term and long-term approaches for improving sustainability performance.

In our work, the state of art was evaluated regarding three different but complementary lines of actions to improve the sustainability in Agenda 2030 SDGs optic of the electroplating industry2, especially in non-mandatory fields such as the decorative one. Either different plating techniques, in-silico simulations and the metal recovery are linked to each other in minimizing the material usage and, consequently, metal extraction.

It is fundamental to fashion designers to take care of the whole production processes, thinking out of the schemes for new sustainable geometries and for industries to embrace simulations to test them3. Hence, deposition techniques should improve by trying to merge the properties of modulated currents with three ways rectifiers engineering and calibrate the deposition parameters with analytical techniques such as spectroscopies. Furthermore, electroplating facilities are needed to dedicate forces to select and optimize recovery methods according to their specific internal needs.

The authors acknowledge the Italian Ministry of University and Research (MUR) funded by the European Union - NextGenerationEU for the National Recovery and Resilience Plan (NRRP), Mission 4 Component 2 Investment 1.3 - Call for tender No. 341 of 15 March 2023 of - Project code PE_00000004, CUP B83C22004890007, Project title "3A-ITALY - Made-in-Italy circolare e sostenibile".

IND-PO-031. Up-cycling of waste Sulfur by inverse vulcanization: novel materials for advanced photonics

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The recently emerged Inverse Vulcanization (IV) process enables the up-cycling of elemental Sulfur, the main by-product of oil and gas refining, and leads to a new class of amorphous polymers consisting of polysulfide chains cross-linked by organic divinyl moieties.1 Due to their peculiar nature, inverse vulcanized polymers (IVPs) exhibit unique functional properties, such as dynamic covalent behaviour and self-healing capability. IVPs also boast very high refractive index and excellent transparency in the near infrared region, which make them appealing materials for functional photonic structures.2 All-polymer photonic crystals are indeed technologically interesting for materials affordability, fabrication simplicity and scalability. However, their application in the field of light confinement is still limited by low and similar refractive indices typical of most processable polymers in their transparency range.

Here, novel IVPs with a very high refractive index were synthetized using specifically designed vinyl aromatic derivatives as cross-linking monomers, which were obtained from the corresponding bromide substrates by a single step Suzuky-Miyaura cross-coupling reaction. Comonomers type and amount were varied to enhance both the optical behaviour and filmability. The achieved IVPs were then successfully used to fabricate all-polymer distributed Bragg reflectors (DBRs), see Fig. 1.

ABC-PO-001. Rare Earth Elements And Trace Elements Concentrations in Geothermal Waters: Implications for Resource Exploration and Water-Rock Interactions

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The Rare Earth Elements (REEs) hold promise as tracers in geothermal systems, yet progress has been hindered by the scarcity of data on REE behavior in thermal waters, as well as on REE mineral solubility and complex stability under high temperatures and pressures. Major and trace element geochemistry of geothermal waters is crucial for sample classification and for comprehending subsurface mass transport during groundwater circulation.1

A better understanding of the behavior of REEs in thermal waters could have significant implications for geothermal resource exploration and the investigation of water–rock interactions in geothermal systems. Consequently, the main objective of this study is an evaluation of REEs concentrations in waters sourced from different continental geothermal systems.2

The matrices under investigation are analytically complex, requiring pre-treatments to eliminate interferences resulting from high saline content before instrumental analysis via inductively coupled plasma-mass spectrometry (ICP-MS). Each sample, after acidification with high-purity grade HNO3, was divided into two aliquots: one underwent filtration while the other was analyzed as is. Corrections for isobaric oxide interferences were implemented for BaO on Eu and Sm, PrO on Gd, and NdO on Tb, with In serving as an internal standard. A comparison between filtered and unfiltered aliquots was conducted to discern the form in which REEs are present within the sample, both in solution and as suspended particulates.

Approximately 70 samples of thermal waters from two Italian regions, Campania, and Veneto, were analyzed, with temperatures at the source ranging from 22.7°C to 86.4°C. In addition to REEs, minor and major elements such as Ag, Al, As, B, Ba, Ca, Cd, Cr, Cu, Fe, Li, Mn, Mo, Ni, Pb, Sb, Se, Sr, Rb, Tl, V, and Zn were analyzed using ICP-MS with Y and In serving as internal standards. Fluoride, chloride, bromide, nitrate, sulfate, and phosphate were determined using ion chromatography.

In both fields, trace element concentrations are higher in the geothermal waters than in the cold waters. Rb/Cs ratio in the geothermal waters was evaluated, as an indicator of water–rock interaction.

The REE concentration distributions were normalized to chondrite and to the European shale composition, with particular attention to Ce and Eu, whose anomalies in the patterns may be used as an indicator of rocks in the water circulation environment.

ORG-PO-054. Innovative molecular platforms for G-quadruplex stabilization

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G-quadruplexes (G4s) have received considerable attention in recent years, due to evidence of their occurrence in living cells. 1Formed by stacks of guanine quartets, G4s belong to the wide class of non-canonical nucleic acid structures. Putative G4 forming sequences are distributed in genomic regions relevant for a number of pathologies, spanning from cancer to viral infections, where they can act as regulators of genetic information transfer.2 In this context, G4-targeting is regarded as a novel potential therapeutic approach for the treatment of associated diseases.3 Taking inspiration from the recent literature on G4 ligands4 and relying on the scaffold hopping strategy,5 we selected three different heterocyclic frameworks, potentially able to bind G4s by stacking the external G-tetrads. We functionalized these scaffolds with proper polar or positively charged flexible groups for binding to G4 loops/grooves, and/or with alkylating warheads for more selective covalent targeting. To investigate the G4 binding properties of the new molecules, in vitro

biophysical studies were performed employing both telomeric and oncogene promoter G4-forming sequences. Interestingly, the investigated compounds showed potent G4-stabilizing properties and a certain preference for G4 over duplex DNA. Under preliminary in vitro studies, some ligands proved to inhibit cancer cells proliferation, not affecting healthy cells used as control.

Mercoledì, 28 agosto 2024
POSTER-B: Poster Session B
Luogo, sala: **Hall B (main hall; level +1)**

POSTER-B: Poster Session B
Luogo, sala: **Hall B (main hall; level +1)**

CSB-PO-008. Metabolomic profiling to explore the role of PIN1 in mouse skeletal muscle

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PIN1 is a ubiquitous enzyme involved in the control of myofibers metabolic behaviour the roles of which in skeletal muscle is still to be defined.1 We investigated the metabolic consequences of Pin1 depletion in mammalian skeletal muscles using a murine model. In particular, a metabolomic study on slow-twitch soleus (SO) and fast-twitch tibialis anterior (TA) muscles, from Pin1 knock out (KO, N=10) and wild type (WT, N=10) mice, was carried out using high-resolution magic angle spinning nuclear magnetic resonance (HR-MAS NMR) spectroscopy, directly applied on tissue samples, without any pre-treatment.2

Multivariate statistical analysis highlighted metabolic differences between SO and TA muscles. The SO samples are richer in lipids, fumarate, succinate, glutamate and glutamine, instead TA samples show higher content of creatine, glucose, lactate and pyruvate. These results agree with the notion that slow-twitching SO have an oxidative metabolism, whereas fast-twitching TA are characterized by glycolytic metabolism.

We detected metabolic changes in Pin1 depleted muscles that suggest a tendency of TA to become more oxidative, whereas those observed on SO are more nuanced.

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ANA-PO-081. Lipidomic Investigation in Plasma of Parkinson's Disease, Multiple System Atrophy and Progressive Supranuclear Palsy Diagnosed Patients

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Parkinson's disease (PD), ranking as the second most prevalent global neurodegenerative disorder, presents a multifaceted clinical profile1. The diagnostic process for PD remains a clinical endeavour, reliant on the expertise of healthcare professionals. This lack of definitive diagnostic tests poses significant hurdles, especially during the early stages of the disease, where subtle presentations may lead to misdiagnoses. Furthermore, distinguishing PD from related neurodegenerative disorders with overlapping early-phase symptoms, such as Multiple System Atrophy (MSA) and Progressive Supranuclear Palsy (PSP), poses its own set of complexities. This investigation aimed to characterize possible circulating lipid biomarkers for PD, MSA and PSP by untargeted and semi-targeted lipidomic analysis using LC-HRMS.

The lipidomics investigation was carried out on a HPLC coupled with a QTOF in an iterative DDA (Data Dependent Acquisition) mode. After data acquisition two different processing pipeline were essayed and compared, specifically a fully untargeted approach and a pseudo-targeted one (illustrated in Figure 1).

After dataset cleaning, a normalization method based on Total Useful Signal (TUS) was applied and after normalization both univariate and multivariate analysis were carried out. Finally, we refined our analysis to compare just two different groups: Parkinson's and non-Parkinson's. Employing this approach, we found 40 preliminary compounds that exhibited significant differences between these two groups and achieved an acceptable separation through PLS-DA

ORG-PO-203. Visible-light generation of aryl radicals from C-halogen bond in cross-coupling reactions

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The generation of aryl radicals has been widely investigated during the last century for their synthetic utility. The typical generation methods involve the combination of aryl halides and an excess of radical initiator, such as AIBN or Bu3SnH, or diazonium salts with strong metal-based reductants. These strategies have several problems related to low efficiency and vast by-product formation, and, for this reason, aryl radicals found low applicability in organic synthesis1.

In the last decade, the development of photoredox catalysis led to a renaissance of aryl radicals, since using an efficient catalytic system it is possible to generate aryl radicals under mild conditions. Seminal papers reported the use of diazonium and iodonium salts as aryl radical precursors1. Aryl radicals find synthetic applications in two main classes of reactions: atom transfer (XAT) and radical addition2.

In this work, we propose an innovative, more general and efficient photochemical method to perform cross-coupling reactions with an electronrich aromatic compound.

Cross-coupling reactions are one of the most common classes of chemical transformations. The general approach to perform this reaction is well described in the literature and, generally, it requires the use of metals such as Copper, Nickel, or, more commonly, Palladium3.

The reaction consists of the generation of an aryl radical by the reduction of a C-X bond by an organic photocatalyst in its excited state. This radical can then react with an electronrich species to form a new C-C bond.

ALI-PO-019. Determination of oxygen heterocyclic compounds content in cinnamon- and Citrus-flavoured foods using High Performance Liquid Chromatography-Tandem Mass Spectrometry

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A great number of plants, principally belonging to Apiaceae and Rutaceae families, contain high levels of oxygen heterocyclic compounds (OHCs), namely coumarins, furocoumarins and polymethoxyflavones1. These compounds are mainly present in Citrus fruits, cinnamon, carrot, parsnip, fennel, celery, parsley and turnip which are commonly used in several plant-based foods. Due to their numerous biological effects, coumarin and its derivatives are widely exploited as therapeutic agents but also as flavouring agents in foods2. The most important properties of these molecules are the antioxidant and anti-inflammatory effects1. Taking into account their significant role in several fields, special attention must be paid to the noteworthy drawback of their hepatotoxicity and skin phototoxicity. Among all the OHCs, the content of coumarin is the only one strictly regulated in foods. The Decision No 1334/2008 of the European Parliament and Council forbids the addition of coumarin to food as an additive, while the Annex III allows the maximum presence of 50 mg kg-1 for traditional bakery products and 5 mg kg-1 for desserts of coumarin in foods containing cinnamon as a flavor3.

The aim of this research was to investigate the amount of coumarin and 35 OHCs in more than 30 foods flavoured with cinnamon and Citrus products to monitor the daily intake of coumarin by food. For this purpose, liquid chromatography coupled with triple-quadrupole mass spectrometry detector (RP-HPLC-QqQ/MS) was the approach of choice to determine the amount of OHCs in the samples of our interest and verify if coumarin content was in accordance with the limit of 0.1 mg kg-1 body weight as a tolerable daily intake imposed by EFSA4. Before the RP-HPLC-QqQ/MS analysis, each sample was subjected to solid-liquid extraction. The extraction method was validated in terms of recovery, varying the type and volume of solvent used, the extraction time and temperature, leaded by the objective of a more environmental friendly way to operate.

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CSB-PO-006. Study on the impact of Toll-like Receptor 4 (TLR4) modulation in rare inflammatory-fibrotic diseases

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The project focuses on the modulation of fibrotic phenotype up-set in rare diseases through a Toll-like Receptor 4 (TLR4) antagonist.

In particular, in this work, we started to test the possible impact on fibrosis progression of FP7 and FP12 that showed inhibition activity against TRL4 activation by LPS in a dose-dependent way in both human and murine cells 1.

Fibrosis is an outcome of the repair response to tissue damage caused by inflammation. When the fibrotic process is excessive or dysregulated it leads to a pathological condition that can affect different organs and functions. Here, it is now clear that inflammation, which however is not the only trigger, plays a key role in the critical cellular process of fibroblast activation that leads to fibrosis up-set 2.

The recent discovery of complex crosstalk between fibrosis progression and inflammatory pathways underlines the central role of TRL4 and its potential as a new drug target3. Here it is proposed an in vitro screening on cellular models of fibrosis with TLR4 antagonists to identify new potential drugs targeting Idiopathic Pulmonary Fibrosis (IPF), a rare fibrotic pathology where a pivotal role of TLR4-mediated inflammation has been observed 4 5.

IND-PO-032. Synthesis of a new heterogenous photocatalyst for the valorizaztion of biomass residues by photoreforming

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The generation of spent lithium-ion batteries (s-LIBs) worldwide amounts to millions of tons annually. While current recycling methods focus on extracting valuable metals like Ni, Co, and Li, they suffer from poor selectivity, high energy requirements, and expensive by-product management. Consequently, there's growing interest in exploring alternative methods for the direct reuse of s-LIBs [1]. At the same time, lignocellulosic and agro-industrial waste and residues represent a central feedstock for modern biorefineries aimed to the sustainable production of renewable energy and biobased materials and chemicals [2]. Technologies such as hydrothermal carbonization (HTC) have been proposed to upgrade orange peel waste (OPW), yielding hydrochar (OPW-HC) and liquid bio-oil (OPW-OIL), rich in furans derivatives like furfural and 5-HMF, pivotal in modern biorefineries [3]. OPW-OIL can be very rich in furans derivatives (furfural and 5-HMF) that represent one of the most important classes of intermediates in modern biorefineries.Starting from these two abundant wastes, we propose a simple direct approach to transform s-LIBs into a lithium (Li)-Co-Ni-Mn doped graphitic carbon nitride composites through one-pot in situ thermal process by using hydrochar as co-catalysts to improve the photocatalytic activity in H2 production and value-added chemicals.

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TEO-PO-033. Photophysics and Fluorescence of a Nucleic Acid-Protein Photo-Crosslinking Model through hybrid QM/MM MD and non-adiabatic Surface Hopping simulations

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Isolation of transient nucleoprotein complexes in their biological conformation is a challenging task: a promising technique for this goal is to induce in vivo crosslinking between the nucleic acid and the protein, by UV light (UV-CL). The photo-cyclization of 5-benzyluracil (5BU) to 1,2-indaneuracil has been proposed as a model reaction for studying the mechanism of UV-CL.[1] In this context, we present a combined experimental and theoretical study of the thermal equilibrium, the photophysics and the ultrafast photo-activated dynamics of 5BU in methanol,[2] exploiting the framework of the DFT and TD-DFT.[3] We adopted the ADMP[4] method and an hybrid QM/MM ONIOM partition scheme, enforcing non-periodic boundary conditions.[5] We recorded the UV absorption spectrum in methanol solution and simulated the band shape through TD-DFT calculations performed on the structural ensemble given by the AIMD trajectory, finding a good agreement between experiments and simulation. With respect to previous studies,[6] we uncovered that first two excited states are indeed the ones responsible for the absorption preceding the photoreaction; that their brightness is strongly influenced by the accessible conformations of the 5BU at room temperature and the microsolvation of its oxygen and nitrogen atoms. After excitation, 5BU exhibits an ultrafast non-radiative decay (probed by fluorescence upconversion experiments), which competes with the reactive path and is debated to be due either to a de-excitation to the ground state or a relaxation within the excited state.[6] To give a molecular interpretation of the photo-induced relaxation, we conducted a mixed quantum/classical non-adiabatic molecular dynamics, by adopting the Surface Hopping[7] approach; we finally performed a vibrational analysis through an innovative protocol, based on the wavelet transform of time resolved generalized modes extracted from the trajectories.

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ANA-PO-042. Mapping of local hydrogen peroxide generation on bioactive surfaces by scanning electrochemical microscopy

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Due to the rise of antimicrobial resistance, new formulations and more efficient materials are being investigated for the control of the microbe spread and the fight against harmful pathogens. This is the case of inorganic antimicrobials, which have become popular in different applications. However, it is nowadays essential to estimate correctly and deeply the nature of bioactivity mechanisms and material surface properties with the ultimate goal of developing safer and greener (nano)antimicrobials. For example, we have recently demonstrated the importance of applying a thorough analytical characterization to predict possible toxicity mechanisms1, thus suggesting specific dose-effect correlations in the case of Cu nanoparticles. In this communication, we present our recent results about ZnO-based materials. Zinc oxide is a widely used antimicrobial whose action mechanism involves multiple processes2. In fact, ZnO bioactivity can be ascribed both to the action of reactive oxygen species (ROS) formed by a photocatalytic process and to Zn2+ release from the material surface3. In this work, scanning electrochemical microscopy (SECM) is used in situ, to evaluate if the ROS generation is caused by the Zn2+ ions or by the intrinsic ZnO photoactivity3. Specifically, the real-time spatially resolved (photo)reactivity of ZnO-based coatings was investigated, monitoring the local oxidation current of hydrogen peroxide, which is the most stable ROS. First, the detailed analytical characterization of the sub-micrometric ZnO-based materials by microscopic (TEM) and spectroscopic (UV-Vis, ATR-FTIR, XPS) investigation will be presented, offering an overview of the material morphology, chemical composition and surface reactivity. Then, the SECM results will be discussed, allowing a point-to-point correlation between the mapping of H2O2 electrochemical evolution, and the antimicrobial surface features. Specifically, higher oxidation currents were produced in specific micrometric regions even at dark conditions, hence without the photoactivation of ZnO. The local release of Zn2+ ions occurs in proximity of the ZnO structures that are homogenously distributed into the polymeric coatings, and can be associated to the generation of a significant amount of ROS, even under dark, that could be enhanced under UV-illumination.

Acknowledgements: M. Izzi acknowledges the ABS Bursary Award by the Association of British Spectroscopists Trust and the fundings by Università degli Studi di Bari for the project REAL (2023-UNBACLE-0244011– call ERC SEEDS).

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ANA-PO-104. Analytical Characterization of ZnO-Alginate Films for Food Packaging Applications

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Food deterioration due to pathogen contamination causes a considerable economic burden and significant waste. Nowadays, plastic-based food packaging materials are the most used systems for preserving perishable goods. However, the environmental impact of plastic abuse should be limited, promoting the use of alternative greener materials, to improve food preservation. It is then envisaged to develop all-in-one biodegradable, renewable and antimicrobial materials. Biopolymers belonging to different families, such as carbohydrates (starch, cellulose, pectin, chitosan and alginates), proteins (whey proteins, wheat and corn proteins) and lipid derivatives may be used as valid substitutes1. Alginates are tasteless and odorless hydrophilic polymers extracted mainly from marine brown algae, showing good film-forming properties, low gas permeability, flexibility, water solubility1. Additionally, crosslinking with appropriate divalent cations (e.g. Ca2+) improves physical-chemical and biological properties of alginate films. Such films can be further modified by blending with suitable additives to confer additional properties. To this aim, biodegradable coatings embedding antimicrobial nanostructures (NSs) can prolong product shelf-life, thus limiting pathogen growth and/or biofilm formation. In this communication, novel crosslinked alginate films embedding zinc oxide nanostructures (ZnO NSs) are presented. A green electrochemical-thermal method based on zinc anode oxidation in hydrogen carbonate solution in the presence of sodium dodecyl sulfate as a stabilizer was used to prepare ZnO NSs2. A suitable protocol for fabricating self-standing ZnO NSs/alginate films was developed. Morphological (TEM) and spectroscopic (FTIR, XPS) characterizations were performed on NSs to evaluate their composition and morphology. Films were characterized by FTIR, XPS and water uptake experiments, showing that the addition of ZnO NSs improves significantly the film resistance, and supporting their potential application in food packaging studies. Finally, zinc release was also assessed spectrophotometrically and then used for the indirect prediction of antimicrobial efficacy.

Acknowledgements: Authors acknowledge the Project “Imballaggio Attivo Ortofrutticoli”, Grant n° J98H23000070008, from “Ministero dell’Agricoltura, della Sovranità Alimentare e delle Foreste” for partial financial support to this research. A.V.M. acknowledges funding by the European Union – NEXTGENERATIONEU – NRRP MISSION 4, COMPONENT 1. PROFOOD-IV Prodotti e Processi Innovativi per la Filiera Ortofrutticola della IV Gamma (ARS01_00755) PON RICERCA E INNOVAZIONE 2014-2020 ASSE II - AZIONE II.2 project is acknowledged for funding.

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INO-PO-059. Design of novel catalysts for the sustainable synthesis of DME

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Effects of climate change and the depletion of oil reserves require the use of clean alternatives to common chemicals and fuels made from fossil sources. Industrial innovation has recently adopted the responsible practice of reducing waste and energy consumption to match economic and environmental sustainability. In this view, dimethyl ether (DME) recently gains increased interest. Besides, being a well-known propellant and coolant, it is an alternative clean fuel for diesel engines, which simultaneously is capable of achieving high performance and low emission of CO, NOx and particulates in its combustion [1].

Industrially, DME is presently produced from syngas (CO+H2) in a two-steps process, in which methanol is obtained and then converted to DME in another reactor. The sustainability of the process could be strongly enhanced by producing DME directly from CO2, which is still a great challenge. Hence, this work investigated the possibility to produce DME from CO2 [2], developing appropriate bifunctional catalysts for a possible one-step reaction, i.e. catalyst able to convert CO2 to MeOH and dehydrate MeOH to DME.

As the transformation of CO2 to MeOH is a well-known and studied transformation operated in the presence of (CuO/ZnO/Al2O3) mixed oxide, we first investigated the dehydration of alcohol to the corresponding ether for the selection of appropriate support for redox component. Different acidic materials have been tested under standard conditions (180°C and 5 bar N2) as dehydrating agent of alcohol to obtain the corresponding ether. Commercial zeolite like ZSM-5 and mordenite (Degussa), Nb2O5, Al2O3, Fe2O3, ZrO2, SiO2 results poorly active. However, by increasing the acidity of oxides with the introduction of sulphonic groups we were able to obtain a neat increasing of the dehydrating activity. Unfortunately, the stability of the sulphonic groups under the actual reaction conditions was poor and we observe a rapid deactivation of modified catalyst. We then turn toward a structural change of oxide instead of a simple functionalization. We then synthesized SiO2·Al2O3 at different internal ratio by Flame Spray Pyrolysis and WO2-modified ZrO2 prepared by microemulsion technique. Preliminary results confirmed the activity and the stability of these mixed oxide in the conversion of iPrOH to (iPr)2O with a productivity of 7,3 mmol/h.

Next steps will be the investigation in a flow reactor.

INO-PO-012. Shape-controlled synthesis of Au nanostructures and their photocatalytic activity

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We present the synthesis, characterization, and photocatalytic testing of gold nanoparticles of different size and morphologies. Gold nanoparticles exhibit a strong localised surface plasmon resonance (LSPR) when irradiated, which is majorly influenced by the morphology of the nanoparticles and their dielectric environment. This interaction of gold nanoparticles with the light makes them suitable for photocatalytic activity. We optimise the synthetic routes to obtain different sizes and shapes of gold nanoparticles with desired optical response. For size-controlled synthesis of Au nanospheres, we use the citrate-reduction method. This is followed by deposition of the nanoparticles over a metal oxide support, which is crucial to study the interaction of gas molecules with our plasmonic photocatalyst. To preserve the reactivity of the nanoparticles, it is essential to remove the stabiliser ligands. We aim to study the effect of plasmonic excitation in binding and unbinding of the reactants to the catalyst of different morphologies

under dark conditions and light illumination (with different intensity and polarisation) using operando IR spectroscopy to unravel the fundamental interaction regulating the plasmonic photoactivity of the prepared materials.

FAR-PO-097. Towards the development of novel Multi-target-Directed Ligands modulating circadian clock dysfunction in Alzheimer's Disease

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Alzheimer's disease (AD) is an intricate neurodegenerative disorder with no effective cure, thus necessitating new therapeutic approaches. Recent research indicates a significant association between disturbances in the circadian rhythm and the development of AD, underscoring the circadian clock (CC), as a promising point of intervention1. In this context, we envisioned the development of Multi-target-Directed Ligands (MTDLs)2 to modulate CC dysfunction in AD. We focused on the selective modulation of two kinases, glycogen synthase kinase-3 beta (GSK3-β) and casein kinase 1-delta (CK1-δ), which have been identified as pivotal regulators of CC. We designed a novel set of MTDLs starting from highly potent, BBB permeable, and GSK3-β and CK1-δ selective inhibitors reported in the literature. By identifying common structural requirements of each kinase and employing in silico calculations, we have identified the maleimide core as an optimal scaffold to generate dual GSK3-β/CKI-δ inhibitors. The optimization of the synthetic route is currently being performed to provide an initial set of potential maleimide-based MTDLs. These will be subsequently evaluated in vitro for their inhibitory profile against GSK3-β and CKI-δ, ADMET properties and cytotoxicity.

ANA-PO-122. Efficient and eco-friendly discrimination of bovine milk through AF4 fingerprinting of colloidal fraction

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Addressing food safety and detecting food fraud while fulfilling greenness requisites for analysis is a challenging but necessary task. The use of sustainable techniques, with limited pretreatment, non-toxic chemicals, high throughput results, is recommended. A combination of Field Flow Fractionation (FFF), working in saline carrier and with minimal preprocessing, and chemometrics was for the first time applied to bovine milk grouping.

A set of 50 bovine milk samples was analyzed: a single analysis yielded a characteristic multidimensional colloidal dataset, that once processed with multivariate tools allowed simultaneously for different discriminations: fat content, thermal treatment, brand and manufacturing plant. The analytical methodology is fast, green, simple, and inexpensive and could offer great help in the field of quality control and fraud identification1. This work represents also the first attempt to identify milk sub-typologies based on colloidal profiles, and the most complete study concerning multivariate analysis of FFF fingerprint.

ALI-PO-035. Optimized Extraction of Phenolics and Procyanidins from Seven Medicinal Herbs for Nutraceutical Development

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The main objective of the study was the optimization of the procyanidin solid/solvent extraction process, using grape pomace, to ultimately determine the procyanidin profile and bioactivity of seven medicinal herbs to potentially use in nutraceutical products. Procyanidins, oligomeric forms of flavan-3-ols belonging to the flavonoids group, are (poly)phenolic compounds synthesized by plants as secondary metabolites1. Parameters influencing the extraction results have been evaluated singularly and the highest procyanidin yields were achieved by the following optimized conditions: extraction solvent 59.5% methanol, 1% formic acid, 10 min sonication, and 10 min shaking. The extraction method was validated by the evaluation of % recovery and % matrix effect. The HPLC-FLD method used for quantification of monomeric to trimeric procyanidins was validated by the ICH guidelines in which the low interday and intraday % bias and % CV values at all standards concentration levels were observed (% CV values not exceeding 20%)2. Quantification of 17 polyphenols has been performed by MS working in Multiple Reaction Monitoring (MRM) using a 4000 Qtrap spectrometer. Furthermore, HPLC-HESI-MS/MS analysis performed on the herbal extracts led to the qualitative identification of 27 further polyphenols. To have an insight into the potential bioactivity of the extracts, the in vitro antioxidant activity was evaluated by DPPH assay, resulting in 935.23 ± 169.85 µmol Trolox equivalent/g of dry weight in Peumus boldus Molina leaves extracts. Moreover, Pearson correlation analysis (PCA) results exhibited higher Pearson coefficient (R2) and significance (p-value) values between total flavonoid content and DPPH in comparison with the total phenolic content and DPPH, indicating flavonoids as the most relevant active substances of the extracts. Finally, Paullinia cupana Kunth. seed extract contained the highest level of procyanidins among all the extracts evaluated and had an antioxidant activity of 693.63 ± 48.04 µmol Trolox equivalent/g of dry weight. In conclusion, the extraction and quantification analysis models proposed are considered valid to produce procyanidin-rich extracts, by which Paullinia cupana Kunth. seed (containing over 5000 µg/g of dry matrix of each dimeric and 2829.14 µg/g of dry matrix trimeric procyanidin) was the matrix that would serve better as the source containing a vast range of flavonoid-type antioxidant agents to be used in prospective nutraceutical products. It would also reduce inflammation rates by interfering with oxidative stress signaling and suppressing the pro-inflammatory signaling transductions, effective in the prevention of chronic inflammation and metabolic disorders.

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ELE-PO-034. Organic Co-Solvent Mediated Electrolyte Engineering for Improved Performance of Aqueous Sodium-Ion Batteries

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While modern lithium-ion batteries demonstrate impressive performance and market dominance, significant safety concerns persist due to their reliance on highly flammable organic electrolytes, posing substantial risks for large-scale storage deployment. Moreover, the limitations surrounding lithium availability and distribution underscore the necessity of investigating alternative battery technologies1. Aqueous sodium-ion batteries offer promise as a viable solution to these challenges, particularly in applications where gravimetric energy density is not the primary consideration. However, widening the electrochemical stability window (ESW) in aqueous electrolytes necessitates the use of high salt concentrations, typically ranging from 21-55 mol kg-1. Although these concentrated electrolytes effectively facilitate the formation of artificial solid-electrode interfaces and enhance water stability, issues related to cost and toxicity emerge2. To tackle these concerns, we propose the integration of an organic solvent into the aqueous electrolyte to effectively decrease water activity by modifying hydrogen-bonding structures. In this investigation, we explore a novel hybrid electrolyte system consisting of sodium bis(trifluoromethanesulfonyl)imide (NaTFSI) and a water-miscible polymer, poly(ethylene glycol) (PEG), acting as the organic co-solvent to reduce water activity. As a result, we achieve an extended ESW reaching up to 3V, with a moderate salt concentration of 5 mol kg-1 (PEG:H2O=80:20), coupled with an impressive conductivity of 2.47 mS cm-1 at 25°C. Thermal behaviour and flow properties of these electrolytes were examined using techniques such as differential scanning calorimetry (DSC) and Rheometry. Initial full-cell investigations employing NaTi2(PO4)3/Na3V2(PO4)2F3 yielded a specific capacity of 48 mAh g-1 at 0.5 C, demonstrating a favorable columbic efficiency exceeding 98%

ABC-PO-024. Upcycling of industrial membrane wastes and their reuse as sorbent of emerging contaminants in drinking water

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Drinking water purification from Emerging Contaminants (ECs), which include pharmaceuticals, personal care products, additives, and dyes, in a current main global challenge. To this aim, the development of innovative, sustainable, cheap, versatile and efficient technologies is urgently needed.

In this communication, I will report innovative materials deriving from industrial scraps of polysulfone (PSU) and polysulfone-graphene oxide (PSU-GO) hollow fiber membranes industrial production, and their validation as sorbent materials for ECs in tap water.Mechanical grinding was employed to convert scraps into PSU and PSUGO granules and cartridges filled with these materials exhibited superior adsorption capacities than Granular activated carbon (GAC), the industrial benchmark sorbent.3 Notably, PSU-GO granules showed over 2 times higher adsorption capacities for diclofenac (DCF), a drug, and perfluorooctanoic acid (PFOA), and over 10 times higher on lead (Pb). Molecular dynamics simulations provide insights on adsorption mechanisms, revealing the key role of graphene oxide (GO) in enhancing the adsorption performance. The obtained materials were exploited under tap operational conditions (4 L/min, 2 bar) and the leaching of GO was excluded by Surface-enhanced Raman spectroscopy analysis of treated water.

ALI-PO-039. Pomegranate peel fermented by Saccharomyces cerevisiae: a study on changes in tannin content and polysaccharide structure

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The pomegranate fruit is highly appreciated for its nutritional properties and numerous uses in the food field. After processing pomegranate fruits to produce juice, significant quantities of waste are generated and the peel is the main by-product (approximately 50% of the total weight of the fruit). Peel contains several micronutrients, hydrolysable tannins and appreciable amount of polysaccharides, mainly pectin [1]. As regards the fermentation of the pomegranate fruit, the most widely described processes are those involving the juice through the use of lactic acid bacteria, namely Saccharomyces c. to obtain a sort of wine [2]. Among the procedures proposed in the literature, fermentation processes using only the peel of the pomegranate fruit have only been poorly explored and aimed at ethanol production [3]. Since there is a demand for simple and sustainable methods that can favor the obtaining of valuable products from pomegranate peel, the aim of the study was to evaluate the changes induced by fermentation with a common yeast such as Saccharomices cerevisiae on the tannins and polysaccharide of the peel (mesocarp and endocarp).

Two varieties (Wonderful and G1) were fermented applying 3 processes: i) fermentation in closed tubes (1N method); ii) fermentation in closed tubes after a blanching of few minutes of the peel at 100°C (2PbN method); iii) fermentation in open-air, with tubes closed only with a cotton cap (3Na method). The experiments were done in triplicate with and without the presence of yeast, to have for each method of fermentation a blank sample (B) characterized by the absence of the yeast (L). All the fermentations were carried out at 25°C adding water to reach a ratio of 1/10 w/v and the same amount of yeast (15 mg/g of dried peel); the samples were collected from 0 to 96 hrs of fermentation. The polysaccharides were recovered after decoction of the whole fermented samples and successive precipitation with ethanol.

HPLC-DAD profiles of tannins in blank samples and yeast samples were very similar or overlapping, within each fermentation method. From a quantitative point of view, the % yields in dry aqueous extracts from fermented samples, calculated on the dried skins, were decidedly higher for the white samples compared to the fermented ones. Interestingly, the concentration of total tannins in the dry extracts obtained from fermentation with Saccharomices c. after 48 and 96 hrs was found to be approximately 50% higher than in the corresponding blank samples.

As confirmed by DLS measurements and NMR-DOSY experiments, fermentation reduced the molecular weight of native peel pectin. Since polysaccharides from unfermented peels have previously shown prebiotic activity in vitro [4], an increase in their fermentability is expected as a consequence of the reduced molecular weight obtained after the fermentation processes.

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TEC-PO-027. Prospective life cycle assessment of the progression of Perovskite/silicon tandem solar cells from the lab to upscaled solar applications

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In their R&D phase, perovskite/silicon tandem solar cells have continued to demonstrate excellent power conversion efficiencies (PCEs) while promising low-cost manufacturing. With prospects for further enhancements, this technology has been pushed closer to market entrance. Nevertheless, for a photovoltaic technology to reach commercialization, factors such as high efficiency, scalability, long-term stability, cost competitiveness, and environmental friendliness need to be considered. Bifacial perovskite/silicon tandem solar modules offer a promising pathway toward greater stability and energy yield compared to the monofacial perovskite/silicon tandems. The bifacial configuration exploits the extra photons that originate from reflected and scattered light from the ground (albedo), resulting in a current larger than that producible by the monofacial configuration, enabling a higher performance. There has been a growing interest in the development and deployment of bifacial solar cells; however, estimates show that they are expected to reach a meaningful market share within the next ten years. It is therefore crucial to evaluate the environmental impacts and anticipate the mitigation of potential critical issues of bifacial perovskite/silicon tandem solar cells alongside technological advancements to guide their development in an eco-design perspective.

In this study we use the prospective life cycle assessment (PLCA) approach allowing the use of multiple upscaling scenarios to assess emerging technologies at the laboratory scale with a future-oriented perspective (large-scale or industrial scale). Using the UpFunMatLCA scheme to generate scenarios, we perform a systematic and comprehensive analysis taking into account the scalability of material and the processing steps of the tandem solar cell. Results highlight the possible implications of future perovskite/silicon tandem design choices and processes from an environmental perspective. Early awareness of the environmental hotspots will be essential to support the technological development before commercialization.

ANA-PO-154. Long-term and photostability of nabumetone/cyclodextrin solid mixtures

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Nabumetone (NAB) is a nonsteroidal anti-inflammatory prodrug, class II drug according to the BCS. Recently we have reported the results of spectroscopic, spectrometric and calorimetric studies on its complexes with β-cyclodextrins (β-CDs) in solution.1 β-CDs form 1:1 inclusion complexes and increase NAB solubility. Herein, we present the results of long-term and photostability of NAB solid mixtures with various cyclodextrins (CDs). The solid mixtures were kept under the following conditions: (i) 141.2 h under day light source (8.5 klux) + 40 h under UV source (5 W/m2); (ii) 25 °C and 60 % RH. The samples were analyzed by previously developed and validated UHPLC-DAD stability-indicating method. Chromatographic analysis was achieved on C18 column in gradient mode (0.1 % HCOOH in H2O and MeOH) with the flow rate set to 0.20 mL/min. NAB was detected at 231 nm. All prepared complexes and pure NAB appeared stable under tested conditions and no CD-mediated drug degradation was observed.

TEC-PO-026. Recycling of Permanent Magnets with Phosphonium Based Ionic Liquids

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Due to the limited availability of primary ore deposits and supply risk, research attention is being drawn towards the recovery of Rare Earth Elements (REEs) from secondary sources1,2. Raw materials play a fundamental role in the current and future technologies necessary for achieving sustainable development goals as outlined in the UN 2030 Agenda. Notably NdFeB and SmCo magnets, as secondary solid wastes, are significantly rich in REEs such as Nd, Sm, and Dy3. Current hydrometallurgical processes for the recovery of the REEs from aqueous solutions have some interesting advantages but require the use of significant amounts of toxic volatile organic compounds4. Ionic liquids (ILs) have many potential applications since they present many advantages such as negligible vapor pressure, reusability, and high thermal stability5.

In this work, we assess the performance of phosphonium based ILs ([P66614][Dec] and [P66614][Cl]) for separation of REEs from transition metals from magnets after HCl leaching. It was found that bivalent ions are extracted from highly acidic media, while REEs prefers neutral pH in both ILs. After extraction, stripping of metals from ILs was performed with various media. The water phase was measured by ICP-OES to quantitatively determine metal concentrations after extraction and stripping and magnet composition after leaching.

Acknowledgements:

MT acknowledges the Italian Ministry for University and research for funding through the PRIN2022 call with the project “Wastezilla” (2022HYH95P).

AK and AM acknowledge the PhD programme on Green topics (Action IV.5, DM 1061/2021, cycle XXXVII) carried out with co-financing from the European Union - ESF REACT-EU, PON Research and Innovation 2014-2020, UniUD

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FIS-PO-005. Enhanced Photocatalytic Methylene Blue Degradation by Mn3O4/HNT-based composite material

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Manganese oxide-based materials are extensively explored for their application in catalysis, photocatalysis, environmental cleanup, water splitting, and energy storage, owing to their polymorphism and composite formation capability1. It notably features the use of halloysite, with its distinct tubular structure and variably charged surfaces, to improve photocatalytic performance by increasing the active surface area.

In this work, the influence of excess ammonium ions (NH4+) on the phase composition of a composite material based on manganese oxides and halloysite nanotubes (HNT) was studied. The composites' photocatalytic performance was evaluated based on their efficiency in degrading the model dye methylene blue. Their phase composition was determined by the Rietveld refinement procedure using Powder Cell for Windows software.

Analysis of the phase composition shows that the presence of NH4+ ions stabilises the hausmannite phase during chemical synthesis under relatively high pH = 10 with a stoichiometric amount of MnSO4 and H2O2 as an oxidising agent (Fig.1). The observed phenomena could potentially arise from the stabilisation of manganese's anionic sulfate complexes and the preferential formation of a spinel phase, which exhibits a mixed oxidation state of manganese (II, III) compared to Mn2O3. Samples synthesised at the pH range 5–7 contain predominately MnOOH/MnO2 components at other equal conditions. Therefore, higher pH and the presence of NH4+ ions change the phase composition and reduce the average oxidation state of manganese in the product.

Concerning photocatalytic activity, samples containing 28% halloysite showed higher dye removal efficiency compared to those synthesized under similar conditions but without the addition of halloysite; 95% and 24% were removed in 60 minutes under UV light, respectively. Despite their insulating properties, HNTs enhance photocatalytic activity, probably due to the decoration effect of MnxOy NPs onto HNTs. Moreover, similar behaviour of HNTs was described elsewhere2,3.

ORG-PO-204. CO2 capture and conversion on Graphene Oxide-Arginine composite: in situ investigation by using X-Ray Photoelectron Spectroscopy

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The “on-demand” capture and utilization of CO2 is effectively realized with a readily accessible dual function organic composite. The covalent and controlled derivatization of graphene oxide (GO) surface with naturally occurring arginine led to a “smart” material capable of capturing (chemisorption) CO2 from high-purity flue-gas as well as low-concentration streams (i. e. direct air capture) and concomitant chemical activation toward the incorporation into cyclic carbonates. The overall integrated CO2 capture and conversion (ICCC) strategy has been fully elucidated mechanistically via dedicated computational, spectroscopic and thermal analyses.

The in situ investigation of CO2 chemisorption or physisorption on functionalized graphene oxide – or on a heterogeneous catalyst - usually requires the low temperature Solid State Nuclear Magnetic Resonance (ssNMR)1, while in present work we were able to observe the chemical environment of chemisorbed CO2 by using the Hi-Resolution X-Ray Photoelectron Spectroscopy via analysis of C 1s, N 1s and O 1s signals. The presence of guanidine group was fundamental for further development of Quantum Mechanics/Molecular Mechanics calculation on the reaction mechanism2. The role of XPS in heterogeneous catalysis on GO and functionalized GO is not limited to study the in situ chemistry of the reaction, but may also support the understanding of limits and issues present in carbocatalysis as a complementary technique to ssNMR3.

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FIS-PO-034. The role of metal-support interactions on the red-ox properties of Pd-TiO2 catalysts

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In situ X-ray absorption spectroscopy (XAS), high-resolution scanning transmission electron microscopy (HR-STEM), Fourier-transform infrared (FTIR) spectroscopy, and density-functional theory (DFT) calculations were combined to uncover the effect of metal-support interactions on the red-ox properties of Pd NPs immobilized on TiO2 (P25) using deposition-precipitation (Pd_dep) and photodeposition (Pd_photo) methods. These systems are employed in several catalytic reactions, including H2 photocatalytic production,

XAS data demonstrate that Pd_dep upon heating in O2 experience surface oxidation already at room temperature (Figure 1b) and gets fully oxidized at ca. 200 °C. In contrast, the Pd_photo gets oxidized much slower, starting from ca. 250°C. According to in situ HR-STEM under oxidizing conditions, in Pd_dep a distinct PdO shell is formed around the NPs, that also reshape into a more spherical form with less contact with TiO2. Pd_photo did not demonstrate any clear PdO shell formation. FTIR data reveal the presence of Pd2+ sites in Pd_photo, likely related to the presence of atomically dispersed Pd. Finally, DFT calculation predict a lattice contraction in Pd-particles upon oxidation, which was confirmed by XAS for Pd_dep, but was not observed for Pd_photo. Altogether, the observed data suggest a stronger metal-support interaction in Pd_photo sample, which strongly affects its red-ox properties compared to conventionally supported Pd. This work demonstrates the role of metal-support interactions on the red-ox properties of palladium NPs supported on TiO2, which are crucial for the understanding their catalytic behavior, and suggests a strategy to tune these properties by varying the synthetic procedure.

INO-PO-085. Improving the pyrolysis yields of biochar from agrifood wastes for hydrogen storage: the action of fungi

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Waste recycling has become a priority in recent years' policies, representing a cornerstone of the Circular Economy model aimed at making the economic system sustainable. Circular principles find ample application in the agri-food supply chain, encompassing agricultural production, processing, and consumption. Recent estimates indicate that waste production from the agri-food sector in Europe amounts to approximately 87 million tonnes, equivalent to 171 kg per capita, with around 20% attributable to the agricultural sector. All these waste materials contain cellulose, hemicellulose, and lignin-carbon bioresources, all substances considered promising for energy storage1: in particular, they are seen as suitable candidates if obtained in the appropriate chemical and morphological form through pyrolysis steps. Pyrolysis is a thermal decomposition process that converts organic materials into carbon-rich solids (biochar), condensable liquids (bio-oil), and non-condensable volatile substances (gas) by applying heat in an oxygen-free environment2.

In our research group, cereals and vegetables waste from Lombardy region (Italy) are considered as good source of C for hydrogen storage. The time and temperature of pyrolysis are undergoing optimization to enhance the chemical and morphological characteristics of the obtained materials. Since the yield for biochar production is still low (maximum 25%), the implementation of a pre-treatment process for biomass/vegetable waste, aimed at making cellulose and hemicellulose components easily accessible, could lead to a higher final yield. One green option is the use of white rot fungi, capable of degrading lignin, cellulose and hemicellulose in lignocellulosic materials. In particular, lignin is a component that proves to be challenging to degrade during pyrolysis. Fungi can assist in breaking down lignin into water (H2O) and carbon dioxide (CO2)2,3 due to their extracellular oxidase. In this study, the capability of six lignicolous fungal strains to colonize different vegetal wastes was tested. The effectiveness of fungal pre-treatment on waste to increase the efficiency of the pyrolysis process was evaluated. Preliminary results pointed out an increase in the solid C production yield during pyrolysis (from 27% up to 40%) for rice bran, the most promising waste from cereals matrices in terms of hydrogen storage gravimetric capacity and kinetics.

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FIS-PO-020. CTAB and a thermoresponsive bile acid derivative form catanionic tubules: sorting out an unexpected composition ratio and a temperature induced tubule-tubule transformation

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Self-assembly catanionic nanotubes are an odd architecture with relevant applicative interests. Their formation is very rare and there is currently no clear understanding of their chemistry. Here we report the intriguing assembly of mixtures formed by CTAB (flexible surfactant) and a thermoresponsive bile salt derivative1 (rigid surfactant, Tb or TBAC). The pure bile salt derivative aggregates into tubules at a temperature above 37°C.When catanionic mixtures are prepared, a peculiar phenomenon was observed: nanotubes form at a specific critical ratio, requiring a minimum portion of CTAB, namely bile salt derivative : CTAB = 9:1. Slightly different variations in CTAB amount, both up or below the critical ratio, create unfavorable conditions for the tubules homogeneity and stability. UV, Circular dichroism, SAXS and microscopy data suggest a molecular packing where the bile acid derivative creates the scaffold of the tubule's bilayer whereas CTAB co-adjuvates in screening the charged heads. Moreover, this system enables for a temperature induced tubule-tubule interconversion: indeed, by increasing the temperature on the catanionic tubules, the catanionic tubules break up and the pure Tb tubules form. The data highlight an innovative case within the narrow umbrella of catanionic nanotubes and encourage further exploration of the possibility offered by the catanionic combination of rigid molecules and flexible surfactants.

ANA-PO-008. Quantification of microplastics and polymer additives in airborne particulate and settled dust collected in indoor environments

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The widespread use of synthetic polymers has led to a significant environmental crisis caused by plastic pollution, with microplastics being found in various environments and posing risks to both human health and the ecosystems. Moreover, microplastics in the environment undergo continuous mechanical fragmentation due to chemical weathering, photo-oxidation, biological decomposition, and mechanical forces, leading to the formation of smaller plastic debris, more prone to be transported and dispersed by atmospheric agents. The potential for plastic fragments to disperse in the air as particulate and to be accidentally inhaled by humans potentially causes harm to the respiratory and other systems1. Therefore, there is a particular necessity to study microplastics as air pollutants. In this study, we tested a combination of analytical pyrolysis, gas chromatography, and mass spectrometry, as well as gas and liquid chromatography-mass spectrometry, to identify and quantify both microplastics and their additives in airborne particulate matter and settled dust from two indoor work environments. By using this combined approach, we were able to accurately quantify ten distinct synthetic polymers (polyethylene, polypropylene, polystyrene, acrylonitrile butadiene styrene copolymer, polymethyl methacrylate, polycarbonate, polyethylene terephthalate, Nylon-6, Nylon-6,6, and polyvinyl chloride) as well as eight classes of polymer additives. The determined additives include phthalate esters, adipates, citrates, sebacates, trimellitates, benzoates, organophosphates, and newly developed brominated flame retardants.

This study received funding from the European Union - Next-Generation EU - National Recovery and Resilience Plan (NRRP) – MISSION 4 COMPONENT 2, INVESTMENT N. 1.1, CALL PRIN 2022 D.D. 104 02-02-2022 – DIORAMA (A deep dive into the study of microplastics in aqueous matrices).

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FAR-PO-089. Discovery of multi-target directed ligands: screening of library compounds at adenosine receptors

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Neurodegenerative diseases (NDs) and cancer represent a global health problem. For NDs treatments, the current focus is on different targets including cholinesterase, monoamine oxidases (MAOs) and adenosine receptors (ARs). Due to their higher density in the brain, the most involved ARs are A1R and A2AR. Evidence indicates that A2AR plays a crucial role in the pathogenesis of Parkinson's disease (PD), linked to motor impairment managing and neuroprotection. Epidemiologic studies show an inverse correlation between the consumption of caffeine (a methylxanthine antagonist of AR) and the risk of developing PD [1][2]. The activity of A1R and A2AR, controlling the release of neurotransmitters (e.g. glutamate and acetylcholine) take part in modulating and integrating cognition and memory functions [3][4]. Studies suggest that in both Alzheimer's disease mouse models and humans, caffeine prevents the acute memory impairment [5][6]. For cancer monoamine oxidases, matrix metalloproteinases (MMPs) and ARs are attractive targets. It has been discovered that adenosine, which increases in hypoxic regions of solid tumours, can hinder the immune system's ability to recognize tumour cells by cytolytic effector cells [7][8]. We have selected compounds among an in-house chemical library with known activity as inhibitors of MMP 2 and 9, acetylcholinesterase, MAO A and B. The aim of this work is to identify additional activities targeting at ARs conferring to our molecules a multitarget activity profile. Thus, compounds bearing different scaffolds (coumarins, hydroxamic acids and barbituric acids) have been screened on the different adenosine receptors (A1, A2A, A2B, A3). The Bioluminescence Resonance Energy Transfer Assay using CHO cells expressing human adenosine receptors is being employed to assess the biological activity. Multitarget activity profile of previously disclosed inhibitors will be presented.

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ANA-PO-054. Retention behavior of Porous Graphitic Carbon stationary phases under High Temperature Supercritical Fluid Chromatography conditions

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Porous Graphitic Carbon has been known as an HPLC stationary phase since the 1980s; the most significant benefits of PGC materials are their stability at very high temperatures (250 °C) and a wide pH range (1-14), as well as the absence of free silanol groups, which could influence analyte retention properties.

The planar graphite-like sheet functionality of PGC affords unique retention mechanism of polar compounds and separation of structurally related analytes, and extreme chemical stability. Chromatographic behaviour of PGCs may be summarised as follows: i) polar retention effect (PREG), whereby solutes of increasing polarity showed a high affinity towards the graphite surface compared to conventional alkyl-bonded silicas, ii) increased retention of non-polar compounds (based on dispersive interactions), iii) increased selectivity towards structurally related compounds due to the flat and highly adsorptive surface of the graphite. The strength of interaction further depends on both the molecular area of an analyte in contact with the graphite surface and upon the nature and type of functional groups at the point of interaction with the flat graphite surface.

Following a previous work in which PGC columns were explored under high temperature LC conditions [1], the present research focuses on the investigation of the same column under High Temperature Supercritical Fluid Chromatography.

A new instrument configuration has been developed in this study: an SFC system was used. This instrument was interfaced to a GC oven, to heat the PGC column up to 200° C. In this prototype instrumentation, in order to achieve a fast and efficient heating of the eluent coming from the autosampler prior to enter into the column, a pre-heating tube was interposed between the autosampler outlet and the column inlet.

Homologue series of parabens, nitroalkanes and pairs of cis-trans isomers were used as probes. The performance of the analytical method was evaluated in terms of retention factor, number of theoretical plates per meter, resolution, peak width, and tailing factor.

Moreover, the greenness was quantitatively estimated to demonstrate the further advantage arising from the use of SFC under high temperature conditions to enhance selectivity and method rapidity, minimizing the use of organic modifier.

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FIS-PO-016. PHOTOSYNTHETIC BACTERIA AND THEIR COMPONENTS FOR BIOELECTRONICS

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Photosynthetic microorganisms and their molecular components represent attractive tools for harvesting and conversion of solar light. The new era of biohybrid devices relies on the exploitation of isolated structures from these microorganisms, or the entire living cells, as the active components for photoconversion in optoelectronic devices and photoelectrochemical cells [1]. The bacterial reaction center (RC) extracted from the purple non-sulphur bacterium Rhodobacter (R.) sphaeroides has been integrated into photoactive transistors [2]. Polydopamine (PDA), a biocompatible polymer produced via self-oxidative polymerization of the dopamine monomer, has been used to immobilize RC without altering the enzymatic photoactivity, and producing photocurrents in photoelectrochemical cells [3].

Finally, assessed PDA biocompatibility with R. sphaeroides cells [4], we have been investigated different approaches for interfacing intact photosynthetic microorganisms with electrodes, enabling photoconversion of whole living cells of R. sphaeroides and R. capsulatus, using PDA as the interface material either as a coating on the cells' surface, or as a film entrapping the cells on the electrode surface [5, 6].

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ALI-PO-027. Sumac as promising nutraceutical source: investigation on phenolic profiles of Sicilian fruits and leaves

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Rhus coriaria L. (Anacardiaceae), commonly known as sumac, it is a typical plant of Mediterranean and Middle Eastern areas, whose ground fruits are nowadays mainly used as spice or for flavouring and garnishing food. However, has been also used, since ancient times, in traditional medicine for treating many diseases such as haemorrhoids, wound healing, diarrhea, ulcers, and eye inflammation.

Actually, sumac fruits and leaves are rich in antioxidant compounds, including several gallic acid derivatives and flavonoids, from which treatment of common oxidative stress diseases could benefit. However, while many studies are focused on fruits, really few were conducted on leaves composition; moreover, most of them about Middle Eastern area samples.

For this reason, conventional and advanced liquid chromatography techniques coupled with photodiode array and mass spectrometer detectors were employed to investigate the phenolic profile of Rhus coriaria L. fruits and leaves, coming from different Sicilian areas. More than 80 phenolic compounds, mainly represented by gallic acid and its derivatives were positively identified, with important qualitative difference between fruits and leaves extracts. The present work confirmed the nutraceutical value of this plant, highlighting sumac leaves as a rich source of gallic acid.

Acknowledgments

The researches were performed within the framework of the Research Project PRIN PNRR - MISSIONE 4, COMPONENTE 2, INVESTIMENTO 1.1 - BANDO PRIN 2022 PNRR - DECRETO DIRETTORIALE N. 1409 DEL 14-09-2022: Sumac nutraceutical Potential through Innovative and Comprehensive invEstigation (SPICE), supported by the Italian Ministry of University and Scientific Research, CODICE IDENTIFICATIVO: P20224B5BE, CODICE CUP: J53D23014460001

ANA-PO-049. Transducer/Aptamer Interface optimization for the design of electrochemical biosensors for biomedical applications

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The biosensors field has become quite a hot topic, especially from an electrochemical point of view, with interests ranging from the biomedical and health-care to biological and engineering fields. In the recent years, a peculiar class of biological species, the aptamers, received high attentions: these bioreceptors which demonstrated pretty good characteristics as sensing platforms, such as high stability and reproducibility, easy chemical modification, enhanced target affinity and ease / cost-effectiveness1: these features grant good performances and a large amount of applications2. Different aptamers were tested, focusing on Listeria monocytogenes specific aptamers. In order to anchor the aptamers to the electrode surfaces, different polymer were used, such as polydopamine and its derivatives (i.e L-DOPA): such polymers were electrochemically deposited onto the electrode surface, with different concentrations. To fully studies the sensors surface functionalization, step-by-step, Cyclic Voltammetry, EIS, FT-IR, ATR, Raman and XPS techniques were used.

Aknowledgments: The authors thank the project IZSPB 02/21 RC “Sviluppo di un sensore innovativo per la ricerca quali – quantitativa di microrganismi patogeni in matrici alimentari” - BIMPA.

ORG-PO-205. Synthesis of Tetra-ortho-Methoxylated Azobenzene Photoswitches via Sequential Catalytic C−H Activation and Methoxylation

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In recent years, particular attention has been paid to the development of new strategies to counteract antibiotic resistance. One of these consists in limiting the release of active antibiotics into the environment: visible light can be used as a tool to modulate the activity of drugs.1 Recently, Just Baringo et al. have demonstrated how the introduction of a photoswitch, the amino acid tetra-ortho-chloro-diethylene-azobenzene (CEBA), can allow control over the activity of tyrocidine A analogues using visible light. In particular, upon isomerization under red light, the cis form would become the major isomer and re-establish the biologically active secondary structure of the natural product whereas, upon exposure to other visible light wavelengths, the activity quickly turn-off.2 Nevertheless, due to the electrophilic nature of the C-Cl bond, CEBA needs to be introduced at the end of the growing peptide in order to avoid the use of strongly nucleophilic bases used during solid-phase peptide synthesis (SPPS). For this reason, methoxy-azobenzenes represent a much more appealing alternative for SPPS as they can be isomerized at 650 nm (red light), like chlorine derivatives, but are not sensitive to SNAr. However, the synthesis is highly limited. The methods reported in the literature had extremely low yields and limitations in functionalization.3,4 To overcome these restrictions, the aim of this research is to develop a new strategy for the methoxylation of azobenzenes that allows a wide range of functionalization and good yields. This objective was achieved through a two-step procedure: 1) synthesis of tetra-ortho-bromo-azobenzenes by C-H activation 2) cross-coupling of the brominated derivatives with methanol (Figure 1).

CSB-PO-005. Design, Synthesis and characterization of synthetic and natural derived TLR4 antagonists.

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TLR4 is an inflammatory receptor belonging to the class of Pattern Recognition Receptor (PRRs), whose function is to sense Pathogens or Damages Associated Molecular Patterns (PAMPs, DAMPs) and start the innate immune response. The natural ligand of TLR4 is Lipopolysaccharide (LPS), an essential component of Gram-negative bacteria outer membrane. The minimal portion of LPS required for immunogenicity is a glycolipid called Lipid A. Through molecular simplification starting from Lipid A, our group developed two new compounds which showed promising TLR4 antagonism: FP7 (Fig. 1, a) and FP12 (Fig.1, b) (HEK-Blue hTLR4 IC50 = 2.0 and 0.63 μM; RAW-Blue TLR4 IC50 = 7.7 and 1.7 μM).

The aim of this work is to produce novel TLR4 antagonists. This goal will be achieved modifying the substituent on the anomeric position of FP7 and FP12 to increase stability for further functionalization of the C6 position. Furthermore, starting form promising natural compounds active as TLR4 antagonists, computer assisted docking will be applied to select new scaffolds to be synthetized and chemically modified.

ORG-PO-090. A Morita-Baylis-Hillman Adduct Derivative as an Electrophilic Agent in the Formation of Unnatural Photoisomerizable RNA Bases

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ABC-PO-016. Nano-engineered solutions for safeguarding frescoes: innovative formulations against microbial deterioration

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Microbial colonization poses a significant challenge to the longevity of mural paintings1, 2. Despite efforts to combat microorganisms using various biocides, their long-term effectiveness remains limited, accompanied by high toxicity and corrosive side effects3. The recent advances in nanotechnology are opening great opportunities for the conservation of cultural heritage, changing the approach paradigm. This study centres on developing ground-breaking nano-engineered formulations, merging noble metal nanoparticles with natural biopolymers, to assess their potential as microbial inhibitors on frescoes. Tailored synthesis of nanoparticles with specific physical-chemical attributes enhances antimicrobial efficacy. Upon

achieving desired properties, mock-ups are meticulously crafted for preliminary performance evaluations. The formulations exhibit minimal colour variation, non-glossy surfaces, favourable hydrophobicity, water vapour permeability, and chemical stability post-artificial and natural aging.

Testing various concentrations screens the in vitro antimicrobial activity to identify the most promising formulation. Remarkably, these formulations substantially limit fungal colonization of frescoes and reduce bacterial growth by up to 99%. Further assessment involves observing biofilm formation and evolution on chitosan-nanoparticle-treated frescoes mock-ups post-aging in climatic chambers, supported by electron microscopy and XPS analyses.

These experiments underscore the efficacy of highly innovative composite formulations in inhibiting microbial growth on mural paintings, signalling their readiness for application to Cultural Heritage materials.

TEC-PO-050. Microwave assisted synthesis of polypyrrole-polyketone copolymers for electrochemical applications as anion exchange membranes

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As the core component of alkaline fuel cells (AFC), anion exchange membranes (AEMs) have to withstand a strongly reactive alkaline environment1. Among the proposed polymeric material proposed not only to show good chemical stability but also to provide high ion conductivity, polypyrrole-polyketone copolymers enjoy an easy synthetic procedure and a low-cost starting material, polyketone2,3. A drawback in the application of the Paal-Knorr reaction to link the amino (then turned into ammonium) functionality is the need for long reaction times when using conventional heating systems. We studied the possibility to reduce reaction time and energy consumption by applying alternative heating/reaction modes, in particular with the use of a microwave reactor. Here we report the preparation of some derivatives characterized by heterocyclic ammonium groups, prepared by varying the amine/PK molar ratio to influence the degree of functionalization, f (Figure 1). The polymers have been cast to produce anion exchange membranes after quaternization and anion exchange.

The membraned have been characterized to understand their chemical composition, thermal and conduction properties proving the efficacy of the devised synthetic procedure in obtaining AEMs with promising ion conductivity.

TEO-PO-007. First-principles insights on solid-state transitions in Mn-based layered oxides as high energy cathodes for Na-ion batteries

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Layered Transition Metal Oxides (NaxTMO2) hold promise as high-energy cathode materials for Na-ion batteries [1]. Their general structure consists of TMO6-octahedra 2D slabs sandwiched between Na layers, wherein the arrangement and packing of oxide layers define distinct material morphologies such as P2- and O3- structures [2]. While mixed transition metal oxides in this class of cathodes have shown promising performances and enhanced anion redox activity [3, 4], ongoing research aims at improving their long-term stability, which is often hampered by solid-state phase transitions occurring during Na+ insertion and extraction cycles, with structural collapse and significant capacity loss. Understanding and controlling these structural transformations is therefore of outmost importance to boost the electrochemical performance of layered oxides.

Employing the solid state nudged elastic band (ss-NEB) method [5] combined with state-of-the-art density functional theory (DFT) calculations, we address the prototypical case of P2 ↔ P2’/OP4 transitions in NaxMnO2 [6]. We provide an atomic-level perspective on the glide-driven processes in these compounds, confirming the key role of Cooperative Jahn-Teller effects (CTJE) and Na+ ordering at low state of charge as driving forces for these phase transitions [7]. Moreover, we highlight the utility of the ss-NEB method in finely charactering these subtle processes. Leveraging the same methodology, we also elucidate how partial substitution of Mn with Ni extends the of P2 phase, delaying the direct transition from P2 to O2 at higher voltages.

In conclusions, our new structural and electronic insights will provide a solid scientific framework for designing new layered transition-metal oxides with enhanced stability for long term battery operations.

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TEF-PO-020. Lemon derived exosome-like nanovesicles as drug delivery system

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Exosomes are extracellular nanovesicles secreted by all cell types and they are involved in various physio-pathological processes, through intercellular communication and substance exchange. The simplicity of large-scale production, low toxicity, low immunogenicity, and high biocompatibility are just some of the aspects that make these nanovesicles attractive as drug delivery systems. The goal is to extract and characterise exosome-like nanovesicles from lemon (ELNVs), load them with a promising drug against Multiple Sclerosis and evaluate the system's effect on an

oligodendrocyte progenitor cell line (OPCs). We successfully extracted ELNVs sustainably without the use of solvents. These particles were characterised in terms of size and stability under different conditions. We were able to load ELNVs with 80% efficiency with an antihistamine drug, Clemastine, achieving a post-loading size of 342.0±107.0 nm in Milli-Q water. The pharmacological activity of the system was assessed in an OPCs model. ELNVs appear to be a promising drug-loading platform. The outlook is to broaden this technique to more plant sources and include different classes of drugs.

INO-PO-031. Metals and metal oxides thin films deposition for food packaging application

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In recent years, many innovative food packaging techniques are being developed due to changes in production processes, retail practices and growing consumers demands of healthier, higher-quality and with a longer shelf-life food products.

Cold plasma surface modification of materials, particularly thin film deposition processes, can offer a good strategy to address these requests. Since these processes are carry out at room temperature, they can be used for the treatment of thermolabile materials such as natural and artificial polymers, or to deposit biomolecules or microorganism. These characteristics make these processes less environmental impactful and extremely attractive for industries1,2.

The purpose of this project is the deposition of inorganic and composite thin film by means of different kind of cold plasmas to improve barrier properties of food packaging or to obtain active coating to control the release of metals and metal oxide.

Enhance barrier properties means to better preserve the food matrix shielding external factors that can impact negatively on food quality like oxygen and moisture responsible of common degradation processes. Active packaging is a recent type of packaging, characterized by the incorporation of bioactive or chemoactive molecules. This technology allows to increase the shelf-life of products and their quality by minimizing or replacing the addition of additives directly to the food3,4.

Two deposition methods will be investigated and applied both individually or in combination: 1) Plasma enhanced-chemical vapour deposition (PE-CVD)/sputtering processes to obtain barrier coatings and composites made up by a matrix and nanoparticles of metals or the corresponding oxides, which will release ions with an antibacterial function; 2) Atomic layer deposition (ALD) to deposit metal oxides barrier layers or active layers like ZnO and Al2O3.

The deposited films will be characterized by means of different techniques. Permeability will be evaluated measuring water vapor transmission rate (WVTR) and oxygen transmission rate (OTR). The effectiveness of the films against bacteria and fungi will also be evaluated through specific tests.

ORG-PO-091. MS-based investigation of chickpea seeds grown under different water conditions.

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Due to the higher cost of living and climate change, nowadays, legumes represent one of the most important sources of human food after cereals.[1] Particularly, chickpea (Cicer arietinum L.) is considered one of the most popular legumes crops worldwide. To date comprehensive studies on agronomic and genetic influences on chickpea protein composition are lacking. This work reports a comparative proteomic analysis via shotgun approach and label-free quantification (LFQ) of two chickpea samples of the Italian genotype Pascià, grown under two different water conditions, namely rain fed and irrigated.[2],[3] Proteomic analysis allowed the identification of about 1100 different proteins. Most of them are common to the two samples (about 78%), whereas 9% of the total and 12% appear exclusively revealed in the rain fed and the irrigated sample, respectively. This comparison revealed a similar qualitative distribution of protein composition in both samples, although some differences have been detected. As expected, in both samples the most abundant components belong to the storage protein family (i.e., legumins, vicilins, and albumins), although the rainfed sample globally contains a little higher content of both legumins and vicilins, and also shows a little higher ratio between vicilins and legumin (V/L ratio). Moreover, a label-free quantification (LFQ) analysis allowed the identification of twenty-three differential abundant proteins (DAPs) that resulted significantly more abundant in the rain fed sample. Most of them are storage proteins or components belonging to the family of the late embryogenesis abundant proteins (LEA), a group of proteins that are upregulated during dehydration stress and show a high abundance during the later stages of seed development, giving the seeds the ability to tolerate drought. Taking into account that legumins and vicilins belong to the cupin superfamily, a group of proteins already identified as legumes allergens,[4] these results, although preliminary, suggest that a balanced water regime might promote a reduction in allergenic potential in chickpea. In the future, this investigation will be extended to another chickpea genotype, to study the impact of different water regimes and nitrogen supply on the qualitative and quantitative protein composition.

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CSB-PO-032. Understanding the structure and function of the human Vault particle

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Vaults are large ribonucleoprotein (RNP) particles with a size of 70 nm × 40 nm × 40 nm. Initially reported in 1986, vaults have a distinct ovoidal architecture made of two symmetric 39-meric shells composed of the major vault protein (MVP). Despite its large size and the high levels of conservation of the vault components, the precise role of this complex in the cell is not yet fully understood.

Here, we report the first cryoelectron microscopy (cryoEM) reconstruction of the human vault complex at 3.3 Å and provide a comparison to the previously published structures of its murine counterpart. Additionally, we investigated the interaction and binding site to the human onco-suppressor protein PTEN with Grating-Coupled Interferometry (GCI) and Small Angle X-ray scattering (SAXS), which showed a strong affinity (kd of 1 μM) in presence of 10 mM of Ca(II), this supports the role of the vault as molecular scaffold and transport of the onco-suppressor protein.

FIS-PO-002. Harnessing Silver Nanoparticles for Environmental Remediation and Disinfection

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In recent years, nanotechnology has garnered significant attention as a pivotal tool for addressing critical challenges such as environmental remediation and clean energy production, aligning with initiatives like the European Agenda 2030 and the Green Deal program.1 In this context, suitably engineered nanoparticles (NPs) have been found advantageous in the disinfection from pathogenic microorganisms, thus overcoming the antibiotic resistance problem.2 In particular, Silver (Ag) NPs are promising for their disinfectant function in various sectors, including biomedical disinfection, water and air disinfection, the textile industry and food packaging. Ag has served as a disinfectant for centuries, utilized in various forms including salts and colloidal nanosystems.3 However, only since 2004 extensive studies on the antibacterial activity of Ag NPs have emerged, and research in this field has grown considerably in recent years. Particularly, it has been demonstrated that Ag NPs have a high capacity to inhibit the growth of a wide range of pathogens, even at low doses.4 The toxicity of Ag NPs depends on their physicochemical characteristics e.g., size, shape, chemical nature, reactivity, surface area and surface charge, the nature of surface coatings, the exposure concentration and release of Ag+ ions.5 The antimicrobial efficacy of Ag NPs is ascribed to several phenomena and reactions occurring both on the bacteria membrane and within the cytoplasm, altering cellular metabolism and leading to bacterial death.6 NPs surface composition influence the kinetics of Ag+ release as well as their interaction with the bacteria. Moreover, NPs size plays a crucial role, as smaller NPs exhibit a higher release rate of Ag+ ions in various media, thereby significantly enhancing their antibacterial activity. On the other hand, small Ag NPs easily tend to aggregate and form larger particles, thus turning in a decreased antibacterial activity.

This study addresses this challenge by synthesizing heterostructures utilizing mesoporous silica nanoparticles (MSNs) as templates and/or supports for the in situ reduction of silver precursor salts, facilitating the formation of physically separated, anchored Ag NPs. Different growth mechanisms and final size of the metal domain result by using mild reducing agents as tetrakis(hydroxymethyl)phosphonium chloride (THPC) in water or, alternatively, butyl amine in ethanol. The two selected heterostructures are tested for inhibiting Escherichia coli in aqueous medium and their activity is compared with that of bare Ag NPs and MSN. The results reveal a reduction of the dose of heterostructures required for the inhibition process, that, remarkably, demonstrates to be structure-dependent.

ANA-PO-024. Biochars of dead Posidonia oceanica leaves as adsorbents of rare-earth elements

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The widespread use of Rare earth elements (REE) in cutting-edge technologies has led to a surge in their consumption and the urgency of finding sustainable solutions for their recovery. The European Community included REE in the list of critical raw materials, i.e. the list of materials whose recovery is considered of strategic interest. Among the different REE recovery methods, adsorption is one of the most attracting, in particular when the employed adsorbents come from waste platforms. This contribution presents the results achieved using three biochars coming from the pyrolysis of dead Posidonia oceanica, a marine plant whose leaves accumulate in abundance on the sicilian cost, as adsorbents of REE from aqueous solutions. To this end, thermodynamic and kinetic experiments were carried out to study the recovery of La, Nd and Dy ions onto the biochar of Posidonia oceanica as it was (BC) and after two types of chemical activations, i.e., an acid activation with phosphoric acid (BCA) and a basic activation with potassium hydroxide (BCB) in aqueous solution at pH = 5 and t = 25°C. The adsorption of REE ions onto BCA, the best adsorbent among those investigated, was also studied, at the same pH, in NaNO3 0.1 mol L-1 to evaluate the effect of ionic strength. Single batch adsorption experiments were also carried out at pH = 3 and 6 to evaluate the effect of pH. Chemical and morphological characterization of adsorbents were carried out by SEM-EDX, FT-IR, elemental analysis, nitrogen adsorption/desorption and pH of point zero charge measurements. The REE adsorption were well described by Langmuir isotherm and, among the adsorbents investigated, the BCA showed the highest qm value. The qm of BCA decreases with the decreasing of pH and in presence of NaNO3. The adsorption equilibrium was reached within 8 hours and the kinetic of adsorption was well described by the double exponential equation. Recycling experiments were also carried out to test the reusability of the BCA.

ANA-PO-102. Development of a decentralized in-flow electrochemical platform for continuous monitoring of heavy metals

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Year after year, the need for decentralized tools to monitor heavy metals levels in the environment continually increases. Suitable electrochemical surfaces are widely established and particularly attractive for the production at low costs of miniaturized devices that can be applied as field-deployable analytical platforms.

This work reports the development of a fully automatable system based on electrochemical detection for the continuous on-site monitoring of heavy metals. The surface of electrochemical sensors is appropriately modified and then coupled to an optimized electrochemical procedure in order to achieve selectivity against the desired analytes.

At the same time, a suitable electrochemical cell coupled to a stirrer and connected to an integrated pump-based fluidic system was designed. This combined system allowed for the achievement of fast results while minimizing the sample volume used. To complete the prototype, a proprietary software capable of controlling both the fluidic system and the electrochemical measurement with the final data processing was developed.

Parameters such as flow speed, sample volume, and stirring steps were experimentally optimized, together with the parameters of the electrochemical measurement so as to obtain the best combination between analysis time and sensitivity.

The developed device was then applied to the multi-element analysis of heavy metals including, among others, Nickel, Aluminium, Cadmium, Lead, and Copper.

FAR-PO-033. Deciphering HSP90 Interaction Dynamics: An AI-Guided Approach Towards Targeted Prostate Cancer Therapies

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The quest for effective and targeted prostate cancer therapies continues to pose significant challenges in the oncological research community. The chaperone protein Heat Shock Protein 90 (HSP90) has been identified as a critical facilitator of cancer cell survival and proliferation, making it a promising therapeutic target in prostate cancer.1 This study introduces a novel methodology for identifying potent HSP90 inhibitors, utilizing precision in thermodynamic and kinetic calculations to elucidate the complex binding/unbinding dynamics of protein-ligand interactions. This study exploits AI's potential to drive enhanced dynamic sampling techniques,2 using multidimensional collective variables through artificial neural networks optimized with supplementary AI systems.3,4 This innovative method enables a thorough investigation of protein-ligand complex dynamics, accentuating critical elements like solvation dynamics, and the conformational changes of ligands, amino acids, and protein segments. Significantly, the research has achieved accurate predictions of experimentally evaluated residence times and binding free energies, alongside exploring binding conformations and providing insights into the mechanisms and modes of binding. The primary goal is to achieve a better understanding of the key molecular events occurring upon ligand binding/unbinding processes in HSP90, as a way to design inhibitors characterized by higher residence times, potency, and specificity.5

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TEC-PO-048. Photocatalytic Degradation of recovered micro/nanoplastics by membrane processes

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Plastic pollution has become one of the most global graves environmental issues for their impact on the environment and on human beings1. The significant and continuous increase of plastics waste require an implement strategy for the reduction/elimination of plastic pollutants. In this work an innovative system that combines the membrane separation and the photocatalytic process for the treatment of polyester-polluted water is proposed (Figure 1). The complete recovery of fibres from water and the almost complete recovery of the initial performance of the membrane used (CA 2 kDa NF) with a cleaning efficiency of 98% and a low fouling index (16%) was obtained. Preliminary photocatalytic tests on some polyester fibres, recovered by a membrane process, showed a decrease in their length and in the weight, the photocatalytic decomposition was confirmed also by py-GCMS characterization2, highlighting the potential of the photocatalytic process to degrade micro/nanoplastics. The obtained results suggested that the photocatalytic process can be tuned to allow the decomposition of micro/nanoplastics avoiding the use of dangerous and costly methods such as the thermal process that can produce toxic by-products. Future work will be directed toward the optimization of an integrated separation/photocatalytic process for the treatment of micro/nanoplastics from polluted water.

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Acknowledgments

The authors thank the project “Tech4You—Technologies for climate change adaptation and quality of life improvement”—National Recovery and Resilience Plan (NRRP), Mission 4, Component 2, Investment 1.5, funded from the European Union–NextGenerationEU, Identity code: ECS 00000009, CUP B83C22003980006; CUP H23C22000370006.

TEC-PO-011. Tailoring the Properties of Low Dimensional Perovskites through Fluorination

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In recent years, perovskites have found use in numerous fields beginning with photovoltaics and expanding to light-emitting applications and other optoelectronic devices. Despite the competing costs and efficiencies, the presence of defects, both at the surface or in the bulk, is critical for the long-term stability and considerably limits perovskite efficiency. Several strategies have been developed to overcome these limits. Among them, perfluoroalkyl-methyl imidazolium ionic liquids have been applied as passivating agents due to their ability to self-assemble on perovskite surface, resulting in the formation of ordered structures and higher film quality with fewer defects. Furthermore, the presence of highly fluorinated saturated molecular fragments in the resulting Low Dimensional Halide Perovskites (LDHPs) can bestow additional water-repellent properties and superior stability compared to fully hydrocarbon-based cations.

In this work, imidazolium cations functionalized with linear perfluoroalkyl chains were applied for the synthesis of new LDHPs. A combination of structural and thermal characterization allowed to study effects of perfluoroalkyl chains on the properties of perovskites. Indeed, fluorous-fluorous interactions and segregation of fluorinated moieties have been demonstrated to induce the formation of ordered structures in perovskite containing fluorinated imidazolium cations, resulting in a thermotropic liquid crystalline behavior. In addition, instead of Pb, non-toxic metals such as Sn or Ge, have been utilized for the same reactions and obtained LDHPs also showed a liquid crystalline behaviour. Collectively, these results may pave the way for a new class of halide perovskite-based soft materials.

INO-PO-078. Heck reaction between free base 2-Br-Porphyrin and vinyl-ferrocene derivatives. A comparative study, electrochemical and spectroscopic characterization of b-functionalized alpha and trans-vinyl-ferrocene porphyrin derivatives.

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The marriage of porphyrins with ferrocene affords new materials with improved photo- and electrochemical properties for photovoltaics, NLO, fluorescent switches and electrochemical-based devices1-2, but, if on one hand the introduction of ferrocene in the meso-porphyrin positions was well and extensively studied, the difficulty to introduce the ferrocenyl moiety in the β-porphyrins positions has limited their application.

In line with our previous work3, here we report on a comparative study to investigate the regioselectivity of the Heck reaction between free base 2-Br-Porphyrin and vinylferrocene derivatives. In the mild reaction condition adopted, using Pd(dba)2/AsPh3 as catalytic system, the vinylferrocene showed a peculiar selectivity towards the formation of the alpha-isomer rather than the trans-isomer. This aspect allowed us to investigate by an electro- and photochemical point of view the properties of the new 2-vinylferrocenyl-substituted porphyrin alpha-isomers compared to the respective trans-isomers, outlining the importance of the type of β-C-C bond in the electron-transfer processes.

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FAR-PO-108. Development of Lubeluzole Analogues Endowed with Reduced Cardiac Liability Evaluated as Possible Skeletal Muscle Sodium Channel Inhibitors

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Lubeluzole is an optically active benzothiazole derivative originally investigated as a neuroprotective agent for its potential benefits in the treatment of ischemic stroke but whose clinical trials were discontinued due to a lack of benefits in humans in terms of survival after ischemic injury. Moreover, a significant increase in heart conduction disorders was also observed in some of the treated patients,1 with lubeluzole administration possibly being associated with the acquired long QT syndrome and ventricular arrhythmias.2 We demonstrated that lubeluzole is a potent inhibitor of skeletal muscle voltage-gated sodium channels hNav1.4, also in vivo showing a potent antimyotonic activity in an animal model of myotonia congenita, a rare disease characterized by skeletal muscle hyper-excitability and stiffness.3 Furthermore, we demonstrated that lubeluzole can inhibit the human ether-à-go-go-related gene (hERG) channel, thus possibly explaining the lubeluzole-induced QT interval prolongation.2 To understand the molecular determinants of hERG channel inhibition, a series of lubeluzole congeners have been prepared and tested on hERG, Nav1.4, and Nav1.5 channels.2,3 The most promising compound has been evaluated in vivo in a rat model of myotonia.

Figure 1: Structures of lubeluzole and analogues.

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ORG-PO-092. Development of nanomaterials based on halloysite/NDIs derivatives as theranostic agents

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Cancer theranostics represent a valuable tool for successful treatment and ease patient care. To achieve efficient medical care, nanoparticle-based therapeutics are commonly used for different biological purposes. Natural inorganic carriers such as halloysite nanotubes (HNTs) are attracting considerable attentions thanks to their capability to penetrate cellular membranes and localizing itself in the perinuclear region.1 Recently, the modifications of HNTs with different biological active species allowed to synthetize valuable carrier systems, capable of selective detection of cancer cells.2 In last years, naphthalene diimides, have emerged as versatile compounds able to span the whole visible spectrum upon simple structural modifications and they can be used for fluorescence tissue imaging. Furthermore, they can generate singlet oxygen acting as photosensitizers for photodynamic therapy.3 Herein we report synthesis of HNTs modified on the external surface with different NDIs derivative to develop new nanomaterials that can be used as theranostic agents. The obtained nanomaterials were characterized by different physical-chemical techniques, their morphology was examined by TEM and the photophysical properties were investigated both in dispersion and solid state. The generation of singlet oxygen by these nanomaterials was also evaluated by recording the absorbance value of 1,3-diphenylisobenzofuran, a singlet oxygen scavenger, after its irradiation with a 650 nm laser. Finally, as proof of concept, the HNTs-NDI nanomaterials were used as carrier for the loading of a PNA derivative to develop a nanomaterial that could selectively target cancer cells.

INO-PO-069. Mini-protein design: tailoring metalloprotein function for electron transfer and catalysis

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Metalloproteins display countless kinds of activities, despite employing a limited number or metal ions. From an inorganic chemist's perspective, they can be considered as a special kind of coordination compounds, featuring a complex macromolecular ligand that dictates the properties of metal ions through specific arrangements of aminoacids.1 Deciphering the intricate mechanisms of metalloprotein function has been a central topic of research. Advances in de novo protein design have significantly contributed to the process, while facilitating the tailoring of enzymes for specific applications.2 In this field, we have designed small, yet functional, peptide-based models housing different metal sites.3-5 Our efforts have been recently directed to reproduce the structural and redox properties of the rubredoxin Fe(Cys)4 center within a miniaturized protein scaffold, named METPsc1.6 Notably, FeMETPsc1 exhibits one the highest reduction potentials among the rubredoxin family, thanks to precise introduction of hydrogen bonds in the second coordination sphere. FeMETPsc1 was able to perform at least 12 reversible redox cycles, prompting us to build a synthetic electron transfer chain by matching FeMETPsc1 with another mini enzyme, ZnMC6*a, as a photosensitizer.

Further, we have obtained the crystal structure of METPsc1 in its zinc and cobalt complexes, showing perfect agreement with the designed model. Our current research is focused on evaluating the effect of metal ion substitution in the METPsc1 scaffold, with the aim of achieving a thorough spectroscopic characterization and expanding the versatility of this mini-protein towards energy-related catalysis. Altogether, these studies open new avenues for exploiting artificial metalloproteins into complex electron transfer and catalytic processes, suggesting a promising direction for nanoscale multi-component mini-protein devices.

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TEC-PO-055. Partial hydrogenation of waste cooking oil biodiesel by steel slags based iron oxides/nickel catalysts

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There are several sustainability issues that the scientific community must tackle by giving high priority to the implementation of the circular economy concept. Wastes can be reused to obtain high-value products and in this context, steel slags, due to their chemical properties, can play a significant role in catalysis by contributing to the reduction of solid wastes.1 On the other hand, converting waste biomass, such as spent cooking oil, into valuable biofuel perfectly fits green chemistry principles and follows the attempts of the world decarbonization.2 In this framework, the present work reports on the synthesis and characterization of new materials constituted of iron oxides and nickel nanoparticles deposited onto waste steel slags to be used as catalysts for the partial hydrogenation of FAMEs (Fatty Acid Methyl Esters) coming from waste cooking oil. The partial hydrogenation

reaction aims at selectively converting all C18 polyunsaturated esters of the FAMEs mixture into C18:1 monounsaturated product, avoiding the formation of C18:0 methyl stearate (Figure 1), thus upgrading the biodiesel parameters of the whole blend.

The novel catalysts were characterized by Thermogravimetric Analyses (TGA), Scanning Electron Microscopy (SEM), Fourier Transform-Infrared Spectroscopy (FT-IR), X-Ray Diffraction (XRD) and Transmission Electron Microscopy (TEM) analytical techniques.

CSB-PO-023. Antiviral Compounds Against SARS-CoV-2

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In 2020, we took a leap back in time, from the era of modern medicine to the great flu of 1918. The recent pandemic caught us off guard, with the same defense tools as the last century. As one group, several researchers from all over the world have turned their attention to the discovery of new antivirals. The research line based on the chemistry of nitrosocarbonyls generated from nitriloxides has been active in Pavia since 1997. Through the use of computational methods we wanted to investigate which molecules potentially active as antivirals could be accessed via these two synthetic routes. Two different enzymatic targets have been studied: RNA polymerase and protease. Docking experiments of nucleotide derivatives were conducted on the first target, characterized by different modifications of the scaffold and the heterobase, obtained through the 1,3-dipolar cycloaddition of different nitriloxides to N-benzoyl-2,3-oxazanorborn-5-ene, in the crystal structures of SARS-CoV-2 RdRp in the pre- and post-catalytic state. The docking poses were classified and compared, the best ones were subjected to molecular dynamics simulations and the trajectories analyzed focusing on the requirements necessary for catalysis. With these tools, structural modifications have been proposed to improve the affinity of compounds to the catalytic pocket. As regards the second target, Mpro, following the analyzes performed on the most representative structures identified through molecular dynamics of the dimer, two allosteric sites with good druggability characteristics were identified. By characterizing the allosteric pockets thus identified with a clustering approach, a docking screening of a database containing compounds obtainable via the chemical pathways studied in this research unit was performed on the representative structures. Then, MDs simulations of the complexes gave us clues regarding allosteric effects of the designed nitrosocarbonyl derived compounds. This allowed the selection of candidate molecules to synthesize. Antiviral activity tests are ongoing to evaluate the agreement between computational predictions and the biological systems studied. Initial biological testing has shown that, at present, one compound stands out in terms of activity compared to others, with the ability to reach an IC50 of 22 uM.

ANA-PO-087. Does the proline residue affect the coordination of divalent metal ions?

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The aim of the present work is to investigate the interaction of metal ions with short model peptides containing proline residues next to the metal binding site. In these peptides, the metal binding site is represented by a histidine imidazole, an effective anchoring site for metal ions such as Cu(II), Zn(II) and Fe(II), already at acidic pH. In the case of Cu(II), increasing the pH value of the solution, the binding to backbone N-amides can occur towards both the N- or C-terminal direction, but with a different level of affinity.1 On the other hand, the occurrence of this coordination behaviour for Zn(II) and Fe(II) is controversial.2,3 The present study concerns the terminally protected short peptide Ac-AAAHAAA-NH2 and two mutants: Ac-AAPHAAA-NH2 and Ac-AAPHPAA-NH2. In the former peptide, the Ala residue in position 3 has been replaced with a proline, while, in the latter one, the two alanines adjacent to the histidine residue (position 3 and 5) have been replaced with prolines.

The investigation allowed to better understand the coordination behaviour of the three metal ions under different pH condition, shedding light on the effect caused by the presence of proline residues close to the metal binding site. In fact, proline residues do provide greater structural rigidity to the peptide chain, hampering conformational changes and rearrangements around the metal center and making unavailable for the binding their corresponding backbone amide.

The thermodynamic and spectroscopic characterization of the metal complex-formation equilibria has been achieved by means of potentiometry, UV-Vis spectrophotometry, circular dichroism, electron paramagnetic resonance and mass spectrometry.

Financial support of the National Recovery and Resilience Plan (NRRP), Mission 4 Component 2 Investment 1.1-NextGenerationEU (PRIN PNRR 2022-P2022EMY52) is gratefully acknowledge.

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TEC-PO-056. Preparation of PVDF membrane with DMI green solvent for membrane distillation

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Poly(vinylidene fluoride) (PVDF) flat sheet membranes were prepared by using the Dimethyl isosorbide (DMI) as the green solvent via NIPS-VIPS method. DMI is a high boiling green solvent that possess good physical/chemical properties for the casting membrane. The PVDF membranes were prepared at the temperature of 120 oC to obtain the completely homogeneous solution. After degassing of about 2 h, the casting solutions were casted by the casting knife on the glass, with the air gap of 250 !m at the temperature of 90 oC in a climate chamber, where the relative humidity is 65% and the temperature is 25 oC [1]. A series of membranes were prepared by varying the exposure time in the humidity, which is 0, 1, 1.3 and 2.5 mins, respectively. The membranes were characterized in terms of thickness, porosity, contact angle, mechanical strength and SEM morphologies. The membranes were applied in direct contact membrane distillation (DCMD) operations. Feed temperatures were set at around 40, 50 and 60 oC respectively for pure water membrane distillation tests. Fluxes were increased with feed temperatures. Results achieved until now showed that, the

membrane prepared under 1.3 mins in the humidity chamber presented high fluxes at around 13 L/m2h, and rejections above 99.9% in the 0.6 M NaCl solution DCMD test, which is operated at the feed temperature of 40 oC and permeate side temperature of 15 oC.

ORG-PO-093. Melanin hybrids with transition metal ions: new sustainable strategies in heterogeneous catalysis

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In the last decade, several attempts have been made to develop innovative materials provided with tunable nanometer scale porosity for innovative applications in heterogeneous catalysis[1,2].

With respect to the general interest for even cheaper and easier to prepare materials, in the last years the focus has been moved toward the research for other and less investigated materials as heterogeneous catalysts such as: carbon nanostructures (e.g., carbon nanotubes) and graphene [3] with high surface area and thermal stability, agri food waste materials characterized by low-cost and easy availability [4], and materials inspired by biopolymers that are fully biocompatible and eco sustainable. In this context, recently special attention has been given to the use of melanins as potential catalysts. Melanins are pigments widely diffused in nature that, due to the unique physicochemical properties, have been used as a multifunctional material in various sectors ranging from (bio)electronics [5] to nanomedicine, energy storage and conversion, and tissue engineering [6]. Moreover, because of their ability to interact with metal ions, melanins have also found applications as chelating agents and in the design of polyfunctional hybrids nanoparticles.

Starting from this evidence herein we report the main results of a research activity aimed at the development of melanin-based catalysts by designing novel metal-melanin hybrid materials.

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FAR-PO-049. The potential of (S)-Usnic Acid derivatives as antifungal agents

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Lichen secondary metabolites are well-studied medicinal compounds with diverse pharmacological properties. One of the lichen secondary metabolites is Usnic Acid (UA), a dibenzofuran characterized by the presence of a stereogenic center. Both enantiomers occur in nature, depending on the producing organism. The most abundant in nature is (R)-UA1. It has a broad spectrum of biological activity: antimicrobial, antitumor, anti-inflammatory, and antiviral. However, UA is characterized by low solubility and hepatotoxicity issues2.

In this work, we focused on the generation of a small series of novel semisynthetic compounds of both (R)- and (S)-UA derivatives and their potential antifungal activity against topical fungal infections such as Candida albicans, Candida tropicalis, and Trichophyton rubrum. In detail, (S)-UA was extracted from Caldonia foliacea1, while the (R)-enantiomer was purchased and successively a small series of both enantiomers was synthesized. All compounds were characterized in terms of water solubility, cytocompatibility, and antifungal activity. The (S)-configured derivatives resulted to be the most potent compounds, showing antifungal activity in the µM to nM range, while maintaining good cytocompatibility. The mechanism of action is under investigation.

MAS-PO-018. GC-MS Investigation of Endogenous Lactonization of 2-Hydroxyglutarate in Acute Myeloid Leukemia Patients

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Introduction: 1/5 cases of acute myeloid leukemia (AML) are affected by a mutation relating to genes encoding for isocitrate dehydrogenase (IDH), responsible for oxidative decarboxylation of isocitrate to alpha-ketoglutarate (α-KG). Instead, the mutated IDH enzymes catalyze reduction of α-KG to the metabolite 2-hydroxyglutarate (2-HG), an oncometabolite.1 A certain amount of R-2-HG-lactone is known to be present in urine specimens of IDHmt brain tumor patients after 2-HG derivatization with (trimethylsilyl)diazomethane for GC-MS analysis.2 However, it is yet to be clarified whether this metabolite has an endogenous or exogenous origin and the related diagnostic implications. Thus, aim of the study was to ascertain the origin of R-2-HG-lactone comparing lactone formation in solvent, plasma matrix and PBMCs suspension.

Materials and Methods: The analytical workflow has been designed in accordance with UNI EN ISO 15189:2022 and Eurachem Guidelines. The chromatographic run was performed on Crossbond 5% diphenyl / 95% dimethyl polysiloxane and performed with GCMS-QP2020 (Shimadzu) in SIM mode. Identified ions for TMS-derivative of 2-HG were 247 (quantifier), 203, 129, 157 m/z; whilst 159 (quantifier), 115, 131, 85, 101 m/z were the selected ions for TMS-derivative of lactone. Known amounts of 2-HG, at two concentration levels, were spiked in aqueous solution, plasma and PBMCs of healthy subjects and AML IDHmt patients. Subsequently, samples were incubated at 37 °C and GC-MS analysis was performed at three timings: T0, T1 (1h-post), T2 (3h-post).

Results and Discussion: A different decrease in the concentration of 2-HG has been observed at T2, reaching 15%, 35% and 47% in solvent, plasma and PBMCs suspension, respectively. Conversely, there was an increase in lactone proportional to the decrease in concentration of 2-HG. These measurements were elaborated through a Michaelis-Menten kinetic model, obtaining vmax, kcat and Km values for each biological matrix. Our data seemed to confirm the hypothesis of an endogenous enzyme capable of catalyzing the 2-HG lactonization. The decrease of 2-HG in non-biological environment also suggested lactone formation via autoxidation process.

Conclusion: Lactone appeared to be present endogenously. However, a small amount formed spontaneously even in vitro. Further investigations will be necessary to establish with certainty the endogenous origin of lactone and its usefulness in the diagnosis of AML IDHmt.

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ANA-PO-146. HPLC-DAD validated method for DM4 and its metabolite S-Me-DM4 quantification in biological matrix for clinical and pharmaceutical applications

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The present study focuses on the development and validation of an HPLC-DAD methodology for the detection of a potent chemotherapeutic agent, Maytansinoid Ravtansine (DM4), and its metabolite, S-methyl-DM4 (S-Me-DM4), in plasma samples.

Methodologically, after a simple protein precipitation with acetonitrile and after drying 1 mL of supernatant, the sample was directly analyzed by HPLC under isocratic elution. Employing a flow rate of 1.0 mL/min and a reversed-phase GraceSmart RP18 column thermostated at 40°C, a complete resolution and separation of DM4 and S-Me-DM4 within 13 min was achieved. The optimized injection volume of 20 µL and the wavelength set at 254 nm were utilized for quantitative analyses. The limit of detection and quantification of the method were 0.025 and 0.06 µg/mL for both the analytes, respectively. The calibration curve showed a good linearity in the range 0.06–20 µg/mL. For both analytes, the intraday precision and trueness were 2.3–8.2% and -1.1 to 3.1%, respectively, while the interday values were 0.7–10.1% and -10.4 to 7.5%, respectively.

The developed methodology 1 enables the concurrent determination and quantification of free DM4 and its metabolite, free S-Me-DM4, making it a valuable tool for assessing the pharmacokinetics and pharmacodynamics of DM4-based therapies. In addition, the procedure was successfully applied to analyse the presence of free DM4 or its metabolite, free S-Me-DM4, in human plasma samples spiked with the 1959-sss/DM4 antibody-drug conjugate (ADC). The utilization of the herein validated methodology allowed confirming the presence of these analytes, thereby providing insights into their potential release from the ADC structure.

TEC-PO-002. Liposomal Nanoplatforms for Targeted Drug Delivery and Diagnostics

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Liposomes, phospholipid-based nanocarriers, have become integral components of nanomedicine, offering a versatile platform for targeted drug delivery and imaging applications. These nanoparticles can be considered an ideal candidate to obtain a robust versatile and biocompatible nanoplatform that can be exploited for a variety of applications and targets, thanks to their biocompatibility and functionalization strategies.

With this in mind, we've been developing different liposome-decorated systems in which a biomarker-specific macromolecule is properly attached to the lipidic nanoparticle. This is feasible through a variety of functionalization techniques, resulting in a nanoplatform that may be customized with macromolecules of interest, being antibodies, peptides etc.

Our research has mostly focused on the use of target-specific peptides, that show fewer side effects than other biomolecules. These can selectively bind to the target, allowing the liposome to exploit its purpose, which is either to release a drug at its site of action if used as a drug delivery system or to detect the presence of its target in a sample if used as a diagnostic tool. Specifically, we have been working on the design and engineering of liposomes functionalized with epitopes specific for CD38 receptor involved in multiple myeloma.

FIS-PO-004. Unveiling the competitive diffusion of binary gas mixtures in polymers: the case of carbon dioxide and alkanes in nanoporous-crystalline polyphenylene oxide

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Natural gas and petroleum gas (ethane, propane, buthane) are energy carriers more sustainable than coal. Moreover, natural gases like propane are seen as green refrigerants which will soon replace highly polluting hydrofluorocarbons (HFCs). Purification of fossil fuel gases may be accomplished with polymeric membranes. In this work, we investigate the sorption of binary gas mixtures constituted of carbon dioxide and either methane, ethane or propane in Poly(2,6-dimethyl-1,4-phenylene)oxide (PPO) endowed with nanoporous crystalline domains. This material is a good

candidate for fuel gas sweetening due to its peculiar pore morphology and distribution. The experiments were conducted at sub-atmospheric pressures and in the range [24, 35] °C to prevent any structural modification induced by the sorbates.

We resorted to a hyphenated technique coupling in situ FTIR Spectroscopy and Barometry. First, we conducted pure gas sorption tests. At thermodynamic equilibrium, the IR signal of each low molecular weight species was isolated in the polymer phase and its absorptivity was calibrated with Barometry. Then, binary sorption tests were conducted and the solubility of each species in PPO was measured at thermodynamic equilibrium and during diffusion with vibrational spectroscopy. Competitive sorption with ethane or propane produces a depletion of the solubility of carbon dioxide with respect to pure gas sorption at the same partial pressure. Moreover, at short times during co-diffusion, carbon dioxide reaches supraequilibrium loading. Such a phenomenon is described by an overshoot in the kinetics and is attributed to the solubility competition between the two penetrants. We effectively interpreted it with the Maxwell – Stefan theory of multicomponent diffusion coupled with the classical Langmuir's adsorption model and showed that the overshoot is a proof of uphill diffusion in PPO.

At the thermodynamic conditions investigated, the separation performances of PPO are analogous to DDR type zeolites despite the different chemical nature of the two adsorbents. For the first time, the competitive diffusion of two gases in a polymer film is unveiled.

ORG-PO-094. Calixarene-based RAFT polymers: synthesis and supramolecular properties

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Calixarenes are considered the third generation of supramolecular macrocycles after cyclodextrins and crown ethers.1 Thanks to their supramolecular properties, calixarenes have been included into polymers to develop chemical sensors, selective membranes, heterogeneous catalysts, microelectronic devices, and drug delivery systems.2

In this work we concentrated our efforts on the synthesis and characterization of calixarene-based RAFT polymers, that have never been reported in the literature. RAFT polymerization is a highly reproducible and reliable reversible deactivation living radical polymerization that ensures the synthesis of polymers with low molar mass, dispersity, and uniform chemical composition.3 We synthesized and characterized different calixarene-polymer hybrid macromolecules based on N-isopropylacrylamide (Figure 1) and having a different number of polymer arms at the calixarene lower rim. The preliminary thermoresponsive and supramolecular properties of such hybrids were also investigated together with their possible future applications in material science.

Funder: Project funded under the National Recovery and Resilience Plan (NRRP), Mission 4 Component 2 Investment 1.1 - Call for tender No. 104 of 02.02.2022 of Italian Ministry of University and Research funded by the European Union – NextGenerationEU. Award Number: Project code 2022285HC5, Concession Decree No. 1064 of 18.07.2023 adopted by the Italian Ministry of the University and Research, CUP D53D23010030006, SAMBA: Self-assembly of bacteria-targeting materials across the mesoscale. PG also acknowledges the ERC Starting Grant (PROTOMAT, 101039578).

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ORG-PO-207. Electrochemical approach for cyclization/bromination of unactivated alkenes

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Various combinations of functional groups have been installed on alkenes through either intra/intra- or intra/intermolecular processes, resulting in differently functionalized heterocyclic systems. In organic synthesis, the electrosynthesis has emerged as a powerful and green tool to construct complex molecules without the use of stoichiometric amounts of hazardous oxidants or reductants.1 Indeed, in-situ electro-generation of highly reactive species allows the use of safe reactants and provides a simplified approach. The development of sustainable electrochemical cascade reactions as efficient method to synthesize added-value molecules, possibly involving the formation of heterocyclic rings, is extremely intriguing. Our research group has been involved in the vicinal difunctionalization of multiple C-C bonds2 and recently we undertook the study of electrochemical cascade cyclization/bromination reactions, focusing on the synthesis of directly functionalized heterocyclic systems by intra/intermolecular processes.

Pursuing the search for a new class of homonucleoside derivatives, an electrochemical palladium-catalyzed alkoxybromination was developed to access 2-bromomethyl morpholines (Figure 1, path A). Some examples of electrochemical alkoxybromination reactions are reported in the literature,3 but analogous aminobromination procedures have been much less developed. In this context, due to the broad possibilities in brominated heterocycles functionalization, we planned palladium-catalyzed amination/bromination procedures in the presence of TBAB as electrolyte and bromine source (Figure 1, path B).

Optimization, scope, and mechanistic aspects will be discussed in the communication.

INO-PO-070. Lanthanide activated KY3F10 nanoparticles for optical thermometry

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Fluoride based nanoparticles (NPs) activated with trivalent lanthanide ions (Ln3+) have been extensively investigated in the last years for their interesting luminescence properties in the UV, Visible and Near Infrared (NIR) optical regions. These NPs are particularly interesting for applications in nanomedicine, in particular as optical probes or sensors in the biological windows (700-950 and 1000-1350 nm ranges).

In this contribution, we focus on KY3F10 NPs activated with luminescent Ln3+ ions (as Pr3+, Nd3+, Tm3+, Er3+, Yb3+), also considering core@shell architectures1 (Figure 1).

Figure 1: Crystal structure (K, violet; Y, green; F, yellow); architecture, TEM image and size analysis for representative core@shell nanoparticles.

KY3F10 NPs have been prepared as water colloids with a “green chemistry”, microwave (MW) assisted hydrothermal technique, using hydrophilic citrate groups as capping agents, which confer excellent colloidal stability in physiological buffers dispersion. Stokes and Anti-Stokes emissions in the UV-Visible-NIR regions have been measured by excitation with laser radiations. Energy transfer processes among Ln3+ ion couples (e.g. Yb3+-Nd3+ or Yb3+-Er3+) have been exploited to investigate the performances of the Ln3+ doped KY3F10 NPs as optical thermometers. In particular, the intensity of emission bands originating from the Ln3+ ions have been employed to study the thermometric properties, for evaluating the absolute and relative thermal sensitivities as well as temperature uncertainties of the NPs, using ratiometric methods. The obtained values clearly suggest a promising use of the KY3F10 NPs as nanothermometers in biomedical applications.

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INO-PO-017. KTb3F10 nanoparticles for optical thermometry: synthesis and spectroscopic characterization

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The search for novel materials as luminescent probes is a hot topic for the rapid development of optical diagnostic techniques in biomedicine. Among the multitude of phosphors, lanthanide doped inorganic nanomaterials exhibit notable luminescence properties in the optical range (UV, visible and Near Infrared). In particular, the multiple emissions of lanthanide ions can be exploited in non-invasive optical nanothermometers with submicrometric spatial resolution.

In this communication, we will focus on the synthesis and spectroscopic characterization of KTb3F10 nanoparticles (NPs) doped with Eu3+ ions. These lanthanide-doped fluoride nanoparticles have been synthesized using hydrothermal conditions and the structural properties have been analysed by X-ray powder diffraction (XRPD) technique. TEM measurements have been exploited to study the size and morphology of the NPs.

The emission properties of the NPs has been measured to investigate the local environment of the Eu3+ dopant ions. Moreover, a preliminary investigation of their thermometric properties has been carried out using a luminescence intensity ratiometric method based on the emissions of the Tb3+ and Eu3+ ions. In particular, the Stark levels of the 7F6 ground state of the Tb3+ ion were selectively excited with laser radiation in resonance with the 7F6→5D4 Stark transitions. Then the Tb3+→ Eu3+ energy transfer mechanisms [1] have been monitored at different temperatures, in particular in the physiological range (20-50 °C). The emission spectra of energy transfer mechanisms Tb3+→Eu3+ were compared to the emission of the selective excitation of Eu3+ of 7F1→ 5D0 transition. Laser excitation was also exploited to study the dynamics of the excited states of the lanthanide ions in order to confirm energy transfers in the NPs.

INO-PO-080. Surface engineering via Atomic Layer Deposition of chitosan sponges for application in cooperative photocatalysis

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Cooperative photo-redox catalysis is a cost-effective and sustainable approach allowing the tackling of two major societal challenges: water stress and energy shortage. In the cooperative photoredox approach, (non-)selective oxidation of organic pollutants is exploited for solar fuels production integrated in a light-driven photoredox system, valorising the contaminants in a circular economy approach.

To this aim, we engineered low-cost and bio-derived sorbents, i.e., chitosan-based sponges, integrating photoactive materials to couple the photocatalysis with the excellent sorption properties for water remediation. Specifically, chitosan-based polymers were adopted as porous sponges and non-porous thin films and atomic layer deposition (ALD) was chosen to integrate the photo-active materials.

ALD is a powerful method for the deposition of thin films on 3D porous materials, due to its processing capabilities such as the angstrom-level thickness control and conformal deposition. Zinc oxide (ZnO) was chosen as a starting photoactive material for its well-known photocatalytic and antibacterial properties, representing a good candidate for the above-mentioned applications.

The growth of the ZnO on both chitosan thin films and sponges was studied by means of spectroscopic ellipsometry, XPS, UV-vis Spectroscopy and FTIR. The measured band gap and the chemical composition confirmed the growth of ZnO. Moreover, the photocatalyst was found to grow within the matrix of the sponges up to at least tens of micrometres. Due to the chemisorptive nature of ALD, the growth model suggested a strong integration of the oxide into the bio-polymer matrix, with properties resembling a ZnO/chitosan nanocomposite. Moreover, it was observed that only 10 ALD cycles, resulting in a nominal ZnO of 2 nm, greatly increased the stability of chitosan sponges in water media, enabling pollutants removal.

The adsorption of Direct Blue 78 was studied as a function of the ALD ZnO cycles. Higher direct anionic dye removal from solution was measured for the ALD ZnO/chitosan nanocomposite compared to the pristine chitosan sponges.

ALD was the key-enabling technology for the production of ZnO-based photo-active organic-inorganic hybrid bio-based sponges, setting the first step towards a cooperative photo-redox system.

This research was funded by the European Union-Next Generation EU within the project PRIN-BECOMEH2 (grant n. P2022XHMRY)

INO-PO-024. A novel 1,2,4-triazole copper(II) complex as a catalyst for Glaser reactions

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Triazoles are versatile ligands for the preparation of copper coordination polymers,1 magnetic materials,2 bioactive compounds3 or copper catalysts.3 In this work, we synthesized a new triazole ligand, the 1H-3,5-ditrifluoroacetamido-1,2,4-triazole, L, following a literature method.4 Upon reaction of L with copper(I) oxide in acetonitrile, pale green crystals were isolated from acetonitrile and the single crystal X-ray diffraction evidenced that the copper centres are penta-coordinated affording a roughly square pyramidal geometry. Each Cu ion is respectively coordinated to two oxygens of amide groups and to two nitrogens of two triazoles of the faced ligands, with the triazoles bridging the two metal centres. The two copper ions display planar square geometry extended to a square-based pyramid by coordination of an acetonitrile molecule, resulting in a structure composed of two square-based pyramids oriented in opposite directions, with acetonitrile molecules occupying the apical positions. An additional acetonitrile solvent molecule is present in the asymmetric unit (Figure 1) of the unit cell. The UV-vis spectra display the appearance of a typical broad absorption band centred at around 666 nm. The dinuclear copper complex is persistent in solution as highlighted by ESI-MS with molecular peaks at m/z 702.6 attributed to [Cu2L2-H]+ and at m/z = 704.6 likely due to [Cu2L2]-. Preliminary catalytic studies show that [Cu2L2(CH3CN)2] is active in the Glaser reaction.5

ABC-PO-010. Life Cycle Assessment of a process for the removal of contaminants of emerging concern by advanced oxidation process enhanced by UVC irradiation

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Life cycle assessment (LCA) is applied in this study to evaluate the Global Warming Potential (GWP) of a system1 that use advanced oxidation processes (AOPs), such as photo-Fenton enhanced by UVC light2, for the degradation of 1 mgL-1 of acetaminophen, as an example of contaminant of emerging concern (CEC), under different conditions3. Results showed in Figure 1 depicts the GWP of acetaminophen removal under different scenarios. This indicate that energy is the most important factor to be taken into account in order to reduce the overall greenhouse gases emission. This analysis confirmed the results obtained in the previous study since photo-Fenton process is the best as it is the fastest and emits the least kg CO2-eq. Finally, in future works the study will be extended to treat larger volumes in order to approach a WWTP.

ORG-PO-095. A multi spectrophotometric approach for the comprehensive study on α –glucosidase, α–amylase and tyrosinase inhibitory activity of anacardic acids

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Anacardic acids are 6-alkylsalicylic acids with varying alkyl chain lengths and degrees of unsaturation, which have demonstrated strong antibacterial and anti-inflammatory properties.1 In our recent studies, anacardic acids were for the first time discovered in Pistacia vera and Juglans regia shells extracted in hydroalcoholic solutions by an optimized microwave-assisted method.2,3 Both extracts showed remarkable hypoglycemic properties by inhibiting key carbohydrate-hydrolysing enzymes (α-amylase and α-glucosidase). Additionally, the P. vera shell extract efficiently inhibited tyrosinase, an oxidase enzyme involved in dermatological disorders. According to HPLC-MS/MS analysis, anacardic acids were the most abundant components of the extracts. However, their role towards α-glucosidase, α-amylase, and tyrosinase has not been deeply explored to date.

Herein, (C15:0)-anacardic acid and (C17:1)-anacardic acid (Fig. 1) were selected to investigate the inhibitory behaviour of such class of phenolic lipids towards α-glucosidase, α-amylase and tyrosinase. Notably, tested compounds resulted superior metabolic enzyme inhibitors than the anti-diabetic drug acarbose. In addition, (C15:0) and (C17:1) anacardic acids exhibited a higher anti-tyrosinase activity (IC50 of 26.55 and 29.36 μM, respectively) than kojic acid (IC50 = 34.96 μM), used as a reference standard. Kinetics analyses uncovered these compounds as competitive inhibitors, while fluorescence experiments allowed the determination of the dynamic quenching (Ksv) and binding (Ka) constants. Altogether, these results introduce anacardic acids as interesting natural hypoglycaemic and anti-melanogenic agents.

Acknowledgements

This work was financed by MUR ITALY PRIN 2022 PNRR (Project No. P2022MWY3P).

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INO-PO-052. Assessing the impact of donor groups on the coordination and magnetic properties of monohydrated Fe(III) complexes for MRI applications

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In response to recent safety concerns surrounding Gd-based contrast agents (GBCAs), there has been a surge in research aimed at identifying alternative options for magnetic resonance imaging (MRI)1. Trivalent iron (Fe3+) complexes have emerged as promising candidates due to the

element's widespread natural occurrence and well-understood metabolic pathways2, suggesting the potential for the development of safer and more sustainable MRI contrast agents. Previously, our research group investigated the structural and magnetic properties of [Fe(EDTA)]- and [Fe(CDTA)]- complexes, serving as model systems for monohydrated Fe(III)-chelates for use as MRI probes3. Building upon this groundwork, the current study delves into the impact of complex charge on water exchange kinetics, thermodynamic stability, and kinetic inertness. To explore this, we synthesized four CDTA-amide ligands, each featuring substitutions of one or two carboxylic groups with diethylamine or butylamine functionalities. These alterations resulted in Fe(III) complexes with either neutral or positively charged characteristics. Investigating the water exchange rates (kex) involved a combination of 1H relaxometric studies and 17O NMR chemical shifts and relaxation rates. In addition, we evaluated the thermodynamic stability and kinetic inertness of the complexes using potentiometry, UV-Vis spectrophotometry, and capillary zone electrophoresis. As anticipated, altering the charge of the complex leads to a modulation of kex, aligning with observations made previously for Gd(III) and Mn(II) chelates. Furthermore, the incorporation of amide donor groups has been found to reduce the stability of the complexes, albeit maintaining a relatively high level. These discoveries offer valuable insights for the prospective development of advanced MRI probes.

INO-PO-041. Electrochemical NADH Regeneration Mediated by Pyridine Amidate Iridium Complexes Interconverting 1,4- and 1,6-NADH Regioisomers

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Although there is a huge interest in redox mediators for the selective electrochemical regeneration of 1,4-NADH,1 only the class of rhodium compounds with bipyridine ligands, initially introduced by the pioneering work of Wienkamp and Steckhan (Angew. Chem. Int. Ed. Engl. 1982, 21, 782-783), has been developed over the last decades.2 Here we report the first two progenitors of a new class of redox mediators for indirect NADH regeneration, namely [Cp*Ir(R'-pica)Cl] {pica = R'-picolinamidate = κ2-R'-pyridine-2-carboxamide ion (–1), 1 R' = H and 2 R' = Me} (Figure 1),3,4 which exhibit high TOF values (0.51 s-1 and 1.34 s-1 for 1 and 2, respectively), production rate up to 3 mmol h-1 cm-2, and Faradaic efficiency up to 99% for both complexes in 0.1 M phosphate buffer (pH 7, 298 K). The reaction exclusively leads to a mixture of 1,4-NADH, the desired product, and 1,6-NADH always in a 91:9 molar ratio, independently of the redox mediator, degree of conversion and applied potential.

TEC-PO-017. Hydroxylated hexagonal boron nitride as filler for polymeric composites

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Introduction

Two-dimensional hexagonal boron nitride (hBN) has attracted tremendous attention over the last few years, thanks to its stable structure and its outstanding properties, such as mechanical strength, thermal conductivity, electrical insulation, and lubricant behavior. As carbon materias, boron nitride has many allotropic forms, of which the most stable is the hexagonal multilayered structure.

hBN has many similarities with its carbon counterpart, graphene. Indeed, the material has many appealing properties, such as thermal and chemical stability, thermal conductivity, and biocompatibility.

Results

In this work, innovative strategies for the chemical modification of hBN are reported.

Starting from a deep study of the material, three approaches were designed for the sustainable insertion of -OH functional groups, mainly on the edges of hBN. The modification of its solubility parameter was also achieved.

The possibility to tune its solubility parameter was exploited in order to introduce this reinforcing filler in two divergent matrices an elastomer matrix (Styrene-butadiene rubber, S-SBR and 1,4 cis isoprene, NR) and a biopolymer (chitosan, CS).

Alongside with the chemical modification a reduction of the staked layers has been induced through the application of mechanical energy by dry and wet methods.

S-SBR based rubber composites were characterized through static and dynamic mechanical tests. This work demonstrates that hBN can also improve the rheological and mechanical properties of elastomer composites when used to partially replace silica.1

Chitosan-based suspensions, papers and aerogels were also prepared: composites were characterized by means of infrared spectroscopy, thermogravimetric analysis, and X-Ray diffraction.

FIS-PO-033. SO2 poisoning of Cu-CHA zeolite studied by in-situ IR spectroscopy

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Catalysts based on Cu-CHA zeolites, broadly employed for reducing NOx emissions from diesel vehicles through the NH3-SCR reaction, undergo low temperature deactivation by exposure to SO2. It has been shown that deactivation occurs through a reaction with a CuII[(NH3)4O2]2+ complex, which is generated during the activation of O2 in the NH3-SCR reaction cycle and plays an important role as reaction intermediate1. In this investigation, this reaction is investigated by vibrational spectroscopy using two samples with identical Cu loading but differing Si/Al ratios, to monitor the evolution of the NH3 ligands in the process.

In-situ IR spectra were measured using an operando IR reactor cell working in transmission mode. The measurement comprised several steps: (1) pre-treatment in O2 at 300°C, (2) reduction in 500 ppm NO/600 ppm NH3 to form [CuI(NH3)2]+, and (3) oxidation in 10% O2 to form CuII[(NH3)4O2]2+, followed by exposure to 50 ppm SO2 in N2 at 200°C. Steps (2-4) were executed at 200°C.

In-situ IR spectra show features related to a) Brønsted sites and νNH modes of NH3 ligands and NH4+ formed by interaction with Brønsted sites; b) bending modes of NH3 ligands and NH4+ (1622 cm-1 and 1430 cm-1, respectively); c) fingerprints of framework coordinated CuII ions (fw-CuII) at

950 and 900 cm-1, which disappear when the Cu ions are solvated by ligands. By following the changes during the different steps we observed an exchange between NH4+ and fw-CuII ions during the formation of the CuII[(NH3)4O2]2+ complex, indicating that not all Cu ions are involved in its formation, with a dependence on the zeolite Si/Al ratio. During reaction with SO2, some NH3 ligands of the CuII[(NH3)4O2]2+ are converted to NH4+ replacing fw-CuII sites, and some (NH4)2SO4 is formed. 2 These results point out the mobility of Cu and NH4+ ions in catalytically relevant conditions and could help understand better the complex chemistry related to SO2 poisoning.

ORG-PO-096. Developing a Sustainable Method for Taming Short-lived Cyclopropenyllithium in Flow

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Functionalized cyclopropenes are highly strained reactive molecules, widely used in numerous reactions, showing metabolic stability when incorporated in bioactive molecules, and used as bioorthogonal chemical reporters. Additionally, substituted cyclopropenyllithium compounds are also valuable synthetic reagents, serving as reactive intermediates for synthesizing diverse organic molecules. However, the reported synthetic batch protocols for accessing cyclopropenyllithiums present practical challenges, requiring a cooling-heating-cooling process in the range of -78 °C to -20 °C to -50 °C within one hour. This poses reproducibility issues, especially on a larger scale. Furthermore, the utilization of flash chemistry in flow microreactors enables the control of short-lived organolithiums at higher temperatures compared to batch processes, ensuring reproducibility and precise control. In this presentation, we introduce a sustainable and reproducible protocol for generating and utilizing cyclopropenyllithium intermediates using a continuous flow microreactor for the first time. This reaction can be conducted under more practical conditions without compromising the selectivity and reactivity of the employed cyclopropenyllithium. In this presentation, we report, for the first time, a sustainable and reproducible protocol for the generation and use of cyclopropenyllithiums intermediates using a continuous flow microreactor. The reaction can be conducted under more practical conditions without compromising selectivity and reactivity of the employed cyclopropenyllithium.

ORG-PO-208. Design, synthesis and characterization of maytansinol-based PROTACs targeting tubulin

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Targeted Protein Degradation (TPD) is a revolutionary therapeutic concept that exploits cellular protein regulation systems to control protein degradation. In this context, PROteolysis TArgeting Chimeras (PROTACs) are heterobifunctional molecules able to interact with an over-expressed or misfolded Protein of Interest (POI) and an E3 ligase. Such constructs bind to both their targets and form a ternary POI-PROTAC-E3 ligase complex, where the POI is polyubiquitinated, freed from the ternary complex and driven to the proteasome for degradation.

Our idea is to develop PROTACs targeting tubulin, an essential dimeric protein with a key role in cancer development and neurodegeneration. The known tubulin binder maytansinol was selected as a POI ligand to build PROTAC-type molecules, as it is located on an exposed pocket of β-tubulin offering wider design possibilities. It has been rationally functionalized and coupled via click chemistry to chosen linkers bearing cereblon (CRBN)- or VHL- ligand as E3 ligase recruiters.

The biophysical and structural characterization of four synthesized compounds was carried out, proving that such PROTACs can bind and recruit tubulin with high-resolution crystal structures. Additionally, it was confirmed that the compounds can bind to VHL and CRBN, respectively, with a crystal structure obtained in the case of VHL. The most significant achievement was the discovery of the capability of the four PROTACs to form the desired ternary complexes tubulin-PROTAC-E3 ligase, which is a groundbreaking discovery in chemically driving the conjugation of tubulin with a ligase.

ANA-PO-069. Thread-based Bioluminescent and Chemiluminescent Biosensors for Sustainable and Accessible Point-Of-Care

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Microfluidic thread-based analytical devices (μTADs) are emerging as a new attractive platform for analytical assays due to their advantages in point-of-care (POC) settings such as their large availability, their light weight as well as their low cost. In particular, thread substrate is seen as a valid alternative to microfluidic paper-based analytical device (μPAD) that instead require hydrophobic barriers for the formation of microchannels and show lower mechanical strength, limiting their practical applications in POC assays. Moreover, the μTADs flexible design achieved by sewing, knitting, weaving or twisting them and their small scale offers the possibility to work with reduced sample volumes1. All these features make thread-based devices sustainable analytical tools in accordance to the principles of green chemistry. We report a proof-of-principle application of bio-chemiluminescent biosensing on cotton threads. We first designed a bioluminescent (BL) thread biosensor in which the light-emitting molecule and the enzyme are immobilized onto two separate threads after twisted together to trigger the reaction. This spatial separation increases the shelf-life of the device and the possibility of quantifying different analytes in a small-volume sample (2 μL) in short time (5-10 min). The preliminary tests were performed for detecting ATP, used as indicator for microbial contaminants in food or hygiene monitoring. In parallel, a thread-based chemiluminescent (CL) device which, to the best of our knowledge, has not been reported in literature yet, was tested. In this case, preliminary tests were performed exploiting the enhanced luminol/H2O2/horseradish peroxidase (HRP) CL system, which can be adapted for different diagnostic applications such as the monitoring of the lactate levels for sport medicine. To prompt future applications in point-of-care and point-of need settings we implemented smartphone detection for easy monitoring of the microfluidic thread-based analytical devices.

IND-PO-033. Innovative Photoelectrocatalytic filter for Recirculating Aquaculture Systems

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Ammonia poses a threat to biodiversity in aquatic environments, having toxic effects on fish living in freshwater and seawater.1 In this work, we have designed a photoelectrochemical reactor and tested in a recirculating aquaculture system (RAS, Fig.1a). This technology exploits the UV-electrochlorine advanced oxidation process to improve water quality and fish welfare, performance and sustainability. The photoanode is prepared by anodization of a metal titanium mesh in a ethylene glycol, water and hydrofluoric acid electrolyte solution at 30 V for 6 h in order to obtain a self assembled titania nanotube arrays film (Fig.1b). The illuminated semiconductor film promotes the oxidation of chloride ions naturally present in fresh- (or sea-) water, to chlorine radical which is highly reactive and selective in ammonia oxidation yielding N2 or nitrate. 2 Preliminary ammonia degradation tests were performed in 5·mM KCl cotaining 100 ppm NH3 solutions at 4 V potential bias. A stable photocurrent up to 550 mA under UV- irradiation was obtained during the test (Fig.1c).3 An almost full ammonia conversion was reached after 6 h-long test with a selectivity towards N2 and NO3- of 80% and 20%, respectively. The setup has been shown to be biocompatible in a real rainbow trout farming plant4 showing a lower nitrate accumulation in water with respect to a traditional bio-filter.

INO-PO-056. Carbazole-cyclic triimidazole: when fluorophores' connectivity makes the difference

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Cyclic triimidazole (TT) has recently revealed as an intriguing scaffold for the preparation of new fully organic room temperature phosphorescent (RTP) materials, luminescent coordination complexes, polymers and bio-probes.1 TT displays at room temperature Crystallization Induced Emissive behaviour with a solid state photoluminescent quantum yield equal to 30% due to concomitant fluorescence and ultralong phosphorescence (up to 1 s).1a

A new recently reported family of TT-Carbazole compounds has been prepared with different connections between the two units, namely a CTT-CCz bond in TT-(C)-Cz or a CTT-NCz one in TT-(N)-Cz and a phenyl spacer in TT-Ph-Cz.2 The three compounds display in diluted solution, films and powders, excitation-dependent emissive behavior with both short and long-lived emissions. Remarkably, TT-(N)-Cz and TT-Ph-Cz have been isolated in different polymorphs displaying a structural and crystalline grade-dependent photophysics. Moreover, TT-Ph-Cz crystallizes as MeOH-solvated (monoclinic) and de-solvated (triclinic and orthorhombic) forms characterized by distinctive emissive features. Notably, triclinic and monoclinic phases are able to interconvert through Single-Crystal to Single-Crystal transition (desolvation) and MeOH uptake (vapochromism) restoring emissive properties. The multifaceted emissive behavior of TT-Ph-Cz is enriched by dual fluorescence (clearly visible in viscous solvents) and phosphorescence, RTP from aqueous aggregate and mechanochromism leading to an interesting stimuli-responsive high-performance single-component luminescent material.

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INO-PO-013. Nanostructured Catalysts for Enhanced CO2 reduction: Insight from Electrochemical and Spectroscopic studies

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The rising levels of atmospheric carbon dioxide (CO2) and the growing socio-economic impacts of global warming underscore the pressing demand for sustainable approaches to CO2 utilization and conversion. In this context, the perspective of using renewable sources and low-cost transition metal-based catalysts to promote an electrochemical reduction of CO2 emerges as a promising avenue to contrast massive utilization of fossil resources for fuel and chemical production. However, the efficiency and selectivity of CO2 electroreduction in aqueous electrolytes is mainly limited by the competitive hydrogen evolution reaction. Recently, the electrodeposition of highly hydrophobic molecular films from water-soluble organic additives was found to significantly improve the electrocatalytic CO2 reduction performances of polycrystalline nanostructured metal surfaces, thus inhibiting or suppressing hydrogen evolution.

According to this strategy, in our group we have designed some heterocyclic organic salts and investigated their adsorption properties on polycrystalline metals as well as their effect as promoters of electrocatalytic CO2 reduction. In this contribution, we present a molecular tuning strategy involving the functionalization of the surface of some metal electrodes with organic molecules. We firstly synthesized a series of organic salts used as substrates for the functionalization of the metallic surface via electrodeposition. Through electrochemical studies, such as cyclic voltammetry, we investigated their electrochemical behaviour in reduction. Furthermore, employing a combination of electrochemical and spectroscopic techniques, we identified and analysed the species adsorbed on the polycrystalline metal foil. We investigated the structural factors and physicochemical properties of the molecular film. Finally, explored their potential catalytic contribution to catalysis by analysing important parameters such as product selectivity, catalytic activity, and the stability.

Overall, this contribution aims to deepen our understanding of CO2 reduction and advance the development of efficient electrocatalysts for sustainable energy conversion

IND-PO-034. Lead-free piezoelectric polymer-ceramics composites for sustainable energyharvesting

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Sarà inviato al più presto

TEO-PO-032. Theoretical study of charge and energy transfer processes in materials for organic electronics

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Nowadays, a myriad of organic semiconductors (OSCs) have been proposed across diverse domains, including electronics, flexible displays, and cost-effective solar cells. [1] Since early investigation on their charge mobility it has been clear that i) local vibrations are strongly coupled to the charge-transfer process ii) the fluctuation in the transfer integrals can significantly affect the transport mechanism, because their magnitude is comparable to the average value of the transfer integrals. [2] Therefore the study of charge mobility in OSCs can be tackled by developing quantum dynamical models in a system where electronic and nuclear degrees of freedom exhibit strong coupling. Starting from this point we propose a study of electron dynamics in emerging hole-transport materials (HTM) devices. Using specific atomistic models of the materials we compute the relevant parameters that controls the charge transfer (CT) process: site energy, electron transfer integrals and electron-vibrational coupling using state-of-the art methodologies. [3,4] These parameters are used as input for a subsequent studyof the electron-nuclear dynamics using a properly defined Holstein-Peierls model Hamiltonian. Using this approach we show how these parameters affect the various regime of charge-mobility in organic HTM.

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ELE-PO-013. Critical Aspects in Lithium-Mediated Nitrogen Reduction Reaction for Electroproduced Ammonia

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Ammonia is a fundamental building-block for fertilizers as well as for many other commodities, and its production via the Haber-Bosch (HB) process is responsible of around 1.4% of the global greenhouse gas emissions due to the severe conditions (200 atm) of these few huge, centralized plants. Finding a renewable-driven and delocalized electrochemical process for NH3 production, complementary to HB, could be a key solution for our society that is facing climate change crisis and that is demographically growing1.

In view of process electrification, the Li-mediated pathway represents the most promising solution in the N2 reduction reaction challenging field. Exploiting the unique reducing power of this alkali metal, this strategy achieves the highest Faradic efficiency (FE) and NH3 production rate2. Different strategies, both continuous and step-by-step systems, are under evaluation in current literature.

In the first, Li+ ions from the aprotic electrolyte are electrodeposited on the cathode, where N2 is reduced and protonated into NH3 directly in the same environment. On the plated Li, a solid electrolyte interphase (SEI) unavoidably forms due to electrolyte degradation on the interface, and the different diffusion rate of Li+, N2, and H+ trough the SEI layer determines the selectivity towards NH3 formation3. In the latter, the formation of Li3N is the key intermediate step. The exploitation of a Li-N2 galvanic cell, inspired by lithium-air batteries, could maximize Li3N formation4. Even in this case, nevertheless, practical aspects are delaying the rising of this innovative research filed, and a critical eye on interferents and impurities should be adopted for a correct NH3 quantification. Our laboratory is currently addressing these challenges within the SuN2rise project, and an overview of electrochemical and engineering-related crucial aspects will be presented in this contribution.

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This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No. 948769, project title: SuN2rise).

ORG-PO-098. The inverse electron demand [4+2] hetero Diels-Alder reaction allows to easy access to tetracyclic fused glycomimetics as precision tools in cancer settings

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Glycomimetics, molecules that mimic the structural and functional features of native carbohydrates, possess vast therapeutic potential and are emerging within the drug development market.1 It is well established that by proper modulation of their structure, researchers can overcome the inherent limitations of native carbohydrates leading to molecules with enhanced selectivity/potency for the target and improved drug-like properties. With this in mind, straightforward synthetic strategies that allow to access to such compounds have emerged at the frontier of drug design thus making glycomimetics more and more available tools for advancing our understanding of the glyco-code and as therapeutics for a great variety of diseases.1b,2

In this framework, the use of glycals as electron-rich dienophiles in the [4+2] inverse electron-demand hetero-Diels-Alder (ihDA) reaction allows as easy access of an array of glycomimetics with a high degree of structural diversity. In this communication, we describe our last contribution in the field in providing a new class of electron-poor heterodienes, the N-substituted-3-thioxo-benzo[c][1,2]thiazin-4-one-2,2-dioxides.3 The use of such heterodienes in the ihDA allows either to further widen the structural diversity of the glycomimetics and to foster the understanding of the mechanistic details and the reactivity of some glycals in the ihDA. The implications of our recent insights in the development of precision therapeutics in cancer settings will be also described.

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ALI-PO-030. Metabolomic Profiling of Herbs and Spices by using Ambient Mass Spectrometry Combined with Chemometric approaches: A Powerful Tool for Fraud Detection and Prevention

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Fraudulent activities in food field are carried out principally for economic purposes and generated to improve perceived quality. In this contest, aromatic herbs and spices represent the most susceptible food matrices to those deceitful and illegal practices. The long and complex supply chain, the increasing in demand and prices make them vulnerable to economically motivated adulteration [5], which define the onset of issues related to the product quality and safety. Moreover, apart from their commercial value, herbs and spices or their extracts (or essential oils), contain functional compounds well-recognized for their biological activities, in particular phytochemicals (phenol compounds, terpenes and alkaloids), recognized for the anti-inflammatory and antioxidants properties. The authenticity and traceability of those samples are commonly evaluated according to ISO standards by using conventional analytical methods, that although provide high reproducibility and sensitivity, are time-consuming approaches in terms of sample preparation and analysis time. In order to deal such drawbacks and introduce more competitive approaches against food fraud, in the last decade fast fingerprinting methods have been employed for the reliable identification of “precious” foodstuffs. Ambient Mass Spectrometry (AMS) has attracted interest for the absent or minimal sample preparation, in line with green chemistry principles, and the capability of in situ analysis of samples in their native environment. The present study employed two innovative AMS techniques, REIMS-QTOF and DART-QDa, as fast and reliable methods to be used for preserving the biodiversity and local economies though the rapid screening of the total metabolome of different herbs and spices. The main goal was the obtaining of univocal fingerprinting for the different samples for the identification of discriminant features among the samples. In this regard, the coupling of these methods to chemometrics was essential, as starting point for finding similarities or dissimilarities across different groups of samples, based on the building of classification models capable to discriminate according to the according to the botanical species or varieties. The models were validated (correctness score higher than 90%) and used for the real-time identification of unknown samples, therefore distinguish genuine from adulterated products.

Acknowledgments:

The researches were performed within the framework of the Research Project PRIN PNRR - MISSIONE 4, COMPONENTE 2, INVESTIMENTO 1.1 - BANDO PRIN 2022 PNRR - DECRETO DIRETTORIALE N. 1409 DEL 14-09-2022: Fast, Reliable and Innovative analytical approaches for the END-to-end quaLity and safetY of spices and aromatic herbs - FRIENDLY, supported by the Italian Ministry of University and Scientific Research, CODICE IDENTIFICATIVO: P2022CAJHW, CODICE CUP: J53D23014550001.

FIS-PO-021. Multiscale Characterization and Imaging of nano/bio-materials by X-ray microdiffraction and microscopy

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X-ray scattering techniques can provide a large amount of structural and morphological information, both at the atomic and nano-scale, and are thus particularly suited to study composite/nanostructured materials. The crystalline components are mainly studied by Wide Angle X-ray Scattering (WAXS), providing information on the crystallinity and crystalline phases, as well as on possible texture. The nanoscale structure/morphology can be assessed based on the Small Angle X-ray Scattering (SAXS) signal and related to the possible crystallinity through combined SAXS/WAXS mapping. SAXS/WAXS/Absorption Microscopy is particularly suited to study biological tissues (or any structured material) with nano and/or atomic scale periodicity. The availability of high brilliance X-ray micro-sources for laboratory equipment allows nowadays to perform the aforesaid advanced X-ray characterization, in both transmission and reflection geometries, in the home laboratory, being such X-ray sources considered as “synchrotron-class”. The synchrotron-class micro-source combined with the SAXS/WAXS system installed at IC-Bari (XMI-L@b, https://www.ic.cnr.it/laboratorio/xmi-lb/) has been successfully applied to the study of free-standing nano/bio-materials. A in-house developed package (SUNBIM) for the collection and analysis of X-ray microscopies with absorption and/or diffraction contrast, as well as data reduction for

transmission and reflection geometries is freely available at http://www.ba.ic.cnr.it/softwareic/sunbimweb/, and constantly updated. Moreover, it has been successfully applied in grazing incidence reflection geometry (GISAXS/GIWAXS) for the study of several nanostructured films for advanced electronic applications. New tools with their respective application examples will be showcased, aimed at enhancing the quality of extracted information, distinguishing variations in density from structural variations in materials.1-2

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FAR-PO-098. Exploring Novel Compounds Targeting Mycobacterium tuberculosis Dihydroorotate Dehydrogenase: SAR Analysis and Biological Activity

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Tuberculosis (TB), caused by the bacillus Mycobacterium Tuberculosis (MTB), persists as one of the oldest diseases despite being curable. However, it remains the world's second leading cause of death from a single infectious agent, with 7.5 million new cases diagnosed globally in 2022, underscoring the urgent need for novel

treatments, especially in the face of emerging drug-resistant MTB strains. Inhibition of crucial enzymes and pathways in MTB has been a focal point in the development of new drugs. Enzymes involved in nucleotide biosynthesis have emerged as promising targets due to their vital role in providing building blocks for DNA and

RNA. Perturbations in cell metabolism can profoundly affect the proliferation of both infected cells and pathogens, rendering these enzymes pivotal targets for therapeutic interventions.

In the tuberculosis mycobacterium, dihydroorotate dehydrogenase (mtDHODH), a crucial enzyme of the de novo pyrimidine biosynthesis pathway, is indispensable for its replication. Our recent efforts have focused on characterizing the full-length mtDHODH, resulting in the successful determination of the crystal structure of the

protein2. Through screening our in-house compound library, we have identified MEDS322 as the first inhibitor of mtDHODH known so far.

Here, we present the synthesis and biological evaluation of MEDS322 and its analogues based on a thiazolidinone ring scaffold as the first mtDHODH inhbitors.

FAR-PO-037. Development of a double-stable isotopic dilution LC-MS/MS method for the accurate determination of hyaluronic acid in biological matrices

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To date, analytical approaches to measure hyaluronic acid (HA) are based on the following steps: 1) protein removal and purification of HA; 2) enzymatic digestion of polysaccharides to the dimeric unit (2-mer, composed of D-glucuronic acid and N-acetylglucosamine); and 3) derivatization of the 2-mer unit and analysis of the adducts by LC-ESI-MS/MS. Most of the proposed methods do not include an internal standard (IS) to normalize HA extraction yield, hyaluronidase enzymatic efficiency and analyte response to MS analyzer. The innovation of the proposed method is the use of two isotope-labelled HA derivatives produced by recombinant technologies to meet these limitations. The method is based on direct enzymatic conversion of HA to the 4-mer oligomer by recombinant bacterial hyaluronidase from Streptomyces koganeiensis and its direct analysis without any derivatization and purification step by LC-ESI/MS-MS using a HILIC column. The yield of HA isolation and its enzymatic conversion to the 4-mer analyte was normalized by adding 100% 13C-labeled HA to the sample before enzymatic conversion. Normalization of the MS response of the analyte was achieved by adding to the samples before mass analysis, a 13C-4-mer isotope analogue obtained by enzymatic conversion of 13C-HA enriched with 50% 13C, followed by purification of the oligomers. HA enriched with 100% and 50% 13C was bio-synthetically prepared using Streptococcus equi subsp. equi and D-glucose (U-13C6, 99%) as a carbon source in an animal-free minimal growth medium. Before precipitation, the HA produced was purified by active carbon filtration and ultrafiltration. Quantitative analysis of 4-mer was then carried out by multiple reaction monitoring (MRM) profiling, using m/z 757→554, m/z 785→574 and m/z 771→568 transitions for 4-mer and its derivatives labelled 100% and 50% with 13C, respectively. As expected, the use of the IS, normalizing the differences in extraction yield, enzyme efficiency and MS response of the analytes, greatly improved the precision and accuracy of the method. The R2 value of the equation improved from 0.9312 to 0.9914 when constructed in the absence and presence of the double IS, respectively. Once validated, the method was then applied to measure HA in biological matrices and particularly in bovine vitreous humour and synovial fluid of healthy donors. In conclusion, the developed analytical method enabled the precise and accurate determination of HA in a complex biological matrix through the use of a double isotopic standard that can normalize the variation in enzyme efficiency and MS response of the analyte and can be easily adapted for HA determination in other biological and even pharmaceutical matrices.

ANA-PO-032. First-row transition metal ions speciation studies with quinolinic and coumaric ligands

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The coordination in solution of first-row transition metal ions naturally occurs in the body or can be induced to enhance the transportation, increase the activity, or reduce the toxicity of the ions. The speciation of metal-ligand systems in solution is useful to investigate the behaviour and the implications of the components in physiological conditions. Quinoline and coumarin derived ligands were studied in combination with some bio-relevant first-row transition metal ions. In particular, 8-hydroxyquinolines (8-HQs) and n-hydroxycoumarins (HCs) represent two families of naturally occurring compounds showing interesting biological properties, including the ability to chelate metal ions.

Metal ions as VIV/V, CrIII, MnII, FeII, CoII, NiII, CuII and ZnII were considered and studied in combination with 8-HQs and HCs derived ligands. These ions are naturally involved in biological mechanisms and their chelation can dramatically change their activity and distribution in the body. The combination of these metals with biologically interesting ligands nowadays represents a strategy in drugs discovery. The considered metal ions and ligands were combined and their interaction was investigated aqueous solution. Several metal-ligands systems were studied adopting a multi-technique approach. Potentiometric, spectrophotometric and NMR titrations were performed, in KCl(aq) 0.2 mol·L−1 and T = 298.15 K. The characterization of the systems was further expanded exploiting other electrochemical and spectroscopic techniques as voltammetry, fluorimetry, and EPR spectroscopy. Combining the information obtained from different techniques, it was possible to achieve a good grade of knowledge about the chemistry of the investigated systems. Stoichiometry of the formed metal complexes were identified, and coordination modes were hypothesized. The stability constants of the complexes were estimated, and the speciation diagrams were obtained defining the main species formed in solution over the biologically relevant pH range.

ORG-PO-209. Synthesis and Characterization of Small Molecule-Drug Conjugates for Targeted Drug Delivery

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Over the past ten years, the conjugation of bioactive substances to biocompatible carriers has proven to be a successful approach for the targeted delivery and controlled release of drugs. This strategy encompasses the covalent linkage of drugs to biological macromolecules thereby enhancing their solubility, stability, and pharmacokinetics while lowering toxicity and side effects.[1] Several biologically active molecules, including lipids, carbohydrates, aptamers, and antibodies, have been used as effective carriers to create novel molecular constructs for the treatment of various diseases. The drug of interest, also termed payload, can be directly linked to the carrier or it can be spaced by a properly designed linker. In both cases, once the bioconjugate has selectively engaged with its target, specific chemical or enzymatic stimuli induce the release of the payload, which is free to exert its pharmacological activity. In this context, we investigated the possibility for cholic acid (CA) and folic acid (FA) to function as carriers for different cytotoxic agents, thus obtaining small molecule-drug conjugate as selective anticancer agents. CA is a primary bile acid whose trafficking in the liver is finely regulated by intracellular lipid-binding proteins (ILBPs).[2] This acid has been directly linked to Mirin, an inhibitor of the DNA damage response processes, endowed with anticancer activity along with chemo- and radio-sensitising properties.[3] This new conjugate has been evaluated for its ability to bind ILBPs, and potentially to accumulate in the liver where, upon release of Mirin, it exerts its antitumor activity. Similarly, FA has been used for the creation of a novel prodrug involving an inhibitor of histone deacetylases (HDAC) as the payload. Folate receptors are frequently overexpressed in different forms of solid tumours,[4] hence FA could selectively shuttle the payload on tumour cells, limiting the off-target toxicity on healthy ones. The HDAC inhibitor has been loaded on FA via a specifically designed self-immolative spacer. This latter is based on a 5-nitropyrrole scaffold that allows the release of the payload via an electron push−pull mechanism activated by the reduction of the nitro group to the corresponding electron-donating amine. For the synthesis of the FA-prodrug, both in-solution and solid-phase synthetic techniques have been exploited.

ORG-PO-210. An eco-friendly treatment of landfill leachate to reduce the Chemical Oxygen Demand

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Landfills represent the most common routes to solid wastes disposal, and provide two main kinds of products related to wastes degradation, i. e. leachates and biogas.1 Landfill leachates derive from water percolation through waste deposits: they are toxic and have a negative impact on environment. They are composed of highly concentrated organic and inorganic contaminants that require severe treatment protocols for degradation to comply with environmental legislation2. The parameter used to evaluate the level of contamination in landfill leachate is the Chemical Oxygen Demand (COD), i.e. the amount (mg) of oxygen required to oxidize organic and inorganic chemicals present in 1 liter of aqueous sample3. The protocol used for COD determination is provided by the EPA Method 410.4 (Revision 2.0: "Determination of chemical oxygen demand by semiautomated colorimetry"), and it is based on the use of $K_2Cr_2O_7$ and H2O2 as the oxidants and potassium hydrogen phthalate as the standard. Here we provide a method of COD reduction that includes a preliminary reverse osmosis step of the landfill leachate and further acid-oxidative steps that lead to a COD value closely matching the limit required by legislation for disposal.

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FAR-PO-119. A new HPLC method with multiple detection systems for impurity analysis and discrimination of natural versus synthetic cannabidiol

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Cannabidiol (CBD) is the main non-psychoactive phytocannabinoid derived from Cannabis sativa L. It is now an active pharmaceutical ingredient (API), given its usage in treating some types of paediatric epilepsy. For this reason, this compound requires a deep characterization in terms of purity and origin. Previous research work has shown two impurities, including cannabidivarin (CBDV) and cannabidibutol (CBDB), in CBD samples from hemp inflorescences, while abnormal-cannabidiol (abn-CBD) has been described as the primary by-product that generates in CBD synthesis. Both natural and synthetic CBD samples exhibit the presence of Δ9-tetrahydrocannabinol (Δ9-THC) and Δ8-THC. In the light of all the above, this study is aimed to develop a new analytical method based on high-performance liquid chromatography (HPLC) with different detection systems to study the purity of CBD and define its origin based on the impurity profile. In addition to the above-mentioned cannabinoids, other compounds, such as cannabigerovarin (CBGV), cannabigerol (CBG), cannabichromenvarin (CBCV) and cannabichromene (CBC), were examined as potential discriminating impurities. Qualitative and quantitative analyses were carried out by UHPLC-HRMS and HPLC-UV/Vis, respectively. Principal Component Analysis was finally applied for statistical scrutiny. Natural CBD samples exhibited purity range between 97.5 and 99.7%, while synthetic samples were generally pure, except for three initially labeled as synthetic, revealing natural derived impurities. To further confirm the origin of CBD samples, the presence of other two minor impurities, namely cannabidihexol (CBDH) and cannabidiphorol (CBDP), was assessed as unequivocal for a natural origin. Finally, an enantioselective HPLC analysis was carried out and the results confirmed the exclusive presence of the (–)-trans enantiomer in all CBD samples. In conclusion, the HPLC method developed represents a reliable tool for detecting CBD impurities, thus providing a clear discrimination of the compound origin.

FIS-PO-065. Stability of the High Entropy Oxide (Mg,Co,Ni,Cu,Zn)O

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High entropy oxides (HEOs) are single-phase materials composed of five or more cations, some of which stabilized in an unconventional chemical environment, different from that of the simple oxide phase, due to the large configurational-entropy contribution1. Despite their potential to yield compounds with unique and promising properties for energy storage, catalysis and thermoelectricity, the role of entropy in the stabilization process is still debated2, and very little is known about their compositional stability range3. An interesting question to address is the role of individual cations in the HEO stability. Currently, one of the most studied HEO, and the subject of our research, is the first one synthesized in 2015 by Rost et al., i.e. (Mg,Co,Ni,Cu,Zn)O. CuO is known to be the most destabilizing component within the solid solution. Through a multicomponent diffusion couple (DC) between CuO and the quaternary oxide containing all cations present in the aforementioned HEO except Cu, we assessed Cu mobility and reactivity. The DC was heated in a tubular furnace at 1000°C for different reaction times. Once the diffusion occurred, the DC cross-section was examined through SEM-EDS for morphological and compositional analysis, and through EBSD (Electron Backscatter Diffraction) to determine the structure in the different sample regions.

Our findings revealed Cu's high diffusivity within the solid solution, and the formation of a product layer, due to the other cations diffusion, with general formula Cu2(MgxCoyNizZnn)O3, compatible a distorted gugghenite structure (Cu2MgO3). Interestingly, EDS analysis also revealed a high solubility limit of Cu within the diffusion region (33%) not reproducible via ex-situ synthesis; indeed, powders obtained via Pechini method showed a Cu solubility limit of 28% with a progressive and long-range structural distortion observed for Cu percentage higher than 25%. Another attempt to assess the single components' role in HEO reactivity was made by progressively reducing the number of components from the quaternary oxide in the DC. First, a DC between the ternary oxide (Mg,Co,Ni)O and CuO was then set-up. We found no product layer is formed demonstrating the Zn has a pivotal role in determining the guggenite stability. By further reducing the number of components in the solid solution a clear trend in the Cu diffusion length was not observed implying that there is no direct correlation between the diffusion kinetics and the number of components, as instead suggested for high entropy alloys. It would be reductive to model high entropy oxide behaviour only based on the configurational entropy of the system. Every composition is unique and has to be analysed considering the nature and the reactivity of every single oxide in the solid solution.

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ALI-PO-021. Analytical evaluation of bioactive compounds in olive oil by-products

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The production of by-products from farming and food manufacturing poses a significant challenge to global environmental and food emergencies. Olive oil production employs a technological process that relies on physical operations without chemicals. However, the extraction process requires a large amount of water and produces a significant amount of solid waste and harmful liquids, which raises significant environmental concerns. Improper disposal of by-products of the olive oil mill industry can lead to environmental pollution and harm ecosystems. Olive mill wastewater (OMWW) is known for its dark color and high concentrations of organic carbon, potassium, nitrogen, phosphorus, calcium, magnesium, and iron, particularly phenols and polyphenols. Olive pomace (OP) is a solid waste consisting mainly of water, seed, and pulp with a high organic matter and carbon content, rich in potassium, low in phosphorus, with intermediate nitrogen levels. It may also contain phenolic and lipid compounds. Both matrices have a high pollution index due to their acidic nature and high concentrations of salts and phenolic compounds, making them potentially harmful by-products for the environment. Identifying and measuring bioactive compounds in complex matrices such as OMWW and OP after

extraction and recovery is a challenging task. Accuracy and reliability are essential to promote new practical destinations for olive oil by-products, resulting in environmental and financial benefits.

In this study, a sensitive and robust analytical method for the quali-quantitative characterization of bioactive compounds (polyphenols and lipophenols) in samples of OMWW and OP based on high-performance liquid chromatography coupled with diode array detector and mass spectrometry with electrospray ionization interface (HPLC-PDA-ESI-MS) has been proposed and validated, by studying parameters such as repeatability, limit of detection (LOD), limit of quantitation (LOQ), linearity range, and recovery by analyzing standard phenolic and flavonoid compounds.

ANA-PO-034. Detection of abusing drugs achieved by using a multienzyme filter layers on amperometric biosensors

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Propofol is widely recognized as the preferred intravenous anaesthetic for short-term sedation due to its rapid onset and elimination, gentle recovery from anaesthesia, and minimal side effects.1 Improper administration, either excessive or insufficient, may result in propofol infusion syndrome (PRIS) or intraoperative awareness, leading to physiological and psychological harm to patients. Notably, there is considerable variability in individual responses to propofol anaesthesia. Additionally, there is a growing global concern about addiction and fatalities associated with propofol abuse in recent years. Therefore, the assessment of plasma propofol levels is crucial in drug metabolism and pharmacokinetics (DMPK) as well as forensic toxicology research.2,3

In this work, an innovative enzyme-based amperometric biosensor was developed by using horseradish peroxidase (HRP) immobilized onto graphene based screen-printed electrodes. In particular, HRP was operated in mediated electron transfer (MET) using [Os(4,4′-dimethyl-2,2′-bipyridine)2(poly-vinylimidazole)10Cl]2+/+ as immobilized mediator, monitoring the inhibition of H2O2 catalytic activity of HRP induced by propofol.4 Moreover, enzymatic layers applied on the electrode surface have been used to eliminated or decrease the signal of interference molecules that may be present in actual blood samples.

The modified electrodes were characterized by using cyclic voltammetry and amperometry to extract the biosensor analytical figures of merit (e.g., dynamic linear range, limit of detection (LOD), sensitivity and stability). The electrodes were finally tested in blood samples using a smartphone-integrated system in order to develop a blood-prick propofol screening test.

ORG-PO-099. Synthesis and characterization of Gadopiclenol bifunctional derivatives

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Due to its optimal thermodynamic stability, kinetic inertness and efficiency (in terms of relaxivity), Gadopiclenol has been proved to be a valuable GBCA (gadolinium based contrast agent) for Magnetic Resonance Imaging (MRI) applications1. In this work we performed the synthesis of a bifunctional Gadopiclenol analogue bearing an amino group on the pyridine moiety (Figure 1); this scaffold could be used in order to link the complex to a molecule with high affinity with human serum albumin (such as adamantane group) or to build a dimeric derivative.

These paramagnetic contrast agents show improved efficiency because of their higher molecular weight (which leads higher rotational correlation time values). In addition, Gadopiclenol and its derivatives are neutral complexes, so they are suitable for MRI-guided therapeutic applications based on the administration of sonosensitive liposomes co-encapsulating the anticancer drug doxorubicin and the paramagnetic agent2.

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TEC-PO-012. From Nature’s Blueprint: Electrospinning of a Resilin-derived Brominated Heptapeptide

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Resilin, an elastomeric protein found in arthropods, possesses remarkable mechanical properties such as high resilience and elasticity, making it an attractive candidate for bioinspired materials. However, translating these unique properties in synthetic materials has remained a challenge, primarily due to the protein's intricate structure and extensive amino acid sequence.1 In our recent work, we focused on the modification of resilin consensus sequence SDSYGAP through bromination of the tyrosine residue.2 This minimal alteration induced peptide self-assembly due to the increased supramolecular stability conferred by bromine atoms,3 resulting in a robust three-dimensional network of fibrils within a hydrogel matrix which exhibited elastic properties absent in the wild-type sequence. Building upon these findings, this study explores the combination of this modified peptide with other biomaterials, such as gelatin, and the fabrication of nanofibrous mats through electrospinning. This technique offers precise control over scaffold morphology and architecture, enabling tunable mechanical properties and excellent biocompatibility. We successfully produced electrospun nanofibers with uniform morphology, showing good stability in water and a strain-hardening behaviour characteristic of biological tissues, highlighting the potential of the fabricated scaffolds for various biomedical applications. Furthermore, the brominated heptapeptide scaffolds demonstrated antioxidant activity, attributed to the inherent properties of the peptide sequence. This study presents a promising avenue for the development of biomimetic materials with tunable mechanical properties and added functionalities,4 inspired by nature's design principles.

TEC-PO-015. Exploring water-polysaccharide interaction in icing conditions

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The formation of ice on exposed surfaces causes serious problems to the safety and operation of instruments and facilities. Active methods of ice removal can be costly and energy consuming. Thus, research focused on passive methods, such as superhydrophobic and liquid-infused porous surfaces (know with the acronyms SLIPS or LIS), which however can lose hydrophobicity in humid conditions or due to degradation.1 Moreover, superhydrophobic coatings are usually made of fluorinated materials, intrinsically hydrophobic, but also potentially hazard for the environment and human health.2 Surfaces infused with a hydrophilic lubricating layer may be an alternative strategy for functional icephobic coatings, allowing the formation of a liquid water layer on the surface which enables ice sliding.1 In this context, polysaccharides, that are soft hydrophilic absorbent materials, non-toxic and biodegradable, may be of particular interest.3 Hence, an electrolyte hydrogel of chitosan, an abundant polysaccharide, was physically crosslinked and infused with different amounts of salted water. A 10-fold reduction of ice adhesion with respect that on aluminum and glass in the same conditions was obtained, due to the exploitation of the colligative properties of water preventing ice nucleation at the ice-hydrogel interface. This is a bio-based and cost-efficient strategy to reach easy ice detachment in humid marine environments, with potential application in offshore platforms and ships.4

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ANA-PO-050. Molecularly imprinted polymers as nanosensing tool for the detection of protein contaminants through time-resolved fluorescence spectroscopy

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Molecularly imprinted nanoparticles (nanoMIPs) are synthetic receptors with tailor-made recognition sites prepared by a template-assisted synthesis. NanoMIP-based optical sensors are currently attracting significant interest as they rely on combining the MIP's selective capability with optical techniques that offer exquisite sensitivity, low detection limit and real-time response.1 In the present work, an optical nanosensor based on MIP was designed for the detection of human serum albumin (HSA) through time-resolved fluorescence spectroscopy (Fig. 1).2 Fluo-nanoMIPs were physically characterized by dynamic light scattering, showing a hydrodynamic size of about 120 nm. Scanning electron microscopy and atomic force microscopy confirmed the size of the nanoparticles. Steady-state fluorescence spectroscopy was used as a classical method to study the ability of Fluo-nanoMIPs to bind HSA, showing an apparent dissociation constant (Kapp) of 30 pM. Moreover, the cross-reactivity of Fluo-nanoMIPs were tested against different proteins, demonstrating high selectivity for the analyte. Then, a Fluo-nanoMIP-based sensor, challenged with increasing concentrations of HSA, was tested in solution through time-resolved fluorescence spectroscopy. A decrease in fluorescence lifetime decay was detected, and characteristic saturation binding isotherm was observed with a Kapp of 18 pM, a linear dynamic range of 3.0 – 83.5 pM and a limit of detection of 1.26 pM. As a proof of concept, nanosensor was shown to detect HSA spiked in wine, presenting a new potential method for monitoring beverage allergens. Finally, with the idea of knowledge transfer, we attempted to immobilize Fluo-nanoMIP onto a surface to develop a portable, compact and easy-to-use device.

FAR-PO-082. New biofilm inhibitors to fight antibiotic resistance

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Biofilms are aggregates of bacteria embedded in a self-produced matrix, that is composed of exopolysaccharides, proteins and nucleic acids.1 Nowadays biofilm is considered a serious threat in infectious disease management, due to its ability to confer the bacterial cells a higher degree of resistance to antibiotics: indeed, its structure works as a barrier impeding the penetration of the drug or other xenobiotics into the cell.2

There are many mechanisms involved in the formation of biofilm, one of which is the Quorum Sensing (QS), a complex machinery governing the assembly of the structural components of biofilms, via the secretion of signalling molecules called autoinducers.3 Based on these premises, as a continuation of a previous research, we designed new compounds acting as QS antagonists to prevent biofilm formation or to disrupt already formed biofilm in different strains of Gram-negative bacteria (figure 1).

Compounds belonging to series A were based on the structure of 2-alkyl-4(1H)-quinolone derivatives, a group of potent autoinducers involved in QS signalling of P. Aeruginosa, while those in series B were conceived by drawing inspiration from some benzimidazole hybrids acting as anti-QS agents.3 Both series of molecules have a common motif composed by a heterocyclic head, an amide spacer, and a side chain R carrying moieties with different steric and electronic features.

Early in vitro assays were performed on B. Cenocepacia, showing a promising ability of such compounds to reduce the biofilm formation up to 30%, while those on P. Aeruginosa and other Gram-negative bacteria are currently underway. These results enabled us shed lights on the structural features required for an anti-biofilm profile, thus constituting a starting point for a further optimization of the QS antagonist activity.

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TEF-PO-013. Inorganic Nanoparticles-doped nanofibrous scaffold for skin regeneratio3.

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Introduction: Natural polymers are considered promising biomaterials in regenerative medicine since they can provide a suitable microenvironment for wound healing, mimicking the structural and biochemical cues of native tissues 1. Scaffolds produced by animal proteins, such as gelatin, could sustain cell adhesion and proliferation due to the presence of tripeptide Arg-Gly-Asp (RGD) motifs, while scaffolds based on plant-based proteins, such as zein, have less immunogenic response than animal-derived proteins. In addition, inorganic nanoparticles, such as selenium nanoparticles (SeNPs), can improve the wound healing process, thank to their antimicrobial activity against Pseudomonas aeruginosa, a pathogen involved in life-threating wound infections 2. In light of these considerations, gelatin or gliadin-based nanofibers doped SeNPs were designed and developed.

Materials and Methods: The polymeric blends were based on pullulan, an electrospinnable polymer, and proteins, gliadin or gelatine. Citric acid was added as crosslinking agent and SeNPs as antimicrobials. Nanofibrous scaffolds were obtained using horizontal electrospinning apparatus keeping the same variables for each formulation. the systems were made insoluble by heating and imaged using electron microscopy (SEM and TEM). Physico-chemical properties, including the mechanical ones, were also assessed.

Results: SEM images revealed smooth surface and uniform nano-dimension fibers independently of scaffold compositions. In addition, after crosslinking and subsequent hydration, each scaffold retained a nanofibrous structure. TEM images confirmed fiber doping with SeNPs. Moreover, the mechanical analysis showed that the presence SeNPs led to increased elastic properties and Young modulus in the case of gelatine-based nanofibers.

Conclusion: Nanofibers based on proteins, doped with SeNPs, have been successfully developed. Current studies are ongoing to evaluate the effect of SeNPs on the preclinical properties of the fibers, in particular biocompatibility and antioxidant properties in vitro on fibroblasts.

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IND-PO-035. Two-photon polymerization of reactive mesogens for micrometric smart devices

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The use of light in polymer science opens up to multiple opportunities. Among them, exploiting photopolymerization processes, specifically designed materials can be printed allowing for 3D structure preparation at different scales. In this communication, the use of Direct Laser Writing, a technique based on two-photon polymerization, will be presented to realize 3D micrometric objects by shape-changing Liquid Crystalline Networks (LCNs). Such materials are crosslinked polymers prepared by a mixture of reactive mesogens (Figure 1a) able to convert energy from external stimuli (as light) into mechanical motion. Their chemical composition can be tailored to achieve different mechanical properties and to modulate force production during actuation. With this materials, we demonstrated different synthetic micrometric robots entirely powered by light and able to reproduce diverse animal behaviour. Developed microrobots are able to perform humanoid tasks, as walking and swimming, but also to grab and manipulate objects.

In the last year, we have also demonstrated more complex smart microdevices useful for photonic or information encryption systems. In both cases, material shape, birefringence (Figure 1B) and their variation under stimuli have been carefully engineered to demonstrate 3D photonic crystals able to work as tuneable filters for telecommunication wavelenght or an array of responsive pixels able to show or hidden basic information. These examples demonstrate how to introduce enhanced functionalities in smart microsystems spanning from storage devices with physical encryption to complex motion actuators.

ANA-PO-125. Spectroscopic and Electrochemical Characterization of a new apta-sensor based on gold electrodes functionalized with poly-L-DOPA film

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As reported by the Codex Alimentarius1: “Food hygiene is the set of all the conditions and measures necessary to guarantee the safety and suitability of food at every stage of the food chain", implying that a food will not cause harm after it has been consumed according to the use for which it is intended. The food can be a source of chemical, physical or microbiological dangers, where the last mainly include pathogenic bacteria such as Salmonella, Clostridium botulinum, Listeria monocytogenes and viruses. Therefore, the development of innovative diagnostic approaches for detection of microorganisms responsible for food poisoning is increasingly in demand. From this perspective, the development of new biotechnologies and their integration into miniaturized devices has opened up new interesting scenarios in the biosensor sectors. Specifically, the present work involves the development of an electrochemical apta-sensor for detection of pathogenic microorganisms Lysteria monocytogenes. For this purpose, screen printed electrodes, appropriately modified with specific aptamers immobilized on poly-L-DOPA electropolymerized film, have been studied. A fully electrochemical and spectroscopic characterization of the proposed biosensor has been reported together with the electroanalytical performances in terms of LOD, linear and/or dynamic range, and sensitivity.

We acknowledge the support of the EU by the Next Generation EU project PRIN2022 – 2022JRKETK_PE7 - Versatile hybrid in-fiBer Optical-electrocHemical systEMs for wIdely Applicable bioseNsing – BOHEMIAN.

FAR-PO-091. Unlocking the Potential of Biocatalytic Oxidative Systems: A Pathway to Sustainable Synthesis of Pharmaceuticals from Food Waste

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Selective oxyfunctionalization of non-activated C–H, C–C, and C=C bonds is a highly desirable chemical transformation with broad implications in synthesizing several products, including pharmaceuticals. However, introducing functionalities into the inert skeletons of organic molecules is challenging. Biocatalysis has emerged as a powerful tool to address these objectives, leveraging enzymes' exceptional substrate specificity, chemo-, enantio-, and regioselectivity under mild conditions.1 Fungal unspecific peroxygenases (UPOs) represent a class of simple and robust heme-thiolate-containing enzymes that catalyse a range of C–H oxyfunctionalization reactions. Activated by H2O2 as the primary oxygen donor and final electron acceptor, UPOs exhibit a kaleidoscope of oxyfunctionalization reactions, positioning them as promising biocatalysts in synthetic chemistry.2 Exploring the biotransformation of food waste into high-value compounds via biocatalysis has attracted significant interest, particularly in medicinal chemistry. Cashew nut-shell liquid (CNSL), a by-product of cashew nut processing, constitutes a natural source of phenolic compounds, featuring a pentadecyl alkyl side chain with varying degrees of unsaturation.3 While CNSL holds promise as a source of drug precursors, its biocatalytic functionalization into drugs remains unexplored. In this study, we present an alternative approach to functionalize the pentadecyl alkyl side chain of CNSL derivatives using biocatalytic oxidative systems, offering a particularly sustainable alternative. Our ongoing investigations seek to further elucidate the potential of this methodology in advancing drug discovery efforts for Neglected Tropical Diseases (NTDs), highlighting the promising role of biocatalysis in sustainable synthesis pathways.

ORG-PO-100. D-Glucamine-functionalized self-assembling fluorophores for the sensing of drugs in water

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Fast and sensitive quantification of drug residues in water is increasingly required, due to the relevant presence of such pollutants in water bodies. This explains the rising interest in fluorescent sensing probes for this purpose. In this context, we synthesized two D-glucamine functionalized fluorophores bearing self-assembling cores, as 1,8-naphthalimide and naphthalene diimide. We studied their self-assembly in water solution, and characterized the aggregates formed by determining their stability constant, their morphology and size by scanning electron microscopy, resonance light scattering and dynamic light scattering. Then, we studied their sensing ability, in water, towards pharmaceutically active compounds such as ciprofloxacin, nalidixic acid, carbamazepine and diclofenac sodium salt, by fluorescence investigation.

Data collected show that the self-assembling ability is significantly affected by the fluorophore structure, which in turn also determines sensing ability. In particular, the naphtalene diimide-based probe was the most sensitive, with LOD as low as 0.01 μM in the presence of nalidixic acid, which is in line and competitive with more complex sensing systems, recently reported in the literature.

Acknowledgement: We thank MUR for funding, SiciliAn MicronanOTecH Research And Innovation CEnter "SAMOTHRACE" (MUR, PNRR-M4C2, ECS_00000022), spoke 3 - Università degli Studi di Palermo "S2-COMMs - Micro and Nanotechnologies for Smart & Sustainable Communities". The funding source had no role in analysis, design, interpretation of results and report writing.

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ANA-PO-142. Unveiling Sasanian secrets: Elemental analysis of ancient drachmas using μ–EDXRF

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Chemical analysis of ancient coins provides valuable information about the metallurgy and economy of the time when the coins were minted1. Due to the high value and rarity of ancient coins, museums and collectors of numismatic items often require chemical analyses using exclusively non-destructive techniques. Among these, X-Ray Fluorescence (XRF) has firmly established itself in the field of cultural heritage and, more specifically, in the analysis of ancient coins due to its cost-effectiveness, non-destructive nature, speed, and its ability to analyse the sample as is, without requiring pre-treatment or cleaning2.

In this study, 29 drachmas minted during the Sasanian dynasty (6th – 7th century AD) were characterised using μ-EDXRF. Specifically, these coins were issued between 498 and 628 AD, during the reign of four Sasanian kings (Kavad I, Khosrow I, Hormizd IV, and Khosrow II) and today belong to a private collection of the Department of Humanities of the University of Trieste.

As the availability of other historical evidence from this period is limited, the coinage of the Sasanian dynasty remains the most critical source for the study of its political and economic history3. Therefore, this study aimed to determine the elemental composition of the alloy's surface, with the objective of ascertaining the fineness of the 29 drachmas and identifying any potential forgeries or devaluation processes that may have occurred during the period covered by these coins.

After cataloguing the coins and measuring their mass, diameter, and thickness, eight XRF spectra were acquired for each sample using a micro-XRF spectrometer ARTAX 200 (Bruker Nano GmbH). From an initial qualitative analysis of the collected XRF spectra, it was concluded that the drachmas were primarily composed of Ag, with traces of Cu, Au, and Pb. Thanks to the availability of a sterling silver standard (92.5% Ag, 7.5% Cu supplied by Goodfellow, UK), it was possible to semi-quantitatively determine the contents of these two elements in all 29 coins. The Ag content was above 95% in almost all the coins, with the exception of one coin that had a high copper content and the presence of characteristic zinc and mercury peaks: this led to the hypothesis that it might be an ancient forgery. In addition, a group of five coins with a higher silver content (> 99.8%) was observed. These coins bear the inscription "afid" on the recto, which means "good" or "excellent" in ancient Persian. The analyses conducted in this study affirmed the superior quality of these coins compared to similar coins minted in the same period but lacking the inscription, corroborating the historical hypothesis. Finally, the Au/Ag ratio, which can provide additional insights into the silver's origin, potentially identified two distinct groups of

coins that may have been forged from two different raw minerals. In order to confirm the results obtained, the 29 drachmas will be analysed using the quantitative LA-ICP-MS technique.

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ANA-PO-141. Biochar: an environmentally sustainable approach for removing potentially toxic elements (PTEs) from contaminated water

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Nowadays, to mitigate the negative effects caused by pollution, particular attention is being paid to the eco-sustainability of human and industrial activities and the development of alternatives to the use of charcoal as a source of energy production. Biochar fits perfectly into these objectives, being used as a soil amendment or as an adsorbent of organic and inorganic environmental contaminants1,2. Moreover, it is obtained through a sustainable process, which yields biofuels, synthetic gases, and clean energy as by-products.

An important source of contamination in the Friuli Venezia Giulia Region is the Raibl dismissed mining district, located in Cave del Predil (UD), which was active for the extraction of galena (PbS) and sphalerite (ZnS) until 1991. A large amount of mineralised waste-rocks and tailings from the flotation plant operating at the Raibl mining district were disposed from 1976 to 1991 in tailings impoundments set up on the western bank of the Rio del Lago stream. Leaching processes involving tailings and the subsequent release and dispersion of potentially toxic elements (PTEs), especially Thallium (Tl), are promoted during periods of intense rainfall and high flow river conditions3. The main aim of this study was to experimentally determine the ability of biochar to adsorb PTEs (such as Pb, Tl and Zn) from contaminated water. The biochar used in this study is obtained from the processing of vineyard pruning waste, produced by slow pyrolysis, and characterised by a high degree of carbonisation, aromaticity, hydrophobicity, and porosity.

Several adsorption tests were performed with two types of biochar, fine-grained and heterogeneous coarse-grained, in different solvents (MilliQ water and fluvial water from the Tagliamento River). A quantity of 200 mg of biochar was exposed to 20 mL of solutions with concentrations of 1, 5, 10, 25 and 50 mg/L of the three elements individually. The tests were also repeated with solutions containing the three elements in a mixture to assess if competition occurred between them in absorption. Using ICP-AES, the residual metals in solution were quantified, and then the adsorbed metals were calculated, expressed both as a percentage in solution and per gram of biochar used. The tests showed that fine biochar has a higher adsorption capacity than coarse biochar due to its greater homogeneity, and that the maximum amount adsorbed by this type of biochar was approximately 2000 µg/g of metal. Furthermore, neither pH nor the presence of cations in fluvial waters (Na, Ca, Mg and K) affect adsorption. By comparing the results of the single-element and multi-element tests, it was concluded that the three metals compete in adsorption, with a recurring order of affinity Pb2+ > Tl+ > Zn2+ most likely due to the formation of a double layer on the surface of the biochar in contact with the solution, in agreement with Stern's theory.

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INO-PO-040. Enhancing Electrochemical Performance of Lithium-ion batteries via Coating of Synthesized Single Crystal LiNi0.8Mn0.1Co0.1O2 (NMC-811) Cathode Material.

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Lithium-ion batteries (LIBs) are a well-known and frequently used renewable energy storage technology, especially in the electric vehicle (EV) and bicycle industries as well as energy storage systems (ESS). The energy density constraint of existing LIBs still affects modern EVs despite their widespread use1. Technological improvements in batteries, especially in the positive electrodes, are necessary to address this problem. Lithium cobalt oxide (LCO) was a primary component of commercial lithium-ion batteries (LIBs) due to its superior performance. However, due to its toxicity and poor sustainability, scientists are currently exploring alternative options. The utilization of Nickel Manganese Cobalt oxide (NMC) in different compositions, such as NMC-111, NMC-532, NMC-611, and NMC-811, with a lower cobalt percentage, is one of the most promising substitutes. Despite the large capacity offered by NMC and its variants, its capacity tends to lose over time. This issue can be mitigated by dealing with single crystal phases and applying different coatings to these materials2. In our research, we synthesized single crystal LiNi0.8Mn0.1Co0.1O2 (NMC-811) using a Sol-gel method. Various coating techniques are found in literature for NMC materials, including atomic layer deposition (ALD), solid-state, and wet method. We opted for the solid-state coating approach for its simplicity and effectiveness in providing protective layer on NMC. This led to an improvement in the stability, conductivity, and overall performance of the cathode material. To assess the structural, morphological, and electrochemical properties of both coated and uncoated single crystal NMC, we employed characterization methods such as X-ray diffraction (XRD), scanning electron microscopy (SEM), and galvanostatic charge-discharge cycling (GCPL). Our findings demonstrate the formation of well-defined single crystal particles with minimal flaws and the desired crystallographic orientation, suggesting potential enhancements in battery performance and longevity. To assess the structural, morphological, and electrochemical measurements of both coated and uncoated single crystal NMC, different characterization techniques such as X-ray diffraction (XRD), scanning electron microscopy (SEM), and galvanostatic charge-discharge cycling (GCPL) are used. Our findings indicate the formation of well-defined single crystal particles with minimal flaws and the desired crystallographic orientation, suggesting potential enhancements in battery performance and longevity.

Keywords: Lithium-ion batteries (LIBs), Single crystal NMC-811, Sol-gel technique, Coating.

FIS-PO-024. Physicochemical insights into peptide-based targeting of G-quadruplex DNA structures

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Protein-DNA interactions are crucial for fundamental cellular processes, including transcription and replication. In addition to interacting with double-stranded DNA, proteins also recognize the noncanonical DNA secondary structures, such as G-quadruplexes (G4s). G4s are polymorphic structures formed within guanine (G)-rich strands, characterized by the presence of at least two G-tetrads, i.e. cyclic planar arrays of four guanines.

We have explored whether it is possible to exploit the DNA recognition motif of G4-binding proteins to obtain peptides that selectively target G4s. Many G4-binding proteins feature an arginine and glycine-rich motif known as the RGG or RG-rich motif. Although this motif plays a crucial role in the recognition of such non-canonical structures, their interaction is still poorly understood.

Aiming to develop peptide-based molecules capable of targeting G4s, we have focused our attention on two peptides: one containing an RGG motif shared by numerous human G4-binding proteins (NIQI), and another derived from the DNA-binding domain of the yeast protein Rap1 (Myb397-415). We have studied their interaction with biologically relevant DNA G4s with different topologies (parallel, antiparallel, or hybrid) using a combination of physicochemical techniques, including circular dichroism spectroscopy, microscale thermophoresis, and isothermal titration calorimetry (ITC). Both peptides exhibited the ability to selectively bind and stabilize some G4s. ITC experiments have allowed us to elucidate the thermodynamics of peptide-G4 interactions. We also shed light on the key amino acids involved in the binding process by introducing point mutations.

Our findings contribute to lay the basis for the development of a new class of peptide-based G4 ligands as an alternative to small molecules.

ORG-PO-101. A new sustainable approach to the synthesis of Benzofurans

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In the last years, the interest in the synthesis of heterocycles is largely increasing for their wide range of industrial application, from the pharmaceutical industry to the agricultural. Between the numerous types of molecules studied, some of the most interesting are probably the Benzofurans; these are in fact really useful in pharmaceutical industry, because they are found as scaffolds in a large amount of API, with different applications, such as antitumorals,anti-infiammatory, antiarrythmic and many more.

To answer to the high demand for this scaffolds, a great number of synthetic pathways were created and can be easily found in literature; most of them, however, present problematics, mainly for the expensive chemicals and catalysts applied, but also for safety and sustainability reasons, such as the use of dangerous solvents and the generation of wastes. To try to achieve better and more sustainable processes for these compounds of great industrial relevance, this work tried to optimize their synthetic paths, applying the principles of Green chemistry. To achieve this, we selected a process form literature between diphenylacetylene and phenol, in which was used the C-H activation reaction, that is highly desirable for a more sustainable process since it doesn't require any prefunctionalization steps. We then started to apply safer solvents, heterogeneous catalysis and different type of bases and oxidizing agent to decrease the wastes.

ORG-PO-211. Resolving the structural complexity of antibody-epitope interaction in Neisseria gonorrhoeae strains: Insights into antibody recognition

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Neisseria gonorrhoeae infection remains a prevalent sexually transmitted disease, with 82.4 million new cases reported globally in 2020. Its consequences, including pelvic inflammatory disease (PID), infertility, and adverse pregnancy outcomes, underscore the urgent need for effective treatments. In the context of increasing antibiotic resistance, the World Health Organisation (WHO) aims to reduce the impact of gonorrhoea by 90% by 2030. Therefore, alternative therapies are being explored. Monoclonal antibodies represent an alternative strategy as they offer targeted action against bacterial pathogens, minimising side effects and hospitalisation. Understanding the complex relationship between antibodies and bacterial epitopes is essential for developing effective treatments1. In this context, this study focuses on the chemical and structural characterization of the lipooligosaccharide (LOS) of N. Gonorrhoeae strain associated with disseminated infections2. The Core oligosaccharide (OS) was purified from cells in stationary phase and the exact mass was determined by Matrix-Assisted Laser Desorption/Ionization Time-of-Flight mass spectrometry (MALDI-TOF). We used NMR approaches to identify the conformation of the oligosaccharide in the free-state and compared it with the bioactive conformation obtained in the bound-state using a specific monoclonal antibody (mAb 2C7) directed against the lipooligosaccharide using STD-NMR and tr-NOESY techniques3. The experimental results were confirmed by computational techniques such as Docking and Molecular Dynamics simulations.

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ORG-PO-102. Immobilization of enzymes on clay minerals surfaces

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Enzyme immobilization is a powerful tool for the design of green and sustainable production processes. Given the diversity of methodologies and carriers, the proper approach for the specific requirements of a given process can be pinpointed. Enzyme immobilization helps to maintain the catalytic activity and stability under a range of pH, temperatures, and inhibitors, along with maintaining their recyclability over successive catalytic cycles. Also, the immobilization of enzymes to solid supports ensures highly purified products by easily removing the biocatalyst from the medium.1 The high expense associated with the support systems hinders the commercial applicability of immobilized enzymes. In this light, clay minerals being natural and low-cost, represent valuable candidates to be used as support for enzyme immobilization.2

Herein, we report the covalent grafting of laccase and, collagenase, on clay minerals' surface to develop functional nanomaterials for different purposes. The obtained nanomaterials were thoroughly characterized by different physical chemical techniques, aiming to confirm the successful grafting. Furthermore, UV-vis experiments were performed in order to validate that the enzymes can retain their enzymatic activity after the covalent grafting on clay surface.

Currently, since immobilized enzymes seem to have immeasurable prospects in all areas of science from targeted drug delivery to the development of sensor and bioremediation to develop functional materials that can be used in different fields.

FIS-PO-007. Novel Strategy in Anchoring Amine Functionalities to MOFs for applications in Direct CO2 Capture from Air.

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Direct air capture (DAC) of has been recognized as a fundamental strategy to drastically reduce CO2 levels in the atmosphere and mitigate the greenhouse effect.

However, CO2 removal from ambient air is a difficult task, since its atmospheric concentration is only 420 ppm, which is roughly 350 times lower than its concentration in other sources of air, like coal-based flue gas (≈15% CO2). In these conditions, sorbents that capture CO2 through chemisorption exhibit stronger and more selective interaction sites than physisorbent materials.

Amine functionalities contribute to the chemical sorption of CO2 by virtue of the reversible formation of carbamate moiety. The development of amino-functionalized solids sorbents (e.g., Metal-Organic Frameworks - MOFs) represents a benchmark strategy to create new possible DAC technologies.1

Many amino-based Ionic Liquids (ILs) possess high efficiency in CO2 capture, in particular a class of ILs containing azoles and amines has shown interesting performances. For this reason, the IL composed of pyrazole and diethylenetriamine has been chosen as main target to design a novel amino-functionalized MOF for DAC.2

The synthetic procedure involves the anchoring of diamine molecules to the MOF by virtue of an acid-base interaction, rather similar to that involved in the formation of the ionic liquids previously mentioned ILs. The novel MOF-303 structure3 appeared to be suitable for this scope thanks to the pyrazolic nature of the linkers and the presence of a strong H-bonding adsorption site which makes anchoring of the amine moieties possible.

The employment of spectroscopic techniques (such as in situ IR and Solid State-NMR) and computational methods could elucidate the structure of the adsorption sites and the nature of the still unclear CO2 capture mechanism involved. In the next future, further experiments will include the use of breakthrough set up, the evaluation of water effect on adsorption performances and how the presence of water in the gas streams could affect the performances of the adsorbent.

Acknowledgement: Authors acknowledge support from the Project CH4.0 under the MUR program "Dipartimenti di Eccellenza 2023-2027" (CUP: D13C22003520001). G.M. acknowledges Decreto-Legge 2 Marzo 2023, n°117 (PNRR) and Centro Ricerche FIAT for the PhD scholarship.

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ANA-PO-044. Single Particle Inductively Coupled Plasma Mass Spectrometry (SP-ICP-MS): an innovative approach for inorganic nanoparticles analysis

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During the last two decades, the use of engineered nanoparticles (ENPs) in a wide range of applications has been growing exponentially due to their unique chemical and physical properties. The increasing presence of these materials in consumer products has inevitably led to their release into the environment and, consequently, to their incorporation into the human body. Together with their spread, the need for an in-depth risk assessment and the introduction of global regulations for a safe and sustainable employment of ENPs became evident.

In this context, single particle – inductively coupled plasma – mass spectrometry (SP-ICP-MS) represents a powerful and emerging technique for routine analyses of NPs. In SP mode, the conventional ICP-MS unit operates in time-resolved analysis mode by using higher data acquisition frequencies to detect every signal pulse corresponding to each individual NP reaching the ICP. Through a single analysis, SP-ICP-MS can provide a wide range of information, such as chemical composition, size distribution and particle number and mass concentrations, overcoming many of the limitations specific to techniques traditionally used for nanomaterials characterization.

In this work, the development of analytical methods for the analysis of different kinds of inorganic NPs (e.g. Au, SiO2, Ni) will be described. Besides illustrating all the fundamental aspects concerning the analysis, the main challenges in rendering SP-ICP-MS a routine approach, especially for environmental studies, will be underlined.

CSB-PO-024. Photochemotherapy by design

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Photochemotherapy (PCT) is an emerging cancer treatment that combines phototherapy and chemotherapy.1 This kind of combination therapy can provide a more potent treatment than using either treatment alone, leading to additive and synergistic antitumor effects. Since PCT is based on the administration of two different compounds, a photosensitizer (PS) and a chemotherapeutic drug, many problems can arise due to the different pharmacokinetic and/or pharmacodynamic profiles of the two molecules.

Here we propose two innovative approaches to develop novel solutions for PCT:

i) Use of proteins or protein nanoparticles to simultaneously transport both the photosensitizer and the chemotherapeutic drug. We have previously showed the ability of human serum albumin (HSA) to disperse temoporfin (mTHPC), an approved photosensitizer. This protein-based formulation improves the phototoxicity of mTHPC, when compared to its clinical formulation. Through a virtual screening approach we now identified chemotherapeutic drugs capable of binding to HSA in a different pocket than the PS, creating an efficient protein-based delivery systems loaded with both the chemotherapeutic agent and the PS.

ii) Exploitation of the intrinsic photosensitizing properties of some chemotherapeutic drugs, like doxorubicin, to enhance their anticancer activity upon light irradiation. We built a structural database of approved anticancer drugs, and we calculated all the photophysical properties of these molecules. We identified 17 promising molecules (i.e. mitoxantrone, pixantrone, daunorubicin, dactinomycin, sunitinib) with the photochemical characteristics to be also a PS. In principle, these chemotherapeutic drugs per se can be also used as a PS in phototherapy.

For both the approaches we selected the most promising candidates for in vitro testing. We observed excellent results, validating the new developed PCT protocols, through the i) simultaneous transport of the PS and the chemotherapeutic drug with a protein-based formulation and ii) light-enhanced cytotoxicity by photoactivation of selected approved drugs.

INO-PO-034. Cyclic trimidazoles as new ligands for the preparation of luminescent metal complexes and coordination polymers

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Triimidazo[1,2-a:1′,2′-c:1″,2″-e][1,3,5]-triazine (1) is a nitrogen rich molecule characterized by an intriguing aggregation induced photophysical behavior comprising an ultralong room temperature phosphorescence (RTUP) in the crystalline state.1 Based on the presence at the vertexes of a regular triangle of three imidazole nitrogen atoms available for coordination, the potentially of 1 as ligand towards different metal ions have been also investigated.2-4 Interestingly, these studies revealed the ability of 1 to coordinate as mono-, bi- and tri-dentate, affording luminescent metal complexes and coordination polymers (CPs). The functionalization of 1 with a pyridinic fragment as in 2 expanded the possible coordination modes.4,5 In fact, 2, due to the presence of one nitrogen atom on the pyridine ring and another on the imidazolic unit at a proper distance is able to act as chelating ligand and to give molecular or extended coordination structures through the additional nitrogen atoms of the triimidazole moiety. The multidentate nature of 2 has also allowed to isolate, by reaction with CuI in slightly different reaction conditions, two strongly luminescent polymorphs of formula [Cu2I2L]x (x = 2, n), namely a yellow emitting one-dimensional coordination network6 and a green emitting dimeric complex whose structural and photophysical properties will be here presented.

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ANA-PO-061. All-paper-based analytical tool for hydrogen peroxide monitoring in exhaled breath

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Point-of-care sensing devices are crucial tools in assisting clinicians with fast analyses, easy management, and painless monitoring of patient diseases. Indeed, these sensing tools closely align with the ASSURED criteria set by the World Health Organization, where ASSURED stands for affordable, sensitive, specific, user-friendly, rapid, equipment-free, and deliverable to end-users. This concept was further updated to REASSURED, highlighting the real-time connectivity and ease of specimen collection.

In the last decade, the fabrication of innovative point-of-care sensors has extensively exploited the multifarious functionalities of paper, mainly based on its intrinsic properties such as porosity, capillary forces, and easy modification. Indeed, the paper has attracted considerable attention from the scientific community for electrochemical sensor development due to its numerous advantages, including the absence of external equipment for

solution flow, the fabrication of reagent-free devices, and the easiness of multistep analyses using an origami approach. A crucial point of paper usage is its loading capability, enabling the storing of the reagents needed for the analysis. Thanks to this capability, it is possible to expose the paper-based sensor to aerosols, including breath, allowing for the wetting of the paper, with the consequent dissolution of the stored reagents. This allows for the use of exhaled breath aerosol as an analysis matrix, having the advantage of the easiness of its sampling by simply incorporating collecting paper into a face mask worn for some time.

In this overall context, we are developing a whole-paper-based analytical tool for hydrogen peroxide detection in exhaled breath, taking into account the high level of H2O2 in lung-associated diseases. In this work, we leverage the use of an office-paper electrochemical screen-printed electrode and a flower-like paper collector integrated into a face mask. In detail, the use of the paper-based collector enables the non-invasive sampling and the further treatment-free analysis of the biological sample carried out by the screen-printed electrode. This electrochemical sensor is ad-hoc modified with carbon black-Prussian Blue nanocomposite, enabling the reliable detection of hydrogen peroxide in the collected condensed aerosol breath. The applicability of the flower-like paper collector is under investigation, considering important features comprising the size, the thickness, and the shape, while the screen-printed sensor is under optimization, taking into account parameters such as linearity range, limit of detection, selectivity, and accuracy.

In conclusion, the proposed analytical platform has the potential to open up new possibilities for the design of face masks as active devices for breath analysis, aiming to facilitate health management and improve the quality of patient life.

FAR-PO-012. Functionalizing Photonic Biochips With CXCR4 Antagonist: Towards A New Potential Easy-Accessible Detection Strategy Of CXCR4-Overexpressing Circulating Tumor Cells

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Point-of-Care (PoC) tests based on biomarkers represent useful tools for diagnosing and monitoring tumor diseases. In this context, we aimed at implementing PoC Test devices for the development of diagnostic strategies for the early detection of circulating tumor cells (CTC). Specifically, the CXCR4 chemokine receptor, overexpressed in more than 30 different types of solid and hematological tumors1, was considered as "hallmark" to be detected by applying photonic biochips previously functionalized with CXCR4-ligands. Specifically, peptide L10 (Ac-Arg-Ala-[Dap-Arg-2Nal-His-Glu]-COOH), recently characterized as potent and selective CXCR4 antagonist, was modified to identify a suitable position within the sequence for introducing a residue of L-Cys, which could be employed to anchor the peptide on an Au-functionalized solid surface. The described peptides were endowed with the following general structure: Ac-Cys-X-Arg-Ala-[Dap-Arg-2Nal-His-Glu]-COOH, where X represents an amphiphilic linker that was modulated in composition and length. This strategy led to the identification of two promising selective and potent CXCR4 antagonists, which were employed to functionalize photonic biochips (CXCR4-PB)2. As a proof of concept, the CXCR4-functionalized biochips obtained were initially evaluated in the presence different concentration (1 x 102 to 2.5 x 104 cells/ml) of both CXCR4-positive (CXCR4+) and CXCR4-negative (CXCR4-) CHO cells, showing the capability to specifically detect the receptor at concentrations comparable to those of the CTC in cancer patients. Encouraged by these promising results, ongoing investigations involve various solid tumor-derived cancer cells expressing different levels of CXCR4 (e.g., CEM, HCT116, HT29 and ASPC-1). The primary objective is to establish the lowest limit of detection for our Point-of-Care tests before advancing to their application in more complex biological matrices such as blood.

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ORG-PO-103. Investigation of the interactions between BMH-21, namitecan and doxorubicin and the Quadruplex-Duplex Junction in LTR-III

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A multidisciplinary approach that combines NMR spectroscopy, molecular modelling, circular dichroism (CD) and fluorescence spectroscopy was employed to investigate the interactions of BMH-21, namitecan and doxorubicin with the Q–D junction LTR-III. In particular, the binding of BMH-21 and namitecan to the LTR-III target was not associated to a significant stabilizing effect. However, doxorubicin was found to be the best Q–D junction binder, as evidenced by the complex denaturation curve, which showed higher melting temperature values. Interestingly, the removal of the aminoglycosyl group significantly changed the pattern of the interactions, indicating that highly polar substituents have a stronger affinity with the exposed regions of the Q–D junction, particularly at the level of the interfacial tetrad. Our chemical investigations, supported by biophysical data and molecular modeling studies, provide guidelines for the identification of new scaffolds for selective Q–D recognition.

INO-PO-044. Molecular Iron Based Water Oxidation Electrocatalysts@Glassy Carbon Lights and Shadows of hybrid catalysis

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Water splitting is considered a sustainable way of obtaining hydrogen but the high overpotential needed in the anodic compartment for oxygen production makes the whole process energetically demanding.[1] To overcome this problem, water oxidation catalysts (WOCs) are required but they are usually based on expensive metals. With the aim of economically viable devices for water splitting and solar fuels production, finding efficient and robust catalysts based on abundant and affordable first-row transition metals is a pivotal point. However, the vast majority of iron WOC catalysts employ sacrificial oxidants and in order to avoid them, electrochemistry offers the alternative. Unfortunately, in the framework of iron electrocatalysts, the few examples reported in literature still show low efficiencies and high overpotential.[2,3]

Recently, our group reported on iron cyclopentadienonic and N-heterocyclic carbene (NHC) complexes that demonstrated to be active, through a stable radical species upon oxidation, in this reaction with competitive activity and low overpotential (TOF of 52 s-1 and η=0,32 V) under basic conditions.[4]

Herein we report on the ligand (NHC) design towards immobilization on glassy carbon accompanied by characterization (Mossbauer and SQUID) and mechanistic investigation (DFT and EPR studies) on molecular complexes. The peculiar behaviour observed upon immobilization will be also presented and discussed.

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Authors wish to acknowledge PRIN 2022 "Biomass-derived alcohols and polyols valorization and use by dehydrogenation/hydrogenation reactions promoted by bifunctional, proton-responsive homogeneous catalysts (ALCOVAL)"financed by the European Union – Next Generation EU for financial support

ORG-PO-104. C-1 and C-5 quaternarization of β-fucosides by HAT reactions

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The functionalization of C-H bonds gives access to complex molecules in fewer steps relative to classical methods. However, the modification of polyfunctionalized structures like carbohydrates is very challenging and still underdeveloped. The challenge arises from the unreactive nature of carbohydrates' C–H bonds and from the regioselectivity problems associated to the presence of many similar functionalities.1

Hydrogen atom transfer (HAT) reactions enable a direct activation of C-H bonds, without the need of pre-functionalization or the presence of a directing group. As such, they are synthetically attractive and have been used on carbohydrates mostly to obtain regioselective inversion of stereocenters of unprotected sugars.2

In the context of glycomimetic design, we are interested in the potential of HAT reactions to modify desired ligands while maintaining the sugar structure intact. This allows to target secondary binding sites in proteins and/or create multivalent ligand presentations, thus expanding the toolbox for glycomimetic development.

Here we report on the functionalization of the C-1 and C-5 position of β-fucosides (Figure 1) that we are exploring for the synthesis of antimicrobial antiadhesive agents targeting the N-terminal domain of the bacterial lectin BC2L-C.3

ORG-PO-212. Synthesis of chiral amines by a chemoenzymatic one-pot tandem protocol

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Multistep one-pot synthetic protocols are an emerging and attractive field in organic chemistry, since the development of these synthetic strategies allows to produce chemicals in compliance with criteria of more sustainable and green processes. One-pot and/or tandem reactions are a strategic tool when it is not possible to isolate highly reactive or transient species. In this context, the combination of chemical and biocatalytic transformations represents a valuable alternative to traditional approaches. In this context, our preliminary investigations revealed the possibility to synthesize chiral amines by means of a chemoenzymatic tandem protocol which combines the reactivity of organolithium reagents with the enzymatic asymmetric reduction of cyclic imines, generated in situ in the first step of the reaction. Compared to the previously reported operating conditions, promising results have been obtained performing the addition of PhLi to 5-bromovaleronitrile under sustainable conditions, using a greener solvent such as cyclopentyl methyl ether (CPME), at room temperature and under air, within a short reaction time. The bioenzymatic transformation is then realized by means of a novel class of NADPH-dependant enzymes, namely Imine Reductases (IREDs), which have been recently employed for the asymmetric reduction of chiral imines under sustainable conditions. Preliminary results will be discussed.

ORG-PO-206. Theoretical study of the reaction mechanism and solvent effect in the reaction between LiCH2SiMe and N-benzoylpirrolydine

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A theoretical investigation was conducted in conjunction with the department's organic chemistry laboratory to explore the conversion of non-activated amides to α,β-unsaturated ketones using LiCH2SiMe3.1 This study employed two different solvents, THF and CPME, resulting in the formation of distinct products exhibiting high stereoselectivity (Figure 1). The primary objective of this study is to elucidate the reaction mechanism occurring in these solvents using Density Functional Theory calculations (M06-2X/def2-TZVP//M06-2X/def2-SVP). Given the propensity of lithium to form aggregates in solution2, various model scenarios have been explored to represent the reagent, ranging from monomeric to dimeric structures, to capture the solvation effect on the complex. Dimeric structures were investigated using the two-layer ONIOM method. In addition to examining the reaction in THF and CPME, studies were carried out in water, as the reaction was experimentally quenched with water. This study underscores the significance of explicitly incorporating the solvent into calculations: substantial alterations in the topology of the potential energy and energetics were detected in the dimeric system (Figure 2) and when explicit solvent only (PCM) was used.

ORG-PO-105. Robust, reproducible, low waste and large scale procedure for high quality CsPbBr3 nanobricks synthesis for scintillation

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Research interest in all inorganic lead halide perovskite nanocrystals (LHP-NCs), described by the general chemical formula of CsPbX3, has recently grown fast thanks to their outstanding and highly tunable chemical and physical properties that make them optimal candidates for a wide range of technological applications[1]. Amidst this rapidly expanding and diverse landscape, we present a robust, reproducible, and easily scalable synthetic method that enables the production of high-quality CsPbBr3 NCs on an unprecedented scale, reaching up to 8 grams.

To achieve this, we modified the synthetic procedure originally outlined by Akkerman et al.[2], introducing a turbo emulsifier (Ultra Turrax Homogenizer) for the first time. This emulsifier, typically used in formulating large batches, enhances the homogenization of the reaction mixture, addressing concentration gradients and reproducibility issues that commonly impact liter-scale reactions of LHP-NCs. Additionally, we employed tetrabutylammonium bromide (TBAB) as an extra bromide precursor to ensure the correct stoichiometry. Operating in a halogen-rich environment is known to reduce defectivity, and the bulkiness of this specific quaternary ammonium salt prevents it from competing with other cations in the perovskite crystal lattice. Our results indicate that the amount of recovered solid material is directly proportional to the solution volume used at every scale, affirming the well-controlled nature of the process even at larger scales. There are also evidences that increasing the scale, magnetic stirring becomes insufficient where turbo-emulsifier remains reliable. Furthermore, the procedure is easy extendable to CsPbCl3 and mixed phase and other acid and amine ligands. We pushed the boundaries by demonstrating that our approach allows for the recovery and reuse of low-boiling solvents and excess reactants, particularly lead bromide, without compromising the final product's quality. This not only reduces the environmental impact associated with waste production but also represents a significant step toward eventual industrial applications.

We finally tested radioluminescence properties and radiation hardness in polymer matrix, confirming their competitiveness in scintillation field[3].

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TEC-PO-040. Structure and formation thermodynamics of Cu(II) and Co(II) complexes with nitrate and chloride anions in the [C4mim][Tf2N] ionic liquid

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The coordination chemistry of transition metal ions in ionic liquids (ILs) attracted much attention in the last two decades, due the numerous applications, such as selective separations for hydrometallurgical processes1, electro-depositions, energy storage and catalysis.2 Ionic liquids (IL) are salts existing in the liquid state at temperatures < 100°C which have been considered for many applications as alternatives to classical organic solvents owing to their numerous interesting features3. Among the hydrophobic ILs, those based on the alkylimidazolium (CnCmim+) cation and bis(trifluoromethylsulfonyl)imide (Tf2N) anion have been studied both for metal extractions, energy storage and as solvents for electrodepositions in recent years.4 The knowledge of the metals speciation in ILs, especially in presence of common inorganic ligands (e.g. Cl-, NO3-), is essential to understand their properties and behavior. In the present communication, we report our recent results on the complex formation between Cu(II) and Co(II) ions and Cl- and NO3- anions in the 1-butyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide ([C4mim][Tf2N]) ionic liquid. Spectrophotometric titrations (Figure 1) and ITC were employed to obtain the thermodynamic parameters related to complex formation. Theoretical and spectroscopic studies were employed to obtain structural information.

ORG-PO-107. Copper catalyzed sequential Glaser coupling and bicyclocarboxylation of propargylic amines to bis(2-oxazolidinones)

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With the continual increase in atmospheric CO2 levels, scientists globally have undertaken research to develop innovative methods for the effective capture and utilization of this well-known greenhouse gas. To tackle this challenge, the Carbon Capture and Utilization (CCU) strategy is designed to capture CO2 from emission sources and transform it into valuable products[1]. The carboxylic cyclization of propargylic amines to produce 2-oxazolidinones stands out as a highly appealing chemical approach for trapping carbon dioxide. One of the possible reactions of propargylamine is

the Glaser coupling on terminal alkynes, that enables easy access to 1,3-diynes, essential intermediates for polymers, macrocycles, and complex scaffolds[2].

As a part of our research on catalytic conversion of carbon dioxide into novel and useful compound utilizing CO2[3,4], we embraced the task of integrating the copper-catalysed reaction of terminal alkynes with the carboxylation of propargylamine (Scheme 1). As far as our knowledge extends, a comprehensive synthesis of bis(2-oxazolidinone)s has not been documented. We try to investigate the Cu/DBU catalytic system, observing a manifold role of copper salt, which acts as a catalyst both for the Glaser coupling and the carboxylative cyclization. We successfully devised a straightforward and efficient one-pot two steps procedure that can be used for a vast range of propargylamines, resulting in a substantial collection of products with excellent yields. Importantly, the purification of the resulting products can be easily accomplished by directly precipitating them from the reaction medium. Finally, we observed a spontaneous polymerization of these butadiene-containing monomers leading to the formation of a category of specialized polymers, accomplished through a solid-state Single Crystal to Single Crystal transformation.

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TEO-PO-018. Implementation of Coupled Cluster analytical gradients based on the Cholesky decomposition of ERIs

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In recent years, rank-reducing techniques have seen a surge of interest by the quantum chemistry

community, due to them being able to mitigate the intensive computational cost associated with electronic structure methods, thus extending their applicability to larger molecular systems. In that regard, we exploit the Cholesky decomposition (CD) of the electron repulsion integrals (ERI) tensor, reducing the impact of its manipulation on the cost of quantum chemical calculations. CD is not only able to compress the information stored within the ERI tensor, making it possible to manipulate it without recomputing or reading the integrals from disk, but also affords a strict control over the accuracy of their representation, since the approximation error is bound to be lower than the predetermined threshold used for the decomposition.

Here we applied the CD of ERIs and their derivatives to the computation of analytical geometrical

gradients at the Coupled Cluster (CC) level of theory. We present an efficient and parallelized

implementation of CD, using a two-step algorithm that can fully exploit Abelian point-group symmetry and compute not only the Cholesky vectors, but also their derivatives with respect to nuclear displacements, also fully exploiting point-group symmetry. We use the Cholesky vectors and their derivatives to achieve an efficient and parallel implementation of the CC density matrices and for the intermediates in the Z-vector equations, along with their contractions with Cholesky decomposed differentiated integrals, yielding optimized molecular structures at the CCSD and CCSD(T) levels. The capabilities of our new implementation are tested on a range of systems, for which we compute the energies and molecular structures.

CSB-PO-014. A Computational Study of a Metamorphic Protein

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Metamorphic proteins, also known as fold-switchers, are capable of interconverting their structure between two or more stable native states to perform different functions in response to changes in the environment. The origin and purpose of fold-switchers in protein evolution have been the subject of an exciting literature debate1,2,3. The selective access of different folds and functions suggests potential applications in drug discovery and molecular target treatment. A small molecule that interferes with the fold switch could directly control the biological process, offering a new avenue for function modulators. Known fold-switchers are present in both eukaryotic and prokaryotic cells and are involved in essential biological processes such as chemotaxis, cell cycle regulation, ion transport, and regulation of transcription and translation4,5,6. A metamorphic protein has also been discovered in the SARS-Cov-2 genome. The study examines the viral protein ORF9b13 and its interaction with the human mitochondrial protein Tom70. When co-expressed, ORF9b13 adopts an all-alpha conformation, whereas in isolation, it dimerizes as a beta-sheet protein7. The study of ORF9b revealed that two residues (S50 and S53) are the driving force for the conformational switch from alpha helix monomer to beta-sheet dimer7.

Here we show a computational study of the metamorphic Collagen Binding Domain (CBD) from bacterial Collagenase. This enzyme degrades collagen tissue in cases of gangrene. The metamorphic properties of CBD are induced by changes in calcium concentration, as demonstrated by X-Ray, NMR, and SAXS. We simulated both metamorphic states of the CBD and identified atomistic details of the pseudo-transitions in metamorphic regions of the domain.

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ORG-PO-008. (BO)2-doped thiahelicenes: synthesis and properties-change induced by BO bonds inversion

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The introduction of a trigonal boron atom into polyaromatic hydrocarbons is an extremely powerful tool to provide organic scaffolds with enhanced spectroscopic and electrochemical features as well as optimal packing in the solid state.1 As a drawback, such flat polyaromatics often display low processability due to their poor solubility in common organic solvents. The distortion of the molecular scaffold represents a suitable strategy to improve the solubility and stacking properties of boron-doped polyaromatics while maintaining good electronic interactions. Extreme structural distortion can be achieved in helical-shaped compounds such as helicenes,2 which are inherently chiral polycycles, formed by ortho-fused aromatic or heteroaromatic rings. The introduction of boron in these compounds represents a topic of huge interest since borahelicenes show intriguing physico-chemical properties3 promising for manifold applications in material science. However, the borahelicene structural diversity is still limited to a reduced number of molecules, mainly consisting of tetracoordinate boron-based carbohelicenes.4

Our innovative contribution to this field concerns the synthesis of the first doubly BO-doped tetrathia[7]helicenes 15 and 2 (Figure) incorporating two oxaborine rings into the parent tetrathia[7]helicene scaffold. The two structures are isomers characterized by the inversion of the B-O bonds in the oxaborine rings. Spectroscopic measurements, electrochemical characterization and theoretical calculations carried out on 1 and 2 showed that their properties are strongly affected by the orientation of the BO bonds into the scaffold. In addition, the enantiomers of 1 and 2 were separated by chiral HPLC and their chiroptical properties as well as racemization kinetics were investigated.

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FAR-PO-126. Optimizing the antimycobacterial efficacy of MbtI inhibitors: towards a nanoparticle-mediated delivery

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In our efforts to combat the global spread of tuberculosis (TB),1 we have focused on an innovative target, Salicylate Synthase I (MbtI), by combining traditional medicinal chemistry approaches with nanomedicine strategies. Over the past decades, anti-virulence therapy has emerged as an alternative to traditional antimicrobial treatments. Building on this, the impairment of iron acquisition through enzymatic inhibitors that block the production of siderophores has been identified as a viable strategy. Our group has devoted considerable efforts to developing inhibitors of MbtI, the first enzyme in the biosynthetic cascade, leading to several promising candidates. Among these, 5-(3-cyano-5-isobutoxyphenyl)furan-2-carboxylic acid (1) stands out as the most potent MbtI inhibitor discovered to date.2 Furthermore, the unique challenges posed by TB, including the need for prolonged treatment regimens, underscore the urgent need for innovative approaches in drug delivery. Nanomedicine presents an unprecedented opportunity to address these challenges, ensuring more targeted, effective, and patient-friendly TB treatment strategies. The core innovation of our project lies in the development of specialized nanoparticles designed to deliver anti-TB drugs more effectively and safely.3 We successfully loaded poly(2-(methacryloyloxy)ethyl phosphorylcholine)-co-poly(2-(diisopropylamino)ethyl methacrylate) (PMPC-PDPA) polymersomes (POs) with ethyl and propyl ester derivatives of 1, namely 1a and 1b. The POs, synthesized through a bottom-up approach, were fully characterized and MTT assays confirmed the absence of cytotoxicity for both the free drugs and the encapsulated POs. Additionally, we demonstrated that our pro-drugs (1a and 1b) can be converted into the active candidate by hydrolase enzymes once inside the macrophages. In vitro assays are ongoing to investigate the effects of our nanomaterials on innovative murine alveolar-like macrophage infection models of Mtb.

FAR-PO-040. Optimization of human glutaminyl cyclase in vitro assay for inhibitor screening

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Glutaminyl cyclase (QC) is a zinc-dependent enzyme that converts N-terminal glutamine or glutamic acid residues into N-terminal pyroglutamate (pGlu or pE) residues through deamidation or dehydration. This conversion is important for enhancing protein stability against aminopeptidase activity and increasing protein hydrophobicity. QC is involved in stabilizing hormones, peptides, and proteins, but it has also been linked to neurodegenerative disorders such as Huntington's and Alzheimer's diseases. In Alzheimer's disease (AD), truncated and N-terminal modified Aβ species, particularly Aβ3pE and Aβ11pE, have recently gained significant attention due to their relevant presence in neuritic plaques. Additionally, the N-terminal pyroglutamate offers protection against in vivo proteolysis, increasing their potential as seeds for aggregate formation. Finally, compared to full-length Aβ, Aβ3pE was shown to be more toxic. This finding underscores that reducing the levels of pE-Aβ by inhibiting QC could be an effective strategy for treating AD. Currently, available methods for in vitro evaluating QC activity and its inhibition are quite limited. In vitro QC activity bioassays

available on the market are based on tandem reactions, which imply the use of an auxiliary enzyme, such as pyroglutamyl peptidase, to produce a measurable chromogenic product. The direct evaluation of enzyme activity without the need for auxiliary enzymes would offer advantages in medicinal chemistry campaigns by reducing false positive outputs which may arise from a downstream interference with the report enzyme. In the search for a direct bioassay, our work builds upon a previously proposed method, that was set for ex-vivo quantification of QC activity. It involves the use of L-glutamine 7-amido-4-methylcoumarin hydrobromide as a substrate and quantification of product formation (per unit of time) by reverse phase chromatography (RP-HPLC) using a PATfix® HPLC system coupled with a UV-vis detection. The use of a C4 column with a 300A pore size ensures the separation of the enzyme from the substrate and product. Assay conditions were optimized in terms of protocol for reaction termination, substrate concentration, reaction time, assay buffer composition, and post-reaction stability prior to analysis. Finally, the optimized method was validated by assessing the inhibitory potency of PBD150, a well-known human QC inhibitor.

ORG-PO-108. Gold catalyzed asymmetric synthesis of axially chiral indole-fused diazocines.

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Atropisomerism, also called axial chirality, is a particular kind of chirality in which the rotation of a σ bond is constrained because of the steric or electric effects of bulky substituents. The main difference between classical stereoisomers and atropisomers is that classical stereocenters are often stable and racemize via a bond-breaking, while racemization for axially chiral compounds is possible through an intramolecular dynamic process that simply involves bond rotation.1 This time-dependent chirality shows great potential for drug development and has been observed in natural products. In addition many chiral catalysts and ligands that are frequently used in asymmetric synthesis are axially chiral compounds.2 Among these substrates, axially chiral indole derivatives have been recognized as an important class of five-membered heterobiaryls, because of their presence in some natural alkaloids, chiral phosphine ligands and bioactive molecules.3 Taking into account these premises, this poster will deal with our recent developments in the gold catalyzed asymmetric synthesis of axially chiral indole-fused diazocines. In particular, optimization of catalytic conditions and preliminary substrate scope of the reaction will be presented together with a mechanistic proposal.

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FIS-PO-059. The Interaction between Fluorescent Molecules and Plasmonic Nanoparticles: From SERS to SEF

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The electric field intensity can be locally enhanced thanks to metallic nanoparticles (or surfaces) that give rise to localized surface plasmon polaritons (SPPs). This mechanism is the basis for electromagnetic enhancement (EM), which plays a crucial role in amplifying Raman signals within Surface Enhanced Raman Spectroscopy (SERS).

Raman scattering, however, is not the only process affected by the increase in the electric field intensity; fluorescence can increase as well, resulting in Surface Enhanced Fluorescence (SEF).

While SERS peaks at very close distances from the metal surface, fluorescence is often quenched at such proximity, necessitating distances of the order of a few nanometers to tens of nanometers for SEF. The distance from the metallic surface, however, is not the only factor affecting these phenomena; particle material, morphology, as well as excitation wavelengths are also involved.

Here, the interaction between a fluorescent molecule and a plasmonic nanoparticle is studied to deeply investigate the balance between these two processes. Plasmonic nanoparticles of different materials (silver and gold spherical nanoparticles) as well as different morphologies (gold nanorods) are employed. Additionally, different distances as well as different excitation wavelengths are explored. All these parameters are evaluated to obtain a deeper understanding of all the complex mechanisms involved in the interaction between a fluorescent molecule and a plasmonic nanoparticle.

ANA-PO-007. GC-MS as a tool for the analysis of cannabinoid-containing gummy sweets: identification of HHC and the synthetic process used for its preparation.

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In recent years, the market for foodstuffs and dietary supplements containing cannabinoids has grown steadily.[1] Among the cannabinoids available on the market, the most commons are non-psychotropic cannabidiol (CBD, 1) and psychotropic Δ9-tetrahydrocannabinol (Δ9-THC, 2), whose effects have been thoroughly investigated over the years and whose sale is legal in some countries, depending on current legislation.[2,3] Recently, hexahydrocannabinol (HHC, 3), a tricyclic compound that is formerly the hydrogenated counterpart of Δ9-THC, has emerged, having been neglected by some regulatory authorities. HHC is semi-synthetic Δ9-THC derivative, prepared via acid catalyzed cyclization of CBD followed by catalytic hydrogenation. There are only few reports on the effects of HHC in humans, although it is supposed to have much the same biological activity of Δ9-THC. Nevertheless, it has been classified in the Table I of the substances of abuse in Italy in 2023.[4] In order to limit the spread of HHC and its analogues, there is a growing interest in improving the routinely available GC-MS and LC-MS methods for the identification and quantification of newly synthesized cannabinoids.[5] In this work we have developed a liquid extraction method for the analysis of seized HHC-containing gummy sweets. The main cannabinoids present in the samples analyzed were identified and quantified via GC-MS analysis, indicating that along with HHC, significant amounts of unreacted starting materials (i.e., CBD and THCs) were present. The data obtained allowed us to identify the synthetic procedure used to prepare the active principle present in the sample.

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TEC-PO-024. SUPREME – Sustainable nanoparticles enabled antimicrobial surface coatings

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As observed during the last catastrophic pandemic, the spread of harmful pathogens can be fast and facilitated by high traffic surfaces and crowded places, highlighting the importance of an economically and environmentally sustainable solution for antimicrobial surfaces as a potential strategy to mitigate the spread of disease outbreaks. Nanoparticles (NPs) filled coatings, with recognised effectiveness against bacteria, viruses, and fungi, are valuable candidates for developing antimicrobial surfaces and minimising the surface adhesion of pathogens. However, due to the many technical challenges, including difficulty to develop nano-coatings with a long-term antimicrobial capability, durability under real conditions and safety assurance, their application at industrial level is still limited.

The SUPREME project aims to develop a platform of efficient and multifunctional antimicrobial nano-coatings, building upon bespoke TiO2 NPs, that have demonstrated an exceptional antimicrobial ability at lab scale (TRL3). Two sustainable routes: 1) customised core/shell and advanced functional NPs and 2) hybrid fibre-NPs (using sustainable bio-based cellulose materials and NPs) will be pursued. The production of the SUPREME coating will follow a sustainable-by-design approach, that considers both toxicity and environmental impact. The scaling-up of the nano-coating production and their validation according to the industrial requirements from different market segments (e.g., textile) will enable to reach the TRL6 by the end of the project. The SUPREME consortium consists in 18 partners from 8 EU countries (UK, IT, ES, GR, BE, MT, NL and NO), including research centres, universities, a National Institute, small and medium-sized enterprises (SMEs) and large companies.

Next Technology Tecnotessile (NTT) is involved in technical activities regarding the evaluation of different coating application technologies on textile-based substrates (WP6), including plasma treatments for increasing the adhesion of the coatings on the surface (WP2). The WP6 also aims to implement the design principles and the proof-of-concept nano-coating systems produced by WP2 and verified by WP3-4 in industrial applications.

ANA-PO-096. Towards green NH3: How to improve ammonia production and its reliable quantification?

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In this current century, climate changes and energy production are some of the most significant and pressing challenges that humankind is facing. In this context, ammonia is a carbon-free energy-source for the end-users, thus resulting an alternative energy resource and also a promising energy vector, as it can be also used as an indirect H2 storage compound. It is a matter of fact that photocatalytic N2 fixation to achieve the so-called green NH3 is emerging as hot area of fundamental and applied research1. Inspired by biological nitrogen fixation through nitrogenase enzyme, NH3 can be photochemically produced from N2 and H2O in the presence of a semiconductor material and in this respect, the metal-free catalyst, namely graphitic-carbon nitride (g-C3N4), is considered a rising star material due to its excellent photocatalytic behaviour, suitable electronic properties (viz. band gap), and good photo-corrosion resistance. At the same time, its low absorption coefficient, fast recombination charge carrier and low surface area are challenges to overcome. Hence, in this work heterojunctions with metal halide perovskites (Cs2AgBiCl6) have been investigated in the whole weight ratio between perovskite and g-C3N4. The experimental results highlighted that g-C3N4-rich systems (90% wt) are more effective in the nitrogen photofixation reaction with ammonia production rates up to 40 µmol g-1 h-1. Indeed, the active sites are the nitrogen vacancies in the nanostructure of g-C3N4, with a positive effect of small perovskite amounts mostly related to its superior light absorbance and reduced carrier losses. The design of an optimal photocatalyst is for sure the key step, but also the need for reliable methods for ammonia detection and quantification is a point to be addressed. NH3 is typically detected by one of a number of possible methods, but serious concerns exist regarding the accuracy of current methods since different parameters can adversely impact ammonia detection and quantification. In this work, the Nessler's colorimetric assays and NH3 Ion Selective Electrode (ISE) have been compared, evaluating the role of some possible interferences, namely the pH, colour and turbidity of the solution, the presence of certain metal ions and of sacrificial agents (mainly MeOH). Finally, the ammonia production rates have been accurately determined by ISE because an overestimation of the NH3 concentration has been experimentally verified when using the colorimetric method. A calibration curve is daily constructed plotting the potential value recorded (mV) against the Log concentration, to verify the slope (varying in the range - 54 ÷ -60 mV).

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ORG-PO-213. Solid state excimer emitting polychlorinated trityl radicals

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Polychlorinated trityl radicals are considered inert carbon-centered free-radicals thanks to their high chemical and thermal stability both in solution and in solid state.1 Organic nanoparticles (ONPs) and polymeric films of tris(2,4,6-trichlorophenyl)methyl radical (1 in Figure 1) form excimers from stable and persistent supramolecular radical-pairs.[1] It is reported that these ONPs present a two-photon excitation and emission in the biological transparency window and can be used to monitor temperature changes with an excellent thermal absolute sensitivity of 0.6-3.7% K−1 in the

temperature range of 278-328 K.[2,3] Here, we report the synthesis and the characterization of two new polychlorinated trityl radicals (2 and 3 in Figure 1) that can form excimers at the solid state. In CHCl3 solution, monoradical 3[4] shows a Fluorescence Quantum Yield (QY) of 9.5 %, a value markedly higher than that measured for 2 and for other trityl radicals reported in literature (QY < 1%).[5] Similarly, radical 3 shows an increased QY compared to 2 at the solid state (94% vs 83% for films containing a 2% of radical in the matrix).

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ANA-PO-148. Reliable and miniaturized profiling of pesticides in Cannabis Sativa L. inflorescence by means of gas chromatography coupled to triple quadrupole mass spectrometry.

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The goal of the present research is to develop innovative, fast, reliable, and environmentally friendly analytical methods to determine pesticides in Cannabis Sativa L. inflorescences. The cultivation of cannabis has significantly increased in proportion to market demand and with it the use of pesticides in order to increase the crop yield. Although there are numerous analytical methods for the extraction and characterization of bioactive compounds in cannabis [1], the determination of pesticides in this matrix is still a relatively new area that requires further study and evaluation. Bureau of Cannabis Control Text of Regulations, the California regulation concerning the limits admitted for pesticides in Cannabis sativa L., describes the Residual Pesticides Testing criteria [2]. Pesticide residue admitted in cannabis plant materials in any case should not exceed action levels expressed as low part per billion (ppb) [lower limit of quantification (LLOQ)] [3].

In this research study particular emphasis has been placed on the development of analytical strategies in order to meet the criteria of green and especially white chemistry, the latter aimed at encouraging the ecologic approach of researchers in the development of new instrumentations and methods, but without loss of functionality at the expense of analytical performance. Based on this assumption, a reliable and miniaturized strategy has been developed for the extraction of pesticides from hemp inflorescences with the objective of automating the entire analytical workflow. The characterization of specific pesticides or chemical classes of pesticides in hemp inflorescences was carried out by using gas chromatography coupled to a triple quadrupole mass spectrometer (QqQ-MS). For this purpose, selective MRM transitions have been optimized for each pesticide by injecting pure analytical standards. One of the main issues in pesticides context concerns the large number of compounds belonging to a broad spectrum of chemical classes. As a result, particular care has been paid to the selection of pesticides present in the agricultural cannabis scenario in order to embrace a broader spectrum of compounds.

ANA-PO-092. Cell-free in-vitro transcription and CRISPR/Cas systems for ultrasensitive biomarker detection

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Detection of specific antibodies and other protein biomarkers plays a crucial role in disease diagnosis, infections, and other pathologies such as cancer and autoimmune diseases.1 In recent years, the possibility to couple the advantages of synthetic nucleic acids (i.e., programmability of interactions, low-cost, and ease of synthesis) together with the sensitivity and the specificity offered by cell-free transcription/translation systems has led to the development of innovative sensors for the detection of different targets,2 including antibodies. Despite this, most of the cell-free biosensors for the detection of antibodies reported to date reach high picomolar/low nanomolar detection limit that appear not enough to identify early stages of infections.3,4 Motivated by this, we report here a cell-free biosensor for antibody detection that takes advantage of CRISPR/Cas system. We have designed a synthetic gene that contain the transcriptional sequence of crRNA for Cas enzyme and an incomplete T7 RNA polymerase promoter domain to prevent the efficient binding of the enzyme. The binding of the specific antibody to a pair of antigen-conjugated DNA strands triggers the reconstitution of the T7 RNA polymerase promoter domain and thus the in-vitro transcription of the crRNA. The developed cell-free biosensor allows the sensitive (low picomolar detection limit), specific (no signal is observed in the presence of non-specific antibodies) and selective (the system can be employed in complex media, including 50% blood serum) detection of target molecules. Due to the programmable nature of the sensing platform, it can be adapted to different target molecules (using a direct or competitive formats).

We demonstrate the detection of different antibodies, including the clinically relevant Anti-MUC1 antibody and Cetuximab and protein markers as Mucin1 and EGFR. Given all these advantages, the CRISPR/Cas-based cell-free biosensors may be of utility for different applications including point-of-care diagnostics.

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FIS-PO-057. Electronic Properties at the TriPyrenBoroxine/Au(111) interface

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The study of the adsorption and self-assembly of organic molecules on metallic surfaces, with the aim of understanding the electronic interaction between the organic active layer and the underlying metallic surface, plays a key role in determining the possible applications of these systems in organic-based opto-electronic devices. Among the various systems studied, very promising results have been obtained with boronic acids derivatives, namely Boroxines, which derive from a self-condensation reaction of three boronic acids molecules leading to a six-membered ring made up of alternating boron and oxygen atoms. Notably, Boroxines are much studied due to their high chemical and thermal stability, the wide range of applications of these compounds in synthetic organic chemistry and the well-established procedures for 3D COFs formation. Concerning their electronic properties, the presence of an ultra-fast charge delocalization channel between the boroxine ring of TriPhenylBoroxine (TPB) molecules and the underlying Au(111) substrate was evidenced1, thus suggesting good performances of the interface in terms of electronic transport. With this in mind, in present work we explore the properties of TriPyrenBoroxine (TPyB) /Au(111) interface. Pyrene has spectral features in the UV-Vis range, which might be exploited to promote specific electronic transitions in TPyB molecules and to study optical-induced electron dynamics both within the organic film and from the organic film towards the underlying Au(111) substrate. In detail, a TPyB molecules film on a Au(111) substrate has been grown, by thermal treatment of 1-Pyreneboronic Acid (PyBA) in a quartz crucible at a temperature of about 300°C in Ultra-High Vacuum (UHV) conditions. The organic film formation has been monitored by XPS (X-ray Photoelectron Spectroscopy), to verify the actual presence of TPyB molecules on the Au(111) substrate; then, the system has been studied through NEXAFS spectroscopy (Near Edge X-ray Absorption Fine Structure), in order to determine both the molecular orientation and the unoccupied electronic states. Charge dynamics has been explored by RPES (Resonant PhotoEmission Spectroscopy), 2PPE (Two-Photon PhotoEmission) Spectroscopy and pump-probe spectroscopy. The study confirmed the occurrence of ultra-fast charge delocalization at the interface and revealed the presence of dynamics of charge with three different characteristic lifetimes, namely in the s, μs and ps regimes. Finally, for a further molecular valence electronic transitions characterization and to study the equilibrium reaction between PyBA and TPyB molecules, UV-Vis spectroscopy measurements in solution have been performed, whose results have been compared to the theoretical values obtained from TD-DFT calculations (Time-Dependent Density Functional Theory).

FAR-PO-016. Structural simplification of imipridones to speed up the knowledge on the nature of the interactions with the human ClpP, a mitochondrial protease strictly linked to DIPG

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The human ClpP (hClpP), a mitochondrial matrix caseinolytic protease, is responsible for the mitochondria proteostasis by degradation of misfolded and damaged proteins under the physiological regulation of the AAA+ ATPase chaperone ClpX. By consuming ATP, ClpX recognizes, unfolds, and translocates the tagged proteins into the hClpP tetradecamer proteolytic cylindrical chamber to be degraded. High hClpP expression levels were found in multiple tumor tissues in which may play an oncogenic role. Given that hClpP inhibition by small molecule inhibitors has shown therapeutic effects in several tumour types, the chemo-activation of mitochondrial hClpP can also exhibits promising anticancer properties1. The most successful ClpP activators belong to the class of imipridones and ONC201, also named dordaviprone, is the first-in-class of the series (Figure 1). Currently, ONC201 is worldwide evaluated in a Phase 3 study in H3K27-altered glioma, including Diffuse Intrinsic Pontine Glioma (DIPG)2. Through a rational drug design approach, the tetrahydropyridopyrimidinone (THPPD) was identified as a new scaffold for hClpP potent activators development (e.g. TR57). Structure optimization led to a novel series of piperazine derivatives as putative hClpP activators. A structure-activity relationship study aimed at deeply knowing the nature of the interactions with the hClpP to identify a better hClpP activator will be presented.

ELE-PO-019. Development of an eco-friendly by-layer gel-polymer electrolyte for rechargeable Zinc-Air batteries

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The Green Deal sets ambitious goals for EU climate neutrality by 2050, enabled by a increase of renewable energy share, pursued by the 'FIT for 55% package, and based on more affordable, secure, and clean energy systems. Achieving these targets requires the development of sustainable, interconnected, sector-coupled, and flexible Electrochemical Energy Storage (EES) systems. Metal-air batteries present several advantages, including using aqueous electrolytes with inorganic salts, cheap and abundant active materials (e.g., zinc), high gravimetric energy density, and long-term stability. The main goal of the HORIZON EUROPE project “HIPERZAB” is to develop an Electrically Rechargeable Zn-Air Battery (ERZAB) ideal for mid-term storage to be coupled with renewable power sources and electrolysers. HIPERZAB will achieve an actual paradigm shift with respect to the battery performance, lifetime, safety, sustainability, and costs of liquid electrolyte-based Zn-Air Batteries through the investigation of three innovative components: a 3D porous Zn/biopolymer composite anode, an eco-friendly bilayer gel biopolymer electrolyte1, and a CRM-free structured cathode. The ultimate goal of the project is to integrate these components in a single device, proposing a radically new gel-electrode-assembly (GEA) battery design with a channelled current collector. HIPERZAB will further focus on understanding the mechanisms behind the unique integration of these innovative components by developing advanced operando techniques and atomistic as well as multiscale modelling for the discharge/charge processes and to control/monitor the durability/performance of the materials. More specifically, our research group is working on the development of the acidic side of an aqueous Gel Polymer Electrolyte (GPE) that, coupled with the basic one2, will increase the battery operating potential from 1.65 V in alkaline-based electrolytes to 2.55 V and, hence, the overall device energy density from ≈ 1353 to 2091 Wh/kg. The electrolyte preparation is based on the use of natural bio-polymers3, such as cellulose derivatives and low-cost, sustainable chemicals, with also the exploration of the use of redox mediators to modulate the kinetic of OER and ORR processes. Particular attention is also paid to the regulation of Zn ion conduction/transport across the interfaces by adjusting the amount of water and the polymer crosslinking density coupled with mechanistic understanding. The idea is to design a membrane-less battery in which ion mixing is avoided thanks to the proper selection of pH-sensitive polymers for both the acidic and basic environments, separately4.

CSB-PO-001. Mastering proteostasis as a promising therapeutic avenue in Alzheimer's Disease

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Alzheimer's Disease (AD) arises from the aberrant accumulation of toxic amyloid Aβ peptides in neuronal tissues, prompting the exploration of the "Amyloid Hypothesis" targeting Aβ misfolding to thwart disease progression. Yet, the setbacks of anti-aggregating drug trials underscore the necessity for a better understanding of proteome maintenance mechanisms (proteostasis)1. In our interdisciplinary research, we delve into the intricate biochemical pathways governing Aβ homeostasis, employing a multi-target approach to screen diverse small molecules for their potential to restore physiological Aβ balance. Furthermore, we also explore the molecular mechanisms through which amyloid aggregates exert their toxicity, such as their ability to penetrate lipid membranes,2 and examine how small molecules can inhibit this process.

In this contribution, our focus is on presenting a comprehensive overview of our studies, with a primary emphasis on exploring the effectiveness of small natural molecules, in halting toxic amyloid aggregation3. We also investigate their potential to revive natural degradation mechanisms, such as the ubiquitin proteasome system (UPS) and proteases. Furthermore, we delve into synthetic compounds, assessing their ability to modulate proteasome activity based on their structural characteristics4. Finally, we consider repurposing "old" drugs, formerly potent antipyretics, as potential regulators of proteasome function5. Our research spans from fundamental inquiries into protein/lipid membrane stability to medicinal chemistry pursuits bridging the gap between basic science and therapeutic applications, and potentially opening new avenues in AD treatment.

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FAR-PO-128. Improved drug delivery strategies to enhance therapeutic outcomes in metastatic melanoma

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Over the last years, melanoma treatment strategies have significantly improved patient survival, but there are still unresolved issues in current therapies. New drug combinations are needed to target non-responsive or relapsing patients, and kinases are nowadays established therapeutic targets in the design of novel drugs against cancer1. Recently, an in vivo screening performed at the European Institute of Oncology (IEO, Milan) demonstrated that the dual targeting of Aurora kinase A and MEK is highly effective against metastatic melanoma tumours derived from patients2. This synergy has already outperformed the standard-of-care therapy in in vitro and in vivo models.

This work aims to target clinical trials, and we propose to increase the outcome of melanoma treatments improving drug bioavailability, cellular uptake and tumour accumulation. In the nanomedicine field, pharmaceutical co-crystals and drug nanoencapsulation are among the more studied and promising strategies for the purpose.

For these reasons, in a first part of the work, we studied at the molecular level MEK and Aurora kinase A inhibitors, exploiting both protein databases3 and experimental crystallographic techniques, with the aim of unravelling their internal interaction profile. This information is fundamental to design novel pharmaceutical co-crystals and salts, thus increasing solubility in biological media of the studied inhibitors.

In parallel, novel nanoformulations dual-loaded with MEK and Aurora kinase A inhibitors have been designed with the aim of overcoming the yet unresolved toxicity and efficacy issues in therapy. First in vitro and in vivo results show increased cellular internalization and tumour accumulation of the encapsulated drugs with respect to the corresponding free drugs, reflecting in a more effective therapy.

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ORG-PO-109. C(sp3)-H bond activation: an effective synthetic tool for the synthesis of complex molecules

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Over recent years, there has been a growing interest in the exploitation of transition metal-catalyzed C-H bond activation for the synthesis of natural products and biologically active compounds. While the activation of C(sp2)-H bond benefits from a higher acidity and effective reactant-catalyst interactions, the activation of C(sp3)-H bonds remains a more challenging process yet very useful for making carbon-carbon or carbon-heteroatom

bonds. In addition, considering the increasing importance of environmental issues, the attention of the scientific community is shifting towards the use of processes employing safer solvents and recoverable, reusable catalytic systems.

In this contribution, we report our study on the definition of sustainable C-H activation methods to synthesize indolines both in batch and/or flow conditions. In addition, we report our exploration towards the development of enantioselective protocol.

ELE-PO-012. Exploiting novel silica etching methods to produce state of the art single atom electrocatalyst for oxygen reduction reaction

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Fuel cells are devices that convert chemical energy into electric energy with higher efficiency compared to thermal engine. Thus, fuel cells are generating attention for their use in transportation and power generation. Among the other, the proton exchange membrane (PEM) fuel cell (FC) results to be the ideal candidate for the commercial application because they can operate at low temperatures (50-100°C) and low pressure (0.3 MPa), and moreover are generally lightweight and small-sized. Unfortunately, PEMFC rely heavily on the utilization of platinum on both anode and cathode. The oxygen reduction reaction (ORR) occurring on the cathode of the fuel cell is the bottleneck of the device therefore greatest effort is devoted to this reaction. Very recently, with the development of anion exchange membrane (AEM), AEM fuel cells have grown exponentially. AEMFC can substitute efficiently Pt supported over carbon on the cathode side with platinum group metal-free (PGM-free) electrocatalysts. These electrocatalysts are also called single atom electrocatalysts and have a structure of a first raw transition metal (TM) coordinated with nitrogen and integrated in a carbon backbone.

State of the art and commercially available ECs use Fe-based electrocatalysts of the type Fe-Nx-C. These electrocatalysts are produced using sacrificial support method (SSM) by the mixing an organic matrix containing nitrogen atoms, silica as a hard templating agent and a Fe salt. This mixture is then subject to pyrolysis with controlled temperature and atmosphere. Silica is then removed through the use of HF. The templating removal etched out not only the silica but remove also undesired oxides and nanoparticles, producing an highly porous carbon containing the active side desired. Due to its lipophilicity, use of HF represents a serious hazard for health and thus safer etching procedure are needed. In this work, an Fe-Nx-C electrocatalysts have been developed exploiting in situ production of HF for the silica etching step, avoiding the direct use of HF. Two salts (NaF and NH4HF2) have been used as HF precursor and the safer etching method was optimized. The samples were characterized in terms of composition, morphology and electrocatalytic activity and compared with the HF etched EC.

Interestingly, in alkaline environment (0.1 M KOH), the best performing electrocatalyst was the one etched with NH4HF2 possessing an onset potential (Eon) of 0.97 V vs RHE and a half-wave potential (E1/2) of 0.88 V vs RHE. The electrocatalyst etched with HF had a Eon of 0.95V vs RHE and a E1/2 of 0.87 V vs RHE.

FAR-PO-061. Design and synthesis of heterobifunctional small molecules for neuroinflammation

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Neuroinflammation has been identified as a precursor to the onset of several neurodegenerative diseases, including Alzheimer's disease (AD). Understanding and managing the intricate interplay between the central nervous system (CNS) and the immune system is crucial from a physiological standpoint, as well as from pharmacological point of view. In an attempt to develop therapeutic approaches to prevent/delay disease's progression,1 in the framework of the Italian National Recovery and Resilience Plan (PNRR) extended partnership (PE) 12 titled "A multiscale integrated approach to the study of the nervous system in health and disease" (MNESYS), a small molecule hit as been identified. It shows an intriguing inhibitory activity toward a neutrophil-specific enzyme implicated in AD neuroinflammation. (Patent Pending) This molecule has become the starting point for the development of innovative heterobifunctional small molecules exhibiting degrading behavior, that exploit the cellular proteasome machinery to degrade the identified target enzyme.2 In these heterobifunctional molecules, the hit compound is connected, through different linker, to a recruiter of CRBN E3 ubiquitin ligase, i.e., thalidomide. (Figure 1) We develop a library of heterobifunctional molecules modifying the linker's characteristics: length, composition, and rigidity. An in vitro bioassay on the isolated target to perform SAR studies has been selected for a preliminary evaluation of the impact of the structural modifications on the binding/activity towards the target enzyme. The therapeutic potential of these heterobifunctional small molecules is currently under evaluation in neuroinflammatory cell models.

Funding: this research was supported by EU funding within the NextGenerationEU-MIUR PNRR Extended Partnership 12 (Project no. PE00000006, MNESYS – SPOKEN7)

ANA-PO-086. Tracing the evolution of street art materials: A study of contemporary mural paintings stratigraphies from Graffity Alley (Ghent, Belgium) and Galeria del Arte Urbana (Lisbon, Portugal)

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Visual art in urban contexts consists of both commissioned and often non-commissioned street art. The ephemeral character, free access, and exposure to the environment and anthropic actions, make public paintings vulnerable to removal, vandalism, and degradation. Urban art is at present widely recognized by art history and by the wide society as an important part of contemporary cultural heritage, and a historical perspective on the evolution of materials and techniques is highly needed to gain a better knowledge of this form of art and to contribute to sustainable preservation strategies.

The synthetic paint materials used by street artists in the last decades, such as spray paints, have undergone a fast evolution in their compositions. This aspect is related both to the implementation of new health regulations, leading to substances being banned from commercial use, and to the continuous improvement and evolution of commercial formulations. Targeted analytical experiments have been carried out to contribute to a comprehensive understanding of the chemical composition of paint materials used by street artists over the past decades, by studying samples which contain stratigraphies representing over 20 years of paint materials.

Two case studies of great importance are presented: the Graffiti Alley (Ghent, Belgium) and Galeria del Arte Urbana (Lisbon, Portugal). These two locations are characterized by up to 25 years of repaintings on the same paint supports, giving a unique point of view on the evolution of the materials in a specific and well-defined time segment. The use of traditional analytical approaches on these samples did not provide an accurate evaluation of the distribution of the materials due to the thinness of the paint layers.

In the presented study carried out at IPANEMA, a state-of-the-art European facility renowned for its expertise in multiscale and multispectral approaches in heritage science, we conducted Multi-spectral Luminescence Microscope (MSLM), Mid-infrared Hyperspectral Imaging (MIRHSI), and combined Micro-XRF/XRD analysis to obtain an exhaustive spatial resolution apt to study the stratigraphy of both the organic and inorganic materials. Moreover, SEM-EDX was carried out in Pisa to provide the elemental composition of the different paint layers. Subsection of the stratigraphies were also analysed by pyrolysis-gas chromatography-mass spectrometry (Py-GC-MS) to obtain a more detailed molecular composition of the samples.

By applying this multiscale and multispectral approach combined with the micro destructive Py-GC-MS, we were able to obtain detailed chemical information about the different paint layers in the cross-sections. This allowed us to gain insight into the paint binder stratigraphy, differentiating between various classes of organic polymers, such as alkyds, acrylics, and nitrocellulose resins, present in each layer, and the evolution of their use in formulation during time. Additionally, the analysis provided valuable information about the inorganic content of the paint layers, revealing not only the presence of pigments and inorganic fillers. While some elements such as calcium and titanium were homogenously present in all the layers, specific metal were detectable only in the oldest paint layers. In particular, the presence of lead was highlighted only in the oldest layers. A detailed microscale element distribution can be crucial in the comparison with relevant literature (patents, European health regulations, peer-reviewed journals, etc.) to tentatively date the different paint layers. The research has been carried out in the framework of the Italian PRIN2020 project SuPerStAr - Sustainable Preservation Strategies for Street Art.

ABC-PO-012. Neural Network Modeling of Nanobubble Characteristics in Venturi Tube-Assisted Hydrodynamic Cavitation for Organic Chemicals Degradation

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Hydrodynamic cavitation has been shown as a suitable technology to remove organic contaminants from water, especially in the presence of nanobubbles. Nanobubble generation has been investigated using devices, including Venturi tubes, showing a strong correlation between nanobubble characteristics (e.g., diameter, Zeta potential, and size distribution) and the Venturi tube's geometry. However, building and testing different designs can be resource and time-consuming; therefore, three neural network models were developed to estimate nanobubble characteristics from Venturi tube configuration parameters in this study.

A design of experiment (DoE) approach was employed to select the most relevant Venturi tube configurations considering throat diameter (Dt), throat length (L1), divergence length (L2), and divergence angle (α°). In detail, 10 out of the 30 considered designs were built and tested in a cavitation system to obtain the data needed to train and validate the neural networks. Dynamic light scattering (DLS) analysis was used to measure the size and zeta potential of the produced nanobubbles. The neural networks were trained and tested to estimate nanobubbles' diameter, zeta potential, and size distribution. Considering the limited range of each design factor (L1, L2, Dt) caused by technical limitations, the model shows good prediction efficiency based on the regression coefficient (R-value), error histogram, and goodness-of-it. The Venturi tube showing the best results regarding nanobubble generation was manufactured from steel and tested inside a semi-pilot cavitation system (4 bar pressure, 13.6 liters of water) to degrade Methylene Blue dye (96% of degradation in 20 min at pH = 3.3). The neural networks developed in this study will facilitate the advancement of Venturi tubes by accommodating various design factor configurations and enabling thorough investigations into their performance.

ORG-PO-110. Synthesis, characterization and mechanism of action of a highly cytotoxic ruthenium (II) based photosensitizer

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Photodynamic therapy (PDT) is an efficient method for cancer treatment due to its high selectivity for the targeted tissues and minimal side effects resulting from its non-invasive nature[1,2]. In this research study, a novel luminescent ruthenium(II) complex 1 incorporating a ligand inspired from isoquinoline alkaloids is introduced as a new photosensitizer. The results of biological assays carried out on human breast cancer (Hs578T) and melanoma (A375) cell lines have shown that: 1) at low concentrations as 0.5 and 1 μM, in the case of Hs578T, and 1 and 1.5 μM, in the case of A375, 1 proved to be cytotoxic only after irradiation at 525 nm (Figure 1b); 2) the light activation of 1 induce an overproduction of reactive oxygen species (ROS), an event that is crucial for pathways associated with mitochondrial dysfunction, caspase activation and apoptosis; 3) the cell death is also induced by cell cycle arrest via DNA photocleavage.

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CSB-PO-012. Metabolic profiling of solid matrices under HR-MAS NMR and ASAP HR-MS conditions

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The NMR- and LC-MS-based metabolic profiling of complex matrices, such as whole cells, biopsies, or food flours, are usually carried out in the liquid state, after metabolite extraction.

Such approaches involve time-consuming sample manipulation that also prevents both relative and absolute quantification of matrix components since extraction efficiencies for the different metabolites strictly depend on the experimental conditions.

NMR analysis under High-Resolution Magic Angle Spinning (HR-MAS) conditions and High-Resolution Mass Spectrometry (HR-MS) with the Atmospheric Solids Analysis Probe (ASAP) allow the analysis of semi-solid and solid samples, respectively, the latter through desorption of compounds by heated nitrogen gas flow and ionization by corona discharge.

Here we report the application of both techniques to the analysis of the metabolites contained in five different food flour samples (rice, quinoa, chickpeas, faba beans, and lentils). We compared the data collected by extraction and analysis in the liquid state with the data provided under HR-MAS NMR and ASAP HR-MS conditions from both a qualitative and quantitative point of view.

Once validated, this approach will be very useful for rapid anti-fraud checks of foodstuffs but will also increase the versatility and speed of NMR and MS techniques in resolving complex mixtures of organic compounds in a wide range of applications, minimizing solvent usage and environmental impact.

TEC-PO-016. Fluoropolymer recycling: Solutions for circularity applied to fluorinated materials

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Fluoropolymers and fluorinated materials (e.g., PVDF, PFPE, fluoro and perfluoroelastomers, perfluorosulfonic resins, etc.) are characterized by the presence of carbon-fluorine bonds which lends outstanding characteristics of fluorinated materials, such as thermal and chemical resistance and stability,

dielectric, surface and rheological properties, barrier and permeation attributes.

For these reasons, fluorinated materials are crucial chemicals in industry and everyday life and play an important and unique role in key

applications such as Batteries, e-mobility, renewable energy, hydrogen economy, water purification membranes, connectivity and life solutions to address sustainability goals

A swift transition to a full circular economy is a topic of primary importance for the sustainability of fluorinated materials.

Different recycling technologies can be applied to meet this target exploiting complementary approaches such as mechanical recycling, physical, and chemical recycling (e.g., depolymerization, pyrolysis,

mineralization). Selected technical approaches are investigated and described as sustainable solutions to address circularity of fluoropolymers and materials.

Acknowledgements: Syensqo is acknowledged for funding the research project “Fluorine Mineralization in Fluoropolymers” and partially funding a scholarship PNRR 117, under the 39° cycle of the PhD course in “Industrial

Chemistry and Chemical Engineering” of Politecnico di Milano for the project “Mineralization and Recycling of Fluorinated Molecules, Polymers, and Materials”

ORG-PO-111. A study on the chemoselectivity of 2-aminobenzaldehyde self-condensation promoted by transition metal ions

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2-aminobenzaldehydes are versatile building blocks in organic synthesis enabling a variety of bond-forming strategies. These molecules are also well-known for their high reactivity in self-condensation reaction. Indeed, for over 80 years, this domino reaction has garnered interest due to the variety of nitrogen-containing polyheterocycles it can produce. In addition, the process plays a considerable role in synthesizing macrocyclic ligands using transition metal ions as templates.

Despite being intrinsically straightforward, controlling the chemoselectivity of the self-condensation presents a significant challenge, as it is strongly influenced by the stereo-electronic effect of the substituents and the reaction parameters such as solvent, temperature and nature of the acidic catalyst.

Herein we present a systematic study on transition metal ions at various oxidation states aimed to address the selective synthesis of trimer derivatives A, using non-innocent alcoholic solvents

ANA-PO-002. Novel electro-analytical approach for the detection and discrimination of cannabinoids in cannabis extracts

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We have developed screen printed electrodes modified with carbon black (SPE-CBs) for qualitative and quantitative analysis of the main cannabinoids produced by Cannabis sativa L. The electrochemical procedure proposed, together with the good detection performances of SPE-CBs, allow discrimination between different cannabis samples based on their cannabinoid content. Cannabinoids are electroactive, due to the irreversible oxidation of the phenolic group so electrochemical sensors can be used for their fast in situ detection, representing an alternative to other more expensive techniques1. Among phytocannabinoids the best known are Δ9-tetrahydrocannabinol (THC) and cannabidiol (CBD), even if the acidic precursors THCA and CBDA are mainly present in Cannabis sativa L. plants. Marijuana, referred to as recreational cannabis, is illegal due to its high THC, which is psychoactive, and THCA content. On the other hand, cannabis plants that contain less than a defined concentration of the psychotropic compound have recently become legal in many countries. These plants, referred as fiber cannabis, and their associated products mostly contain CBD and CBDA, which are not psychoactive. According to the European regulation, vegetal material can be commercialized only when containing a very limited amount of THC, namely <0.3 % w/w2. Therefore, accurate controls of the THC and THCA levels to meet specific regulations are fundamental. In this work, we analysed extracts of different types of cannabis characterized by different cannabinoids contents. We verified the possibility to quantify the THCA content in the different extracts using a calibration curve3. On the other hand, we investigated the sensor ability to recognize illegal and legal samples by a multivariate approach. Moreover, a prototype of a portable device, capable of performing a rapid in-situ analysis of cannabis samples, has been developed. This device uses micro-pumps and flow sensors to prepare all the solutions, starting from the extraction step, and finishing with the electrochemical analysis performed with a SPE-CB inside a flow cell.

FIS-PO-043. Coffee for energy storage devices: a new tool for the energy transition

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The extensive use of fossil fuels for energy production has brought about profound environmental changes. The aspiration to establish an energy transition based on natural and renewable sources clashes with the essential requirement for electrochemical energy storage devices to deliver high performance while relying on critical raw materials. Supercapacitors are fast gaining interest due to their intrinsic enhanced eco-friendliness, safety, long life-cycle, and high charge/discharge rates. Their major limitation, however, lies in the low energy densities in comparison to state-of-the-art metal-ion batteries. [1] To address this limitation and expand the applications of supercapacitors, a number of approaches have been explored, including the possibility of increasing the device energy density exploiting the Faradic current contribution of natural antioxidant molecules as redox additives in the electrolyte. [2] Waste generated from the coffee value chain has emerged as a promising solution. Despite being the third most consumed beverage globally, following water and tea, only approximately 1% by mass of the initial coffee cherry fruit is utilized, leaving over 10 million tons per year of by-products and waste that contain valuable chemicals, including antioxidant polyphenols, worth considering as resource. [3,4] We present a novel bio-based metal free supercapacitor developed from a carbon-based current collector, a water-based slurry and a bio-based binder formulation. The symmetric supercapacitor exhibits a high specific capacitance of 105 F g-1 and an excellent cycle stability (capacitance retention after 10.000 cycles >95%). Preliminary findings indicate the feasibility of employing chlorogenic acid (extracted from coffee) as redox additive to aqueous electrolytes for advanced bio-based energy storage devices, enabling a new circular value chain based on waste from the coffee industry as possible sources for obtaining electrochemically active materials or molecules.

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ANA-PO-039. Silver Nanoparticle/Zein Composites as Green Antimicrobial Self-standing Films

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To reduce waste and reduce costs, the current trend is to find alternative solutions aimed at combating environmental pollution, e.g. by replacing classic plastics with biodegradable and sustainable materials. Therefore, the use of plant biopolymers could be a valid alternative. In this communication, self-standing zein films, of potential application as food packaging layers, were prepared by co-dispersion with sodium caseinate to improve the mechanical and barrier properties1. Zein is a highly hydrophobic corn protein with excellent film-forming properties, which could be extracted by corn gluten meal (byproduct of corn milling process)2. Moreover, the embedding of silver nanoparticles (AgNPs) was considered to confer antimicrobial properties3 to the proposed materials. AgNPs were first prepared according to a green reduction process limiting the amount of silver precursor (AgNO3) and using low-toxic chemicals (ascorbic acid as a reducing agent and zein as a stabilizer). NPs were then added to the zein/caseinate dispersion to obtain antimicrobial films. AgNPs and composite films were characterized by a multi-analytical approach in terms of NP morphology and size (DLS, TEM) and chemical composition (UV-Vis, XPS, FTIR). AgNPs have typically a spheroidal shape with a mean diameter of about 20 nm. FTIR analysis, as reported in the literature1, confirmed the high compatibility and strong interactions between casein and zein. Mechanical and water absorption tests were performed showing good results. Moreover, preliminary antifungal in vitro tests and silver ion release (ETAAS) are presently under study to evaluate film properties.

Acknowledgements: A.V.M. acknowledges funding by the European Union –NEXTGENERATIONEU – NRRP MISSION 4, COMPONENT 1. PROFOOD-IV Prodotti e Processi Innovativi per la Filiera Ortofrutticola della IV Gamma (ARS01_00755) PON RICERCA E INNOVAZIONE 2014-2020 ASSE II - AZIONE II.2 project is acknowledged for funding. Authors acknowledge the Project “Imballaggio Attivo Ortofrutticoli”, Grant n° J98H23000070008, from “Ministero dell’Agricoltura, della Sovranità Alimentare e delle Foreste” for the financial support to this research.

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ORG-PO-112. Mechanistic Insights Into The Base-Mediated Deuteration Of Pyridyl Phosphonium And Ammonium Salts

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The past decade has witnessed great progress in the field of “deuterium switch”, a strategy based on the replacement of hydrogen with deuterium. Due to the greater activation energy for the cleavage of the C-D bond, the metabolic stability and safety of a drug containing deuterium atoms can improve compared with the non-deuterated counterparts. Given the importance of pyridines in drugs, novel methodologies to access diverse selectivity patterns in their deuteration are highly desirable; inspired by its reported base-mediated meta, para-deuteration1,2, we wondered how the deuteration of model compound 2-phenylpyridine (1) could be modified to allow for a different labelling selectivity. We envisaged that the temporary installation of an electron-withdrawing group on the pyridine could promote the deuterium switch and alter the deuteration pattern, and in particular that phosphonium salt [2]+ or ammonium salt [3]+ could promote ortho/meta-deuteration by increasing the corresponding acidity in these positions while blocking the para-position. A phosphine ligand was then installed on the Ph3P+ moiety as a directing group (compound [4]+) to facilitate the approach of the base by pre-coordination of its cation. In this work, we evaluated, computationally and experimentally (including by in situ NMR analysis) the deuteration of compounds [2]+ to [4]+.

Figure 1: A) Base-promoted deuteration of 1-d. B) Phosphonium and ammonium salts used in this work.

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MAS-PO-001. Advances in thyroglobulin measurement: exploring dried blood spot mass spectrometry for enhanced clinical utility

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In contemporary medical practice, human thyroglobulin (Tg) represents the primary tumour biomarker for detecting the recurrence of differentiated thyroid carcinoma (DTC) in patients who have undergone thyroidectomy. Tg is a large and highly glycosylated tissue specific protein exclusively produced by both healthy and tumour

thyroid follicular cells in the thyroid gland. Different techniques, including immunometric assays (IMA) and radioimmunoassays (RIA), have been implemented in clinical settings to gauge Tg levels in blood samples collected through venipuncture. However, the reliability of these methods is compromised by the presence of antibodies, including antithyroglobulin antibodies (TgAbs) and heterophile antibodies (HAs), resulting in frequent inaccuracies in the quantification of T due to either the under or overestimation of the actual values. In recent years, liquid chromatography tandem mass spectrometry (LC-MS/MS) has emerged as a distinctive and alternative tool aimed at overcoming the challenges posed by antibody interference. Despite its potential, the effectiveness of LC-MS/MS has yet to be fully explored and, if performed, could improve our knowledge regarding the potentiality of this tool for the detection of Tg.

In this work, we present a workflow, based upon LC-MS/MS and Stable Isotope Standards and Capture by Anti-Peptide Antibodies (SISCAPA) technology, to quantify Tg in patients with thyroid cancer, indicating greater sensitivity and specificity with respect to the routinely available protocols. Moreover, this workflow is also currently being translated and tested for use with samples obtained with DBS (dried blood spot) devices, a simple, costeffective, and minimally invasive alternative to those obtained by venipuncture. Based upon these findings, this LC-MS/MS and SISCAPA based approach not only shows the potential for improving the accuracy of Tg quantification but may also simplify this process for patients living in remote areas who could independently collect DBS samples for Tg monitoring.

ORG-PO-113. Dual target approach for the treatment of Gaucher disease: new iminosugar pharmacological chaperones with antioxidant/anti-inflammatory properties

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The design and synthesis of multitarget directed ligands represents one of the most attractive and challenging fields in medicinal chemistry research. Nitrogen-containing glycomimetics, such as iminosugars, have proven to be inhibitors of glycosidases and glycosyltransferases. More recently, these compounds have been introduced as therapeutic agents towards lysosomal storage disorders (LSDs), acting as pharmacological chaperones (PCs)1. PCs are small molecules able to rescue the activity of mutated enzymes. In the context of LSDs, they favor the correct folding of the enzymes and facilitate their translocation to the lysosomes when used at subinhibitory concentration. In this work, we report a series of trihydroxypiperidine iminosugars bearing different antioxidant or anti-inflammatory moieties as potential bifunctional agents for the treatment of Gaucher disease (GD) (Figure 1), starting from low-cost D-mannose. GD is the most prevalent LSD, caused by mutation in the GBA gene encoding for lysosomal β-glucocerebrosidase (GCase), which is responsible for the hydrolysis of glucosylceramide2. The new compounds are potentially able to mend GCase dysfunction while reducing the severe oxidative stress/inflammatory state observed in GD patients. Since GBA mutations are also known as the most recurrent genetic risk factors for Parkinson disease (PD)3, these novel compounds are interesting for the treatment of PD as well. The synthesis of the new bifunctional compounds and their biological evaluation towards GCase will be presented.

FAR-PO-056. Design of novel nucleic acid-based therapeutics targeting a long non-coding RNA for the treatment of melanoma

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Metastatic melanoma is a highly aggressive tumour with a high mortality rate. Recent findings have been proven that long noncoding RNAs (lncRNAs) are involved in the regulation of different cellular processes fundamental for the development/survival in several cancers including melanoma1. A common strategy to elicit the cellular activity of lncRNAs is to target them with chemically modified antisense oligonucleotides (ASOs)2.

To identify the most suitable lncRNAs to be exploited for melanoma treatment with ASOs, we set up a systematic approach starting from the Lnc2Cancer v.3.0 database3, integrated with GENCODE annotations4. Upon this search we selected BRAF-activated non-protein coding RNA (BANCR), a lncRNA whose expression is upregulated in melanoma5. The second step of our study was to verify the efficacy of DNA and RNA ASOs designed against BANCR lncRNA in melanoma cell lines.

First, the expression of BANCR was analysed in the A375 cell line using Quantitative Real-time PCR. Overall, our results demonstrated the presence of our lncRNA within the nucleus in the selected cell line.

Subsequently, the selection of accessible regions within BANCR to be targeted by ASOs was performed by using the structural predictions tool RNAfold (ViennaRNA Package)6. Additionally, BANCR's potential to sponge microRNAs was explored employing starBase7 tool. We identified miR-205-5p as an attractive partner of BANCR for our goal. Therefore, we targeted the region of BANCR responsible for the binding to miR-205-5p with tailored DNA and RNA ASOs starting from the fully complementary sequences.

Hence, the interaction of BANCR with miR-205-5p, DNA and RNA ASOs were evaluated by circular dichroism (CD) and differential scanning calorimetry (DSC). Both the CD and DSC data confirmed the formation of the duplex complexes according to a fully reversible process. The efficiency capacity of the fully complementary DNA and RNA ASOs to displace the miR-205-5p from BANCR was confirmed.

These findings can provide proof-of-concept that the targeting of miR-205-5p binding region could be a new option for melanoma treatment through BANCR inhibition.

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ORG-PO-214. Multivalent calix[4]arene-based mannosylated dendrons as new FimH ligands and inhibitors

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FimH is a mannose-specific adhesin that mediates the adhesion of uropathogenic Escherichia coli (UPEC) to urothelial cells and can be targeted thanks to the glycoside cluster effect given by carbohydrate-lectin interactions.1

Among the different synthetic scaffolds used to build multivalent glycoconjugates,2 calixarenes show peculiar properties dependent on the different valences of the scaffold and on the stereochemical disposition of the saccharide units. Thus, we inserted two trivalent mannosylated dendrons onto the upper rim of a calix[4]arene scaffold, obtaining hexavalent glycocalixarenes (Figure 1). The antiadhesive properties of compounds 5a-b was then assessed by an assay based on yeast cell agglutination to UPEC, a highly conserved FimH-dependent binding property among isolated E. coli strains. On-cell STD NMR experiments, acquired in the presence of UPEC living cells, confirmed the specific binding of calixarenes functionalized with Man units (5a-b) to FimH proteins at the cell surface.3 Mannosylated calixarenes 5a-b are thus promising hit compounds for the development of novel antiadhesive therapies aimed at fighting urinary tract infections caused by UPEC.

MAS-PO-011. Occurrence of ChloroPerFluoroPolyether Carboxylates (PFPECAs) in environmental and biota samples: evaluation of toxicity profile of ClPFPECA-N2 by lipidomics approach

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Per- and Poly-FluoroAlkyl Substances (PFASs) constitute a broad class of man-made chemicals linked to some human diseases. In the last years, alternative compounds deemed safer than the called “legacy” PFASs (PFOA, PFOS...) were synthetized. An example is the “emerging” class called ClPFPECAs which were recently founded in both environmental and biota samples. Herein, we report the evaluation of toxicity profile of ClPFPECA-N2 by lipidomics approach. HepG2 cells were exposed to increasing concentrations of ClPFPECA-N2 and after extraction, lipidomics analysis was performed by UHPLC-HRMS. Data were elaborated using Lipostar2 (Molecular Discovery Ltd.) and the obtained results shown lipids dysregulation for cells treated with ClPFPECA-N2 compared to the control samples. Particularly, MUFA and PUFA cardiolipins and triacylglycerols were the lipidic classes mainly responsible for the separation in the multivariate statistical analysis (PCA and PLS-DA) between treated samples and controls.

ALI-PO-024. Biodiversity valorization through investigation of anti-glycative activity of Diospyros kaki, Succisa pratensis, Aloysia citriodora

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Italy has one of the most significant biodiversity heritages in Europe, both in terms of the total number of plants and the high rate of endemism. Therefore, it is important to preserve and enhance it as a source of goods and resources to ensure the maintenance of healthy ecosystems and coexistence between humans and nature, which is sustainable in the long term and resilient to ongoing climate change. In this contest, the Italian National Recovery and Resilience Plan financially supported “National Biodiversity Future Center”, dedicated to frontier research involving Italian institutions and companies, including the University of Pavia, which aims to monitor, preserve, restore, and enhance biodiversity. Therefore, our research group aims to investigate and identify biologically active edible plant species, focusing on their potential anti-glycative properties.

Glycation is a non-enzymatic reaction between a reducing sugar and the side-chain amino groups of protein lysine or arginine residues, followed by further rearrangements, leading to the formation of advanced glycation end-products (AGEs). In vivo AGEs accumulation is associated with many chronic disorders such as diabetes, retinopathy, nephropathy, cardiovascular, and neurodegenerative diseases.1 In particular, the aim of the present study is to investigate the anti-glycative activity of Diospyros kaki, Succisa pratensis, and Aloysia citriodora, included in the Belfrit list, in order to identify and develop a new food ingredient with anti-glycative properties. Several in vitro assays were carried out to evaluate the ability to interfere with the glycation process at the initial, intermediate, and final stages of the reaction. In particular, model systems consisting of glycating agent, such as MGO, and a protein, such as bovine serum albumin (BSA), has been set up at physiological conditions (37 °C, pH 7.4) to evaluate the intermediate stage of glycation process.2 With the help of NBT (blue nitrotetrazolium chloride), the capacity of the extracts to inhibit the formation of Amadori products (the initial products of the glycation process) has been evaluated.2 In addition, MGO and GO trapping ability of the extracts has been investigated.2 Then, the antiglycative activity at the final stage of the reaction was further investigated by several in vitro assays such as BSA-Glucose3, BSA-Fructose3, phthalaldehyde test4, and thiol group test5. Overall, all three edible extracts had high anti-glycative properties at the intermediate stage of the reaction, efficiently inhibiting the formation of AGEs in the presence of MGO, which is also highly trapped. In addition, they inhibited the glycation reaction at the final stage of the reaction in presence of fructose and glucose, also increasing the percentage of free lysine amino groups; conversely, they had low anti-glycative properties at the initial stage of the reaction.

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FAR-PO-064. Exploring the Inhibition of Iron Acquisition in M. abscessus as a Potential Anti-Virulence Strategy in People with Cystic Fibrosis

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M. abscessus (Mab), an opportunistic pathogen belonging to the class of non-tuberculous mycobacteria (NTM), causes chronic pulmonary infections in sensitive individuals, especially cystic fibrosis (CF) patients. Despite its incidence is on the rise, the available therapeutic strategies have only a limited efficacy and are very burdensome for the patients. Hence, due to the intrinsic resilience of NTM to treatments and the dramatic spread of resistant strains, new pharmacological approaches are urgently needed.1

In this context, iron acquisition has been recently proposed as an interesting target in the phylogenetically close M. tuberculosis (Mtb), due to the involvement of this metal in the pathogenesis and survival of the microorganism in the host.2 Therefore, we decided to investigate the targeting of mycobacterium-specific iron chelators as a possible anti-virulence approach against Mab. In detail, we focused on the first enzyme involved in the siderophore biosynthetic pathway, a salicylate synthase (SaS) that has been successfully studied to identify antitubercular agents against Mtb. Due to the structural conservation of the active site in the two congeners, we approached this study by screening an in-house library of Mtb-SaS inhibitors. This initial investigation led to the identification of the first hit compounds against Mab-SaS.3 Moreover, considering the high plasticity of the active site, we performed crystallization studies to solve the structure of Mab-SaS, providing a solid base to structure-based drug design efforts. The obtaining of the first 3D-model of this enzyme allowed us to characterize its orthosteric site and study the peculiar area around it.4 Our promising results will be presented, along with preliminary data on the use of the new structure for the development of optimized inhibitors.

CSB-PO-027. Impact of aberrant N-glycosylation on GRP94 functionality: insights from Molecular Dynamics simulations

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The glucose-regulated protein 94 (GRP94), a member of the Hsp90 family, acts as a chaperone in the endoplasmic reticulum, aiding in the folding and activation of client proteins. Structurally, GRP94 is a homodimer with three globular domains per chain: the N-terminal, middle, and C-terminal. Mechanistically, ATP binding at the N-terminal domain induces conformational changes in GRP94, facilitating client protein binding and folding. Upon ATP hydrolysis, rearrangement of client-binding-site residues occurs, inducing conformational changes in the bound client protein.

Recently, a glycosylation-dependent disease specific variant of the chaperone GRP94 has been identified1. Aberrant glycosylation at specific asparagine residues triggers a structural shift in GRP94, leading to its relocation to the plasma membrane and stable interactions with the membrane proteins. This altered state transforms GRP94 from a folding to a scaffolding protein, resulting in the reorganization of protein assembly and connectivity, ultimately leading to widespread proteome dysfunction and disruption of normal cellular pathways.

In this study, we use molecular dynamics simulations to elucidate, at an atomistic level, the mechanism by which N-glycans at different protein sites modulate the conformational dynamics of GRP94, affecting both its interaction mode with clients and nucleotide processing, and ultimately GRP94's function. More specifically, our findings reveal a crucial structural role of N-glycans in regulating the internal dynamics of the protein, which is associated with its functional motions. Furthermore, we demonstrate that N-glycosylation promotes specific protein states, ultimately influencing interactions with different partners involved in the assembly of complexes determining cell phenotypes. Finally, we used these insights to rationalize the engagement of GRP94's conformational states by both active and inactive ligands, providing guidance for designing molecules targeting disease-specific, aberrantly glycosylated variants of GRP94.

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TEO-PO-013. Using semiclassical vibrational spectroscopy to gain a new perspective of water solvation

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It is now common knowledge that solvation can play an important role in many areas of chemistry, such as reactivity and the study of biomolecular processes. What is less obvious and still remains an open problem for the theoretical community is how to properly model and describe such processes. In this work we take as an example the case of water solvated thymidine. We chose this system due to its peculiar experimentally observed behavior in the vibrational spectrum, where in gas phase the signal relative the pyrimidinic rings' C4 = O and the one to the C5 = C6 are well separated while upon water solvation the same two signals are degenerate. To investigate the reason of this concerted shift of signals and gain a new atomistic physical picture of this phenomenon we use the Divide and Conquer Semiclassical Initial Value Representation (DC-SCIVR) which allows us to add Nuclear Quantum Effects (NQEs) to classical molecular dynamics. Furthermore, to retain an high accuracy on such a complex and massive system we combined our semiclassical approach with the cutting edge QM/AMOEBA potential. During this presentation it will be shown how the use of these tools allowed us to build a new physical picture of water solvation which keeps in account for the atomistic details in a dynamical way.

INO-PO-083. Towards building-integrated photovoltaics: highly transparent and colourless luminescent solar concentrators based on bright Eu3+ supramolecular cages

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Achieving seamless installation of photovoltaic (PV) devices into buildings requires versatile technologies that can maximise the energy output while preserving the functionality and aesthetics of the existing architectural element. Luminescent solar concentrators (LSCs) are now emerging as powerful tools to turn glazing systems into energy-producing building components. An LSC is conventionally comprised of a glassy or polymeric slate embedded or coated with luminescent species, which light emission can be stimulated by sunlight and collected at the edges of the panel by thin PV cells, to be then converted into electrical power.

Our study reports i) the synthesis of strongly emitting [Eu2L4]2- cages, where the ligands L are bis-β-diketones capable of sensitizing the Eu3+ ion through the benzolytrifluoroacetone (btfa) moiety, ii) the preparation of planar LSCs in form of tiles or films having 5 x 5 cm2 active area by embedding the cages into PMMA, and iii) the study of the LSC-PV devices obtained by edge-coupling the LSCs with monocrystalline Si PV cells. The photophysical properties of the luminophores have been fully characterized before and after embedding into the host medium. Measured average visible transmission (AVT), colour rendering index (CRI) and CIELAB coordinates are all well within the industrial standards for glass destined to neutral colour applications, denoting excellent transparency ad aesthetic quality. LSC-PVs have been characterized under simulated AM1.5G illumination. Thanks to increased light absorption, LSCs containing higher luminophore loadings yield better power conversion efficiency (PCE), while maintaining unaltered transparency and colour neutrality. Finally, we compared the fabricated LSC-PVs to other Eu3+-based concentrators present in literature, finding similar performances in terms of PCE, while using a 10 to 100 times lower content of europium in our devices.

CSB-PO-004. Design, synthesis and characterization of novel nucleopeptides targeting ATP and GTP

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Nucleopeptides represent a novel class of biomolecules where the peptide backbone incorporates nucleobases in the side chains (Fig. 1)1. The inherent versatility of nucleopeptides arises from the potential to manipulate both the peptide and nucleobase constituents, modulating favorable characteristics such as biostability, biocompatibility, multifunctionality, and the ability to spontaneously self-assemble in aqueous solutions2. Herein, we present an ongoing investigation into the US-assisted3 synthesis of tailored nucleopeptides aimed at identifying novel binders for ATP and GTP (Fig. 2). While these nucleopeptides feature diverse amino acid sequences, they share distinctive functional moieties: a nucleobase-bearing amino

acid (NBA) in the C-terminus (Lys) to bind Adenine or Guanine of the ATP or GTP, respectively; aromatic L-Phe and hydrophobic L-Leu, to enhance aggregation processes after target sequestration; three L-Arg residues to interact with the phosphate groups of ATP/GTP in cell and facilitate cell penetration through electrostatic interactions with negatively charged molecules on the cell surface; L-Ser as a hydrophilic spacer to balance the hydrophobic component and improve the solubility of the nucleopeptides in aqueous environments. Preliminary CD studies reveal nucleopeptide-ATP/GTP interactions by adopting distinct binding modes. NMR studies are in progress to gain further insights into their local conformational peculiarities and structural changes driving the target recognition process. Remarkably, some of these nucleopeptides, except for those bearing an acetyl group that replaced nucleobase on the side chain of Lys, also exhibited gel-forming abilities, highlighting the involvement of the nucleobase in sol-gel transition and opening new perspectives for drug delivery applications.

TEF-PO-017. 3D Bioprinting of an Oral Solid Probiotic Dosage Form

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Inflammatory bowel disease (IBD), including Crohn’s disease and ulcerative colitis, affects over 6 million people globally1. The composition of gut microbiota in IBD patients has been reported to be significantly different from that of healthy individuals. Therefore, the treatment of dysbiosis could have a positive impact on IBD. This may be achieved by various approaches ranging from simple dietary changes to replenishment of the bacteria. Probiotics are commonly administered in the form of capsules or sachets. Their incorporation into tablets, more convenient from the industrial and treatment compliance perspectives, is challenging because of the compaction forces involved2. To overcome such limitations, bioprinting, which consists in 3D printing of biomaterials (bio-inks), was here proposed for the manufacturing of a solid probiotic dosage form for colon delivery3,4. Particularly, the aim of the present work was to set up an immediate-release core formulation, where the bacteria would be incorporated, intended for subsequent embedding in a functional polymer shell. For fabrication of the disintegrating core, extrudable pastes, including a large amount of solids, were prepared, and printing by a 3D Discovery™ Gen. 5 bioprinter (RegenHU, CH) was attempted. The pastes, also containing paracetamol as an analytical tracer, were based on either insoluble (Kollidon® SR) or soluble (Mannogem® XL) fillers, which were expected to impart the desired mass and density of the final product while maintaining proper viscosity of the formulations to be extruded. In the former case, a superdisintegrant was added to accelerate interaction with aqueous fluids. By adjusting the composition and the process parameters, it was possible to print selected pastes into monolithic units of desired shape and size. These were allowed to dry at room temperature before being characterized in terms of mass, dimensions, mechanical resistance, disintegration time and dissolution rate. Using a soluble filler led to faster disintegration than combining an insoluble one with a superdisintegrant. The best-performing pastes were then loaded with Lacticaseibacillus paracasei as a model probiotic, pointing out compatibility issues only in the case of that containing Kollidon® SR, as highlighted through viable cell count. Even though extensive studies need to be performed to assess the impact of formulation and printing as well as drying conditions on cell viability, the present work would pave the way for the use of bioprinting technique in manufacturing solid dosage forms intended for oral administration of probiotics.

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FIS-PO-061. Preparation and characterization of PET (Polyethylene terephthalate) nanoparticles by using a solution of HFIP: Chloroform 1:1 (80%) and water (20%)

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Nano- and microplastic toxicology has appealing global consideration. As matter of fact, the plastic materials are disposed in to the environment and degrade by releasing micro- and nano plastic, which are very dangerous, due to their potential to bypass the biological membranes. In order to perform toxicological studies on human cells, it is necessary to produce particles with nanometric dimension, which can be difficulty extracted and characterized from environmental matrices [1]. In this work, we have produced of PET Nanoparticles from commercial grade PET resin, by grinding the PET pellets and dissolving the powder in a solution of hexafluoro isopropanol: chloroform (1:1), then extracted in water. By using this feasible method, PET nanoparticles have been characterized by UV spectrophotometer, optical microscope (bright field), scan electron microscope (SEM) and dynamic light scattering (DLS). Furthermore, PET fluorescence properties have also been characterized by spectrofluorometric techniques.

This work approaches a simple and easy way for PET nanoparticles production, which can be very useful for the study of cell toxicology of this kind of plastic. Furthermore, the spectroscopic properties of PET can be used for the evaluation and quantification of PET nano- and microparticles in environmental samples.

FIS-PO-018. Photocross-linked gelatin methacryloyl microparticles prepared by double emulsion method for drug delivery

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Despite the well-known versatility and biocompatibility of gelatin, this biopolymer has been underutilized due to the potential toxicity of traditional cross-linking agents, e.g., glutaraldehyde, which are generally used to stabilize gelatin-based microparticles in aqueous environments at physiological temperature. Here we proposed a safer and more biocompatible alternative method which integrates a straightforward and effective double emulsion

preparation protocol1 with UV-activated cross-linking2. Photocross-linkable gelatin methacryloyl (GelMA), which has been proven to be suitable for tissue engineering3 and drug delivery4 applications, was selected as primary material for the preparation of porous microparticles. Photocross-linked GelMA porous microparticles with different degrees of substitution were comprehensively investigated using a variety of techniques, including optical and electron microscopy, as well as scattering methods, highlighting the significant impact of substitution degree, and photocross-linking on the microparticles' dimensions, surface morphology, nanoscale organization and swelling abilities. To demonstrate their potential application as delivery vehicles, the photocross-linked microparticles were loaded with a model drug (methylene blue) and the release in water was studied at two different temperatures (25°C and 37°C), resulting in a direct relationship between the release temperature and the drug quantity released. The release patterns, fitted with the empirical Weibull function, suggest a Fickian diffusion mechanism. Our results mark a substantial advancement towards the effective design and preparation of functional, porous gelatin-based cross-linked microparticles suitable for drug delivery applications.

ORG-PO-215. Chemoselective SN2' Homologation of Allylic Platforms with Zinc Carbenoids

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Homologation chemsitry has been subject of considerable attention in the last decade, leading to a lot of studies and publications investigation the possible combination of homologating agent and substrates.1 Most of the known procedures foresee the employment of a nucleophilic species as the medium of the chain enlargement; among the several nucleophiles, lithium and magnesium carbenoids have been largely exploited for the exploration of this kind of chemistry.2 A exception relies in zinc carbenoids, mostly known for their electrophilic behavior which made possible the Simmons-Smith cyclopropanation reaction of alkenes by iodomethylzinc iodide3 and ethyl(iodomethyl)zinc.4 Still, zinc carbenoid chemistry is not as explored as other metals one. Herein we present the homologation of allylic halides (X: Br, Cl) to homoallylic iodides derived from a iodomethylene unit SN2' type transfer mediated by iodomethylzinc iodide. More than 30 examples were synthesized achieving remarkable scope and chemoselectivity thanks to the neutral nature of zinc carbenoids toward electrophilic site sas amides, esters, ketones and aldehydes.

FAR-PO-008. AI-driven Discovery of TERRA G4 Ligands for ALT Anticancer Therapy

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While most cancer types rely on telomerase reactivation for telomere maintenance and sustained proliferation, a subset (~15%) of cancers employs telomerase-independent mechanisms, referred to as Alternative-Lengthening of Telomeres (ALT). Several evidence demonstrates that ALT-elongated telomeres exhibit a permissive chromatin state that leads telomeres to be hyper-transcribed into long non-coding RNA transcripts, called telomeric repeat-containing RNA (TERRA)1. TERRA is implicated in numerous functions, including the interaction with telomeric proteins, modulation of telomeric chromatin, and transcription2.

TERRA contains long tracts of telomeric r(UUAGGG) repeats, and as such it can form G-quadruplex (G4) structures. G4-interacting small molecules have shown potent inhibition of TERRA interaction with proteins, resulting in loss of TERRA at telomeres. This event is related to induction of telomeric DNA damage, decreased telomere length, and increased telomere aberrations3. These results suggest that targeting TERRA G4 could spearhead novel therapeutic strategies for the selective killing of ALT cancer cells.

The present contribution showcases the application of the newly developed AI-powered Virtual Screening method, PyRMD2Dock4, to screen an ultra-large chemical database for the lead discovery of new chemotypes able to bind the TERRA G4 fold. Biophysical and biological evaluation is here reported to demonstrate the predictiveness of the employed method in the identification of potential ALT-selective antiproliferative TERRA G4 binders.

TEC-PO-057. Effective Cu/SteelI Slags catalysts for nitroarenes reduction in aqueous medium

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The application of waste materials as catalysts holds significant relevance in the field of sustainable chemistry and green synthesis. Steel slags are waste-product the steel manufacturing process, originating from the extraction of molten steel from contaminants in steel production furnaces.1 This slag material exists in a molten liquid state as a compound solution of silicates and oxides, which undergoes solidification upon cooling. Its chemical composition typically comprises calcium, silicon, iron (II), aluminium, magnesium, and their oxides. Given its extensive composition, alkaline characteristics, and good mechanical properties, steel slag has garnered significant attention as a promising material for use as a catalyst support for organic reactions, such as reduction of nitroarenes. Copper has been selected as the active component for catalysis among transition metals due to its high level of activity, abundance, and relatively moderate cost.2

New Cu/SteelSlags catalyst obtained by mixing copper sulphate pentahydrate (CuSO4·5H2O) solution and sieved steel slags powder for 2 hours, followed by separation of the solid fraction by centrifugation, washing and drying. The transformation of the active component from copper (II) to copper (0) occurred

in-situ under reaction conditions, as evidenced by the change in the colour of the catalyst from blue-grey to black.

Catalyst was tested in reactions of nitrobenzene reduction to aniline at room temperature in the presence of NaBH4, as the reductant, and Cu/SteelSlags in deionized H2O as the solvent during 2 hours. The recyclability test showed a consistently high yield of aniline (>90%) over 5 cycles. Cu/SteelSlags material was characterized by FT-IR, XRD, PXRF, TGA, SEM and TEM techniques before and after the catalytic cycles.

Besides to nitrobenzene reduction catalyst was tested in the reactions of various nitroarenes reduction to the corresponding anilines, where catalyst always demonstrated high activity and selectivity in short reaction time.

FIS-PO-012. Designing g-C3N4/g-C3N4 nanoarchitectures by playing with urea/melamine precursor ratio

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The metal-free polymeric graphitic carbon nitride (g-C3N4) is an emerging 2D layered graphene-like materials due to its exceptional properties i.e. thermal and chemical stability, non-toxicity, tunable band gap and visible light activity. For these reasons, nowadays, g-C3N4 finds applications in many fields like photodegradation of pollutants, photocatalysis for hydrogen production, carbon dioxide reduction, water splitting, solar light-driven photo-redox catalysis, photoelectric conversion1. Nevertheless, it's essential to highlight some g-C3N4 limitations, such as the high recombination rate of the photoinduced electron–hole pairs, the poor charge carrier mobility the chemical inertness itself and the low specific surface area2. For this reason, currently, considerable efforts are directed towards overcoming the aforementioned drawbacks3, either by establishing g-C3N4/g-C3N4 or g-C3N4/graphene metal-free homo/hetero-junctions or g-C3N4/inorganic semiconductors and/or metals, etc.. hybrid materials. In this study, porous g-C3N4 nanoarchitectures are achieved through a facile and effective in-situ synthesis method involving the thermal treatment of different melamine (M) and urea (U) precursor mass ratios. The role of the precursors on morphology and structure, was analysed by means of many characterization techniques, including HRTEM, FESEM, X-ray diffraction, UV-visible, PL and FTIR spectroscopies. Some more, samples, obtained by mixing melamine (M) and urea (U) precursors, combine the advantage of high thermal stability and significant reaction yields, due to melamine action and greatly improved surface area, low dimensionality and short migration paths, due to urea action. Consequently, different “top-down” approaches have been optimized with the aim of further increasing the surface area and decreasing the dimensionality of the U-derived-g-C3N4 systems, thus exploiting the well-known “quantum confinement” effect typical of low-dimensional architectures.

Lastly, preliminary results also on the synthesis and characterization of low-dimensional-g-C3N4/oxides heterojunctions will be discussed, in order to highlight the role of morphology, structure, surface and bulk properties on the photocatalytic performance.

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ORG-PO-216. Artificial fluorescent proteins as sustainable downshifters for bio-hybrid LEDs: tailoring the emission through modifications of a non-native fluorophore

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LED lighting plays a fundamental role in the energy transition, due to its superior energy efficiency, compared to traditional light sources. For this reason, LEDs have now become the standard for indoor and outdoor applications, but their production and disposal still poses concerns in terms of sustainability, due to the need of employing rare-earth based colour down-converting filters. In the search for alternative solutions, fluorescent proteins (FPs), in which an organic fluorophore is embedded into a peptide scaffold, have been proposed as bio-based emitters for sustainable downshifter materials. An ideal FP emitter should display high fluorescence quantum yield values and good photo- and thermal stability, to ensure long lifetime, compatible with the required applications. To achieve such features, we studied several classes of fluorescent organic compounds, in order to cover the whole range of the visible light spectrum, by tailoring the absorption and emission properties. In this regard, we selected a well-known fluorescent core based on a photostable thiadiazole molecule as a flexible molecular platform, whose emission wavelength can be extensively modulated from green-yellow to orange-red, with relatively low synthetic effort, through conjugation with different (hetero)aryl moieties. Through synthetic modification of the fluorophore scaffold, we investigated the possibility to adapt it for efficient interaction with a properly designed protein scaffold. Finally, we revised the whole synthetic route to improve the overall sustainability of the process.

TEC-PO-008. Eco-design of cellulose nanocrystal through ESCAPE method at lab-scale

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Sustainability is becoming more and more the compass to drive the design of materials and processes. From this perspective, cellulose can be considered a sustainable natural source for the development of innovative materials due to its renewability, biodegradability, and interesting

mechanical properties. Moreover, the possibility to cleave its hierarchical structure opens the way to the production of nanocellulose. Cellulose nanocrystals (CNC) find applications in different fields, such as packaging, cosmetics, energy storage and nanocomposites production.1 However, synthetic procedures could be impactful in terms of energy demand.

Herein, CNC were obtained through two processes, the first one based on the standard and widely used H2SO4-treatment[1], the second following a claimed “greener” process which foresees the use of the oxalic acid/choline chloride deep eutectic solvent (DES)[2]. For each process, CNC were produced and characterized.

The sustainability of both lab-scale processes was assessed using the “ESCAPE”[3] tool. The sustainability was evaluated in terms of embodied energy (EE) and carbon footprint (CF), keeping track of the local energy mix and comparing it to foreign energy mixes. The DES-based production was found to be more sustainable, primarily due to its lower purification time and higher mass recovery. These results allowed for the identification of the most impactful steps in the synthesis process, particularly the purification step and water usage. Consequently, targeted improvements in these steps allowed to reduce the overall environmental impact without affecting the morphology of final products.

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ORG-PO-217. Transition-metal free one-pot synthesis of N-aryl-1,2,4-triazoles via arylazo sulfones under visible light irradiation

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The 1,2,4-triazole core is present in several bioactive molecules and therapeutically significant drugs including alprazolam and fluconazole. The growing interest for this scaffold and the drawbacks of traditional approaches have raised the demand for mild and sustainable synthetic routes.[1] Photochemical approaches utilizing visible light to achieve this target remain underexplored. In the view of this, we exploited arylazo sulfones as photoactive substrates for the synthesis of the 1,2,4-triazole ring. The dyed auxiliary group (N2SO2R) in arylazo sulfones is responsible for visible light absorption and photoreactivity, allowing the formation of radical species.[2] Indeed they have been recently employed as photoactive reagents in the visible-light-mediated metal and (photo)catalyst-free preparation of α-sulfonyl arylhydrazones.[3]

We present herein a one-pot, 100% atom economy, mild and transition-metal-free photochemical route to N-aryl-1,2,4-triazoles, by irradiation of variously substituted arylazo sulfones in the presence of different N-alkenyl amides. The desired products have been isolated in moderate to satisfactory yields via cyclization of the key intermediate arylhydrazone and the developed protocol showed an excellent group tolerance. Post-transformations on final substartes and their preparation under flow conditions have been also performed.

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TEC-PO-044. Optimization of Carbon-based Electrodes for Energy Storage and Conversion

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Electrochemical energy storage and conversion devices are crucial for providing solutions to clean and green energy sectors, particularly for decarbonizing industry and long-range transport sectors. Among those devices, Metal-Air Batteries (MAB) and Microbial Fuel Cells (MFC) represent unique added values regarding sustainability, for the possibility of using oxygen from air at the cathode side and organic waste as a fuel in the case of MFC [1,2].

The critical challenges for developing MAB and MFC are the intrinsically slow kinetics of oxygen reduction at the cathode side, leading to the need to use efficient electrocatalysts. However, using critical raw materials (CRMs), such as platinum-group metals, at the cathode side jeopardizes sustainability and increases costs. By developing an efficient electrode design for MAB and MFC performance enhancement, CRM-based cathodic catalysts should be replaced with CRM-free materials [3].

This work proposes developing and optimizing iron-based air cathodes to enhance oxygen reduction at the cathode side of Zinc-Air Batteries (ZAB) and MFC. By subjecting iron phthalocyanine and carbon black pearls to controlled thermal treatments, we obtained Fe-N-C electrocatalysts with high surface area (628 m2g-1) and high oxygen reduction in both near-neutral pH and an alkaline environment. The electrocatalysts were integrated on carbon cloth and carbon paper to obtain gas diffusion electrodes, the architecture of which was optimized to maximize MFC and ZAB performance. The optimization was performed by screening different commercial carbon gas diffusion electrodes (carbon cloth and carbon paper), investigating the effect of hot pressing the catalyst layer, and the pore size of the current collector.

When assembled at the cathode side of a ZAB, the Fe-based cathode showed an excellent galvanostatic polarization discharge peak power density (PPD), outperforming the Pt/C benchmark electrocatalyst.

Moreover, the optimized electrode also showed promising features as cathode for energy recovery in an MFC: a good performance was obtained in MFC: for the Fe-based carbon paper (1028 mWm-2, as PPD) as compared to a traditional electrode design based on carbon cloth (619 mWm-2).

Acknowledgments:

This work has received funding from the European Union – Next Generation EU in response to the MUR (Ministry of University and Research) call “PRIN (Project of National Interest) 2022”: Project code: 20224WLXRK.

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FAR-PO-059. Inhibition of SARS-CoV-2 Replication by 2-Phenylquinoline Derivatives Targeting nsp13 Helicase

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Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) emerged at the end of 2019 as a new deadly human betacoronavirus, responsible for COVID-19, a highly infectious and pathogenic disease. The RNA vaccines, approved in the early 2020, have represented the main weapon to successfully reduce the devastating impact of the outbreak, while the discovery of efficacious antivirals have lagged behind, with only three drugs that have approved to date. As a results, the development of SARS-CoV-2 antivirals is still a priority to address the limitations of the existing drugs and to effectively manage the future pandemics.

Due to its high conservation across coronaviruses, and being a crucial component of the replication transcription complex, the nsp13 helicase, which catalyses the RNA unwinding and ATP hydrolysis, could represent an alternative drug target.1

By screening a selection of small molecules from our in-house library, we have recently identified the 2-phenylquinoline (2-PhQ) as a promising scaffold to obtain new anti-SARS-CoV-2 agents. Indeed, the proper substitution pattern around the 2-PhQ nucleus furnished some compounds endowed with: broad anti-coronaviruses inhibition, being active in the low µM range against SARS-CoV-2 and two other human coronaviruses, HCoV-229E and HCoV-OC43; absence of toxicity up 100 µM concentration; µM inhibition of the helicase unwinding activity.2

Thus, guided by the preliminary SAR, a new series of 2-PhQ derivatives was synthesised by maintaining the 6,7-dimethoxytetrahydroisoquinoline at the C-4 position to guarantee the helicase recognition, while extensively modifying the C-2 substituent.

As an alternative approach to hit nsp13 helicase, the best 2-PhQs were also handled into hydrophobically tagged degraders.

The design, synthesis and biological evaluation of the new set of compounds will be object of the presentation.

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FAR-PO-054. Development of bona-fide NOX inhibitors: a novel therapeutic strategy

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NADPH oxidases (NOXs) are enzymes responsible for only generating reactive oxygen species (ROS). The seven NOX isoforms share the same catalytic core; despite this, each isoform presents peculiar items (tissue distribution, activation mechanism, and specific activities).1 In cancers, dysregulation of NOX enzymes affects ROS production, leading to redox unbalance and tumor progression.2 Our project focused on the molecular simplification of M41, a promising lead compound discovered through two ultra-large in silico screens of 350 million compounds, carried out by our collaborators. As the cocrystal structure of M41 with the NOX5 DH domain from C. Stagnale shows high adaptability of M41 for binding, we investigated the contributions of its various chemical groups, obtaining a first series of simplified derivatives. The reduction of the complexity of spiroamine has allowed us to obtain MC4876 and MC4854, which show potency and selectivity on NOX2 and NOX5, respectively, (MC4876: IC50 hNOX1 = 71.2 µM; IC50 hNOX2=7.7 µM; Ki (NOX2) = 7.3 µM; IC50 hNOX4 = 81.2 µM; IC50 hNOX5 = 63.5 µM; MC4854: IC50 hNOX1>100; IC50 hNOX2>100; IC50 hNOX4>100; IC50 hNOX5=1.6 µM). Given the good results obtained in vitro, we decided to better study MC4876 in cellulo (EC50 NOX2 = 5.7 µM; CETSA hNOX2 = + 1.1 °C).3 Considering good results of MC4854 and MC4876, we designed and synthesized a second series of derivatives based on the two lead-compounds just mentioned. All the compounds synthesized have been tested against the full length of the various isoforms at Mattevi's laboratories at the University of Pavia. For some compounds, good isoform selectivity is maintained. Additionally, during the synthesis of the azetidine derivative MC4923 via Buchwald-Hartwig cross coupling reaction, we also obtained the bisquinoline derivative MC4921, that we decided to test. Surprisingly, this is, until now, our most potent compound (IC50 hNOX1>100, IC50 hNOX2 = 1.4 µM; IC50 hNOX4>100; IC50 hNOX5>100; Ki hNOX2 =2.1 µM; EC50 = hNOX2 = 0.77 µM; CETSA hNOX2: +6.0 °C).

ORG-PO-218. New bioorganic materials

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This study delves into Porous Silicon Nanoparticles (PSiNPs), with a specific focus on their potential surface passivation with bioorganic molecules for therapeutic applications. Porous Silicon (PSi) is a nanostructured material renowned for its optical properties and sponge-like morphology, characterized by a substantial surface area that renders it highly suitable for biomolecule decoration. The optical

properties of PSi stem from voids within its network, which can be controlled by adjusting various process parameters (crystalline silicon doping, attack time, electrolyte concentration, etc.), yielding diverse photonic structures (Fabry-Perot Bragg mirror, optical microcavity, aperiodic multilayer sequence, etc).

The primary challenge associated with employing PSi lies in its chemical instability when exposed to air or aqueous environments. In such conditions, the native Si-H bonds undergo replacement with Si-O-Si bonds, resulting in the formation of a surface oxide layer. This chemical transformation is thermodynamically driven and compromises the stability of PSi. To overcome this hurdle and ensure the stability of PSiNPs, a crucial passivation process for their surface is imperative. In this study, PSiNPs have been effectively passivated using carbohydrates to enhance their suitability for drug delivery applications.

TEF-PO-016. ZnAl layered double hydroxides as functional materials in wound healing treatment

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Skin chronic wounds are characterized by a disrupted healing process [1]. Therefore, 3D structures are used as scaffolds to stimulate skin reparation [2]. Layered double hydroxides (LDH) are anionic clay minerals which should contribute to boost the cellular processes thanks to their peculiar structure and chemical composition [3]. The aim of this work was the development of polymeric spray-dried microparticles doped with ZnAl LDH to enhance the skin tissue regeneration. The production method was designed in view of a continuous manufacturing process involving the LDH synthesis and the development of the microparticles.

LDH containing Zn2+ and Al3+ were synthesized via co-precipitation using ammonia as an alkaline agent. The LDH were then isolated and dispersed in water, without further washing. Alginate and chondroitin sulfate were added to the dispersion, which was then spray dried. The microparticles were then crosslinked using CaCl2. Physico-chemical characterizations, together with in vitro proliferation assays on normal human dermal fibroblasts (NHDF), were carried out. The efficacy of the systems was assessed through preclinical in vivo testing on a murine model.

Microparticles with a spheroidal shape and a mean diameter of 10-15 µm were produced. The crosslinking step with CaCl2 allowed to obtain water insoluble microparticles without changes in morphology. The presence of LDH in the microparticles was confirmed and corresponded to the theoretical value. The amount of Zn released from the microparticles was evaluated to assess its role in the regeneration process. Cell proliferation assays showed that the scaffolds improved cell growth up to 6 days and the presence of the LDH seemed to increase cell viability. In vivo testing confirmed the efficacy of the systems and proved the crucial support of LDH in the skin regeneration phases.

To conclude, microparticles made of alginate and chondroitin sulfate doped with synthetic LDH, based on Zn2+ and Al3+, were successfully manufactured. These scaffolds proved to support cell proliferation over 6 days and confirmed their efficacy on the skin regeneration process on a murine model.

Acknowledgments:

CN thanks PON 2014-2020 (REACT-EU FSE DM 1061/2021) and SAES Getters SpA for his PhD position.

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ANA-PO-015. A Multidimensional Approach on Preparative Scale for Oligonucleotides Purification

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Therapeutic oligonucleotides represent a recent breakthrough in the pharmaceutical industry since they are emerging due to their ability to regulate gene expression with great specificity 1.

They are short nucleic acid chains and, nowadays, the most established technology to produce them is solid phase synthesis. This technic is a cyclic approach where the progressive addition of nucleotides monomers results in a polymeric chain. However, this leads not only to the main target but also in many structurally similar impurities such as a deletion or addition nucleotide resulting in the so called shortmers (n-1) or longmers (n+1) impurities 2,3.

Therapeutic oligonucleotides require extensive chromatographic purification to ensure that a high-quality Active Pharmaceutical Ingredient (API) is manufactured, and to fulfill the strict purity requirements imposed by the regulatory agencies. In the biopharma industries the purification of oligonucleotides usually is carried out through single column preparative liquid chromatography, in particular the main technique used for this purpose are Anion Exchange Chromatography (AEX) and Ion Pair- Reversed Phase Chromatography (IP-RP) 3.

AEX takes advantage of the negative charge on phosphate linkage on the oligonucleotide, the elution is generally performed with a sodium salt gradient and at the end of the process the product is already in its sodium form. On the other hand, IP-RP purification ensures not only charged based residues but also discriminated neutral lipophilic impurities. However, because of the use of counterion, an additional salt-exchange step is required to yield the oligos in its sodium form 3. Nevertheless, single column purification techniques suffer from a purity-yield trade off, for this reason

the batches are run sequentially to overcome this problem. Therefore, this results in higher production and analysis costs since intermediate analysis steps are necessary between the different purifications 1,2,3.

In this work a multidimensional technique on a preparative scale, the Integrated Batch process, has been applied on a preparative scale for the purification of a single-stranded DNA oligonucleotide. This process can combine two chromatographic steps, where the eluted product from the first column can be diluted in-line and loaded directly in the second column to maximize the throughput of the purification process.

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ORG-PO-114. Synthesis of 2-oxazolidinones by oxidative carbonylation of β-amino alcohols catalyzed by Pd supported on silica-POSS-Imi

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The direct synthesis of 2-oxazolidinones by the oxidative carbonylation of β-amino alcohols [1] allows obtaining high value added molecules with several biological applications. 2 Oxazolidinones are known, in particular, to possess significant antibacterial [2]

and antitumor activities.[3]

We have now found that it is possible to perform this kind of transformation by supporting our PdI42– catalyst (already widely applied in the development of oxidative carbonylation processes under homogeneous catalysis conditions) [4] on a hybrid material based on imidazolium modified polyhedral oligomeric silsesquioxanes (POSS-Imi) grafted on amorphous silica (SiO2). The newly developed heterogeneous catalyst was proved effective with a wide range of β-amino alcohols 1 to give the 2-oxazolidinone derivatives 2 in fair to high isolated yields (63-86%) as shown in Scheme 1.

Scheme 1

The recyclability of the catalysts has been successfully verified for three consecutive runs.

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INO-PO-051. Exploring functionalized [Fe(EDTA)]- complexes and their supramolecular adducts

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All the FDA-approved contrast agents (CAs) are Gd(III)-based complexes (GBCAs) and they are used in 40% of the tens of millions of Magnetic Resonance Imaging scans performed each year. Recently, concerns regarding their economic, environmental and clinical impact have spurred interest in exploring alternative CAs, notably those utilizing endogenous ions like Fe(III). Initial studies suggest that Fe(III) chelates, administered at higher doses than GBCAs, exhibit comparable efficacy in typical clinical settings. However, understanding the mechanisms underlying water proton relaxation enhancement by Fe(III) complexes and their structural features is still an open challenge.1,2 In this study, we investigated Fe(III) complexes with derivatives of EDTA functionalized on the acetic arms with one (EDTA-BOM) or two (EDTA-BOM2) benzyloxymethyl groups. The objective is to explore the effects of ligand modification on the overall efficacy (relaxivity, r1) of these systems for contrast enhancement. In fact, an increase in the relaxivity of these probes is expected because of the elongation of the molecular tumbling, provided by the increasing molecular mass. Moreover, the lipophilic nature of the BOM substituents allows non-covalent interaction with different substrates (β-cyclodextrin, poly-β-cyclodextrin and human serum albumin), which can further increase their efficacy. For these reasons, we present the 1H and 17O NMR relaxometric characterization of these two novel complexes and their supramolecular adducts, for which we also investigated their thermodynamic stability, kinetic inertness and redox behaviour.

ANA-PO-040. Exploring tensor-based decomposition methods for hyperspectral image analysis: a comparative study with spectral unmixing techniques

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Tensor-based decomposition methods have long been established as robust methodologies in chemometrics, providing effective tools to analyse complex data structures1. In the context of hyperspectral images, where simultaneous exploration of spatial and spectral domains is crucial, Canonical Polyadic Decomposition (CPD) and Tucker decomposition2 are useful techniques. However, CPD's imposition of rank 1 on each factor can be overly restrictive, while Tucker decomposition offers greater flexibility but suffers from rotational ambiguity. An intermediate method, Block Term Decomposition (BTD)3, facilitate a compromise. By imposing rank = 1 on one factor and allowing rank ≠ 1 for the other two factors (LL1-BTD), it preserves the uniqueness property of CPD while accommodating more complex spatial structures related to a single spectral signature. Therefore, BTD is well-suited for analysing hyperspectral images where the spatial structures of various spectral components require distinct factorization. This includes scenarios such as the presence of minor components or components with similar spatial distributions but different spectral signatures, and vice versa. In this study, we explore the adoption of LL1-BTD for analysing benchmark hyperspectral imaging datasets of chemical mixtures, biological fluids, leaves, a mineral sample, and remote sensing images. These datasets were acquired using different spectroscopic techniques such as UV-Vis, NIR, Raman, LIBS. LL1-BTD performances are compared with CPD and spectral unmixing methods applied to unfolded hyperspectral data cubes. Results indicate that LL1-BTD shows promise for hyperspectral image analysis, offering insights into the efficacy of tensor-based decomposition methods for addressing the challenges posed by such data.

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ANA-PO-043. Study on Molecularly Imprinted Polymers obtained sonochemically for the determination of phytosterols from food matrices

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Phytosterols (PSs) are bioactive compounds structurally and functionally similar to cholesterol. They contain an extra methyl, ethyl group, or double bond, and most of their side chains contain 9-10 carbon atoms. PSs have been classified as 4-desmethyl sterols of the cholestan series, which all have double bonds at the C5 position of the B-ring1. These molecules are particularly known for widely range of properties including reduced intestinal cholesterol absorption and potential contributions to the prevention of cardiovascular diseases2. PSs are generally classified into three groups based on the number of methyl groups on carbon-4, two (4-dimethyl), one (4-monomethyl), or none (4-desmethyl). Moreover, 4-dimethyl esters and 4-monomethylsterols are metabolic intermediates in the biosynthetic pathway leading to the final product, 4-desmethyl phytosterols, but are usually present at low levels in most plant tissues. These compounds are present in plants, such as seeds, grains and legumes, both in free and conjugated form and they can be found in the form of fatty acyl esters, glycosides and fatty acyl glycosides. The selectivity issue in plant matrices is a challenging task, and classic approach such as solvent or solid phase extraction (SPE) are expensive and not always give the needed selectivity. In this scenario a low cost molecularly imprinted polymers (MIPs) approach for the selective of extraction these compounds was not fully explored. In this work, a fast chemical MIPs synthesis approach for selective extraction of PSs was performed, using cholesterol as a dummy template. The MIPs were used as an adsorbent phase for SPE and combined with a targeted approach using liquid chromatography coupled to tandem mass spectrometry (LC-MS/MS) with atmospheric pressure chemical ionization (APCI). The results showed high selectivity with significant extraction performances and low matrix effect, a principal goal in complex plant matrices. The proposed strategy can be consider as fast and effective method to produced MIPs as extraction tool for the determination of these target compounds.

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ANA-PO-153. Penetration depth in NIR and XRF spectral imaging: the INSIDE research project

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The two-year research project INSIDE, funded by the Italian Ministry of Universities and Research – MUR as a frame for the “PRIN 2022” call, involves three Italian universities: Genova, Bologna and Torino. The project is aimed at revolutionising the concept of hyperspectral imaging (HSI) in the near-infrared (NIR) and X-ray fluorescence (XRF) spectral domains, evolving from a surface analytical technique to an in-depth 3D spectral tomography. The impact of such a cutting-edge analytical solution will be exploited and validated in three main application fields: food analysis, cultural heritage, and forensic sciences.

After a systematic literature analysis of research studies published on this topic, for a comprehensive recognition of the state of the art, key factors affecting the penetration depth of NIR and X radiations, as well as their interactions, will be investigated by application of multivariate design of experiments (MDOE). Moreover, applying proper sampling design techniques will ensure the collection/preparation of samples capable of guaranteeing maximum representativity and the development of analytical strategies characterised by an effective capacity to address the predetermined targets. During these initial phases, ad hoc samples, with a well-defined stratigraphy, will be designed and built employing a multi-material 3D printer, using polymers with distinct spectral signatures.

Multivariate unmixing strategies – including multivariate curve resolution (MCR) and super-resolution algorithms – will be applied for efficiently gathering 3D chemical information from hyperspectral data.

Confirmatory analyses will be performed to validate the analytical protocols developed by using scanning electron microscopy (SEM), gas chromatography-mass spectrometry (GC-MS) and ultra-high performance liquid chromatography tandem mass spectrometry (UHPLC–MS/MS).

Suitable tools for 3D graphics will be implemented for the conversion of deconvoluted NIR and XRF hyperspectral information into 3D chemical maps, including the development of a stand-alone app with a user-friendly GUI, which will be distributed to the project stakeholders for testing, and will demonstrate the way forward for establishing new opportunities in research and industrial sectors.

Acknowledgement:

Financial support provided by the Italian Ministry of Universities and Research – MUR (Research Project PRIN 2022 n. 20223WBTH8, CUP: D53D23008950006) is gratefully acknowledged.

INO-PO-019. Innovative therapies for multiple sclerosis based on PEG-functionalized gold nanoparticles.

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Gold nanoparticles (AuNPs) find wide application in nanomedicine, from imaging to therapy1. Like all nanomaterials, they have at least a size between 1 and 100 nm, which leads to the phenomenon of plasmonic resonance bands: surface electrons can be collectively excited upon interaction with electromagnetic radiation of the appropriate wavelength, and the resulting absorption is known as Localised Surface Plasmon Resonance (LSPR)2. In this framework AuNPs were synthesised using polyethylene glycol (PEG-SH) as hydrophilic capping agent, to enhance the biological response3. The AuNPs-PEG have a small size (20 nm x 80 nm), showing LSPR in water at λmax = 530 nm: this increases the surface/volume ratio and the loading of drug used in the treatment of multiple sclerosis. Spectroscopic characterisations by UV–visible (Figure 1), FT-IR, X-ray photoelectron spectroscopies were carried out, verifying the gold surface functionalization. Moreover, Dynamic Lighth Scattering and Z potential studies confirmed the size and stability in water solution. These preliminary studies encourage the use of this system to increase the bioavailability of drugs, reducing their effective dose and therefore side effects.

ANA-PO-100. Non-invasive and early detection of Tomato spotted wilt virus infection in tomato plants using a hand-held Raman spectrometer and chemometrics

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Tomato spotted wilt virus (TSWV; species Tomato spotted wilt orthotospovirus; genus Orthotospovirus; family Tospoviridae) is a thrips-transmitted virus that induces outstanding economic losses in the agriculture, since infects more than 1000 different plant species from 90 botanical families, including ornamental, fruit, horticultural, and agronomic crops1,2. On tomato plants, it induces leaf bronzing, small brown flecks, dieback of growing tips, and ultimately death3. The leading management and containment strategies to fight TSWV infection consist in using resistant cultivars and spraying insecticides for thrips control. Early detection of plant pathogens is fundamental in a sustainable crop management context. The aim of this research is to disclose the presence of TSWV infection using a hand-held Raman device and Machine Learning (ML) approaches. For this purpose, four healthy plants and four TSWV-infected ones were analysed. Raman spectra were collected at 3 and 7 days post inoculation (dpi), acquiring six spectra per plant, obtaining a final data matrix of 96 spectra. Plants were scored for symptom development and the typical chlorotic spots appeared at 21 dpi. After a preliminary phase of spectra pre-processing using three different algorithms - asymmetrically reweighted penalised least squares (arPLS) smoothing, Savitsky-Golay filter, and Standard Normal Variate (SNV) transformation - a filter method based on Partial Least Squares Discriminant Analysis (PLS-DA) coefficients4 was applied, to remove the redundant or irrelevant variables. The resultant reduced dataset was finally used for exploratory purposes with Principal Component Analysis (PCA) and then to build the PLS-DA model5. Interpreting the classification metrics, resulting from ten different train-test splits, we observe that Raman spectroscopy coupled with ML techniques provided promising results for an early detection of TSWV infection on tomato plants within the first 7 dpi, with an average accuracy >90%. Early detection of TSWV infection when symptoms are visually undetectable represents an important advantage from a productivity point of view. Moreover, these results have been obtained with a hand-held Raman spectrometer, easy-to-carry for field measurements in real time and less expensive than a corresponding benchtop instrument.

INO-PO-029. Exploiting high throughput experimentation tools in iron-catalyzed ethylene/alfa olefin copolymerization

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Brookhart's and Gibson's independent discoveries that iron complexes with bis(imino)-pyridine ligands (BIP) are excellent catalysts for ethylene homopolymerization had a strong impact on the research in the field of coordination insertion polymerization.1-3 One of the main unsolved problems in this field deals with the introduction of polar functional groups into the otherwise apolar skeleton of polyolefins. Therefore, there is a remarkable interest in the development of efficient catalysts for the direct, controlled, copolymerization of ethylene with vinyl polar monomers and the use of iron as the metal for such catalysts represents a major, but ambitious, goal. High Throughput Experimentation (Fig. 1) investigation is a powerful tool to unravel suitable candidates for this reaction.

We have now revisited three examples of Brookhart's and Gibson's catalysts (Fig. 2) and applied them to the copolymerization of ethylene with 1-hexene, as a starting alfa-olefin, before addressing our attention to polar vinyl monomers. All precatalysts generated active species leading to ethylene/1-hexene copolymers with an incorporation of the alfa-olefin up to 3.0 mol%. A remarkable effect of BIP ligand and reaction conditions on catalyst performances were observed and will be presented in this contribution. As an example, complex with L2 generated the most active species with values up to 15.3 kg CP mmolcat-1h-1 at 50 °C in the production of the copolymer with an Mn value of 5.9 kDa. This catalyst resulted to be also active at 70 °C. All the copolymers obtained with the three catalysts have polydispersity values in the range 2.3-12.6, thus indicating the formation of multiple active species.

Acknowledgements:

Finanziato dall'Unione Europea – Next Generation EU

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FAR-PO-039. Exploiting the pyrazole scaffold for multipotent agents in Alzheimer disease

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Alzheimer disease (AD) represents a significant challenge in contemporary healthcare, and the urgency of finding effective treatments is underlined by the progressive increase in life expectancies and the resulting higher incidence of neurodegenerative diseases in aging population. Beyond the urgency of discovering a treatment for AD, there is the need to identify valid therapeutic targets that can combine the different pathological pathway of the disease.

GSK-3B is a serine/threonine kinase, ubiquitously expressed and widely found in central nervous system, where its dysregulation has been related to tau phosphorylation, AB deposition, reduced synaptic plasticity and inflammation. Since the primary function of kinases is to transfer a phosphate group from ATP to the substrate, targeting the ATP binding site proved to be a promising strategy to interfere with the activity of these enzymes. In this respect, designing drug candidates able to establish a network of hydrogen bonds with the hinge region is indeed a widely accepted strategy. The aminopyrazole can be considered a privileged scaffold, with a donor-acceptor-donor hydrogen bond pattern that could complementarily bind the hinge region of GSK-3B. Indeed, the acetamido derivative A emerged from a virtual screening as able to engage GSK-3B (IC50 = 39 μM). Starting from this molecule, new derivatives were designed and in a first series a further amido-terminal group was introduced and different linkers were selected to connect the two functions. Moreover, the N-methylbenzyl terminal moiety was functionalized with p-H, p-OCH3 and p-Cl. This series led to the hit compound 1c (IC50 = 2.2 μM). In a second series of derivatives the maleic linker, which gave the best results, was maintained and substituents with different electronic and steric properties were introduced on the terminal benzyl ring. The compounds were tested for their GSK-3B inhibitory activity and for their ability to counteract AB aggregation. Moreover, due to their peculiar structure, the best compounds were also tested for their potential chelating properties towards some biometals overloaded in AD conditions.

ORG-PO-219. Copper-Catalyzed Synthesis of Chiral γ-Amino Alcohols from Alkynyl Oxetanes

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The synthesis of compounds featuring quaternary stereocenters represents one of the most demanding tasks in organic synthesis due to the large steric repulsion present in congested carbon centers.1 Although ɣ -amino alcohol fragments are present in a multitude of pharmaceutical and intermediates for natural product synthesis (e.g. benzo[1,4]oxazepines and benzo[1,4]diazepines), enantioselective approaches for the preparation of such targets comprising quaternary stereocenters has remained largely unexplored.2,3

Here, we present a simple, scalable, and attractive method for the enantioselective synthesis of ɣ -amino alcohols having quaternary stereocenters. Enantioselective Cu-catalyzed ring-opening amination of oxetanes is demonstrated to provide access to these compounds in high yields. These functional propargylic compounds are illustrated to be suitable and versatile synthons for the preparation of a series of biological importance intermediates such as ß -unnatural amino acids.

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FAR-PO-010. Synthetic Optimization, Biological Activity and Early PK/PD Characterization of Dafachronic Acids, the Endogenous Ligands of DAF-12 Receptor

Paccoia, Federico[1]; Ceccarelli, Giada[1]; Ricci, Lucia[1]; Rovitti, Alessandro[1]; Di Bona, Stefano[2]; Goracci, Laura[2]; Passeri, Daniela[3]; Gioiello, Antimo[1]

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Dafachronic acids (DAs) are steroidal hormones derived from the catabolism of cholesterol. They exhibit a unique structure featuring a C3-keto group, a double bond at the C4- or C7-position, a C25-methyl group, and a C26-carboxylic tail (Figure 1). Several evidences have shown that these signalling molecules play a pivotal role in regulating the life cycle of both free living and parasitic nematodes through the modulation of the nuclear receptor DAF-12.1,2 Remarkably, in preclinical models of hyperinfection the activation of DAF-12 by DAs was able to suppress infection and to reduce lethality.3 The readily availability of DAs is therefore crucial not only to better define their therapeutic potential but also to enable medicinal chemistry investigations towards more effective modulators. In this communication, we report a novel, straightforward synthesis of DAs starting from the readily available and low-cost Ergosterol (Figure 1). The new synthetic route is superior to previously reported methods as it furnishes DAs in good yield and high purity, also at large scale. The synthesized ligands have been tested in terms of human receptor selectivity, physicochemical

and metabolic profile unveiling some hidden properties shared by the molecular shape of DAs that can be exploited in the design of novel and highly potent DAF-12 modulators for the treatment of parasitic disorders, such as Strongyloidiasis.4

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ORG-PO-115. Synthesis of organic sensitizers for H2 evolution in DS-PEC

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Visible-light-driven splitting of water into oxygen and hydrogen, often referred to as “artificial photosynthesis”, is an attractive way to convert solar energy into fuels. In this context, dye-sensitized photoelectrochemical cells (DS-PECs) have been deeply investigated as a promising technology to convert solar energy into renewable hydrogen fuel. A crucial strategy to increase the efficiency of DS-PEC is the optimization of the dye used in the sensitization of nanostructured TiO2 photoanodes, whose electrochemical properties must match those of the ruthenium complex used as water oxidation catalyst (WOC).1 We designed metal-free sensitizers having a D(donor)−π−A(acceptor) structure (Figure 1) according to the photoelectrochemical requirements for applicability in DS-PEC.Taking advantage of the modulation of HOMO energy through the insertion of different donor groups, we synthesized molecules 1a-b by means of a short sequence featuring a direct arylation reaction as the key step. In this communication, the optimization of the synthetic conditions and the characterization of the final compounds will be described.

FAR-PO-057. Structural and mechanistic studies of cycloheptathiophene-3-carboxyamide based compounds as potent and broad-spectrum anti-influenza agents.

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The availability of novel and broad-spectrum anti-influenza virus (IV) drugs is a crucial weapon in the fight against future pandemic outbreaks, especially since drug resistance is a major concern for the limited number of approved anti-IV drugs. A promising target for the discovery of next-generation antivirals is RNA-dependent RNA polymerase (RdRP), which is essential for viral replication and evolution. It is a heterotrimeric complex that is highly conserved across IV strains and consists of PA, PB1 and PB2 subunits. Therefore, interfering with the formation of protein-protein interactions (PPIs) involved by RdRP subunits during the IV life cycle offers an innovative approach to identify anti-IV agents that reduce the ability of IV to develop drug resistance.1 Starting from previously identified compound 1, in this work I reported the structural exploration of the cycloheptathiophene-3-carboxamide (cHTC) core as well as the moieties at the C-2 and C-3 positions.2-4 The investigation led to analogues capable of potent inhibition of IV replication in the nanomolar range against a panel of IV strains. (Figure 1) With the aim of clarifying the mechanism of action, in-depth studies were performed for the best compound 2, which showed the ability to prevent PA-PB1 heterodimerization by binding PAC. Finally, a more efficient and scalable chemical procedure was developed for the synthesis of these promising anti-IV agents.

INO-PO-063. TI3C2 MXene heterojunctions for enhanced photocatalytic properties in hydrogen photoproduction

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The hydrogen production can be performed in different ways: electrolysis, thermo-splitting, and photo-splitting. [1] The methods just mentioned use different types of energy to decompose water into hydrogen and oxygen, even though the efficiencies are really different. Indeed, the efficiencies of these systems are generally 70% when electricity is used, 40% when heat is used, and about 0,5% when light is the source of energy. With the idea of developing efficient green processes to produce hydrogen, among the quoted mechanisms photolysis results be a very interesting and feasible option since harvesting solar energy would directly produce H2. The efficiency of the technology is still very low, due to several factors that depend on the reaction itself and for the catalyst used.

In the recent past MXene (Ti3C2) [2] has been used as a cocatalyst in possible combination with other synthesized semiconductors for an enhanced photocatalytic heterojunction. This material shown a 2D structure and is also interesting the presence of many functional groups that can be tuned by changing the synthesis. It exhibits absorption in the visible spectrum, boasts conductivity comparable to metals, and maintains an ideal Fermi level for hydrogen production when interacting with water.

In this study, the synthesis of this compound was always executed starting using Ti3AlC2 as precursor, trying different etching processes. Different semiconductors were also synthesized paying particular attention to different factors such as energy gap, the position of valence and conduction band, and sustainability aspects. All the synthetize materials were then characterized with XRD, SEM and UV-Vis analyses.

In the end, the photocatalytic performances of the materials were tested for the production H2 by using different LED source (characterize by different wavelengths) to evaluate the performances.

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MAS-PO-009. Oral fluid as a new investigative matrix to determinate IGSR and OGSR exposure

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The increased use of ammunition without lead and heavy metals was observed, leading to a growing interest in the detection of organic gunshot residues (OGSR) as evidence of firearms related crimes; however metal determination helps us to determine the type of ammunition used.

The purpose of this work is the development of a reliable analytical method by means of ICP-MS for the determination in oral fluids (OF) of the most common metals used found in ammunition and gun cleaning oils.

For this purpose, acid extraction in microwave was used for the OF clean-up and metals extraction before ICP-MS analysis.

The method was tested on real samples: a shooting session was performed in an open shooting range; the shooters fired from 2 to 200 rounds with a 9x21 caliber, after which they were sampled. Samples were analyzed confirming that metals explosives may be detected in OF, the use of this matrix may be of great interest for investigative purposes as it is not affected by secondary transfer. and the sampling is fast, not invasive and can be performed by non-medical staff. The study demonstrates how the most commonly used metals both in the ammunition and in the primer are found in different concentrations depending on the type of cartridge used and the number of shoots. The study also showed that people in close contact with the shooters (example: shooting instructor) still inhaled a large amount of metals and allows us to assess the presence of the risk factors of the exposed subjects. The presented method allows the determination of very low traces of analytes, providing evidence of a direct contact with IGSR.

This represents an interesting starting point for the assessment of the potential exposure to IGSR or the use of firearms at a crime scene.

In this work also the persistence of IGSRs in OF was investigated. The preliminary results obtained during this trial are very promising, as a close correlation between the concentration of IGSR in saliva and the time elapsed between sampling and exposure was observed.

ALI-PO-015. Comparison of metabolic profile, anti-oxidant, and hypoglycaemic effects between fresh and fermented Voghiera black garlic (Allium sativum L.) extracts

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Diet is currently one of the most important exogenous factors in the prevention of chronic diseases. The increasing incidence of non-communicable diseases is driving the search for and use of functional foods that can actively contribute to the prevention of human disease [1].

Allium sativum L. is a plant known as a medicinal food since ancient times. To date, several beneficial properties have been demonstrated, such as anti-cancer, antibacterial, antiviral, anti-hypertensive, cardioprotective, hypolipidaemic and anti-diabetic effects, mainly associated with various organosulphur compounds [1,2]. However, the consumption of garlic is uncommon in Europe and America due to its pungent smell and taste, which is not very pleasant. To overcome this problem, it is common practice, especially in Asia, to ferment garlic at high humidity and temperature (around 70°C) for different days (30-40gg). Fermented black garlic becomes sweet and aromatic with a syrupy, gelatinous consistency. In addition, the fermentation process also seems to improve the beneficial properties, probably due to non-enzymatic browning reactions (phenol oxidation, Maillard reaction and degradation of organo-sulphur compounds) and enzymatic ones. Studies have shown that fermentation modifies the chemical composition of garlic, resulting in greater antioxidant power (mainly related to the formation of S-allylcysteine, Amadori products and melanoidins) and improved hypoglycaemic capacity [3].

In the present study, DOP garlic from Voghiera was fermented and several samples were taken throughout the process (30 days) to assess the changes in its chemical composition. For this purpose, the samples were extracted by hydroalcoholic sonication and, after purification, analysed by mass spectrometry. In addition, the antioxidant and hypoglycaemic properties were assessed using various spectrophotometric assays (ABTS, ORAC, DPPH, alpha-amylase and glucosidase), highlighting in particular an improvement in antioxidant capacity as the fermentation process progressed.

Finally, the chemical composition and bioactivities tested were correlated to identify the most bioactive classes of molecules.

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INO-PO-033. Ru(II), Rh(III) and Ir(III)- Arene Complexes containing Pyrazolone-Based Hydrazones Ligands as suitable catalysts for tandem Knoevenagel condensation reactions

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The formation of carbon–carbon bonds is a quest that has required a lot of research throughout the last 125 years of the history of chemistry. These new bonds are the key to producing a wide variety of products with high impact on every aspect of human life, and the Knoevenagel condensation

reaction is one of the most important methodologies for this purpose. All the Knoevenagel reactions are performed with nitrogen-based catalysts able to remove an acidic proton from the starting material.1 Recently, some studies have shown that in many catalytic processes the presence of Schiff bases within metal complexes is an important requirement because the -NH fragment plays an important role in involving atom-transfer intermediates. Herein, we exploited the presence of pyrazolone-based hydrazones as ligands in metal complexes where, in addition, there is a synergistic effect of the metal atom. Several Ru(II), Rh(III), and Ir(III) complexes containing hydrazone ligands were synthesized and characterized, and we explored their catalytic activity toward Knoevenagel condensation applied in tandem reactions. Interestingly, the different metal centre strongly influences the nature of the starting material consistently with their ability to catalyse either de-acetalization or oxidation reactions.

INO-PO-084. Synthesis and characterization of new curcumin and bisdemethoxycurcumin conjugates for novel bioactive Ru(II)-arene complexes

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Curcumin and bisdemethoxycurcumin, bioactive ingredients extracted from the rhizome of the plant Curcuma longa, have shown interesting medicinal properties such as anti-cancer activity. However, their clinical application is restricted by low bioavailability due to the low absorption and low water solubility, rapid metabolism, and clearance. In this respect, highly promising approaches dealing with the bioavailability issue involve the coordination of a metal center and structural modifications. Recently, some Ru(II) and Os(II) complexes incorporating palmitic bioconjugates of curcuminoids showed enhanced cytotoxic effects on both cis-platin sensitive and resistant ovarian carcinoma cell lines (AC2780 and AC2780cisR).1 Herein is reported the synthesis and characterization of new ester-conjugates of curcumin and bisdemethoxycurcumin to investigate if their Ru(II) related compounds could lead to improved efficacy. Ru(II) half-sandwich complexes, synthesized using appropriately modified bidentate curcuminoid ligands (Figure 1), have been studied as antitumor agents.

ELE-PO-031. Electric Response and Conductivity Mechanism of Solid State Hybrid Inorganic Organic Polymer Electrolytes for Sodium Secondary Batteries

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The widespread adoption of electric vehicles, smart grids, and portable electronics is foreseen to necessitate a substantial quantity of energy storage devices, surpassing the capabilities of Li-ion batteries alone. Consequently, there is an ongoing exploration for innovative electrochemical energy storage technologies [1]. Among these alternatives, sodium secondary batteries (NaBs) emerge as promising solutions due to the abundant and cost-effective nature of raw materials, the low sodium standard reduction potential, and the chemical similarities between sodium and lithium, facilitating their implementation. Currently, state-of-the-art electrolytes for reversible sodium deposition rely on flammable organic solvents, which are unstable when in contact with sodium metal.

Drawing inspiration from the groundbreaking work conducted by Di Noto and colleagues [2-4], this study introduces a family of hybrid inorganic-organic polymer electrolytes (HIOPEs) designed for advanced solid-state NaBs. The HIOPE is synthesized by reacting zirconium ethoxide with polyethylene glycol (PEG400) and sodium perchlorate, resulting in a 3D hybrid network. This network features interconnected inorganic zirconium metal nodes and organic PEO chains, ensuring structural flexibility. To further enhance flexibility and ion conductivity, the HIOPE is doped with the poly(ethylene glycol) dimethyl ether (PEGDME250) plasticizer, achieving a room temperature value exceeding 10-4 S cm-1. The proposed solid-state electrolytes undergo comprehensive analysis of thermal and structural properties, focusing on interactions within the HIOPE components. Additionally, the conduction mechanism is elucidated through broadband electrical spectroscopy studies in a wide range of temperatures and frequencies. This comprehensive exploration provides valuable insights into the utilization of non-traditional solid-state electrochemical functional components for NaB applications.

Acknowledgments:

The project “ACHILLES” (prot. BIRD219831) of the University of Padua. The projects TRUST (protocol 2017MCEEY4) and NEST - Network 4 Energy Sustainable of the Italian MUR.

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ANA-PO-079. Expanding CRISPR-Cas12a Biosensing Toolbox with Synthetic Antibody-DNA Conjugates

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CRISPR/Cas systems have been widely utilized for the development of biosensing platforms for precision molecular diagnostics1. Despite significant advances, current CRISPR platforms mainly focus on nucleic acid detection. To fully exploit the advantages of CRISPR-based diagnostics, current research efforts aim to develop CRISPR sensors capable of detecting a wide range of analytes in addition to nucleic acids2. In the present work, we integrated the CRISPR-Cas12a detection system with established analytical methods, such as immunoassays, to expand its diagnostic capabilities. Using an innovative approach involving DNA strands conjugated with Anti-IgG antibodies, we implemented two different immunosensing platforms to detect SARS-CoV-2 infection. Specifically, we developed an ELISA assay, CRISPR Enzyme-Linked Immunosorbent Assay (CRISPR-ELISA), and

an Immunomagnetic assay, called Cas12a-Linked Immunomagnetic Fluorimetric Assay (CLIF), for the detection of the virus-associated Spike protein. Both assays demonstrated high sensitivity (LOD 3 ng/mL and LOD 12 ng/mL respectively) and specificity for the Spike protein, even in the presence of protein interferers.

ORG-PO-220. Sustainable-by-design metallophthalocyanines: a multidisciplinary approach for sensing application

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In recent years, driven by the increasing environmental awareness, the development of alternative and greener strategies for the synthesis of organic molecules has experienced a growing interest in the scientific scene. In this sense, step economy stands as an important concept in the synthetic design and strategic implementation of chemical reactions from an environmental, economical and practical point of view [1]. In this contribution, a new one-pot procedure for the synthesis of substituted metallophthalocyanines is reported, assessing its environmental sustainability through green chemistry metrics.

Furthermore, the noteworthy photophysical properties of such prepared sustainable-by-design metallophthalocyanines can be used for sensing application. Through a multidisciplinary approach the electrospray deposition technique (ESD), used in previous works of my group to immobilize enzymes [2] onto suitable supports to fabricate biosensors, has been now explored to immobilize metallophthalocyanines.

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ORG-PO-116. Metabolomics of Antarctic soils: an NMR and MS-based pilot study

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In Antarctica, ice-free areas can be found along the coast, on mountain peaks, and in the McMurdo Dry Valleys, where microorganisms well-adapted to harsh conditions can survive and reproduce. Metabolic analysis can shed light on the survival mechanisms of Antarctic soil communities from both coastal sites, under different plant coverage stages, and inner sites where slow-growing or dormant microorganisms, low water availability, salt accumulation, and a limited number of primary producers make metabolomic pro-filing difficult. Here we report, for the first time, an efficient protocol for the extraction and the metabolic profiling of Antarctic soils based on the combination of NMR spectroscopy and mass spectrometry (MS)[1]. This approach was set up on samples harvested along different localities of Victoria Land, in Continental Antarctica, devoid of or covered by differently developed biological crusts. NMR allowed the identification of thirty metabolites (mainly sugars, amino acids and organic acids) and the quantification of just over twenty of them. UPLC-MS analysis identified more than twenty other metabolites, in particular flavonoids, medium and long chain fatty acids, benzoic acid derivatives, anthracenes, quinones. Our results highlighted the complementarity of the two analytical techniques. Moreover, we demonstrated that their combined use represents the "gold standard" for the quali/quantitative analysis of very little explored samples such as those collected from Antarctic soils.

Acknowledgements

The authors acknowledge the Italian National Programme for Antarctic Research for funding research activities in the framework of projects Whycrust (PNRA 2013/AZ1.19) and MicroBiomA-S (PNRA18_00015). Authors wish to thank the logistic personnel of the Mario Zucchelli Italian station for their support in the field activities during the XXXI and XXXVII Italian Antarctic expeditions.

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CSB-PO-030. Cell-Free and In Vivo Characterization of the Inhibitory Activity of Lavado Cocoa Flavanols on the Amyloid Protein Ataxin-3: Toward New Approaches against Spinocerebellar Ataxia Type 3

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Spinocerebellar ataxia type 3 (SCA3) is a neurodegenerative disorder characterized by ataxia and other neurological manifestations, with a poor prognosis and a lack of effective therapies. The amyloid aggregation of the ataxin-3 protein is a hallmark of SCA3 and one of the main biochemical events prompting its onset, making it a prominent target for the development of preventive and therapeutic interventions.

Here, we tested the efficacy of an aqueous Lavado cocoa extract and its polyphenolic components against ataxin-3 aggregation and neurotoxicity. The combination of biochemical assays and atomic force microscopy morphological analysis provided clear evidence of cocoa flavanols' ability to hinder ATX3 amyloid aggregation through direct physical interaction, as assessed by NMR spectroscopy. The chemical identity of the flavanols was investigated by NMR spectroscopy and ultraperformance liquid chromatography-high-resolution mass spectrometry. The use of the preclinical model Caenorhabditis elegans allowed us to demonstrate cocoa flavanols' ability to ameliorate ataxic phenotypes in vivo.1

To the best of our knowledge, Lavado cocoa is the first natural source whose extract can directly interfere with ATX3 aggregation, leading to the formation of off-pathway species.

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TEC-PO-046. New memory-shaped materials based on PBS and PPAz for ophthalmic suture.

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Memory-shaped polymeric sutures have recently emerged as a promising innovation in ophthalmic surgery. These sutures are designed to have shape memory, allowing them to revert back to their pre-programmed shape after being stretched or deformed. This unique property allows for improved wound closure and enhanced tissue healing in surgeries, like ophthalmic ones. The ability of memory-shaped polymeric sutures to provide controlled and precise tension during the healing process significantly contributes to better surgical outcomes. Additionally, the use of this kind of sutures eliminates the need for knot tying, reducing the risk of post-operative complications such as suture slippage1. Furthermore, the biocompatibility and biodegradability of these sutures make them suitable for use in ophthalmic field, where long-term tissue support is not required.

In detail, a shape memory material requires a rigid phase with a sufficiently high melting point that can maintain the permanent shape, together with a soft phase that can create the temporary shape. In the present study, poly(butylene succinate), PBS, was used as the hard segment, being characterized by high crystallinity, high elastic modulus, high melting temperature and proven biocompatibility2. The soft segment was made of poly(propylene azelate), PPAz, a flexible aliphatic polyester with a melting point near body temperature.

In this context, the synthesis of the two homopolymers was carried out by a two-stage melt polycondensation process. A physical blend and a block copolymer were obtained by dissolution in a common solvent and reactive blending (for 13 minutes), respectively, from a 50:50 weight ratio of the two homopolymers. Compression moulding was then used to process the materials into films. Chemical characterisation was carried out by Nuclear Magnetic Resonance (NMR) and Gel Permeation Chromatography (GPC), while the crystallinity was analysed by Wide Angle X-ray Scattering (WAXS). Thermal analyses including Differential Scanning Calorimetry (DSC) and Thermogravimetric Analysis (TGA) were also performed. The mechanical properties of the materials were also investigated and preliminary shape memory analyses were successfully carried out. Hydrolytic degradation and cell viability studies were also performed.

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FAR-PO-084. Exploring metallophore-antibiotic conjugates as a novel antimicrobial strategy that exploits Pseudomonas aeruginosa zinc dependence

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Pseudomonas aeruginosa (PA) is a ubiquitous Gram-negative bacterium. Pulmonary infections caused by PA represent a serious threat, especially to patients with cystic fibrosis (CF). This risk is further exacerbated by the increasing spread of bacterial strains that show antibiotic resistance. The ease with which PA can colonize the respiratory tract depends on its ability to proliferate even in environments where essential metals (such as Zn) are present in low concentration. In particular, zinc plays a fundamental role, as it is present in many bacterial proteins crucial for virulence. A peculiar tactic of PA to obtain zinc involves the secretion of pseudopaline (Fig. 1), that is a low molecular weight zinc chelating molecule, capable of binding zinc present in the external environment, extracting it also from proteins present in the host, and deliver it inside the bacterial cell. The mechanism by which the zinc pseudopaline complex is transported into the bacterial cell has not yet been completely defined.

The use of pseudopaline to chelate zinc represents a potential vulnerability of the pathogen, which can be exploited to allow antibiotics to enter the cell via the Trojan horse approach. The aim of this study is to synthesize simplified analogs of pseudopaline, to evaluate the minimal structural requirements needed to participate in the zinc transport process of PA. These simplified zincophore compounds, simpler to synthesize than pseudopaline, can be more easily conjugated to various antibiotics that are still in use and active against these PA (such as aztreonam or ampicillin), to facilitate their entry into the bacterial cell through a preferential pathway. The antibacterial activity of these conjugates is evaluated against different PA strains to confirm the involvement of the zinc recovery pathway and demonstrate the proof of concept of the Trojan horse approach.

ELE-PO-014. Electrochemical CO2 reduction inspired by the theory of emergence of life

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Since the discovery of the first Oceanic Hydrothermal Vent field in the 1970s, these geological formations have been proposed as possible cradles for the emergence of life on our planet. In the Archean era, Alkaline Hydrothermal Vents were generated by the reaction between alkali, metal, and hydrogen-rich fluid, originating from the oceanic crust, with a slightly acidic and CO2-rich ocean. Within this environment, a mineral barrier precipitated, composed of iron oxide and hydroxide, green rust, iron sulphide, along with Ni, Zn, Co, and Mn ions. The surface of this material, jointly with the structure of the vent itself, can efficiently promote the coupling of CO2 reduction reaction (to simple organic molecules) with hydrogen oxidation. [1]

On the other hand, material scientists and chemists worldwide are frenetically searching for an effective material capable of performing CO2RR at affordable prices. Could the minerals that performed carbon dioxide reduction 4.4 billion years ago be utilized in today's industry to address the environmental challenges of the new millennium? Here is the idea of "emergence of life inspired material" for CO2 conversion.

Recently, a new approach to the study of Hydrothermal Vents has emerged from electrochemistry. [2][3]

New electrodes based on mineral materials have been tested to determine their effective catalytic ability for CO2 reduction and product distribution. In our research, Mackinawite (Fe-S) and Violarite (Fe-Ni-S) were tested by performing electrolysis in a CO2 environment, revealing the production of formic acid, methanol, and carbon monoxide at -1.1 V vs SHE (HCOOH and MeOH had never been identified before on such materials [4]).

The geological system is modelled as a fuel cell where a continuous supply of carbon dioxide and hydrogen is provided. The electrode material is composed of the vent's minerals, with the anode and cathode short-circuited in a configuration that recall a corrosion process. The system, capable of coupling CO2RR and HOR (or other oxidation process), is ultimately powered by the pH difference between the two compartments (simulated inner vent fluids and oceanic waters). An electrochemical analogue of the vent has been created in an H-type cell to study the current and electrical potential trends during operation. The results are then compared using an Evans-type diagram.

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FAR-PO-004. Glyphosate Renewal in the EU: A MAATrica-Based Assessment of the Scientific Literature

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The widespread use of herbicides, including glyphosate, has raised concerns about potential health risks. Glyphosate, a primary herbicidal agent used globally, has been linked to various human health issues, prompting scrutiny from regulatory bodies. Despite its approval for use until 2033 in the European Union, questions persist regarding its safety [1]. This study utilizes the MAATrica assessment metric [2] to analyse the scientific validity and coherence of publicly available literature and studies utilized by the Glyphosate Renewal Group [3] and European Commission [4] to support glyphosate renewal efforts.

By analyzing accessible studies, we aim to provide insights into the reliability of scientific evidence surrounding glyphosate, contributing to informed decision-making in public health policy.

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CSB-PO-003. Differential Interactions between ATP and NGF / proNGF: Chance or Necessity?

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The prototype of the neurotrophin family, Nerve Growth Factor (NGF), is essential for the development and maintenance of neurons and is crucial in immune and endocrine systems and in the pain pathway. NGF precursor, proNGF, whose pro-peptide is an intrinsically unstructured domain (IUD), is endowed with different biological properties. The binding to TrkA, p75NTR and sortilin receptors activates the NGF/proNGF signaling pathways. Much is known about NGF in neuronal physiology. However few reports described essential endogenous ligands as modulators of NGF biology.

Recently, the binding of ATP to NGF was identified. To determine the molecular elements of this binding, we used integrative structural biology to unveil for the first time the binding cartography of ATP to NGF [1]. Isothermal Titration Calorimetry (ITC), 1H Saturation Transfer Difference NMR (1H STD-NMR), 2D 1H-15N HSQC, coupled to the determination of the 3D solution NMR structure of NGF and MD simulations, helped identifying the likely binding mode of ATP on NGF. ATP/NGF binding to the receptors was investigated through Surface Plasmon Resonance (SPR).

We also undertook a complementary biophysical study on the binding of ATP to proNGF. Our results reveal a different binding profile for mature and precursor proteins. A combination of Small Angle X-ray Scattering (SAXS), Hydrogen-Deuterium Exchange Mass Spectrometry (HDX-MS) and limited proteolysis showed that ATP binding induces a change in the conformation and/or dynamics of proNGF, predominantly in the IUD pro-peptide [2].

Combined, these results suggest a functional role for ATP in modulating the biological role of proNGF/NGF in health and disease states.

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IND-PO-036. Continuos Flow Production of g-Valerolactone from Methyl-levulinate promoted by MOF-derived Al2O3-ZrO2/C catalysts

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The growing demand for sustainable energy, fuels, materials, and chemicals production has led to the exploration of alternative biobased feedstocks that can be processed by modern biorefineries. Among these, levulinic acid and alkyl levulinates obtained from lignocellulosic biomass are particularly interesting, as they can be used to synthesize various value-added chemicals, including γ-valerolactone (GVL). GVL is a fully degradable, non-toxic green solvent, a precursor for valuable chemicals, and a potential fuel additive [1-3].

Currently, most published studies on the hydrogenation of levulinic acid and its esters utilize ZrO2-based catalysts under batch conditions with pressurized molecular hydrogen. However, these catalytic processes often lack selectivity and are challenging to scale up. In contrast, catalytic transfer hydrogenation (CTH) offers a more suitable and sustainable alternative to traditional hydrogenation methods, as it utilizes organic molecules like alcohols that act as hydrogen donors toward the carbonyl group in the presence of a catalyst containing both acid and base Lewis sites.

In this study, the catalytic conversion of methyl levulinate (ML) into γ-valerolactone (GVL) through catalytic transfer hydrogenation (CTH) [4] using 2-propanol as the hydrogen donor/solvent is presented under both batch and continuous flow conditions. A series of Al2O3-ZrO2/C catalysts with varying Al/Zr ratios were synthesized using Metal-Organic-Frameworks (MOFs) as sacrificial templates.

The reactions conducted under continuous flow conditions were significantly more efficient compared to those carried out under batch conditions, yielding excellent GVL yields. Furthermore, the activity results showed that the addition of Al2O3 improved the catalytic performance in terms of both ML conversion and selectivity towards γ-valerolactone (GVL) by increasing the content of both Lewis acid and base sites.

The achieved results represent significant progress in the selective production of GVL from methyl levulinate, as it combines the preparation of highly active non-noble metal catalysts with the use of a more sustainable catalytic process under continuous flow conditions.

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ORG-PO-120. Pioneering Low Environmental Impact Methodologies for Polymer Waste Transformation with Deep Eutectic Solvents

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In this communication, we present our findings on the DES-promoted depolymerization of PET and PU chains, enabling the recovery of monomers as new raw building blocks for use in the synthesis of other polymers or fine chemicals. This represents a crucial step towards a more sustainable approach to polymer waste management and resource utilization.

ORG-PO-127. Stereoselective Sustainable Synthesis of α,β-Unsaturated Esters via Horner-Wadsworth-Emmons reaction in Deep Eutectic Solvents

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The Horner-Wadsworth-Emmons (HWE) reaction is commonly employed for the synthesis of α,β-unsaturated esters. This work proposes an innovative, scalable, and environmentally friendly protocol for the synthesis of (E)-α,β-unsaturated esters via the HWE reaction. This method utilizes deep eutectic solvents, known for their non-toxic, biodegradable, and cost-effective properties, thereby eliminating the need for volatile organic compounds. HWE reactions conducted using choline chloride/urea as a solvent showed high yields (50-98%) and E/Z ratios up to 99% under moderate conditions at room temperature. Additionally, the protocol demonstrates significant stereoselectivity in the synthesis of (E)-α,β-unsaturated esters from aldehydes and ketones (hetero)aromatic containing halogens, electron-donating, and electron-withdrawing groups.

ANA-PO-026. Electrodeposition and Characterization of Nanostructured Metal on Silicon

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The electrodeposition of nanostructured materials on silicon substrates provides a means to combine the desirable properties of metals with the exceptional electronic properties of silicon, enabling the development of integrated circuits, electrodes in batteries, supercapacitors, fuel cells,

sensors, and photovoltaic cells1. This deposition technique was chosen because is an inexpensive, easily scalable, and quick synthesis route, is carried out at room temperature and atmospheric pressure, in aqueous solution, and with adjustable properties.

In this work, the possibility of obtaining electrodeposited nanoparticles, ultra-thin films, and Under Potential Deposition (UPD) on n-doped silicon was evaluated2. The first selection of metals to be electroplated was made through the evaluation of Density Functional Theory (DFT) calculations, considering the Schottky barrier, the metal-silicon, and the metal-metal formation energy. Voltammetric studies were then carried out using solutions containing Ni, Ru, Pd, Rh, Pt, Ag, Mn, and Co. Charge-controlled depositions were performed, and tests on electroless deposition were made. Ideal deposition conditions were sought for the most promising metals. The deposits thus obtained were characterized morphologically and compositionally using Secondary Electrons (SE), Backscattered Electrons (BSE) Scanning Electron Microscope (SEM) techniques, and extensively by analytical spectroscopy point of view, by the means of Energy Dispersive X-ray Spectroscopy Analysis (EDS) and X-ray Photoelectron Spectroscopy (XPS) technique. The focus of the study was the electrochemical deposition of rhodium on silicon which is surprisingly not much covered in the literature. For this reason, multi-step charge-controlled deposition studies were carried out, and the surface coverage, the average thickness, and the variation in deposited particle size distribution were then evaluated accordingly. The knowledge gained was used to obtain ultrathin silicon nanowires (NWs) by a wet etching process assisted by an electrochemically deposited metal thin film, a procedure not widely used in the literature at the state of the art. These results could create new opportunities for smaller-sized and better-performing sensors3.

The authors acknowledge the support offered by Fondazione CR Firenze, Fondazione per la Ricerca e l'Innovazione of the University of Florence and Confindustria Florence within the FABER4 project.

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FIS-PO-044. Metal-doped active carbon from agro-food waste for solid state hydrogen storage

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Amidst the increasing demand for green energy and the pressing necessity for decarbonization to counteract the detrimental effects of greenhouse gas emissions, hydrogen (H2) emerges as a promising, sustainable, and environmentally friendly renewable carrier and energy storage medium. However, unlocking its full potential necessitates the development of efficient and cost-effective storage systems. The utilization of porous materials such as Activated Carbons (ACs) for hydrogen adsorption represents an optimal solution for this issue. This kind of material can be easily prepared through a first step of pyrolysis of the biomass, obtaining the so-called biochar, followed by a thermochemical activation step to achieve a microporous structure.

These carbon-based materials boast numerous advantages, including low mass density and high storage capacity. Noteworthy results have been achieved by our research group using ACs derived from agri-food wastes, demonstrating hydrogen adsorption values of 4.2 wt% and 3.9 wt% at 77K and 6 bar on materials derived from melon peels and asparagus stems, respectively. However, the requirement to maintain extremely low temperatures poses a significant challenge, particularly for automotive applications.

Consequently, there is a growing interest in exploring Metal-Doped ACs. Exploiting the interactions between hydrogen and metallic nanoparticles (NPs) offers the potential to push the storage mechanism towards chemisorption, enabling higher operating temperatures, closer to ambient conditions. The spillover effect, in particular, is based on the dissociation of H2 molecule on metal NPs and the migration of H atoms in the material, enhancing storage performance. To deepen this behaviour, ACs can be decorated with metals using, for example, the impregnation method. This technique, commonly employed in catalyst preparation [1], consists in stirring the solution of the metal precursor (e.g. nitrates of transition metals) with the carbon material, followed by chemical reduction or thermal treatment, in order to obtain zero-valent metal NPs dispersed in the carbon matrix [2]. The effect of different metals and experimental conditions is deeply investigated.

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ORG-PO-117. Solid supported Cu(I): an efficient catalyst for additive free C-H amination of benzoxazole

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Among nitrogenous heterocyclic compounds 2-aminoazoles, especially 2-aminobenzoxazoles, possess high relevance due to their biological and pharmaceutical activities.

Selective C-N bond formation of benzoxazoles is usually performed by reactions as Buchwald Hartwig or Ullmann and Goldberg couplings but still some disadvantages are needed to be solved for better agreement with green chemistry criteria. Thus, developing greener and simpler methodologies, the direct amination of aromatic C–H bonds is regarded as a more powerful alternative.

Many transition metals had been exploited as catalysts, however Copper use has risen thanks to its low cost, high functional group tolerance, high environmental abundance and safety, and low overall toxicity.

Successfully examples of benzoxazole selective C-H amination are reported in literature, however they usually show limits such as the use of stoichiometric amount of an acid or base as a promoter, non-greener peroxide oxidants or solvents, pre-functionalised amino-reactants as well as high temperature.

The aim of the present work is the optimization of a simple, efficient and green direct C-H amination which avoids the use of any acidic, basic or oxidant additive. The reaction was proved to take advantage from microwave irradiation and excellent results were achieved in presence of a silica

supported Cu(I) catalyst. The catalyst allowed a convenient isolation of the final product, and a simple procedure for catalyst regeneration was exploited to reuse the catalyst up to eight times without losing catalytic activity.

ORG-PO-118. Tandem photo-enzymatic catalysis with imine reductase enzymes (IREDs) in the stereocontrolled synthesis of cyclic amines

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The growing interest in the synergistic use of photocatalysis and biocatalysis, merging the reactivity provided by photocatalysts with the selectivity of enzymes, highlights the potential of photobiocatalysis for achieving novel syntheses of valuable chemicals,1 for example α-stereogenic amines. Indeed, they are ubiquitous among natural products and active pharmaceutical ingredients (APIs) and are crucial in organic synthesis as chiral auxiliaries and resolving agents. Recently, their preparation via the Dynamic Kinetic Resolution (DKR) of linear and cyclic amines has been improved by the combination of the enzymatic activity of monoamine oxidases (MAOs),2 and lipases,3 with different photocatalysts. In this context, our interest in the preparation of cyclic chiral amines has recently brought our attention to imine reductases (IREDs),4 an emergent class of nicotinamide-dependent enzymes, discovered in 2010 by Mitsukura and co-workers,5 catalysing the asymmetric reduction of imines. Their use in photobiocatalysis is still unprecedented but given the well-established reactivity of imidoyl,6 and iminyl radicals,7 it could provide an original route to N-heterocycles.

Here we report the first application of imine reductases (IREDs) in photobiocatalysis in the stereocontrolled synthesis of 2,5-disubstituted pyrrolidines. The presented methodology leverages the photochemical generation of a nitrogen-centred radical which triggers an intramolecular hydroamination of a non-activated alkene. The cyclization is telescoped with the enzymatic reduction of the in situ formed imine, providing the final saturated heterocycle.

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TEO-PO-036. Insights into the rate limiting step of the natural water oxidation reaction from all-atom molecular dynamics simulations of Photosystem II

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In nature the manganese cluster (Mn4Ca) located inside the enzyme Photosystem II (PSII) catalyses the water oxidation reaction, which represents a key step of the whole photosynthetic process. The complex reaction takes place along the five steps (S0-S4) of the Kok-Joliot cycle. The slowest step in oxygen evolution has been recently identified after the S3 state by a combined experimental and computational study, highlighting a significant entropic slowdown. [1] Classical molecular dynamics (MD) simulations allow to get insights on the H-bond network sampled by the solvent molecules around the Mn4Ca cluster on timescales inaccessible to quantum chemical calculations, thus representing a suitable tool for investigating at molecular level on the origin of this entropic slowdown. Here, starting from the experimentally determined structure of PSII in Thermosynechococcus vestitus BP-1, [2] we simulated the wild-type (WT) form of PSII in the oxidized S3 state, embedded in a lipid bilayer, and the respective D1-N298A variant. Firstly, by following a recent approach, [3] we developed a new classical force field derived by Ab Initio Molecular Dynamics simulations [4] of the manganese cluster in the oxidized S3 state. Thereafter, by means of classical all-atoms MD simulations, we started working on the origin of the entropic contribution associated with the bottleneck of photosynthetic oxygen evolution. Our MD simulations reveal pronounced fluctuations regarding the H-bonded protein-water network in the surrounding of the Mn4Ca cluster. Starting from the simulated trajectories, we carried out several analyses to sample the water molecules distribution and take into account their intrinsic mobility in the oxygen evolving complex (OEC) over the simulation time. Our results show an increased mobility of the closest water molecules to the Mn4Ca and a concomitantly more flexible protein environment upon N298A mutation, thus resulting in a weaker H-bond network in the OEC when compared to the WT form. These results could explain both the experimentally found increased entropic and decreased enthalpic contributions to the activation free energy of the S3 to S4 transition in the mutated PSII.

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ORG-PO-119. Radical fluoroalkylation and multicomponent radical polar crossover reaction under continuous flow conditions

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The presence of fluorine atoms in a wide range of pharmaceuticals is well-established, with over 20% of drugs on the market containing at least one fluorine atom. Consequently, the synthesis of complex chemical structures that incorporate fluorine atoms has become a highly sought-after area of research in organic chemistry. The advent of photo(redox)catalysis has enabled the development of new and innovative synthetic methodologies that were previously impossible using traditional ground state pathways. This approach has proven particularly useful in the synthesis of fluorinated compounds. While several strategies have been proposed for generating fluoroalkyl radicals using photocatalytic mechanisms, little research has been conducted on the reactivity of monofluoroalkyl radicals. In this study, we present a novel photocatalytic monofluoroalkylation strategy that employs a decarboxylation of α-fluoro carboxylic acids in a Giese reaction and in a subsequent multicomponent radical polar crossover reaction for the one-pot synthesis of highly complex chemical structures performed effectively under continuous flow conditions.

FIS-PO-050. On the evolution of stability and quality of bake-on PDMS coatings upon extended thermal treatment

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Siliconization of glass primary packaging containers is increasingly adopted in order to reduce drug-glass interactions in primary packaging. Bake-on siliconization is used when a robust and well-adhered PDMS layer is required1. In this process, a PDMS emulsion is sprayed in the containers, which are then heat-treated in order to obtain a thin densified coat. Before use, the containers are washed and depyrogenized before filling. In this study, we explore the stability and the quality of siliconization layers upon these further treatments. Stability and quality of the PDMS layer upon further extended thermal treatments have become recently of particular concern due to the evolution of filling technologies. In fact, we observe a trend in filling machinery manufacturers towards higher capacity and speed of all phases of the process (washing-depyrogenation-filling). Because of the different specific speeds of the different phases, the depyrogenation oven is often used as a buffer for matching the speeds of the upstream and downstream phases. This imply a variable duration of depyrogenation, whose duration is increased when the downstream phases do not accept new vials. In this study, standard siliconized vials were subjected to a heat treatment in a muffle at 300°C in of air at different exposure times ranging from 2 to 96 hours. The vials thus obtained were analyzed by optical, SEM and AFM microscopy, contact angle with water. The same samples were also exposed to a selection of drug simulants including surfactants, complexing agents and proteins, and the quality of the PDMS after exposure was characterized with the same techniques. The data obtained from different analyses show that the bake-on PDMS layer remains stable upon extended heat treatments with minor changes in morphology and hydrophobicity.

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ORG-PO-221. The important role of GPC/SEC system in molecular structure identification of polymers and characterization of their functionality

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Gel permeation chromatography (GPC/SEC) is the most widely used technique for determining the molecular weight distribution of polymers. It is employed not only for their characterization but also for the separation of the polymer matrix from oligomers, additives, degradation products, and residual monomer. The chemical structure of both synthetic and natural polymers (polysaccharides, proteins) can be investigated by GPC/SEC using organic or aqueous solvents.1 Furthermore, multi-detector options (multiple detection with viscometry, concentration and static light scattering detectors) allow accurate molecular weight values and to study structural properties, such as the number of branches on the polymer backbone. We employed this technique to control the polymerization reaction of polyester and polyurethane.2 We performed, in particular, an optimization of reaction conditions taking into account the molecular weight and the percentage of monomer conversion. The formation of linear polymer with a very low percentage of ramification was observed.3 The molecular structure of natural and synthetic polymers was also studied to verify the goodness of recycling process and functionalization.

TEC-PO-035. Cellulose-based sorbent materials for water decontamination from pesticides: the case study of Atrazine as a representative model compound

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Atrazine is a synthetic herbicide, one of the most studied compounds in the scientific literature [1] to validate the adsorption efficiency of sorbent materials. Furthermore, its chemical structure allows synthetic modifications with the introduction of functional groups able to change its chemical-physical properties.

In this work, we considered atrazine as potential model compound to predict the behaviour of a wider family of pesticides and their interaction with sorbent materials. In a first step, we conducted a cluster analysis which allowed to group pesticides onto consideration of three chemical-physical parameters. This analysis confirmed that Atrazine could be considered an ideal model compound for a high number of pesticides. Moreover, we also carried out a meta-analysis on the adopted operating conditions for pesticide (ad)sorption lab tests, aimed to understand if Atrazine could also predict the (ad)sorption behaviour of other similar compounds. Results confirmed that Atrazine could be considered a reliable model compound for describing (ad)sorption on the same class of sorbents, emphasizing the importance of solute-sorbent interactions.

Based on these outputs, we used Atrazine to better investigate the (ad)sorbing properties and its chemical-physical interaction with new classes of cellulose-based nanostructured materials[2] and a cellulose-based commercial product. To do that, Atrazine was also chemically modified by introducing lipophilic and hydrophilic functional groups on its triazine core.

This comprehensive study allowed us to better understand the mechanisms of interaction between Atrazine and the designed cellulose-based materials, also suggesting a way to improve the sorbent for a more efficient removal of pesticides well represented by the model herbicide.

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FAR-PO-103. From iloperidone to new sigma-1 receptor agonists: a structure-based approach

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Huntington's disease (HD) is a hereditary condition caused by a mutation in the HTT gene, resulting in the progressive degeneration and death of neurons in certain areas of the brain. Unfortunately, there are currently no effective treatments capable of halting or preventing the onset of this debilitating disease. However, an increasing number of research suggests that the sigma-1 receptor (σ1R) may play a role in the management of various neurodegenerative disorders, including HD. The σ1R is a relatively small and poorly understood membrane receptor found in the central nervous system. Its three-dimensional structure has recently been elucidated through X-ray crystallography, and it responds to various synthetic ligands, such as (+)-pentazocine (an agonist) and haloperidol (an antagonist). Studies have shown that agonists possess neuroprotective properties against neurodegenerative diseases. Nevertheless, the structural mechanisms underlying agonism or antagonism at the σ1R are not fully understood. Generally, the overall conformation of the receptor when bound to an agonist is similar to that when bound to an antagonist, except for a shift in the α4 helix by approximately 1.8Å. This shift likely contributes to the agonists' ability to decrease the oligomeric state of the protein and may serves as a discriminative factor for agonist classification. Through structure-based computational methods, we designed new Iloperidone analogues as potential σ1R agonists. Indeed, very recently, a high binding affinity for σ1R of the antipsychotic Iloperidone has been demonstrated. From our computational studies, including cross-docking procedures and molecular dynamics simulations, the pharmacophoric groups have emerged. In detail, the most stable interactions are established by the nitrogen atom of the piperidine ring of Iloperidone, which is positively charged at physiological pH. Starting to these data, the chemical structure of this antipsychotic drug has been modified applying a scaffold hopping approach, to obtain a pronounced and selective agonist of the σ1R. We synthesized new small molecules that retained the piperidine core and replacing the benzoisoxazole ring (responsible for a generic π-π interaction) with oximes. Additionally, we have functionalized the oxygen atom of the oxime group to enhance steric hindrance between the α5 and α4 helices, with shifts in the latter. Biological assay data will be presented and discussed.

INO-PO-081. Reaction with water vapor defines surface reconstruction and toxic activity of fractured quartz particles

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Respirable crystalline silica (RCS) remains the leading cause of occupational respiratory disease worldwide and continues to prompt extensive research into its mechanisms of toxicity. Surface characteristics of silica, notably the occurrence of specific silanol groups, the "nearly-free silanols" (NFS), have emerged as pivotal factors in triggering the molecular initiating event of silica toxic pathways1. NFS are formed during fracturing of crystalline silica and exhibit a unique arrangement that facilitates the interaction with zwitterionic phospholipids in cell membranes, resulting in their disruption. The amount of NFS can be modified through physico-chemical processes that lead to different surface reconstruction pathways, that in turn modulate the degree of toxicity observed with different silica specimens2.

To clarify the impact of the silica surface reconstruction on cell membrane damage, quartz was milled in different molecular environments that combined the absence and presence of molecular water vapor and oxygen. Water- and oxygen-free environment (–H2O/–O2) mainly generated silyl surface radicals (E’ centers). Oxygen-rich environment (–H2O/+O2) favored the peroxyl and surface-bound superoxide radicals, with respect to E’ centers. Water-rich environments (+H2O/±O2), on the contrary, reduced the number of electronic defects, and converted them in diamagnetic species, likely surface silanols. Only quartz milled in water-free environments (–H2O/±O2) exhibited highly reactive surface that immediately interacted with water vapor and acquired a membranolytic activity. On the contrary, quartz milled in water-rich environments (+H2O/±O2) showed a negligible membranolytic activity. Mechanistically, E’ centers, that largely dominate the surface of quartz milled in water-free environment, seems to be responsible for the generation of the membranolytic silanol species, after reaction with water vapor3.

The identification of specific silanol configurations that can interact with phospholipid and induce membrane damage may pave the way for a comprehensive toxicity model extended to particles of several metal oxides and minerals with hydroxylated surfaces.

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INO-PO-046. Self-assembled complex promotes cell proliferation and stem cell self-renewal through redox signaling in in vivo model

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Transition metal complexes have attracted much attention because of their rich and peculiar chemical and spectroscopic properties that have found applications in different fields and even as therapeutics.1 In this field, Pt(II) complexes have been extensively studied. However, even though the emission of platinum complexes has been extensively investigated, the use as luminescent probes, for cellular imaging, has been still poorly investigated. This application requires water solubility of the complexes, and it is limited by the quenching exerted by dioxygen in water and biological fluids because of the long lived luminescent excited state. This severe drawback could however be overcome by exploiting the high tendency of such square planar compounds to self-assembly in supramolecular structures. In this regard, our research group has already demonstrated the aggregation induced emission for Pt(II) complexes2,3 in different media. In this contribution we describe the synthesis and characterization of luminescent amphiphilic platinum compound, soluble in water, based on a N^N^N pyridil-triazolate functionalized with an ancillary ligand and its behaviour in vivo. An invertebrate freshwater polyp, Hydra vulgaris, was treated with the bright orange phosphorescent complexes at only 20 μM concentration.

The compounds self-assembly in vivo and in particular accumulate in the tentacles of the animal. Interestingly, preliminary results suggest not only the use of these compounds for bioimaging and cell tracking but also as enhancer of cell proliferation. Studies are in progress to rationalize such important results.

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ANA-PO-098. Dissipative Hybridization Chain Reaction for Responsive DNA Nanomaterials

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Supramolecular assemblies in biological systems exhibit a dynamic behaviour that is crucial to achieving environmental responsiveness. The possibility to develop chemically fuelled synthetic materials able to mimic such dynamic aspects of biological systems can lead to adaptable materials with unprecedented properties. Dissipative DNA nanotechnology, exploiting DNA programmability and the use of nucleic acids as chemical fuels to drive non-equilibrium processes, has recently emerged as a potential strategy to achieve adaptable and responsive biomaterials. Motivated by this, we propose here a novel approach to introduce a dissipative control over the Hybridization Chain Reaction (HCR). This is a DNA assembly technique based on the polymerization of two metastable DNA hairpins. Implementing a "tailed HCR" strategy, we introduce a dissipative behaviour via enzyme-mediated fuel consumption. Specifically, we have re-designed an RNA fuel that activates a strand displacement process followed by the disassembly of the DNA polymer. The presence of RNase H, an enzyme able to specifically recognize the RNA/DNA heteroduplex, can induce the degradation of this heteroduplex and the consequent rebuilding of the DNA nanostructure, thus driving a cyclic dissipative reaction. This approach enables programmable assembly/disassembly of DNA nanostructures, suggesting the potential of dissipative DNA nanotechnology in creating time-controlled responsive biomaterials. Exploiting dissipative strategies, we equip DNA polymers with new properties that can have important analytical applications, including concentration-dependent adaptability and reversible multicomponent analysis.

ANA-PO-022. Multiway data fusion approach for the determination of synthetic caramel in Balsamic Vinegar of Modena

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Synthetic caramel is one of the most widely used colourants in the food industry. The use of caramel in Balsamic Vinegar of Modena PGI is regulated by the protocol of the Consortium of Balsamic Vinegar of Modena1. However, recent years have witnessed an alarming increase in food fraud, with synthetic caramel being a significant contributor to adulteration in Balsamic Vinegar of Modena. The challenge has therefore arisen to develop an analytical approach capable of determining synthetic caramel in balsamic vinegar. An approach based on two analytical techniques was thus investigated: fluorescence spectroscopy and solid-phase headspace microextraction coupled with gas chromatography-mass spectrometry (SPME-GC-MS). With both techniques, not only vinegar samples were analysed, but also the raw materials from which balsamic vinegar is produced (wine vinegar, cooked must and concentrated must) to study their effect on the instrumental response. Both techniques result in three-dimensional datasets (i.e. samples x emission wavelengths x excitation wavelengths for fluorescence spectroscopy; samples x retention time x mass spectra for GC-MS) that require the application of appropriate data analysis techniques. In the case of fluorescence, PARAFAC2 was applied to resolve and quantify fluorophores related to the presence of caramel. For the GC-MS analysis, PARADISe software3 was used for the resolution, integration and identification of analytes characterising the aroma of vinegar samples. A model was then built to determine the presence of synthetic caramel in balsamic vinegar samples from Modena.

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ANA-PO-083. DoE and Chemometric Analysis for the Safe and Sustainable-by-Design Synthesis of the 2D-Materials

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The synthesis of 2D materials with controlled morphology is having an increasingly prominent role in materials science, because the variation of the synthesis parameters allows optimizing the functional properties of the materials themselves. Not all the synthesis parameters can be modified as desired and the influence that each parameter has on the final characteristics of the product is different.[2] At the beginning, a proper definition of the chemical, structural and morphological characteristics that can drive the functional properties at nanoscale and molecular level can be scouted by an extensive literature search. In order to recognize the most significant parameters, a Design of Experiment (DoE) screening approach can be applied to the selected parameters to explain experimental variability. Starting from the synthesis conditions for the specific materials obtained through the screening DoE, series of morphology controlled 2D-materials can be synthetized and characterized with different analytical methods.[3] Finally, materials' characteristics can be collected and evaluated using Principal Component Analysis (PCA) and data fusion approaches. These chemometric techniques should allow us to establish the relationship between the synthesis parameters and the materials' characteristics. These relationships can be exploited to develop a DoE optimization model for the Safe and Sustainable-by-Design (SSbD) synthesis of specific 2D-materials.

ABC-PO-021. Enhancing permanence of corrosion inhibitors inside acrylic protective coatings for outdoor bronze statues using green nanocontainers

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Outdoor bronze statues face daily exposure to weathering and reactive compounds present in the atmosphere which can interact with the surfaces of the artworks. To avoid these phenomena, one of the most exploited methods is the application of coatings including corrosion inhibitors. However, the most employed acrylic coating, Incralac®, contains benzotriazole (BTA) which is toxic and considered a suspected carcinogen.1 The development of safe and reliable long-term methods and strategies for the conservation of these artworks is nowadays a mandatory prerequisite, since the currently exploited hazardous materials need to be replaced.2 The idea behind this work arose from the attempt to improve the poor permanence over time of two corrosion inhibitors chosen to formulate new acrylic coatings for outdoor bronzes.3 Cyclodextrins were selected to host corrosion inhibitors, due to their capability of giving rise to complexes embedding small organic molecules. Cyclodextrins are water-soluble macrocyclic oligosaccharides, made of at least six α-D-glucopyranose units linked via α-(1–4)-glycosidic bonds. CDs are among the most widely used host molecules thanks to their unique structure that creates an internal cavity less hydrophilic than the external aqueous environment and therefore able to accommodate a large variety of hydrophobic molecules inside it.4

In this work, Methyl β-Cyclodextrins (Me-β-CD) were investigated as nanocontainer of 5-ethyl-1,3,4-thiadiazol-2-amine (AEDTA) for enhancing its permanence inside acrylic coatings. First, the compatibility of the nanocarriers inside the acrylic systems was assessed. Then complexes of Methyl β-Cyclodextrin and AEDTA were prepared and the formation of the inclusion complex was proved by FTIR and XRD. Three types of acrylic coatings were prepared at different concentration of Me-β-CD/AEDTA system. The coatings were applied on both inert supports and bronze polished mock ups. The so-prepared samples were aged inside an oven at 80 °C and monitored every 24 hours by Fourier Transformed Infrared Spectroscopy, either in transmission or in reflection mode according to the support. During the first 72 hours, SPME-GC/MS and py-GC/MS analyses were also performed to assess the volatilization of the corrosion inhibitor. The obtained results were compared with the corresponding data for pure AEDTA films and Incralac®. The outcomes from the experiments are encouraging, highlighting that Me-β-CD/AEDTA complexes might be considered as serious candidates for the formulation of novel coatings, exhibiting increased stability and longer retention of AEDTA over time.

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ORG-PO-223. Electrocatalytic Cobalt Catalyzed CO2 Reduction: Mechanistic Investigation via the Parasite Hydrogen Evolution Reaction

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The mechanistic investigation of homogeneous electrocatalytic CO2 reduction is crucial for the development of new and increasingly high-performance catalysts.[1] Tris(2-pyridylmethyl)amine TPMA cobalt complexes have been reported as promising species able to catalyzes the CO2 reduction.[2] Despite several mechanism have been proposed, an overall understanding is still missing and the selectivity of CO2RR vs HER still remains an opened issue.

Here we report a novel strategy to investigate the reaction mechanism based on the evolution of CO2RR vs HER selectivity during the controlled-potential electrolysis experiments.

A decrease in the production of CO vs H2 was found during the CPE experiments suggesting the intermediate formed during the electrolysis shift the selectivity towards H2 production. Through a deep computational study, it was found that the stable Co(I)-CO intermediate formed during the electrolysis is the key intermediate responsible for this experimental trend. Moreover, the presence of the intermediate was experimentally confirmed though in-situ IR-SEC experiments.

TEF-PO-015. Development of a nasal spray based on cyclodextrin/hydrophobically-modified hydroxypropyl-methyl cellulose association for the prevention of viral infectious diseases

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The present work aims to develop a thermo-gelling and mucoadhesive system intended to be administered as nasal spray for the prevention of viral infectious diseases. The addition of cyclodextrins (CDs), hydroxypropyl-β-CD (HPβ-CD; Sigma-Aldrich, I) and randomly methylated-β-CD (rβ-CD; CycloLab, HU), to hydrophobically-modified hydroxypropyl-methyl cellulose (Sangelose (SG)) aqueous solutions is proposed to obtain thermo-gelling systems. At room temperature, SG/CDs aqueous solutions are characterized by a low viscosity due to SG/CDs complexation. As the temperature increases to physiological values, SG/CDs complex dissociates: SG hydrophobic chains interact with each other, causing the system sol-gel transition1.

SG/CD solutions, based on 0.5% w/w SG and different HPβ-CD or rβ-CD concentrations (0.1-0.5% w/v and 0.025-0.2% w/v respectively), were characterized in terms of rheological behavior; viscosity and viscoelastic measurements were performed at room (25°C) and body temperature (37°C) and gelation temperature (Tgel) and time (tgel) were determined. The mucoadhesive properties were tested by means of a Texture Analyzer using 8% w/v mucin suspension in simulated nasal fluid as biological substrate. Sprayability and spreadability were investigated for the most promising thermo-gelling and mucoadhesive systems. The spray coverage area using a conventional nasal device, tension surface and contact angle on gelatin/mucins substrates were investigated. Spray deposition in a nasal cast model will be also studied. SG/CD systems stability was evaluated in terms of viscosity at room temperature. Finally, in vitro experiments will be performed to assess system cytocompatibility on different cell lines (HeLa, MRC-5, A549, or HEp-2 cells).

The addition of both HPβ-CD and rβ-CD to SG solution was responsible for a sol-gel transition within a physiological temperature range (29-34°C) in about 1 minute. SG/CD systems were characterized by a prevalence of the elastic properties on the viscous ones at 37°C; this behavior is functional to the formation of a protective gel barrier on the mucosa. SG/CD systems were characterized by optimal mucoadhesive properties. The most promising formulations showed sprayability and spreadability suitable for nasal administration. In vitro test demonstrated that the systems do not alter the viability of any of the cell lines used.

The thermo-gelling and mucoadhesive systems obtained are proved to be easily sprayed through an appropriate device into the nasal cavity and to form a gel at physiological conditions that should act as a physical barrier to the entry of pathogens into the respiratory tract.

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ANA-PO-067. Sustainable LSPR-based platform for trace-detection of analytes in complex matrices

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In the last decades, several colorimetric sensor arrays have emerged as low-cost optoelectronic devices for the detection of various compounds. Among these, a class of sensors based on noble metal nanoparticles (NPs) has recently gained great interest. Gold and silver NPs, functionalized with specific receptors, have demonstrated to be powerful tools for trace detection of analytes of interest in various fields, including the food industry, environmental chemistry, and cultural heritage conservation.1 These sensors exploit Localised Surface Plasmon Resonance (LSPR), offering remarkable advantages for analyte detection at exceptionally low concentrations. The mechanism behind these sensors relies on variations in the LSPR through NPs aggregation occurring upon the presence of the analyte, resulting in a shift of the plasmonic absorption and the corresponding colour change.

Another application of NPs, still based on LSPR and well-developed for trace-detection, is Surface Enhanced Raman Scattering (SERS) spectroscopy, consisting of the great amplification of the Raman signal of analytes in proximity to the metal NP. SERS is a powerful analytical technique that provides detailed information about the chemical composition of materials. It has applications in the conservation of cultural heritage objects, and has been already employed for the identification of molecule-specific fingerprint signals in a wide range of applications. The need for sustainable, uniform and flexible SERS platforms 2 has led to introducing metal NPs into polymeric brushes, opening new perspectives for composite nanostructured materials featuring unique mechanical, electrical and optoelectrical properties. Additionally, the gel-brush network has demonstrated to stabilise the NPs and induce their uniform spatial distribution.3

We report here on the synthesis and characterization of a new sustainable sensor made of properly functionalized silver nanoparticles (AgNPs) fixed on a polymeric substrate, to be used both as a sampling device and detection system. Different synthetic pathways were experimented, while the substrates were characterised through microscopic and spectroscopic techniques. The SERS performances were tested for probe molecules, which showed a potential for low concentration detection, potentially applicable on analytes of interest for different matrices.

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CSB-PO-009. New Promising Curcumin Mimics as Neurodegenerative Hallmarks Rescuers

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Proteins' misfolding and the formation of their aggregates is a common event to several human pathologies (Protein Misfolding Diseases – PMDs) and neurodegenerative disorders, as Alzheimer's Disease (AD). Recently, it has been observed that a decreased activity of Ubiquitin Proteasome System (UPS), fundamental pathway of misfolded or damaged proteins, leads to an accumulation of the proteins that plays a key role in Protein Conformational Diseases (PCDs). Starting from the selected lead-metabolite Curcumin (Cur), reported to have an unprecedented therapeutic potential in the pathophysiology of AD, but poor pharmacokinetics (PK), different approaches of drug discovery have been pursuing for the development of novel molecules capable both to interfere with protein misfolding processes and to enhance the activity of UPS. To create derivatives with better drug-like properties and inspired by the presence of common structural elements among small-ligand proteasome activators, we have designed, synthesized, and characterized a mini-library of novel Curcumin mimics by varying the two aromatic moieties and modulating the length and rigidity of the newly settled diamide spacers. These compounds will be functionally probed for their antiaggregating ability and to stimulate h20S proteasome, both crucial capabilities in restoring cellular proteostasis. Resulting structure-activity relationships will be used to implement the pharmacophore model to drive future structure optimization.

FIS-PO-046. Impact of Lithium Halides Redox Mediators on Singlet Oxygen Evolution in Aprotic Li-O2 Batteries

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Aprotic lithium−oxygen batteries (aLOBs) are considered as one of the most interesting high density secondary batteries1. Therefore, overcoming the limits that hinder their employment is a key target in order to fulfil the increasing demand for energy storage systems. A significant drawback lies on the high overpotentials needed upon charge to oxidize the non-conductive discharge product Li2O2. This is due to the fact that, at high operating voltages above 4.0 V vs. Li+/Li0, many parasitic processes that lead to cell damage and early failure are triggered2,3. A major role in these detrimental phenomena is played by the formation of molecular oxygen in its singlet excited state, which is highly reactive and unmanageable4.

With the aim of mitigating the charge overpotentials, many redox mediators (RMs), soluble catalysts that facilitate Li2O2 oxidation, are proposed in literature5. Among them, lithium halides LiI and LiBr are considered attractive because of their favourable thermodynamics, simplicity and reduced costs6,7.

However, their impact on parasitic processes, including the formation of singlet oxygen, needs to be further explored. Our studies aim at revealing the correlation between thermodynamical and kinetical properties of LiX redox mediators, that vary basing on the solvent employed, and their tendency to favour singlet oxygen evolution. The spin trap 4-oxo-TEMP was used as probe of singlet oxygen and detected by EPR spectroscopy. Moreover, in order to obtain a more reliable and quantitative analysis of the singlet oxygen evolved, fluorescence measurements were carried out using 9,10-dimethylanthracene as probe molecule. The results demonstrate a strong correlation between solvation, kinetics and singlet oxygen evolution in LiX-mediated Li-O2 batteries8,9.

ORG-PO-121. New approach for the development of Streptococcus pneumoniae 6A and 6C vaccine

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The control of Streptococcus pneumoniae (SPn) infections is a dynamic and evolving field, particularly in developing vaccines that can provide broad protection against different serotypes. The first pneumococcal polysaccharide conjugate vaccine (PCV7), which covered only a few of the many serotypes of SPn, has been expanded over the years to cover more serotypes due to the serotype replacement phenomenon1, whereby an increase in cases of infection by serotypes not present in available glycoconjugate vaccines (NVTs) is observed. An example is serogroup 6, where serotypes 6A and 6B are included in PCV13 vaccine, but 6C2 has subsequently shown serotype replacement, highlighting the need for continuous innovation in vaccine design. The use of molecular dynamics simulations3 represents a novel approach in this regard, allowing researchers to explore conformational differences between serotypes within the group 6. Particularly the study of conformations on capsular polysaccharide (CPS) fragments, allows critical data to be collected to predict cross-protection between serotypes. This information is invaluable in synthesizing the most effective vaccine candidate, particularly for serotypes with similar epitope structures, such as 6A and 6C, and provides an opportunity to hypothesize the structure that will achieve a total cross-reactivity. The CPS repeating units of SPn 6 serotypes have minimal structural differences: 6A and 6C have the same glycosidic linkages, but they differ in their monosaccharide composition, with glucose replacing galactose in 6C4. The tetrasaccharide fragments of SPn 6A (Target 1) and 6C (Target 2) serotypes are the primary synthetic goals of this project (Scheme 1). In addition, we designed the 4-deoxy derivative of both tetrasaccharides (Target 3), where the only structural difference between 6A and 6C CPS is removed. According to the retrosynthetic approach, compound 4 was synthesized from a suitable rhamnose derivative, which can be used both as an acceptor for the synthesis of disaccharide 8 and as a donor for the glycosylation of ribitol 9. Finally, target tetrasaccharides 1, 2 and 3 have been assembled using the phosphoramidite derivatives 5, 6 and 7. The synthetic tetrasaccharides will be eventually conjugated to a carrier protein, and the glycoconjugates obtained will be subjected to in-depth immunological studies. The results will help to identify protective epitopes to be employed for the development of an effective anti-SPn 6A/6C glycoconjugate vaccine. A new approach to pneumococcal vaccine design is needed to stop serotype replacement and consequently the phenomenon of antimicrobial drug resistance, which is estimated to cause 10 million deaths annually by 20505.

ABC-PO-038. Effects of iso- and hetero-valent substitutions in Egyptian Blue on color and luminescent properties

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The interest in the ancient pigment Egyptian blue CaCuSi4O10 (cuprorivaite) increased dramatically after its discovery in frescoes of Raphael in the Villa Farnesina by non-invasive mapping [1]. This pigment has also been shown to have luminescent properties. In order to study the effect of possible impurities on the color and luminescent properties of the cuprorivaite phase, we prepared two series of samples corresponding to (1) isovalent substitution of Ca by Ba, (2) heterovalent substitution of Ca by La and Si by Al (Fig. 1). The samples were obtained by liquid sintering method in the presence of Na2CO3 (2%) at 1000ºC. Solid solutions based on cuprorivaite containing Ba are characterized by a monotonic increase in lattice parameters. The substitution of Ba by Ca in BaCuSi4O10 doesn't occur. The formation of solid solutions with successively increasing parameters has been proven in the case of heterovalent substitution. In both cases, the formation of solid solutions leads to a change in color from blue to violet in (1) and to steel bluish-green in (2). The effect of dispersion on the color is studied. A change in IR luminescence upon substitution in series (1) and (2) is shown.

FIS-PO-011. Refractory Ceramics for the Aluminium Foundries: Novel Perspectives for Greater Process and Product Sustainability

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The mastery of metallurgy represented a transformative leap for mankind, enabling the production from the first revolutionary tools and weapons to today's hi-tech materials. Global aluminium production is reported to be second only to that of iron, with the smelting of 70.593 MT of Al in 2023 alone1. Endless recyclability, reduced production costs, and eco-compatibility, combined with metal's extreme versatility, make aluminium foundries sustainability-conscious and cutting-edge to the extent that future projections anticipate an 80% increase in demand by 20502. Castable refractory ceramics play a crucial role in the aluminium production process, thus special features such as high-temperature, thermal shock, chemical and mechanical resistances as well as formability, durability and insulating properties are required.

In this work, BN-doped ternary SiO2-Al2O3-CaO ceramics were manufactured and fully characterised. The well-known SiO2-Al2O3-CaO system is able to meet many demands3. Nevertheless, a deep insight into the mechanisms at the base of their performance in the specific application is highly necessary. Inductively Coupled Plasma-Optical Emission Spectrometry (ICP-OES) analyses confirmed the theoretical values of the major elements, while Scanning Electron Microscopy (SEM) provided morphological and structural information showing the heterogeneity of the ceramic product which consisted of a calcium aluminosilicate matrix in which fragments of silica and BN were dispersed. Moreover, SEM technique revealed that sintering caused a decrease in macroporosity with a concomitant increase in microporosity. X-Ray Diffraction (XRD) showed that the microstructure of the ceramic was a result of both amorphous and crystalline phases. Interestingly, the microstructures before and after the heat treatment appeared very similar despite a slight increase in the crystalline/amorphous ratio and the loss of two water-related phases, i.e., aluminium hydroxide (nordstrandite) and calcium aluminium hydroxide hydrate. This phenomenon has already been observed and ascribed to water loss with consequent modifications in the crystalline lattice4. Furthermore, XRD patterns of samples treated at different sintering temperatures, i.e., 850 °C, 950 °C and 1050 °C, permitted to determine a significant increase in cristobalite content as the temperature increased, and the formation of corundum at 1050 °C. In addition to the physicochemical characterization, thermal analyses and mechanical testing were started with the aim to disclose specific correlation between product characteristics and its performance.

Finally, a MatLab-based calculation tool was developed to estimate the heat losses occurring during the transportation of molten Al from the holding furnace to the casting station. This met the need for improved product sustainability combined with the possibility of creating uniqueness, whose purpose is to lead to products and processes customization.

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ANA-PO-101. Development of a UHPLC-HRMS method for simultaneous determination of abuse substances in whole blood by Salting-out Assisted Liquid-Liquid Extraction (SALLE)

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New psychoactive substances (NPS) are increasingly being used and their recognition, both in samples from findings and in biological samples, is a very topical analytical problem [1]. The purpose of the proposed work was the development of a UHPLC-HRMS/MS based method for the determination of 150 drugs (classical drugs and NPS) in whole blood. One of the objectives was to achieve a rapid, economical and versatile pretreatment method, suitable for the different classes of molecules considered. In this regard, Salting-out assisted liquid liquid extraction (SALLE) [2] was selected and, at a preliminary stage, it was essential to find the most suitable conditions for the development of the extraction parameters. The analysis was initially carried out on a smaller number of analytes (47 of 150), and for this purpose was performed a HPLC- MS/MS method with a triple quadrupole mass spectrometer. The work was then extended to all analytes (150) using a UHPLC-HRMS with orbital ion trap analyser at the Department of Scientific Investigations (Carabinieri) of Rome. It was possible to validate the entire HRMS analytical method for the multi-screening determination of drugs from whole blood in order to obtain the simultaneous extraction and quantification of 150 drugs. The proposed procedure

allowed to speeding up of the SALLE extraction technique: the number of steps required and the volume of organic solvent have been reduced making the extraction process more sustainable on a long scale in terms of cost and environmental issues. The pre-treatment maintains also a higher concentration of the analytes, thus providing improved LODs and LOQs than reported in literature.

Another strength of the presented method was the applicability to an extensive and heterogeneous drugs and not limited to a specific class of psychotropic substances. The entire analytical procedure, once validated, was accurate, precise, sensitive, with a low matrix effect (for both low resolution and high resolution methods).

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FIS-PO-047. Exploring Redox Mediators and Non-Toxic Electrolytes for Lithium-Oxygen Batteries: An Experimental and Computational Study

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Over the past decade, lithium-oxygen aprotic batteries (aLOBs) have emerged as a promising advance in energy storage technologies, provided they realize a substantial portion of their theoretical specific energy. However, their path to commercialization faces obstacles due to several technical challenges1.Current implementations exhibit limited energy efficiency and a departure from reversible electrochemistry. This discrepancy can be attributed to the insulating nature of the discharge product, lithium peroxide, Li2O2, and the formation of singlet oxygen resulting in the need for high charge overpotentials2. The presence of singlet oxygen initiates parasitic chemistry, leading to the formation of secondary products and contributing to the degradation of battery components. This interrupts the reversibility of the redox process, further complicating the efficiency of the overall system. A promising strategy to address the slow decomposition kinetics of Li2O2 involves the use of redox-active and soluble molecules known as redox mediators3, RMs. These serve as catalysts for the oxidation of Li2O2, significantly reducing the charge overpotential that attends as the source of harmful singlet oxygen formation. Unlike solid catalysts, redox mediators have the advantage of enjoying a larger reaction interface as they are dispersed in the electrolyte. The catalytic effectiveness of the RM is strongly influenced by the environment in which it operates. Therefore, the choice of solvent in the electrolyte is a key factor, as it must be able to stabilize the species acting as the mediator. RM can pose a risk of ionic short-circuiting due to a shuttle effect between the anode and cathode. This can lead to corrosion at the lithium metal anode, causing the loss of the active redox mediator and the oxidizing species. One solution to this problem could be the use of self-defending4 RM, which serve a dual function as catalysts for the oxidation of the discharge product and as protectors of the lithium metal anode. Based on the information just presented, our contribution involves a combined experimental and computational approach to investigate the effective pairing of RM and solvents to address some of the critical issues affecting these systems.

ORG-PO-123. Preliminary evaluation of new bicyclic chelators for Ac-225 targeted α-therapy

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225Ac is an α-particle emitting isotope studied in nuclear medicine for α-therapy applications. The isotopes generated by radioactive decay of 225Ac have different physico-chemical characteristics compared to the parent nuclide, that can lead to the release of the free isotopes during the in vivo application. One of the chelators most suitable for the stable complexation of 225Ac is the 4,13-diaza-18-crown-6 macrocycle functionalized with picolinic arms (Macropa).1 Unfortunately, one of the main problem of such ligand for the 225Ac radiolabelling is the possible release of 221Fr or 213Bi after radioactive decay of the parent radionuclide.

In this work we synthetized the bis-alkyne ligand through the alkylation of the 4,13-diaza-18-crown-6 macrocycle with methyl 6-(chloromethyl)-4-(prop-2-yn-1-yloxy)picolinate as already reported in literature2. Two bis-azide-functionalized amines are then synthetized with different lengths with the aim to obtain a macrobicyclic structure able to create a cage around the isotopes preventing the release of both parent and daughter isotopes. The Cu(I) catalyzed Azide-Alkyne reaction has been carried out on the La(III) complex that is considered the non-radioactive surrogate of Actinium. The bicyclic La(III) complex has been characterized via 1H NMR and the its kinetic inertness evaluated in acidic conditions.

After these preliminary studies, the amino groups on the closing molecules will be used for the bioconjugation of the radiopharmaceutical with biomolecules for targeting purposes.

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ALI-PO-034. Green Datterini tomatoes as a potential nutraceutical in the prevention of aging-related muscle diseases: proof of concept studies in mice

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Sarcopenia is an aging-related muscle disease characterized by the loss of 50% of muscle mass, leading to several adverse effects as frailty and disability. In order to develop a nutraceutical formulation for sarcopenia prevention, our attention was focused on tomatidine, a natural compound able to act simultaneously on the mTORC1 and ATF4 factors, two targets involved in aging-related muscle disease.1 Tomatidine represents the aglyconic moiety of α-tomatine, a glycoalkaloid identified in green tomatoes (Solanum Lycopersicum L.). α-tomatine is converted into tomatidine by an in vivo metabolic mechanism.2 A matrix screening of seven tomato cultivars allowed to identify the green Datterini tomatoes (DT) as the cultivar with the most promising polyphenolic (chlorogenic acid: 1.41 ± 0.01 mg/g dry weight; rutin: 995.57 ± 3.46 µg/g dry weight) and glycoalkaloid content (α-tomatine: 34.70 ± 1.36 mg/g dry weight). Therefore, this cultivar was selected for further investigation through in vitro assays and in vivo proof of concept study in mice.3 Tomatidine efficacy on C2C12 muscle cells confirmed tomatidine efficacy in the stimulation of protein synthesis and mitochondrial function. Therefore, an in vivo proof of concept study was performed to confirm the efficacy of green DT in sarcopenia prevention in elderly mice. A treadmill test showed the nutraceutical capacity to improve muscle performance in DT treated mice by increasing the time spent and the running distance on the treadmill and by reducing the number of interruptions during the speed. The histological analysis of gastrocnemius tissues showed a remodelling of the muscle profile of DT treated mice, with an increased number of young muscle fibers with high resistance to physical exercise. Moreover, metabolomic analysis confirmed the increment of metabolomic activity and protein synthesis. Therefore, these results suggested the potential use of green DT as a potential food matrix for the development of new nutraceuticals for the prevention of aging-related sarcopenia disease.

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TEC-PO-030. Adducts of few layers graphene with 2-pyrones: one pot functionalization and exoliation

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Since the 1990s, the escalation of environmental apprehensions has propelled the development of green chemistry, with the primary aim of reducing the use of hazardous substances.

Galactaric acid, from fruit peels, is crucial in organic chemistry and polymer synthesis. 2-Pyrones, or α-pyrones, are unsaturated heterocyclic compounds with a C-6 atom containing an oxygen atom and a carbonyl group at the α position. They represent a versatile class of structural compounds found in numerous biologically active metabolites. Their chemical versatility is explained by the resonance of 2-pyrone, which exhibits partial aromaticity. 2-pyrones react as dienes and can undergo typical reactions such as the Diels-Alder cycloaddition.

A huge amount of research has been focused on graphene due to its high surface area, exceptional mechanical strength and high charge carrier mobility2. Graphene is being developed mainly in the electronic field, whereas few layers graphene (FLG) are finding applications in the material field.

In this work, FLG were prepared by exploiting the edge functionalization with 2-pyrones, promoted by the mechanical energy of a high shear mixer (HSM). One pot functionalization and exfoliation were obtained, in water as the dispersion medium. Adducts of FLG were prepared by mixing a high surface area graphite (HSAG) and 2-pyrone in deionized water, in the HSM. The grafted 2-pyrone was supposed to promote the exfoliation.

The adducts were characterized by means of X-ray diffraction, UV, IR and Raman spectroscopy, investigating the degree of exfoliation.

TEC-PO-021. Towards Sustainable Mobility: Innovation in Polymer Binders for High-Performance EV Lithium Battery Technology

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Lithium-ion batteries (LIBs) have become indispensable energy-storage devices for various applications, ranging from portable electronics to electric vehicles and renewable energy systems. The performance and reliability of LIBs depend on several key components, among which the role of the binder for the electrodes, often overshadowed by the active materials used, is also crucial for long-term durability.

Binders provide no electrochemical benefits to the electrodes, but function to interconnect the active materials and carbon additive and adhere the electrode slurry to the metal current collector foil, preserving the electrode integrity.

Polyvinylidene fluoride (PVDF) binder is the polymer of choice because of its chemical and electrochemical stability, coupled with high mechanical strength, high strain and heat resistances, and good processability. Despite several advantages, PVDF usually has low cohesive force with the current collector because of the non reactive functional groups tethered onto the PVDF backbone, resulting in low adhesion to the metal foil.

Syensqo, former part of Solvay group, has taken advantage of its expertise in fluorine chemistry and polymerization technologies for designing a new generation of PVDF polymers, designed for use as binder and is especially tailored for high-demanding xEV battery applications, where it is necessary to guarantee best performance during battery operation. The combined effect of several polymer parameters has been studied showing how the reinforced intermolecular interactions between polymer, active materials and current collector result in increased performance in terms of adhesion and chemical resistance in the electrolyte and can influence the binder crystallinity. This can ultimately influence the final properties of lithium-ion batteries.

FIS-PO-049. Unveiling the Effect of Resins on Dynamics of Elastomeric Compounds with Solid-State NMR and Viscoelastic Analysis

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In the tire industry, resins are essential ingredients because of their curing, reinforcing, and tackifying properties. They modify the rheological behaviour of rubber compounds, improving processability and enhancing mechanical properties.1 Resins change the dynamics of the polymer chain, which affects the viscoelastic behavior and the mechanical characteristics at the end. In this research, we focused on comparing the effect of a natural- and a petroleum-origin resins on SBR compounds. The resin content was varied from 15 to 45 parts per hundred parts of rubber. To gain insights into the molecular dynamics and structural properties of the elastomeric blends, we employed different Solid-State Nuclear Magnetic Resonance techniques,2-3 combined with dynamic-mechanical, rheometric, calorimetric and chemical analyses. These techniques have provided a comprehensive understanding of the mechanical, thermal and vulcanisation properties of the elastomeric compounds, as well as of the polymer chain dynamics, as affected by the resin nature and content.

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ORG-PO-124. Efficient Catalytic Reduction of Nitroarenes Using Zirconium Carboxy-Aminophosponate Nanosheets Loaded with Nickel Nanoparticles

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Supported metal nanoparticles are widely explored for their sustainability, activity and recyclability. Among metal nanoparticles, nickel nanocatalyst is the preferred choice due to its availability, minimal toxicity, and low cost.1 As known, a careful choice of the support plays a pivotal role in designing stable and high active supported metal NPs catalysts. In this context, layered zirconium phosphate and phosphonates with high surface area offer an attractive support for metal nanoparticles because of their chemical and thermal stability, along with a facile tunability of their structural features.2-5

Zirconium phosphate carboxy-aminophosponates (ZrPGly) possess a layered structure with exposed phosphonate and carboxylic groups on the surface, allowing efficient interactions with cations. To increase the accessibility, the solid was completely exfoliated in water by adding n-propylamine, resulting in a stable dispersion of zirconium phosphonate nanosheets. The ion exchange with a solution of nickel acetate provides zirconium carboxy-aminophosponate nanosheets loaded with nickel as a green pale solid (Ni@ZrPGly). The resulting Ni-catalysts were fully characterized and tested in the reduction of nitroarenes with NaBH4 at room temperature. The catalytic system proved its efficiency as it was reused for five cycles with a negligible loss of catalytic activity and with a very low Ni leaching.

Polyhedral representation of ZrPGly

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ANA-PO-115. Sustainable Supramolecular Deep Eutectic Solvents based extraction for the recovery of bioactive phenolic compounds from olive pomace

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Agri-food industries generate large amounts of waste and the circular economy promises to be a valid solution: the reuse of by-products allows the extraction of some compounds, such as phenolic compounds, and at the same time, minimizes waste1. Bioactive phenolic compounds are secondary metabolites, which are present in many vegetable matrices, and thanks to their antioxidant power, prevent the onset of many diseases. According to the principles of green chemistry, the recovery of phenolic compounds from food waste chains should respect the use of economical, sustainable and environmentally friendly methods2. For this reason conventional organic solvent, such as methanol, hexane or acetone, are not suitable for this purpose and can be replaced with other green solvents, such as water and ethanol. In recent years, interest in innovative and sustainable new solvents has increased. Among these, Deep Eutectic Solvents (DESs) are widely studied in the literature, particularly for the extraction of phenolic compounds from food matrices and wastes4. In recent years, DESs have been also evaluated with the addition of β-cyclodextrins, which are cyclic oligosaccharides produced by enzymatic modifications of starch, and are characterized by a selective interaction with specific analytes, thanks to their structural characteristics. These innovative solvents are called Supramolecular Deep Eutectic Solvent (SUPRA-DESs) and promise to be a valid solution, instead of organic solvents, for the extraction of phenolic compounds5. The aim of this work was to develop and optimize an innovative extraction method based on the addition of β-cyclodextrins in the DES composed by ammonium acetate-lactic acid (1:7), in order to increase the analyte extraction yield. Specifically, the method was optimized by analyzing the time (30, 90 and 180 min) and temperature (30, 50 and 80 °C) of the extraction, the solid-liquid ratio (1:5, 1:10 and 1:50) and the different concentration of β-cyclodextrins (0.7, 1.8, 2.1, 4.5 % w/w). The optimized extraction procedure consists on the best extraction time of 30 minutes, temperature of 80 °C, solid-liquid ratio of 1:50 and the concentration of 1,8 % (w/w) of β-cyclodextrins. Furthermore, the extraction using SUPRA-DES enabled an increase in the extraction yield in comparison to the use of

DES and also to conventional organic solvents. Finally, the olive pomace bioactive phenolic compounds were determinated through High-Performance Liquid Chromatography coupled with Mass Spectrometry (HPLC-MS).

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FIS-PO-064. Exploring the depth of Deep eutectic solvents: structural insights and molecular dynamics

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A deep eutectic solvent (DES) stands out as an interesting solvent due to its distinct thermic properties, resulting in a significant decrease of the mixture's melting point (MP). The recent introduction of type V DES represents a highly biocompatible alternative to traditional solvents by being both hydrophobic and free from chlorides and metal ions. The formation of these DESs relies heavily on the structural attributes of their precursors, distinguishing between hydrogen bond acceptors (HBAs) and hydrogen bond donors (HBDs).

The main aim of this project is to quantify the depth that makes such a DES. Our interest lies in comparing precursor pairs with and without hydroxyl groups, aiming to guide DES formulation with minimal alterations to the compounds. The addition of a hydroxyl group to one of the components can significantly alter the solidliquid equilibrium (SLE). Consequently, our investigation seeks to examine the role of all interactions that take place in these systems, focusing specifically on π-π stacking. This study concerns comparing the eutectic mixture formed by trimethoxybenzene (TMB) and 1,3-diacthylbenzene (13DAB) with the DES formed by 3,5-dimethoxyphenol (DMP) and 13DAB. We have adopted a combined approach between experimental measurements and theoretical calculations.

Most combinations of organic compounds exhibit eutectic behavior that can be easily predicted by conductorlike screening model (COSMO) calculations. Then, thermic characterization is conducted using differential scanning calorimetry (DSC), while molecular level can be investigated with MD's simulations.

FIS-PO-058. Templated Self-Assembly of Transient Branched Au Nanoshells

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Self-assembly of metal nanoparticles (NPs) represents a versatile tool for creating materials with new structures and intriguing collective properties. Our work in this field is focused on the design of different self-assembly strategies to form hybrid superstructures, exploiting the templating ability of peptides and proteins. [1] At this aim, we have devised a one-pot procedure to obtain peptide-gold superstructres (AuSP; 200 nm) where a monolayer of 5nm AuNPs surrounds a peptide core [2]. Together with being chiroptically active, AuSPs could act as template to control the formation of a transient 3D-branched Au-nanoshell (BAuNS) stabilized by sodium dodecyl sulphate (SDS). The BAuNS dismantles upon SDS concentration gradient equilibration over time in the sample solution, leading to NPs disassembly and regression to PAuSS. Notably, BAuNS assembly and disassembly promotes temporary interparticle plasmonic coupling, leading to reversible and tunable changes of their plasmonic properties [3].

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ORG-PO-224. Study of the interaction between Graphene Oxide and cholesterol using liposomes as artificial membrane model

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The growing use of Graphene Oxide (GO) as biomaterial brings to light many important questions regarding its possible toxicity to organs, tissues and cells. One of the most interesting fields of study would be the characterization of the GO exposure effect on reproductive functions. In a recent study,1 it has been demonstrated that GO at low concentrations can promote an increase of membrane fluidity of the apical membrane of mammalian spermatozoa and a reduction of cholesterol/phospholipidic ratio in a dose/dependent manner. As a result, it was found that GO improved the spermatozoa fertilizing ability in an in vitro fertilization model (IVF) by extracting cholesterol from membranes, without affecting sperm membrane integrity.

Starting from this evidence, the aim of this work was to investigate whether the ability of GO to promote membrane remodelling was reproducible even in the presence of an artificial phospholipid membrane. The effect of GO was studied on liposomes consisting of cholesterol and 1,2-dioleoyl-sn-glycero-3-phosphocoline (DOPC), by using two different fluorescent probes, such as 5(6)-carboxyfluorescein and Filipin III. The former dye was embedded into the aqueous core of liposomes and its rate of leakage was monitored to evaluate the kinetic stability of the membranes in presence and absence of GO. Filipin III marker is known to form complexes with cholesterol and the analysis of its excitation spectra has been used to suggest either cholesterol extraction or membrane remodelling induced by GO. Liposomes treated with GO were also characterized in terms of dimension, morphology and phase transition temperature by DLS, AFM and DSC analyses. In addition, Raman spectroscopy analysis of the liposomes was performed in order to evaluate the phospholipid chain packing, and therefore the variation of fluidity of liposomes membrane treated with GO. The obtained data may offer a better insight into GO interaction with lipidic membranes and open the way to new potential engineering of sperm membrane for improving assisted reproduction technologies outcomes.

Acknowledgements: funded by the European Union – NextGenerationEU under NRRP – M4C2 – Investiment 1.5 – Call for tender No. 3277 of 30.12.2022 IMU “Innovation, digitalization and sustainability for the diffused economy in Central Italy” – Concession Degree No. 1057 of 23.06.2022 – CUP D73C22000840006 and National Science Foundation NSF-RUI-CHE 1609135 and NSF-RUI-CHE 2002900.

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ORG-PO-225. Improving Selective Filtration in Polymeric Hollow Fibers through Chemical Modification of Graphene Oxide

Pintus, Angela[1]; Tunioli, Francesca[2]; Khaliha, Sara[2]; Mantovani, Sebastiano[2]; Trifoglio, Andrea[2]; Kovtun, Alessandro[2]; Bocchi, Letizia[3]; Melucci, Manuela[2]

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Hollow fiber membranes play a pivotal role in advanced filtration technologies, finding applications in various fields such as biomedical treatments and water purification. The inherent chemical inertness of the polymers constituting these membranes poses a significant challenge for functionalization. Thus, this study addresses the challenge of enhancing selective filtration in polymeric membranes by introducing graphene oxide (GO), a two-dimensional material that serves as an ideal platform for post-functionalization due to the presence of oxygenated groups on its surface. The incorporation of GO was achieved through a systematic approach, involving the coating of polyethersulfone (PES) fibers.This procedure featured a novel post-functionalization strategy designed to obtain a chemically modified GO-polymeric membrane. Lysine (Lys) was selected as a case study, and successful GO covalent modification was confirmed through SEM, XPS, and contact angle measurements. Adsorption experiments conducted with both pristine PES-GO and modified PES-GO-Lys fibers revealed improved removal of carbamazepine pollutants after Lysine-modification. Several examples of chemical modification and applications of resulting composite membranes for water treatment will also be discussed.

ELE-PO-016. Feasibility and challenges of the electrochemical ammonia production from nitrogen and nitrate in a flow cell reactor

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The Haber-Bosh process is the most optimized and only known way to produce the quantities of NH3 needed to satisfy the overall world demand. Despite that, the urge to reduce as much as possible greenhouse gases emission paved the way for the discovery of alternative and cleaner paths towards the production of such a fundamental molecule indispensable to sustain agriculture in this period of demographic growth. The research has focused on the possibility of producing NH3 from direct N2 electrochemical reduction (NRR) in aqueous electrolytes under ambient conditions, the limitations of which are the low selectivity at high current densities and low yield, due to the high dissociation energy of N2 triple bond and the unavoidable hydrogen evolution reaction (HER).1 On the other hand, NO3− can be easily converted into NH3 thanks to the lower activation energy and it is one of the most abundant contaminants of underground waters. Thus, the use of NO3− to produce NH3 under ambient conditions can also address the water pollution issue.2 The research on such topics is still in the first stages and very few literature reports reliable and consistent results.

Our work is divided into different lines: i) the NO3− electrochemical reduction using commercial MoS2 in a gas-diffusion electrode flow cell of 10 cm2, ii) NRR tests using different catalysts in different conditions, iii) the study of different sources of contamination, among all that coming from Nafion membrane. Regarding the first line, the design of experiments and surface response methodology (DoE/RSM) revealed the possibility of having stable operations for over 100 h with low NO3− concentration (500 mg L−1), with FE and productivity rate for NH3 stable at values around 60% and 19.6 μg h−1 cm−2, respectively. Unfortunately, even with the hardest effort, we were not able to obtain reliable and good results for NRR in all the explored conditions. False positives have been demonstrated to be related to the presence of contaminants, especially the one coming from the Nafion membrane, which can absorb NH3 in a magnitude dependent on the electrolyte composition and on the cell conditions.

FAR-PO-073. DELTA: Database of Enhanced Ligands and TArgets for drug discovery and activity prediction

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Given the large extent of information on ligands and targets involved in diseases available in public databases, increasing efforts have been made over the last decades on the application of in silico strategies. Among these, inverse screening approaches are attracting increasing great interest due to its many applications in the drug discovery process. For example, it allows the identification of both the mechanism of action of a new molecule and of secondary targets for investigated drugs or natural compounds, enabling the prediction of possible side effects and toxicity but also suggesting new potential therapeutic uses1,2. Different strategies to perform inverse screening have been developed in the last decades3,4, they however present significant limitations due to an unsuitable number of target structures, which can result in an inefficient screening or in a too high computational and time requirement.

On these grounds, we developed a dataset of therapeutically relevant targets, consisting in 485 proteins associated with specific diseases and for which either an approved drug or a drug under clinical trial is available. For each target, we also collected a dataset of ligands with experimentally determined activity on the targets, including an equal number of active and inactive compounds depending on a defined activity threshold, reasonably covering all the involved chemical space. Both targets and ligands structures have been refined and optimized. The major applications of these datasets include the possibility to perform reverse screening campaigns and develop predictive models to identify targets for a specific query molecule. Some examples of relevant applications will be presented.

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TEO-PO-031. Spectroscopic characterization of the interface between tripyrenboroxine and Au(111) surface

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Boroxines represent a class of compounds extensively employed as templates on metal surfaces. Their exceptional mechanical properties and thermal stability have sparked significant interest in utilizing them for the development of new electronic devices. In this study we performed a combined experimental and theoretical study to characterize the interface between tripyreneboroxine (TPyB) and Au (111) surface in term of its electronic properties through NEXAFS core spectroscopy studies. Density Functional Theory (DFT) calculations were performed to describe the geometry of the system and elucidate the nature of TPyB /surface interaction. A finite cluster was then cut out from the periodic relaxed structure for the calculations of the NEXAFS spectra at both B and O K-edge. The calculations suggest the presence of unoccupied orbitals strongly hybridized with gold atoms, close to the Fermi level. The coupling of these orbitals with the Au substrate demonstrates the importance of the boroxine group to mediate possible charge transfer between molecule and surface. These findings suggest that such systems, typically utilized as templates for the growth of organic films, can also serve as active interlayers, establishing an efficient electronic transport channel that bridges the inorganic substrate and organic overlayer.

FAR-PO-011. Identification of novel potential elastase inhibitors with anti-aging activity using computational alanine scanning and pharmacophore modelling

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Skin aging is characterized by wrinkles, fine lines, loss of elasticity, and non-uniform pigmentation due to a combination of exogenous factors, including U.V., chemicals, pollutants, and endogenous factors, such as cellular metabolism, genetic mutations, and hormonal factors.1 A main hallmark of skin aging is the loss of structure in the extracellular matrix, which contains numerous proteins, including collagen and elastin, that play an important role in maintaining skin elasticity. Extracellular matrix degradation is mainly due to the increased activity of certain proteolytic enzymes, such as elastase, which is responsible for the breakdown of elastin.2 Inhibition of this enzyme can lead to increased skin elasticity, preventing the formation of wrinkles and sagging.3

In this regard, we present a study aimed at identifying potential small molecules capable of inhibiting elastase enzyme by computational approaches. Several hotspot residues on elastase were identified using a combination of pharmacophore modelling, computational alanine scanning and molecular dynamics.

Then, an accurate pharmacophore was created, consisting of a hydrogen bond donor, two acceptors, and two hydrophobic features. This pharmacophore was used screen in silico different libraries, including naturals and synthetics compounds. Molecular docking studies were carried out to investigate the binding mode of the selected hits. Finally, binding free energy was calculated and a series of molecular dynamic simulations were performed to gain information about the stability of protein-ligand complexes.

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The authors thank the “I.3.3 Borse PNRR-Dottorati innovativi che rispondono ai fabbisogni di innovazione delle imprese”, XXXVIII cycle, for financial support in form of a PhD scholarship “DOT1314952” granted to Giovanna Pitasi.

ORG-PO-125. Characterization of the protein fraction by high resolution mass spectrometry reveals specific post translational modifications in extracellular vesicles secretes by astrocytes

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Parkinson's disease (PD) is characterized by the progressive loss of dopaminergic (DAergic) neuronal cell bodies in the ventral midbrain (VMB) and their terminals in the striatum (STR). Astrocytes (AS) play a crucial role in maintaining the homeostasis of DAergic neurons, and extracellular vesicles (EVs) secreted by astrocytes (AS-EVs) can have either destructive or beneficial effects [1]. To identify the mechanisms involved in the neuroprotective effects of AS-EVs, we have characterized their protein fraction and specific post translational modifications (PTMs), comparing vesicles secreted by astrocytes from the VMB vs. the STR, both in basal conditions (AS-EVs CTRL) and activated by the pre-treatment with the neuroprotective chemokine CCL3 (AS-EVs CCL3) [2].

Intact EVs were purified from primary cultures of postnatal VMB and STR astrocytes. EVs were lysed using 0.1% RapiGest SF and proteins were reduced with DTT, alkylated with iodoacetamide and digested using trypsin. Analysis was conducted in triplicate by a shotgun approach and nanoUHPLC/High-Resolution nanoESI-MS/MS [3].

The results showed a different protein content and a different pattern of PTMs in AS-EVs CTRL and AS-EVs CCL3 extracted from VMB and STR. In particular, we focused the attention on PTMs related to protection and degradation pathways of proteins as ubiquitination, SUMOylation, oxidation, phosphorylation and deamidation. The assignment of functional roles to these PTMs will be a further step towards the full understanding of the impact of EVs on neurodegeneration.

Overall, our study suggests the existence of a molecular machinery capable of organizing the sorting of specific proteins towards EVs, in nigrostriatal astrocytes. Furthermore, it implies the possibility that secreted proteins with specific PTMs may have specific functions when transferred to target cells and thus the reprogramming of AS-EVs as a novel strategy for brain repair. Finally, the knowledge generated within this study may pave the way for the development of innovative therapeutic approaches to tackle PD.

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ANA-PO-057. A bivalent HF5 analytical approach for isolation and quality control of extracellular vesicles

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Extracellular vesicles (EVs) are key players in cell communication and immune regulation and impact tumor growth and therapy resistance: investigating their composition is essential for unraveling the mechanisms behind malignancy regulation. Characterization of EVs from plasma, a complex biological fluid, needs EV isolation, a challenging process due to their small size, high heterogeneity and low concentration. Common isolation techniques including ultracentrifugation, Size-Exclusion Chromatography (SEC), and ultrafiltration demand significant sample volumes (hundreds of µl) and can compromise the structural and biological activity of EVs by potentially causing damage.

Here we present a bivalent approach exploiting a Hollow-Fiber Flow Field-Flow Fractionation (HF5) system to isolate EVs from plasma and as a tool for performance separation control of commonly used EV isolation techniques, such as SEC. The latter is justified by HF5 ability to provide soft and native separation not achievable by other techniques. Assessing EVs content and size was possible thanks to the spectroscopic, light scattering and fluorescent detectors coupled with the separative system. We previously presented a methodology able to select EV-enriched fractions from human serum for online microfluidic biosensing, that in this work we transferred to collect vesicles from the plasma of healthy donors. EVs were both collected from plasma via a standard SEC protocol and through the optimized HF5 separation system, then both samples were re-analyzed with the HF5-multidetection platform to obtain a direct comparison of the profile, relative size and abundance, and aggregation state of the isolated EVs.

SEC- and HF5-derived EVs showed differences in population size and vesicles and protein amount; except for the presence of aggregates in SEC-EVs compared with HF5-EVs, no generalized differences between the two isolation methods were measured, while it emerged a high biological variability from donor to donor.

Isolated EVs were also characterized via Western blot and were positive for markers including ALIX, confirming the presence of specific EV markers. In addition, Flow Cytometry demonstrated the expression of EV marker (CD9, CD81) and platelet-associated markers (CD41a, CD42b) in EVs from both techniques.

ELE-PO-002. Smart Design, Cleaner Future: Optimization of the MicroFlowCell in Cathodic Reactions

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The water splitting reaction and the carbon dioxide conversion into energy dense molecules could cooperate to meet the supply of industrial energy demand using clean and renewable strategies. The electrochemical reduction of the molecules such as CO2 and H2O into building blocks or fuels, such as H2, CO and HCOOH, is a possible solution to meet future energy needs and decrease the carbon footprint. To do that, the most important aspects are the design of the device and the smart synthesis of the catalyst.1,2,3

The most important factor for the successful implementation of the reaction lies in the meticulous design and optimal functionality of the reaction device.3

In this study, we focus on the development and optimization of a novel flow device known as MicroFlowCell. The MicroFlowCell is designed for precise control and manipulation of fluid dynamics, presenting promising applications in industrial fields. The device is coupled with a Gas Diffusion Electrode system, which allows to have higher currents and to maximize the substrate-electrode interactions.

The investigation includes a thorough examination the key parameters such as the effects of liquid and gas flow rates, solution pH, electrolyte concentration and gas diffusion layer design on the MicroFlowCell's functionality.4 Experimental methodologies are employed to systematically explore the interplay between these parameters and the device efficiency.

The significance of this study lies in the potential advancements in using the reactor to test new electrocatalyst designs within a well-functioning system.

TEF-PO-010. Polycaprolactone and zein-based fibrous scaffolds for skin tissue engineering

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Tissue engineering is a branch of regenerative medicine that focuses on the design and the development of biological substitutes able to repair or replace a damaged tissue1. The most promising adavances in this field are the three-dimensional biocompatible scaffolds2. In this scenario, centrifugal spinning became a promising method to produce fibrous scaffolds3.

Given these premises, the aim of the present work was the design and the development of polycaprolactone (PCL) and zein (Z) fibers via centrifugal spinning, for skin tissue engineering.

PCL blends (18%-30% w/w) were prepared in acetic acid 96% v/v and subjected to centrifugal spinning. Z was added to PCL in a concentration ranging from 2% w/w to 10% w/w and the formulations were spun.

The obtained fibers were subjected to physicochemical characterizations. The morphological and dimensional analyses were carried out on both dry and hydrated samples by scanning electron microscopy. The formulation based on PCL 30 % w/w and Z 5 % w/w was the most promising to obtain regular and homogenous fibers with a mean diameter of 5μm. The hydration process, in distilled water overnight, do not show a variation of mean fiber diameter and the overall structure is maintained, indicating that fibers preserved their structural integrity. Since an ideal scaffold for wound healing should be elastic and maintain its shape after mechanical stresses, mechanical properties were evaluated on both dry and hydrated samples. The hydration process does not affect the scaffolds resistance. The degradation of fibers was investigated by keeping each sample in PBS at 37 °C in a water bath for 28 days. Preliminarily results showed that no degradation has occurred. Contact angle was evaluated to assess wettability of the scaffolds. The results reveal that the scaffolds are characterized by a hydrophilic surface that should support cell attachment. Moreover, scaffolds cytotoxicity was evaluated, and the preliminary results demonstrate that the fibers are biocompatible.

In conclusion, PCL-Z fibers have been successfully developed and have shown promising features for tissue engineering application. Further investigations are ongoing in order to deeply assess the biocompatibility and cell adhesion on the scaffolds.

Acknowledgements:

This work was funded by Horizon Europe project FORCEREPAIR - "Smart and multiFunctional 3D printable prO-Regenerative biologiCal matrix modulating mEchanotRansduction as advancEd theraPy to treAt skIn chRonic wounds" under the grant agreement No. 101092243

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INO-PO-054. Purification of water contaminated with arsenic using a bio-inspired porous membrane with selective As-sequestering properties

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The presence of arsenic as contaminant in water for drinking and irrigation is a worldwide issue. This, particularly, where groundwater is the prevalent source. Several technologies have been proposed to address this issue and remove arsenic from water.

The successful development of a porous membrane designed using a bio-inspired and multidisciplinary approach is here presented. This membrane has been tested successfully on model solutions and real groundwater samples. This membrane is able to selectively remove arsenic in both As(V) and, the more toxic and less easy to remove, As(III) oxidation states.

The high selectivity avoids demineralization making the decontaminated water suitable for human use without further processing.

IND-PO-037. Immobilizing lytic polysaccharide monooxygenases on carbon nanotubes to increase stability and prevent oxidative damage.

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Thanks to their excellent functional properties, enzymes can catalyse several complex chemical processes under mild conditions and are potentially excellent catalysts for a more sustainable chemical industry. However, low stability and tendency to be inhibited by substrates, products or solvents, limit their application for nonbiological purposes. A promising and successful strategy to improve enzyme stability in industrial settings is the enzyme immobilization onto a suitable carrier, following simple and cost-effective protocols.

Lytic polysaccharide monooxygenases (LPMOs) are mononuclear copper-containing enzymes found in the majority of cellulolytic fungi and actinomycete bacteria that are able to oxidize C–H bonds of the glycoside linkages in polysaccharides1–3. However, LPMOs are prone to oxidative damage, particularly in the absence of an adequate substrate2. The aim of this contribution is to develop a possible bio-catalyst for C-H activation reactions, based on bioconjugation of LPMOs to Carbon Nanotubes (CNTs), in order to stabilize the biological partner without jeopardizing its catalytic ability. CNTs have been selected since they are conductive, thus allowing the electron transfer processes fundamental to optimize the LPMO activity. Two LPMOs, LsAA9A and ScAA10C, containing lysine residues close to the substrate binding surface, were selected encouraging immobilisation in the desired orientation. Moreover, to increase the chances of successful immobilisation, these enzymes were engineered, introducing two lysine residues on two different loops on the LPMO surface.

Using a two-step carbodiimide activation/immobilization reaction, enzymes were immobilised on multi-walled COOH-CNTs. After the reaction, the oxidase4 and peroxidase5 activities of the LPMO bioconjugates was assessed, demonstrating a successful immobilization just for the engineered enzymes. The results on oxidative damage showed that the inactivation of both free LPMOs is already evident after only 10 minutes with less than 20% residual activity, while the bioconjugates retained around 70% residual activity under the same conditions, indicating that the CNT is successful in protecting the LPMO against oxidative damage.

The stability of the enzymes was finally assessed by using circular dichroism, incubating the bioconjugates at different temperatures and in presence of different organic solvents.

ABC-PO-026. Bronze disease: synthesis and characterization of new recycled polystyrene-based coatings

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Polystyrene (PS) is one of the most used and worthwhile plastic materials: millions of tons of PS are produced every year for applications in several aspects of modern life, from packaging to construction and automotive. However, high production volumes imply high procession costs, making recycling a central goal for end-life PS plastics. Hence, the development of low-cost strategies aimed at converting waste plastics into new valuable materials is of paramount importance to minimize the environmental and health impact of this kind of waste. In particular, the PS conversion can match the need to develop new materials suitable for protecting outdoor bronze artifacts, also complying with circular economics goals (e.g. the European Green Deal).

To this aim, a new protocol for PS upcycling was developed, based on a study by Kurbanova.1 Expanded PS was functionalized with an increasing feed of maleic anhydride (MA, 5 to 25% mol) via Friedel-Craft acylation reaction. The functionalization results in the formation of carboxylic pendant moieties, which could both (i) improve PS performances as a coating due to the interactions of the newly formed moieties with the bronze surface and (ii) act as a protecting group for the copper alloy.

The library of newly established materials (PS-MA) was analyzed by proton nuclear magnetic resonance (1H NMR), attenuated total reflection Fourier transform infrared (ATR-FTIR), size exclusion chromatography (SEC), and differential thermogravimetry (DTG).

Application tests were carried out by laying PS-MA on bronze substrates. Coating thickness was measured by Optical Coherence Tomography (SD-OCT) before and after artificial aging treatment.2 The tested samples have shown promising performance in terms of corrosion resistance, color, thickness, and adhesion.

Overall, the PS-MA library represents optimum candidates for the development of new and effective coating materials. Moreover, this novel class of end-life polystyrene materials could be further modified with target molecules to introduce additional anti-corrosive agents for cultural heritage aims and scopes.

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ANA-PO-155. Scanning electron microscopy for tear film analysis: identification, characterisation and quantification of particulate matter as a useful marker of urban air pollution.

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Tears, often overlooked in clinical diagnostics, contain a diverse array of biomarkers reflective of systemic health, including environmental exposures. Pollutants such as heavy metals and volatile organic compounds (VOCs) can be detected in tears, providing valuable insights into individual exposure levels and associated health risks Here, scanning electron microscopy (SEM) was employed for the first time to analyse and characterize particulate matter (PM) present in tear films. The final goal was to assess the extent of PM deposition on the ocular surface and its potential correlation with pollution levels in urban areas. In summary, SEM analysis of tear films from healthy subjects in the urban area of Bologna demonstrated significant deposition of PM. Statistical analysis revealed a positive correlation between PM levels in tear films and the exposure duration to urban environment.

IND-PO-038. Two birds with one stone: green NH3 production from stationary NOx emissions

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Green ammonia is expected to play a crucial role in the energy transition as it serves as a sustainable base chemical and a versatile energy carrier. With its potential to store and transport hydrogen, it will facilitate the integration of renewable energy sources into various sectors, thus accelerating the shift towards a cleaner and more resilient energy infrastructure. Nowadays, ammonia production is energy intensive, as the energy required to sever the N-N bond is significant. NOx is a waste toxic compound present in combustion flue gases, which is nowadays abated using NH3 as a reactant according to the well-established SCR process to comply with environmental regulations. In this scenario, the production of green ammonia using NOx as N source is very appealing, as it could turn emission abatement from a cost to a potential resource, allowing for a decentralized production of green NH3.

A possible way to abate NOx while producing NH3 is to use Lean NOx Traps (LNTs) materials for NOx abatement from mobile sources. These catalysts rely on a cyclic process: they can adsorb NOx when exposed to flue gases; once the trap is saturated the atmosphere is switched to reducing conditions to convert NOx to N2 while regenerating the trap. By twisting the formulation and process conditions of LNTs it should be possible to steer the selectivity of the process towards NH3 rather than N2.

We have effectively demonstrated this using three home-made catalysts based on 1% Pt, 0.5% Ru or 0.5% Rh, each supported on Al2O3 and promoted with Ba. By working at 250°C on a Pt-based catalyst, we managed to obtain a significant NOx adsorption and a complete regeneration of the adsorbent when exposed to H2 (Fig. 1A), with a selectivity to NH3 in excess of 75%, yielding a production of 80 µmol/g/cycle of NH3. At higher temperatures the amount of adsorbed NOx increases slightly (Fig 1B), but the NH3 selectivity drops due to the faster kinetics of N2 formation causing an overall decrease in NH3 production (Fig 1C). Ru and Rh show 100% NH3 selectivity below 300°C, but are unable to store significant amount of NOx at these temperatures. Operando FT-IR tests are currently ongoing to disclose mechanistic aspects of the reaction.

TEF-PO-022. Lipopolyplexes for DNA delivery: the effect of cationic polymer on cytotoxicity and transfection

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Lipopolyplexes (LPP), namely ternary complexes of biocompatible cationic polymers, nucleic acid and liposomes, represent an attractive though poorly investigated alternative to lipoplexes for gene delivery. Poly-L-lysine (PLL), polyethyleneimine (PEI), spermidine, spermine and protamine sulfate are the most used polymers for LPP preparation1. Nevertheless, a systematic study of the polymer nature on nucleic acid complexation and transfection efficiency is missing. Here, we prepared LPP using three cationic polymers (Chitosan, PLL and PEI) and 1,2-dipalmitoyl-sn-glycero-3-phosphocholine (DPPC) based liposomes to complex a pDNA encoding the green florescence protein (EGFP). Briefly, pDNA encoding EGFP was complexed with chitosan, PLL or PEI in PBS 50mM pH 4.5 at different polymer/DNA mass ratios. Selected polyplexes were further complexed with DPPC:DOPE:Chol liposomes (55:35:10 mol%, in PBS 50 mM pH 7.4) at at different molar ratios. All formulations were characterized in terms of hydrodynamic size, polydispersity index (PDI) and zeta potential by dynamic light scattering (Malvern, UK). Cytotoxicity, assessed by an MTT assay, and transfection efficiency were determined HeLa human epithelial cells by GFP detection. A pDNA/DOTAP based lipoplex was used as positive control.

We found that optimal polymer/DNA mass ratios were 10 for chitosan and PLL polyplexes and 6 for PEI polyplexes. These polyplexes were around 100 nm in size, PDI<0.2 and positively charged, while final LPP had a mean diameter of about 180 nm, PDI<0.2 and they were slightly positive/neutral. The formation of the ternary complexes were confirmed by Fluorescence resonance energy transfer (FRET) and crioEM. In vitro, generally LPP were significantly less toxic than corresponding PP, with chitosan LPP being the most biocompatible. LPP showed higher transfection efficiency than corresponding PP and control lipofectamine like formulations. In particular, PEI LPP induced the highest GFP expression, both as percentage of positive cells and mean fluorescence intensity also in comparison with the lipoplex. In conclusion, that the choice of polymer influenced the mode of gene expression mediated by these LPP in vitro; generally, PEI is the most promising polymer for the design of LPP, offering a valid alternative for the delivery of pDNA platform.

ORG-PO-126. Synthesis of Bivalent Natural Products-Based Inhibitors of SARS-CoV-2 Spike Protein

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SARS-CoV-2 is a virus responsible for COVID-19 pandemic, which caused more than 6.7 million deaths worldwide. Viral mutations could compromise the efficacy of vaccines, so developing drugs capable of suppressing viral replication to treat COVID-19 remains an open therapeutic challenge. In SARS-CoV-2 morphology, a crucial region is the receptor-binding domain (RBD), located in subunit S1 of Spike glycoproteins, since it is involved in the binding with Angiotensin-Converting Enzyme 2 (ACE2) receptor of human cells in the early internalization step. Through virtual screening of the RBD active recognition region, several natural products (NPs) capable to bind in two different portions of the RBD were identified. Triterpenoids were reported as pocket 1 binders, while bile acids derivatives should bind to pocket 5. In this work, bivalent compounds formed by a triterpenoid and a bile acid linked by a spacer were developed, with the aim of obtaining more potent and selective antiviral molecules capable of blocking the fusion between SARS-CoV-2 and host cell. Computational studies have guided the synthesis, providing indications on the size and flexibility of the compounds. Azide-alkyne cycloadditions and amide couplings were used as synthetic strategies to connect the selected triterpenoids (betulinic acid and glycyrrhetinic acid) and bile acid (obeticolic acid). Neutralization assays using pseudotyping lentiviral particles with specific SARS-CoV-2 Spike proteins were performed to evaluate the antiviral activity of these bivalent compounds, demonstrating a higher ability to reduce SARS-CoV-2 infection than single natural products.

ABC-PO-048. Green strategies to conserve the past and preserve the future of cultural heritage (GoGreen)

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The Horizon Europe GoGreen project aims at introducing a green revolution in conservation. In the field of preventive conservation, new damage assessment tools for different materials are developed to support decision-making processes for reducing the carbon footprint. The detection of early signs of damage with AI enable the formulation of preventive conservation strategies. The project also aims at developing eco-friendly solutions for cleaning paintings and metals, as well as sustainable stabilisation materials for metals and glass objects. These advancements draw inspiration from historical recipes, bioprocesses, and green chemistry. To validate the effectiveness of these methods, cutting-edge analytical procedures for surface and volume assessment are developed. A key goal of GoGreen is to empower the conservation community to align future practices with the objectives of the Green Deal, through the development of a digital web-app and the organisation of educational initiatives.

IND-PO-039. Blending or bonding? Benzothioxanthene derivatives as emitters in Luminescent Solar Concentrators based on poly(methyl methacrylate) from recycled sources

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Many conjugated planar fluorophore structures utilized for the preparation of poly(methyl methacrylate) (PMMA) Luminescent Solar Concentrators (LSC) face concentration quenching due to the presence of free dye molecules that phase separate from the host polymer matrix, even at relatively low concentrations. One potential strategy to mitigate this effect without diminishing the fluorophore quantity is the covalent integration dye into the polymer chain through co-polymerization with a monomeric unit functionalized with the fluorophore molecule. Benzothioxanthene (BTX) imides have shown promising emitting properties in solution and comparable to commonly used perylene diimides (PDIs). Also, considering the mono-substitution, they are the best candidate since they prevent cross-linking during the polymerization process. Notably, two BTX derivatives were synthesized as fluorophores: i) BTX-EH, which was dispersed within the PMMA matrix; ii) BTX-MA, containing a methacrylic group suitable for co-polymerization with MMA. All devices were based on PMMA manufactured through free-radical polymerization of chemically recycled methyl methacrylate (r-MMA), which exhibits similar properties to virgin methyl methacrylate, but with a lower environmental impact. LSCs with varying fluorophore concentrations (100, 200, 300 ppm) were characterized by determining internal (ηint) and external (ηext) photon efficiencies, as well as the fluorophore quantum yield (QY), and the properties compared to define the best (blending or bonding) formulation strategy.

ORG-PO-227. Functionalized clay minerals for optical detection of environmental pollutants

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Anthropogenic activities cause the release of harmful compounds in air and water (e.g. VOCs and PAHs), posing a serious risk to overall ecosystem. Thus, the development of reliable technologies capable to detect pollutants at low concentration, high efficiency, portability and low cost, is highly desiderable.1

In this context, the use of luminescent probes anchored to natural and eco-compatible nanomaterials is emerging as promising strategy to obtain sensing and remediation platforms.2-3 Clay minerals (CM) are gaining growing interest as smart nanomaterials for several applications, due to their eco-compatibility, tuneable surface chemistry and low cost.4 In this context, new naphthylimide-based fluorescent probes were synthesised and functionalised to be anchored to clay minerals, obtaining naphthylimide-CM nanomaterials. The physical-chemical characterization of the obtained materials was carried out by several techniques, and optical properties were investigated as well. The sensing performance towards the selected pollutants was evaluated both in solution and solid phase, observing an easy detectable signal after the recognition.

TEC-PO-047. Cellulose-based nanosponges as efficient sorbent materials for minimizing disinfection by products in drinking water

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Nowadays, there is a growing awareness of the impact that climate change is having not only on the quantity of water, but also on its quality. Among the several implications that this phenomenon generates, a critical aspect refers to the provision of safe drinking water to guarantee human health security. In fact, worldwide both surface water and groundwater are the predominant sources for drinking water supply. The continuous increase of background natural organic matter (NOM), chemicals and microbial contaminants due to climate change asks for the development of more efficient and specific treatments for their removal.

For these reasons, disinfection of drinking water before distribution could take on an increasingly important role in the upcoming years for providing a microbially safe water. However, disinfection by-products (DBPs) can be formed, depending the presence on natural organic matter (NOM), which is one of the main DBPs precursors, representing in turn an additional risk for human health.

Among the different approaches suggested to overcome this issue, the development of effective adsorption-based processes to remove NOM before disinfection is a promising route. In the last decade, we have developed a new class of cellulose-based nanoporous materials which resulted particularly effective for the decontamination of wastewater and seawater from a wide range of both heavy metals1 and organic contaminants.2 They result from the covalent cross-linking between cellulose nanofibers and polyamine polymers.3

Herein we report a purposely designed new family of cellulose nanosponges (CNS) for NOM sorption before undergoing disinfection of water intended for human consumption, as part of the results obtained within the ongoing EU project SafeCREW (Climate-resilient management for safe disinfected and non-disinfected water supply systems), funded by the European Union under grant agreement No 101081980.

The removal efficiency by CNS has been verified on water matrices spiked with custom NOM solutions, resulting even higher than that measured with both micro- and meso-porous powdered activated carbons, selected as referent adsorbing materials.

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INO-PO-030. Diffusional and heteronuclear NMR investigation of the formation of sulfide-based electrolytes for all-solid-state lithium-ion batteries

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Batteries are the fastest-growing storage technology and make an important contribution in tackling the effects of climate change. Of all existing types, lithium-ion batteries are extremely effective in powering a wide range of applications, which require high energy densities and safety features.1 In this scenario, all-solid-state batteries seem to exhibit the right combination of performance and non-flammability.

Sulfide-based materials are promising solid electrolyte candidates achieving ionic conductivities comparable to those of liquid electrolytes. These electrolytic systems are synthesized by the reaction of Li2S with P2S5 in different molar ratios affording several ionic conductors also called LPS systems.2 Recently, sulfide-based electrolytes can also be prepared in the liquid state using polar and aprotic solvents, offering the prospect of a more scalable approach.3 However, the ionic conductivity of the so-obtained materials may be lower than those prepared through the other routes, and some attempts to improve their performances are hindered by a lack of understanding of their speciation and formation reaction mechanism in solution. In this contribution, we will show the results of our preliminary spectroscopic studies aimed at assessing the processes of dimensional growth and mixing/integration of inorganic components, by using 31P and 6/7Li diffusional NMR techniques.

IND-PO-040. Kinetic investigation of Ammonia Decomposition over Ru-based Catalysts for Hydrogen Production

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Hydrogen (H2) is considered as one of the most prospective energy carriers for the future energy systems. Ammonia (NH3) as a promising H2 carrier, has attracted increasing attention, due to its well established production and distribution infrastructure, zero carbon emissions during dehydrogenation and no side reactions. Ru is the most active metal for NH3 decomposition. In this work, a kinetic investigation of NH3 decomposition was performed over Ru-based catalysts, with a systematic experimental and modelling work.

ANA-PO-031. Enhanced Urea Detection in Wastewater using Catalytic and Biocatalytic Approaches

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As urea is a common fertilizer and additive for cow feed, it pollutes the environment by causing soil runoff, which in turn leads to eutrophication and algal blooms1. This makes it crucial to keep an eye on wastewater's urea levels. Because wastewater often contains significant quantities of urea, quantifying urea is helpful in determining when it might be worthwhile to try recovering it or converting it in a valuable material for many applications, including for energy issues. This will give a contribution in achieving circular economy and to valorize materials that would otherwise be treated merely as waste2. Catalytic and biocatalytic methods can be employed in wastewater treatment plants to monitor, treat, and recover urea. In fact, the urea oxidation process (UOR) is now thought to be a promising alternative energy source. Catalytic and biocatalytic technologies can be used to monitor, treat, and recycle urea in wastewater treatment facilities. Indeed, because of its low cost, ecologically favourable features, and green processing, urea oxidation reaction (UOR) is currently considered an attractive alternative energy conversion, environmental remediation, and electroanalysis topic. In contrast, the high selectivity that may be achieved is the driving force behind biocatalytic-based methods3.

In this work, we developed a novel combination of flow injection analysis (FIA) and bio-cartridges for a real-time urea monitoring process. For continuous monitoring and automated sample processing, FIA-based bio-cartridges are very helpful. Enzymes were immobilized onto spherical particles inside the cartridge, to improve the surface to volume ratio and mimic homogeneous reactions. For the electrochemical readout, the bio-cartridges are then connected to small solid-state ammonium sensors. To generate the greatest signal in the shortest length of time, various parameters were tuned, including the amount of immobilized enzyme, flow rate, and reagent concentrations. After that, the bio-cartridge results were compared with an electrochemical method based on UOR. In order to do this, many Ni-based electrode surfaces for the amperometric detection of urea were examined and characterized. For online detection, various analytical parameters were tuned.

Preliminary results on wastewater samples were reported.

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INO-PO-003. Electrochemiluminescent systems for bio-sensing applications

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Electrochemiluminescence, or electrogenerated chemiluminescence (ECL), is a process that uses an applied electrical bias to generate reactive species at an electrode surface that undergo subsequent electron-transfer reactions to generate luminescent species1.The biggest advantages of this technique are the absence of the background noise from the excitation source, used in traditional photoluminescent measurements, high specificity and an excellent sensitivity. Nowadays the ECL technology is largely used in the development of immunoassays2.

However, sensitivity of ECL strongly depends on the nature of the emitters, therefore the development of new strategies to improve ECL-based assays is still a relevant research topic and the aim of this project. Our strategy to achieve signal increase is to build systems in which a large number of ECL-emitters are anchored on a three-dimensional (3D) platform, which in this case is constituted by silica nanoparticles (NPs), functionalized on the surface with electrochemiluminescent Ir(III) complexes. We selected Ir(III) complexes as emitters of choice since they show outstanding photophysical properties, such as high emission efficiency, easy-tuning of the emission range by changing the C^N ligand and ancillary ligand together, excellent stability2. Furthermore, the introduction of negatively charged solubilizing groups (SG, sulfonates) on the Ir complex ligands would allow for both increasing solubility in aqueous media and preventing non-specific binding interactions with unwanted biological targets.

Although some Ir(III) complexes for ECL applications appeared in the literature, only a few examples of Ir complexes soluble in aqueous media or aqueous organic media have been reported3,4.

In this communication, the synthesis of Ir(III) water soluble complexes, their characterization, as well as their anchoring to nanoparticles, will be illustrated.

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FAR-PO-050. Small molecule modulators of the activity of microRNA-21

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Although the majority of the human DNA codifies for non-coding RNAs (ncRNAs), biomolecules exerting important biological functions, the field of RNA targeting for therapeutic application is still at an early stage.1 The recent approval of RNA-targeting small molecules by regulatory agencies, such as Risdiplam® and Ataluren®, has opened the way to small molecule RNA therapeutics. Among the variety of ncRNAs, micro-RNAs, consisting of 20-25 nucleotides, mediate post-transcriptional gene regulation as they bind to messenger RNAs inducing their degradation or translation inhibition.2 Micro-RNA-21 (miR-21) is a potential interesting pharmacological target, being an essential element for cancer cell proliferation and survival.3 Micro-RNA-21 is overexpressed in several cancer types,3 and decreasing its cellular levels has been reported to sensitize cancer cells to chemotherapy.4 Several small molecules targeting miR-21 have been reported in the literature;5 however, there is still ample space to discover new compounds capable to decrease miR-21 levels in cells.

One of the approaches to reduce miR-21 in cells consists in finding compounds that bind to its precursor (pre-miR-21) thus preventing the cleavage by the ribonuclease Dicer.6 With this idea in mind, we performed a medium-throughput screening campaign to assess the affinity to pre-miR-21 of circa 600 fluorinated fragments by 19F-NMR technique.7 The primary hits were subsequently tested in a biochemical assay to measure their Kd 8 From this screening campaign, several hit compounds emerged for their promising affinity to pre-miR-21. Among them, a compound bearing a pyrazolopyrimidine scaffold showed Kd in the low micromolar range: this compound was selected for further investigation. A ligand-based approach was applied to improve the affinity to pre-miR-21. Several derivatives were synthesized, leading to a few compounds with submicromolar affinity to pre-miR-21 and capable of inhibiting the Dicer-mediated processing.

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DID-PO-002. Using Interrupted Case Studies to Enhance Argumentation Skills

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Fruits mainly comprise living tissues and are characterized by a high level of water availability, which makes them highly perishable. Edible film and coating applications show promising results in increasing the shelf-life, as well as preserving their quality. This study reports on the implementation of three interrupted case studies1, and the use of edible film and coatings in fruit conservation. The case studies, entitled 'The delicious crimson grapes', 'Mr. Jairo´s pears' and 'Guavas, edible films and minerals', were undertaken by undergraduate chemistry students. Implementing the case study as a teaching strategy focused on students utilizing data provided in case studies to formulate a written scientific argument in defense of the best solution for the cases. This work utilizes the Leitão's framework2 to investigate the students' written arguments regarding solutions for the case studies. Leitão2 outlined a unit of analysis, which is meant to capture how dealing with opposition affects the speakers' position. The unit of analysis includes three basic elements: argument (justified claim), counterargument and reply. According to Leitão2, there are three types of replies: dismissing the counterargument (speakers find themselves able to dismiss a piece of information a counterargument conveys), local agreement (speakers normally start by stating their agreement with the content of a counterargument and then they keep defending their previous position by adding to it some new support), integrative (integrating both positions and rejecting the initial view). The reply is made up of points of view and justifications. The research questions investigated in this study was "What are the types of replies in the student's written texts when faced with counterarguments presented by the case studies characters about the best edible films to use in each problem situation? The results show that the majority of the counterarguments was dismissed. To do this the students took a position regarding counterarguments, being forced to revise them carefully. Almost all the students effectively used evidence to formulate their replies. Indeed, students cited data by linking specific inscriptions (e.g., graph representing changes in weight of grapes over time, tables presenting information on various properties of fruit after edible coatings/films, etc.) to their argumentative texts. In conclusion, using an interrupted case study method facilitates written argumentative texts based on using evidence.
FAPESP (Grant 2023/01936-1); CNPq (Grants 304974/2020-0 and 420662/2023-5).

MAS-PO-006. Comparison of different methodologies for batch effect correction for an Untargeted Metabolomics analysis by UHPLC-MS-qToF

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It has estimated that plants produce from 90,000 to 200,000 different compounds classified into primary and secondary metabolites. To define the plants metabolome, it is necessary the development of metabolomic approaches, to increase the identification and quantification of plants metabolites, their patterns and relationships as part of Natural Complex Matrices (NCMs)1. In this way untargeted and targeted metabolomics approach using hyphenated methods, such as UHPLC-qToF, are widely applied to obtain high resolution mass data.

Untargeted metabolomic data obtained by HR-LC-MS techniques are affected by intra-batch and inter-batch effects, which are the major confounding factors in data interpretation2. Batch effects lead to results that are not reproducible along the analytical sessions; this is why experimental data-processing and data pre-treatment strategies are necessary to minimize its impact.

In this study fourteen samples composed by NCMs were analysed in three different analytical sessions. Each sample was stored at -80°C before acquisition and acquired in randomized sequences. The following correction strategies for batch effect were applied:

- The use of different internal standards (ISTD)3 added to the samples to normalize the response in specific regions of the entire chromatogram depending on chemical similarity associated to the analytical method.

- The use of quality controls sample (QC) at the same concentration randomly included along the analytical session as reference for apply the substraction of the mean responses to all the compounds detected (mean centering) and the probabilistic quotient normalization (PQN)4.

- The use of quality controls sample (QC) at different concentrations randomly included along the analytical session that generate for each compound a linear regression model to estimate the compound response.

This study highlights the best way to correct batch effect to characterize and monitor the quality and manufactoring process of products based on NCMs.

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ANA-PO-041. Adsorption isotherms and kinetics of rare earth metals on multifunctional materials from various waste pomaces

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This contribution presents the preliminary results obtained using waste biomasses from the industrial food chain for the preparation of multifunctional materials possibly able to detect, bind and extract, efficiently and selectively, rare earth metal ions from aqueous solutions simulating real matrices. These metals belong to the list of "Critical Raw Materials", i.e. the group of materials whose recovery is considered strategic by the European Community1. The use of food-processing industry wastes as secondary raw materials offers a sustainable and environmentally friendly approach,

that could also be useful for the rare earth metals recovery. In particular, the adsorption of neodymium and dysprosium ions in aqueous solution was studied at pH ~ 5 and t = 25°C using different waste biomasses, namely Bergamot Pomace (BP), Olive Pomace (OP) and Grape Pomace (GP), chemically pretreated at t = 30°C with H2O and HNO3 0.10 mol dm-3 2,3. The materials were characterized employing different analytical techniques; through the FT-IR ATR spectroscopy 2, it was possible to confirm the presence of functional groups capable of interacting with the above mentioned metals. To evaluate their adsorption capacity, batch experiments were carried out on different solutions containing the metal ions (M3+ = Nd3+, Dy3+). The concentration of each M3+ was determined by ICP-OES 4. The results obtained from adsorption experiments show that Langmuir equation was the best isotherm fitting model for BP, OP and GP for the rare earth metals adsorption. The adsorption equilibrium was reached within 24 hours and the kinetic of adsorption was well described by the pseudo-second order model. Then the recovery of the metals adsorbed on the biomasses was carried out using HNO3, but the reused materials show lower performance than the starting ones, exception done for BP, which showed great reutilization capacities 4.

Acknowledgements:

We thank MUR: PNRR - Missione 4, Componente 2, Investimento 1.1 - Bando Prin 2022 - Decreto Direttoriale n. 104 del 02-02-2022. Project title: “Wastezilla: Recycled waste biomass for efficient recovery of critical elements”. CUP: J53D23007540006 – project code: PRIN_2022HYH95P_001 CUP: B53D23013740006- project code: 2022HYH95P_003

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INO-PO-082. Synthesis and catalytic properties of CeO2 nanoparticles for ROS production or scavenging

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CeO2 nanoparticles (NPs) are interesting materials for possible applications in biomedicine as wound and bone healing, cancer therapy, and other diseases involving oxidative stress.1 An intriguing aspect of these NPs is the presence of both Ce3+ and Ce4+ ions2 which confers the peculiar ability to both scavenge and produce OH radicals through redox processes. CeO2 NPs have been synthetized using several methods,3 but the preparation of stable colloidal suspensions in water or biological buffers, needed to be used as therapeutic agents, is not trivial. In this contribution, we investigate the synthesis of water-dispersed CeO2 NPs employing different preparation conditions, from room temperature to higher ones, by microwave-assisted technique, and with different reaction times. The effect of precursors and capping agents (e.g. the citrate group) concentrations on both the colloidal and the redox properties of the CeO2 NPs have been evaluated. A possible doping with Tb3+ ions has been also investigated to exploit the Ce3+ to Tb3+ energy transfer, serving as a quick tool to probe the presence of Ce3+ under different conditions.4

The synthesized materials have been characterized by means of X-Ray powder diffraction, Raman spectroscopy and Dynamic Light Scattering. Investigations on the catalytic properties of CeO2 NPs have been carried out by indirectly following Reactive Oxygen Species (ROS) generation through UV-Vis and fluorescence spectroscopy, exploiting the Fenton reaction to degrade a sample dye or directly tune the Ce3+/Ce4+ ratio.

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FAR-PO-095. Design and Synthesis of Benzothiazole-based Proteolysis Targeting Chimeras for targeted degradation of Casein kinase 1 (CK1) implicated in Circadian Clock Dysregulation of Alzheimer’s disease (AD)

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PROteolysis TArgeting Chimeras (PROTACs) are heterobifunctional small molecules which, by recruiting specific proteins of interest (POI) for ubiquitin-mediated degradation, control protein levels rather than modulating its function.1 Alzheimer's disease (AD) is a complex neurodegenerative disorder characterized by the accumulation of misfolded proteins, synaptic dysfunction, and progressive cognitive decline and with no effective treatment up to date. Emerging evidence suggests a significant involvement of circadian rhythm dysregulation in the pathogenesis of AD, with protein kinases, such as CK1, playing a crucial role in modulating circadian processes.2

For that purpose, a small library of CK1-targeting PROTACs was designed based on benzothiazole derivatives originally developed for Amyotrophic Lateral Sclerosis (ALS), with promising potency, proven BBB permeability and already explored SAR.3 Within this series, a combination of three different positions on POI ligand, two on cereblon recruiter, and two different linker lengths will be examined to determine optimal geometry for formation of effective ternary complexes. Currently, synthesis is in progress and, once obtained, compounds will be tested for in vitro potency and initial pharmacological and ADMET evaluation. Cell proof of concept studies will demonstrate effective degradation of the POI.

FAR-PO-111. Novel pro-autophagic urolithin analogues as promising neuroprotective agents.

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Neurodegenerative diseases are one of the most significant health problems of the last decades, due to the absence of resolutive therapies. Over time, researchers turned their gaze toward natural substances with interesting biological activities in order to find new scaffolds to work on and synthesise new drugs. Within this vast environment, ellagitannins (ETs) are a large group of bioactive compounds found in plant-source foods, such as pomegranates and berries. Ellagic acid is the aglycon portion of ETs, but the beneficial effects observed following the consumption of ET-containing foods are explained by their extensive metabolism to urolithins. In particular, Urolithin A (UA) shows good antioxidant, anti-inflammatory and neuroprotective properties. In this work, we describe the synthesis of a small library of urolithin analogues obtained through the decoration of the UA-scaffold, and the biological evaluation. In vitro preliminary results showed that new derivatives were able to promote autophagy using Urolithin A as a reference activity. The most active compounds were selected for further evaluation in a preclinical model for Alzheimer's diseases of Caenorhabditis elegans. In this poster I will discuss the results of these assays and the future perspectives that come with them.

ORG-PO-229. Building biohybrid systems for solar energy conversion by bacterial photoenzymes and organic light harvesting antenna molecules

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Reaction Centres (RCs) of photosynthetic bacteria are enzymes employing solar energy to generate charge separated states with almost unitary conversion efficiency. This efficiency, optimized by Nature in billions of years of evolution, is very attractive in view of designing biohybrid systems for light-responsive bioelectronics.1 Our studies have demonstrated that the covalent functionalization of the bacterial Rhodobacter sphaeroides RC with tailored organic light harvesting antenna molecules is an efficient route to hybrid systems that outperform the native photoenzyme in photocurrent generation.2,3 Moreover, smart supramolecular architectures can be assembled by multiple covalent bioconjugation of both bacterial RC and Cytochrome c proteins by means of tailored organic photoactive linkers. Such systems feature an almost doubled photoactivity versus the pristine RC upon illumination at 660 nm, and ~ 10 times higher photocurrent versus an equimolar mixture of the unbound proteins, this being a promising outcome for the development of eco-sustainable systems for biophotovoltaics.3

The design, synthesis and photophysical properties of RC-based bioconjugated constructs, as well as their suitability as solar energy bio-photoconverters, will be herein discussed.

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TEO-PO-004. r2SCAN derived composite methods for solid state calculations

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In the last decades, methods derived from Density Functional Theory (DFT) have been used as workhorse computational tools for many applications. Recently, there has been a growing interest in moving from the modelling of small and medium-sized systems to investigating increasingly large and complex systems. However, for systems characterized by weak bonds the current semi-local or hybrid DFT methods do not show sufficient accuracy and predictive power due to their pitfall in describing dispersive interactions. To cope with this, it would be necessary to use either the 5th-rung exchange-correlation (XC) functionals or wavefunction-based methods, which are very accurate but extremely expensive for large-scale calculations. To overcome this limitation, Stefan Grimme proposed the so-called "3c" composite methods1 which combine DFT with semiclassical corrections to include dispersive interactions and correct for the basis set incompleteness error. After their initial application to molecules and molecular crystals, the originally proposed methods have been revised and optimized for solid-state calculations. This has resulted in a set of methods referred to as "sol-3c"2.In this work, we have extended the existing "sol-3c" composite methods to mGGA XC functionals using the r2SCAN one3. The corresponding r2SCAN-based composite methods in their pure and hybrid HF/DFT variants have been developed in combination with double-ζ (sol-def2-mSVP) and triple-ζ (pob-TZVP-rev2) quality basis sets4 specifically adapted to solids. The r2SCAN "sol-3c/pob-3c" methods were validated and tested on benchmark sets containing both intermolecular adducts (s66x75), molecular crystals (X236, DMC87) and simple inorganic solids (SS208). They were then applied to the study of the energetic and structural properties of layered materials, the mechanical, electronic and vibrational properties of α-quartz, TiO2 (and its polymorphs), all-silica zeolites and the adsorption of small molecules on inorganic surfaces and meta-organic frameworks. The new methods show broad applicability with accurate results and an adjustable and affordable computational cost.

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CSB-PO-019. NMR Characterization of metabolic response in glioblastoma cells interacting with gold nanorods

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Magnetic Resonance Spectroscopy (MRS) is a very powerful and non-invasive technique for the study of biological systems in vitro. MRS may provide information on cultured tumour cell metabolism, aiming to an increased knowledge of cell response to anti-cancer therapies. In particular, once identified the most relevant metabolic signals (spectroscopic markers), their variations can give insight on the response of tumour cells to different treatments, including drug delivery systems based on gold nanorods (AuNRs). AuNRs are arousing great interest in the biomedical field, thanks to their peculiar physicochemical properties, and the possibility of differentiated surface functionalization, allowing the transport of drugs.This study focused on the synthesis and characterization of AuNRs stabilized with cetyltrimethylammonium bromide (AuNRs-CTAB) and their effects on the metabolism of a glioblastoma cell line (namely, T98G). 1H MRS characterization of the metabolic profile of T98G cells was performed to identify the main observable metabolic pathways. Then, 1H MR cell spectra were acquired at different times after T98G incubation with AuNRs-CTAB at different concentrations. Both one-dimensional (1D) and two-dimensional COrrelation SpectroscopY (2D COSY) spectra were acquired

TEO-PO-028. A computational study of the interaction between the sterol transporter Niemann-Pick C1-Like 1 protein and new natural ligands with potential inhibitory activity

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Niemann-Pick C1-Like 1 (NPC1L1) is a transmembrane protein, involved in cholesterol absorption in the intestine, whose activity can be modulated by ezetimibe, a drug that prevents cholesterol transport from the lumen to the membrane. The structure of the complex NPC1L1-ezetimibe was recently resolved1: ezetimibe localizes in a tunnel which is the path for cholesterol transport from the N-terminal domain (NTD), where cholesterol is first recognized, to the sterol sensing domain (SSD), where cholesterol leaves the protein and is released in the membrane.

Molecules such as sterols and polyphenols, contained e.g. in plants, have been shown to act against NPC1L1 activity2. However, it is still unknown where they bind NPC1L1, and which is the mechanism by which they manage to prevent cholesterol absorption. In this study, we aim to predict the structures of the complexes the aforementioned molecules could form with NPC1L1. Computational approaches such as protein-ligand docking and all-atoms molecular dynamics simulations, with explicit modelling of the membrane3, are used. Structural information on the binding of other molecules to NPC1L1 and NPC1 proteins, a structural homologous which is also involved in cholesterol transport, is exploited to drive the modelling procedure.

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TEC-PO-052. Synthesis and characterisation of lignin-based hydrogels for the removal of emerging pollutants from wastewater

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Lignin is the second most abundant organic polymers on Earth and consists of cross-linked aromatic units called "lignols" [1]. Nowadays, most lignin is pyrolysed as biomass. However, new possibilities for its application have recently opened, including its use as a component of hydrogels for drugs removal from wastewater due to its adsorption and retention properties [2].

In this study, LS_pAAm hydrogel was synthesised from lignin sulfonate and acrylamide by a free radical copolymerisation, using N,N′-Methylenebisacrylamide as the crosslinking agent. In addition, a hydrogel with cationic functionalities (LS_pAAm_DAC) was obtained by free radical grafting with Acryloxyethyltrimethyl Ammonium Chloride (DAC) of the main chains of the copolymer LS_pAAm.

Physical-chemical characterisation of the prepared hydrogels (Infrared Spectroscopy, Scanning Electron Microscopy, Differential Scanning Calorimetry and Thermal Gravimetric Analysis) confirmed the obtainment of a porous material able to incorporate high amounts of water and, in the case of LS_pAAm_DAC, with the cation the DAC quaternary ammonium moiety.

The cationic LS_pAAm_DAC hydrogel, which showed a higher swelling degree than LS_pAAm one, was tested for the removal of the model drug Diclofenac in its anionic form (DCF-Na) and showed a Removal Efficiency of 85% after incubation with a 30 mg/L aqueous solution of DCF-Na.

The kinetic of DCF-Na removal as well as the isotherm adsorption were also studied: the removal follows a pseudo-second order kinetic whereas a linear absorption of the drug by the hydrogel is suggested.

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ORG-PO-230. The potential of bile acids exploitation in drug discovery: from cancer to chronic inflammation

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Bile acids (BAs) are cholesterol metabolites serving several functions in our bodies. Other than their role into digestion, BAs act as hormones regulating several metabolic processes. Many transmembrane and nuclear receptors, especially expressed along the gastrointestinal apparatus, were identified as endogenous counterparts of BAs. Over the years, the wide druggability of these receptors has been explored to address several unmet clinical conditions such as cholestatic liver diseases, metabolic syndrome, GI cancer, and inflammatory bowel disease (IBD).1,2

The high variability of the steroidal scaffold yielded abundant biologically active small molecules with promising pharmacological results. In such a fascinating context, our interest focused on both deepening the biological role of a vast pool of bile acids and harnessing the steroidal backbone to selectively target pathologically relevant receptors. Indeed, some BAs were identified as first endogenous antagonists of the leukemia inhibitory factor receptor (LIFR).

LIFR is a heterodimeric membrane receptor formed by LIFRb subunit and glycoprotein (gp-130) and binds LIF protein, an IL-6 cytokine, fostering epithelial mesenchymal transition and stimulates cell growth. LIFR inhibition prompts the advancement of BA-based treatments in LIF-mediated oncogenesis.3

Moreover, we designed a novel class of bile acid derivatives acting as GPBAR1 agonists and RORγt inverse agonists. Both receptors are indeed attractive drug targets to develop clinically relevant small modulators as potent hybrid medicines for autoimmune diseases. We were able to identify several compounds endowed with great efficacy and potency values and excellent pharmacokinetic profiles.4

IND-PO-041. Integrated valorization of paper mill wastes for the sustainable production of chemicals and energy

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The great world production of paper and paperboard (more than 400 Mt/a) involves the production of significant amounts of waste streams1. A cellulose-rich waste (CRW) and the inorganic-rich waste (IRW), supplied by the company Lucart Group, resulted particularly interesting for chemical and energy valorisation as an alternative to costly disposal. CRW, deriving from the converting step, has a content of glucan of 75 wt % but cannot be reused within the paper mill process, while IRW contains 70 wt % of $CaCO_3$ and about 25 wt % of cellulose. Due to its high cellulose content, CRW was employed as substrate for the one pot acid-catalyzed conversion to ethyl levulinate (EL) using ethanol as reagent and reaction medium. The increasing interest towards EL is related to its outstanding characteristics: EL is a promising versatile biofuel which can be employed as bio-blendstock in both diesel and gasoline engines, and also an intermediate for the production of plasticizers, solvents and pharmaceuticals.2 The optimization of the ethanolysis process, performed in the presence of 1% sulphuric acid, allowed to reach EL yields of 45 mol%, an important achievement given the simplicity of the process involved.

On the other hand, the IRW was employed in a oxy co-gasification process for energy recovery through the production of syngas adopting a downdraft fixed bed reactor with O_2/H_2O as gasifying agents. A blend of IRW and wood pellets in 1/5 wt/wt ratio was adopted as substrate. Notably, the co-gasification in the presence of IRW produced a syngas characterized by high hydrogen content (40 mol %) and CO (21 mol %). Moreover, tar compositional analysis revealed the presence of long-chain (C19-C39) and polyaromatic hydrocarbons. Finally, the ash characterisation evidenced the formation of good quality CaO deriving from $CaCO_3$ decarbonisation, which can be exploited in the paper mill process itself in a circular economy perspective.

FAR-PO-043. Development of dual PD-L1 and epigenetic-target based inhibitors as novel potential molecules for anticancer immunotherapy

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Research on cancer immunotherapy is recently making many strides, and the PD-1/PD-L1 signaling pathway is increasingly highlighted as a target to be inhibited to enhance the function of immune cells in cancer1. Interaction between PD-1 and its ligand PD-L1 leads to immunosuppression and blockade of T-cells' functionality, playing an important role in various malignancies where it can attenuate the host immune response to tumor cells2. Of note, impairments in the immune cycle, which are crucial for PD-1/PD-L1 immunotherapy resistance, could be restored by epigenetic modifications3. In particular, there is much scientific evidence about the efficacy given by the synergistic combination of PD-L1 antibodies and

epigenetic drug inhibitors4. As an immune checkpoint in combination with epigenetic therapeutic agents, PD-L1 is able to improve immune recognition and tumor growth, leading to increased response rates in preclinical and clinical studies, recently summarized in4. Considering our experience in polypharmacology to overcome the main limitations of the single target therapy thus aiming at superior therapeutic effects, decreased adverse reactions, and a reduction of potential mechanism(s) of drug resistance caused by robustness and redundancy of biological pathways5, we developed a series of dual inhibitor molecules which presented both PD-1/PD-L1 and various epi-target inhibiting properties. The developed compounds showed promising inhibiting activities in biochemical assays against the targets of interest, exhibiting balanced IC50 values against the PD-1/PD-L1 axis inhibition as well as against the chosen epigenetic targets (i.e., HDACs or LSD1). Currently, the most promising compounds are under evaluation in in vivo tumour xenograft mouse models.

ANA-PO-064. Exploring Trikafta Therapy Effects on Exhaled Breath Molecules by Comprehensive Two-Dimensional GCxGC-Q-TOF

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Background: The introduction of Trikafta therapy has significantly improved the quality of life for individuals affected by cystic fibrosis (FDA approved in late 2019).1 We investigated the possible effects of Trikafta therapy on exhaled breath chemical composition which may allow to obtain clinically relevant information about disease and treatment progression directly from the breath samples.

Methods: Mixed breath samples were collected at the University Children's Hospital Zurich from 19 patients (12-18 years) in 2L handmade Nalophan bags. An aliquot (250 mL) of breath was transferred at 50 mL/min into sorbent tubes (packed with 250 mg of Tenax GR 60/80 mesh)2 and then analysed with thermal desorption unit (TD) coupled with a comprehensive two-dimensional gas chromatography (GCxGC) connected to a quadrupole time-of-flight mass spectrometer (Q-TOF).3

Results: We could tentatively identify 166 molecules which were significantly increased for the breath vs. room samples. We investigated the differences in breath chemical composition during Trikafta therapy (ANOVA with post-hoc t-test with p-value < 0.01) which resulted in 25 significantly different compounds (12 endogenous, 3 unknowns, 10 anthropogenic). The endogenous breath volatiles were mainly related to energy metabolism and often lipid peroxidation (Figure 1).

Conclusion: We can report significant differences in exhaled breath molecules after Trikafta therapy.

ELE-PO-036. The Pivotal Role of Ligands Determining the Properties of Atomically Precise Gold Nanoclusters

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Since Professor Whetten's groundbreaking work on "Nanocrystals Gold Molecule" in 1996,1 atomically precise nanoclusters (NCs) protected by ligand shells have emerged as a fascinating class of molecule-like species. Today, metallic NCs are a driving force in materials science, fueled by the ability to create novel functional materials with precisely tailored properties through ligand design.2

This work highlights the crucial role of ligand chemistry in manipulating NC behavior. We demonstrate how meticulous ligand design allows precise control over a broad spectrum of NC properties, including solubility, biocompatibility, electron transfer kinetic in both solution and solid state,3 and chemosensing response for volatile organic compounds (VOCs). We also explore their potential for monolayer formation using the Langmuir-Blodgett (LB) technique. Furthermore, we report the first high-yield synthesis of a Au25 dimer bridged by a metal-complex moiety, that is a modified Ru(II) complex, achieved without by-product formation. This multicomponent, redox-active molecule exhibits unique properties such as quenched emission and intriguing spectroelectrochemical behavior. This feat was accomplished through a novel ligand exchange reaction (LER) strategy leveraging electrostatic forces and product precipitation.

This work underscores the importance of ligand design for synthesizing functional NCs with tailored properties, paving the way for the development of advanced materials with vast application potential.

TEC-PO-054. Development of biofunctionalized membrane-based platforms to enhance recognition selectivity and sensitivity of sensing systems

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To achieve more selective and effective management in the detection of traces of small molecular weight micropollutant (SMWMP) in aqueous phase, the development of biosensors built on biofunctionalized membrane-based platform has attracted considerable attention. The introduction of the membrane with appropriate chemical-physical characteristics into the biosensor architecture contributes, in fact, to support the bioreceptor in a well-defined structure, regulate the analyte transport, promote the bioreceptor-analyte interaction, increase the analyte concentration, act as a microenvironment that aids the transduction of the biochemical interaction into a physical signal.

In this work, phosphotriesterase enzyme (PTE) was used as a model bioreceptor to selectively recognize the pesticide paraoxon (as SMWMP model). PTE was covalently linked on various home-made and commercial membranes (polyvinilidene fluoride - PVDF, polyvinylidene fluoride/alkali lignin - PVDF/AL, regenerated cellulose - RC, and polyamide - PA) using glutaraldehyde as crosslinker1. The activity and stability of the biofunctionalized membranes were monitored over time. Adsorption experiments of paraoxon (substrate) and p-nitrophenol (product) on membranes enabled us to design strategies for sensing systems.

RC and PA membranes were selected for the membrane-based sensing systems development as they showed the highest specific enzyme activity after biofunctionalization. Due to the chemical composition differences between the membranes, RC membrane showed no adsorption of either the

substrate or the product, while the PA membrane adsorbed only the latter (turning yellow). A colorimetric detection is provided for both the developed platforms using two different detection instruments: a UV-Vis spectrophotometer for RC membrane and a color detector for PA membrane. The lecture will discuss the strategies investigated to enhance sensing selectivity and sensitivity.

Acknowledgments:

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INO-PO-023. Sustainable Hydroponics: Examining the Effectiveness of Vermitea on the Growth, Nutrient Uptake, and Metabolism of Diplotaxis Muralis

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Sustainable food production for the world's growing population is a major challenge. To meet the demand for food, an additional 2.7-4.9 million hectares of land will be needed for agriculture each year1. Unfortunately, one-third of arable land is already contaminated with various pollutants, leading to a heightened interest in hydroponic farming for food security. However, hydroponics typically relies on mineral fertilizers, which are derived from finite resources. Furthermore, their continuous use can result in the accumulation of toxic elements in edible plants. As a result, farmers are actively seeking sustainable farming solutions. Vermitea, a liquid extract of vermicompost (organic fertilizer processed by earthworms), has emerged as a potential substitute for inorganic nutrient solutions in hydroponic cultivation2. In this study, we evaluated the effectiveness of vermitea in the hydroponic cultivation of Diplotaxis muralis plants. Our findings demonstrate that enhanced vermitea solutions (with similar electrical conductivity and pH values to the Hoagland solution) resulted in higher biomass production, SPAD values, and nutrient assimilation. The lower nitrate content in vermitea solutions also improved the quality of rocket leaves. Nuclear Magnetic Resonance (NMR) spectroscopy, a key analytical technique in metabolomics, was used to analyze the metabolic profile of Diplotaxis muralis plants grown in three different hydroponic nutrient solutions3. Our research suggests that enhanced vermitea can completely replace inorganic nutrient solutions in hydroponic farming.

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ORG-PO-231. Electrochemical stereoselective synthesis of biaryl scaffolds

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Biaryl scaffolds are widely spread in biologically important natural products, in numerous therapeutic agents, but they are also considered a privileged class of ligands and (organo)catalysts; therefore, the development of efficient alternative methodologies to prepare such compounds is always attracting much attention.1 Traditional methods to achieve these structures are based on transition metal-catalysed coupling reactions, such as palladium or rhodium, and nucleophilic organometallic species, which show a notable environmentally impact. However, more recently few protocols based on an electrochemical approach have been reported.2 In particular, in 2018, Waldvogel et al. investigated on the direct anodic cross-coupling between aryl amines and different-substituted phenols and naphthols, affording the desired products in up to 48% of yield.3 Considering these results, we envisioned the possibility of developing an enantioselective synthesis of biaryl scaffolds (such as BINAM) using naphthylamines derivatives bearing a chiral auxiliary directly connected to the heteroatom in order to exert a stereochemical control over electrochemical-driven coupling.

Initially, an exploration of various electrochemical parameters (conductivity, electrodes, F/mol) were undertaken to optimize yield, employing a model substrate based on naphthylamine scaffold. Subsequently, different chiral auxiliaries were investigated in order to reach good level of diasteroselectivities. According to this approach, the desired biaryl products were obtained in moderate to good yields and up to 85:15 diastereomeric ratio. The two diastereoisomers were subsequently separated by chromatographic purification before the removal of the chiral auxiliary.

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INO-PO-015. Synthesis and characterization of electroluminescent copper(I) complexes

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Last years have witnessed an increase in the interest in photoactive copper(I) complexes, because of their potential use in solid-state lighting devices. In particular, ionic copper(I) coordination compounds are currently investigated as electroluminescent materials to be used in the active layer of Light-Emitting Electrochemical Cells (LECs), as a more sustainable alternative to poorly available second and third-row transition metals.

Among the variety of complexes, tetrahedral heteroleptic [Cu(P^P)(N^N)]+ are one of the most studied. Focusing on the N^N ligand, 2,2'-bypiridine and 1,10-phenanthroline derivatives have been extensively investigated, but moving to ligands containing 5 membered N-heterocycles can be interesting in term of expansion of the colour range of emission, in particular towards the green-blue part of the visible spectrum.

In this context, herein we present the synthesis, the characterization and the application in device of a series of [Cu(P^P)(N^N)]+ complexes, based on Xanthphos as the P^P ligand and on differently substituted pyridine pyrazoles as the N^N ligand. The compounds have been structurally characterized by NMR and XRD techniques. The photophysical properties have been investigated through UV-Vis absorption and emission spectroscopies, while the electrochemical behaviour has been tested by means of cyclic voltammetric measurements. The most promising compounds of the series have also been incorporated and tested in prototypal LEC devices.

FAR-PO-101. KLig Enumerator: a Tool for Library Creation Based on Kinase X-Ray Structures.

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Kinases encompass one of the widest groups of proteins targeted in drug discovery campaigns. Not only due to their involvement in several diseases, kinases are often object of study in the context of multi – target drug discovery programs.1

Despite the different pockets and binding modes reported in literature for specific kinases or chemotypes, the so-called hinge region of the ATP binding site results is a conserved hot – spot for inhibitor design.2 Furthermore, a plethora of co – crystal structures are available in the RCSB PDB and several information about ligand binding are now encoded in the KLIFS database.3 Therefore, embedding moieties, whose binding mode in the proximity of the hinge is already known by means of crystallography, into another scaffold might be a strategy for increasing the chance of obtaining tailored kinase inhibitors and also for developing "fused" multi-target compounds.

Herein, KLig compound enumerator, a tool able to extract the fragments binding the hinge region from a list of kinase co-crystals and to connect them to a user defined scaffold, is presented.

The computational pipeline has been indeed employed to generate two libraries of potential dual inhibitors for the treatment of several multifactorial diseases, starting from a list of 4381 kinase complexes and two privileged cores. Nevertheless, further code implementations aimed at performing fully combinatorial library generation or at targeting different kinase regions are under evaluation.

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ORG-PO-128. Preclinical pharmacokinetic investigation of BAR502 metabolic profile

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GPBAR1 and FXR have been found to be the two most involved receptors in inflammatory liver conditions. Currently, the only semi-synthetic steroid derivative to have been successfully employed in human therapy for primary biliary cholangitis (PBC) is obeticholic acid (OCA). Its only drawback is the induction of a moderate to severe itching in treated patients. To identify a safer alternative to OCA, my research team performed extensive modifications to the bile acid scaffold and was able to identify several selective or dual FXR/GPBAR1 agonists. Among these, BAR502 emerged from the pharmacological studies were carried out as the most active without inducing itching. It is a double FXR/GPBAR1 agonist and has a shortened side chain. It is a 3,7,23-triol that shares the same stereochemistry as the substituents on rings A and B with OCA. BAR502 was also tested in several in vivo tests such as HFD and CCl4 induced damage models. The excellent results from all of these tests prompted the start of phase I clinical trial: safety, tolerability, pharmacokinetics, and pharmacodynamics of BAR502 in healthy subjects. Subsequent in vitro studies were executed by incubating the molecule in two well-known enzymatic systems and then analysed by LC-MS. To this end, conceivable metabolites both identified in our enzymatic assays or hypothesized as plausible by rational biotransformation prevision were synthesized and used as analytical standards. Obtained analyses and fragmentations spectra perfectly overlap with the authentic standard assuring high confidence in the identification.

INO-PO-047. Octacoordinated iron(II) complex with neutral bis-tetrazolylpyridyl ligands and solvent molecules as solid-state-trapped intermediate in solution conversion

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2,6-bis(2-(methyl)-2H-tetrazol-5-yl)pyridine, Me2btp, related to the most known bis-pyrazolylpyridyl R-bpp derivatives (R = variable substituents),1–3 was employed as neutral tridentate mer-coordinating ligand for iron(II). Metalation of Me2btp with iron(II) perchlorate revealed a non-trivial chemistry with the selective crystallization of [FeHS/LS(Me2btp)2](ClO4)2.MeCN.2.75H2O (2HS/LS.MeCN.2.75H2O) as red rods through accurate solvent polarity control, with half of the iron(II) in the high spin (HS, S = 2) state and the second half in the low spin (LS, S = 0) state. 2HS/LS.MeCN.2.75H2O slowly converts in solution into the co-crystal [FeLS(Me2btp)2][FeHS(Me2btp)(MeCN)2(H2O)](ClO4)4.MeCN (2LS.3HS.MeCN) through the unprecedented octacoordinated species [Fe(Me2btp)2(MeCN)(H2O)](ClO4)2.H2O (1.H2O) as intermediate species trapped in the solid state.4 The

combined use of different spectroscopic techniques, single-crystal X-ray diffraction experiments and magnetic measurements, together with theoretical calculations, will be presented in this contribution.

Acknowledgment: Italian Ministero dell'Università e della Ricerca (MUR), the Royal Society of Chemistry through the RSC Research Fund grant nr. R19-0504 entitled 'Nitrogen-donor ligands for new molecular iron(II) spin crossover complexes and cobalt(II) single-molecule magnets', the Dipartimento di Scienze Chimiche e Geologiche of the Università degli Studi di Modena e Reggio Emilia through the Fondo Dipartimentale per la Ricerca year 2020 (FDR2020 linea ricerca) and year 2021 (FDR2021 linea dottorato).

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ALI-PO-016. Comprehensive lipidomic analysis of functional foods and nutritional implications

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In the last decades, lipidomics has emerged as a cutting-edge approach among omics- techniques, since lipids revealed to be essential molecules in the regulation of metabolic pathways. To this regard, the content of essential fatty acids (EFAs), as well as nutritional indices such as the levels of omega-3 and omega-6 FAs and their ratio are essential parameters to evaluate the beneficial properties of food products. In addition, the investigation of complex lipids in their native forms is proved to be crucial to obtain additional information about lipids role and on FA arrangement into each species.

ABC-PO-034. Studying the degradation of egg proteins in polychrome layers by MS-based proteomics

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Egg was widely used in the tempera technique thanks to its good resistance and stability to aging1. The present study aimed to investigate the effect of artificial aging on egg white proteins to better explore the process of protein degradation in polychrome artworks. According to the literature, the most common protein events in historical samples are the oxidation of serine, phenylalanine, and cysteine as well as the deamidation of asparagine and glutamine2. In many cases, inorganic pigments may accelerate the binder's degradation as several studies claim3,4.

Mock-up samples made of beaten egg white, egg white each mixed with hematite and calcium carbonate, applied, and dried on glass microscope slides, were analyzed as such and after artificial aging with a solar lamp (300 W, 230 V, 280-2000 nm) at 50 °C for a maximum of 864 hours and relative humidity between 60 and 75%. Three types of enzymes (trypsin, GluC and AspN) were employed to enzymatically digest the freshly prepared samples as well as the ones subjected to 30, 72, 144, 288, 576 and 864 hours of aging. Trypsin was chosen as the conventional enzyme for bottom-up proteomics while AspN and GluC were selected for a middle-down approach. ATR-FTIR (attenuated total reflectance – Fourier-transform infrared spectroscopy) analysis was performed on microscope slides, while reversed-phase liquid chromatography with electrospray ionization-mass spectrometry (RPLC-ESI-MS) and matrix-assisted laser desorption/ionization-time of flight MS (MALDI-TOF-MS) were used to investigate the enzymatically digested samples. Regardless of the enzyme employed, the number of no specific peptides increased with artificial aging time, suggesting a protein structural degradation. This was also confirmed by the peptide mass fingerprinting (PMF) in MALDI-MS showing a progressive decrease of the S/N ratio with aging especially for heavier peptides. In this communication, the main results will be presented and discussed.

This work was supported by Progetto di Ricerca di Interesse Nazionale—PRIN 2022CNNRWZ- REActive GEl for orgaNic bindERs recognition in Artworks (REAGENERA), financed by the Italian Ministero per l'Istruzione, l'Università e la Ricerca (MIUR).

FIS-PO-040. Computational modeling of electronic excitations in solution

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The investigation of electronic transitions in solution is a useful tool to gather information on relevant biological systems. To this extent, accurate ab initio methods based on Quantum Mechanics (QM) can aid in the interpretation and rationalization of experimental results. Solvated systems are usually characterized by a very large number of atoms, and the straightforward application of QM methods is unfeasible from the computational point of view. A possible solution is to resort to multiscale modeling, in which the solute is described at the QM level, while the solvent is modeled employing simplified embedding potentials. Among these methods, hybrid QM/Molecular Mechanics (MM) methods have proven to be particularly successful in the simulation of solvated systems. In particular, QM/MM methods are capable of describing specific solute-solvent interactions such as hydrogen bonding patterns, that can play a role in the shaping of spectroscopic signals.

From the solute's point of view, one of the most popular approaches for the calculation of excitation energies is Time-Dependent Density Functional Theory (TDDFT) since it represents a good compromise between accuracy and computational cost. However, one of the major intrinsic drawbacks of TDDFT is the lack of nondynamical correlation, which is crucial for the simulation of multireference systems, e.g. conjugated systems or transition metal complexes.

To overcome this limitation, in this contribution we propose a QM/MM computational strategy based on the combination of multi-configurational methods, grounded in the Complete Active Space Self Consistent Field (CASSCF) approach, and the Fluctuating Charges (FQ) force field. The

resulting CASSCF/FQ method is then applied to the calculation of vertical excitation energies of a set of molecules in solution, which paves the way for future applications on biological systems. A detailed comparison with reference and experimental data is also proposed

INO-PO-008. Fluoride Binding by Lanthanide(III)-Complexes Investigated by Multinuclear and Multifrequency NMR Techniques

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The ability of complexes to recognize anions represents a significant challenge for coordination chemistry and it is attracting increasing interest due to its potential applications in technological and biomedical fields. In this work, we investigated the interaction between fluoride ion and two LnIII-based complexes characterized by different coordination geometries and hydration numbers (q = 1, 2).[1] For this purpose, a combination of high- and low-resolution NMR techniques has been employed. Specifically, fast-field cycling relaxometry (1H longitudinal relaxation rates vs B0) and 17O NMR measurements (oxygen transverse relaxation rates vs temperature) were performed on the GdIII-complexes. The affinity constant (KA) of the complexes with F- was determined via relaxometric titration. The thermodynamic and kinetic parameters, associated with the chemical exchange of water molecules with fluoride, were determined by acquiring 19F NMR spectra at different temperatures over the diamagnetic analogue YIII-complexes.[2] The results of this study represent a fundamental step towards the development of new LnIII-receptors with enhanced anion affinity and selectivity.

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TEO-PO-038. Computational investigation on the Hydrogen Evolution Reaction mechanism by Chini complexes

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The transition from fossil fuels to renewable energy sources necessitates the development of efficient energy storage methods to address the spatiotemporal challenges posed by the limited ability to store this energy for use when it is most needed. Chemical bond energy storage, particularly through electrochemical conversion of renewable resources into carbon-neutral fuels, emerges as a promising solution. Metal Carbonyl Clusters (MCCs) with their tailored electronic structures present as ideal candidates for electrocatalysis, notably in hydrogen evolution reaction (HER) and carbon dioxide reduction (CDR). The utilisation of MCCs as homogeneous electrocatalysts offers distinct advantages over conventional catalysts, owing to their unique properties. Their high proton affinity in the reduced state facilitates hydride intermediate formation at low potentials, while the flexibility in substitution reactions enables precise tuning of catalytic properties. Here, we present a comprehensive Density Functional Theory (DFT) study focusing on a specific class of platinum carbonyl clusters with general formula [Pt3n(CO)6n]2- (n ≤ 10), known as Chini clusters (Figure 1). Our computational approach delves into the efficacy of Chini clusters in prompting the reduction of protons and (possibly) CO2 to produce molecular hydrogen and (hopefully) formate utilising metal hydride intermediates. We assess the accuracy of various levels of theory in describing the structure and infrared spectra of Chini clusters and explore the reaction profile for the hydrogen evolving reaction.

TEO-PO-010. Theoretical Investigation of Inorganic Particulate Matter: The Case of Water Adsorption on a NaCl Particle Model Studied Using Grand Canonical Monte Carlo Simulations

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Sodium chloride (NaCl) represents the principal component of atmospheric particulates of marine origin.1 To gain a molecular-level understanding of the adsorption process of water vapor on the NaCl surface, Monte Carlo simulations performed in the Grand Canonical ensemble were carried out, considering the water adsorption at different water pressures on a NaCl(001) surface.2 The calculated adsorption isotherm shows four different regions, whose coverages correspond to those of the low-, transition-, high-, and pre-solution-coverage regions experimentally observed. Detailed analysis, leveraging unsupervised machine learning for water clusters detection, revealed how the structure of the adsorbed water molecules (islands, layer, and multi-layer) changes depending on water pressure, and how their orientation with respect to the surface varies with the distance from the surface. This detailed information further supports the picture coming from previous experimental IR absorption spectroscopy studies.

CSB-PO-010. Development of NIRF probes for FAP imaging

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Fibroblast Activation Protein is a pan-cancer target1, thus the development of diagnostic approaches by targeting FAP would be impactful. Besides diagnostic imaging techniques, optical imaging guides the clinician's decision-making in real-time, thus the development of novel tumour-targeted dyes has been increasing interest. This work aims at synthesizing, and in vitro/in vivo testing two novel FAP-targeting probes for Near Infrared-fluorescence imaging applications based on IRDye800CW and FNIRTag fluorophores. The FAP targeting fluorescent conjugates were synthesized through amidic bond (Fig 1A). The absorption, emission, and excitation spectra were recorded at different concentrations both in PBS pH=7.4 and

in PBS:MeOH (1:1). Stability in human serum and photobleaching were investigated by UPLC-MS and fluorescence emission decrement measurements respectively. Albumin binding was evaluated by incubating the two molecules (0.5 μM) in human serum albumin (0-30 μM) for 1h at room temperature. The uptake on FAP-expressing cells (293T-FAP+) was evaluated by flow cytometry measurements. Preliminary ex vivo experiments were conducted to assess the FAP expression, by inoculating subcutaneously TUBO cells in female Balb-C mice through flow cytometry analysis and immunohistochemical evaluation. In vivo fluorescence imaging studies were performed on TUBO tumor-bearing athymic mice by i.v. administration of 5 nmol of dyes. Biodistribution studies at 24h post-injection were performed to quantify the fluorescence in the main organs. Photophysical properties investigation revealed a linear relationship in the range 0-2 μM and a 3-fold higher fluorescence for FAPI-FNIRTag (fluorescence measurements and phantom imaging). FAPI-IRDye800CW and FAPI-FNIRTag showed no degradation in serum and exhibited remarkable stability to photobleaching after 2h-irradiation, higher for FAPI-FNIRTag (92% vs 68%). Albumin binding data showed a comparable affinity, as shown from the KD values obtained from the fitting of the binding isotherm (10-7). Flow cytometry analysis revealed that the conjugation of FAP-inhibitor moiety to the fluorescent dyes did not affect the FAP specificity (Fig.1B). IHC staining and FACS analysis proved that TUBO tumor-bearing mice is a suitable model for the preclinical validation of imaging probes based on FAP-inhibitors. In vivo imaging studies (Fig. 1C) revealed a good tumor-to-background ratio for both of the dyes but competition experiments are needed to confirm the specificity of the signal. Biodistribution studies showed a liver uptake of the dyes and a kidney clearance. IRDye800CW and FNIRTag dyes are used for the first time to develop FAP-targeting NIRF probes with FAPI-46 FAP inhibitor.

FAR-PO-007. Innovation in Virtual Screening: PyRMD2Dock's AI-Infused Approach

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This abstract introduces a new computational approach, PyRMD2Dock, designed to enhance the efficiency of virtual screening campaigns for drug discovery by combining our Ligand-Based AI- enforced Virtual Screening tool PyRMD with the widely used docking software AutoDock-GPU (AD4-GPU).

Recent research has highlighted the importance of using ultralarge molecular databases (i.e., containing millions or even billions of compounds) for SBVS campaigns.1 The screening of vast compound libraries, exemplified by the Enamine REAL database with approximately 7 billion compounds,2 increases the chances of identifying novel and potent drug candidates not simply achievable with smaller databases.3 However, screening millions or billions of compounds presents challenges, necessitating substantial computational resources and specialized software.4

Through the implementation of PyRMD2Dock, we demonstrated the rapid screening of massive chemical databases to identify compounds with the highest predicted binding affinity to a target protein. Benchmarking and screening experiments highlighted the predictive accuracy and speed of PyRMD2Dock, emphasizing its potential to expedite the discovery of novel drug candidates.

Overall, this research underscores the value of integrating AI-powered LBVS tools with docking software for effective and high-throughput virtual screening of ultralarge molecular databases in drug discovery. The open-source tools, PyRMD5 and the PyRMD2Dock6 protocol, are freely accessible on our GitHub page (https://github.com/cosconatilab/PyRMD).

INO-PO-079. Deposition of fungicide and Bacillus spores containing coatings for encapsulating seeds by Aerosol Assisted Atmospheric Pressure Plasma tecnique

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Cereals can be colonized, throughout the whole crop cycle, by fungal pathogens, including mycotoxigenic species and among these one of the most important is F. graminearum, causal agent of different cereal diseases such as Fusarium Head Blight. Fusarium graminearum represents both a phytopathological problem and a toxicological risk for human and animals. To date, fungicides represent the most effective strategy to protect cereals against Fusarium species. However, in the last years, as requested by the European Green Deal, more eco-friendly strategies should replace the use of chemicals in agriculture. In this scenario, selection of biocontrol agents and Low Temperature Plasma (LTP) processes recently developed for applications in Agriculture and Food technologies are very promising.1, 2

Experiments were conducted on the deposition of barrier films containing fungicides or bacterial spores in a DBD (Dielectric Barrier Discharge) reactor by means of Aerosol Assisted Atmospheric Pressure Plasma Deposition (AA-APPD). With this approach, high fungicide effect with a small quantity of chemicals and less pollution of soil and water is expected. The chemical composition and the morphology of barrier film have been characterized by means of WCA measurements, FTIR, SEM and profilometer. Coating chemistry and morphology and activity against F. graminearum have been tested on glass discs, and the viability of the Bacillus spores as well.

Good activity against fungi has been observed both for coatings embedding the fungicide or including the Bacillus spores. Very interestingly the latter retained the viability upon the deposition process. In the case of coatings containing prothioconazole an anti-fungine activity higher than the pure pesticide has been found. Preliminary results showed that Aerosol Assisted Atmospheric Pressure Plasma can represent a good ecofriendly tool for seed coating. Activities aimed to optimize the deposition on maize and wheat seeds of nanocomposite film containing fungicides or bacteria spores, are ongoing.

Acknowledgements: this research activity is partly funded by Progetti@CNR “Cold Plasma Processes and Technologies for Sustainable Agriculture and Food Processing” and ON FOODS, PNRR Mission 4 Component 2 Investment 1.3, Theme 10

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ORG-PO-232. Pd-catalyzed carbonylation reaction: process optimization and industrial scale up

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The use of palladium-catalyzed carbonylation reactions of aryl halides is increasing in the pharmaceutical chemistry due to their very high atom-efficiency, improved milder conditions and large availability of aryl halides intermediates1.

A case study of process optimization of a reductive Pd-carbonylation of an aryl halide intermediate using silanes as hydride donor to achieve the desired aldehydic intermediate is discussed. Studies of reaction parameters like i.e. catalyst loading, temperature, CO pressure, oxygen content and concentration, including also kinetic data, helped understanding side reactions and impurities formation.

The scale up of the above carbonylation reaction was based on the gas-liquid mass transfer coefficient kLa performing down-scale optimization experiments using similar kLa value of the industrial autoclave.

All above studies allowed to achieve at industrial scale very high conversion, purity and yield

ORG-PO-130. Hit-to-lead optimization of flavone-based tyrosine kinase inhibitor inhibiting L858R/T790M EGFR activation in NSCLC

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EGFR is one of the most molecular targets in non-small lung cancer (NSCLC) where the mutant forms of EGFR are expressed. The efficacy of tyrosine kinase inhibitors (TKIs) could be compromised by additional mutations in EGFR. Since several flavonoid have been reported to possess protein kinase inhibitory activity 1-2, a flavone core was used as a scaffold for the design of novel ATP-competitive inhibitors. The core is modified by introducing several chemical groups able to interact with the key regions of the ATP-binding pocket. A homemade virtual library was generated, and a three-track virtual screening was made to identify compounds with a higher affinity toward both mutated forms with respect to the wild type one. This process allowed us to select two novel flavone-based TKIs (FL4 and FL5), that were then synthetized and tested in kinase enzyme assay. One of these two hits compound (FL4) shows effective selectivity against both EGFRL858R/T790M and EGFRL858R/T790M/C797S while sparing the wild type ones 3. At this point, our goal was to optimize this hit compound to obtain a lead compound with a better efficacy profile. We also aimed to improve its lipophilicity profile. The LogP of compound FL4 is 6.9, a value that does not comply with one of Lipinski's 5 rules (LogP<5). Starting from this hit compound, novel TKIs are therefore designed to obtain molecules with nanomolar inhibitory activity. Molecular Docking approach was used for the identification of the most promising compound (F2) which was then synthetised and tested in the enzyme-based assay. This novel flavone compound showed an IC50 of 0.1 μM against EGFRL858R/T790M form, 120-times lower with the respect to compound FL4 and it did not inhibit the phosphorylation of wild type EGFR. Finally, it can be stated that the new lead compound also has a better lipophilicity profile compared to compound FL4, with a LogP value of 4.

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ANA-PO-025. Evaluation of the relative response factor among different gas chromatographic systems

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When it comes to gas chromatographic analysis, we usually tend to consider MS as the reference detector to identify the analytes, while FID for their quantification. This is because the molecules do not respond in the same way to different detectors, and due to the analogue response of FID, the analytical signal is more linear to the concentration and the dynamic range maintains the linearity over a range of higher concentration.

If the analysis goal is the chemical elucidation of a given sample, the response normalization of the single analytes on the total detected signal (area %), is an effective and common way to express the chemical distribution of within a given sample.

This is reasonable and accurate with a detector as FID, whose response is fairly consistent between different compounds or at least predictable through the calculation of relative response factors (RRFs). Different approaches have been developed for their calculations, among which the effective carbon number (ECN) [1].

Applying total response normalization when using an MS detector is generating an error, especially if different chemical classes are considered: this is due to the different responses of molecules in relation to their different structure. In addition, predicting the RRFs is not yet demonstrated.

In this contribution the relative response factors of 35 compounds with different chemical structure (n-paraffins, i-paraffins, olefins, naphthenes, aromatics, and N/O-containing compounds) were calculated for GC coupled to different detectors: FID, qMS, TOFMS, and VUV. Using on-column injection, it was possible to understand the different responses of the various detectors for each class of compounds.

In addition, it was studied the inlet splitting influence on RRFs, through the comparison of on-column and split injection analyses.

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FAR-PO-107. From Hit to Lead: Exploring Natural Compounds as Potential Inhibitors of SARS-CoV-2 NSP13 Helicase for COVID-19 treatment

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In the current medical landscape, there is an urgent need to discover new effective drugs to enhance the therapeutic options for COVID-19. The SARS-CoV-2 non-structural protein 13 (NSP13) helicase enzyme has emerged as a promising target for the development of novel COVID-19 inhibitors. In this study, our objective was to identify potent natural products capable of inhibiting NSP13 through virtual screening of 96,402 compounds from the COCONUT Database. These compounds were docked into the NTPase active site, and Canvas similarity clustering was employed to categorize them into different scaffolds for further analysis. Subsequently, based on commercial availability, ten compounds were selected for in vitro testing. Among these, one compound exhibited significant NSP13 inhibitory activity with potency in a micromolar range (Figure 1). Building upon this finding, GBPM and ligand designer tools aided in the lead optimization process. The most promising chemical candidates will be synthesized and evaluated for their antiviral activity against SARS-CoV-2. This work is funded by the PANVIRIDE project1.

ANA-PO-109. A GC-QEPAS prototype for the detection of chemicals of forensic interest: a chemometrics approach

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GC-QEPAS, a compact gas sensor designed for real-time analysis of Volatile Organic Compounds (VOCs) and Semi-volatile Organic Compounds (SVOCs), has been developed by CREO and validated within the scope of the RISEN project (Horizon 2020, Grant Agreement No 883116). This study focuses on the analysis of drug precursors and chemical weapons in the forensic field, to ensure the safety of operators. Compounds are transferred into the sensors by a pump and then concentrated employing two graphitized carbon sorbents (Carbograph 5TD and Carbograph 2TD). Thereafter, compounds are separated by a MEMS-based fast-GC and analysed by an IR sensor based on Quartz Enhanced Photoacoustic Spectroscopy (QEPAS).

The effectiveness of the GC-QEPAS prototype was established by analysing the following drug precursors and chemical weapons simulants: safrole, benzyl methyl ketone (BMK), benzaldehyde, acetone, piperidine, toluene, methyl ethyl ketone, dimethyl-methylphosphonate (DMMP), di-propylene-glycol-methyl-ether (DPGME) and methyl salicylate, diethyl sulfide (DES), diethyl methylphosphonate (DEMP) and trimethyl phosphonate (TMP). Following the ENFSI guidelines, a complete validation of the method was carried out considering the repeatability, reproducibility, and sensitivity. Repeatability and reproducibility calculated for IR spectra correlation were close to 100%. The Limit of Detection (LoD) for the majority of analytes, determined through the signal-to-noise ratio of chromatograms, was lower than 1 ppm.

Therefore, a chemometrics approach was developed for robust data analysis and forensic interpretation. Multivariate data analysis was carried out using Python code within a Jupyter Notebook environment, using the following packages: NumPy, Pands, Matplot library, Plotly and Scikit-Learn. The data analysis of QEPAS spectra workflow involved various pre-processing steps of raw data, unsupervised and supervised pattern recognition techniques, and model evaluation through Leave-P-Out cross-validation.

Analytical method performances obtained by the validation were evaluated as reliable and relevant for the criminal justice system. Therefore, the analytical data was treated with different classification models, such as Linear Discriminant Analysis (LDA), Quadratic Discriminant Analysis (QDA), Partial Least Squares Discriminant Analysis (PLS-DA), Logistic Regression (LR) and Support Vector Machines (SVMs), in order to establish the improvements in comparison to conventional hyphenate GC-spectroscopy instruments. The results highlighted the importance of the data pre-processing method employed to obtain an accurate classification. The PCA-LDA, PCA-QDA and PCA-LR, using the standard normal variate pre-processed spectra, appear as the most effective classification models, showing satisfactory results for real implementation in forensic field applications. In addition, SVM showed lower model accuracy than the beforementioned methods but appeared still adequate.

Merit to its good analytical performances and ease of use, the instrument can be employed to detect chemical traces on crime scenes, such as drug precursors, hazardous materials and chemical weapons to protect the health and safety of forensic personnel. In conclusion, the GC-QEPAS prototype developed by CREO, coupled with the chemometrics approach, presents a promising methodology for the detection of chemical substances of toxicological interest in the forensic field.

ANA-PO-072. NIAS migration from polymeric materials in contact with dry food: optimization and validation of the extraction procedure

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The release of Non-Intentionally Added Substances (NIAS) from polymeric articles into food poses a health risk. This scientific work was focused on the optimization of a analytical method that allows the identification and quantification of NIAS migration which could occur following contact of a silo's polyurethane gasket intended for dry food contact. The migration of aniline, acetyltributylcitrate, bis(2-ethylhexyl)adipate, 2,6-tertbutylhydroxytoluene (BHT) and 1,4-butanediol from this polymeric manufact was studied.

Migration tests were carried out as indicated by law regulation (EU Regulation 10/2011) simulating the worst conditions inside the silo, using Tenax as appropriate food simulant, and directly on real dry food (rice, flour, powdered milk, cocoa powder, sugar, corn starch). The analytical method is based on GC-MS analyses. During the method development phase, based on some articles in the literature, several analytical criticalities were evidenced. The most critical were the presence of matrix effect for several real dry food and some very low recovery yields. With the aim of overcoming the problems mentioned, an extraction method has been developed which involves the smallest number of steps possible and avoids the loss of the analytes through volatilisation. Finally, the extraction yields were evaluated and the correct migration values were calculated by external calibration or, where required, employing the standard addition method. Finally, the entire primary validation procedure is performed on the optimized method.

The results obtained show how the process is influenced not only by the chemical nature of the migrant, but also by the physical-chemical nature of the simulant or of the food matrix used.

ORG-PO-233. Exploring Chirality in Photo-Assisted Water Oxidation with Carbohydrate-Decorated Antenna Dyes

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Similarly to its natural counterpart, artificial photosynthesis harnesses sunlight to promote the transformation of water and carbon dioxide into energy-rich products. The synthetic architectures designed for artificial photosynthesis rely on three key elements: light-harvesting chromophores, a water oxidation catalyst, and a semiconductor. The "quantasome" (QS) architecture designed in our group relies on a self-assembled supramolecular aggregate generated by the hierarchical organization of perylenebisimide dyes (PBIs), the artificial antennas, on a ruthenium-based polyoxometalate (RuPOM), the reaction center for photo-assisted water oxidation. The complex exhibits quantitative faradic efficiency and excellent performances on electrode.

A modular click chemistry approach allowed the decoration of the PBIs with different moieties to tune the properties of the aggregate. Introducing chiral carbohydrates had the double aim of generating QSs with improved water affinity and introducing optical activity into the system. The intriguing chiral assembly of the new QS allowed us to explore the effect of this property on the efficiency of the system and on the possibility of chiral-induced spin selectivity (CISS) effect in QS-mediated water oxidation.

ORG-PO-131. Structural Identification of the main Impurities of Voclosporin, a semisynthetic API with immunosuppressant Activity

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Voclosporin (tradename: LUPKYNIS) is a semisynthetic immunosuppressant drug derived from cyclosporin A. The presence of a diene system instead of a single double bond, at the noncoded amino acid methyl-pentadienyl-N-methylthreonine (MePmt1), gives higher activity and lower toxicity than cyclosporine A, enough to be approved by FDA in 2021 for the treatment of Lupus nephritis.

In the development of the API process, the study of the potential impurities which could arise during the synthesis, purification and storage, is a key aspect. The most critical impurities of voclosporin are generated due to the instability of this API in basic conditions.

Three main impurities were synthesized, isolated and their structures were elucidated by orthogonal analytical techniques such as LC-MS, mono and bi-dimensional NMR. One of them was identified as an isomer of voclosporin, produced by epimerization of specific stereogenic centres in the cyclic undecapeptide, while the other two impurities are dehydrated voclosporins, generated by elimination reaction of the hydroxyl group at the noncoded amino acid (MePmt1).

TEO-PO-011. CO oxidation mechanism of Ag-substituted Mo/Cu CO-dehydrogenase. Analogies and differences to the native enzyme

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The aerobic oxidation of carbon monoxide to carbon dioxide is catalysed by the Mo/Cu-containing CO-dehydrogenase enzyme in the soil bacterium Oligotropha carboxidovorans, enabling the organism to grow on the low-weight gas molecule as a carbon and energy source [1]. It was shown experimentally that silver can be substituted for copper in the active site of Mo/Cu CODH to yield a functional enzyme. In our laboratories, we employed QM/MM calculations to investigate whether the reaction mechanism of the silver-substituted enzyme is similar to that of the native enzyme. Due to remarkable consistence with experimental findings, our theoretical results indicate that the Ag-substituted enzyme can oxidize CO and release CO2 following the same reaction steps as the native enzyme. Surprisingly, lower activation energies for C–O bond formation have been found in the presence of silver. We also evaluated the effects that differences in the water-active site interaction may exert on the overall energy profile of catalysis. Finally, the formation of a thiocarbonate intermediate along the catalytic pathway was found to be energetically unfavorable for the Ag-substituted enzyme. This finding aligns with the hypothesis proposed for the wild-type form [2], suggesting that a step corresponding to the formation of such species may not be necessary for the enzymatic catalysis of CO oxidation. Further perspectives in terms of investigations on engineered forms of the enzyme active site will be also considered in our presentation.

ABC-PO-011. Biopolymer membranes as a sustainable alternative to chemical biocides in Built Cultural Heritage: a preliminary study

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Nowadays, outdoor built cultural heritage is particularly affected by degradation phenomena threatening the conservation of the stone elements because of the changes in environmental conditions (e.g. increase in the air pollution, climate changes) along with predisposing factors linked to the intrinsic characteristics of the material (porosity, composition, etc.). These changes have resulted in an acceleration of degradation processes, including those of biological origin. The Baroque monuments of eastern Sicily, built in local limestones, represent a significant conservation challenge since physical, chemical decay and biodeterioration are easily observable. In this context, the attention to the environmental issue encourages the definition of more sustainable conservative strategies1 focused on safer and cheaper alternatives to traditional chemical biocides.

The objective of this research is to synthesize biopolymeric membranes as controlled-release systems for natural biocides, to test on Modica, Ragusa and Comiso stones widely used in the Sicilian Baroque. The main compositional and physical features of the limestones were previously and opportunely determined to assess the efficacy of the developed polymeric systems.

In this study, a biopolymeric membrane based on Polylactic acid (PLA) and combined with limonene was synthesized and characterized using analytical techniques2 such as Fourier-transform infrared spectroscopy (FTIR) and nuclear magnetic resonance spectroscopy (NMR). FTIR analysis enabled the identification and interpretation of molecular interactions between limonene and the PLA matrix through vibrational band analysis, while NMR highlighted the presence of limonene in the membrane. The next steps foresee to prepare membranes with different amounts of limonene and to evaluate their biocidal efficiency in biological tests conducted on limestone samples undergone biocolonization in laboratory-controlled environment.

ORG-PO-129. Novel approaches toward sp2-sp3 medicinal chemistry relevant scaffolds

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Over the past years, sp2-sp3 hybrids are emerging as medicinal chemistry relevant building blosks1–3 attracting the interest of the synthetic community. In this communication two different strategies to reach sp2-sp3 hybrids will be discussed (Figure 1). The first one relies on the development of a dearomative platform for the synthesis of (amino)cyclitols-aryls sp2-sp3 hybrids 1,4 this approach allows to reduce the sp2-fraction of polynuclear aryls and (hetero)aryls 2, giving access to aryl condensed cyclohexane rings.

In the second approach the sp2-fraction of the ketone 4 has been increased exploiting the ketone chemistry to get (hetero)aryls-bicyclo[2.1.1]hexanes sp2-sp3 hybrids 3. Those scaffolds represent an attractive class of benzene rings bioisosteres.5

FIS-PO-027. Glutathione Peroxidase-like activity of functionalized tellurides: insight into the oxidation mechanism through activation strain analysis

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Glutathione peroxidases (GPxs) are a family of selenium-based enzymes that catalyze the reduction of hydroperoxides in living organisms, counteracting the formation of reactive oxygen species that may lead to cellular damage and degenerative pathologies. Organotellurium compounds have been investigated as possible GPx mimics, since they often display a higher catalytic activity compared to the corresponding S and Se-equivalents. Recently, several novel β-substituted diorganotellurides were synthesized and evaluated as catalysts for the reduction of hydrogen peroxide. The chemical nature of the substituent proved to have a crucial effect on the rate of oxidation of the thiol substrate. Specifically, the presence of a β-amino group on the telluride lead to a much higher catalytic activity, compared to other substituents. In our study, an in silico approach was adopted to interpret experimental results and draw general conclusions on the reactivity of organochalcogenides with H2O2. The computational work has been conducted within the framework of Density Functional Theory, combined with the Activation Strain Analysis. The calculated activation energies for the reaction of the chalcogenides with H2O2 are consistent, both in gas-phase and in solvent, with the experimental evidence. We thereby conjecture a low-barrier alternative reaction mechanism, which is presumably involved when the β-amino moiety is found in its protonated form.

FAR-PO-066. A sustainable one-pot three-step approach for the synthesis of 3,5-disubstituted 1,2,4-triazines as versatile pharmacological tools

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1,2,4-Triazines are an important class of six-membered aromatic heterocycles which have demonstrated a wide range of pharmacological applications, showcasing properties that extend to anticonvulsant, antithrombotic, antibacterial, antimalarial, antiviral, anti-inflammatory, and anticancer activities.1,2 While various strategies for synthesizing 1,2,4-triazines have been reported, they often require multiple steps/purifications, harsh reaction conditions, activation by toxic metals/oxidants, longer reaction times, use of complex synthetic precursors, and sometime lead to the formation of multiple regioisomers.2 We report herein the first microwave-assisted one-pot three-step metal-free [4+2] procedure for the synthesis of 3-hydrazinyl-1,2,4-triazine directly from commercially available aromatic and heteroaromatic ketones (1). The optimized protocol allowed us to quickly generate substituted 5-aryl/heteroaryl-3-hydrazineyl-1,2,4-triazines (5) in good overall yields which were further elaborated by a μW-assisted condensation with a wide range of aldehydes/ketones to provide a collection of hydrazone-derivatives (7). The developed synthetic approach proceeds under mild conditions, with good functional group compatibility and represent a versatile, rapid, and efficient tool for the generation of new highly functionalized 1,2,4-triazines derivatives of potential biological interest.3

Figure 1: Synthetic route to obtain 1,2,4-triazine based derivatives.

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TEF-PO-009. Chitosan-associated SLNs promoting mucin binding for ocular drug delivery

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Solid lipid nanoparticles (SLNs) made of biodegradable physiological lipids have been widely suggested as carriers in ophthalmic drug delivery. The synergic combination of natural polymers, such as chitosan, and SLNs could be an effective strategy for increasing nanoparticles retention. This mainly occurs due to the electrostatic interaction between the positively charged chitosan and the negatively charged mucin. At this purpose, in the present study, SLNs were manufactured by means of high shear homogenization and ultrasound method [1]. Three different systems were prepared: naked SLNs, chitosan-associated SLNs (CH-SLN), and SLNs coated with chitosan (CH-c-SLNs). As for naked SLNs, the lipid phase (Compritol 888 ATO and cyclosporin A) was melted and the aqueous phase (water with surfactants – Tween 80 and Pluronic F68) was added to the lipid phase under homogenization (T25, IKA-Werke GmbH, Germany). CH-SLNs were prepared by mixing the lipid to a chitosan hydrochloride solution and then diluted in water, while CH-c-SLNs were produced by adding chitosan solution after hot emulsification of SLNs. All samples were submitted to ultrasound treatment (Elmasonic S80 H) for 10 min to avoid aggregation during particles stabilization.

The morphology and the particle size of SLNs were investigated by means of cryo transmission electron microscope Glacios (Thermo Fisher Scientific) and dynamic light scattering (Litesizer 500), respectively. Overall, the results highlighted circular dark structures related to spherical nanodroplets, and a mean particle size of about 180 nm. In particular, the presence of chitosan led to the production of particles with a higher particle size characterized by a rigid core enclosed by a jelly coating, and to the presence of some free polymer chains without nanoparticles. Moreover, the thermodynamic interaction between SLNs and mucin was investigated by isothermal titration calorimetry at 37°C (MicroCaL PEAQ-ITC, Malvern). After the addition of trehalose as cryoprotectant (solid lipid: cryoprotectant 1:4), SLNs were freeze-dried and dispersed in acetate buffer 20 mM at pH 4.5. The nanoparticle dispersion with a concentration of 1 mg/ml was placed in the syringe and was added into the thermostated cell containing a suspension of mucins in acetate buffer (0.1 mg/ml). A plateau, corresponding to the equilibrium of the system, was reached for CH-SLNs and CH-c-SLNs, meaning that saturation of mucin by the SLNs occurs. In fact, the dissociation constant (Kd) of naked SLNs was higher compared to that obtained for SLNs containing chitosan, indicating a lower binding affinity.

Further studies are ongoing to assess the permeation and penetration of SLNs across the corneal cells, and the cellular uptake.

FAR-PO-105. UNVEALING NEWLY DISCOVERED SMALL MOLECULES AS ACE2-SPIKE INHIBITORS AGAINST SARS-CoV-2

Ruggieri, Giuseppe[1,2]; Madia, Valentina Noemi[1]; Patacchini, Elisa[1]; Ialongo, Davide[1]; Messore, Antonella[1]; Albano, Aurora[1]; Arpacioglu, Merve[1]; De Leo, Alessandro[1]; Michelini, Zuleika[3]; Cara, Andrea[3]; Scipione, Luigi[1]; Di Santo, Roberto[1]; Costi, Roberta[1]

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The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an RNA virus with a positive strand, responsible for the ongoing global pandemic of coronavirus disease 2019 (COVID-19). It is crucial to expedite the discovery of drugs to combat this pressing global health crisis. The interaction between the spike (S) protein of SARS-CoV-2 and the cell surface receptor angiotensin-converting enzyme 2 (ACE2) facilitates the virus's infectivity, enabling its entry into host cells. ACE2 functions as a ligand-receptor pair that initiates viral attachment and cellular entry. Specifically, the receptor-binding domain (RBD) of the S protein binds to the membrane-distal portion of the ACE2 proteine.1 Notably, current vaccines stimulate antibody responses to the S protein, with most neutralizing antibodies targeting the RBD. Therefore, disrupting the binding between the S protein and the ACE2 receptor is promising as approach to impede virus entry. 2 Inhibitors targeting the protein-protein interaction between the S protein and human ACE2 are of significant interest as potential antiviral agents because this interaction initiates membrane fusion and virus entry, occurring at an accessible extracellular site. 3 While developing protein-protein interaction inhibitors with small molecules presents challenges compared to antibodies, small-molecule inhibitors could offer alternatives that are less susceptible to strain variations and mutations, suitable for oral or inhaled administration, and more controllable and less immunogenic. This strategy has already proven successful in inhibiting viral entry for other viruses, exemplified by two FDA-approved drugs, maraviroc and enfuvirtide. This study aimed to identify potent antiviral drugs against SARS-CoV-2 by targeting well-established proteins crucial to the viral cycle using high-throughput screening (HTS) techniques. A recombinant RBD of SARS-CoV-2 and ACE2 receptor, constructed with two different tags by collaborators at IP Paris, was utilized for HTS to identify molecules interfering with the interaction between the RBD and ACE2. Twenty-one candidates were selected from HTS based on a robust homogeneous time-resolved fluorescence (HTRF) assay. Among them, two hits were identified, demonstrating inhibitions of 51.4% and 25.6% and IC50 values of 1 and 2.42 μM against ACE2 and 0.44 and 3.58 μM against RBD, respectively. However, both hits exhibited cytotoxicity against SARS-CoV-2 infected cells. Therefore, to mitigate the cytotoxicity and enhance druggability, analogues of these compounds were designed. The data from the biological assays will be presented and discussed.

ORG-PO-235. Discovery of a new drug prototype able to modulate the BAG3/HSP70 axis

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Cancer cells strategically exploit the protein quality control system to deal with the stress caused by rapid proliferation and adverse environmental conditions. The BAG3 (Bcl-2-associated athanogene 3) co-chaperone plays a crucial role in this process by interacting with HSP70 (Heat Shock Protein 70) forming an important functional module involved in cancer cell survival, apoptosis inhibition, and autophagic clearance of damaged

proteins. Therefore, the BAG3/HSP70 axis emerges as a focal point in various cancers, making it a promising target for drug development. However, due to the complex BAG3 biology, only a few modulators that disrupt its interaction with HSP70 are known. In light of this, we decided to leverage the modular nature of multicomponent reactions to develop new chemical platforms that can interfere with the BAG3 protein. We successfully synthesized a novel class of 1,2,3-triazole-α-acylaminocarboxamides by combining the Ugi reaction with the alkyne-azide Huisgen procedure in a sequential tandem approach. Our compounds underwent biophysical and biological evaluation, leading us to identify interesting molecules able to inhibit both BAG3 and HSP70 protein. These compounds, emerging as new drug prototypes, offer a therapeutic approach with enhanced efficacy against cancer. Our findings represent a significant advancement in developing effective treatments targeting the BAG3/HSP70 axis in cancer cells.

FAR-PO-044. Discovery of 2,3-Diaminoindole Derivatives as a Novel Class of NOD Antagonists

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NOD1 and NOD2 are the best characterized members of the NOD-like Receptor (NLR) family of proteins, a group including more than twenty pattern recognition receptors involved in the innate immune response to cellular injury and stress. Overactivation of these proteins is implied in a wide range of human inflammatory disorders, and it has been related to the onset and progression of several human cancer types. NOD antagonists would therefore represent valuable pharmacological tools to gain new insight into the role of these proteins, potentially leading to novel therapeutic strategies. Based on the chemical structure of Noditinib-1 (a potent and selective NOD1 antagonist), herein we report the expansion of the chemical space of NOD1 antagonism via a multicomponent synthetic approach affording a novel chemotype, namely, 2,3-diaminoindoles. This led to the identification of a new hit compound endowed with low micromolar affinity and moderate selectivity towards NOD1 versus NOD2. Importantly, both Noditinib-1 and our hit compound were studied through protein-based NMR experiments and fluoresce titration assays which provided, for the first time, proof-of-evidence of their direct binding to NOD1. Moreover, a combination of molecular modelling studies and ligand-based NMR competition experiments led to identify NOD1 nucleotide-binding domain (NBD) as its putative binding-site for these small molecule inhibitors, thus providing unprecedented knowledge for the future structure-based design of new potent and selective NOD1 antagonists.

ORG-PO-236. AI-assisted predictive synthesis of biopolymers for the generation of colon cancer 3D tissue models

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The development of human tissue mimetics is crucial in advancing theragnostic solutions for healthcare management through the generation of in vitro organs for drug screening and cell biology studies [1]. With the advent of automated manufacturing systems like 3D printing and collaborative robot, it is now possible to control the synthesis and formulation of biomaterials, limiting the combinatorial and artisanal chemical approach that is typically used to obtain 3D in vitro tissue models with tuneable advanced biomolecular and physical properties [2,3]. In this communication, the synthesis of functional biomaterials for the generation of colorectal cancer (CRC) tissue models will be presented. Furthermore, the integration of Artificial Intelligence (AI) and Machine Learning (ML) algorithms in biomaterials synthesis and formulation, to reduce synthetic effort and predict the most efficient synthetic conditions to generate hybrid multifunctional biopolymers with selected properties and features will be included

ALI-PO-037. Oxygen Heterocyclic Compounds: Chromatographic Insights and Comparisons

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Due to their pleasing scent, Citrus essential oils are widely used in flavouring foods and hydroalcoholic fragrance formulations. These oils contain a non-volatile fraction comprising approximately 10-20% of coumarins, furocoumarins, and polymethoxyflavones. Furocoumarins are known to cause photosensitization and possess potential carcinogenic and mutagenic properties. Therefore, regulatory bodies such as the International Fragrance Association closely monitor the levels of furocoumarins in cosmetic products. Supercritical fluid chromatography (SFC) has emerged as an innovative analytical technique for analyzing these molecules. SFC employs supercritical CO2 as a mobile phase, offering characteristics between a liquid and a gas, resulting in faster analysis times and reduced solvent consumption compared to conventional liquid chromatography.

This research focuses on developing rapid analytical methods with minimal environmental impact using chromatographic techniques. Two validated methods were developed: the first utilizing SFC coupled with either a photodiode array detector (PDA) or a triple quadrupole mass spectrometry detector (QqQ-MS), enabling fast separation with minimal solvent usage in under 8 minutes; the second employing RP-HPLC-QqQ-MS for quick screening, completing analysis in about 4 minutes with less than 3 mL of ethanol per analysis. These methods aim to provide an environmentally friendly approach for quantifying coumarins, furocoumarins, and polymethoxyflavones in cold-pressed Citrus essential oils, flavoured foods and cosmetics. Calibration curves were constructed using distilled lemon essential oils to quantify these compounds in real samples, with satisfactory validation parameters allowing for quantification even at trace levels in finished products. Overall, these methods offer a green analytical approach for analyzing these compounds in Citrus essential oils, with the SFC-PDA method being particularly environmentally friendly compared to previously developed liquid chromatography methods. Thus, SFC is well-suited for quality control of these compounds in citrus essential oils and finished products.

ORG-PO-237. Synthesis of 2-(Benzofuran-2-yl)acetamides via Palladium-Catalyzed Coupling of 1-(2-(Allyloxy)phenyl)-2-yn-1-ols and Isonitriles

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(2-(Benzofuran-2-yl)acetamides represent a class of organic compounds of particular interest, due to their significant pharmacological activities, including antifungal1 and anticonvulsant2,3 activities, in particular. Their structural versatility makes them promising candidates for drug discovery and development, motivating research efforts aimed at developing new methods for their synthesis as well as at understanding their biological functions and therapeutic potential.

In this contribution, a novel catalytic method is presented, which allows the synthesis of 2-(benzofuran-2-yl)acetamides 3 starting from readily available 1-(2-(allyloxy)phenyl)-2-yn-1-ols 1 and isonitriles 2 and with Pd(PPh3)4 as simple catalyst (Scheme 1). Reactions are carried out in MeOH at 70 °C for 5 h.

(Scheme 1)

Formation of 3 derives from a mechanistic pathway involving an ordered sequence of steps, beginning with the oxidative addition of the phenoxyallyl moiety of 1 to Pd(0) followed by the insertion of 2 to give an (allyl)(imidoyl)palladium complex. The isonitrile group, being isoelectronic with CO, in a similar manner as carbon monoxide4 is, in fact, able to insert into the palladium-carbon bond arising from the oxidative addition of a suitable substrate to Pd(0). Water attack to the (allyl)(imidoyl)palladium complex followed by β-H elimination from the H-O-C-Pd(allyl) moiety leads to formation of an allylpalladium hydride species (allyl)PdH and a 2-(3-hydroxybenzofuran-2(3H)-ylidene)acetamide intermediate. Reduction of the latter by (allyl)PdH and MeOH finally affords the desired (2-(benzofuran-2-yl)acetamides.

TEO-PO-005. The effect of locally concentrated RTILs on low temperature aluminium-sulfur batteries, a computational investigation

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In modern days, battery usage is expanding since mobile systems like smartphones, electric vehicles, etc. rely on stored energy[1]. Aluminium-sulfur (Al-S) batteries have been considered promising energy storage devices due to their theoretical capacity and the high abundance of their components. However, these batteries are notoriously flawed by sluggish ionic transport and cathode conversion rates[2]. Recently[3], a mixture of room-temperature ionic liquids (RTILs) and aromatic diluents has been used showing improved ionic transport, offering high coulombic efficiency.

We have employed molecular dynamic simulations to study locally concentrated RTILS electrolytes (LCILEs). The aggregation behaviour of LCILE has an important role in the ionic transport and stripping/plating mechanism on the electrodes. The advantage of using a parametrized simulation make the dimension scales of nano-aggregations easily achievable giving us a tool to better understand the experimental results of those novel batteries.

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ORG-PO-238. Puzzling Synthesis of Novel Fluorinated Bioactive Compounds

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The beneficial effects of fluorine atoms inclusion in the chemical structure of therapeutic or diagnostic drugs candidates are well established1: enhanced activity and selectivity, as well as improved membrane permeability, stability and pharmacokinetic properties are just few of the advantages related to the presence of one fluorine atom or a fluorinated functional group, as -CF3. Not by chance, the list of F-containing drugs approved by the U.S. Food and Drug Administration is continuously updated2.

As the demand for safer non-steroidal anti-inflammatory drugs (NSAIDs) has rapidly grown, a series of dual inhibitors of cyclooxygenase-2/lipoxygenase-5, enzymes involved in inflammatory processes, appeared in the literature, in the attempt to limit adverse effects typically associated with individual inhibitors3. Next to synthetic drugs, naturally occurring quinones, terpenoids and phenols, as eugenol or thymol, exhibited relevant bioactivity. However, targeted functionalization of natural phenols is known to further extend and enhance their effectiveness, in a wide range of biological application4.

In this communication, an overview of our recent efforts on the synthesis of fluorinated thymol and anilines derivatives, eventually bearing -CF3 functionalities, will be presented, together with a focus on their application as dual inhibitors of cyclooxygenase-2/lipoxygenase-5 enzymes.

IND-PO-043. A unified approach for the synthesis of heteroaromatics by combining decatungstate photocatalysis and Paal-Knorr reaction in flow

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Heteroaromatics are coveted scaffolds in pharmaceuticals, agrochemicals and material science: their expedite synthesis is therefore of prime importance. A privileged access point to these precious motifs is the Paal-Knorr approach, especially for the synthesis of five- and six-membered heterocyclic compounds including furans, thiophenes, pyrroles and pyridazines. This approach demands for the wide availability of 1,4-diketones. Consequently, substantial efforts have been directed towards to developing efficient methodologies for preparation of such compounds. A very convenient method consists in the decatungstate (DT)-photocatalyzed hydrogen atom transfer (HAT) acylation of electrophilic olefins, which starts from readily available raw materials such as aldehyde and α,β-unsaturated carbonyl compounds.

In this study, we present a unified strategy for a streamlined two-step synthesis of heteroaromatics, combining decatungstate photocatalysis and the Paal-Knorr reaction in flow conditions (Figure 1). The first photocatalytic step involves the reaction between an aldehyde and a vinyl ketone to obtain 1,4-diketone via DT-photocatalyzed HAT, which occurs in 5 minutes. Without isolating the intermediate, the diketone enters a second reactor and is reacted with amines, Bronsted acid, Lawesson's reagent, and hydrazine to afford pyrroles, furans, thiophenes and pyridazines, respectively. For example, the modular nature of our method allowed for the tailored, on-demand synthesis of pyrroles in 6 minutes residence time with a Space-Time Yield (STY) of 47 kg h–1 m–3, thus offering an operationally simple and scalable route to these commercially relevant scaffolds

ORG-PO-132. Synthesis of phlorotannins as potential antifungal agents

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Plant diseases are caused by pathogenic microorganisms, mainly fungi, which affect the quality and the yield of produced crops, causing losses up to the 30% at all stages of crop production. Pathogen control has been effectively performed mostly by synthetic fungicides. However, nowadays only a few of them are allowed worldwide, and their continuous use has resulted in resistance emergence and spread of several pathogenic fungi. Furthermore, synthetic pesticides have created a high environmental impact over the years, also causing bioaccumulation. To address the growing urgency in managing fungal diseases, there is the need to find novel compounds able to effectively inhibit pathogens, with lower human and environmental impact. In this context, the development of natural and nature-derived agrochemicals is a promising strategy.

In the last decades phlorotannins emerged as an important class of polyphenols. They are isolated from various brown seaweeds as a very complex mixture of phloroglucinol oligomers. In the present work, given the promising antifungal activity showed by the phlorotannin crude extracts, phloroglucinol dimers, namely diphenylethers and biphenyls were synthesized. The potential antifungal activity of the single pure compounds and their methylated/acetylated analogues was investigated. Furthermore, Differential Scanning Calorimetry (DSC) experiments were designed to study the potential interaction of the bioactives with the phospholipidic membrane of pathogenic fungi.

ORG-PO-239. Synthesis of New Biocompatible Materials Based on Alginic Acid with Antibacterial Activity

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To replicate the exceptional performance of natural processes at a reasonable cost, scientists have often looked to nature for inspiration when creating high-performing, low-cost bio-based materials. Regarding those above, we decided to focus our recent research on alginic acid (Figure 1), a polymer extensively found in brown algae’s cell walls. To achieve our aim, we chose the functionalization of alginic acid with Kojic acid, a chelating agent produced by different species of fungi. Due to Kojic acid’s ability to chelate, the material has exhibited siderophore action and antibacterial activity against Gram-positive and Gram-negative bacteria without any cytotoxic effect. In addition, alginic acid was also functionalized with an ionic liquid. The latter already had recognized antibacterial properties that were enhanced by the functionalization. This new material was further modified with another interesting chelator, tris(3-hydroxypyridin-4-one) (THP). Antibacterial tests performed on this material have also shown excellent antibacterial activity.

TEO-PO-006. Modeling Single Atom Catalysts

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Single Atom Catalysts (SACs) are considered to be the new frontier in the field, since they establish a bridge between the homogeneous and heterogeneous catalysis. Computational chemistry shows the atomistic details of electrocatalytic processes, and it is extremely helpful to rationalize of even predict systems’properties. A lot of attention has been dedicated to the reactions of evolution and conversion of molecular hydrogen and oxygen from or to liquid water.1 The Computational Hydrogen Electrode (CHE) approach is the key to predict the activity of SACs, where the free energy of key intermediates adsorbed is used to explain the catalytic activity, or even predict the reaction mechanism.

In this presentation we discuss a computational screening of Single Atom Catalysts (SACs) bound to titanium nitride (TiN), an emerging supporting matrix. The catalysts were tested against the Hydrogen Evolution Reaction (HER), based on density functional theory (DFT). We explore the role of fundamental ingredients to consider for a reliable screening of SACs. Namely, the formation of H2-complexes besides the classical H* one has an important impact on the predicted HER activity. Also, the results indicate that one needs to adopt self-interaction corrected functionals5, including the Hubbard parameter on d electrons. Once unconventional intermediates in a self-interaction corrected scheme, the number of potential good catalysts for HER is strongly reduced, since the formation of unconventional intermediates lead to thermodynamic barriers. This study highlights the importance of including the key ingredients for the prediction of new systems, as the formation of unconventional intermediates and the adoption of self-interaction corrected functionals. Also, this study highlights some interesting candidate deserving more dedicate work.

ELE-PO-029. Anti-corrosion coatings of TiVNbMoAl high-entropy alloy synthetized by DC-magnetron sputtering

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High entropy alloys (HEAs) are a new class of materials1 that has attracted an increasing interest in recent years, in the form of thin films, because of their outstanding properties such as high strength/hardness, good wear resistance, high temperature strength, exceptional corrosion resistance2. In this work, we used pulsed direct current (DC) magnetron sputtering to fabricate HEA thin films of TiVNbMoAl 15-15-20-25-25 at%, starting from a single target of the same alloy composition. The films of 900 nm thickness were deposited on a 30 mm diameter 100Cr6 steel disk at two different temperatures of 25oC and 400oC. X-ray diffraction (XRD) analysis (Fig.1) was performed to prove the formation of a crystalline high entropy alloy film. The results showed that the films were well-crystallized (Body-Centered Cubic (BCC) Structure solid solution) at both temperatures, but the crystallite size increases with an increase of deposition temperature from 16 to 38 nm. In addition, no intermetallic phase was detected. The roughness was less than 10 nm, indicating that all the films have comparatively smooth surfaces. The chemical composition obtained by SEM-EDX analysis of the film appears to be in line with that of the starting target. The corrosion tests show an increase resistance of HEA-coated samples compared to the bare substrate, confirming the possible application of this class of materials as protective films.

ORG-PO-133. Tailored Metal Porphyrin-Based Electrocatalysts for Artificial Nitrogen Fixation to Ammonia

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Ammonia is an essential raw ingredient for fertilizers, a carbon-free hydrogen carrier, and an alternative fuel.

The over one-century old Haber-Bosch process is still used today for the synthesis of ammonia, from nitrogen and hydrogen, but it is strongly energy demanding (ca. 2% of global energy demand) and generates massive greenhouse gases (ca. 2% of global emissions). It is therefore mandatory to develop clean access to ammonia in order to match the net zero decarbonation targets for 2050. Recently, research has focussed attention on alternative routes and, among those proposed, the electrocatalytic reduction from nitrogen to ammonia is the most accredited. The strongly inert N2 molecule can be activated thought an electrocatalytic approach under mild conditions. However, so far, the use of organic-based electrocatalysts is very rare in the literature and systematic studies are almost absent.

Following our previous general approach for organic design for solar generation of green hydrogen,1 in this communication we present our recent preliminary work on the investigation of a series of metallo-porphyrins, which have been properly functionalized in order to enhance nitrogen fixation performance. In particular, we have developed two series of hydrophilic and hydrophobic derivatives, able to show different interactions at the interface with the aqueous electrolytic environment of the electrochemical cell, thus affecting the device interface phenomena and, eventually, the final response.

FAR-PO-053. 1,2,4-Triazole-Based Derivatives as Non-Competitive Heme Oxygenase-1 Inhibitors

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The stress-inducible enzyme, named HO-1, exerts an essential role in maintaining cellular homeostasis in response to oxidative stress in normal cells. On the other hand, overexpression of this isoform in cancer cells has been linked to tumor aggressiveness and drug resistance phenomena. Therefore, the association of non-competitive HO-1 inhibitors, such as imidazole derivatives, with FDA-approved drugs showed in vitro efficacy in enhancing antiproliferative effects.1 Unfortunately, the clinical application as adjuvant chemotherapy of this class of compounds might be limited by their lack of selectivity towards other heme-dependent enzymes (i.e., cytochromes P450),2 likely, due to the presence of an imidazole nucleus. Based on this premise, we selected any of our most potent HO-1 inhibitors among three different series reported so far,3 that served as reference compounds for lead-optimization. Specifically, to keep potent enzyme inhibition activity and reduce potential off-target effects (i.e., CYP3A4, and CYP2D6 inhibition) we replaced the imidazole ring with a 1,2,4-triazole one (Figure 1, left). Thus, new derivatives were synthesized, characterized, and tested for their in vitro activity towards the selected target; while molecular modeling studies allowed us to analyze their binding modalities (Figure 1, right). Finally, the in vitro antiproliferative properties of the most potent compound and its co-administration (combo) with 5-FU have been tested in selected cancer cell lines (i.e., DU-145 and MCF-7) using the MTT assay.

ANA-PO-131. Development of a solid deposition GC-FTIR library as a powerful tool for the identification of hydrocarbon isomers

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Gas chromatography coupled to mass spectrometry detector (GC-MS) with electron ionization (EI) source is a widely used analytical technique for identification of volatile compounds. The highly reproducible fragmentation pattern provided by MS, allows reliable identification by comparing experimental spectrum with commercial spectra database, but in many cases, misidentification can occur due to a high spectral similarity. The Linear

Retention Indices (LRI) approach can be used in combination with conventional mass spectral search with the goal of boosting the identification of "challenging" molecules.

However, when it comes to molecules which present a high number of positional, as well as geometrical isomers such as hydrocarbons, the identification by GC-MS becomes challenging, because they show the same m/z fragmentation and a very similar retention behaviour. On the top of that, the lack of reference materials and of published retention data makes the reliable identification trickier. On the other hand, Fourier Transform Infrared (FTIR) spectroscopy can provide a wealth of molecular information of GC-separated analytes which are related to the specific vibrations of the chemical bonds present in a molecule. Such vibrations are different for each isomer, therefore making possible their discrimination.

For this reason, in this research, a database containing the spectra obtained by GC-FTIR analyses of hydrocarbon standard mixture was created, and it was successfully applied for the identification of unknowns. It allowed the reliable discrimination of the isomers which presented a very similar mass spectrum, as well as linear retention index. Such isomers, indeed, presented a considerable difference in terms of similarity score in the FTIR library search.

TEF-PO-001. Hyaluronan-based graft copolymers for the development of novel biocompatible materials with high potentiality in biomedical applications

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Hyaluronic acid (HA), a natural polysaccharide belonging to the glycosaminoglycans, represents the main component of the extracellular matrix (ECM). Thanks to its molecular properties, HA plays an important role in tissue engineering, wound healing, cancer treatment, ophthalmology, and cosmetics [1]. Ferulic acid (FA, 4-hydroxy-3-methoxycinnamic acid), a natural compound largely distributed in the plant cellular wall, possesses many health benefits [2] and represents an interesting biocompatible fluorophore [3]. In this context, aggregation-induced emission (AIE) fluorogenic FA residues bearing propargyl (Pg) groups were used in the grafting reaction of HA macromolecules to afford the resulting hyaluronan derivative HA-FA-Pg graft copolymers that could be exploited in Cu(I)-Catalyzed Azide-Alkyne 1,3-dipolar Cycloaddition (CuAAC) conjugation [4]. This synthetic strategy was employed in a biocompatible and biomimetic hyaluronic coating (BBHC) of surfaces of different nanostructures [3-7] to obtain novel materials. Based on the encouraging obtained results, we also evaluated the effects of the covalent coating of HA, by using HA-FA-Pg graft copolymers, around the spheroidal geometry of poly(propylene imine) (PPI) dendrimers of first, second, and third generation on the architecture and aggregation features of hybrid resulting dendrimeric materials, which represent biocompatible drug carriers endowed with encouraging features in transporting anticancer doxorubicin to tumor cells [8]. Additionally, we further extend the application of HA-FA-Pg grafted derivatives, by developing a new crosslinking procedure in which the propargyl groups of HA-FA-Pg graft copolymers were exploited in the CuAAC coupling with different oligo(ethylene glycol)-based spacers terminated with azide groups to obtain novel biocompatible crosslinked HA materials potentially useful in different biomedical applications [9,10].

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ABC-PO-042. Novel Entities in the Earth System: highlighting impacts on Coral Reefs through new monitoring strategies

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Based on the framework developed by Rockstrom et al. [1], planetary boundaries (PBs) are defined as biogeochemical and physical thresholds that could have severe consequences for the Earth System (ES) if crossed. Chemical pollution has been included in the list of PBs since the first release of the PBs framework, and has recently been renamed to novel entities (NEs) to encompass "new substances, new forms of existing substances and modified life forms" [2]. At present, the assessment of the amount of NEs that can be tolerated by ES before irreversible shifts remains a challenge. Coral reefs are a hotspot of the current ecological crisis and human-driven ES changes: reef-like structures have existed on Earth for over 500 million years, but now their existence appears threatened by a combination of anthropogenic stressors such as higher water temperatures, ocean acidification, and chemical pollution. To collect data in these delicate environments and establish the contribution of NEs to large-scale bleaching events, we are currently developing new monitoring strategies based on the application in vivo of solid-phase microextraction and advanced mass spectrometry techniques [3]. Our work focuses on detecting different classes of contaminants including persistent organic pollutants (POPs), contaminants of emerging concern (CECs) [4], heavy metals and radionuclides, micro and nanoplastic (MPs and NPs) [5], and at the same time secondary metabolites to be used as markers of ecological system integrity [6]. By identifying the primary stressors that lead to irreversible changes, the marine pollution mitigation actions are then correctly prioritized, and the effectiveness of restoration plans is accurately evaluated.

TEO-PO-017. Accurate description of environment effects on Thermally Activated Delayed Fluorescence: role of state-specific polarization response and dispersion interactions

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The accurate simulation of environmental effects in the formation and relaxation of electronic excited states (ESs) is essential for efficient design of new materials with target properties.[1] The consideration of non-equilibrium effects is a crucial aspect but the quantum mechanical (QM) approach must flexibly address the diverse descriptions of the environment's polarization response.[2] While numerous studies have explored singlet ESs,[3] less is known about the impact of solvent effects to triplet transitions, that have garnered considerable attention due to their potential applications in optoelectronics[4,5] and their role in the photoprotection mechanisms in plants and bacteria.[6] Here, we delve into the challenges of accurately characterizing the polarization response of the environment to triplet excitations, surpassing the limitations of the standard linear response framework in continuum dielectric models. The latter indeed fails to incorporate solvation effects arising from singlet-to-triplet transitions. Notably, the state-specific polarization (ss-pol) response also plays a crucial role in determining the ESs structure minima, facilitated by analytical gradients through a lagrangian formulation in a TDDFT framework.[7] Since it has been shown by an open quantum systems approach[8] that the delayed solvent response due to the solute charge density reorganization evolving in a time regime naturally include both ss-pol and dispersion interactions, both of them have been included in our effective protocol here presented. Simulations in the study of systems with inverted singlet-triplet gap[9] in solution for thermally activated delayed fluorescence applications will show the pivotal role of an accurate solvent response description.[10]

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IND-PO-044. New materials from lignocellulosic biomasses valorisation

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Lignocellulosic biomass is very widespread in nature and its use as a raw material has the advantage of not being in competition with its use in the food and feed supplies [1]. There are also numerous types of waste lignocellulosic biomasses whose valorisation represents an advantage not only for the use of renewable raw material but also for the possibility of reducing the environmental impact of their elimination as waste. Furthermore, in recent years the exploitation of renewable materials from biomass represents a strategic objective for the chemical industry to reduce the depletion of fossil resources while solving waste disposal problems at the same time.

Based on this, the study of new materials with high added value, that can be obtained from the valorisation of waste biomass, is extremely interesting. In particular, cellulose and other polysaccharides can be recovered from biomass waste using specific protocols optimized based on the different composition of the biomass [2]. The mechanical, physical and chemical treatments must be optimized based on the type of biomass studied.

However, to obtain sustainable production processes, even starting from waste materials, it is essential to limit transformation stages with high energy consumption or with the use of high quantities of reagents and solvents, trying to optimize the complete recovery of the biomass.

The objective of this research was therefore a protocol for a low environmental impact biorefinery process for the extraction and/or valorization of cellulose from fibers of a lignocellulosic biomass, aimed at subsequent use in the production of biobased products such as gels, films and panels insulators, intended for processes of interest to various sectors such as the construction one. The main biomass used in this study is Posidonia Oceanica Sea Balls (eagropili), a biomass of photosynthetic origin widely present on the coasts of the Mediterranean Sea, often destined for disposal but with the aim of extending the optimized procedures also to other types of waste lignocellulosic material.

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Acknowledgements. Thanks to NextGenerationEU for project MICS PNRR MUR – PE11 Spoke 2

ORG-PO-134. Metabolomic Analysis of Malus domestica (Suckow) Borkh. Varieties From Molise Region (Italy) by NMR and Mass Spectrometry

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Apples (Malus domestica Borkh.) are one of the most extensively produced and consumed fruits worldwide1 and represent an important source of bioactive compounds like polyphenols which are responsible for their antioxidant and anti-inflammatory properties and possess a role in the prevention of degenerative diseases2. The proposed project is based on the valorization of the Molise region, exploiting specific autochthonous cultivars belonging to Malus domestica: although the nutritional characteristics of these species are well known, knowledge of the Molise products is still incomplete compared to other Italian regions (e.g., Annurca apple of Campania region). Thus, the comprehensive phytochemical investigation of metabolomes of these cultivars represents a partially unexplored research field that could be helpful to trace and/or complete their fingerprint. The metabolomic profile will be assessed through a quali-quantitative determination of the constituents of each selected variety by 1D and 2D NMR Spectroscopy for the polar extracts while UHPLC coupled to Mass Spectrometry will be applied to identify fatty acids in the apolar extracts. Chemometric analysis with the PCA and PLS-DA techniques will be performed in order to observe differences among the varieties. Moreover, LC-MS/MS will be applied to identify polyphenols obtained with a specific extraction protocol with the aim to disclose active secondary metabolites that can be used for nutraceuticals, cosmeceuticals, food supplements and cosmetics. Furthermore, the total phenolic, flavonoids, and condensed tannins content will be assessed, and in vitro antioxidant activity will be evaluated by using DPPH scavenging activity, the ABTS scavenging assay, and ferric-reducing antioxidant power (FRAP).

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The research activity was supported by:

University of Molise (Start-Up 2022): PROJECT_20232024_BIOACTIVE_START_UP_CHINI - Isolation, characterisation, activity and evaluation of natural and synthetic bioactive compounds.

MUR (PRIN 2022 PNRR): P2022MWY3P - Old but Gold! Identification of molecular platforms for age-associated diseases to promote healthy and active aging.

IND-PO-045. Novel approach to produce green aromatics from ethanol and furfural

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Aromatic compounds, in particular benzene, toluene and xylenes (BTX) have very broad applications in chemical industry. Production of aromatic hydrocarbons is based only on petrol-based feedstock. Therefore the manufacturing of green BTX from renewable raw materials would widely increase their sustainability.1 In a very innovative work Gancedo et al.2 proposed an alternative route for the production of aromatics starting from furfural (FFL) and ethanol (EtOH), both coming from renewable feedstock. The reaction network involves the decarbonylation of FFL to form furan and the dehydration of EtOH to form ethylene and the condensation via Diels-Alder cyclization to form BTX. All these steps are acid catalysed reactions and the catalyst used is a commercial HZSM-5 zeolite. In the present work this novel approach for the production of aromatics is more deeply investigated, focusing on the effect of experimental conditions, such as reaction temperature and composition of the feed, as well as the physico-chemical features of the catalysts such as aluminium content and the metal-doping of the catalyst with acid metals (mainly Zn and Ga).

Figure 1: Results of catalytic experiment with H-ZSM-5 40, Selectivity of furfural towards aromatics.

Preliminary studies demonstrated that the H-ZSM-5 zeolite catalyst with Si/Al ratio of 40 is the most active in the production of aromatics (Figure 1), while lower or higher Si/Al ratios are leading to fast catalyst deactivation or absence of production of aromatics, respectively. With all catalysts the production of aromatics stops after 4 hours TOS, whereas the reaction rate of dehydration of EtOH and decarbonylation of FFL are 10% when compared to first 3 hours TOS. This suggests the presence of the catalytic sites of different nature, with only a part of these active in aromatization that suffer from deactivation. With experiments using the single reagents it can be demonstrated that benzene and toluene are mainly produced from EtOH, while xylenes and heavier aromatics are deriving from FFL as well as benzofuran, which is likely the cause of poisoning of the catalytic sites active in the aromatization. Results with metal-doped zeolites will be also presented.

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ORG-PO-135. Waste-minimized C(sp3)-H activation for the preparation of fused N-heterocycles

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One of the most effective strategies for reducing environmental pollution associated with chemical production is the use of efficient catalytic reactions. Transition-metal-catalyzed C–H functionalization technologies have emerged as a valid alternative to traditional cross-coupling reactions for the effective formation of carbon-carbon and carbon-heteroatom bonds. Particularly, heterogeneous palladium catalysts have received widespread attention because they can be easily separated from the reaction mixture and reused.

Nitrogenous heterocyclic compounds, such as oxindoles and pyrrole derivatives, are important structural motifs in many molecules of biological and pharmaceutical interest. Herein we present the development of a waste-minimized protocol for the synthesis of oxindoles using cyclopentyl methyl ether (CPME) as a safe and green reaction medium and palladium on carbon (Pd/C) as a reusable catalyst, up to at least 4 reaction runs, with negligible loss of reactivity and stability, with low values of palladium leaching in solution. Meanwhile, the E-factor calculated for this protocol is very low demonstrating its validity from a sustainable point of view. Then we developed an effective waste minimized approach for the intramolecular Pd-catalyzed C(sp3)-H activation of methyl pyrrole derivatives, by using of a heterogeneous recyclable palladium(II)-bis(N-heterocyclic carbene) catalyst and CPME, the heterogeneous catalytic system could be recovered and reused up to representative five runs without any loss in efficiency. The

target products have been obtained selectively and with excellent isolated yields and the approach leads to the definition of a protocol with a very good E-factor.

ORG-PO-136. Pentaerythritol Tetra Esters: a Novel Spiro DiKetal Mediated, Water Catalyzed Synthetic Method is Presented

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Pentaerythritol tetra esters are widely used as additives in the lubricant oils industry.1 A novel two step one pot convenient method for the preparation of these molecules will be presented. Pentaerythritol is a notoriously problematic molecule because of its poor solubility in almost all organic solvents. This characteristic makes the synthesis of its esters very difficult, resulting in the creation of synthetic procedures over the years that are characterized by high solvent consumption, long reaction times and the use of dangerous reagents like thionyl chloride.2 This new method unlocks the possibility of preparing larger amounts of esters in smaller reaction mixture volumes thanks to the key intermediate 3,3,9,9-Tetramethyl-2,4,8,10-tetraoxaspiro[5.5]undecane. The reaction proceeds in 3 major steps: first, the spiro diketal is prepared; then, it react in the presence of a catalytic amount of acid with trace amounts of water in the solvent that act as initiator, hydrolysing one ketal. The two hydroxyl groups liberated are then able to undergo esterification, yielding water that continue the cycle.

INO-PO-061. LabXAS: a new table-top instrument for in-lab XANES/EXAFS measurements

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X-Ray Absorption Near Edge Structure (XANES) and Extended X-Ray Absorption Fine Structure (EXAFS) spectroscopies are powerful techniques used to characterize the oxidation state of the absorbing atom and its coordination to the ligands. However, the need of an intense and tuneable-in-energy x-ray beam has limited the use of these techniques to synchrotron facilities, thus precluding their wide spreading. Giving access to XANES/EXAFS facilities to a broader community of physicists, chemists and material scientists would be extremely beneficial as XANES/EXAFS could provide them with an immediate feedback on the quality of the products of their research.

Recently, the development of novel laboratory x-ray sources with modern technology has favoured the rise of compact, but extremely expensive XANES/EXAFS spectrometers1,2. Within the NEXT-GAME and MUSA projects, we have designed a XANES/EXAFS spectrometer, called LabXAS, based on the use of a conventional but micro-focused x-ray source with suitable brilliance. Besides the source, the spectrometer also comprises a Johansson-type Ge(nn0) crystal analyser and a silicon drift detector, installed in vacuum and arranged on a Rowland circle. The instrument will work in transmission, within the energy range spanning from 3 to 15 keV. LabXAS is intended to minimize the costs, the size and the mechanical complexity of existing laboratory XANES/EXAFS spectrometers, while reaching measurement performances comparable to available instruments. Ultimately, it aims to provide a fast access to XANES/EXAFS characterization of novel, freshly synthesized materials, in particular for studies in the field of the next-generation batteries and catalysis. In this talk, we will give a general overview of the LabXAS instrument by presenting the innovative design solutions and the targeted performances, and we will finally discuss the most appealing applications for the community of chemists.

ALI-PO-008. In-depth study of coffee's acidity among eight brewing methods: chemical, sensory and statistical evaluation

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Acidity in coffee is a crucial sensory characteristic mainly influenced by the roasting level and organic acid composition. This research offers a comprehensive analysis of how eight coffee brewing methods (AeroPress, Chemex, Clever, FrenchPress, Moka, PureBrew, Ibrik and V60) affect the acidity profiles of both specialty and mainstream coffees across different types of coffee. For the first time, a systematic approach with chemical analysis and sensory evaluation has been applied to explore the relationship quantitatively and qualitatively between brewing methods and coffee acidity. Employing an innovative method, the study correlated the chemical composition comprising organic acids, chlorogenic acids, and caffeine, with sensory attributes like sourness and mouthfeel, alongside physicochemical acidity indicators such as titratable acidity, pH, and Total Dissolved Solids (TDS). Statistical analyses demonstrated that chlorogenic acids significantly affected the coffee's pH and titratable acidity (Figure 1), whereas the sensory perception of sourness was more closely correlated with the concentration of organic acids. Notably, non-filtered brewing methods like Ibrik and Moka showcased a higher total acids content, with Ibrik coffee registering the highest acid levels, reaching 2500 mg/L for certain organic acids such as acetic and citric. In contrast, the Chemex method, which employs a specific paper filter, yielded the lowest acid extraction, underscoring the impact of filter type on acidity. These findings identified organic acids as likely predictors of perceived coffee acidity, providing new insights into how brewing techniques influence the sensory and chemical profiles of coffee. The study significantly advances our understanding of coffee brewing science and sets the stage for further research to improve coffee quality and consumer satisfaction with respect to acidity.

IND-PO-046. A green chemistry approach for the functionalization of oxidized cellulose nanofilms for the improvement of hydrophobic properties

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Due to the constant increase in society's interest in the realization of ecological transition highlighted by EU Directive 2019/904, the scientific community has increased the focus on the valorization of biomass. Thanks to its abundance in nature and its biodegradability, cellulose is one of the most studied biopolymers, however it also has some disadvantages, which limit its potential: it is insoluble in water, hydrophilic and the defibrillation process are energy intensive. For these reasons, the scientific community has focused attention on the possibility of obtaining more processable nanoscale cellulose derivatives Among others, Isogai et al. in 2011 proposed a method to obtain a stable suspension of C6-oxidated cellulose nanofibers by treatment of cellulose in the presence of the TEMPO/NaBr/NaClO system (TEMPO-oxidized-cellulose nanofibrils TEMPO-ox-CNF)1. TEMPO-ox-CNF has carboxyl groups on its surface which can be modified into ester or amide groups to improve its properties2 or impart new ones3. In this contribution, the chemical grafting of TEMPO-ox-CNF by amidation with amines and diamines is proposed using 4-(4,6-Dimethoxy-1,3,5-triazin-2-yl)-4-methylmorpholinium chloride (DMTMM) as a condensing agent. The amidation reaction promoted by DMTMM has various advantages such as the use of water as a solvent and low temperatures. Its effectiveness has already been successfully demonstrated for obtaining high performance films4. The material obtained has been characterized by spectroscopic, thermal, and physical-mechanical investigations. Chemical grafting impacts various properties such as hydrophobicity with a significative improvement of contact angle from 40° to 90°.

FAR-PO-069. 4 (3-Phenyl-4-(3,4,5-trimethoxybenzoyl) 1H pyrrol-1- yl)benzenesulfonamide, a Novel Carbonic Anhydrase and Wnt/βCatenin Signaling Pathway Dual-Targeting Inhibitor with Potent Activity against Multidrug Resistant Cancer Cells

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Carbonic anhydrases (CAs) are ubiquitous enzymes that catalyze the reversible hydration of carbon dioxide to produce monohydrogen carbonate and H+ ions. The CA isoforms play key roles in many physiological processes: signal transduction, cell differentiation and proliferation, and onco-genesis. The project starts from the relevance of the sulfonamide group as inhibitor of several isoforms of carbonic anhydrase. We decided to start from different derivatives, active as tubulin polymerization inhibitors, introducing a sulfonamide group, to selectively inhibit CA IX and CA XII isoforms, which are triggered by hypoxia-inducible factor 1 in many types of cancer. Novel pyrrole and indole derivatives have been synthesized as human carbonic anhydrase (hCA) inhibitors. The presence of both N1-(4-sulfonamidophenyl) and 3-(3,4,5-trimethoxyphenyl) substituents was essential for strong hCA inhibitors. Notably, compound 15, the most potent hCA XII inhibitor (Ki = 6.8 nM), demonstrated a dual target inhibition by effectively suppressing the Wnt/β-catenin signaling pathway as well, which is found to be dysregulated in some solid tumors, its target genes MYC, Fgf20, and Sall4 and exhibited the typical markers of apoptosis. Docking experiments were performed to gain insights into the molecular details of the binding modes of the reported compounds. Several compounds exhibited promising activity against different tumor cell lines, including colorectal cancer and triple-negative breast cancer, highlighting their potential as therapeutic agents.

ALI-PO-013. Application of phenolic compounds from olive pomace in delaying flaxseed oil oxidation in model emulsions

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Olive pomace (OP) represents the main by-product of olive oil production1. OP contains approximately 98% of olive phenolic compounds which are represented mostly by hydroxytyrosol (OH-tyr) and tyrosol (tyr), along with their precursors2, whose antioxidant activity has been largely documented. Besides their health-promoting properties, these phenolic compounds could also be used as natural antioxidants. Hence, this research aimed at evaluating the capacity of OP antioxidant compounds to mitigate lipid oxidation of highly labile compounds like omega-3 fatty acids. A response surface methodology (RSM) was conducted to investigate the effect of three independent variables (temperature, 4-95 °C; time, 30-120 min; ethanol concentration, 0-50%) on the green extraction of free and total OH-tyr and tyr, measured by HPLC-DAD, and the radical scavenging capacity (RSC) assessed by DPPH assay. The conditions allowing for the higher yield of OH-tyr and tyr and RSC were 95°C, 40% ethanol and 30 minutes. The best-perfoming extract was incorporated at different concentrations into flaxseed oil model emulsions and incubated for 60 days at 40°C to induce oxidation. Primary and secondary oxidation products were assessed by peroxide value (PV) and thiobarbituric acid reactive substances (TBARS) tests, respectively. The degradation of OH-tyr and tyr was also monitored by HPLC. OP extract at the maximum concentration used (400 µM) provided a reduction of PV and TBARS of 97.8% and 78.0% respectively in the emulsions after 60 days. The 82.5% reduction of OH-tyr during the incubation time further proved its antioxidant capacity, differently from tyr that remained substantially stable. These results demonstrate the efficacy of OP OH-tyr in retarding the lipid oxidation of flaxseed oil, providing a valuable tool for future technological applications.

ANA-PO-123. Waste Stabilization Sequestration (SS) in alkali activated geopolymers with chelating agents

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Geopolymers, based on aluminosilicate powders via alkali activation, have been developed and successfully

used to sequester and stabilize sludges from electroplating plants and tannery wastewaters. Their semicrystalline three-dimensional silico-aluminate structure consisting of linked SiO4 and AlO4 tetrahedra, allows

them to be used in a variety applications.

Analyses carried out on eluates obtained according to the UNI EN 12457-2-2004 standard from geopolymers

cured for 28 days have shown the encapsulation of pollutants present in the wastes, such as soluble metal

ions, anions and surfactants.1

The analyses performed at well-defined time intervals, allow the stabilization capacity to be studied in order

to guide the reuse or correct disposal of the resulting materials. The results showed a good retention capacity

of the effluent components.

Additional analyses carried out on the leachate were aimed at evaluating the release of the 3D aluminosilicate network formers (mainly Al and Si). These main constituents of the geopolymeric matrix are found in high concentrations in the leachate when the reticulation process is inefficient. This second part of the investigation allowed the optimisation of waste treatment, geopolymer paste formulation and curing conditions to improve encapsulation performance.

ORG-PO-240. Point-of-care array devices based on organic fluorescent probes for human stress detection

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The development of biosensors for the quantitative detection of stress biomarkers such as dopamine, noradrenaline, epinephrine and cortisol in biological fluids such as blood, urine, saliva and sweat has a significant impact on the field of medical diagnostics.1 Our goal is to develop a portable sensor device to detect stress biomarkers in harsh and adverse environments, such as space missions.2 We chose to use array technology for the realisation of the sensor device because of its particular characteristics: ease of use, extreme selectivity, sensitivity and ease of implementation.3 The array was designed with an optical/colorimetric output. In particular, we have selected and synthesised some organic fluorophores (probes) taking into account two important characteristics: 1) the spectral properties of the transducer, in particular the absorption/emission range of the probe; 2) the interaction with the analyte through non-covalent interactions. The interaction between each probe and the stress biomarker was previously tested in solution at different analyte concentrations, from 1 nm to 1 pM, and then the response of the array was analysed on a solid state using an optical fibre as a detector. In particular, we detected Dopamine, Cortisol and Adrenaline in real saliva samples.4

FAR-PO-114. Optimization of chemical-biological tools for characterizing the activity of dissociative inhibitor of human thymidylate synthase

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Human thymidylate synthase (hTS) catalyzes the reductive methylation of deoxyuridine monophosphate (dUMP) to deoxythymidine monophosphate (dTMP) which requires methylene tetrahydrofolate (mTHF) as a cofactor [1]. This enzyme has been targeted in cancer treatment because of its crucial role. Drugs such as 5-fluorouracil (5-FU) and folate analogues like raltitrexed can bind covalently to the active site of hTS. However, this mechanism often leads to an increase in the expression of hTS within the cell, resulting in drug resistance. Over the years, it was shown that the hTS is a homodimer of 76 kDa consisting of two identical subunits, each weighing 37 kDa. Each subunit contributes to the formation of two active sites and can exist in different states. The dimer can switch between an active state and an inactive state, the dimer is in equilibrium with its monomeric form with a Kd around 6-8 nM. All these states can contribute to compose the broad interactome with different biomolecular targets within the cell and trigger eventually different specific mechanism. To overcome drug resistance, our research group has focused on finding new ways to switch the dimer to monomer equilibrium and reduce the enzyme catalytic activity causing its overexpression [2]. We aim to target the interface of the dimer to shift the equilibrium towards the inactive monomeric form of hTS. In order to characterize the dissociative character of these newly synthesized compounds to shift the equilibrium toward the monomeric form of the protein and inactivate it, different chemical-biological tools were set up: fluorescence-resonance energy tarnsfer (FRET) experiments, kinetic assays with dedicate algorithms, site specific mutagenesis and more recently dialysis experiments. The present work present the results from the different assays for some representative inhibitors and focus specifically on the recent results on the dialysis experiments. By conjugating the protein with a fluorescent probe we were able to monitor its movement in the dialysis device and detect some interesting events such as the dissociative effect of the dimer destabilizer.In conclusion , we succeed in developing a new chemical biological tools to characterize the dissociative capacity of these newly shythesized inhibitor , which rapresent a promisimg Medicinal Chemistry strategy .

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ORG-PO-138. Development of copper-catalyzed regio- and stereoselective tandem functionalizations using strained heterocyclic rings

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The synthesis of complex molecules through efficient and streamlined processes represent one of the most coveted goals in organic synthesis. In this sense, multicomponent reactions represent nowadays a fascinating as well as challenging method that provide access to variously functionalised building blocks, starting from readily available reactants with a higher atom and step economy.1,2 In this context, three-component copper-catalysed borylative difunctionalization of olefins has become a powerful method for a concomitant installation of a C−C bond and a boryl group.3 These procedures pave the way for an easy access to borylated building blocks, of great interest in organic chemistry due to their exclusive reactivity and divergent synthetic capability. As shown in Scheme 1, a boryl-copper species formed in situ undergo an insertion an alkene and the resulting alkyl-copper intermediate is then intercepted by an electrophile (E) to generate the desired product bearing a boryl group.3,4 On these bases, we developed some novel three-component stereoselective copper-catalysed tandem procedures, consisting in an overall assembly of a styrene molecule, a pinacol-borane (BPin) unit and strained heterocyclic rings as the electrophilic partners.

FAR-PO-088. Privileged scaffolds for potent and specific inhibitors of PARPs subfamilies

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ADP-ribosylation, a reversible post-translational modification of proteins, is catalysed by a large family of enzymes (17 in humans) known as PARPs. While poly-ADP ribosylating enzymes (poly-ARTs) are well characterized with some approved anticancer compounds that represented an important step forward towards targeted therapy, mono-ADP ribosylating enzymes (mono-ARTs) still remain less understood. However, the interest toward these enzymes has grown due to their pivotal roles in various cellular processes such as cell replication, immune modulation, apoptosis, stress response, and neurodevelopment. Furthermore, targeting mono-ARTs shows promise in treating not only cancer but also inflammation and neurological disorders.1 Despite the hot topic of this research field, the mono-ARTs inhibitors development is still at an early stage. Being the NAD pocket highly conserved among all the PARPs subfamilies and since most of the inhibitors work as NAD mimetics, the development of highly selective ARTs inhibitors still remains one of the major challenges to fight with.1

In this scenario, by exploring innovative heterocycles as new nicotinamide mimicking scaffolds, we have recently identified the most potent PARP10 and dual PARP10/PARP15 inhibitors described to date.2,3 Based on these valid starting points and aiming to increase even more the selectivity and inhibit other specific enzymes within the mono-ARTs subfamily, a further SAR exploration has been performed. In particular, taking advantages of the available co-crystallographic structures, various modifications were made to reach some less conserved regions (e.g. D-loop or mono-ARTs hydrophobic cavity) of the PARPs catalytic domain for achieving specificity.

All of the synthesized compounds were tested against a wide panel of PARPs, from which interesting derivatives with new SAR insights emerged; the best derivatives were also characterized in cellular context and preliminarely studied for their ADMET properties. The results will be the object of the presentation.

ANA-PO-065. Development and application of an electrochemical sensor for the detection of Benzophenone-3

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The presence of emerging microcontaminants, including organic UV filters (OUVAs), has been detected worldwide in the aquatic ecosystems. These pollutants, originated from various anthropogenic sources, can persist and transform within wastewater treatment plants (WWTPs)1, posing a potential environmental hazard.

In this framework, this research presents an innovative electrochemical sensor based on molecularly imprinted polymers (MIPs) for the selective detection of Benzophenone-3 (BP-3), one of the OUVA most spread in the aquatic environment2, to overcome the analytical challenges related to the quantification of this class of contaminants in wastewater samples.

Different monomers, gold screen-printed electrodes and cyclic voltammetry conditions were tested to select the best parameters for the electropolymerization of the MIP layer. The template washing step, polymer surface blocking and analyte rebinding conditions were also optimized to maximize the selectivity and sensitivity. Electrochemical detection was performed using electrochemical impedance spectroscopy (EIS) supported by an electrochemical probe. In addition, cross-reactivity tests were carried out in the presence of possible interferents, selected on the basis of their size, chemical structure and occurrence in wastewater samples. All the tests were conducted in parallel, using both MIP electrodes and non-imprinted polymer (NIP) electrodes. The sensor demonstrated a significant selectivity for the target analyte, showing an imprinting factor of 55, a linear range between 0.01 and 1 µM and a limit of detection of 5 nM.

The sensor has also been tested with real WWTP effluent samples previously spiked with a known concentration of BP-3, demonstrating no compromised analytical performance despite the complexity of the matrix.

In conclusion, the study showed interesting results that may lead to a specific and cost-effective approach, allowing widespread monitoring and supporting early detection of the target compound in wastewater samples.

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ANA-PO-130. A sustainable analytical approach towards assessing olive oil adulteration

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Knowledge of the composition of TAGs in vegetable oils is important for dietary and nutritional reasons, due to the influence of the different properties of each fatty acid on the human organism. Specifically, olive oil is a popular food ingredient worldwide, and for this reason, detecting economically motivated adulteration is important to protect consumers' interest and health [1].

Current research on the fraud detection of olive oil involves a wide array of methods, including infrared spectroscopy, Raman spectroscopy, liquid chromatography (LC), and gas chromatography [2]. In this study, a fast, simple and green methodology was optimized to detect intentionally adulterated olive oil with common seed oils at different levels (between 5% and 50%), by means of subcritical fluid chromatography (SubFC) with UV detection, followed by statistical analysis.

The developed method is a more sustainable alternative to conventional non-aqueous reversed phase methods (NARP-LC), for routine analysis aimed to guarantee olive oil quality. Separation was achieved on four Ascentis Express C18 columns serially coupled (for a total stationary phase length of 60 cm), with a CO2-based green mobile phase, which provided high efficiency without reaching a prohibitive backpressure. Remarkably, small amounts of organic modifier (5%) were sufficient for elution, thus minimizing both solvent consumption and waste (around 1.5 mL per analysis).

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ABC-PO-030. Contaminants screening in Procambarus clarkii and environmental matrices from three wetlands in Sicily (Italy)

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The aquatic environment is a reservoir of pollutants of natural or anthropogenic origin. Pollution and the invasion of exotic species are recognised as major factors in the loss of biodiversity1 and are known to have a negative impact on ecosystems and trophic networks. Monitoring is therefore necessary, including chemical investigations to assess contamination of environmental and biological matrices. Procambarus clarkii is one of the most widely introduced freshwater animal species in the world, raising concerns about its impact on native aquatic biota2. Despite the important nutritional properties of freshwater decapods and their potential use as a source of bioactive molecules, there are potential health risks associated with their consumption due to their ability to accumulate contaminants2. In the present work, three representative Sicilian aquatic ecosystems were selected for the collection of P. clarkii specimens and environmental samples (water and sediment). The analytes selected for determination in the muscle and exoskeleton of P. clarkii, as well as in water and sediment, were trace elements (TEs), pesticides, per- and polyfluoroalkyl substances, phthalates, antibiotics and cyanotoxins. Except for TEs, all samples showed concentrations below the detection limit for all contaminant classes. Bioaccumulative potentials and TEs contamination profiles differed significantly between sites and matrices, confirming the suitability of P. clarkii as a biomonitor of environmental contamination. The levels of TEs found in the biological matrices were similar or lower than those reported for other sites in different parts of the world3 and below the limits set by current European environmental and food safety legislation. However, these results should be contextualised to the selected sites, time of sampling collection and contaminants, and desirably confirmed by further periodic sampling and analysis.

Acknowledgements:

This research was financially supported by the project "Censimento, caratterizzazione, controllo e valorizzazione del Gambero rosso della Luisiana (Procambarus clarkii) in Sicilia (Mis. 2.49 art. 49 PO FEAMP SICILIA 2014 2020)", realised in cooperation between the dept. STEBICEF of the University of Palermo and the "Assessorato dell'agricoltura, dello sviluppo rurale e della pesca mediterranea" of Regione Sicilia. This research was supported by the fund “NextGenerationEU” of the European Union (D.M. 737/2021 CUP B79J21038330001 and by project funded under the National Recovery and Resilience Plan (NRRP), Mission 4 Component 2 Investment 1.4 - Call for tender No. 3138 of 16 December 2021, rectified by Decree n.3175 of 18 December 2021 of Italian Ministry of University and Research funded by the European Union – NextGenerationEU - Award Number: Project code CN_00000033, Concession Decree No. 1034 of 17 June 2022 adopted by the Italian Ministry of University and Research, CUP B73C22000790001, Project title “National Biodiversity Future Center - NBFC”.

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ANA-PO-143. Chemometric strategies in forensic sciences: two case studies

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This work presents two forensic case studies where the application of chemometrics played a crucial role.

The first study explores the potential of a multiblock platform (IRIS, XGLab SRL – Bruker Nano Analytics, Milano, Italy) capable of simultaneously capturing X-ray fluorescence (XRF) data along with visible & near-infrared (VNIR) and short-wave infrared reflectance spectra (SWIR) to identify dehydrated biological fluids. Various fluids including blood, urine, semen, and saliva from different donors were analysed on wood specimens at different deposition times using chemometric methods. The study aims to achieve two objectives: firstly, to detect the presence of biological fluids on the substrate and, secondly, to differentiate between them. Chemometric analysis, including Principal Component Analysis (PCA) and Multivariate Curve Resolution - Alternating Least Squares (MCR-ALS), proved highly effective in recognizing and distinguishing between biological fluids through detailed chemical maps, even in cases with similar vibrational bands and elemental compositions, like urine and saliva.

This research contributes to the development of new techniques for forensic investigations, addressing the challenges of complex sample matrices and degradation effects commonly encountered in this field.

The second study focuses on the estimation of the time since the discharge of firearms, analysing the decay of gunshot residues (GSR) over time. GSR consists of a complex mixture of organic (O-GSR) and inorganic (I-GSR) compounds, released after the firing of a firearm. So, this research employs solid phase microextraction followed by gas chromatography - mass spectrometry (SPME-GC-MS) for the detection of O-GSR in weapon

and ammunition components. The initial phase involves optimizing and validating a method to detect O-GSR in spent shells. Chemometrics, using a multivariate statistical approach based on Principal Component Analysis (PCA) and Design of Experiments (DoE), was utilized to define both the target compounds to be investigated and the optimal experimental conditions to analyse them. In the second phase, the developed method was applied to the analysis of O-GSR in semi-automatic pistol barrels, monitoring decay over time with multiple linear regression.

Preliminary findings suggest that SPME-GC-MS analysis of firearm components could offer valuable insights into recent firearm use, paving the way for potential advancements in forensic firearm investigations.

ANA-PO-091. High-throughput fabrication of DNA condensates for bioanalytical applications

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Liquid-liquid phase separation (LLPS) is a physical process that gives rise to membrane-less biopolymer condensates. Engineering LLPS processes has proven to be a powerful approach for creating mimics of cells and cellular organelles, driving advancements in the field of synthetic biology1. In particular, DNA-based condensates have garnered interest due to the versatile design capabilities of DNA, allowing for the fine-tuning of their physical properties and functions2. DNA condensates are generally formed by multi-armed DNA nanostructures, known as DNA nanostars, and their cross-linking can be mediated through sticky-ends3 or through hydrophobic cholesterol molecules4.

Although the traditional manual approaches have demonstrated to be effective for DNA condensates preparation, they are laborious and time-consuming. Motivated by these considerations, we propose here the development of a high-throughput method for DNA condensates fabrication that allows the production of a large number of samples in a relatively short amount of time. To do this, we employed pre-annealed DNA nanostars and we studied their isothermal assembly using the Opentrons® OT-2 liquid handling robot.

We also performed a high-throughput analysis to characterize the size and stability of the condensates using Differential Dynamic Microscopy (DDM) technique, as developed for similar DNA condensates obtained through a manual approach involving thermal annealing5. The results showed that condensates exhibited varying sizes depending on incubation time and z-levels within the well. Notably, they were stable for at least to 8 days. The achievement of a high-throughput method for DNA particles synthesis and analysis allows for a rapid screening and testing of various compositions and parameters, facilitating a potential transition from laboratory-scale to industrial-scale production. Building upon these results, the next step involves exploring bioanalytical applications of DNA condensates.

INO-PO-076. Fabrication of new functional high-performing clay-based fabrics for environmental parameters detection

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Nowadays environmental pollution deriving from anthropological activities is a serious threat to the well-being of ecosystem and its inhabitants, representing the main cause of mortality in the world. The presence of emerging and common pollutants in air, water and soil is a cause of worry and discussion. Effective monitoring methods are indispensable for assessing environmental quality and identifying pollution sources. One of the most powerful analytical tools for determining environmental contaminants is chromatography, which allows for qualitative and quantitative analysis. However, these approaches require qualified staff, expensive instrumentation, and time-consuming sample preparation. In this regard, nanotechnologies represent potential for the development of sensor for environmental applications, thanks to their unique features such as high surface area (surface/volume ratio), catalytic capacity, reactivity and easy functionalization to chemically modulate their properties.1 In particular, devices based on functional nanomaterials may represent a valid alternative to traditional techniques, compared to which they generate fast responses, addressing at the same time the actual need to use systems with a low environmental impact.2 Recently, the scientific community is focusing on the development of optical sensor systems for the detection of environmental parameters and contaminants such as heavy metals. In particular, colorimetric sensors exhibit promising potential for the detection of metallic ions, anions, organic dyes, drugs, pesticides, and other toxic pollutants thanks to their easy fabrication, quick detection, high sensitivity, and naked-eye sensing.

In this work, a user-friendly adsorbing system that may either respond colorimetrically to the presence of various environmentally parameters (such as pH) is developed using different chromophores. In particular, a hybrid material based on functionalized clay is produced and used to immobilize seven distinct organic dyes and applied on cotton fabrics. All starting materials and final products have been characterized by means of different chemical-physical and morphological techniques. Finally, their successful employment for the pH variation detection will be shown, together with preliminary tests for pH variations and heavy metal revealing.

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Acknowledgment:

MICS (Made in Italy – Circular and Sustainable) Extended Partnership (PE00000004), Ecosistema SAMOTHRACE – SiciliAn MicronanOTecH Research And Innovation CEnter (ECS00000022) and E.S. PhD project PNRR "Transizioni digitali e ambientali" D.M. n118/2023 are gratefully acknowledged.

ANA-PO-027. Label-free and single-molecule detection of Sars-CoV 2 subgenomic mRNAs

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The ongoing COVID-19 pandemic is undeniably one of the most significant global threats in modern history, which has resulted in severe social and economic consequences.[1] Several detection approaches and genome sequencing methods have been utilized for SARS-CoV-2, as indicated by the extensive number of available data [2]. Currently, the SARS-CoV-2 diagnosis is based on Reverse Transcription-quantitative Polymerase Chain Reaction (RT-qPCR) method, which is considered the gold standard [3]. However, the RT-qPCR major limitation is the non-specificity in the detection of genomic, subgenomic, or degradation product of the viral RNA. Indeed, different studies prove that subgenomic mRNAs (sgmRNAs) could be used as a significant epidemiological marker for detecting different SARS-CoV-2 strains [4,5]. Furthermore, these mRNAs are related with the active replication of the virus[5]. In this study, we evaluated the application of the Single Molecule with a Large Transistor (SiMoT) technology [6] to perform a proof of concept for the early detection of nucleocapsid protein coding SARS-CoV-2 sgmRNAs. The core of the SiMoT device, based on an electrolyte-gated field-effect transistor, is a gold gate electrode biofunctionalized with a self-assembled monolayer [7], densely packed of the sgmRNAs . The proposed label-free, fast electronic assay paves the way to ultra-high performing immunometric point-of-care devices for large-scale screening of the active replication of the virus.

IND-PO-047. Enzymatic hydrolysis of protein-rich biomass waste for the production of biostimulants

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Rice and soybeans are among the crops that generate the largest amounts of protein-rich waste, e.g. the protein content of rice bran and soy meal are 13-19% and 44-49%, respectively. Thus, they have high potential to be used as starting materials to produce value-added products. To this aim, proteins contained in these agri-food waste must be extracted and separated from the other constituents of biomass, and then hydrolyzed. Enzymatic hydrolysis is an easily scalable, green and cost-efficient strategy which involves the use of proteases, eventually in combination with carbohydrases, to produce mixtures of peptides known as protein hydrolysates (PH), for which a number of applications have been reported. Among them, PH can be used as biostimulans in horticulture. In this work an in-depth investigation of different commercially available enzymatic formulations, experimental conditions (T, pH) and time of hydrolysis was performed to obtain soy PHs with biostimulant activity.

FAR-PO-085. Structure-Based Virtual Screening (SBVS) for the discovery of Sirtuin-2 inhibitors

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Sirtuin-2 (SIRT2) is a (NAD+)-dependent enzyme with deacetylase activity. Dysregulation in SIRT2 activity was shown to be related to a plethora of diseases, such as neurodegenerative disorders, cancer and metabolic syndromes. Several conformationally diverse X-Ray structure of SIRT2 are available at the Protein Data Bank (PDB), both in the holo- and apo-states. With the aim to discover novel SIRT2 inhibitors (SIRT2Is) via structure-based virtual screening (SBVS), a preliminary study for the evaluation of the available SIRT2 PDB structures for the following VS was performed, scouting single- and multiple- protein conformation approaches. The structure ability to select SIRT2Is within a set of decoys was evaluated by Receiver Operating Characteristic AUC (ROC-AUC). The best system was chosen to screen the ChemDiv commercial library (>22,000 compounds), guiding the discovery of novel chemo-types endowed with modest SIRT2 inhibitory ability. This piece of information paved the way for the following SBVS of novel pyrazolo-pyrimidines and thiazole-based compounds exhibiting ameliorated SIRT2 inhibitory ability.

ORG-PO-139. Catalysis via dispersion forces in visible-light-promoted reactions

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The generation of (bi)radical intermediates under mild conditions has opened broad synthetic opportunities during the last century, but these reactive intermediates are present in solution in tiny concentrations, and they require a tailored tuning of experimental parameters to efficiently convert substrates into desired products. Here, we report a general approach that can overcome those limitations using bi-naphthyl derivatives. These species can act catalytically in energy-transfer mediated processes, showing a dramatic effect on the efficiency of several visible-light promoted reactions,1 such as the E/Z isomerization of conjugated alkenes, and a [1,5]-HAT/cyclization2 or an arene para-cycloaddition of functionalized allenamides3 (Figure 1). These results show that this family of bi-naphthyl derivatives represent a new class of catalysts, which might become widely used for several photocatalytic applications.

FIS-PO-062. Operando Solid State NMR of photo-responsive materials: new hardware and experiments

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Solid State Nuclear Magnetic Resonance (SSNMR) is one of the most powerful techniques for obtaining a deep understanding of the structural and dynamic properties of materials, over very wide spatial (0.1-100 nm) and time (10-11-100 s) scales1. The possibility of performing SSNMR experiments on photo-responsive materials while they are interacting with light is very attractive, since it could reveal the structural and dynamic

modifications occurring in the material due to its interaction with light. This appears of particular interest in the field of photovoltaics since it can improve the understanding of the material performance and its design. In this contribution we present the preliminary results of the project PRIN 2022 “NUTSHELL” (this study from the European Union – Next Generation EU), aimed at developing SSNMR apparatuses for performing SSNMR spectroscopic and relaxation experiments on organic and inorganic photoactive materials during their illumination.

TEC-PO-028. A Multivariate Statistical Approach to Monitor the Synthesis of Polyurethanes

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Diisocyanates, due to the presence of two functional groups –N=C=O, are commonly used for the synthesis of polyurethanes (PUs), in combination with an appropriate polyol. Physical, chemical and mechanical properties of PUs can be modulated by varying the nature of the diisocyanate compounds. In this study, two kinds of acrylate polyurethanes (PUAs) were synthesized: one using isophorone diisocyanate (IPDI), with an aliphatic R group, the other using 2,4-toluene diisocyanate (TDI), with an aromatic R group. As shown in Figure 1, in the first step, the diisocyanate compound reacts with a polyol to obtain an urethane prepolymer with two terminal –N=C=O groups; in the second step, the as-obtained urethane prepolymer is functionalized with an hydroxy methacrylate derivative.

Figure 1: Synthetic pathway of the preparation of PUs with methacrylate as end groups (PUA).

The aim of this study was the application of a methodology, faster than the conventional titration method1, for the quantification of the free isocyanates in the first step of the prepolymer synthesis. IR spectra were recorded, in the wavenumber range between 1800 and 2100 cm-1, on calibration solutions and on aliquots collected from the reaction batch at different times. Then, a multivariate statistical approach was applied to build a calibration model, able to monitor the rate of decrease of the diisocyanate reagent. Results were in line with those obtained through the conventional method.

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ELE-PO-015. Exploring Novel Solutions for Enhanced Performances in Fluoride-Ion Batteries

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A new era of electrochemical energy storage devices is required to meet the increasing demand for energy storage capacity at lower costs. Furthermore, because the number of batteries produced is constantly increasing, developing more sustainable chemistry without consuming limited resources is an actual research challenge. In recent years there has been growing interest in batteries based on fluoride-ion shuttle. This interest stems from the potential to utilize a cost-effective, high-capacity conversion cathode, taking advantage of multi-electron transfer processes, and use a metal anode without the risks caused by dendrite formation, resulting in enhanced safety and performance. Today, finding a suitable electrolyte is one of the most significant challenges for developing a fluoride-ion battery capable of competing with modern lithium-ion batteries. This work attempts to use a novel solution in the electrolyte technology, to ensure ionic conductivity and high chemical and electrochemical stability, enabling cyclability between metal-metal fluoride electrodes at room temperature

ALI-PO-001. Sustainability in Food Safety: Deep Eutectic Solvents for Aflatoxin Extraction in Pistachios

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Aflatoxins, identified as carcinogenic mycotoxins belonging to Group 1 by the International Agency for Research on Cancer, pose a substantial risk to global food safety. These contaminants are present in diverse food sources such as wheat, rice, corn, milk, spices, and nuts. To address health concerns linked to aflatoxin exposure, global regulatory bodies have set maximum limits for aflatoxins in food products, necessitating thorough pre-trade analyses by producers. Existing official methods for aflatoxin analysis rely on organic mixtures, generating considerable waste1. In response to the increasing emphasis on sustainable analytical practices, especially in food chemistry and safety, this study suggests an innovative and environmentally friendly approach using Deep Eutectic Solvents (DES) for the extraction and quantification of aflatoxins from pistachios—an economically valuable commodity prone to contamination in hot and arid regions. DES, a recent class of alternative solvents, comprises a binary mixture with a hydrogen bond donor and acceptor in specific molar ratios, allowing their use at room temperature. Numerous DESs have exhibited non-toxicity, biodegradability, and effective extraction capabilities for various target compounds2. The extraction process was optimized using a Design of Experiment. Considering the complex nature of extracts from aflatoxin-contaminated pistachios, a necessary clean-up and concentration step involved dilution with water and passage through a C-18 solid phase extraction cartridge. The trapped aflatoxins were subsequently eluted with a minimal amount of methanol and analyzed using ultra-high performance liquid chromatography coupled to a fluorometer detector, equipped with a partially porous C18 column. This study illustrates the feasibility of utilizing DES as extraction media for aflatoxins in a complex matrix, diminishing dependence on conventional solvents and minimizing process waste. The developed method demonstrated robustness and reliability, achieving an inter-day repeatability lower than 6.4% (CV%) for each analyte, with limits of quantification below 0.71 ng/g. Recoveries for individual aflatoxins were as follows: 97.5% for AFB1, 98.5% for AFB2, 105.2% for AFG1, and 92.9% for AFG2. Additionally, the environmental sustainability of the method was quantified and evaluated using two distinct metrics. This inventive approach aligns with the ongoing trend towards more environmentally conscious analytical practices in the field of food safety.

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ORG-PO-140. Synthesis of triple strand glycan structures with rigid conformations

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The main feature of proteins is to encode specific information by folding, allowing these biopolymers to carry out sophisticated functions. The understanding of peptides folding rules has permitted to design and synthesize linear chains programmed to adopt a defined 3D structure [1]. Conversely, synthetic polysaccharides capable of autonomously folding into a defined 3D structure have not been explored so far, due to their complexity and lack of folding rules.

A glycan hairpin, namely two strands chains attached to a turn unit, has recently been synthesized [2] adopting: an α-L-Rha-(1,3)-[β-D-Glc-(1-4)]-D-Glc trisaccharide (similar to Lewis X conformation [3]) as a turn unit and two linear β-1,4-Glc repeating units (cellulose) as the two strands.

Exploiting the design principles developed so far and with the aid of molecular dynamics simulations, we intend to synthesized more complex structures with rigid conformations, mimicking proteins' β-sheets (Figure 2). Recent progress towards the synthesis of these structures by Automated glycan assembly (AGA) on solid phase will be described [4].

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Acknowledgements: The fellowship of S.S. is supported by EU funding within the NextGeneration EU-MUR PNRR (Dottorati Industriali)

ORG-PO-141. Employment of natural products for laccase immobilization on organic films for efficient biocatalysis

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Laccases, multicopper oxidases, exhibit significant catalytic activity in oxidizing a wide range of substrates, such as polyphenols, diamine, and some inorganic compounds, in the presence of molecular oxygen. Despite their high activity, selectivity, and specificity, laccases have disadvantages such as low chemical and thermal stability, difficulty in recovery and reuse, and high cost. To overcome these limitations, enzyme immobilization is considered a promising technology for implementing catalytic efficiency and controlling enzymatic reactions. The immobilization of enzymes is typically done using different strategies1: i) physical adsorption; ii) ionic adsorption; iii) covalent binding between the enzyme's support and amino acid side chain; iv) entrapment through a physical encapsulation. This work aims to immobilize laccase from Trametes versicolor (LTV) onto two different systems: a) a blend formulation of PLA/PBAT loaded with walnut shell extract,2 b) nylon films activated with APTES and natural products.3 FT-IR, SEM and TGA will characterize the new systems. The immobilized enzyme's activity and its reusability will be spectrophotometrically tested. These newly developed immobilized enzyme systems can be potentially used to synthesize organic compounds, bioremediate wastewater from organic compounds and for biosensor development.

FAR-PO-079. Chemical Space Exploration of ALDH1A3 Inhibitor NR6 for Anticancer Agents Development

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Cancer is the second global cause of mortality, accounting for nearly 10 million deaths in 2022.1 Despite significant advancements in oncological treatments, poor outcomes are still associated with chemoresistance, metastasis, and the rise of cancer stem cells (CSCs). Targeting these latter represents a promising approach for overcoming the limits of the traditional cancer treatments. In this context, the Aldehyde Dehydrogenase (ALDH, EC: 1.2.1.3) family recently garnered significant attention from the scientific community, with the isoform1A3 being identified as a CSC marker2 and overexpressed in several tumors, e.g., glioblastoma multiforme. Our research group developed a library of diphenyl imidazo[1,2-a]pyridines as potent ALDH1A3 inhibitors and NR6, showing a 2,6-substitution pattern, emerged with a subnanomolar EC50 on ALDH1A3-overexpressing cell lines and an IC50 value of 5.3 μM in enzymatic inhibition assays.3 Noteworthy, the presence of 3-cyanophenyl substitution in position 6 in NR6 seems to play a key role in interacting with the enzyme, as suggested by crystallographic studies.4 Aiming to improve solubility and enhance the inhibitory potency of such compounds, we explored the effect of different substitutions on the phenyl ring at position 2 of the heterocyclic core, thereby generating a novel series of NR6 derivatives which allowed the construction of structure-activity relationships and address the synthetic efforts in the lead optimization process.

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FAR-PO-094. Novel FtsZ inhibitors identified by virtual screening and Adaptive Steered Molecular Dynamics

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Filamentous temperature-sensitive Z (FtsZ) protein represents a promising antibacterial target owing to its essential role in bacterial cell division[1]. Serving as the prokaryotic functional homologue of tubulin, FtsZ polymerizes into protofilaments orchestrating the formation of the Z-ring during binary fission.

A molecular docking and pharmacophore based virtual screening campaign resulted in the discovery of a novel FtsZ polymerization inhibitor exhibiting an IC50 potency of 48 μM. The promising in-vivo MIC of 2 mg/mL was achieved in presence of a efflux pump inhibitor (PaβN[2]). To enhance potency and diminish affinity towards efflux pumps, an Adaptive Steered Molecular Dynamics (ASMD) based drug design approach was employed.

ASMD[3] presents a refinement of the Steered Molecular Dynamics (SMD) technique where the driving of a steered particle (i.e. the unbinding of a ligand) is performed by a time-dependent harmonic force in stages. Unlike SMD, which requires a large number of replicas to encompass all potential unbinding configurations and generate a reliable Potential of Mean Force (PMF) along the reaction coordinates using Jarzynski's Equality (JE), ASMD optimize this process by segmenting the unbinding pathway into stages and discarding trajectories that significantly deviate from the equilibrium path at the conclusion of each stage.

Structural analogues of the discovered inhibitor were purchased and tested to build preliminary structure-activity relationships (SAR) and the trends in inhibitory activities were retrospectively predicted by ASMD. The optimized parameters obtained from this analysis were utilized in the rational design a new derivative, featuring chemical moieties tailored towards mitigating bacterial efflux and enhancing potency.

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ANA-PO-099. Innovative iron-doped carbon nitride material for CEC removal

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The removal of contaminants of emerging concern in water represents a challenge for the sustainable development of the society, where advanced oxidation processes are the main method for their abatement. This work focused on the synthesis of carbon nitride1 (g-C3N4) based materials, added with iron. It is possible to introduce iron metal centers to extend Fenton reactions at neutral pH, otherwise hindered at pH > 4 by iron precipitation2. At the same time, the UVA irradiation of carbon nitride allows the production of H2O2 in situ, which can be used for Fenton reactions, through the reduction of dissolved oxygen.

The synthesis of the photocatalyst was carried out by adding FeCl3•6H2O to melamine through a thermal polycondensation reaction under anoxic conditions at 500°C. The quantitative transfer of iron in the structure was confirmed by determining the Fe content after the thermal decomposition of the organic fraction. The photocatalytic performance was evaluated by measuring phenol (PhOH) 100 μM degradation under UVA irradiation, with a fixed amount of photocatalyst of 1.65 g L-1 at initial pH = 7.0. When needed, H2O2 1.0–25 mM was also employed.

Studies at different iron concentrations have shown that content of 0.28% w/w iron is optimal for the degradation of PhOH in the absence of external H2O2. In experiments carried out with 1 mM H2O2, the degradation rate of PhOH increased using g-C3N4, but this did not happen for Fe-g-C3N4. These observations and the disappearance of over 90 % of H2O2 in just 30 minutes of irradiation with Fe-g-C3N4, suggest that: 1) the reactive oxygen species (ROS) formed at the metal centers can react more easily with the structure of the photocatalyst than with the model contaminants; 2) high valent oxoiron complexes could contribute more to phenol degradation than ROS species.

Increases in the reaction kinetics with Fe-g-C3N4 was observed for additions of H2O2 concentrations > 5 mM. In these cases, the contribution of the photolysis of H2O2 is not negligible and industrial applications in wastewater treatment plants would be expensive.

Further studies are currently underway to study the working mechanisms by using spectroscopic techniques (i.e., EPR) and selective scavenging of the main ROS species (•OH, 1O2, •O2-) involved in the degradation of phenol. This work will include material characterization and analysis on catalyst reuse.

Acknowledgements:

The authors acknowledge support from the Project CH4.0 under the MUR program "Dipartimenti di Eccellenza 2023-2027 (CUP: D13C2200352001)"

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ABC-PO-020. Mulching Films: Plastic Additives Release into Soil and Crops

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Mulching, a widely practiced technique in agriculture, involves laying a protective layer of material over the soil's surface [1]. This is typically achieved using films derived from polyethylene (PE), known for containing additives such as phthalates. These additives are recognized for their ability to disrupt endocrine functions, thereby posing environmental and health risks through the potential transfer of chemicals to the soil and crops.

Biodegradable plastic mulches could represent an alternative to reduce plastic waste and the costs associated to the PE films removal. However, concerns exist regarding the release of substances from these mulches, impacting biodiversity and human health. To assess contaminants transport, a field experiment was conducted with strawberries by mulching the soil with four different film materials: PE, biodegradable PE (PE-BIO), polypropylene (PP) and polybutylene adipate terephthalate (PBAT)/starch. Soil and strawberry samples were analysed by GC-MS for phthalates and other plastic additives such as acetyl tributyl citrate, di-n-butyl sebacate and tris(2-ethylhexyl) phosphate.

The Kruskal-Wallis test showed significant differences in the total concentration of phthalates between the control soil and soils mulched with PE-BIO ($p=0.033$) and PP ($p=0.002$). Furthermore, a significant difference was also observed between the soil mulched with PE and that mulched with PP ($p=0.048$). However, no statistically significant differences were found between the controls and the soil mulched with PBAT-starch and PE ($p=1$). Regarding dibutyl sebacate and acetyl tributyl citrate, the statistical tests did not show any significant differences among the treatments ($p>0.143$).

Data from strawberry samples are currently being analysed and will be presented at the conference.

The results will help determine the risks posed by mulches to agricultural soils and whether differences exist in contaminant transport among different mulching materials.

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FAR-PO-081. Targeting RNA for degradation with small molecules: design and synthesis of selective RNA binders and development of ribonuclease targeting chimeras (RIBOTACs)

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RNA has been successfully targeted by small molecules for drug discovery purposes, by taking advantage of binding sites available upon rearrangement of RNA into secondary and tertiary structures.1 A validated RNA target is pre-miR-21, a non-coding RNA, linked to various cancers and other pathologies.2 This project aims to develop selective binders to target pre-miRNA21 and in turn decrease miRNA21 levels. To identify RNA ligands, we used a virtual screening, taking advantage of RNA binders reported in literature. Those compounds were docked against different possible conformations of pre-miRNA21. Here, the best compounds were selected for further synthesis. We identified two fragments, selected for a fragment growth campaign. Indeed, by following an optimized synthetic strategy, we obtained several derivatives that have been tested for their binding affinity to the short pre-miR-21 construct by high-resolution mass spectroscopy (MS) under native conditions. Binding data from native MS will guide ongoing structure−activity relationship (SAR) studies for the expansion of ligand library and the development of more potent and selective pre-miRNA21 ligands. Subsequently, pre-miRNA21 ligands will be employed as warheads to synthesize Ribonuclease Targeting Chimeras (RIBOTACs), a class of RNA-degraders.3 RIBOTAC includes an RNA-binder conjugated by a linker to an RNase L recruiter, ultimately to induce enzymatic cleavage the RNA of Interest (ROI). (Fig.1)

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ORG-PO-242. Low-Impact Synthetic Strategies for Constructing Stereodefined Coumarin-Based Molecular Architectures

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Coumarins represent one of the most important tools for studying and developing new bioactive molecules for treating human pathologies, in the integrated fight against pests, and for developing fluorescent probes for applications in bioimaging and theranostics. In recent years, our research group has conducted several studies aimed at developing different synthetic strategies for constructing new coumarin scaffolds and their chemo- and stereoselective transformations. This effort has provided access to new chemical architectures with significant biological activity and notable photophysical properties. These results were achieved through the convergence of various synthetic approaches, ranging from photochemistry to organocatalysis, with a primary focus on developing robust, scalable, and environmentally friendly catalytic processes.

In this contribution, we present the development of novel stereo- and enantioselective synthetic processes aimed at obtaining new molecular scaffolds with coumarin cores. Furthermore, we investigate their potential as antiviral drugs.

ORG-PO-142. Synthesis of bioprintable polymers for the development of lung cancer tissue mimetics

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The extracellular matrix (ECM) of lung cancer is characterized by interconnected biomacromolecules, including fibrous proteins (i.e. elastin and collagen) and proteo- and glycosaminoglycans (i.e. hyaluronic acid, versican)1. The identity and the gradient of ECM components in cancer reflect the cancer grade and localization and it is differential from the ECM fingerprint and structural organization of healthy lung tissue2. To produce lung cancer tissue models that mimic the in vivo microenvironment, the generation of ECM mimics that can recapitulate the key components involved in cell-ECM crosstalk are needed2. Here in this work, biomaterials-based ECM mimics have been produced using chemoselective ligation approaches on different biopolymers3. The introduced functional groups have been employed to crosslink polymers of different nature using multiarms linkers in order to control the stiffness and the printability. The produced biomaterials have been characterized by NMR and FT-IR analysis. Morphological features have been also evaluated using SEM analysis in order to compare the porosity and the structural features of decellularized ECM and lung ECM mimics. The formulation with optimal rheological properties were employed in bioprinting protocol to generate 3D in vitro lung advanced models employable for drug screening and cell biology studies.

TEC-PO-005. Development of sensors for halogenated pollutants

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Access to clean and safe drinking water is essential for human health and well-being, but it is increasingly threatened by the presence of various contaminants, such as iodine. Iodine is a common disinfectant used in water treatment, but it can also cause adverse health effects, such as thyroid dysfunction, at high concentrations1. Therefore, the development of sensitive and selective sensors for the detection of iodine in water is of great importance for ensuring the safety and quality of drinking water.

Hexamethonium salts have emerged as promising porous materials for iodine capture due to their unique properties, such as high surface area, structural flexibility and chemical selectivity (Figure 1)2,3.

The work has been organized in several key steps, including the synthesis and characterization of hexamethonium-based sensing layers, the development and optimization of the sensor design and fabrication process, and finally the testing and validation of the sensors with real water samples. Overall, the successful optimization of these sensors could have significant implications for water quality monitoring and public health, and could lead to new technologies for water treatment and purification.

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TEC-PO-038. Electron-beam irradiated nanogel-based drug delivery system for cancer treatment

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Cancer remains a significant global health challenge, accounting for nearly 10 million of deaths in 2020, whose incidence and mortality cases are steadily increasing. Conventional chemotherapy is the most common approach in the treatment of the disease, but it is often hindered by issues such as the lack of selectivity towards cancerous cells and the premature drug degradation. This results in the need of administering higher doses of chemotherapeutic compounds and leads to drug resistance, which commonly determines the failure of the treatment. Nanoparticles respond to this issue, and the creation of drug delivery systems that can selectively target the affected cells, protect the administered drug, and increase its efficacy, is an innovation in the field of precision medicine. Aqueous solutions of poly(N-vinylpyrrolidone) and acrylic acid (AA) underwent high-energy radiation-induced cross-linking to obtain nanogels. This work focused on the creation of non-immunogenic, blood-compatible, sterile, and colloidally stable systems to be eliminated through the final excretory system. Nanogels were loaded with a model chemotherapeutic drug through a redox-sensitive linker, decorated with a model targeting agent, and evaluated in 2D and 3D cellular models, to assess their applicability as modular nanosystems for precise and efficient delivery of therapeutic payloads to cancer cells.

ANA-PO-066. Laser-Induced Graphene electrochemical aptasensor for the detection of Escherichia coli

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Detecting and identifying pathogenic microorganisms is a matter of critical importance, due to the significant impact of them on both healthcare systems and economies. Laser-Induced Graphene (LIG) is a novel promising material that stands out and attracts interest due to its many properties, including mechanical resistance, high surface area, and easy and streamlined production processes1. These attributes have opened possibilities to develop low-cost and portable devices that can fulfill the needs of point-of-care applications. In this work, a LIG electrode (Fig. 1A) covalently functionalized with two different aptamers (P12-55 and P12-312) was used for the development of an aptasensor for detecting E. coli. Using electrochemical impedance spectroscopy, the change in the charge transfer resistance (RCT) of the aptasensor was monitored upon interaction with bacteria. The aptasensor showed a linear response in the presence of E. coli within 100 – 102 CFU/mL when tested in phosphate buffer saline (PBS) solution. Notably, the biosensor displayed minimal response in presence of Staphylococcus aureus and Pseudomonas aeruginosa, proving to be selective for E. coli. Furthermore, the sensor was calibrated using urine samples spiked with a known concentration of E. coli cells (Fig. 1B).

FIS-PO-038. Multiscale multiconfigurational self-consistent field/fluctuating charges approach to simulate electronic properties of solvated systems

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This study introduces a novel approach that couples a multi-reference self-consistent field method, i.e. CASSCF, with the fluctuating charges model (FQ) to investigate the electronic properties of solvated systems. The hybrid Quantum Mechanics/FQ model captures the complex multi-configuration nature of molecules and the effects of the external environment, making it a promising tool for future research in various fields.

FAR-PO-006. Targeting hypoxia in cancer therapy

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Hypoxia, defined as a condition of lower-than-normal oxygen levels, is a key feature of most solid tumours, associated with therapy resistance and poor patient prognosis.1 Alongside, the chemically reducing environment found in hypoxia allows it to be targeted with pro-drugs. Hypoxia-activated prodrugs based on indolequinone and nitroaryl groups have been exploited by our group to specifically target the oxygen-deficient fraction of tumour cells,2 reducing the systemic exposure. By using this approach, we have developed two series of hypoxia-activated PROTACs (HAP-TACs) targeting BRD4 which degrading activity is triggered when oxygen levels are reduced below 2%. Our HAP-TACs are stable in normoxic conditions (21% O2) and undergo enzyme-mediated bioreduction in cells to release the active PROTACs in hypoxia (2-0.1% O2). The conditional degradation of BRD4 is reflected by a selective antiproliferative activity in colorectal cancer cells exposed to hypoxia, whereas proliferation of normoxic cells is not affected. As the bioreductive groups used to develop our HAP-TACs are attached to the cereblon and VHL E3 ligase ligands (Figure 1), this strategy is applicable to any PROTAC that recruits these E3 ligases, with the potential of increasing the therapeutic index of already reported PROTACs against a wide range of target proteins. Complementary work to develop hypoxia-triggered biorthogonal reactions to form anticancer agents inside tumour cells will also be presented.

ORG-PO-143. Fast one-pot synthesis of aza-S(VI) fluorides from sulfinyl amines

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Hexavalent sulfur fluorides are strategic electrophilic reagents in organic synthesis enabling the linkage of S-O, S-N and S-C bonds. While the preparation and use of sulfonyl fluorides have been widely explored, very little information about the synthesis and reactivity of sulfonyl fluoride aza-isosters, namely sulfonimidoyl fluorides and sulfondiimidoyl fluorides, is currently available. Moreover, these compounds can be prepared through lengthy and time-consuming synthetic routes, that often require the generation of more reactive intermediates such as aza-S(VI) chlorides, or gaseous reagents. Considering the great potential of such S(VI) derivatives in enabling the straightforward preparation of sulfur pharmacophores, here we present a fast one-pot synthesis of both sulfonimidoyl fluorides and sulfondiimidoyl fluorides starting from sulfinyl amines. The transformations proceed via nucleophilic addition of organometallic reagents to sulfinyl amines and sulfurdiimides, in turn prepared in situ from sulfinyl amines, followed by subsequent quenching with an electrophilic fluorine source. This process affords the products within a few minutes. Further reactions of such aza-S(VI) fluorides have also been investigated, disclosing their synthetic utility in the preparation of diverse S(VI) compounds.

ANA-PO-010. Implementation of rapid diagnostics: nanoMIPs transform LFA paradigm

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In the realm of immunodiagnostics, antibodies have long been regarded as the gold standard for molecular recognition, playing a pivotal role in various applications1. However, the challenges associated with antibody production, high cost, batch-to-batch variability, and ethical concerns, have spurred exploration into alternative molecular recognition systems. Among these alternatives, molecularly imprinted nano polymers (nMIPs) have emerged as promising biomimetic materials. They are synthetic, highly cross-linked materials designed with cavities that exhibit selective molecular recognition2. Although the current state-of-the-art applications predominantly employ nMIPs for tasks such as molecular separation, sensing, and controlled release, their adoption as primary recognition elements in diagnostics remains limited. While LFA has become a widespread and user-friendly tool for rapid diagnostics, traditional antibodies continue to dominate as the recognition element. The potential of nMIPs in LFA, with their advantages of stability, reproducibility, and cost-effectiveness, is an area ripe for exploration3. This study presents a novel approach to lateral flow immunoassay (LFIA) diagnostics, aiming to reshape point-of-care testing (POCT) by minimizing reliance on biomolecules. The innovation centres around integrating nMIPs with core-shell gold silica nanoparticles (Au@SiO2), a strategically chosen marker widely utilized in colorimetric LFIA4. nMIPs were synthesized to selectively target IgG bovine, establishing a molecularly imprinted framework. Functionality and binding properties of the composite nanomaterial were investigated through batch rebinding to estimate affinity and binding capacity. Characterization studies, including transmission electron microscopy (TEM) and dynamic light scattering (DLS), validated the structural integrity of the material. To enhance their functionality, the nMIPs were conjugated with Au@SiO2, ensuring a synergistic integration of their selective recognition properties with the optical advantages of gold nanoparticles. Experiments were meticulously designed to evaluate the applicability of the new hybrid material in the LFA. Key objectives included establishing the visual limit of detection, unravelling the dynamic interaction between nMIP and IgG, and conducting selectivity studies were crucial to defining the potential of this innovative detection system. This proof-of-concept challenges conventional LFIA paradigms,

showcasing the power of nMIP for the advancement of synthetic receptors in rapid bioanalytical tests. This approach paves the way for a future where LFA becomes more accessible, robust, biomolecule-free, and user-friendly, signalling a significant advancement in rapid screening tests.

TEO-PO-026. A look into the electrolyte structure of Molten Carbonate Electrolysis Cells.

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Clean energy is one of the big demands of this century, driven by the need to mitigate human impact on the planet's ecosystems.[1] Weather-dependent renewable sources require advancements in energy storage technologies.[2] Molten carbonate electrolysis cells (MCECs) are a prime example of devices able to convert surplus energy from a renewable source into gaseous energy carriers, like H2.[3-4] To further improve the efficiency of these devices, we require reaching a deeper understanding of each step involved in the functioning process. Here, we start with a thorough structural investigation of the electrolyte of choice for MCECs, namely the molten Li1.24K0.76CO3 eutectic mixture. We employ explicit polarization molecular dynamics to show that the structure of this molten mixture is characterized by tight lithium-carbonate interactions, giving rise to a structural network in which the K+ ions are loosely embedded. Using the knowledge of the melt structure at an atomic level, we can rationalize the conductivity trends we see experimentally in molten carbonate mixtures. Finally, from our simulation we provide the first theoretical prediction of the static structure factor, S(q), of the Li1.24K0.76CO3 melt at the typical operating temperature of MCECs (923 K, see Figure 1). This work will be the first step in a larger endeavor to characterize at an atomic level each element of the chemical processes involved in these devices. The polarizable force field developed here will be a steppingstone towards more advanced studies: on the role of the electrolyte first, and the rest of the cell later.

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ANA-PO-068. Validation of multi-step analytical protocols for microplastics detection in lipid-rich matrices

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The increasing amount of microplastics (MPs) in the environment has raised serious concern about human exposure to MPs in food. Several methods have been developed to extract and detect MPs in food matrices1. However, complex matrices, such as those rich in lipids, often require multiple pretreatment steps that, while not affecting the detection of other organic compounds, can lead to sample contamination and reduce recovery rates for MPs analysis. In addition, the presence of lipid material often inhibits filtration processes and compromises the potential chemical characterization of polymers by forming a lipid layer that can absorb radiation.

Here, several multi-step analytical protocols were optimized and validated to extract and purify MPs from different lipid-rich matrices from species suitable for human consumption, such as eggs and fish. First, the lipid content of each matrix was evaluated by gravimetric analysis. Then the most suitable digestion method was evaluated, from basic oxidative digestion to more elaborate enzymatic processes. Recoveries and precision (RSD) were calculated using standards. In addition, the efficiency of the digestion treatment to remove lipid matter was estimated through the compatibility of using μFTIR spectroscopy to chemically characterize the spiked standards. Spectroscopic analysis also allowed the integrity of the polymers to be assessed after the digestion treatment. Quality assurance and quality control were assessed through the entire processes. With the ability to remove all interfering materials, it will be possible to characterize MPs and thus provide an accurate ecological risk assessment on edible species2.

The presence of MPs in food can pose a risk to human health and animal because of their potential bioaccumulation in organisms and their ability to act as a carrier for other toxic chemicals. Therefore, the validation of methods that accurately detect the presence of MPs in complex matrices such as food is crucial.

This research was supported by the European Union - Next Generation EU. National Recovery and Resilience Plan (NRRP) - M4C2 Investment 1.3 – Research Programme, PE_00000005 "RETURN" - CUP B83C22004820002.

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FAR-PO-065. Evaluation of Novel PfDHODH Enzyme Inhibitors Using 3D-QSAR Studies, Molecular Docking, Molecular Dynamic Simulation, and ADMET Properties of PfDHODH Enzyme for the Treatment of Malaria

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This research explores new possibilities for antimalarial drugs by focusing on the Plasmodium falciparum Dihydroorotate Dehydrogenase (PfDHODH) enzyme, a critical enzyme in the parasite's pyrimidine biosynthesis pathway. Unlike humans, the malaria parasite cannot salvage pyrimidines, making PfDHODH an ideal target1. The study combines various techniques, including 3D-QSAR, molecular docking, molecular dynamics (MD) simulations. A dataset of 99 triazolopyrimidine derivatives was examined using CoMFA and CoMSIA models, and the best ranked molecules were evaluated

through molecular docking and MD simulations, confirming the stability of these inhibitors within PfDHODH bindng site and reinforcing their potential as effective inhibitors. The best 25 triazolopyrimidine analogues derived from in silico studies has been synthetized, and their in vitro enzymatic activity will be here discussed. In summary, this research provides a robust approach for the design and of PfDHODH inhibitors as novel leads for the treatment of malaria, offering hope in the fight against this deadly disease.

ELE-PO-018. NiO Nanoparticles as Electrocatalyst for Nitrates Reduction

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The introduction of the Haber-Bosch (HB) process in the early twentieth century enabled the large-scale production of NH3, swiftly becoming one of the most crucial chemical products worldwide due to its extensive application in agriculture as a fertilizer. Moreover, NH3 has recently garnered significant interest as a potential renewable energy storage system, given its capacity to serve as a source of hydrogen.1

However, the Haber-Bosch process, reliant on atmospheric nitrogen and fossil fuel, requires H2 for NH3 production, as well as high process temperature and pressure, contributing to approximately 1.6% of the annual global CO2 emissions.2 A promising alternative lies in the electrochemical nitrogen reduction reaction (E-NRR) to synthesize NH3 under ambient conditions.3 However, to date, this process has a limited yield production and a low selectivity due to the high stability of the N2 molecule and the presence of parasitic reactions, primarily leading to water (solvent) conversion into hydrogen.4

A more recent focus has emerged towards the reduction of NO3–, as it can be more easily converted into NH3 with a significant Faradaic efficiency (FE) and high yield. Moreover, owing to the prevalent use of nitrogen-based fertilizers, this process possesses a significant real-case application towards wastewater treatment were high NO3– levels have often been detected.3

This study presents the utilization of a nanostructured NiO electrocatalyst, prepared by precipitation in aqueous medium and calcinated at 600 °C, for the reduction of NO3– into NH3, achieving an average FE of 36% and a production rate ranging from 28 to 107 μg h cm–2, depending on the initial NO3– concentration. The experiments were conducted in a H-type cell, utilizing three different concentrations of KNO3 (NO3– source), i.e. 0.1, 0.05, and 0.008 M. A second investigated experimental parameter was the concentrations of the supporting electrolyte (i.e., K2SO4), that was used at 0.4, 0.45, and 0.492 M. The tests were conducted under an applied potential (E) of –1.4 V vs. Ag/AgCl for a duration of 2 h.

In this contribution, we will show the main outcomes derived from this newly explored electrocatalysts, highlighting the main structure-performance correlations.

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This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No. 948769, project title: SuN2rise).

ANA-PO-038. Paper-based sensors on algae-derived substrate functionalized with nanobiochar for bisphenol A determination in Zebrafish embryo ecotoxicological model

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Bisphenol A (BPA) has become a pervasive environmental contaminant, posing a significant threat to aqueous ecosystems and human health. In this work, for the first time, paper derived from seaweed biomasses (Algae) has been used for manufacturing lab-made electrochemical sensors, that were employed as monitoring tools during eco-toxicological studies performed with Zebrafish embryos (Z-EBs, Dario rerio) exposed to different BPA levels. Firstly, the potentiality of Algae paper to assist the stencil-printing was investigated, employing different graphitic inks as conductive elements; Algae-paper sensors were compared with transducers fabricated onto other types of paper (recycled and office-grade) and polyethylene terephthalate (PET), showing superior performances for BPA electro-sensing. The electrochemical properties of the sensors have been improved by employing two kinds of biochars (BH) with fibrillar (F) and amorphous (A) morphology, both deriving from industrial by-products and nano-dispersed through an aqueous-based and solvent-free sonochemical method. The most performing Algae-paper sensor has been challenged towards the direct BPA sensing in Z-EBs culture medium, achieving robust analytical performance devoid of any matrix effects, returning satisfactory limit of detection (LOD = 48 nM) and linear range (0.25 – 6 μM), together with quantitative recoveries (95-113%, RSD≤9.1% n=3). Afterward, the BPA bioaccumulation in Z-EBs during ecotoxicological studies was determined using the Algae-paper sensor; despite the inherent complexity of embryos, in matrix calibrations returned useful linearity (0.25 – 8 μM) and a LOD of 57 nM, allowing the estimation of the BPA bioaccumulated within Z-EBs (recoveries: 98-114%, RSD≤5.4% n=3).

Herein, the marriage between Algae-paper and BH gave rise to an effective analytical tool for monitoring BPA in Z-EBs, employed as an environmental (culture medium) and toxicological (embryos) model. This study proves how by-products can become active and functional parts of analytical devices, creating a virtuous circle able to offer sustainable solutions for environmental monitoring.

ORG-PO-144. Sustainable Synthesis of Sulfonamides in Deep Eutectic Solvents Under Mild Conditions

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Sulfonamides represent a crucial structural motif in numerous pharmacologically active compounds. Recognizing their diverse applications and significance in the pharmaceutical industry, scientists have been actively seeking sustainable methods for their synthesis since the turn of the century. This pursuit aims to eliminate the use of toxic chemicals and volatile organic compounds (VOCs), such as pyridine and dichloromethane, which are commonly employed. Our research contributes to this endeavor by establishing environmentally benign procedures for the synthesis of sulfonamides under sustainable conditions. Deep eutectic solvents (DESs) have proven to be highly effective reaction media for facilitating N–S bond-forming processes under remarkably mild conditions, notably at room temperature and under ambient air. This innovative approach enables us to circumvent the need for VOCs, stringent pH control, and the issues associated with poor solubility of starting materials, ultimately leading to improved yields and minimized waste generation, thus enhancing the atom economy of the reaction. Utilizing choline chloride (ChCl)-based DESs, we have successfully synthesized various types of sulfonamides from primary and secondary aliphatic and aromatic amines, as well as sulfonyl chlorides. The reactions typically reach completion within two hours, affording the desired products in yields of up to 97%

IND-PO-049. Development of photoelectrodes based on different perovskite material for energy applications

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Perovskite materials (ABX3) due to their optical and electronic properties have been exploited for energy and environmental applications, such as hydrogen production, CO2 reduction reactions and solar cells1,2. Recently, perovskites have been also considered to photo-electrochemically store hydrogen into ammonia molecule. Different types of perovskite materials, moving from halide inorganic perovskites to oxidic systems with single or double perovskite structure were considered as suitable and functional materials for this purpose. In this work, inorganic perovskites were produced considering different chemical approaches and structurally, optically and morphologically characterized. Chemical deposition techniques were optimized to create thin film for photo-electrode with suitable properties (characterized by FE-SEM and UV-Vis spectroscopy). The obtained photo-electrodes were tested electrochemically and photoelectrochemically in different conditions (suitable for ammonia production) using cyclic and linear sweep voltammetry and electrochemical impedance spectroscopy. The obtained results show the influence of perovskite composition and morphology on photoelectrochemical properties of the related photoelectrode.

FIS-PO-029. Unveiling the impact of force fields and non-covalent interactions on the adsorption of (bio)molecules onto solvated metal nanosurfaces

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The computational investigation of (bio)molecule adsorption on metal surfaces at the atomistic level remains a challenging task. Within classical molecular dynamics (MD) simulations, selecting appropriate force fields (FFs) is crucial to accurately represent the complex interactions occurring at these interfaces.1

This contribution explores the influence of FFs on modeling the adsorption dynamics of selected biochemical molecules on an aqueous Au(111) surface by systematically comparing four combinations of molecule/gold/water FFs. Minimum distance, water coordination numbers, and Non-Covalent Interaction (NCI)2 plots along the adsorption pathway are analyzed, and adsorption free energies are estimated.

Our findings, partly summarized in Figure 1, highlight how different FF combinations determine general trends in both structural and energetic features.3 Also, the proposed protocol paves the way for a fruitful integration with multiscale QM/classical approaches for modeling surface-enhanced spectroscopies.4

IND-PO-001. Double-layer off-on mechanochromic systems based on pyrene and perylene bisimide derivatives

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Excessive mechanical stress on polymeric materials can result in the rupture of macromolecular chains, causing degradation and macroscopic failures which can compromise the functionality of devices and even pose relevant safety issues. Reliable rapid and accessible strain monitoring would be a potent preventive measure against premature and potentially debilitating damage. One way to achieve this is by employing mechanochromic probes which, once dispersed or covalently bound to the desired material, make it able to change its optical properties in response to mechanical stimuli, thus providing reliable and direct clues to easily address mechanical stress.1 This approach also allows to target commodity polymers which are largely available, already find several applications, and can be easily reused/recycled.

In this study, we have developed a novel design for a two-layers mechanochromic device capable of producing a large variation of fluorescence upon stretching thanks to synergic response of the different mechanophoric systems present in the different layers. In particular, the bottom layer comprises a pyrene-based aggregachromic system capable of switching its fluorescence response to lower wavelengths upon mechanical deformation, while the top layer contains a red pigment, based on perylene bisimide dyes, that act as a filter to absorb the radiation coming from the bottom layer in the relaxed state.2,3 Upon stretching, the combination between the shift of the fluorescence in the bottom layer and the thinning of the filter in the top layer result in large and rapid variation of the intensity.

We investigated the optical response of different dye-filter combinations and tested different host materials to better understand the efficacy of the proposed design. By employing elastomeric matrices, it is possible to obtain reversible off-on systems. This approach provides an affordable and effective method to prepare versatile mechanical stress indicators.

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ELE-PO-022. Electrochemical Iodination as a Green Alternative for the Synthesis of X-ray Contrast Media

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Iodinated contrast media (ICM) exploit the radiopacity of the iodine they contain to enhance tissues contrast in X-ray-based analyses. Their usage has widely increased in the last 20 years,1 but SARS-CoV-2 related lockdowns caused a troubling shortage of ICM in 2022.2 The solutions adopted to deal with the problem were mainly implementing the conservation strategies and reduce the dosages, but also novel and more efficient synthetic routes must be considered as a possible solution to prevent the problem in the future. This also provides an opportunity to rethink the process to be more consistent with the green chemistry principles.

In this work, the successful electrochemical tri-iodination of N,N'-bis(2,3-dihydroxypropyl)-5-hydroxy-1,3-benzenedicarboxamide, an important intermediate for the synthesis of iomeprol, is reported. This reaction is currently carried out using corrosive and difficult-to-handle reagents (e.g. ICl), the production of which also implies an increase in time and costs.3 In particular, the possibility of using less hazardous reagents, such as iodides or molecular iodine, that are electrochemically oxidized to the iodinating I2/I+ species was explored.4

The goal was to have a one-step in situ iodination process, in which the generation of the iodinating agent and iodination itself occurred in the same reaction environment. The final optimized synthesis involves a first stage of chemical iodination with I2 and a second stage of electrochemical recycling of the iodides formed.5 For the electrochemical part, working in pH control (pH 10-12) and potentiostatic conditions (+ 0.65 V vs SCE) is the best solution to both avoid the formation of oxidation by-products and enhance the current efficiency. The setup involves a divided cell equipped with a cation exchange membrane and leads to an almost complete iodination of the substrate using stoichiometric iodine and a faradic efficiency of almost 100%. The electrodes selected are inexpensive and robust carbonaceous anode and stainless steel cathode, meeting the industrial requirements. Industrial-scale implementation of this electrochemical iodination could therefore help in the direction of green synthesis and environmental protection in the pharmaceutical field.

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ANA-PO-140. Revolutionizing biosensing: exploring synthetic receptors for small molecule detection.

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Therapeutic drug monitoring (TDM) is crucial for evaluating and improving treatment effectiveness, enabling personalized treatments and precision medicine to enhance patient survival. Since drug effects vary among individuals, adjusting dosages based on individual pharmacokinetic profiles maximizes treatment benefits and minimizes adverse effects.

Biosensors represent an innovative technology that can offer an opportunity for the rapid, sensitive and specific detection of analytes (drugs, protein biomarkers, etc.). Selective receptors are the key to allow any biosensing platform to properly work. For decades antibodies (Abs) were employed as the receptors of election, and so it is nowadays. However, although Abs are very specific for proteins, they might not for small molecules. Moreover, they are also sensitive to environmental conditions such as pH, temperature, which could limit their stability and biosensor performance. Finally, their production can be expensive and time-consuming.

In this respect, aptamers and peptides might offer a valuable alterantive.1-4 Aptamers are single-stranded oligonucleotides that can be designed to target a wide range of molecules, including small molecules. Their defined structure facilitates their binding to targets with high specificity and affinity. Furthermore, aptamers exhibit remarkable stability, superior to that of proteins or antibodies. Peptides are also a promising category of bio-recognition elements, primarily valued for their stability and selectivity towards a specific target analyte. Furthermore, they can be both chemically synthesized, which allows for straightforward production and modification. This process is typically more rapid and cost-effective compared to the production of Abs, thus making them suitable for the development of novel biosensing architectures.

Herein we discuss aptamer- and peptide-based biosensing platforms enabling the recognition of small molecules with high specificity and selectivity.

ALI-PO-040. Determination of pesticide residues in honeydew honeys by QuEChERS extraction followed by Orbitrap LC-MS

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In this study, the occurrence of 73 pesticides residues in Italian honeydew honeys collected between 2022 and 2023 was investigated. Sample preparation was performed by a QuEChERS approach as previously described [1]. Sample analysis was performed by Orbitrap LC-MS. In only 6 of

the 56 samples analysed (10.7%), no pesticide residues were found. As regards neonicotinoids, acetamiprid was detected in more than half of the samples with concentration ranging between 0.08 and 11.14 ng/g while imidacloprid was detected in one third of the samples with a content varying between 0.23 and 1.53 ng/g. Other relevant detected analytes include coumaphos (17 samples), 3-hydroxy carbofuran (14 samples), deisopropylatrazine (6 samples), propazine (6 samples) and chlorfenvinphos (5 samples).

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FAR-PO-051. Development of an Analytical Method for assessing Pharmaceutical Contaminants of Emerging Concern in agricultural water

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Water reuse is becoming increasingly important due to limitations in freshwater availability. Treated wastewater can be a reliable water supply, independent of seasonal droughts and weather changes. However, health and environmental protection must be considered when reusing wastewater. The EU Regulation 2020/741, effective June 2023, sets minimum monitoring and quality requirements for safe wastewater reuse in agricultural irrigation as part of the Circular Economy Action Plan1. Contaminants of emerging concern (CECs) are a pressing issue, encompassing various chemical compounds with potential ecological and health impacts. These CECs, including pharmaceuticals and personal care products, are not yet regulated under current environmental laws. Their global presence in aquatic systems is a cause for concern, exacerbated by the low efficiency of conventional wastewater treatment plants in removing these pollutants.2 Proper identification and quantitation and the development of efficient removal procedures are crucial to reduce the threat to humans and ecosystems. In a collaborative project with the Department of Agriculture and Food Science (DISTAL) of the University of Bologna, we established an analytical protocol to monitor the presence of ten pharmaceutical CECs (Ph-CECs) which were selected based on previously published reports and literature. These selected Ph-CECs have varying physicochemical properties, with AlogP values ranging from -1.03 to 4.36 and pKa from 0.07 to 10.1. Although the concentration of Ph-CECs is anticipated to be low, ranging from ng/L to µg/L, their allowed limits are not yet regulated. Therefore, we optimized an isolation method using hyper-crosslinked hydroxylated polystyrene-divinylbenzene copolymer-based SPE cartridges to enhance analysis sensitivity. The optimized protocol allowed complete retention of all selected analytes despite their differences in hydrophilicity and ionization state. Elution with 100% organic solvent followed by solvent evaporation further contributed to the implementation of the method's sensitivity. Finally, for analyte quantitation, a high-performance liquid chromatography-electrospray ionization/mass spectrometry (HPLC-ESI/MS) method was developed and validated. This method will be applied to monitor the presence of the selected Ph-CECs in treated wastewater used for agricultural irrigation.

Acknowledgments: We acknowledge EU - NextGenerationEU with funds made available by the National Recovery and Resilience Plan (NRRP) Mission 4, Component 1, Investment 4.1 (M.D. 118/2023).

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IND-PO-048. Mechanistic insights into r-WGS reaction on Rh and Pt via a combined experimental and structure-dependent microkinetic analysis

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The Reverse Water-Gas Shift (r-WGS) reaction is pivotal among CO2 utilization approaches since it produces CO, a fundamental block of the chemical industry. However, there are still a lot of debates concerning the precise mechanism of this reaction. We thus combined both theoretical and experimental methodologies to investigate how the reaction mechanism changes according to the oxygen-affinity of the surface, employing two catalyst materials with different oxophilicities, i.e., 4wt.% Rh/α-Al2O3 and 4wt.% Pt/α-Al2O3.

The reaction rate exhibited a direct proportionality on CO2 concentrations for both catalysts but showed a significant dependency on H2 only on Pt. Therefore, we proposed that, on Rh, CO2 is activated through dissociation into CO* and O*, while, on Pt, CO2 activation occurs via a H-mediated route forming a COOH* intermediate, in agreement with previous theoretical investigations from our group.

To elucidate this mechanistic interpretation, we conducted a structure-dependent microkinetic analysis on both materials based on DFT calculations. We found that CO2 activation is the rate determining step on both catalysts and proceeds via dissociation into CO* and O* on Rh, while it follows a H-mediated route on Pt, in agreement with experiments. The microkinetic model accounts for both the activity and the abundance of a set of active sites exposed by catalyst nanoparticles. This structure-dependency inclusion was essential to identify the kinetically dominant active sites, i.e., Rh(100) and Pt(111) on Rh and Pt respectively, thus paving the way to derive fundamental rate equations for catalyst design and optimization.

ELE-PO-027. Optimizing Synthesis and Investigating Divalent Element Doping Effects on Fe-Mn-based oxide for Sodium Ion Battery.

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Sodium-ion batteries (SIBs) are being considered as a viable alternative to lithium-ion batteries (LIBs) due to their similar physical and chemical properties. However, it is crucial to recognize the distinct differences between SIBs and LIBs, particularly in terms of ionic radii.1

The research presented here focuses on iron-manganese-based oxide materials doped with bivalent elements as positive electrodes for SIBs. The synergistic effect of its two elements, Fe and Mn, and their abundance make this class of material environmentally appealing.2 Nevertheless, the material exhibits air instability and undergoes multiple phase transitions during charging and discharging. To overcome these challenges, dopants

can be introduced. Our focus is on materials with an O3-type structure, which allows for higher sodium content compared to P2-type structures, thus enhancing battery performance.3

This project pursues two main objectives. First, to optimize the co-precipitation synthesis process by considering various factors that influence it;4 second, to comprehensively investigate the effects of various dopants from multiple perspectives, including electrochemical performance, structural stability, and moisture sensitivity. The study aims to contribute to the advancement of SIB technology by comprehensively analyzing the aspects mentioned above.

ANA-PO-090. Bio-Nano Interactions of Functional DNA Origami Targeting Cell Receptors

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The DNA origami technique streamlines the independent assembly of customizable DNA structures, enabling precise patterning at the nanoscale of a variety of conjugated biomolecules. With their inherent compatibility with biological systems and the ability to control shape, size, and ligand arrangement, DNA-based nanostructures hold great promise for applications in nanomedicine1,2. Despite demonstrations of effective binding in various scenarios, the underlying biophysical dynamics governing membrane binding remain largely unexplored. In this study, we explore the binding dynamics of two rod-shaped DNA origami nanoconjugates: one decorated with anti-EGFR (Epidermal Growth Factor Receptor) antibodies and the other with anti-EGFR aptamers. Through single-particle tracking (SMT) microscopy, we monitor the trajectories of ligand-modified DNA origami in both free solution and bound states on the cell membrane, enabling the calculation of their diffusion coefficient (D). We show that we can quantify the fraction of DNA origami specifically bound to the targeted receptor, distinguishing them from nonspecific bindings. Furthermore, SMT aids in determining the first-order rate constant for complex dissociation (Koff), a critical parameter revealing the average duration of the interaction between the DNA origami and the membrane receptors. The ability to finely adjust Koff values can be crucial for modulating potential therapeutic and stimulation effects3. Our DNA origami nanoconjugates demonstrate specific binding with a Koff profile potentially favoring preferential binding to cancer cells, opening new avenues in selective cell targeting for biomedical applications.

CSB-PO-011. Targeting the RelSeq Synthetase Domain with Amino Benzoic Acid Centred Inhibitors

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It is well established that antibiotic resistant bacteria have the genetics to specifically target and disarm an antibiotic's mode of action. The more obscure phenotypic resistance, i.e. temporarily antibiotic tolerant, has yet remained relatively unexplored. These elusive sub-populations called persisters, are in a transient pseudo-reduced metabolic state, sometimes occurring without environmental pressure. They can be multidrug tolerant and often contribute to chronic and recurring infections. Furthermore, persisters have been credited as an evolutionary stepping stone to antibiotic resistance.[1]

The downregulation of metabolism displayed by persisters is interconnected with activation of the stringent response and thus is believed to also be initiated by the accumulation of the intracellular signalling alarmone, guanosine penta- or tetra-phosphate, (p)ppGpp.[2] The intracellular concentration of (p)ppGpp is controlled by the superfamily of RSH (RelA/ SpoT Homologue) proteins (Fig.1), making them potential targets for drug development to reduce chronic infections and help restrict antibiotic resistance.

The main objective of this study is to design small molecules to selectively inhibit the synthetase domain of Rel proteins, from which we have chosen RelSeq (S. equisimilis) as our model protein. Among the chemotypes identified through in silico screening,[3,4] we present the growth of the amino benzoic acid fragment into the first family of synthetase selective Rel inhibitors.[5]

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ORG-PO-145. Optimization of a Nanoparticles Protein Corona Isolation and Identification Platform using Omics

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Since the engagement of nanoparticles is becoming more and more relevant in modern medicine, scientific attention has been drawn toward the characterization of the "bio-molecular corona", which is described as a layer of biomolecules assembling on the surface of nanoparticles when they encounter biological fluids.

The dynamic structure of the corona is composed of different biomolecules, such as lipids, sugars, nucleic acids and, first and foremost, proteins accounting for most of the overall mass. Therefore, we mostly refer to this entity as "protein corona".1

The "protein corona" provides a new identity to the nanoparticles, hence redefining their pharmacokinetics and fate in the body ranging from their uptake by cells to immunologic responses and resulting in a decrease in their half-life. Therefore, the "protein corona" characterization is essential in the development of nanoparticles with better bioavailability, but it can also help in resolving the nanoparticles path inside the body, opening the way to a targeted delivery of therapeutics.2

One of the main challenges in the corona characterization is the optimization of its isolation from the biological environment. In literature, centrifugation is the most frequently described technique since it can be applied to the vast majority of nanoparticle types even though many drawbacks are evident, such as potential disruption of the physiological corona or the creation of artefacts caused by the applied centrifugal force.3

Thus, with the aim of an in-depth protein corona characterization, we set to establish the best strategy for corona analysis using polylactic-co-glycolic acid (PLGA) nanoparticles as a model. In particular, preliminary experiments were performed to define the optimal isolation method for the nanoparticle-corona complexes, starting from centrifugation and moving on to less common methodologies, such as microfiltration and size exclusion chromatography, also implementing an array of different variables for the biological fluids.

CSB-PO-015. Unraveling the molecular basis for G-quadruplex-binders targeting ALS/FTD-associated G4C2 repeats of the C9orf72 gene

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The present work is part of the “HEAL ITALIA” project in the general context of the Italian National Recovery and Resilience Plan. The main goal of this extended partnership is the development of novel, inexpensive, and noninvasive diagnostic routes for more efficient prediction, detection, and monitoring of complex diseases. In this context, many research projects are currently being performed, and one of those will be the subject of the present communication.

Intronic G4C2 expanded hexanucleotide repeats in the C9orf72 gene were identified as the most common genetic cause of amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD), two devastating neurodegenerative disorders. It was shown that these repeating sequences can fold into distinct G-quadruplex (G4) structures, which were recently solved using NMR techniques.1 Small molecules, able to selectively target RNA G4C2 G4-forming repeats, showing promising therapeutical activities, were reported.2 Unfortunately, to date, insights into the mechanism of action at the atomistic level for these compounds are still missing. For these reasons, considering the absence of any structural data, we have applied distinct computational tools to unravel the structural basis for the selectivity of these small molecules. Finally, we have tested the activity of the recently reported Au(I)/N-heterocyclic carbene G4-binder, AuTMX2,3 and we have rationally designed novel Cu(II) metal complexes able to strongly and selectively bind G4C2 repeats forming RNA G4 motifs. Thus, our findings could help to shed light on this novel potential therapeutic strategy to tackle neurodegenerative disorders.

TEO-PO-008. Activity of Single Atom Catalyst for Nitrogen Reduction: The More Reactive the Better Does Not Always Holds True

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Single Atom Catalysts (SACs) are emerging as a new frontier in heterogeneous catalysis. They are made of metal atoms atomically dispersed on a matrix. Computational chemistry allows to study catalytic processes with an atomic detail and to rationalise, and even predict, the properties of systems. A lot of attention has been dedicated to the electrochemical Nitrogen Reduction Reaction (NRR) to ammonia, because of the key role that it could have in energy transition. The activity of SACs is usually rationalized by using the Computational Hydrogen Electrode (CHE), a thermodynamic approach proposed by Nørskov and co-workers, making possible to explain the catalytic activity evaluating Gibbs free energies of key adsorbed intermediates. In this presentation we rationalise the activity of Single and Dual Atom Catalysts made of a set of transition metal atoms for NRR. We show the importance of using self-interaction corrected functionals. We also observed that DACs are more active than SACs, an aspect in line with the nature of the real catalyst (nitrogenase) for NRR in ambient condition. Also, the highest thermodynamic barrier decreases from 3d to 5d metals. Interestingly, if one combines the two positive effects, this results into too strongly stable intermediates, showing that “the more reactive the better” does not always hold true in single atom catalysis. We, finally, show that the NRR mechanism cannot be limited to the classical. This work highlights i) the importance of using self-interaction corrected functionals, ii) DACs could be a valid option for NRR, and iii) the combined effect of DACs with 5d metals does not necessarily lead to an increment of the activity.

ORG-PO-146. Synthesis and characterization of diketopyrrolopyrrole-based small molecules for singlet fission in crystalline molecular thin films

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A key aspect towards a green and carbon-neutral transition involves enhancing the efficiency of solar cells. However, traditional photovoltaic (PV) devices face inherent limitations due to thermodynamic constraints, such as thermalization losses, which restrict the maximum achievable power conversion efficiency (PCE) to around 29% for an ideal single-junction Si cell. The exploitation of Singlet Fission (SF) is a promising strategy to enhance the PCE, relying on the efficient conversion of a singlet exciton into two triplet excitons: in suitably engineered devices this could yield light conversion quantum efficiencies ≈ 100% in the spectral region where the SF material absorbs.

Recently the diketopyrrolopyrrole (DPP) core has been proposed as a promising platform for SF, thanks to its excellent photostability, diradical character and the easily modifiable chemical structure, that enables concurrent control over the singlet-triplet energy gap and the molecular packing configuration; the latter, in particular, is known to influence both the efficiency of SF and its successful exploitation in solar cells.

Here we present the synthesis and characterization of a series of DPPs based molecules, with different alkyl chain and different aromatic substituents, which should enhance the diradical character of the molecules and favor the slip-stacked packing in solid thin films.

INO-PO-025. Exploring the Antitumor Potential of Novel Platinum(II)-Nucleoside Complexes of the type cis-[Pt(NH3)2(Guo/dGuo)X] (X = Cl, Br, I): Synthesis, Characterization, and Cytotoxicity Studies

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The investigation of metal-based complexes with potential antitumor activity has been a major focus in recent years, following the success of cisplatin. Despite the effectiveness of approved platinum drugs against various types of cancer, their lack of selectivity towards cancer cells and high toxicity have prompted the search for new platinum-based antitumor agents. Among these, platinum(II)-nucleoside compounds have shown promise as antimetabolites for anticancer therapy1. Complexes of the type cis-[Pt(NH3)2(Am)Cl]+ (Am = heterocyclic amine derived from pyridine, pyrimidine, purine, piperidine, or saturated amine) have demonstrated high stability and solubility in aqueous media, as well as interesting antitumor potential in vitro and in vivo against various tumors, including sarcoma and leukemia2. Recently, we synthesized six complexes of the type cis-[Pt(NH3)2(Am)X]+, where Am = guanosine (Guo, a) or 2'-deoxy-guanosine (d-Guo, b) and X = Cl (1), Br (2), I (3). These cationic platinum species were characterized by NMR spectrometry and their potential antiproliferative activity was evaluated in different cancer cell lines. Our findings suggest that halogen substitution may be a simple method to alter the cytotoxic and biological activities of these complexes, while maintaining their molecular structure.

INO-PO-004. Development of constrained DACH-containing chelators for radiopharmaceutical applications

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Nuclear medicine exploits radiopharmaceutical for diagnostic and therapeutic purposes across various diseases. 68Ga (t1/2 = 1.13 h, Iβ+ = 89%, Eβ+ avg = 830 keV) stands out as a leading option for Positron Emission Tomography (PET) due to its advantageous characteristics. To effectively bind the metal, chelating agents are essential. Macrocyclic chelators generally show slow kinetics, requiring harsh radiolabeling conditions unsuitable for many biomolecules used as targeting vectors. On the other hand, non-macrocyclic ligands offer faster complexation kinetics under milder conditions, but their complexes typically exhibit lower thermodynamic stability. HBED1 is a promising acyclic chelator for 68Ga, forming complexes with high thermodynamic stability. To address the drawbacks of acyclic chelators, we have developed a novel class of constrained chelators based on HBED, incorporating a "rigid" trans-diamminocyclohexane (DACH) backbone. This structural constrain can enhance the metal-ligand complex stability. In this study, new constrained DACH-containing chelators were synthetized and thoroughly characterized. The complexation with Ga was performed in D2O and MeOD-d4 at room temperature, followed via NMR spectroscopy. Preliminary findings suggest promising potential for these chelators in developing novel radiopharmaceuticals for 68Ga. Further studies will focus on completing the investigation of these molecules and performing the radiolabeling of the complexes obtained, as well as evaluate the complexation with other metals of interest.

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ANA-PO-103. Valorization of Tomato Sauce Industry Wastes by Identification of High-added value Compounds

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The development and implementation of innovative techniques are crucial for the valorisation and reuse of industrial waste products. In addition, the climate crisis has posed new challenges to our society, including how to make it sustainable despite large volumes of production. Therefore, the use of eco-sustainable (bio-based) raw materials and waste materials paves the way for a new and possible solution to this global issue. The food processing industry is responsible for producing considerable amounts of residues and by-products. Among the different food transformation and production chain, the vegetable processing industry generates significant amounts of various types of waste. One of the most significant global food markets is related to the tomato processing industry, which produces substantial by-products that are often discarded as waste rather than reintegrated into the supply chain with a new purpose [1]. However, these by-products could be excellent sources of ingredients, such as bioactive compounds including carotenoids, fibers, peptides, proteins, lipids, polysaccharides, polyphenols, antimicrobial compounds, and natural pigments [2].

Existing studies mainly focused on the revaluation of tomato pomace, peels, or seeds. On the other hand, the re-evaluation of tomato-based sauces discarded due to various errors in the production line, such as packaging or recipe errors, which make the product unsuitable for sale but potentially rich in bioactive compounds, remains unexplored. In this case, the production waste is a mixture of sauces (e.g., pasta condiments) in which tomatoes coexist with various other ingredients such as cheese, meat, and basil. From these premises the objectives of this work, aimed at finding one or more extracts of high-value components from finished product waste. Therefore, various sauce samples and a mixture of these were chemically characterized using different analytical techniques (UV-Vis, GC-MS, NIR), and the stability of their chemical composition was also investigated over time.

Moreover, a preliminary attempt to develop form this by-products a renewable raw materials for use in biobased packaging materials, has also been proposed.

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ELE-PO-021. Aquivion®-based nanocomposite proton exchange membranes containing perfluoroalkylic decorated cerium oxide nanoparticles as radical scavengers.

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The most promising alternative to the current fossil-fuel cantered system is a hydrogen-based circular economy This requires the conversion of hydrogen into electricity in proton exchange membrane fuel cell (PEMFC) using perfluorosulfonated polymer (e.g. Nafion® and Aquivion®).

The main limit of these devices is their relatively low lifetime due to the degradation of the polymeric chains caused by radical species (•OH •OOH) generated at the cathode. The best strategy to improve the device's lifetime is the introduction of radical's scavenging species in the (MEA). State of the art radical scavengers include cerium oxide nanoparticles, either embedded in the membrane, or in the catalyst layer.

To improve the compatibility between the inorganic filler and the organic polymeric matrix we fabricated CeO2 NPs decorated with 4 different fluorinated silanes through a surface grafting process of the nanoparticles that are then dispersed in the polymeric film. The success in the fabrication of nanocomposite membranes was proved trough IR spectroscopy, XRD analysis and microscopic imaging. Thereafter the samples were thoroughly physicochemically characterized showing improved thermal, and mechanical properties with comparable electrochemical behavior.

FIS-PO-035. Insertion of Active Sites in ZEO-3 Matrix: A Promising Catalyst for Partial Oxidation of Bulky Molecules

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Zeolites are microporous silicates with a large variety of applications as catalysts, adsorbents, molecular sieves, and cation exchangers. Stable silica-based zeolites with extra-large pores are actively studied because they allow adsorption and processing of large molecules. Still, their synthesis procedures are usually challenging. In this work, a novel highly stable pure silica zeolite called ZEO-3 (IZA code: JZT) is being investigated.1 This material has a multidimensional, interconnected system of extra-large pores open through windows made by 16 and 14 silicate tetrahedra, and is the least dense crystalline polymorph of silica, with a specific surface area of more than 1000 m2/g. In preliminary synthetic attempts, it was found that with higher amount of the organic structure directing agent (OSDA), namely tricyclohexyl-methyl-phosphine hydroxide, i.e. OSDA/SiO2= 0.82 compared to the reference molar ratio 0.5 as from ref. 1, the structure is obtained along with higher crystallinity, even though the amorphous fraction increases upon calcination. Based on these preliminary results, further studies to correlate the effect of different concentration of OSDA (0.5 < OSDA/SiO2 < 1) with the quality of the final material are ongoing. Future investigations will involve the insertion of metals such as Ti in the framework, to be exploited as catalytic active centres for partial oxidation of bulky molecules along with H2O2, a better understanding of the crystallization process, and the advanced characterization of the synthesized materials.

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ORG-PO-147. Synthesis and preliminary conformational analysis of 1-deoxy-L-idonojirimycin derivatives as potential α-L-iduronidase modulators

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Herein we present the synthesis of a series of novel 1-deoxy-L-idonojirimycin derivatives exploiting an unexplored synthetic pathway. In recent years this class of piperidines have emerged as promising active-site modulators of the lysosomal glycosidase α-L-iduronidase (IDUA). IDUA deficiency is involved in a neurodegenerative lysosomal disorder known as Mucopolysaccharidosis type I (MPS I). In this context, the proposed synthetic approach led to the successful seven-steps preparation of compound 7 as an analogue of L-iduronic acid (Fig. 1). Moreover, with the attempt to improve the affinity towards IDUA and investigate conformational features, this synthetic route was expanded for the preparation of compounds 11-14. A preliminary computational conformational analysis supported the NMR-based evidence that introducing an acyl- or alkyl- moiety at the nitrogen position can switch the 1C4 chair conformation of compounds 4 and 7 into a 4C1 chair in compounds 11-14. This behaviour suggests that different substitutions at the nitrogen position and the presence of the carboxylic acid at the C6 position can be exploited to modulate the conformation of these small molecules. Furthermore, as a change in conformation of iminosugars has a profound effect on their binding properties towards glycosidases, this strategy could provide preliminary information about the potential biological activity of this class of piperidines.

ANA-PO-014. Comprehensive structural characterization of seaweeds polar lipidome by coupling single-phase extraction and aza-Paternò-Büchi derivatization

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The valorization of seaweeds has generated unprecedented interest in recent years due to their unique chemical characteristics. The taxonomic differentiation between Chlorophyta, Rhodophyta, and Ochrophyta is often supported by their contrasting chemical characteristics. The lipid contents of seaweeds are generally low and quite variable between and within phylum. Seaweeds are known for their rich content of biologically active

polyunsaturated fatty acids (PUFA), such as eicosapentaenoic acid, which are crucial in various physiological processes, including brain development, cardiovascular health, and inflammation regulation. The polar lipidome of seaweeds has gained significant interest in the scientific community since they are the primary deliverers of PUFA. However, despite their importance in determining their biological properties of lipids, little is known on the regiochemistry, i.e., the geometry and position of carbon-carbon double bonds, of free and conjugated fatty acids in seaweeds [1]. In the present work, an analytical platform was developed for the extraction, untargeted HRMS-based analysis, and detailed annotation of the lipid species. First, four one- and two-phase solid-liquid extraction protocols were tested and compared on a seaweed pool sample to select the method that allowed the overall highest efficiency as well as easy coupling with lipid derivatization by photochemical [2 + 2] cycloaddition with 6-azauracil. Underivatized lipids were annotated, employing a data processing workflow on Compound Discoverer software designed explicitly for polar lipidomics. Subsequently, inspection of the MS/MS spectra of the derivatized lipids following the aza-Paternò-Büchi reaction allowed pinpointing the regiochemistry of carbon-carbon double bonds. Once the platform was set up, the lipid extracts from eight seaweed samples from different seaweed species were characterized, with information on the regiochemistry of free and conjugated fatty acids. The overall analytical approach helped to fill a gap in the knowledge of the nutritional composition of seaweeds.

The work was supported by the PRIN2022 PNRR project Prot. P2022PTYWP, entitled “Design of high-pRofit fostEring bioActive coMpounds through integral valorization of seaWEEDs infesting the MEditerranean sea (DreamWEEDme),” provided by the Italian Ministry of Education, Universities, and Research.

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INO-PO-093. Doped CeO2/g-C3N4 nanocomposite as photocatalyst for H2 production

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The emergence of hydrogen economy with the current scenario of the need to switch to cleaner and greener forms of energy sources is seen to be inevitable. However, the production cost of green hydrogen is seen to be higher than blue or grey hydrogen in the energy market, especially in Europe1. One of the important factors that need to be considered for accessing proper large-scale production of hydrogen apart from the reactor geometry and configuration set-up includes mainly the catalyst. Herein, a catalyst synthesized with the idea of building blocks was tested for the H2 evolution reaction. The synergistic effect of heterojunction formation between CeO2 and g-C3N4 was taken into account with modification in the ceria lattice by introducing some rare-earth (RE) metals (Nd, Pr, Gd, Y). The catalyst was synthesized by a co-precipitation method with calcination at 400˚C. Further, heterojunction formation was confirmed with characterization techniques such as HR-TEM, Raman, XRD where cubic-fluorite nanoparticles of ceria were formed ~ 5nm with a composite formation with g-C3N4. Photocurrent measurements showed impressive e-/h+ separation in case of CeO2/g-C3N4. Further, Raman analysis with F2g peak broadening in the case of the RE doped ceria was seen along with UV-DRS showing extended absorption of Pr0.2Ce0.8O2-δ/g-C3N4 and Nd0.2Ce0.8O2-δ/g-C3N4 as compared to the undoped composite proving the inclusion of the RE ions. Testing these materials for H2 production clearly showed 10 times higher production of hydrogen in case of Nd0.2Ce0.8O2-δ/g-C3N4 as compared to CeO2/g-C3N4 through overall water splitting with both the catalysts producing stoichiometric amounts of H2 and O2. Also, using TEOA as a sacrificial agent, higher production of H2 for Nd0.2Ce0.8O2-δ/g-C3N4 (406 µmolg-1h-1) as compared CeO2/g-C3N4 (329 µmolg-1h-1) was observed.

TEC-PO-004. Light-breakable mesoporous silica coated upconverting NPs for NIR-triggered drug release

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Light, especially near-infrared (NIR) radiation, offers a non-invasive method with high spatiotemporal resolution for triggering drug delivery, facing challenges such as carcinogenic risks and limited tissue penetration of UV light. Lanthanide-doped upconverting nanoparticles (UCNPs) provide a solution by converting NIR to UV light. Despite promising, their low upconversion quantum yield necessitates high laser powers and prolonged irradiation, posing overheating risks to tissues. To overcome this, strategies like core surface passivation and coating UCNPs with photolabile drug carriers (either mesoporous silica (UCNP-MS) or polymeric coatings) have been adopted. UCNP-MS, emerging as a robust carrier, still faces challenges like high power and long exposure times for drug release. Unlike unchanged UCNP-MS systems during drug release, polymer-coated UCNPs with UV-breakable bonds disintegrate structurally, enabling drug release for only hydrophilic molecules. This study introduces UCNPs encapsulated with a thin, UV-breakable MS shell, merging MS's scalability with an efficient drug release mechanism of a thin breakable coating.

More in detail, we present the one-step synthesis of a nanocomposite consisting of LiYbF4:Tm3+@LiYF4 UCNP coated with an UV-sensitive mesoporous organosilica shell. We demonstrate that a thin shell can be easily broken under NIR light exposure at 1 W/cm2, significantly lower than traditional systems. Loading the mesopores with the hydrophobic vitamin D3 precursor, 7-dehydrocholesterol (7-DH), results in the release of contents upon shell breakage. Vitality tests on HeLa cells confirm the nanoparticles' safety. Their internalization is assessed by conventional confocal and non-linear optical microscopy via up-conversion luminescent emission, in which the sequential absorption of two or more low-energy photons in the infrared promotes the absorption into a high-energy state, enabling a correct drug delivery. The system's tunability, enabled by its simple synthesis and low-power operation, opens new avenues for NIR-triggered drug release via UCNP, making it a scalable, flexible, and translational option.

FAR-PO-125. On the path towards a self-illuminating photodynamic therapy against cancer

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Photodynamic therapy (PDT) emerges as a promising alternative for cancer treatment [1]. However, PDT effectiveness is compromised by the attenuation of external light irradiation within tissues, thus reducing treatment efficacy. To overcome the need of an external light irradiation, an innovative approach involves generating light directly inside the cancer cells through a chemiluminescent reaction [2]. The emitted light can be absorbed by a photosensitizer to produce singlet oxygen or radicals, effectively inducing cell death. However, the proposed solution requires the efficient internalization of the components, ensuring non-toxicity, access to the target cells and close proximity with the photosensitizer. In this context, silica nanoparticles (NPs) emerge as a potential solution due to their ability to encapsulate and release components, offering advantageous properties such as biocompatibility, degradability, and a large surface area.

Figure 1: Concept of self-illuminating PDT.

This study explores a self-illuminating PDT approach, based on the encapsulation of chemiluminescent reagents and of a photosensitizer (PS) in silica NPs. Breakable organosilica nanocapsules, (ssNCPs), hollow structures with a unique hydrophilic cavity and breakable nanocages (ssOSCs) (exhibiting a cage-type morphology) were selected for the encapsulation of luciferase (enzyme) and D-luciferin (substrate). The silica network of these NPs contains disulfide bonds, allowing them to break within cells when exposed to a reducing environment like glutathione, abundant in cancer tissue. Figure 1 illustrates the concept of the study, demonstrating that upon the destruction and release of the components, the light generated by the chemiluminescent reaction can be absorbed by a photosensitizer (through energy transfer) to generate reactive species. Herein, preliminary experiments including the synthesis and characterization of organosilica nanoparticles are assessed using various methods (as electron microscopy, DLS, FTIR). Also, evidence of the encapsulation of luciferase and D-luciferin is presented.

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ABC-PO-031. Monitoring of indoor air quality and preventive conservation: the case study of the King's Apartment, Royal Palace of Turin

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A conservation project that aims to preserve an artwork in the best possible way must adopt an analytical approach, developing methodological strategies to gain exhaustive knowledge of the object and the environment that hosts it.

Identifying the composition of materials not only enhances understanding of an artist's technique and may provide evidence of authenticity, but it is crucial for directing restoration interventions and identifying past ones, shedding light on the conservation history of the object. In fact, the study of the state of conservation of historical and artistic heritage assets also takes into account the composition of alteration products and the processes leading to their formation. It is therefore necessary to consider environmental factors such as temperature, humidity and air quality, as they can lead to alterations and chemical, mechanical and biological degradation.1

In the King's Apartment of the Royal Palace of Turin, monitoring of microclimatic conditions, air quality and aerobiological particulates is currently underway with the aim of identifying the environmental risks in the apartment in its current state of disuse and in view of its possible future use for exhibition purposes. Moreover, the study aims to identify possible sources of pollution, external or internal to the apartment, and any correlations between air quality and the state of conservation of the artworks currently present in the apartment.

The contribution presented here reports some preliminary results on air quality emerging from the processing of data collected in the first five months of monitoring. In particular, the monitoring involves the continuous detection of particulate matter (PM1.0, PM2.5 and PM10) and volatile organic compounds (TVOC), measurements of formaldehyde concentration and detailed analysis of organic emissions through solid phase microextraction coupled to gas chromatography/mass spectrometry (SPME-GC/MS).

ANA-PO-073. Enhancing Product Quality Control in Industrial Processes through the Identification of Critical Process Steps

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In industrial processes, guaranteeing the high quality of final products is crucial. For this purpose, it is essential to identify the process phases that mostly affect product quality parameters in order to accurately estimate them before the process is completed. This not only helps to minimize waste and losses, but also enhances environmentally friendly manufacturing practices.

The case-study presented here concerns the industrial production of Acrylonitrile-Butadiene-Styrene (ABS). ABS is currently synthesized through a nine-stage process monitored using multiple sensors installed in different areas of the plant and that acquire physical (temperature, pressure, flow rate measurements) and chemical (near-infrared spectra) information during its progression. The objective of this work is to determine at which process stage the information acquired is sufficient for a correct prediction of ABS quality. To this end, various multivariate regression methodologies (namely, Partial Least Squares – PLS – Local-Weighted PLS – LW-PLS1 – MultiBlock PLS – MB-PLS – Locally Weighted MultiBlock-PLS – LW-MB-PLS – and Response-Oriented Sequential Alternation – ROSA2) will be employed to model the ensemble of data blocks resulting from all the process phases in an incremental fashion. In other words, these different data blocks will be sequentially gathered and processed as if they were collected in real time during ABS manufacturing. By assessing how the predictive performance of the aforementioned regression methodologies evolves as the amount of available information increases, this approach will permit to highlight whether satisfactory estimates of ABS quality can be obtained before the end of the production process and, as outlined before, at which exact stage of its time evolution.

FIS-PO-060. Stabilizing carbynes

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Carbyne is the name given to a chain of sp carbons. Despite several claims, existence of a solid consisting of such chains has not been substantiated. Solids with sp3 carbons, namely diamond, and sp2 carbons, namely graphene, C-nanotubes and fullerenes, are well known and widely accepted. Chains of sp carbons can occur in two forms: cumulenic with equal bonding between all atoms, and polyynic, with alternating short and long bonds deriving from a Peierls instability. In the first case the interpretation is that bonds are all ‘double bonds’ whereas in the second case bonding arises from alternating ‘single and triple bonds’. Although the polyynic form is more stable, chains of sp carbons are too reactive to condense into a solid.

Stabilization has been achieved by attaching large groups at the ends of the chains, which suggests the importance of the chain-ends.

In this work, we show how gold nanoclusters obtained by laser ablation can stabilize solids formed from sp carbon chains, pseudocarbynes.[1-3] Model calculations also make it possible to hypothesize that a cumulenic structure can also stabilized.[4]

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FAR-PO-106. Development of first in class HDAC6-MAGL inhibitors

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Monoacylglycerol lipase (MAGL) is a serine hydrolase responsible for catabolizing 2-arachidonoylglicerol (2-AG). Targeting the catalytic S122 residue of MAGL a robust impairment of enzymatic functionality is attained, thus indirectly activating cannabinoid receptors and prompting neuroprotective and anti-inflammatory outcomes.1 Amongst the scientific efforts focused on the development of potent and selective MAGL inhibitors, beta-lactam-based irreversible MAGL inhibitors effectively reached the aimed goals.2,3 Particularly, they harbour a branched aromatic motif, a N-containing linker and an electrophilic moiety embedding a leaving group, detached by MAGL S122, thus leading to enzyme acylation, as demonstrated by the X-ray analysis.3

Histone deacetylase 6 (HDAC6) is a unique isoenzyme, being located in the cytoplasm and primarily interacting with non-histonic proteins. Lots of reports suggest that HDAC6 may play a pivotal role in triggering neurodegenerative and proinflammatory processes.4 HDAC6 is a metalloenzyme, therefore a typical inhibitor embeds a Zn2+ binding group (ZBG) (commonly an hydroxamic acid), an aromatic or aliphatic linker, accommodated into a hydrophobic tunnel connecting the active site of the targeted protein to the outer region, and a bulky cap motif, responsible for isoform selectivity.5

We recently undertook the development of new dual HDAC6-MAGL inhibitors. By merging the pharmacophoric elements useful for inhibiting the two proteins, we designed two sets of compounds. The new molecules belonging to Set A bear the ZBG on a p-phenyl substituted feature and harbour several N-containing five member heterocycles. In Set B, an azole-based moiety was employed as a novel ZBG supporting motif; several potential ZBGs were installed on this heterocyclic nucleus. Notably, computational analysis underline that the presence of an EW group on position 4 of pyrazole ring allow to better delocalize the negative charge of TS intermediate, facilitating expulsion of the leaving group by S122. The new inhibitors may hold promise as in inflammatory and/or neurodegenerative-based diseases.

Enzymatic data displayed interesting SARs and selected analogues effectively inhibit both enzymes, thus representing promising hits to further develop novel pyrazole-based HDAC6/MAGL hybrid inhibitors.

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ABC-PO-023. Development and evaluation of an air cleaning system for prolonged antifungal and antibacterial activity for indoor cultural heritage spaces

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Biological air contamination inside cultural heritage indoor spaces is a frequent problem that needs to be solved since microbial deposition on artistic surfaces causes mechanical biodeterioration and the impossibility of a complete appreciation of the artwork. To prevent those mechanisms, it is helpful to reduce the microorganisms present in the air by introducing an air-cleaning system. The starting point of this project is the work of a research group from the Universitat Politècnica de Valencia that has already applied tea tree essential oil cold diffusion as an active air cleaning system for this purpose at a small space in Los Santos Juanes Church in Valencia [1]. In this research work, the tea tree essential oil has been encapsulated inside the pores of mesoporous silica support to elongate the period of activity of the oil and enhance its performance. To obtain the simplest device, it has been designed to be a part of a passive-release air cleaning system.

The silica mesoporous support has been characterized through diffuse/specular reflectance, attenuated total reflectance infrared (ATR-IR) and Raman spectroscopies, electron scanning microscopy coupled with X-ray microprobe (SEM-EDX), porosimetry and X-ray diffraction (XRD) whereas the amount of the charged essential oil has been evaluated through thermogravimetric analysis (TGA) [2].

In addition, this innovative air cleaning system has been tested in test rooms and compared with the free-oil system. The complete air monitoring control (temperature, relative humidity, microbial assay, and particulate matter) performed in these rooms showed that the essential oil encapsulated in the microparticles (as a passive release system) keeps its biocidal activity for a longer time than the oil-free one, especially after the third week for the bacteria and after the fourth for the fungi. The new cleaning system has also been applied in vitro [3].

These promising results are the beginning of future research projects that will focus on combining the microparticles and the essential oil to have a high immediate and long-term biocidal effect, for example, applied in an air filtration system.

ORG-PO-148. Luminescent micro- and nanostructures from organic fluorophores and microalgae

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Among the living organisms that generate nanostructured components, diatoms are very attractive. Diatoms are a large and prolific class of single cell photosynthetic microalgae, whose mesoporous biomineralized silica shells (frustules) encase the organic protoplasm.[1] Frustules exhibit interesting properties such as high surface area, mechanical resistance, unique optical characteristics and mesoporosity, which make them appealing materials for applications in photonics, sensing, optoelectronics and biomedicine. The availability of numerous chemical and biological approaches to modify the frustules composition represents a powerful resource to produce nanostructured materials with properties tailored for specific applications.[2] Frustules chemically modified with organic dyes have seldom been investigated for their optical properties thus far. We have demonstrated that in vivo incorporation of organic molecular emitters into frustules through diatoms' silica biomineralization represents an efficient biotechnological route to new photonic materials whose properties result from the combination of the frustule hierarchical nanostructure with the luminescence of incorporated emitting molecules.[3] In particular, our study points out that the functionalization of diatoms biosilica with tailored photoactive molecules can represent a powerful tool in order to obtain luminescent micro- and nanostructured biomaterials for applications in biomedicine, optics, photonics and agriculture technologies.

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ANA-PO-114. Extraction and analysis of bioactive compounds from rocket: development of a green and innovative analytical method

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Bioactive molecules are substances of very varied chemical composition widely distributed in the plant world, in fact they are mainly found in fruits and vegetables. In recent years, rocket has been widely studied for its beneficial properties on human health as it is rich in antioxidant compounds that can been used in multiple applications, including cosmeceutical, nutraceutical and pharmaceutical industries1. However, the phenolic profile depends on several factors such as the species of the rocket, geographical area of origin, climate and sunlight. Modulation of growing parameters in experimental laboratories can increase phenolic compounds synthesis. Generally, bioactive compounds extraction is performed using organic solvents such as ethanol and methanol2. In recent years, the main engine of analytical chemistry is to move towards increasingly green and

sustainable applications3. Following these principles, in this work traditional organic solvents were replaced by innovative and green solvents, such as deep eutectic solvents (DESs). They are easy to prepare using low-cost constituents, are non-toxic and biodegradable.

DESs are mainly a combination of two compounds: hydrogen bond acceptor (HBA) and hydrogen bond donor (HBD), which can interact through extensive hydrogen bonds.

An analytical method based on the use of deep eutectic solvents was developed and optimized to determine nutraceutical compounds in rocket plants growth at different conditions of light (80 PAR+LED; 80 PAR- no LED; 80 PAR + NEON), temperature (16°C; 22°C; 23°C) and salt stress induced with sodium chloride (0 mM NaCl, 150 mM NaCl, 300 mM NaCl). The optimization of the extraction procedure involved the study of type of DES, quantity of water to add to the selected DES, matrix to solvent ratio, times and temperature of extraction. Among the tested DESs, the best was choline chloride glucose (molar ratio 2:1), which gave the best quantitative results under the following optimized conditions: 1:50 w/v as matrix to solvent ratio; 30% of water added to the DES, extraction time of 30 min and extraction temperature of 50°C.

The rocket phenolic compounds profile was determined through high-performance liquid chromatography coupled with mass spectrometry (HPLC-MS): isorhamnetin, quercitin-3-O-galactoside, roseoside, quercitin, ferulic acid and chlorogenic acid were tentatively identified.

Acknowledgements: The activities were performed within Project ECS 0000024 Rome Technopole, - CUP B83C22002820006, NRP Mission 4 Component 2 Investment 1.5, Funded by the European Union – NextGenerationEU

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MAS-PO-013. Natural acidic aqueous extracts of Vicia faba L. pod valves: an innovative source of bioactive compounds to use as adjuvant in the pharmacological treatment of Parkinson's disease

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Vicia faba L. is a vegetable belonging to Leguminosae family and nowadays it's consumed worldwide for human and animal nutrition because of its several nutritional compounds. It's also well known as an important natural source of L-Dopa, the dopamine precursor to be used in first-line treatment of Parkinson's symptoms. Also broad bean by-products could be an attractive natural source of bioactive compounds. Because of the huge presence of health beneficial compounds also in Ribes rubrum L., Punica granatum, Phyllanthus emblica, this work was focused on the characterization of pod valves extracts in these acidic aqueous matrices. 2D van Krevelen diagrams and LC-ESI/LTQ-Orbitrap/MS2 approach were used as a tool to obtain molecular formula maps and an untargeted fingerprint useful for a rapid and comprehensive analysis of the more representative metabolite classes. Neuroprotective assay was carried out against the human neuroblastoma cell line SH-SY5Y too.

ORG-PO-243. A novel Fluorophore-ureido-Calix[5]arene receptor for the recognition of bioactive guests

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Supramolecular chemistry-based sensing offers distinct advantages, such as the possibility of selective and specific design based on the complementarity of size, shape, and function between the receptor and the analyte, and the ability of re-use the systems thanks to the non-covalent approach. Calix[5]arene macrocycles have been extensively tested against bioactive ammonium-containing substrates and the complexation processes have been observed by NMR spectroscopy.1 However, it is known that the efficiency of the recognition process is strongly dependent on the ion pair interaction between the ammonium cation heads and their counterions. To this end we proposed a novel fluorophore-ureido-calix[5]arene luminescent receptor for the detection of bioactive species that contains linear alkylammonium motif. The design of this receptor implies that, in addition to the known complexing capabilities of calix[5]arenes for linear alkylammonium guests, the complexation will be improved by the synergistic action of the ureido group,2,3 trapping the anionic counterion, and the presence of a fluorescent label will allow to follow the host-guest complexation by fluorescence spectroscopy.

TEC-PO-031. Protein-based Nanocomposites: from Insect-mediated bioconversion of Organic Waste to Electro-conductive Bioplastics

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Starting from the Organic Fraction of Municipal Solid Waste (OFMSW) as a feeding substrate for the insect Black Soldier Fly (BSF), this research aims to derive functional materials from its proteins, hence contributing to close a circular economy model for the full valorization of OFMSW. Specifically, a BSF protein-based bio-nanocomposite material enriched with a functionalized Conductive Carbon Black (CCB) for flexible electronics applications is here presented.

The BSF insect proteome was deeply characterized through SDS-PAGE and LC-MS/MS, disclosing a prevalence of muscular proteins. TGA, WA-XRD analyses, and Hansen solubility tests were utilized for the characterization of the functionalized filler. Kraus plots and electrical conductivity measurements, together with associated mathematical models, served as practical tools to evidence stronger filler-polymer interactions after

functionalization of CCB with the pyrrole methodology. Obtained composites are flexible and mechanically robust, with conductivity values up to 0.9 S/m. Taken together, these findings not only support the development of green flexible electronics, but also contribute to the valorization of the OFMSW, aligning with European policies of circular economy.

MAS-PO-015. Hydroxyanthracene derivates citotoxicity: A differential evaluation between single molecule and whole plant extract

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Hydroxyanthracene derivates (HADs) are a group of natural or synthetic compounds with a wide range of biological activities (for instance, anti-inflammatory, antibacterial, and antiarthritic). In addition, because of their properties for helping the normal bowel function, HADs are widely used in constipation as pharmacological drugs and nutritional supplements. Nevertheless, during the past years, a safety usage of HAD products has been placed under consideration from European Food Safety Authority (EFSA) because some scientific studies reported that HADs are not lacking toxicity. In particular, the safety of the use of medicinal plants containing HAD in dietary supplements was re-evaluated concluding that HAD emodin, aloe-emodin, and the structurally related substance danthron have been shown to be genotoxic and carcinogenic until proven otherwise based on other studies. Thus, the first objective of this study was to shed light on the large variability in composition of botanical food supplements containing HAD by a systematic analysis of the qualitative and quantitative composition of a cohort of extracts and raw materials of plants with high levels of anthraquinones commercially available (Cassia angustifolia, Rhamnus purshiana, Rhamnus frangula, Rheum palmatum, and Rheum raponticum) using UPLC-MS/MS. Specifically, the targeted analysis was performed by parallel reaction monitoring (PRM). Since, the current investigations of HAD toxicity were based on in vitro and in vivo studies conducted mainly on the use of the single molecules (emodin, aloe-emodin, and rhein) rather than on the whole plant extract, the qualitative quantitative characterization was the starting point to select the most appropriate products for the treatments for an in vitro cell studies. Thus, the second objective of this study was the investigation, for the first time, of the toxic events of HAD used as single molecule in comparison with the whole plant extracts containing HAD occurring in an intestinal in vitro model of human colorectal adenocarcinoma cells (Caco- 2). A shotgun proteomics approach followed by a bioinformatic elaboration was applied to investigate the differential protein expression in the Caco-2 cells after a single-HAD or whole–plant extract treatment to fully understand the potential targets and signaling pathways. In conclusion, the combination of a detailed phytochemical characterization of HAD products and a largely accurate analysis of the proteomic profile of intestinal cells treated with HAD products provided the opportunity to investigate their effects in the intestinal system.

TEO-PO-021. Oxygen-promoted Au(111)-supported polyboroxine formation probed by core-electron spectroscopies: a combined theoretical and experimental study

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On-surface synthesis of organic structures is a convenient bottom-up approach for tailoring both the chemistry and the morphology of surfaces and for the synthesis of complex hybrid interfaces of potential interest in the development of organic based devices1,2.

The unexpectedly rich surface chemistry of trinaphtylboroxine (TNB) deposited on the Au(111) support has been monitored through X-ray Photoemission and B K-edge NEXAFS. Through computational screening of a set of possible structures, by exploiting the element sensitivity and site specificity of core-electron spectroscopies we were able to uncover the role of adsorbed O atoms in promoting B-C bond cleavage which resulted in the on-surface formation of a stable B-O-B motif. Furthermore, the synthesis of the B-O-B motif allows for tuning the electronic properties at the interface between molecules and gold substrate. This work has been carried out in close collaboration with experimental groups of the CNR-IOM in Trieste.

ANA-PO-137. Mass spectrometry-based discovery of faecal biomarkers for colorectal cancer towards non-invasive diagnostic tests

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Advanced mass spectrometry (MS)-based proteomics is a powerful approach for discovering new disease biomarkers, towards the development of reliable diagnostic tests for early and accurate diagnosis.1,2 Colorectal cancer (CRC) stands as the second leading cause of cancer death, for which non-invasive diagnostic screening tests are strongly needed to improve the prognosis and the efficacy of the pharmacological therapy.3 In order to increase participation in preventive care screening it would be ideal to find a biomarker detectable in samples collected through a totally non-invasive method such as stools.

The present work is part of a research project aimed at combining the discovery of faecal CRC biomarkers, with the perspective to implement point-of-care testing based on smart electrochemical sensing devices.

Stool samples were obtained from a cohort of patients subjected to colonoscopy and carrying at least one adenomatous polyp or carcinoma. Patients were stratified according to histology into three groups: low-grade dysplasia, high-grade dysplasia, and carcinoma; healthy controls were also included in the study.

A nano-LC coupled to an Orbitrap Exploris 480 with a High-Field Asymmetric Waveform Ion Mobility Spectrometry System was used for untargeted MS-based shotgun proteomics. Different sample preparation strategies were investigated and the extraction procedure that allowed the highest number of identified human proteins involved a lysis buffer combined with sonication and protein precipitation with acetone/ethanol (1:1 v/v). In

particular, a total of approximately 500 proteins were identified and quantified across all the samples. Statistical analysis highlighted the presence of several enriched proteins compared to healthy subjects in low-grade dysplasia, high-grade dysplasia, and carcinoma patients.

The developed MS-based proteomics strategy permitted the shortlisting of potential CRC biomarkers for further validation.

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Acknowledgements: PRIN 2022 project N. 2022E8YHB7 (OmicSensing).

ORG-PO-244. New Easy Recoverable Cryogel-Based Palladium Catalyst for Suzuki Reaction in Water

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A new heterogeneous and recyclable bio-based cryogel containing palladium was synthesized as a heterogeneous catalyst for organic reactions.1 The synthesis of the macroporous material started from the appropriately functionalized amino acid L-phenylalanine complexed with palladium and subjected to free radical polymerization in water at subzero temperature.2,3 The pore size, surface morphology, composition, and thermal stability of the obtained cryogel were studied using SEM/EDX, FTIR, and TGA techniques. The hybrid cryogel was successfully used as a catalyst for Suzuki-Miyaura coupling reactions using water as solvent. The material demonstrated robust mechanical strength while reusable across multiple catalytic cycles without any discernible loss in activity. Moreover, palladium remains complexed within the cryogel and is not lost in solution once the catalytic cycle is complete. The catalyst can be easily recovered by removing the cryogel from the reaction and washing it with a mixture of ethanol/water, preserving its integrity with minimal weight loss or alteration in appearance. This innovative cryogel catalyst boasts several appealing features, including its utilization of eco-friendly and non-toxic solvents for catalysis and effortless recovery and reusability.

ANA-PO-084. Chemometric application for qualitative carbohydrates analysis using Yeast-Direct Catalytic Fuel Cell bio-device.

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Fuel Cells of different types and configurations are able to convert the chemical energy into electrical energy, using hydrogen or more complex compounds as fuel, such as methanol, ethanol, or glucose. Fuel cells have also been used in the past, by present authors, to quantify alcohol or glucose content in foods, or drinks, while in more recent papers authors investigated the analytical survey of the Direct Catalytic Fuel Cell (DCFC) for “qualitative” analysis too, of aliphatic alcohols and so on, using suitable chemometric methods for DCFC data elaboration. In the present research we tried to extend the same format, for qualitative determination to several carbohydrates (Glucose, Xylose, Fructose, Galactose, Sucrose). Figure 1 shows the experimental apparatus used for batch analytical measurements, by Fuel Cel and Yeast incubation.

Carbohydrates had to first be converted into alcohol using yeast solution. For this purpose, 50 mL glass flask, properly closed and filled with 30 mL of yeast-glucose-glycine solution, was kept at a constant temperature, for 12 h. At the end of the incubation time, 2 mL of solution was quickly extracted from the flask with a device made by graduated syringe, equipped with two small filters (see Figure 1), and injected in the DCFC. The end plate of the electrode of DCFC was made of a Pt-Ru black catalyst, assembled with a Nafion™ membrane. The cell was used in a potentiostatic mode, by measuring the so-called supplied current, using an EmStat potentiostat from Palmsens, connected to a PC. Current response trends to five investigated carbohydrate molecules have been recorded. Principal component analysis was then applied to the data set obtained by gathering all the data points of the response curves, after mean centering. The results of PCA are graphically displayed, in Figure 2, in terms of scores plot along the first two components, accounting for more than 99.9% of the total variance. The recoveries and differences about the behaviour among carbohydrates, can be appreciated by inspecting the scores plot reported in Figure 2.

INO-PO-020. Long-term surface reactivity of asbestos in simulated body fluids

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Inhalation of asbestos fibres is associated with the development of several lung diseases, including incurable malignancies. The production of reactive oxygen species (ROS) is recognized as a significant factor in triggering inflammation, which, if prolonged, can lead to fibrosis and cancer. ROS can originate from cellular processes such as phagocytosis, as well as from redox reactions catalysed by iron sites exposed on the surface of asbestos fibre. While asbestos potency to catalyse free radical generation is well established, few is known on how the interplay between asbestos surface and biological fluids may modify this reactivity.

To clarify whether the interaction of fibres with biological fluids can modify the surface reactivity, crocidolite and tremolite asbestos were incubated in artificial lysosomal fluid at 37°C for 28 days. Biodurability (Si and Mg release) and surface chemical composition were evaluated by ICP-OES and XPS, respectively. ROS generated by pristine and incubated fibres were assessed by measuring •OH radicals through the spin trapping technique coupled with EPR spectroscopy. •OH radical release in oxidizing environment was monitored up to 15 days (indicative of long-term reactivity). To mimick the condition encountered by fibres phagocytized by macrophage and subsequently released into inflamed epithelial tissue due to frustrated phagocytosis, the spin-trapping measures were carried out at pH 4.5 and 7.4, respectively.

Crocidolite and tremolite asbestos showed different durability and underwent changes in surface composition, with alterations in Fe abundance and reactivity depending on the dissolution rate and the amount of Fe in the bulk, which are both higher for crocidolite than tremolite. However, despite the different dissolution, both asbestos were still reactive in •OH radical release following incubation in artificial lysosomal fluid. Additionally, both displayed higher •OH production under neutral than under acidic pH.

INO-PO-021. CO2 Capture and Conversion to C1 Chemicals with Copper/Nickel Bis(amino)bipyrazolate Metal−Organic Frameworks

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The reaction involving 3,5-diamino-4,4′-bis(1H-pyrazole) (3,5-H2L) with copper (II) and nickel (II) acetates under solvothermal conditions resulted in the formation of four mixed-metal metal−organic frameworks (MIXMOFs). Despite their relatively low specific surface areas, these MIXMOFs exhibited notable CO2 adsorption capacities at ambient temperature and pressure, with the highest values observed for Cu0.05 Ni0.95 and Cu0.2 Ni0.8 (5.6 wt% CO2), along with reasonably high isosteric heat of adsorption, particularly for Cu0.2Ni0.8 (Qst = 26.2 kJ/mol). All MIXMOFs were evaluated as heterogeneous catalysts in carbon dioxide electrochemical reduction (CO2RR) in acetonitrile solution under varying potential conditions. The most favorable outcomes were achieved at E = −1.5 V vs. Ag/AgCl/KCl sat. In addition to hydrogen evolution (HER) side reactions, the main reduction products observed under these conditions were CO and CH4. Cu0.05 Ni0.95 exhibited superior performance, achieving an overall [CO+CH4] conversion of ~200 ppm and a Faradaic efficiency of ~52%. Notably, the selectivity of CO2RR products appeared to be correlated with the predominant metal ion within the catalyst: while Cu0.05 Ni0.95, enriched in nickel, predominantly produced CO, Cu0.5 Ni0.5, with a higher copper content, mainly generated CH4.

IND-PO-051. Determination of Vapor Pressures of FAME Industrial Mixtures by Ebullioscopic and Thermogravimetric Experimental Methods

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The quest for sustainable energy sources has led to biodiesel (BD) emerging as an environmentally friendly alternative to traditional fossil fuels. Fatty Acid Methyl Esters (FAME) constitute the primary components of these biofuels and meeting specific standards, such as ASTM D6751 and EN 14214, is essential for their direct use in the fuel market. Vapor pressure (VP) is a crucial characteristic related to the volatility of BD, impacting both safety and engine combustion efficiency, but the experimental determination is challenging due to its composition variability, low vapor pressures, and susceptibility to degradation during experiments. Furthermore, the definition and the measurement of vapor pressure for mixtures is strongly dependent on the possible variation of the composition during experiments, due to the different volatility of the single compounds. It is also possible to calculate the vapor pressure of the mixture starting from its composition, but the different thermodynamic scenario (ideal or not ideal mixture as first) must be considered. Moreover, for industrial samples possible effect due to the presence of impurities must be considered.

The study employed two distinct experimental methods to determine the vapor pressure of certain acetate esters and two industrial blends of Fatty Acid Methyl Esters (FAME) from Sabio Fuels srl. The first method used a direct ebullioscopic approach, whereas the second involved an indirect thermogravimetric analysis (TGA). The impact of impurities on accuracy was investigated, and TGA methodology was optimized for ambient pressure operation. An error function was employed to compare the experimental vapor pressure results obtained through both methodologies with theoretical values. Ebullioscopic measurements proved effective only for acetate esters, as FAME mixtures displayed too low vapor pressures for an accurate quantification using this technique. In contrast, the TGA methodology demonstrated greater accuracy for FAME compared to acetates and it allowed a rapid collection of numerous vapor pressure values through a swift analysis. While this method may be less accurate than others, it can be useful for fast screening FAME mixtures, even when contaminated with light impurities, and determining the temperature at which the vapor pressure equals or exceeds a predefined value.

ABC-PO-002. Determination of trace elements for the evaluation of the exposome: the ExpoMap project

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The determination of essential and toxic chemical elements in environmental, biological and food matrices is nowadays of considerable importance as an indispensable tool for the assessment of risk factors for human health, as well as for the drafting of consequent standards and legislation.

The living environment substantially determines an individual's state of well-being or illness, and the environment-health pair is now considered inseparable. Water, food, air, and soil are examples of pathways through which individuals are exposed to pollutants that may affect their health. Men and their state of health can be considered essential indicators of the environmental state, evaluating the presence of contaminants within biological matrices1. Each biological matrix retains a different pollution trace capable of being conserved for variable times2. Urine, in particular, matrix represents the biological matrices of choice for clinical and forensic investigations. This is 'stable' matrix since it has less variability than other matrices, for example, nails and hair, which are subject to sources of external contamination. Main objective of this work is the evaluation of the

environmental exposure of subjects residing in two different areas of the Campania region: Land of Fires and Sele Valley. The volunteers recruited for this purpose are, in fact, healthy boys and girls aged between 18 and 22, with body mass indexes and homogeneous lifestyles. To evaluate the environmental exposure of the subjects of interest, the concentrations of trace elements (Hg, Li, Be, Al, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Rb, Sr, Cd, Sn, Sb, Te, Ba, Pb, U) and alkali and alkaline-earth elements (Na, K, Ca, Mg) have been evaluated in different biological fluids in order to evaluate the bioaccumulation of these elements in the human body. For the determination and quantification of these trace elements, analytical methods have been implemented and validated for the different biological matrices using the ISTISAN 15/303. report as a starting point and the subsequent instrumental determination by inductively coupled plasma mass spectrometry (ICP-MS) and microwave-generated plasma-coupled atomic emission spectrometry (MP-AES).

ORG-PO-149. Zwitterionic calixarenes interact with real and artificial membranes of Gram-negative bacteria

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The overuse of antibiotics to treat bacterial infections leads to antimicrobial resistance, one of the most serious threats in our century.1 The ability to distinguish between bacterial species can provide a useful tool to overcome this dangerous problem with the possible development of a selective, rapid and inexpensive sensor. Knowing that calixarenes are able to selectively bind different types of macromolecules,2 we studied a series of water-soluble zwitterionic calix[4]arenes, and found that those functionalised at the upper rim with four zwitterionic amino acid moieties, were able to selectively interact with the cell wall of Gram-negative bacteria, among the other families tested. The proline and phenylalanine derivatives (1 and 2 respectively, Figure 1) have been shown to bind Gram-negative bacteria using on-cell Saturation Transfer Difference NMR techniques.3 Preliminary results suggest that they are able to interact with the lipopolysaccharide (LPS) portion. LPS-containing lipid interfaces are developed as a mimic of the cell wall of Gram-negative bacteria, and their interaction with the calixarenes is investigated using quartz crystal microbalance with dissipation monitoring.

ALI-PO-017. A method using dilute-and-inject liquid-gas chromatography-tandem mass spectrometry for the determination of sixteen polycyclic aromatic hydrocarbons in extra-virgin olive oil

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This study presents a method based on dilute-and-inject liquid-gas chromatography-tandem mass spectrometry for the rapid determination of 16 polycyclic aromatic hydrocarbons (PAHs) in extra-virgin olive oil (EVOO). The sample preparation process was simple, involving only a dilution step, thereby eliminating the need for extraction, clean-up procedures, and reducing organic solvent usage significantly. A comparison between selected-ion-monitoring and pseudo multiple-reaction-monitoring (p-MRM) acquisition modes was conducted to assess specificity and analyte detectability. The results favored the p-MRM mode for its superior performance and was thus adopted for acquisition.

The method exhibited linearity within the concentration range of 1-200 µg kg-1 (and 5-200 µg kg-1 in three instances). Accuracy, tested at 2 µg kg-1 and 20 µg kg-1 concentration levels, fell within the range of 86.9-109.6%, with a relative standard deviation of less than 10%. Precision within the same concentration levels showed intra-day and inter-day variations ranging from 1.2% to 8.8% and 3.2% to 10.8%, respectively.

All PAHs showed a negative matrix effect. Among ten samples, three EVOOs exhibited traces of three out of the sixteen PAHs, albeit at low parts per billion levels.

ORG-PO-245. Electrochemical Synthesis of 2-Oxazolines using electrodes from recycled aluminium cans

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Nowadays, the chemical industry is intensively working to achieve net-zero carbon dioxide emissions. Electrochemical manufacturing, which uses electricity as the major source of energy, is becoming a promising alternative to reduce the environmental impact of chemical production. Although the current research is focused on the optimization of key electrochemical parameters such as energy efficiency, product selectivity, productivity per time unit and so on, there is little attention on the use of electrodes made from waste. For example, aluminium is a highly recyclable metal, and it can be recycled at a very low energy cost compared to its primary production. We are currently developing electrosynthetic methods using electrodes deriving from inexpensive and recyclable materials, specifically spent aluminium cans. In this contribution, we report our study on the electrochemical synthesis of differently substituted 2-oxazolines. An extensive green metric assessment has been carried out to quantify the overall sustainability of our protocol compared to those reported in the literature.

FAR-PO-063. Innovative Approaches to Combat Tuberculosis: Exploring Dual-Acting Inhibitors Targeting MtMetAP1c and Mbtl

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Tuberculosis (TB) is the world's second-leading cause of death from a single infectious agent, remaining a significant global issue. Approximately 10 million new cases and 1.4 million deaths are reported annually by the World Health Organization (WHO). Moreover, the spread of multi-drug-resistant strains of Mycobacterium tuberculosis (Mtb) requires the urgent development of new therapeutic approaches.1

The mycobacterial methionine aminopeptidase family (MtMetAP) has recently emerged as a promising target for the development of anti-TB agents due to its essential role in the protein synthesis pathway. Considering that recent studies identified MtMetAP1c as essential for Mtb survival, our focus was primarily on this isoform.2,3

Hence, we prepared different substrates and known inhibitors to assess the functionality of MtMetAP1c and develop an assay for the evaluation of new candidates.4 In a literature survey, we observed that a 5-phenylfuran-2-carboxylic acid derivative had been identified as a MtMetAP inhibitor.2 Considering that this scaffold was also the core of a class of inhibitors of the salicylate synthase (MbtI) from Mtb, identified by our research group,5 we envisaged that we could develop a series of potential dual inhibitors, maximizing their antimycobacterial effect by blocking two distinct pathways. Our preliminary data will be discussed, laying the foundation for the discovery of dual-acting enzymatic inhibitors for the treatment of Mtb infections.

FAR-PO-025. Pyrazine-based CK1δ inhibitors as potent neuroprotective agents

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Casein Kinase 1δ is a serine/threonine kinase involved in several biological processes, including mitotic checkpoint signaling, DNA repair, circadian rhythm, Wnt signaling, endocytosis and neurodegenerative disease progression.1 Thus, the importance in finding new inhibitors towards this enzyme. The base of the project comes from an in-house screening of some pyrazine-derivatives that showed interesting activity towards CK1δ, in particular compound 1 that displayed an IC50 of 1.86 μM and represented the starting point for the structure optimization. In this work we explored the chemical space around pyrazine scaffold by introducing different substituents, considering aromatic groups, alkyl chains and both linear and cyclic amines (Figure 1). The obtained results allow to define a structure activity relationship and, supported by both docking studies and X-ray structure analysis of molecules-target co-crystals, a strong structural optimization has been carried out, leading to active compounds in the nanomolar range. Most promising compounds have been preliminary assayed for their neuroprotective effect on a neuronal cell model, giving encouraging results.

Figure 1: Panel A: Structure of compound 1, starting point of this work, and its inhibitory activity towards the enzyme. Panel B: schematic representation of the investigation on the pyrazine scaffold.

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ANA-PO-035. Edible Enzymatic Biosensors for Amperometric Monitoring of Glucose concentration

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As per the World Health Organization, approximately 422 million individuals, around 5% of the global population, have diabetes, making it a significant health concern.1,2 Predicted to become the seventh leading cause of death, diabetes is a serious threat due to its associated complications, including cardiovascular disease, blindness, amputation risk, and kidney failure. Managing blood glucose levels is crucial for delaying these complications, but it's a challenge due to significant variability, especially in severe cases. This need for precise monitoring has led to a thriving market for glucose biosensors valued at over 15 billion EUR annually. However, challenges persist, primarily in scaling up biosensor production with multiple costly biological elements. To address this challenge, the scientific community is working on developing reusable biosensing platforms with long-term stability.3

Although implantable and minimally invasive sensors offer the advantage of continuous monitoring, their chemical compositions pose significant regulatory challenges for routine usage. As a result, there is a growing emphasis on developing diagnostic devices that are biodegradable, bioresorbable, or ingestible to overcome this limitation. In this regard, we have addressed the very important challenge of tailoring and designing novel conductive smart carbon-based inks completely biocompatible and edible to develop biocatalytic biosensors able to monitor the intestinal absorption of glucose in type 2 diabetic (T2D) patients. We employed a Design of Experiments (DoE) approach like Face Centered Design to optimize processing variables and enhance ink performance, providing a unique model for formulating edible carbon-based inks.4

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ORG-PO-150. Chemically modified graphene oxide for short chain Per- and Polyfluoroalkyl substances (PFAS) adsorption from drinking water

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In the last years, graphene oxide nanosheets (GO) has emerged as potential sorbent materials for the removal of contaminants of emerging concern, (i.e. pharmaceuticals and personal care products, Per-and Polyfluoroalkyl substances (PFASs)) from drinking water.1-5 Oxygenated groups on the surface of GO nanosheets enable specific adsorption selectivity and capacity, mainly driven by specific hydrophobic, van der Waals and electrostatic interactions.6 Fine tuning of adsorption selectivity can be achieved by tailored chemical modification of GO nanosheets' surface.1,4 On this line, here we report the design, synthesis and application of GO nanosheets modified with tertiary amines ended functionalities by epoxide ring opening reaction, and then quaternarized by nucleophiclic addition. The adsorption performances in water toward a mixture of PFASs with different alkyl chain length and end groups (carboxylated or sulfonated), will be reported and compared to those of granular activated carbons (GAC), the industrial sorbent benchmark.

IND-PO-052. Valorization of Polyolefin Plastic Waste into Liquid Hydrocarbons via Catalytic Upcycling

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Every year, millions of tons of poorly managed plastic waste accumulate in the environment, posing significant challenges to ecosystems. This is particularly evident with polyolefins (POs), where 95% of post-consumer POs become waste, constituting over 60% of municipal solid waste plastic content1-3. The limited recycling of POs represents a significant gap in the plastic market loop, contradicting the goals of the "European Strategy for Plastics in a Circular Economy." Despite EU legislation suggesting strategies for upcycling plastic waste, the upcycling of POs remains in its early stages.

This project aims to raise awareness and advance the catalytic upcycling of POs waste into value-added liquid alkanes. The process involves thorough characterization using a multi-technique approach to identify crucial catalyst properties and process variables driving the selective cleavage of C-C bonds inPOs.4,5. Two types of catalysts will be developed, utilizing acid sites and ruthenium nanoparticles as active phases, with variations in acidity and support porosity. These catalysts will be compared to a commercial Ru/C catalyst. Various types of polyolefins, ranging from high purity to real waste, will undergo reductive conditions such as hydrocracking or hydrogenolysis, as well as transfer reductive conditions using aliphatic alcohols as green H-donor molecules.

TEO-PO-022. Hybrids QM/MM methods for simulating spectroscopic properties of zwitterionic L-tryptophan in water

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Spectral properties of isolated molecules can be drastically different from those of the same molecules dissolved in aqueous solution. Multiscale Quantum Mechanics (QM)/Classical models are highly effective for simulating solvated molecules by partitioning the system into two components: the solute, which is treated at the QM level, and the solvent, which is modelled classically. Among these methods, QM/Molecular Mechanics (MM) approaches have undergone a great expansion in recent decades and have become widely used to study spectroscopic properties of systems in solution. The success of this type of theory lies in retaining the atomistic details of the solvent and the ability to describe the hydrogen bonding.

In this work, we study several spectroscopic properties of Zwitterionic L-Tryptophan in aqueous solution, by using fully polarizable QM/MM and QM/Frozen Density Embedding (FDE)/MM approaches. The MM portion is in all cases described employing the Fluctuating Charges (FQ) and Fluctuating Charges and Dipoles (FQFμ) force fields, and the coupling to classical molecular dynamics allows the sampling of the solute/solvent configurational space. While QM/ FQFμ well describes long-range electrostatic interactions, the use of a three-layer QM/FDE/ FQFμ approach permits an accurate ab initio description of short-range non-electrostatic interactions. The simulated properties are UV-Vis absorption, Nuclear Magnetic Resonance, and Electronic Circular Dichroism, which are all very sensitive to solvent effects. The work aims to demonstrate the improved accuracy of the methodology by increasing the level of sophistication which is employed to model solute/solvent interactions, through comparison with experimental data.

ORG-PO-246. Synthesis of Dihydrofuroquinolinone Derivatives by Pd-Catalyzed Carbonylative Double Cyclization

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Quinolinone derivatives play a very important role in medicinal chemistry, as numerous molecules containing this scaffold have shown interesting antitumor1 and antibacterial2 activities. In this communication, a carbonylative double cyclization3 approach to 2,3-dihydrofuro[3,2-c]quinolin-4(2H)-ones derivatives 2 from readily available 4-(2-aminophenyl)-3-yn-1-ols 1 is presented, based on the use of PdI2/KI as the catalytic system4 under oxidative conditions. Products have been obtained in fair to high yields (60-89%) in one step and in a multicomponent fashion, working under relatively mild conditions (100 °C in MeOH for 24 h, under 60 atm of a 4:1 mixture of CO-air).

(Scheme 1)

The reaction represents a single-step method for synthesizing a particularly important class of fused heterocycles, using easily and accessible materials [4-(2-aminophenyl)-3-yn-1-ols, carbon monoxide and oxygen (from air)], with selective and sequential formation of three new bonds and two cycles. The working mechanism has also been investigated by DFT calculations following a protocol designed for Pd-containing systems,4 and this approach helped to shed light on the molecular source of the catalytic activity, providing atomistic details on the intermediates and transition states of the chemical event.

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ORG-PO-247. Smartphone-based sensing of cortisol by optical array: a supramolecular approach

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The monitoring of cortisol levels should be extremely important to control the human health, thus funding important medical application.1 The standard analytical methods for cortisol identification and quantification cannot be self-performed, due to the bulky size of the instruments and the necessity of specialized persons.2 Molecular probes solve these problems due to their fast and easy use.3 In this contribution, the synthesis of new fluorescent rhodamine probes, able to interact with cortisol by non-covalent interactions, the recognition properties in solution as well as in solid state by optical array, using a smartphone as detector, is reported. DFT calculations and FT-IR measurements suggest the formation of hydrogen bonds between probes and cortisol. The ability to detect cortisol in artificial saliva, in a linear range from 1 mM to 1 pM has been demonstrated, thus leading to the realization of practical smart device for the detection of cortisol in real life.

ALI-PO-028. HS-GC-IMS screening method to support the virgin olive oils panel test: an inter-laboratory study

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For extra virgin olive oils, it is crucial to ensure the authenticity of the declared and labelled commercial category. Olive oil companies, as well as quality control public and private laboratories, are often requested to rapidly assess the quality and purity of extra virgin olive oils. In this framework, a screening method based on gas chromatography coupled with ion mobility spectrometry (HS-GC-IMS) for the analysis of volatile compounds can be useful to support the virgin olive oils sensory analysis (Panel test). This instrumental approach can contribute to improve the overall efficiency of official quality and purity controls in the olive oil sector, thus protecting the consumer from the related common fraudulent practices.

In this research, around 80 commercial virgin olive oils were sensory assessed by five Italian panels, then classified, through the adoption of a decision tree based on the agreement among them, in a commercial category. Moreover, the volatile fraction of these oils was analysed in five laboratories by HS-GC-IMS. The results were elaborated towards the possible definition of a joint calibration based on a common dataset. In particular, the commercial categories of each oil were predicted based on volatile compounds data using PLS-DA models, with a focus on borderline samples between the extra virgin and virgin commercial categories.

This inter-laboratory study showed satisfactory results for such a prediction of the commercial category since most of the samples were correctly classified in the same quality grade with respect to the robust sensory classification.

Authors acknowledge the involved sensory panels, Federolio, and LabService Analytica.

Dr. Enrico Casadei's research activity is funded under the National Recovery and Resilience Plan (NRRP) - NextGenerationEU "ON Foods - Research and innovation network on food and nutrition Sustainability, Safety and Security - Working ON Foods".

ORG-PO-151. Sustainable conjugated polymer synthesis in OPV: a case study from conventional to flow and microvave-assisted synthesis.

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In the pursuit of more efficient and environmentally friendly energy sources, organic photovoltaics (OPVs) have emerged as a promising alternative to silicon-based solar cells, especially for indoor application. In order to achieve, not only economic viability but also sustainability of OPVs, low cost and large module production need to be coupled with increased greener conjugated polymers production and minimal batch-to-batch variation.

Continuous flow synthesis and microwave assisted synthesis represent two sustainable and efficient way compared to conventional polymer synthesis: the flow chemistry approach demonstrates a remarkable reduction in reaction times and solvent use, aligning with green chemistry principles, while microwave-assisted synthesis further enhances the sustainability quotient by using small volume of solvent, providing rapid heating and short reaction time, decreasing energy consumptions.

Here we present the case study of PSBTBT (poly(4,4-dioctyldithieno(3,2-b:2',3'-d)silole)-2,6-diyl-alt-(2,1,3-benzothiadiazole)-4,7-diyl), a wide used low-gap polymer for OPVs. We have synthesized the polymer using Stille cross coupling polymerization with the three different approaches, comparing the molecular weight, the optical characteristics and the metal residual in the polymers.

FIS-PO-041. S-Bearing Species at Interstellar Icy Grains: an ab-initio Study

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Binding energies (BEs) are crucial parameters to understand the evolution of molecular species in dense clouds, determining whether a species is frozen onto the grain surfaces or free in the gas phase. Nowadays, BEs are usually provided as single point values, however the predominant amorphousness of icy grains gives rise to a distribution of BE sites and values. Recently, ACO-FROST, an automatic procedure to simulate realistic icy grains has been released.1 capable to build up models of amorphous ice up to 1000 molecules and to simulate a large variety of BE sites, see Figure 1 left panel.

In the present work, the aforementioned procedure was applied to compute BE distribution of S-bearing species, i.e., H2S, OCS, CH3SH. S-species were selected in order to contribute to a long-standing issue in the field: the Sulphur depletion problem.2 BEs were computed at DFT level (B97-3c) and then refined with one of the highest level of theory available (DLPNO-CCSD(T)). The previous reported BE values are overestimated with respect to our new BE distribution,3 see Figure 1 central panel. Besides, frequencies distribution was calculated for OCS molecule and compared to the James Webb Space Telescope (JWST) observations4 as reported in Figure 1 right panel. The computed distribution outstandingly reproduces JWST data indicating the robustness of the model studied and thus defining a novel computational tool to predict icy species vibrational features.

ALI-PO-002. Combination of HS-SPME-GC-MS analysis of terpenes and pentene dimers and chemometrics for characterization and clustering of Italian monovarietal extra virgin olive oil

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Terpenes and pentene dimers are two less-studied classes of volatile organic compounds (VOCs), associated with characteristic sensorial attributes of extra virgin olive oils (EVOOs). This 3-years study aimed to characterize the mono- and sesquiterpene and pentene dimer profiles of monovarietal EVOOs from 14 Italian cultivars for their quality control and authentication. Quantitation of both classes of compounds was achieved with a recently validated HS-SPME-GC-MS method. A total of 225 monovarietal EVOOs collected over three harvest seasons were analyzed, and the quantitative data were used for the characterization of the cultivars. The cultivars were also classified in groups based on their terpene and pentene dimer profiles. Sesquiterpenes were the molecules that most differentiated the groups, ranging from a total content of 4.338 mg/kg for the Pendolino variety to 40.674 mg/kg for the Nocellara variety. The chemical structure (e.g., acyclic, monocyclic, polycyclic) of the prevalent sesquiterpenes also played a role in the characterization of the cultivars. Pentene dimers (1.330-3.762 mg/kg) and monoterpenes (0.473-1.794 mg/kg) showed lower variability among cultivars and much lower content overall. Statistical methods such as ANOVA-PCA-LDA-AHC were applied to the experimental data and allowed to divide the cultivars into 4 clusters (cluster 1: Ascolana Tenera, Casaliva, Leccio del Corno, Moraiolo, Pendolino, Frantoio, Leccino; cluster 2: Coratina, Picholine, Tonda Iblea, Nocellara; Cluster 3: Bosana, Peranzana; cluster 4: Itrana). A predictive model to classify the monovarietal oils in the clusters was built and achieved a 94.3 % correct classification when used on the training group samples. The model was also tested on 33 additional monovarietal EVOOs, correctly classifying 91% of them.

FAR-PO-093. Development of heterobifunctional small molecules for prion diseases

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Prion diseases are a group of lethal, infectious neurodegenerative diseases, involving a protein infectious agent that propagates the disease by transmitting protein conformational changes. The conversion of the cellular prion protein (PrPC) into misfolded isoforms (PrPSc) is the main event in prion diseases. However, the mechanism by which this process results in brain damage and disease is largely unknown. Such unorthodox nature makes the search of effective anti-prion compounds highly challenging.1 As a result, there is not a viable cure yet. Given the extensive validation of the PrP hypothesis, there have been several efforts to develop PrP-lowering therapies, but proximity-based modalities aimed to induce PrP degradation (and to lower its cellular level), have so far been never exploited. Thus, we sought to harness proteolysis-targeting chimeras (PROTACs, Figure 1), a leading proximity-based modality in drug discovery.2 Thanks to their bifunctional nature, PROTACs may induce proximity between the PrP protein and a ubiquitin E3 ligase to trigger targeted PrP ubiquitination and subsequent degradation.

Following visual inspection of the available PrP-ligand complexes, an initial set of potential PrP-directed PROTACs was designed and synthesized by tethering a diphenylmethane-based PrP ligand with an E3 binder via different linkers. Preliminary investigation in noninfected neuronal N2a cells and RML strain scrapie-infected N2a (ScN2a-RML) cells to evaluate cytotoxicity and anti-prion activity is being performed.

Encouraged by their success with undruggable proteins, PROTACs hold enormous potential to unlock drug discovery efforts against this challenging target and to find an effective cure for prion diseases.

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TEF-PO-011. Ozonized oil-based NLCs for wound healing and infection control

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Chronic wounds, characterized by impaired healing processes and prolonged inflammation, pose a significant healthcare challenge. Persistent open wounds can also provide a favourable environment for bacterial colonization and proliferation, which can lead to localized or systemic infections (1). Antimicrobials-based nanomedicine can prevent infection and wound chronicity, promoting and accelerating the healing process. In this context, ozonized oils are characterized by considerable antibacterial properties without developing bacterial resistance, due to their capability to disrupt cell membrane and interact with DNA (2). In addition, they can improve the oxygenation of the site and stimulate the release of growth factors (3). At this purpose, the aim of this work was the development of nanostructured lipid carriers (NLC), loaded with ozonized oils, as medical devices, to enhance healing and prevent infections of chronic wounds.

Cocoa Butter (Aboca S.p.A., Sansepolcro, Italy) was used as solid lipid and sunflower ozonized oil (Innovares srl, Sant'Ilario d'Enza (RE), Italy) as liquid lipid. In the aqueous phase Tween80 was added as surfactant. NLC were manufactured using microfluidics (ANP Automated nanoparticle system) at 40°C. Several processes parameters (total flow rate and ratios) were tested, and their impact on size and PDI was evaluated. NLC were characterized using a multidisciplinary approach including morphology, particle size, zeta potential and in vitro cytotoxicity towards Normal Human Dermal Fibroblast (NHDF)

Pre-formulative studies on NLCs production show that the processes parameters variation had a significant impact on the particles size and smaller particles were obtained increasing the ratio aqueous/organic phase. In particular, the ratio 8:1 between aqueous and organic phase was the best ratio to obtain nanoparticles with a dimension around 165 nm and a polydispersity index lower than 0.25. In addition, nanoparticles were characterized by negative zeta potentials (-30 mV) at all aqueous to organic ratio. Subsequently, to study the influence of the total flow rate (TFR) on the physical-chemical properties of the nanoparticles, the ratio aqueous/organic was kept constant and nanoparticles were produced at different TFR (5000 ul/min – 10000 ul/min). Hence, nanoparticles dimensions were assessed, and results showed that dimensions and zeta potential were slightly affected by the variation of the total flow rate. Moreover, in vitro assays towards NHDF showed that NLCs were biocompatible and enhance cell proliferations.

NLCs were successfully manufactured using microfluidics and characterized in terms of physical chemical properties. Moreover, they showed good biocompatibility and proliferation properties towards normal human fibroblasts. Further studies are ongoing to assess the antimicrobial properties of the nanoparticles.

This work was funded by project PNRR ON FOODS - research and innovation network on food and nutrition sustainability, safety and security working on foods - PE0000003 - F13C22001210007.

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TEF-PO-003. Chitosan/Hydrolysed Collagen-based spray-dried microparticles endowed with antimicrobial properties for the treatment of respiratory tract infections

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Pulmonary administration route has been extensively exploited for the treatment of local lung diseases such as asthma, chronic obstructive pulmonary diseases and respiratory infections and it is one of the most preferred routes for drug delivery, providing a high surface area for a quicker and effective drug absorption1,2.

The aim of the present work was the development of microparticles (Mps) via spray-drying technique. Insoluble Mps, resulting from the interaction between chitosan (Cs; medium MW, Sigma Chimica, I) and hydrolysed collagen (HC; Kelisema, I), were prepared for the treatment of respiratory tract bacterial infections.

HC aqueous solutions were prepared at different concentrations (1, 2, 4 % w/w) and mixed at 1:1 weight ratio with 2% w/w Cs solution in 0.5M acid acetic. Cs/HC0.5, Cs/HC1 and Cs/HC2 mixtures were spray-dried setting different inlet temperature values ranging from 120 to 200°C (100% aspirator, 0.6 L/h flux). Mps collected were characterized for: i) morphology and size by Scanning Electron Microscope (SEM), ii) physicochemical properties by Fourier-Transform Infrared Spectroscopy (FT-IR) and Thermal Gravimetric Analysis/Differential Scanning Calorimetry (TGA/DSC); iii) aerodynamic performance and particle size distribution by Next Generation Impactor (NGI); iv) in vitro cytotoxicity assay on adenocarcinomic human alveolar basal epithelial cells (A549); v) antibacterial properties and capability to inhibit bacterial adhesion to A549 (S. aureus BH1CC strain and P. aeruginosa PAO1 strain).

The main results pointed out that Mps were characterized by a spherical shape and a particle size between 1-10 µm depending on the inlet temperature set and the polymer concentration; in the case of Mps Cs/HC0.5 obtained at 120°C, 95% of Mps had a mean diameter lower than 5 µm, suitable for pulmonary drug delivery. FT-IR and TGA/DSC analysis confirmed the formation of an interaction product (IP) between Cs and HC, responsible for the formation of insoluble and biodegradable Mps. In vitro assay on A549 cells demonstrated the Mps optimal biocompatibility. Mps displayed antimicrobial properties against both Gram + and Gram – bacteria higher than those of the raw materials and their physical mixture. Finally, Mps were also able to inhibit bacterial adhesion to A549.

In conclusion, water insoluble Mps based on CS and HC IP have been successfully achieved by means of spray drying. They were characterized by a size functional to pulmonary administration. The IP was characterized by improved antimicrobial properties and capability to inhibit bacterial adhesion to cells.

ELE-PO-024. Nanocomposite Oxides from High Entropy MAX-phases Ti3AlxSiySnzC2 as Negative Electrode for Lithium-Ion Batteries

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In recent years, batteries have significantly influenced societal advancements, with the lithium-ion battery (LIB) standing out for its impressive electrochemical capabilities. However, the commonly negative electrode, graphite, has encountered challenges related to aging and safety, particularly under high current densities.

An alternative worth exploring for the negative electrode in LIBs is the utilization of Li-alloy systems such as Li-Sn and Li-Si (theoretical reversible capacity of Sn and Si are, respectively, 783 mAh g-1 and 4212 mAh g-1). However, the significant volume changes during cycling pose obstacles to their practical use.

To mitigate this challenge, one potential strategy is the adoption of corresponding conversion oxides like SnO2 and SiO2, which, through a conversion mechanism with lithium ions, potentially create smaller metal particles embedded within the Li2O framework. Despite the promise of this approach, managing volume fluctuations remains a critical concern.

Within this framework, a less explored route involves employing solid solutions of conversion oxides with intercalation oxides, such as TiO2, capable of providing a robust framework. Regarding this, we have introduced an innovative approach to produce nanostructured solid solutions of oxides by thermally treating MAX-phase systems and we have shown that controlled oxidation of these Sn-containing phases (Ti3Al1-xSnxC2 with x= 0.4 or 0.7) at 600°C in air yields a composite material capable of very good electrochemical performance as a negative electrode in lithium-ion batteries. Moreover, in this context, we have also studied how the final temperature of the oxidation step can modify the final product and how these related differences can affect its electrochemical properties.

With an analogous approach, here it's proposed a novel parallel study starting from Si-based MAX-phases, both Ti3Al1-xSixC2 and Ti3AlxSiySnzC2 (with x+y+z=1). First, their physical-chemical properties were investigated; then their electrochemical performances were evaluated as possible negative electrodes for LIBs.

ORG-PO-152. Synthesis of lanthanide chelates for Time Resolved-Foster Resonance Energy Transfer (TR-FRET)

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Time Resolved-Foster Resonance Energy Transfer (TR-FRET) is an analytical technique that combines Time-Resolved Fluorescence (TRF) and Foster Resonance Energy Transfer (FRET). These two spectrofluorimetry use fluorophores that, when exposed to a light source set at a specific wavelength, emit fluorescence at a higher wavelength with less energy, obtaining a fluorescence spectrum. Classical fluorophores (like fluorescein) have a very short emission time (nanosecond scale) 1. Since proteins also exhibit fluorescence, their emission produces a high background that interferes with the emission of the fluorophore. Unlike classical fluorophores, stable lanthanide chelates (typically europium and terbium) are used, which have large stokeshifts and longer emission times (microseconds to milliseconds). All this makes it possible, after excitation of the fluorophore, to wait for the background fluorescence switched off before making the measurement, thus improving the signal-to-noise ratio. The lanthanide probes, in addition to the chelanting site, has two important sites: the "antennae" site and the bioconjugation site. The antenna is characterised by a system conjugated to the chelating portion of the compound which, depending on its structure, allows light to be emitted at specific wavelength 2. For the bioconjugation component, there are several approaches depending on the type of macromolecule (usually protein) to be bound 3. In TR-FRET there are the fluorophore donor and the fluorophore acceptor 4. The aim of the work is to synthesise lanthanide chelates by modifying the antenna and the bioconjugation part, while keeping the size of the chelating site unchanged.

TEC-PO-001. Dry Reforming of Methane of recycled platinum on CeO2

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Due to the continuous emissions of greenhouse gases (GHG) in the atmosphere because of anthropogenic activities, it is very important to reduce their concentration using several approaches. One of the best ways is to use the dry reforming of methane (DRM) reaction that consumes GHG to obtain syngas, a mixture of H2 and CO. DRM is promoted using catalysts, often based on Pt or other critical raw materials (CRMs) for EU. To face CRM issue, we fabricated Pt/CeO2 catalysts with 2%wt of Pt by direct impregnation of the CeO2 support with the leachate HCl based solution of Spent Automotive Diesel Oxidation Catalysts submitted to a mild hydrometallurgical recycling process, without purification of the leachate solution, which contains H2PtCl6 complexes as Pt precursors. A synthetic leachate Pt/CeO2 solution was also prepared for comparison. CeO2 has been chosen because of its widely accepted positive influence on the conversion of the products. The results obtained from the catalytic tests were very encouraging, as shown in Fig.1, where the conversions of CO2 and CH4 are reported for the Pt/CeO2 catalysts obtained from commercial Pt precursors. The ratio of H2/CO was 0,9 at T=850 °C. Lower conversion efficiency was found in case of the real leachate solution. Catalysts were characterised by TPR, TGA, XRF, XRD, SEM and Raman Spectroscopy.

ORG-PO-153. Synthesis and electro/photochemical study of new pyridinium salts

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Bipyridinium chromophores are extensively studied for their interesting photochemical and electrochemical properties.1 They find application as components for molecular batteries, electrochromic displays, redox-mediators, redox-sensors, and so on. For this reason, there is a great interest in designing new bipyridinium derivatives that behave not only as electroactive moieties but also as fluorophores.

In this contribution, we report on the synthesis and the photophysical/electrochemical characterization of a new series of 1-aryl-(4,4'-bipyridin)-1-ium salts bearing several different alkyl chains on the para position of the phenyl ring, as shown in Figure 1.

Figure 1

The new compounds 1-4 have been prepared by the ANRORC reaction 2 of 1-(2,4-dinitrophenyl)-(4,4'-bipyridin)-1-ium chloride with the corresponding 4-alkylanilines, followed by counterion exchange with LiNTf2. The redox behavior of 1-4 has been examined by cyclic voltammetry (CV), while the photoluminescence properties were studied by UV/vis spectroscopy.

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INO-PO-032. Chiral gold nanoparticles for optical sensing applications

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Gold nanoparticles (AuNPs) find wide application in advances technologies, such as optoelectronics, sensing, imaging and therapy [1,2]. This is due to their synthetic versatility, engineering possibilities and particular chemical-physical properties, such as the Localised Surface Plasmon Resonance (LSPR) [3]. Among all challenges regarding the fabrication of AuNPs, the simple production of chiral nanoparticles remains open. Studying the synthesis and functionalization of chiral inorganic surfaces aids in understanding the dynamics at the organic-inorganic interface and will play a crucial role in their translation for biomedical applications. Although a few studies have described the transfer of molecular chirality into micrometre-sized helical ceramic crystals, this technique has yet to be implemented for metal nanoparticles with sizes of tens or hundreds of nanometres [4]. In this framework, chiral AuNPs were synthesised using wet method in tree steps, using Cetyltrimethylammonium bromide (CTAB) and L-cysteine (Lcys) as capping agents. The obtained chiral AuNPs showed typical LSPR at λmax = 580 nm. Spectroscopic characterisations by FT-IR, X-ray photoelectron spectroscopies were carried out, verifying the gold surface functionalization. Moreover, Dynamic Lighth Scattering and Z potential studies confirmed the nanosize and colloidal stability in water solution, preliminary optical investigations the chirality. These preliminary studies encourage the use of this system which shows high potential in the field of optical chiral sensors.

Acknowledgments. The Grant of Excellence Departments 2023–2027, MIUR (ARTICOLO 1, COMMI 314–337 LEGGE 232/2016), and Rome Technopole Project (CUP:F83B22000040006) are gratefully acknowledged by authors of Roma Tre University.

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INO-PO-064. Subcritical Hydrothermal Synthesis of Low- and High-Entropy Spinel Oxides for Oxygen Evolution Reaction

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Spinel oxides based on earth-abundant transition metals, such as Cr, Mn, Fe, Ni, Cu, and Zn, have emerged as promising alternatives to 'platinum group metals'-based catalysts in fuel cells and electrolysers, particularly for their application in the oxygen evolution reaction (OER).[1]

A novel and promising approach for developing high performance OER-catalysts involves high-entropy spinel oxides (HESO). These materials, characterised by a single phase spinel crystal structure with multiple metal cations, generally exhibit superior catalytic performance and increased stability compared to conventional binary spinel oxides.[2]

This project aims at optimising a low temperature, sustainable, water-based synthetic route for spinel oxides through the subcritical hydrothermal treatment of an oxalate suspension of the metal cations present in the final structure.[3] In particular, low entropy spinel oxides with the formula NiFe2-XMXO4, (X = 0.25, 0.50, 1.00 and M = Mn or Cr) were synthesised to investigate the influence of Fe substitution on the structural and catalytic properties of the materials. Furthermore, four HESOs were synthesised: (Cr0.2Mn0.2Fe0.2Co0.2Ni0.2)3O4,

(Cr0.2Mn0.2Fe0.2Ni0.2Cu0.2)3O4, (Cr0.2Mn0.2Fe0.2Ni0.2Zn0.2)3O4, (Mn0.2Fe0.2Ni0.2Cu0.2Zn0.2)3O4. Although some samples exhibited a pure crystalline spinel structure immediately after the hydrothermal treatment (150-200°C, 24 h), as confirmed by PXRD analyses, others required a subsequent annealing step (300-500°C) to achieve crystalline purity. Stoichiometries were determined through ICP-AES analyses, demonstrating good agreement with expected values and confirming the successful incorporation of the cations within the crystal lattice.

Currently, electrochemical tests (linear sweep voltammetry measurements) are ongoing on the synthesised materials to assess their electrochemical behaviour. These results will be pivotal in identifying the most promising stoichiometries for future evaluations, where the materials will be tested as electrocatalysts for OER in water electrolysers.

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ANA-PO-147. Synthesis and optimization of polynorepinephrine nanoparticles for enhanced bioanalytical applications and immunotherapy

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Monoclonal antibodies (mAbs) are currently almost the only choice in the field of molecular recognition applied for the development of bioanalytical assays, therapies, or diagnostics. Due to their high production costs and low stability, new systems need to be developed to replace them. In this context, molecularly imprinted polymers offer an effective alternative. With the ability to create selective recognition sites in synthetic polymers, MIPs offer the specificity and selectivity of naturally occurring receptors with the added benefits of ease and speed of preparation, low cost, and good stability under various environmental conditions. Among the potential polymers, polycatecholamines (pCAs) have gained prominence in the scientific literature. Inspired by the adhesive system of mussels [1], polymers derived from endogenous neurotransmitters such as dopamine (DA) and norepinephrine (NE) can be used for the synthesis of nanofilms or nanoparticles with remarkable adhesive properties on virtually any surface and are easily molecularly imprintable to obtain mimetic receptors of a new generation, namely Molecularly Imprinted Bio-Polymers (MIBPs) [2]. In particular, the synthesis of polynorepinephrine nanoparticles (PNE-NPs), achieved through alkali-induced autoxidation of NE, has been investigated and tuned by a multivariate approach of the synthesis conditions to optimize their use for various applications, from clinical diagnostics to therapy.

The approach has been performed first on non-imprinted PNE NPs, and then on MIBPs. Noncovalent molecular imprinting has been exploited to create molecular recognition cavities within the polymer matrix by incorporating the protein template (or a portion of) after the initial nucleation step of PNE-NPs. Several analytical techniques can be coupled with these PNE-NPs: benchtop sensors based on Surface Plasmon Resonance (SPR), Quartz Crystal Microbalance (QCM), or Fiber-Optic Bio-Layer Interferometry (BLI). MIBPs also hold promise as an alternative to mAbs, emulating the natural process of antibody-antigen recognition in vivo, with potential applications in the treatment of diseases such as cancer, autoimmune disorders, or infections. [3]

Acknowledgments

Project funded under the National Recovery and Resilience Plan (NRRP), European Union - NextGenerationEU, as part of the Tuscany Health Ecosystem THE (ECS_00000017) spoke 4 - Nanotechnologies for diagnosis and therapy. Authors acknowledge MUR-Dipartimenti di Eccellenza 2018-2022 and 2023–2027 (DICUS 2.0) to the Department of Chemistry "Ugo Schiff", University of Florence.

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ALI-PO-020. Chemical characterization of unconventional seed oil with a focus on lipid components and volatile profile

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The Food and Agriculture Organisation of the United Nations has estimated that in order to cope with the continuous increase in world population, agricultural production should be increased by a 60% factor. For this reason, search for alternative food sources that can replace or complement existing ones are becoming widespread. In this context, seed oils are gaining an important role in food and nutraceutical market, as they are widely used both for direct consumption and as nutraceuticals for the high content in polyunsaturated fatty acids (PUFA). The present research focused on the investigation of unconventional eight cold pressed seed oils: blackcurrant, carrot, plum, pomegranate, radish, raspberry, rosehip, strawberry. The aim of the study was to demonstrate their beneficial properties related to the FA composition and/or volatile profile. Specifically, FAs were identified and quantified as FA methyl esters, obtained via a cold derivatization procedure1, by using gas chromatography (GC) coupled with mass spectrometry (MS) and flame ionization detector (FID), respectively. The volatile fraction was elucidated by means of headspace solid-phase-microextraction (HS-SPME) coupled with GC-MS2. All the oils showed a content of UFAs, mainly consisting of oleic, linoleic and a-linolenic acid in the range 80-90%, potentially contributing to the prevention of cardiovascular diseases. Isomers of linolenic acid were also detected in significant amounts, such as a-linolenic and punicic acid in blackcurrant and pomegranate seed oils, respectively. Particularly, punicic acid is a conjugated isomers of linolenic acid, with possible antioxidant, anti-cancer, anti-obesity and anti-inflammatory activities.

Regarding the volatile compounds, aldehydes were the dominant molecules identified in plum, pomegranate and strawberry seed oils, while terpenes such as a-pinene, d-3-carene and carotol were the main volatiles in blackcurrant, carrot and rosehip seed oils.

The results confirmed that these oils could be introduced into the food market for direct consumption or as nutraceutical products for the prevention of specific health conditions.

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ELE-PO-009. Palladium electrodeposition: a systematic study of α-PdHx and β-PdHx formation conditions

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The electrodeposition of palladium for decorative applications has become widespread in the last decades as a substitution for nickel and it is now used both as a final coating and as an intermediate layer to improve corrosion resistance, increase the adhesion of subsequent precious deposits, and act as a diffusion barrier layer. However, palladium and palladium alloy deposits easily undergo micro-cracking due to the evolution of large quantities of hydrogen during the metal reduction and its consequent co-deposition. Indeed, palladium is able to dissolve hydrogen forming two bulk hydride phases known as α-PdHx (x ~0.02) and β-PdHx (~0.67). Microfractures result from hydrogen desorption associated with the lattice contraction that occurs in the transition from the β-PdHx to the thermodynamically stable α-PdHx phase. On the other hand, high-hydrogen palladium hydrides are of great interest for different industrial sectors, especially in the energy field for hydrogen storage1. Identifying the working conditions necessary to ensure the selective formation of the two phases would therefore be of crucial importance for both the electroplating industry and the energy field. We focused on the two parameters that we think have the greatest influence in incorporating and retaining hydrogen during electrodeposition, testing five different current densities (from 0.25 to 4 A/dm2) and three thicknesses (0.25, 0.5 and 1 µm). The experiments were carried out in a pure Pd galvanic bath (Fe < 1%) at a temperature of 50 °C and pH ranging 7 and 7.3. Brass plates were used as substrates, and subsequent analyses of the samples were performed using the X-ray diffractometry (XRD) technique that allows the two phases to be easily identified thanks to the diagnostic peaks associated with α-PdHx and β-PdHx at 40.1° and 38.34°, respectively2. Measurements were performed using a powder diffractometer equipped with a Euler cell and scanning from 35° to 45°. To roughly estimate the kinetics of the desorption process, the XRD analysis were performed 10 minutes, 1.5, 3, and 24 hours after the end of the deposition process. Finally, we identified a heat treatment that can be used by the electroplating industry to facilitate the desorption of hydrogen and quickly obtain the α-phase. The authors acknowledge MUR and EU-FSE for financial support of the PhD fellowship PON Research and Innovation 2014-2020 (D.M. 1061/2021) XXXVII Cycle in Chemical Sciences.

ABC-PO-014. New materials with low environmental impact for the protection of Cultural Heritage

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In recent years it has become increasingly important to identify new materials to be used for the protection of Cultural Heritage in place of long-chain perfluoroalkyl compounds (PFAS), highly efficient products but with a high environmental impact, and therefore currently under restriction in EU. In the last decade, new materials have been designed for the protection of degraded, non-varnishable wooden artifacts, but also applicable in other cases, for instance stone based items, where the maintenance of the aesthetic characteristics of the treated object is essential.

Recently, interesting results have been obtained on wood using various fluorinated products, prepared by reacting different oligoamides and a diethylenetriamine with a C6 fluorinated chain epoxide. All these compounds have low molecular weights and therefore non-film forming properties, the presence of polar groups makes them similar to polar materials such as wood while the fluorinated chain gives hydrophobicity and stability to light, but above all they are soluble or easily mixable in eco-sustainable solvents such as 2-propanol. In view of a further probable extension of the restriction to the use of C6 fluorinated chemicals, other products with a shorter fluorinated chain (C4) have been also synthetized.

Systematic tests on wood samples have been done to evaluate and compare these products using a diagnostic protocol developed for this specific application field. The optimal application method has been evaluated for each product. To verify the actual variation in surface wettability with no or minimal alterations to the surface color, contact angle and colorimetric measurements have been carried out. Furthermore, the second part of the diagnostic protocol has been developed to test the resistance of these protective materials to natural and artificial photoinduced aging, as well as the resistance to mild abrasion, both on fresh and aged samples, to simulate the effects of manipulating the artefacts. Tests on stone samples have confirmed the potential of these new materials as protective agents.

Best results both in terms of protective efficacy and stability to various types of stress were obtained with the C6 derivatives, demonstrating the criticality in the use of products with a too low fluorine content.

Fluorine-free derivatives are being also studied as alternative protective agents for Cultural Heritage.

TEF-PO-018. Design of microneedles for dermal delivery of cationic liposomes

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Skin delivery of drugs has been investigated for decades to achieve local or systemic effects. However, the strong barrier given by the tightly packed skin corneocytes prevents the passive diffusion of most compounds into the deepest strata. Among the approaches studied to breach the skin barrier, using microneedles (MNs) or very fluid and deformable liposomes seems to be the most effective; therefore, several studies recently proposed a combination of the two methods1. However, most of the research tracked the skin permeation of the drugs delivered with this approach, whereas the effect of MNs on the skin penetration of liposomes per se has been scantly investigated.

In this work we designed microneedle arrays (MNA) with different geometrical properties to verify how the MNA pre-treatment on the skin could affect the diffusion of cationic liposomes, either conventional rigid liposomes (RL) or fluid liposomes (FL). Squared arrays of 6.4 mm2 composed of 7x7 pyramidal MNs were produced with a 3D printer at different base diameters (150 or 200 µm) and needle heights (600 or 1000 µm). After UV curing (60°C, λ=405 nm), MNA were characterized for their morphology, mechanical strength (tensile testing machine) and skin depth (Parafilm model2). RL and FL liposomes were prepared by thin film hydration method. RL composition was DPPC/DOTAP/Cholesterol/Rho-PE 45/45/9/1 mol/mol/mol/mol whereas FL bilayers were composed of DOPE/DOTAP/Rho-PE 24/75/1 mol/mol/mol and Tween 80 was added as edge activator in 85:15 w/w ratio with respect to the lipid component. The particle size distribution and ζ potential were measured by dynamic light scattering (DLS). Low density MNA of 200x1000 µm showed the best mechanical properties, thus were selected to evaluate the diffusion of RL and FL formulations into full-thickness porcine ear skin. Skin samples were poked with the MNA (30 N, 60 s), then treated with 50 µL liposomes dispersion on Franz

diffusion cells under non-occlusive conditions for 15 min before tape-stripping, PFA fixation, cryosectioning, and observation under a fluorescence microscope.

All the MNA reached at least 2 Parafilm layers; MNA 200 µm base and 1000 µm height reached 5 parafilm layers (approx. 600 µm depth). A reduction in base diameter increased the fragility of 1.0 mm height MN and reduced the reached skin depth. Liposomes showed homogeneous nanometric size (121 ± 3 nm RL; 112 ± 2 nm FL) and positive ζ potential (49 ± 10 mV RL, 28 ± 4 mV FL). Fluorescence imaging indicated that after 15 min FL could efficiently reach the epidermis/dermis interface (EDI) either with or without MN skin pretreatment, while the 200x1000 MN improved the diffusion of RL to the EDI (ImageJ elaboration, $p<0.05$, Two-way ANOVA). Thus, MNs treatment may be required to enhance RL diffusion into the skin, albeit less impacting on FL diffusion.

TEC-PO-053. Toward green development of polymeric and hybrid nanoparticles by membrane processes

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Although technological progress has brought undeniable benefits, it has generated some issues related to the excessive exploitation of planet's resources and to the resulting effects on environment and human health. In reply to this concern, there has been a growing focus on a new concept of industrial advancement which could integrate economic growth with social and environmental responsibility, converting old technologies into new eco-friendly processes. Membrane technologies play a dominant role in offering a valid solution to the aforementioned problems and they are currently proposed as greener alternative productive processes in different field. Membrane nanoprecipitation (MN) is emerging as sustainably manufacturing method to formulate different polymeric particulate materials. The process is based on the precipitation of the polymer as a form of nanoparticles (NPs) due to the solvent- non solvent mixing at the membrane pores level; these products could find application in various sectors. MN is recognized as environmentally friendly method because allows to operate using few steps, minimizing energy consumption and waste output.1 MN has been extensively studied to produce hydrophobic NPs, while limited literature data have been reported for hydrophilic ones. To fully explore the potentiality of the technology in this field, two case-studies will be presented in this study focus on the use of MN for the development of 1) chitosan NPs for the encapsulation of organic bioactive molecules and 2) hybrid materials in which inorganic components are enveloped within the polymeric shell. Chitosan has been selected as biopolymer material for its relevant role among the hydrogel carriers for drug delivery and because its positive charge allows electrostatic interactions with not only organic, but also inorganic compounds with the purpose of creating hybrid structures. A methodical investigation on chitosan NPs preparation by MN will be discussed examining the results in terms of uniform distribution, particle size and productivity, encapsulating a protein (BSA) as model. The MN will be also studied for the production of hybrid particles using zeolites as anionic models. The effect of the type of reagents and their concentration will be analyzed. The sustainability impactful of the process will be evaluated by calculating the energy consumption, the environmental factor (E-factor) for the two cases studies presented and the results will be compared with conventional methods used in the field.

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ORG-PO-154. Organoselenium and organoarsenic molecules as promising opportunities for tomorrow's anticancer drugs

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Carbon, hydrogen, oxygen, nitrogen, sulfur, and occasionally halogens. These are the fundamental elements that Nature and synthetic chemists combine to craft their bioactive compounds. In the last years, I had the opportunity to broaden that with the study of the chemistry and the bioactive properties of organic compounds containing other exotic element: selenium and arsenic.

FIS-PO-031. Cu/TiO2 based catalysts for electrocatalytic CO2 reduction

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Catalyst design to modify the electronic and geometric properties of copper-based electrocatalysts for carbon dioxide reduction reaction (CO2RR) is a promising strategy to improve the selectivity towards one peculiar reaction product, such as methane, ethylene, or ethanol.1

In this work, two series of Cu-TiO2 samples have been prepared in order to modify both the active surface area and the electronic structure of the Cu material. The study was carefully extended by varying the nominal weight ratio of copper (1%, 5%, 10%, 15%, 25%) deposited on a commercial TiO2 P25 powder, employed as the Cu support, by means of two different synthetic methods: i) grafting (G), and ii) freeze drying (FD). Their catalytic activity has been assessed by loading the catalysts onto gas diffusion electrodes (GDEs) and using a flow-cell device.

The most efficient catalyst resulted to be the FD-prepared one containing 15 wt.% of copper, labeled as Cu/P25_15_FD and exhibiting significant selectivity for the production of ethylene. At an industrially relevant current density of 400 mA·cm-2, the FD series suppressed hydrogen evolution reaction (HER) compared to the G series and CO2RR products (CH4, C2H4, CO) were favored by increasing the Cu loading. The high selectivity for CO2RR of the FD series is in line with the fact that the rapid sublimation of the solvent allows the growth of small nanoclusters, as further confirmed by High Resolution-TEM images. Theoretical calculations in the literature support that a proper Cu atomic dispersion provides an abundance of catalytic sites, which is extremely advantageous for promoting CO2RR.2

Further optimization of the most performing Cu/P25_15%_FD catalyst was achieved by systematically investigating the effect of additives, i.e. Nafion, added to the ink formulation of the spray-coated GDE and acting as an essential binding agent, simultaneously facilitating the CO2 diffusion through the catalyst.3 We found a clear correlation between the Nafion content and the FE toward CO2RR, resulting in a bell-shaped trend peaking for the catalyst with a 4.1 mg cm-2 Nafion content. In this way we were thus able to further improve the production of ethylene, reaching a ca. 50% Faradaic efficiency.

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INO-PO-066. Copper indium sulfide quantum dots enabling quantitative visible light photoisomerisation of (E)-azobenzene dyes

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Azobenzene derivatives are one of the most studied photochromic systems, garnering significant attention in different fields such as photopharmacology and photoresponsive materials1,2. However, azobenzenes rely on UV light to generate the metastable (Z) isomer, limiting their use in the previously mentioned fields. The rare cases showing large ratios of the (Z) isomer under visible light irradiation need either the use of a photosensitizer or structural modifications of the azobenzene compound3. Our work has focused on investigating various hybrid architectures involving azobenzene and quantum dots. We design an azobenzene with a dihydrolipoic acid chain that is grafted onto the surface of CuInS2 quantum dots (CIS-QDs) (Figure 1). Interestingly, all these hybrid systems show quantitative photoisomerization to the (Z) isomer under visible light irradiation (e.g., 533 nm), with no observable back photoisomerization. We demonstrated that this peculiar effect was also noticed for physical mixtures of CIS-QDs and azobenzene dyes, revealing that this phenomenon can be ascribed to a direct interaction of the (Z) isomer N=N function with CIS-QDs. We showed that this interaction drastically decreases the intensity of the absorption bands of the (Z) isomer in the visible spectrum, shifting the photostationary state to the (Z) isomer, preventing its back photoisomerisation.

Acknowledgement:

This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 101006839 (CONDOR).

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ORG-PO-155. Water-processable polymer nanoparticles as alternative organic photosensitizers for cofactor regeneration under visible light

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The increasing levels of carbon dioxide (CO2) in the atmosphere and the growing global need for energy impose the development of renewable methods to convert CO2 into valuable chemicals and fuels, for example by exploiting the coenzyme-dependent activity of formic acid dehydrogenase (FDH) to catalyze the reduction of CO2 to formate.1 Nevertheless, the high cost of the coenzymes, as NADH and MV•+, have so far limited the application of this technology. In this context, effective coenzymes regeneration methods using low-cost energy sources would provide a suitable pathway for CO2 reduction with the improvement of artificial photosynthesis systems.2

Here we report the application of a semiconducting polymer, poly[2,2''''-bis[[(2-butyloctyl)oxy]carbonyl][2,2':5',2'':5'',2'''-quaterthiophene]-5,5'''-diyl] (PDCBT) for the fabrication of water-processable nanoparticles (WPNPs) through the miniemulsion approach (Figure 1). Then, the polymer-based WPNPs were employed as photosensitizer in a visible-light-driven MV•+ regeneration system consisting of TEOA as electron donor and MV2+ as electron acceptors. Enzyme-catalyzed redox reactions were then used to validate the production of the regenerated cofactor (Figure 1).

Our results show a successful example of polymer WPNPs used for the selective coenzyme regeneration in an artificial photosynthesis system, which is easy to build and usable under mild conditions for the easy regeneration of different coenzymes. These results could pave the way for other photoredox reaction systems that enable the selective and sustainable production of chemicals and fuels through the use of solar light.

FAR-PO-045. Reliable Evaluation of Selective hIDO1 Inhibitors in Cellular Models through LC-MS/MS Targeted Metabolomics of Kynurenine Pathway Intermediates

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L-Tryptophan, an essential amino acid, is metabolized via the kynurenine pathway (KP) with hIDO1 as a key enzyme. In cancer management, targeting the KP with hIDO1 inhibitors shows promise.1 Bioanalytical chemistry, particularly quantitative liquid chromatography with tandem mass spectrometry (qLC-MS/MS), is vital for understanding the KP and exploring therapeutics. Profiling kynurenines is challenging due to their diverse properties, but qLC-MS/MS offers reliable and selective analysis.2 Plasma, serum, and urine are commonly used to measure hIDO1 activity by evaluating the kynurenine/tryptophan ratio.3 While cell culture supernatants provide a physiological environment for in vitro cancer research, there's a scarcity of LC-MS methods for quantifying kynurenines in these media, necessitating further development. This abstract introduces a validated LC-MS/MS method for quantifying multiple kynurenines in cell culture media (Figure 1). The method, validated per EMA, ICH, and FDA guidelines, was applied to study selective hIDO1 inhibition effects on the kynurenine pathway in melanoma, breast cancer, and glioblastoma cell lines, as well as to

determine the in vitro efficacy of hIDO1 inhibitors (Figure 2). The proposed LC-MS/MS method is reliable, robust, and versatile, suitable for preclinical drug research and in vitro assays.

FIS-PO-055. Interfacing graphene with photochromic molecules

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Photochromic molecules are molecular switches that can be toggled between two or more states by one of the most abundant energy sources found in nature, i.e. light. Their structural design enables to programme their chemical and physical properties, such as their capability of absorbing visible light, the time-responsiveness to the optical stimuli, the stability of the various states, etc. The optically-modulated changes in their structural, mechanical and electrical properties has been exploited for the fabrication of multi-responsive (nano)devices.

In this work, we report on the self-assembly of a photochromic diarylethene (DAE) molecules equipped with two alkyl sidechains. We demonstrate that the exposure of this molecule to blue or green light makes it possible to switch it between two thermodynamically stable isomers. The efficient photoresponsive nature of this DAE was revealed in studies performed solution and in the solid state. The structural, electronic and optical properties of ultrathin DAE films onto graphene have been investigated, and exploited for the fabrication of light-responsive electronic devices based on this hybrid assemblies.

ABC-PO-006. Photochemical fate of benzene and phenol as polystyrene degradation products, in a surface water – atmosphere two-phase compartment

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Micro- and nanoplastic particles are a considerable emerging problem in the environment, because their small size facilitates interaction with living organisms with harmful effects. Exposure of water-suspended plastics to sunlight may cause fragmentation, which is a source of microplastics and nanoplastics, but it may also induce formation of dissolved compounds [1]. The latter phenomenon is interesting because it could end up in eventual removal of plastic particles from environmental waters, thus its details deserve investigation. We have previously shown that exposure of polystyrene aqueous suspensions to sunlight produces a range of aromatic and aliphatic compounds that could derive either from the polymer skeleton, or from additives and plasticisers [2]. This presentation will introduce an approach to predict the fate of two toxic/carcinogenic photodegradation products of polystyrene, i.e., benzene and phenol, using a two-compartment model that considers both surface waters and the atmosphere.

Most benzene produced by irradiation of aqueous polystyrene would end up in the gas phase, where it would react with the hydroxyl radical (•OH); phenol is the main product of the reaction between benzene and •OH in both water and air. In water, phenol would mainly react with the triplet states of chromophoric dissolved organic matter (3CDOM*) [3]. In the gas phase, the main removal pathways of phenol would be reaction with •OH in daytime and with the nitrate radical (•NO3) during the night [4].

The reaction between phenol and •NO3 yields nitrophenols, which can undergo partitioning to atmospheric waters (e.g., cloud water), whence they could reach surface-water environments by precipitation (especially, 4-nitrophenol and 2,4-dinitrophenol). This scenario was modelled by considering a gas-water partitioning equilibrium, as described by the Henry's law constants (KH) and by the volume fraction of liquid water in the atmosphere (fw = 5x10-7) [4]. We could thus model the time evolution of aqueous phenol from benzene + •OH(w), followed by phenol degradation with 3CDOM*(w), as well as phenol formation in the gas phase followed by liquid-water partitioning and precipitation of its transformation products.

ORG-PO-156. Calixarene - based luminescent mechanophores for mechanoresponsive polymers

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Mechanoresponsive polymers are materials capable of transducing a macroscopic mechanical force into molecular events that, in turn, trigger a response of the macroscopic material. The incorporation of mechanoresponsive dyes, also known as mechanophores, into the polymer matrix results in materials that change their optical properties upon mechanical stress. Various strategies have been explored, from the cleavage of weak covalent bonds, as in the case of spyropyranes or triarylmethanes, to the formation/disruption of pi-pi interactions between fluorescent dyes. Good reversible mechano-responses have been obtained by the use of supramolecular structures such as cyclophanes or rotaxanes, which guarantee a proper preorganization of the dyes. Following this approach, we decided to exploit the peculiar conformational properties of the calix[4]arene scaffold to develop new supramolecular mechanophores. It is well known that calix[4]arenes, when functionalized at the lower rim with alkyl chains, are involved in a rapid interconversion between two equally stable pinched cone conformations. On the contrary, in presence of suitable functional groups at the upper rim, the equilibrium can be strongly shifted towards only one of the two pinched cone conformations, and upon appropriate stimuli, the equilibrium can be reversed.

We synthesized pyrene-functionalized calixarenes, which, in the stress-free state, are pinched in the closed cone conformation allowing intramolecular dimerization of the dyes. We covalently incorporated these calixarenes into polymer chains so that the transduction of an applied mechanical force to the calixarene could trigger the opening of the pinched cone conformation, thus resulting in the monomeric form of pyrene.

ABC-PO-041. Technological and compositional characterisation of Chinese Tang-style pottery

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The so-called mingqi figurines are Chinese funerary glazed or painted pottery statuettes. They became highly popular during the Tang dynasty (618-907 AD), a golden age of Chinese art, depicting peculiar characters such as coloured horses, foreign servants, and Bactrian camels 1. Then, from around the 1910s, mingqi figurines began to attract Western collectors, and modern reproductions began to proliferate in the art market 2,3. However, little provenance information is available, and authenticity is often uncertain. In addition, Tang-style finds have never been subject to systematic investigation.

As part of the PhD research project in Technologies for Cultural Heritage, 30 figurines from the Museo delle Civiltà in Rome, Museo di Arte Orientale in Venice, and Museo delle Culture in Milan have been analysed using non- and micro-invasive methods. In this study, the focus was set on the first chemical examination of their ceramic bodies. The comprehensive chemical characterisation of 30 pottery fragments from the inner cavities of the statues was carried out. More specifically, the samples were examined by colourimetry (Munsell colour system), μ-Raman/μ-FTIR spectroscopies and X-ray powder diffraction (XRPD) to assess the mineralogical patterns, Backscattered (BS) Scanning Electron Microscopy (SEM) to characterise the shape of the inclusions, SEM coupled with Energy Dispersive X-ray Spectrometry (SEM-EDS) to verify possible classifications based on the compositional analysis.

The employed multi-technique approach provided compositional, morphological, and structural information, with a possible comparison and cross-checking of the results. The early results allowed us to check for a first classification of modern Tang-style production from the major Chinese collections in Italy, and a comparison of the technological features with those of authentic Tang figurines from Chinese archaeological sites. The systematic investigation using the illustrated methodology might offer valuable information for further authentication and provenance studies of all the Tang-style artefacts stored in Western contexts.

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ANA-PO-018. Design and development of a wearable sensing device for monitoring Dopamine in sweat

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Dopamine is a neurotransmitter belonging to the catecholamine family that plays a crucial role in neurotransmission processes, in particular in motor coordination, motivation behavior and regulation of cognitive processes. Impaired dopamine levels in brain lead to the onset of symptoms related to the onset of various and heterogeneous neurological disorders, such as Parkinson and Alzheimer diseases, increasing motorial impairments such as bradykinesia or tremor. Nowadays, the only way to bring relief to patients suffering of Neurological Disorders is the pharmacological administration of drugs with the aim of restoring the adequate levels of neurotransmitter in brain's pathways. Regrettably, the fine-tuning of such pharmacological strategies is strictly dependent on the levels of neurotransmitters in cerebrospinal or blood fluids, therefore a painful and continuous monitoring is strictly required. Taking into account these considerations, several peripheral biofluids, such as saliva, urine and sweat, promote the development of wearable sensitive devices capable to detect neurotransmitters in a painless, continuous, and non-invasive manner.

For this purpose, electrochemical-based sensors offer amazing potential for the development of point-of-care-analysis devices. Indeed, due to the miniaturization, sensor can be integrated into comfortable ordinary tools such bracelets or smartwatches.

This study introduces a new analytical wearable platform for screening and monitoring dopamine in peripheral biofluids, with the aim of develop a sensitive and painless wearable device. Specifically, graphite screen-printed working electrodes were enhanced with a biocompatible polymeric conductive layer. To this end, different amino acids were studied as biocompatible and biodegradable functional monomers. Then, the polymeric layer was further modified by the enzyme covalent immobilization and by electrodepositing gold nanoparticles for the direct detection of electroactive. The modified platforms were characterized using cyclic voltammetry and electrochemical impedance spectroscopy. The analytical performances were evaluated in both standard solutions and in artificial biological fluids.

Acknowledgements

This work was supported by the European Union by the NextGenerationEu project ECS00000017 'Ecosistema dell'Innovatione' Tuscany Health Ecosystem (THE, PNRR, Spoke 3: Nanotechnologies for diagnosis and therapy).

FAR-PO-070. Predicting UGT-mediated metabolism by ligand and structure-based models

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The in silico prediction of drug metabolism is gaining a growing interest due to the possibility to process large datasets allowing the stability and safety of new drug candidates to be evaluated in the early stages of drug discovery process. To date, in silico models for metabolism prediction mainly exploits the physicochemical and stereo-electronic properties of the training molecules in order to predict the occurrence of a given metabolic reaction and/or the reactive site involved in the predicted biotransformation.1 However, recent reports suggested that structure-based methods, such as docking simulations, can be conveniently integrated with ligand-based (LB) approaches for drug metabolism prediction purpose, with the advantages to predict if a given molecule can fit the enzyme active site and which moiety approaches the catalytic residues.2 On this ground, this work aimed at developing ML predictive models for UDP-glucuronosyltransferase (UGT)-mediated metabolism by combining both ligand- and structure-based (SB) approaches. UGT enzymes catalyse a phase II metabolism reaction consisting of the glucuronidation of nucleophilic sites of the substrate. Specifically, our study was focused on UGT2B7 and UGT2B15 isoforms as they are widely implicated in the clearance of many drugs as well as in clinically relevant drug-drug and drug-xenobiotics interactions. First, a computational study, including docking and molecular dynamics (MD) simulations, was performed to investigate the binding order of cofactor and substrate to UGT2B7 and UGT2B15, exploiting their three-dimensional models available on AlphaFold repository. The analysis of MD trajectories allowed an appropriate conformation of both UGT isoforms to be identified for the development of ML classification models. For this purpose, a set of UGT substrates and non-substrates was collected from the manually curated MetaQSAR database3 and split into training and test sets. SB models were trained on a set of scoring functions computed by docking and rescoring calculations and protein-ligand fingerprints. Instead, the LB classifiers were generated using a set of physicochemical and constitutional descriptors. All models were internally validated by ten-fold cross validation and evaluated on the test set. In addition, a further validation

was carried out on an external test set containing molecules retrieved from GOSTAR database. Overall, the generated models displayed a good ability to correctly identify UGT substrates, with the SB classifiers outperforming the LB models when evaluated on the GOSTAR external dataset. Moreover, inspection of docking poses provided useful hints about the structural motifs that are most likely to undergo glucuronidation.

ANA-PO-062. A potentiometric pH sensor for monitoring chronic wounds

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Chronic wounds, defined as those persisting beyond three months without healing, pose a significant challenge to the healthcare system, exerting a substantial toll on patients' quality of life and necessitating considerable treatment resources. Parameters such as pH and temperature serve as valuable indicators of wound status and its progression towards healing, as these parameters usually decrease as the wound progresses towards healing 1. In this work, a potentiometric pH sensor with integrated thermistors was devised to monitor both pH and temperature of a wound (Figure 1). The sensor fabrication involved electropolymerization of polyaniline onto a carbon screen printed electrode, which served as the pH-sensitive material. Furthermore, modification of the Ag/AgCl reference electrode with a poly-acrylic acid hydrogel was implemented to enhance both its electrical stability and adhesion to the skin. The sensor exhibited a linear response across the pH range of 3 to 10 in both liquid solutions and on pH-controlled semi-solid agar plates, effectively encompassing the potential pH variations in real wound scenarios. Finally, this sensor was able to measure pH of a real sample of wound exudate with an error within ±0.2 points of pH when compared with the results obtained with a reference glass electrode.

TEF-PO-021.Poloxamine-908-based hydrogels containing zein nanoparticles as hierarchical injectable formulations

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The excellent flexibility, biocompatibility and soft nature of hydrogels promoted their use in various pharmaceutical and biomedical applications. In particular, the design of thermo-sensitive formulations represent a feasible strategy for the sustained drug release in the required body compartment with reduced side effects. Among the molecules characterized by thermo-responsive features, poloxamines, pharmaceutical excipients belonging to the family of amphiphilic block copolymers, have attracted a certain degree of attention. In this context, this work aims at evaluating the feasibility of poloxamine 908 (P908), a hydrophilic, X-shaped tetrablock copolymer consisting of an ethylenediamine central moiety linked to four chains of poly(propylene) and poly(ethylene) oxide blocks, for the development of in situ-forming hydrogels1. Various amounts of P908 (15-35 % w/w) were solubilized in cold water under magnetic stirring until a clear solution was formed; then, the samples were characterized by means of passive and dynamic rheology with the aim of investigating the influence of the copolymer concentration and temperature against their mechanical properties. The obtained data showed that the use of concentrations ≥25% w/w P908 favored the formation of systems with a gelation within a suitable temperature range (27-33 °C) and a viscoelastic behavior at 37 °C. Moreover, it was shown that P908 hydrogels can be easily prepared in different physiological relevant media (0.9% saline solution, 5% w/v glucose solution or 0.01 M phosphate buffered saline) and can withstand the autoclave sterilization procedure without any variations of their rheological features1. The entrapment of rhodamine B (0.10 and 0.25% w/w) and ovalbumin (1% and 2% w/w), used as models of hydrophilic compound and protein, respectively, demonstrated the ability of the hydrogel matrix to ensure a prolonged and sustained leakage of the entrapped compounds. Additional investigations have been performed in order to develop a hierarchical injectable formulation; in detail, various colloidal carriers, such as zein nanoparticles, have been embedded within the P908 hydrogels with the aim of modulating the biological activity and leakage of the encapsulated compound(s) demonstrating the physico-chemical properties of the nanosystems influence the rheological features of P908-hydrogels.

These results confirm the potential use of P908-based thermo-sensitive hydrogels for the prolonged release of active compounds and the development of multistage systems.

FIS-PO-066. Preparation and physicochemical characterization of a Cobalt-based Deep Eutectic Solvent

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Deep eutectic solvents (DESs) are a novel class of liquid mixtures characterized by significant depressions of the melting point compared to those of their neat constituents, usually compounds classifiable as Hydrogen Bond Donor (HBD) and Hydrogen Bond Acceptor (HBA) species1. These materials are promising “designer” solvents2 exhibiting a host of tunable physicochemical properties as a function of the nature and ratio of their components3. Unfortunately, achieving this “tunability” remains elusive due to the many difficulties associated with the development of predictive models for DES physicochemical properties4. These difficulties arise from two factors: the inherent complexities in describing DESs through computational simulations5, as well as the absence of a comprehensive dataset of their physicochemical properties necessary for empirically derived predictive models6.

Our research aims to bridge this informational gap by carrying out a systematic evaluation of DES physicochemical properties and how these change as a function of the identity of their constituents. In this work, we report the physicochemical characterization of a DES composed of Choline Chloride as HBA and Cobalt Chloride Hexahydrate as HBD. Cobalt-based DESs were prepared by simply mixing the precursors in different molar ratios and heating them at 70°C for 30 min (Figure 1). Physicochemical properties such as thermal stability, viscosity, electrical conductivity, density and electrochemical window were characterized in a wide range of temperatures and compositions.

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FAR-PO-046. Multitarget agents for overcoming resistance in glioblastoma therapy

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Glioblastoma Multiforme (GBM) is the most common primary brain tumour in the European Countries and USA. Its remarkably poor prognosis, with a 5-year survival rate of 4-5%, makes it an urgent unmet medical need for pharmaceutical R&D. The standard-of-care for the treatment of GBM is Temozolomide (TMZ): an imidazotetrazine derivative that acts as an alkylating agent, after its activation at physiological pH. The principal reason for the weakness of this treatment is the emergence of resistance phenomena.1 Accordingly, our present project aims to the design, synthesis, and biological evaluation of TMZ-conjugates to overcome these current limitations. Our design is so focused on the merging of TMZ with other compounds with activity on well-known drug resistance pathways, such as: senescence-associated secretory phenotypes, escape from immune surveillance, and deregulation of epigenetic mechanisms. To this end, the application of advanced synthetic methodologies in late-stage approaches2 enables access to libraries of MultiTarget Chemical Entities (MTCEs) as pharmacological tools to further study resistance phenomena in brain tumours.

TEO-PO-020. Rapid Screening of Gold Nanoparticle-Small Molecule Affinities: Applications in Sensing and Beyond.

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Gold nanoparticles hold great promise in a myriad of advanced applications across chemistry, material science and biology, owed largely to their advanced optical and electrical properties. These intrinsic qualities have positioned nanoparticles as key players in sensing, catalysis, and drug delivery. However, a pivotal challenge lies in the design and engineering of gold nanoparticle monolayers that feature specific, high-affinity binding sites. It is this ability to tailor selective binding that underpins much of the practical applications of gold nanoparticles' unique properties, representing a significant hurdle in reaching their full potential.

Computer-aided rational design has proved invaluable in the effort to design and tailor nanoparticle monolayers for specific binding [1]. Yet, as with drug design, computer-aided rational design of nanoparticle monolayers requires a detailed understanding of the desired systems to allow researchers to make rational choices. Within drug development, preliminary screening techniques such as docking are routinely employed to swiftly identify and eliminate inferior candidates, thereby concentrating efforts on molecules with the most promise. However, such docking methods are inapplicable to nanoparticle systems due to the highly dynamic and evolving nature of the monolayers [2].

Here, we introduce a rapid screening approach, combining molecular dynamics simulations with machine learning, to explore the interactions between gold nanoparticles and small molecules. Utilising Nanomodeler [3], which allows the automated creation of monolayer-protected gold nanoparticles

in silico, our approach facilitated the efficient evaluation of thousands of gold nanoparticle ligands for their binding affinity to small molecules, demonstrated through the case study of 3-methoxytyramine, a vital neuroblastoma biomarker.

While our immediate aim is the development of nano-based chemosensors for early neuroblastoma detection, the versatility of our method shows potential for broader applications in catalysis, drug delivery and energy harvesting with gold nanoparticles.

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ANA-PO-046. FFF multidetection for direct, real-time, size-resolved measurements of drug release from conjugates of biocompatible gold nanoparticles

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The conjugates of gold nanoparticles (AuNPs) and protein are promising systems for drug delivery. Because of its bioaccumulation, targeting, biocompatibility, and surface properties, albumin can transport diverse therapeutic systems in a localized way, which is denoted "spatially controlled release". The interesting optical properties of AuNPs allow them to be monitored using imaging tools, and the photothermal effect can release adsorbed molecules on the AuNP surface, thereby temporally controlling drug release.

Curcumin (Cur) is a polyphenolic compound extracted from the rhizomes of Curcuma longa. It is particularly attractive for its antioxidant, antimicrobial, anti-inflammatory, and anticancer effects. This study presents the first application of Asymmetric flow field-flow fractionation (AF4) with on-line detectors like UV/vis and multi-angle light scattering to quantify release profiles of curcumin from Au-BSA conjugates nanoparticles. The main drug carrier, Au-BSA conjugates for improving the bioavailability of curcumin, have been studied in detail in previous work.

In contrast to conventional measurements requiring separation of the NPs and dissolved drugs (typically by dialysis) prior to quantification, AF4 provides in situ removal of unincorporated drugs, while the combination of online UV detection selectively provides the entrapped drug concentrations,

and hence the drug release information. In the synthesis stage, with the 3D UV-vis spectrum, we can further detect the changes of different species in the incubation solution, especially the independent binding between the drug and excess BSA provides a further basis for the quantification of drug loading. Further coupling with online multi-angle light scattering (MALS) and offline dynamic light scattering (DLS) allows us to monitor the size changing of Au-BSA-Cur carrier at the drug burst release stage. In addition, The factor I 401 nm/ I 530 nm (signal intensity of nanocarriers at 401 nm and 530 nm) as an index to judge the drug loading and release greatly avoids errors caused by stability and environmental changes, while the factor at no-load is 0.54 ±0.01 (n>3).

Overall, with the support of the dialysis models and AF4 technique, we are able to evaluate the Au-BSA-Cur drug carrier from the synthesis to the release stage completely, and the assistance of multi-detectors enables us to accurately monitor the changes in each stage.

FAR-PO-102. Structure-Based Virtual Screening targeting APSR to discover Covalent and Non-covalent Inhibitors.

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The discovery of inhibitors targeting adenosine 5′-phosphosulphate reductase (APSR), an essential enzyme involved in the reduction of inorganic sulphate to sulphite, crucial for synthesizing biomolecules,1 offers a promising strategy for limiting Pseudomonas aeruginosa growth and antibiotic resistance. APSR enzymatic activity is attributed to its catalytic cysteine, located in the highly mobile C-terminal tail and executing a nucleophilic attack on the sulphur atom of the endogenous ligand adenosine phosphosulphate (APS), leading to the formation of the inactivated enzyme-thiosulphonate intermediate.2

To investigate the enzyme inhibition mechanism, two alternative approaches were considered to retrieve both non-covalent and covalent inhibitors. The first virtual screening workflow has been applied starting from an ultra-large library of over 6.5 billion compounds, relying on an initial shape screening protocol,3 wherein the Enamine REAL compound collection was screened against the structure of the endogenous ligand (APS). Consequently, 100,000 compounds that displayed a higher degree of similarity, were submitted to a docking refinement procedure within the catalytic site, excluding compounds unable to fit within the protein environment. Moreover, the virtual screening workflow was complemented with short metadynamics simulations, assessing the ligand binding mode stability.

As an alternative strategy, a virtual screening campaign was set-up to discover covalent compounds targeting the catalytic cysteine. Since the crystallographic structure of APSR lacks the C-terminal tail, precluding the resolution of the Cys256, this region was built exploiting the AlphaFold model as a template for structural prediction. The obtained structure bound with different warheads was used to generate pharmacophore models able to screen and retain compounds forming reactive Michaelis complexes, to be processed with covalent docking calculations.

Our final selection of compounds, to be tested in enzymatic and cellular assays, explore alternative modalities to obtain enzymatic inhibition and an antiproliferative activity.

IND-PO-055. The flow of materials during the plastic processing; an uncharted and underestimated field in the carbon footprint analysis of plastic working process

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Researchers have recently outlined that the impact of plastics on climate and environment is bigger than originally thought. In a study published in 2021 in Nature Sustainability, it has been pointed out as the global carbon footprint of plastics has doubled since 1995, reaching 2.2 billion tons of CO2 equivalent (CO2eq) in 20151. In this context, studies on the global environmental impact of plastics have mainly focused primarily on the disposal phase, whereas there are few studies about the manufacture and in particular processing of plastics, which also remarkably affect the carbon emission and air quality. This produces a knowledge gap about the environmental impact of processing of the plastic, where most companies underestimate the environmental impact of their processes.

The calculation of the LCA, specifically of Carbon Footprint (CF) can assess the industrial environmental impact of a supply chain, but to do so, the study of materials and energy flow must be performed (LCI), where all the input and output in the chain must be identified, quantified, and studied their possible impact in the environment to produce greenhouse gases is concerned. The aim of this work within the PNRR Grins project is to carry out a critical survey in the plastic manufacturing steps, in particular about the most common plastic processing (extrusion and injection molding, mainly) of different polymers in different Italian ad European companies. As initial step the flow of material in input and output (the processed material, the waste and the discarded material) must be assessed. For specific case studies, the use of gas chromatography or total carbon analysis could be considered. The last step of the work is to calculate the carbon footprint of the processes and quantifying the emission of every single steps. These results would support the development of strategies to reduce the environmental impact of the plastic manufacturing process

ORG-PO-157. Exploit the Enzymatic Cleavable Linker GPLG-PABC to Enhance the Efficacy of an isoDGR based Small Molecule-Drug Conjugate

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In the field of cancer treatment, Small Molecule-Drug Conjugates (SMDCs) represent an effective strategy to overcome the drawbacks of traditional chemotherapeutic agents by conjugating a cytotoxic compound to a targeting ligand recognizing a specific overexpressed cell surface receptor.1 To connect the ligand with the payload, a chemical linker is needed, which should be able to release the free payload inside or in proximity of the cancer cell upon external stimuli (i.e. enzymatical proteolysis). Thus, the linker plays a key role in the effectiveness of the final conjugate. Herein, we present the synthesis and the biological evaluation of a novel SMDC 1 bearing a new enzymatic cleavable linker composed by the peptide sequence Gly-

Pro-Leu-Gly (GPLG) and by the self-immolative linker p-aminobenzyloxycarbamate (PABC).2 In particular, the GPLG-PABC was here used for the first time to connect the αvβ3 integrin cyclic peptidomimetic ligand bearing the recognizing sequence isoAsp-Gly-Arg (isoDGR)3 to the potent tubulin inhibitor monomethyl auristatin E (MMAE). The final SMDC 1 was tested for its antiproliferative activity, and the results confirmed a higher potency of the SMDC 1 compared to the corresponding conjugate 2 containing the Val-Ala-PABC cleavable linker recognized by the lysosomal enzyme Cathepsin B, previously reported by our group (Figure 1).4 A further in vitro enzymatical assay assessed the fast release of MMAE from the GPLG-PABC linker through the proteolytic activity of lysosomal enzymes, although a specific protease was not identified. Further studies are currently ongoing in our laboratories to fully characterized this new enzymatical cleavable linker.

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ANA-PO-052. A chemometric approach for the optimization of the synthesis of biomass-based Carbon Quantum Dots

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Since the discovery of Carbon Quantum Dots (CQDs) in 2004,1 interest in these materials has increased over the last two decades. Moreover, the synthesis of CQDs from green sources offers a valuable alternative for waste management and has received great attention thanks to the biocompatibility and affordability of the starting materials.2 Among the various preparation strategies, the most common is the green hydrothermal method. However, the literature varies widely on the chosen synthesis conditions. For the hydrothermal treatment using water as solvent, temperature, time, and initial concentration of precursors seem to be the main parameters affecting the properties of the obtained products in terms of particle size and surface functionalization, which in turn reflect on the photoluminescence properties and stability of the CQDs.3

This work exploits the chemometric tool of experimental design4 to optimize the synthesis of biomass-based CQDs. Citrus waste lyophilized bergamot pomace was used as a precursor. An initial hydrothermal synthesis was performed using 250 mg of pomace in 25 mL of water, heated in an autoclave at 180 °C for 6 hours.5 The experimental design was then conducted according to a 2k full factorial design while varying the initial amount of precursor (200 and 300 mg of pomace), the temperature (150 and 210 °C), and the reaction time (3 and 6 hours). After purification, the quantum yield was evaluated using quinine sulfate as a reference, and the particle size was evaluated through Transmission Electron Microscopy. The results were used to construct the experimental surface, allowing to determine the optimal conditions for the synthesis of CQDs from bergamot pomace and to clarify which parameter mostly influences the properties of the obtained product.

Aknowledgement: We thank MUR: PNRR - Missione 4, Componente 2, Investimento 1.1 - Bando Prin 2022 - Decreto Direttoriale n. 104 del 02-02-2022. Project title: “Wastezilla: Recycled waste biomass for efficient recovery of critical elements”. CUP: J53D23007540006 – project code: PRIN_2022HYH95P_001.

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INO-PO-094. Towards a More Sustainable and Circular Production of Hydrogen

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The paradigms of circular economy include for sure the production of sustainable energy but also the valorization of materials that are currently solely seen as waste. Nowadays, sewage sludge (SS) is one of the most abundant waste produced by municipalities and industries, but it can also be a source of valuable chemicals, including some interesting energy vectors1.

The significant concentration of ammonia in SS2 is appealing for this purpose: its oxidation does not produce any carbon containing species and it has much lower energy demand compared to water oxidation3, thus it represents an innovative and circular way to produce hydrogen.

In this work, we investigated a composite system based on metal nanostructures grown on nickel foam (NF) and others supports for the (photo)electrochemical ammonia oxidation reaction (AOR). Both platinum and more earth-abundant metals such as Ni and Cu were deposited by different synthetic approaches in solution (e.g., static and pulsed electrodeposition and hydrothermal method) to have high dispersed nanostructures. They were characterized from morphological, crystallographic and (photo)electrochemical point of view.

Moreover, (photo)electrolytic experiments were performed to investigate and compare the stability and selectivity for AOR. Our results showed that Pt has some evident tendency to poisoning while materials based on less noble metals could show longer stability.

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ORG-PO-158. Synthesis of pseudodimeric triazine-based PD-L1 inhibitors.

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In the context of cancer immunotherapy, the inhibition of the interaction between the programmed cell death receptor 1 (PD-1) and its ligand PD-L1 by monoclonal antibodies (mAbs) has achieved notable success in treating several types of cancers. Nevertheless, the use of mAbs is hampered by drawbacks such as high production costs, lack of oral bioavailability, poor tissue and/or tumor penetrability, and for these reasons small molecule inhibitors of the PD-1/PD-L1 axis could represent a promising alternative.1

Our research group has recently reported a small library of triazine-based small molecule PD-L1 inhibitors, among which, compound 10 (CMP-10) showed high affinity towards PD-L1 (IC50 = 115 nM),2 and a significant anticancer activity in co-cultures of PD-L1-expressing NSCLC cells and peripheral blood mononuclear cells (PBMCs).

Here we present the synthesis of a new class of pseudodimeric PD-L1 inhibitors based on lead CMP-10 that, according to literature, should be significantly more active in blocking the PD-1/PDL1 interaction by stabilizing the PD-L1 homodimer, when compared with their monomeric counterpart.3

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TEC-PO-045. Strategic metals recovery from spent lithium-ion batteries: a new technology based on microwaves

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To achieve the energy transition targets, it is estimated that by 2050 the demand for lithium, cobalt and graphite will increase by 506%, 460% and 417%, respectively. Considering that these elements are included in the list of raw materials at risk of exhaustion it is essential to recycle. This work proposes a new microwave (MW) treatment of spent lithium-ion batteries (LIBs), for strategic metal recovery (Li, Mn, Ni and Co) by carbothermic reduction, involving short treatment times1. The dedicated MW device, consisting of a refractory chamber and a susceptor, allows to increase the equipment thermal insulation, to recover the MW energy furnished to a carbothermal reduction reaction. Figure 1 reports the layout of the proposed recycling process based on the black mass (BM) leaching with water and environmentally friendly organic acid (L-malic acid), after the MW treatment, for the simultaneous extraction of Li (mainly in water), Ni, Co, and Mn.

Figure 1: Scheme of the metals recovery procedure. (Figure created with BioRender.com).

The first experiments performed on LCO ($LiCoO_2$) batteries show that the MW treatment at 600 W for 5 min increased Li recovery, reaching 85%. This result encourages the development of MW technology able to reach high temperatures in a short time, compared to pyrometallurgical processes.

This study was carried out within the MICS (Made in Italy – Circular and Sustainable) Extended Partnership and received funding from Next-GenerationEU (Italian PNRR – M4 C2, Invest 1.3 – D.D. 1551.11-10-2022, PE00000004).

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FAR-PO-130. Sustainable Plastic Degradation: A Machine-Learning-Based Enzyme Engineering Approach

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The problem of how to dispose of the enormous amount of plastic waste is a pressing topic worldwide. In particular, new and sustainable approaches to plastic polymer degradation are required since the currently employed techniques are environmentally polluting. In the past few decades, the scientific community has invested considerable efforts to engineer naturally occurring enzymes capable of degrading plastic polymers to increase their catalytic efficiency and applicability on the industrial scale. In this framework, we apply machine learning models to the problem of mutating selected enzymes capable of degrading plastic polymers to increase their catalytic efficiency. In particular, provided the structural data of the enzyme and the polymer to degrade, the machine learning model will aim at predicting the kinetic parameters of the reaction (the binding affinity Kd and the turnover number kcat). Such a pipeline would constitute the basis for a general framework to tackle the problem of enzyme optimization for plastic polymer degradation.

IND-PO-056. Biocatalysis for the Regio- and Stereo-selective Production of Enhanced Pharmaceuticals

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Natural enzymes have revolutionized chemistry through biocatalysis, blending molecular precision with environmental care. This approach has provided sustainable methods for producing fine chemicals and a greener alternative to conventional synthesis, moving from harmful solvents to eco-friendly, regio- and stereospecific biocatalysts. Biocatalysis has enabled the production of complex, water-soluble derivatives by combining pharmaceutical knowledge with biobased molecules, leading to safer prodrugs that mitigate the side effects of traditional active ingredients. Herein, we highlight the synthesis of compounds with significant market presence, like ursodeoxycholic acid, utilized in treating gallstones, and a range of cinnamic acid derivatives, such as ferulic and caffeic acids, which are biobased molecules celebrated for their antioxidant and anti-inflammatory properties, as well as ibuprofen, one of the most used anti-inflammatories in the world. Centered on the molecular dynamics of biocatalysts for optimized reuse and stability, these advancements not only showcase the effectiveness of prodrugs over traditional compounds but also reflect a commitment to the principles of sustainability and the circular economy. This journey illustrates a harmonious blend of chemical innovation and environmental responsibility, marking a future where chemistry continues to evolve in alignment with sustainability and health protection.

INO-PO-062. Building Multisite Hydrocarbyl Ligands in Diiron Carbonyl Complexes Pointing to Catalytic Applications

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Specific diiron complexes, derived from commercial [Fe2Cp2(CO)4] (Cp = η5-C5H5), have emerged as versatile frameworks for the construction of functionalized organometallic architectures. Taking advantage of the facile substitution of up to three carbonyl ligands and the synergistic interplay between the two iron centres, these complexes enable the assembly of small molecular entities via non-traditional reaction pathways.1 Cyano-amino-allylidene complexes (1) can be synthesized through a sequence of regio- and stereo-selective reactions, being tolerant towards diverse functional groups (esters, pyridyl, thiophenyl, ferrocenyl, etc.).

Within complexes of type 1, the interaction between the amine nitrogen lone pair and the terminal carbonyl ligand promotes the thermally-induced displacement of this CO. The resulting derivatives with multisite ligands have been evaluated for their catalytic activity in the hydroboration reaction of aldehydes and in the coupling reaction of CO2 with epoxides under mild conditions.

INO-PO-010. Design, synthesis and characterization of glyco-conjugated copper(II) complexes as potential anticancer agents

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Thiosemicarbazones (TSC), semicarbazones (SC) and acylhydrazones are at the same time molecules with biological activity and versatile ligands towards transition metal ions. Cu(II) complexes are promising compounds as an alternative to platinum based drugs in antitumor therapies, since copper is an endogenous metal and cancer cells have an abnormal copper balance; therefore, the use of this metal could improve the selectivity towards cancer cells. Cancer cell metabolism is also characterized by an enhanced uptake and utilization of glucose: consequently, a useful tool to further increase the selectivity of an anticancer agent is its glyco-conjugation, which also improves water solubility.

In this context, three novel ligands, the TSC H2L1, the SC H2L2 and the acylhydrazone H2L3 and their copper (II) complexes have been successfully synthesized and characterized. The coordination properties of the ligands towards Cu2+ ions have been studied in aqueous solution by mean of UV-vis spectrophotometric titrations. Evaluation of their cytotoxic activity is currently ongoing.

FIS-PO-036. Effect of Plasmonic Nanoparticles on the Photocatalytic Properties of Nanostructured Silica

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The most studied photocatalysts are nanostructured metal oxides, characterised by wide band gaps and absorption in the UV region. On the other hand, silica nanoparticles (SNPs) have both lower cost and environmental impact exhibiting photo-activation capacities in the UV. Thanks to their surface reactivity, they are also suitable for functionalisation to improve photocatalytic response. Particularly appealing strategies involve the exploitation of LSPR effect of metal nanoparticles (MNPs) anchored on SNPs: when coupled, these materials have synergistic effects, endowing the composite material with enhanced absorption towards visible light and assisting photocatalytic reactions through LSPR decay processes. In this work, a comprehensive study on the effect of MNPs on SNPs efficiency for the photo-degradation of organic pollutants is proposed. The evaluation of the parameters determining the photocatalytic properties of the composite materials is performed through full characterizations.

FIS-PO-023. Development of mRNA nanovectors as non-viral tool to produce CAR-T cells: future prospectives and applications for CAR-T cell therapy of Glioblastoma

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Biocompatible Nanoparticles (NPs) have been extensively investigated in the therapeutic field for their application as drug and gene delivery vectors. In particular, lipid nanoparticles (LNPs) have been used in clinical setting as mRNA-based vaccines. LNPs have also showed to be a promising tool to generate personalized therapies in cancer immunotherapy, for example in the production of CAR-T cells1.

The tremendous success of CAR-T cells in the treatment of B cell malignancies has revolutionized the field of cancer immunotherapy, but they have not been yet effective in treating all solid tumors. Specifically, for glioblastoma, a rare but serious and untreatable primary brain cancer, phase I clinical studies demonstrated safety, but modest efficacy. Recently, a retroviral-based CAR targeting B7-H3 (a membrane protein overexpressed in more than 70% of GBM, as well as in other cancers, but absent in normal tissues) was developed. B7-H3.CAR-Ts recognize and kill GBM cell lines in vitro and increase survival in GBM xenograft models2. Although these encouraging preclinical results, developing engineered CAR-Ts at clinical levels by viral-based gene transfer is costly and logistically difficult since it requires cell factories specifically designed for producing clinical grade viral vectors and transduced CAR T cells3.

We propose the use of T cells, in which B7-H3.CAR expression will be obtained through non-viral lipid-based mRNA nanovectors (NVs), to demonstrate the efficacy of mRNA-B7-H3.CAR-Ts in a preclinical model of glioblastoma. We show the synthesis and characterization of mRNA loaded lipid-based nanovectors and their transfection efficiency. Positive results will accelerate the use of CAR-T cells in the clinical setting of glioblastoma, thus addressing one of the most urgent unmet needs in oncology.

MAS-PO-002. Efficient Photooxidation Processes for the Removal of Sildenafil from Aquatic Environments: A Comparative Study

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The erectile dysfunction drug sildenafil has attracted a great deal of attention in recent years due to its widespread legal and illegal use around the world and its increasing use by young people for recreational rather than medical purposes1. Due to sildenafil's high stability in various environmental conditions and its accumulation or phototransformation in receiving waters, this dangerous trend poses a significant risk to both human health and the environment2. Therefore, in-depth studies are needed to find innovative methods for completely removing sildenafil from the aquatic environment, while limiting the formation of more toxic derivatives. This study investigated the efficacy of photooxidation processes for removing sildenafil and its potentially toxic derivatives from water. Distilled water and synthetic wastewater were treated with three different oxidants: peroxymonosulphate (PMS), peroxide sulphate (PS) and hydrogen peroxide (H2O2), and a

heterogeneous catalyst, TiO2. The investigation also considered the formation of potentially toxic phototransformation products, performing a tentative structural identification by LC-ESI-MS and MSn. The results proved that the Sunlight/PMS system is the most effective for entirely and environmentally friendly removal of this drug and its transformation products from aquatic environments, achieving complete degradation in distilled water and synthetic wastewater after 80 and 130 minutes of irradiation, respectively. Toxicity bioassays on Vibrio fisheri and in silico tests using the software ECOSAR confirmed the non-toxic nature of the phototransformed products. This study highlights the potential of Sunlight/PMS photooxidation as a promising strategy for mitigating the environmental risks associated with sildenafil contamination.

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ALI-PO-036. Ulvan from Ulva lactuca L.: optimization of enzymatic hydrolysis by ulvan-lyase and characterization of the produced oligosaccharides

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Ulva lactuca L. is a green alga of the Ulvaceae family distributed worldwide, which has gained increased attention due to its high reproductive rate, which leads to the phenomenon known as "green tides", accelerated by water eutrophication. While algae from the Ulvaceae family are used for food and feed purposes, their biomass currently has limited applications. However, the cell wall of these algae is rich in polysaccharides, of which ulvan is the most peculiar and interesting. Ulvan is composed of disaccharides repeating units, constituting in rhamnose-3-sulfate (Rha3S) linked to D-glucuronic acid (GlcA), L-iduronic acid (IduA) or D-xylose (Xyl) by predominantly beta glycosidic bonds. Ulvan oligosaccharides has been associated with anti-cholesterolemic and antioxidant activities, making the production of these compounds a promising opportunity for biomass utilization1. Since these bonds are highly resistant to conventional acidic hydrolysis methods, enzymatic hydrolysis is preferred to ensure efficiency and the production of food-grade products. To this end, ulvan lyases (EC 4.2.2), found in marine bacteria, can be used for the catalysis of the endolithic cleavage between Rha3S and uronic acids, by a β-elimination reaction2.

Aim of the present study was the optimization of the enzymatic hydrolysis of ulvan to obtain a pool of ulvan oligosaccharides to be testet for biological activities. Ulvan were extracted from U. lactuca collected in an aquaculture tank of Orbetello lagoon. A recombinant ulvan lyase of PL24 family commercially available was used for the hydrolysis. The enzyme was characterized kinetically and different concentrations of buffer medium (composed of NaCl and Trizma® base both from 0 to 100 nM) were tested to minimize the residual presence of salts in the final products. The activity of the enzyme was measured for 24 h as spectrophotometric absorbance at 235 nm (indication of double bonds formation after β-elimination), 1H-NMR spectra were acquired to monitor the production of oligosaccharides, and Dynamic Light Scattering measurements were applied to evaluate the hydrodynamic volume of the hydrolyzed ulvan in solution.

In summary, ulvan lyase resulted a robust enzyme able to rapidly and extensively hydrolyze ulvan at different composition of the medium. To provide insights into the impact of ulvan on gut health and to promote future uses of Ulva biomass, the hydrolyzed ulvan will be tested in vitro for its prebiotic activity.

TEF-PO-012. Electrospun nanofibers coated with a pH-responsive film to be used as vaginal delivery systems for the prevention of sexually transmitted infections.

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The present work aims to develop electrospun nanofibers coated with a pH-responsive film to be used as vaginal delivery systems for the prevention of sexually transmitted infections. The film coating should remain intact at vaginal pH, protecting the inner nanofibers. The increase in the environmental pH due to the presence of the seminal fluid should cause film solubilization, resulting in nanofibers exposure, and their subsequent hydration and adhesion to the vaginal mucosa. For the fibers preparation, polyvinyl alcohol (PVA; Sigma-Aldrich, I) and carrageenans (k-CAR and i-CAR; Sigma-Aldrich, I) were prepared in MilliQ water (2h at 85°C). Different concentrations of PVA (10-20 % w/v) and CARs (1-2% w/v) were considered. PVA and CARs solutions were mixed at 9:1 weight ratio at 95°C for 1 h1. Mixtures viscosity (shear rates 10-1000 s-1, 30°C) was assessed by means of a rotational rheometer (MCR 102, Anton Paar, I). Polymer solutions were electrospun (STIKIT-40; Linari Engineering, I) at a constant temperature (28-30°C) and relative humidity (30%-40%). The nanofibers obtained were characterized for morphology (SEM; PhenomTM Pure Desktop, Thermoscientific, I) and mucoadhesive properties (TA.XT plus; Stable Micro Systems, UK), using commercial mucin suspensions in simulated vaginal fluid2 (SVF) as biological substrate. An in vitro degradation assay was performed in SVF and simulated seminal fluid (SSF)3 at 37°C. 8% w/v Eudragit L100 (EL100, Evonik, I) solution in absolute ethanol and glycerol (Gly, Sigma-Aldrich, UK) at 8% and 16% w/v were used for film preparation by casting3. Films mechanical properties (tensile strength and elongation at break %) were investigated by means of TA.XT plus. Films were subjected to in vitro degradation assays in both SVF and SSF at 37°C. Viscosity values in a range of 2-3 Pa.s at 1,000 s-1 were evaluated as ideal to obtain bead-free homogeneous PVA/CAR nanofibers with a mean diameter of about 500 nm. They are characterized by good mucoadhesive properties and a small weight loss after 24 h of immersion in SVF/SSF. EL100/Gly films possess adequate mechanical properties, able to allow their administration avoiding ruptures, a proper stability in SVF and a quick dissolution in SFF, to permit the exposure of PVA/CAR nanofibers after the contact with a potentially infected seminal fluid. In conclusion, promising nanofibers characterized by suitable mucoadhesive and degradation properties, and polymeric films to be used as a protective coating were successfully developed. Ongoing studies are focused on nanofibers loading with a model drug.

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FAR-PO-117. cRGD-functionalized liposomes as a theranostic tool for the treatment of triple negative breast cancer

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Triple Negative Breast Cancer (TNBC) poses a significant challenge within oncology due to its aggressive nature and the limited therapeutic option available. To address these challenges, nano-based drug delivery systems have emerged as promising therapeutic tools.

In this study, we aimed to develop liposomes designed for targeted doxorubicin (DOX) delivery to TNBC cells overexpressing integrin receptors αVβ3 and αVβ5. The liposomes underwent surface modification with cyclic pentapeptides containing the Arg-Gly-Asp sequence (cRGDs), which selectively bind to αVβ3 and αvβ5 integrins with nanomolar IC50 values. Lipids modified with a dibenzocyclooctyne moiety were incorporated into the liposome's membrane and exploited for the surface functionalization, while the inclusion of rhodamine-tagged lipids allowed to monitor nanoparticle internalization. The cRGD derivatives, bearing a terminal azide group (N3-3a-RGD), were linked to the liposome's surface through a strain-promoted azido-alkyne cycloaddition (SPAAC) reaction.

The analysis of the nanosystem's physicochemical properties confirmed the effective functionalization and the high efficiency in encapsulating doxorubicin. In vitro studies showed enhanced cellular uptake of cRGD-functionalized liposomes in TNBC cells, leading to increased cytotoxicity compared to free doxorubicin or non-functionalized liposomes. Overall, this study demonstrates that DOX-RGD-liposomes represent a promising theranostic nanocarrier for TNBC treatment.

ABC-PO-029. HIGH TEMPORAL AND SPATIAL RESOLUTION MONITORING OF INDOOR AIR QUALITY IN AN ITALIAN BASILICA

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In recent years, people spend most of their time in indoor environments as working places, public or private transportations, homes and schools which are frequently more contaminated than outdoors one[1, 2]. In fact, in addition to outdoor pollutants penetrating through windows and doors and affecting the indoor air quality (IAQ), indoor pollutants sources as building materials, furniture, cleaning and combustion processes (heating, cooking and incense or candles burning) can deeply worsen the air quality in closed environments. Among indoor sources linked to combustion processes, cooking or cigarettes smoking has been deeply characterized in contrast to incense burning emissions [3]. Anyway, over recent years, incense burning is attracting ever more interest because it was found to be the significant source of large amounts of particulates, heavy metals, polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs) [4]. In a poorly ventilated environments as the churches where a large number of people gathers and incense is commonly burned, high concentrations of harmful chemical pollutants could affect IAQ and, thus, the human heath of exposed people. Therefore, this study aims to investigate the time profiles of pollutants concentration in an Italian basilica during the liturgical celebrations. An high-time and spatial resolved monitoring campaign was carried out from 1st November 2023 to 2nd April 2024 inside an basilica that covers an area of about 23000 m2. The real time measurements of PM, TVOCs, CO2 and microclimatic parameters as temperature and humidity were provided by integrated systems consisting of low-cost sensors named NOSE (Beefrest srl) located in eight different points inside the basilica. In addition, the real time concentrations of total polycyclic aromatic hydrocarbons (TPAHs) were monitored by a photoionization analyzer (PAS2000 - EcoChem Analytics) installed bottom of the church altar in a beeline with the first lines of pews.

The preliminary results highlighted relevant increments of PM10 (maximum value: 216 μg/m3), PM2.5 (maximum value: 184 μg/m3), TVOCs (maximum value: 3.9 ppm) and TPAHs (173 ng/m3) concentrations, especially, at the sites nearest the altars and during liturgical celebrations linked to Christmas, Lent and Easter when incense was burned. These peak concentrations as well as PM10 and PM2.5 daily mean concentration values registered during Christmas and Easter days were significantly higher than the daily limit value established by Italian law for the PM10 outdoors concentrations (Legislative Decree 155/10).

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ABC-PO-039. Less analyte, less impact: hydrogel extraction for ultra-sensitive dye characterization, protecting artifact integrity and the environment

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Dye analysis represents an invaluable repository of historical knowledge, while also shaping future strategies for cultural heritage conservation. However, characterizing dyes within complex matrices presents challenges, particularly when aiming for minimal or non-invasive analyses, due to potential interferences. Optimal techniques in this regard include high-performance liquid chromatography coupled with mass spectrometry (HPLC-MS), capable of separating components in mixtures and identifying them individually, and surface-enhanced Raman spectroscopy, providing ultrasensitive high-throughput vibrational information1,2. Nevertheless, achieving fingerprint characterization requires the removal of paint or thread fragments. Moreover, traditional approaches often involve high temperatures, strong acids, and significant amounts of organic solvents to extract various dye classes with varying solubility from the sample.

In the proposed methodology, a direct hydrogel extraction technique is introduced, tailored for minimal dye quantities, able to facilitate SERS and HPLC-MS characterization while preserving artifacts integrity. This approach utilizes agar, a green polysaccharidic compound forming a hydrogel upon interaction with water. Agar gel loaded with an ammonia aqueous solution was employed to gently extract dyes without the need for organic solvents3.

To maximize the use of minimal analyte quantities extracted for multi-technique characterization, a clean-up strategy, known as dispersive liquid-liquid microextraction (dLLME), was tailored. DLLME purifies and preconcentrates low concentrated analytes, reducing organic solvent volumes while maintaining effectiveness.

Following successful results on laboratory mock-up, the gel was rescaled until it could be applied using a Pasteur pipette tip, to prevent any visible markings. The methodology was applied to real study cases in collaboration with the Berlin National Museums. The results highlight the effectiveness of the developed workflow in enabling fingerprint dye characterization using minimal analyte quantities while minimizing visible impacts on artifact surfaces.

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Bandini	Elisa	CNR-ISOF	Bologna	Italy
Bannò	Mariasole	Università di Brescia	Brescia	Italy

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Baraldo	Nada	Università degli Studi di Ferrara	Ferrara	Italy
Baratta	Walter	University of Udine	Udine	Italy
Barbara	Valtancoli	Univ di Firenze	Sesto Fiorentino	Italy
Barbera	Vincenzina	Politecnico di Milano	Milano	Italy
Barbera	Marcella	Università Degli Studi di Palermo	Palermo	Italy
Barberis	Marta	Università di Pavia	Pavia	Italy
Barbero	Nadia	Università di Torino	Torino	Italy
Barbero	Alice	University of Turin	Torino	Italy
Barbetta	Ismaele	CNR	Milano	Italy
Barbiero	Davide	EPFL	Chavannes-pres-Renens	Switzerland
Barboni	Davide	Università degli Studi di Ferrara	Ferrara	Italy
Barcelo	Damia	University of Almeria	Almería	Spain
Baretta	Roberto	Università degli Studi di Padova	Padova	Italy
Bargnesi	Luca	Università di Bologna	Bologna	Italy
Barison	Simona	CNR Consiglio Nazionale delle Ricerche	PADOVA	Italy
Barlocco	Ilaria	unimi	Inveruno	Italy
Barlucchi	Leonardo	Università di Pisa	Pisa	Italy
Barni	Benedetta	Università degli studi dell'Insubria	Albiate	Italy
Barolo	Claudia	Università di Torino	TORINO	Italy
Baron	Giovanna	Università degli Studi di Milano	Milan	Italy
Barone	Giampaolo	Università degli Studi di Palermo	Palermo	Italy
Barone	Gianluca	Laboratorio Antidoping FMSI	Frascati	Italy
Barone	Simona	Università Federico II di Napoli	Napoli	Italy
Barreca	Salvatore	Universitá di Catania	Catania	Italy
Barreca	Maria Letizia	Università degli Studi di Perugia	Perugia	Italy
Barrino	Federico	Università di Palermo	Palermo	Italy
Bartoccini	Francesca	Università degli Studi di Urbino Carlo Bo	Urbino	Italy
Bartolini	Manuela	Alma Mater Studiorum Università di Bologna	Bologna	Italy
Bartolini	Francesco	Sapienza Università di Roma	Roma	Italy
Bartolomei	Beatrice	Università di Trieste	Perugia	Italy
Basilico	Federica	Emme 3	Lainate	Italy
Bassan	Giovanni Adriano	Università di Trieste	Trieste	Italy
Bassetti	Beatrice	Centro Cardiologico Monzino	Milano	Italy
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Battaglia	Luigi	Università degli Studi di Torino	Torino	Italy
Battaglia	Vincenzo	Università degli Studi di Salerno	Fisciano	Italy
Battistini	Lucia	Università di Parma	Parma	Italy
Bazzana	Gabriella	Basell poliolefine italia srl	ferrara	Italy
Bazzica	Edoardo	Università degli Studi di Perugia	Bastia Umbra	Italy
Beccalli	Martina	Politecnico di Milano	Verderio	Italy
Bedogni	Federico	Università di Bologna	Reggio nell'Emilia	Italy
Behera	Sourav	Università degli Studi di Cagliari	Cagliari	Italy
Belforte	Erica	Università degli studi di Roma Tor Vergata	Roma	Italy
Bella	Federico	Politecnico di Torino	Torino	Italy
Bellina	Fabio	Università di Pisa	Pisa	Italy
Bellotti	Denise	Università di Ferrara	Ferrara	Italy
Bellumori	Maria	Università degli Studi di Firenze	Sesto Fiorentino, Firenze	Italy
Belvisi	Laura	Università degli Studi di Milano	Milano	Italy
Benaglia	Maurizio	Università degli Studi di Milano	Milano	Italy
Benazzato	Stefania	Università degli Studi di Padova	Padova	Italy
Benazzi	Valentina	Università degli Studi di Pavia	PAVIA	Italy
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Benedetti	Michele	Università del Salento	Lecce	Italy
Benedetti	Barbara	Università degli studi di Genova	Genova	Italy
Benedetti	Alessia	Conservatorio di Musica “Nino Rota” - Monopoli	Monopoli (BA)	Italy
Benedetto	Eleonora	Politecnico di Milano	Castel d'Aiano (BO)	Italy
Benesperi	Iacopo	Università di Torino	Torino	Italy
Benettin	Tommaso	università degli studi di milano	Bollate	Italy
Bensaid	Samir	Politecnico di Torino	Torino	Italy
Bergamini	Cecilia	Arpae Emilia Romagna	Bologna	Italy
Bergomi	Andrea	Università degli Studi di Milano	Milano	Italy
Berlier	Gloria	Università di Torino	Torino	Italy
Bernal	Leonardo	Università di Modena e Reggio Emilia	Bologna	Italy
Bernardi	Anna	Università degli Studi di Milano	Milano	Italy
Bernardi	Elena	Università di Bologna	Bologna	Italy
Bernardini	Marianna	La Sapienza	Rome	Italy
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Berretti	Enrico	CNR	Vaiano	Italy
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Berti	Claudia	Barilla	Parma	Italy
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Bertini	Luca	Università degli studi di Milano-Bicocca	Milano	Italy
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Bertolini	Giorgio	Olon SpA	Sesto San Giovanni	Italy
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Bertolotti	Silvia	Università di Torino	Brescia	Italy
Bertoluzzo	William	Università di Padova	Padova	Italy
Bertoncini	Benedetta	Università di Pisa	Castelnuovo di Garfagnana	Italy
Bertucci	Alessandro	Università degli studi di Parma	Parma	Italy
Bertuzzi	Giulio	Università di Bologna	Bologna	Italy
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Bianchera	Annalisa	Università di Parma	Parma	Italy
Bianchi	Federica	University of Parma	PARMA	Italy
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Bianchi	Eleonora	Università di Pavia	Pavia	Italy
Bianchini	Petra	Università di Pavia	Pavia	Italy
Bianchini	Elena	Medica S.p.A.	Medolla	Italy
Bianco	Giuliana	Unibas	Potenza	Italy
Bianco	Ettore	Università degli studi di Torino	Torino	Italy
Bianco	Mariachiara	Università degli studi di Bari	Bari	Italy
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Biancolillo	Alessandra	Università dell'Aquila	L'Aquila	Italy
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Bianconi	Tommaso	University of Wisconsin-Madison	Madison	United States
Biesuz	Raffaela	Università di Pavia	Pavia	Italy
Biffis	Andrea	Università di Padova	PADOVA	Italy
Biffoli	Fabio	Università degli Studi di Firenze	Sesto Fiorentino	Italy
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Blasi	Davide	Università degli Studi di Bari Aldo Moro	Bari	Italy
Blasi	Paolo	University of Bologna	Bologna	Italy
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Bocchini	Sergio	Politecnico di Torino	Torino	Italy
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Bodo	Enrico	Università di Roma La Sapienza	Roma	Italy
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Boggia	Raffaella	UNIGE-University of Genoa (Italy)	Genova	Italy
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Bokan	Maksym	University of Torino	Torino	Italy
Boldrini	Amedeo	Università di Siena	Asciano (SI)	Italy
Bollella	Paolo	Università degli Studi di Bari Aldo Moro	Bari	Italy
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Bonaccorso	Giulia	Università degli Studi di Firenze	Firenze	Italy
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Bonadonna	Filippo	LNI SWISSGAS	Milano	Italy
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Bonati	Luigi	Istituto Italiano di Tecnologia	Genova	Italy
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Bondar	Kateryna	University of Turin	Turin	Italy
Bondi	Roberto	Università degli Studi di Perugia	Assisi	Italy
Bonechi	Marco	Università degli Studi di Firenze	Campi Bisenzio	Italy
Bongiolo	Samuele	Università degli Studi dell'Insubria	Figino Serenza	Italy
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Bontempi	Elza	University of Brescia	Brescia	Italy
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Bordiga	Silvia	University of Turin	Turin	Italy
Borelli	Mattia	Università degli Studi di Milano	Milano	Italy
Borghi	Federica	UNIMORE	Modena	Italy
Borgogno	Marco	IAMA Therapeutics	Genova	Italy
Borgonovo	Gigliola	Università degli studi di Milano	Milano	Italy
Bormetti	Marco	Università di Parma	Arcola	Italy
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Borsatti	Giulia	UNIVERSITA DI PAVIA	PAVIA	Italy
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Bortolini	Olga	Università di Ferrara	Ferrara	Italy
Boselli	Monica Fiorenza	Università degli Studi di Milano	legnano	Italy
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Bossi	Alessandra Maria	Università di Verona	Verona	Italy
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Bottari	Alberto	Politecnico di Milano	Viadana	Italy
Botti	Giada	Università degli Studi di Ferrara	Ferrara	Italy
Bracaglia	Ilenia	Università La Sapienza- Roma	ROMA	Italy
Bracchi	Maddalena	Università degli studi milano bicocca	cremella	Italy
Braga	Andrea	Università degli Studi di Udine	Udine	Italy
Bragioto	Filippo	Università degli studi di Padova	Lendinara	Italy
Braido	Rachele	Università Ca' Foscari Venezia	Venezia Mestre	Italy
Brandi	Jessica	Università di Verona	Verona	Italy
Brandi	Francesco	ICCOM -CNR	Sesto Fiorentino	Italy
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Bretti	Clemente	Università di Messina	Messina	Italy
Brighenti	Daniele	Politecnico di Milano	Latina	Italy
Brioschi	Maura	Università di Milano Bicocca	Milano	Italy
Brioschi	Giulia	University of Milan	Milan	Italy
Broggini	Gianluigi	Università degli Studi dell'Insubria	Como	Italy
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Brunelli	Francesca	Università del Piemonte Orientale	Novara	Italy
Brunelli	Andrea	Università Ca' Foscari di Venezia	Venezia	Italy
Brunetti	Andrea	Università di Bologna	Jesi	Italy
Brunetti	Leonardo	Università degli Studi di Bari Aldo Moro	Matera	Italy
Bruschetta	Chiara	Università degli Studi di TORINO	Torino	Italy
Brutti	Sergio	Università di Roma La Sapienza	Roma	Italy
Bruzzoniti	Maria	University of Turin	Torino	Italy
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Budriesi	Roberta	Università di Bologna	Bologna	Italy
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Cacciola	Francesco	Università degli Studi di Messina	Messina	Italy
Cacioppo	Michele	Università degli Studi di Palermo	Palermo	Italy
Cadamuro	Francesca	University of Milan Bicocca	Vedano al Lambro	Italy
Cademartori	Davide	Università degli studi di Genova	Genova	Italy
Cafarella	Cinzia	University of Messina	Messina	Italy
Cafeo	Giovanna	Università degli studi di Messina	Messina	Italy
Caffi	Claudia	Syensqo	Bollate	Italy
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Cagossi	Giorgio	Università di Parma	Parma	Italy
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Calabretta	Maria Maddalena	Università di Bologna	Bologna	Italy
Calabria	Donato	Università di Bologna	BOLOGNA, BO	Italy
Calamante	Massimo	ICCOM-CNR	Sesto Fiorentino	Italy
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Caliceti	Paolo	Università di Padova	Padova	Italy
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Camilloni	Carlo	Universita' degli Studi di Milano	Milano	Italy
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Camozzi	Davide	FKV SRL	Torre Boldone	Italy
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Campana	Filippo	Università degli Studi di Perugia	Perugia	Italy
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Campiglia	Pietro	Università di Salerno	Fisciano	Italy
Campinoti	Caterina	Università di Pisa	Piombino	Italy
Campone	Luca	Università Milano Bicocca	Milano	Italy
Campostrini	Andrea	Università Ca' Foscari Venezia	Venice	Italy
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Cangiano	Alessandro	Università degli Studi di Napoli Federico II	Giugliano in Campania	Italy
Cannizzaro	Francesca	Università degli studi di Messina	Messina	Italy
Cantamessa	Mara	Dentis Recycling Italy srl	Sant'Albano Stura	Italy
Cantini	Francesca	University of Florence	Sesto Fiorentino	Italy
Capacchione	Carmine	Università degli Studi di Salerno	Fisciano(SA)	Italy
Capaldi	Giorgio	University Of Turin	Turin	Italy
Capaldo	Luca	Università di Parma	Parma	Italy
Capasso	Domenica	Università degli Studi di Napoli Federico II	Napes	Italy
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Carbone	Claudia	Università degli Studi di MIlano	Milano	Italy
Carbone	Marilena	Startnetics	Roma	Italy
Carbone	Giorgio	Università degli Studi di Milano-Bicocca	Montano Lucino	Italy
Cardano	Francesca	Università di Torino	Turin	Italy
Cardellicchio	Nicola	CNR	Taranto	Italy
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Cardito	Alice	Università degli Studi di Salerno	Salerno	Italy
Cardona	Francesca	Università degli Studi di Firenze	Sesto Fiorentino (FI)	Italy
Cardoni	Francesco	University of Padua	San Michele al Tagliamento (VE)	Italy
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Carlotti	Benedetta	Università degli Studi di Perugia	Perugia	Italy
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Carotenuto	Alfonso	Università degli Studi di Napoli Federico II	Napoli	Italy
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Cattelan	Mattia	Università di Padova	Padova	Italy
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Cavazza	Antonella	Università di Parma	Parma	Italy
Cavazzini	Alberto	Università di Ferrara	Ferrara	Italy
Cavazzoli	Gianluca	Università degli Studi di Milano	Milano	Italy
Cavazzoli	Chiara	UNIMORE	Modena	Italy
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Cecchetti	Violetta	Università di Perugia	Perugia	Italy
Cecchi	Teresa	ITT Montani	Fermo	Italy
Cecone	Claudio	Università di Torino	Torino	Italy
Cela	Ejdi	Università degli Studi di Perugia	Perugia	Italy
Celeste	Arcangelo	Sapienza Università di Roma	Roma	Italy
Celesti	Consuelo	Università di Messina	Messina	Italy
Cellupica	Edoardo	Italfarmaco SpA	Cinisello Balsamo	Italy
Centrella	Barbara	Universita di Torino	Fiumicino (RM)	Italy
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Cerchiai	Alberto	Università di Pisa	Pisa	Italy
Cerea	Paolangelo	Olon spa	Treviglio	Italy
Ceriotti	Michele	EPFL	Lausanne	Switzerland
Ceriotti	Davide	Politecnico Milano	Milano	Italy
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Ceroni	Ludovica	Università degli studi di Padova	Padova	Italy
Cerra	Bruno	Università degli Studi di Perugia	Perugia	Italy
Cerrato	Andrea	Sapienza Università di Roma	Roma	Italy
Cerruti	Simone	Università degli Studi del Piemonte Orientale	Alessandria	Italy
Cerveri	Alessandro	Università di Parma	Rapallo	Italy
Cerza	Elisa	Università degli Studi di Perugia	Perugia	Italy
Cesari	Andrea	Università di Pisa	Pisa	Italy
Cespi	Daniele	Alma Mater Studiorum – Università di Bologna	Bologna	Italy
Cesprini	Emanuele	Università di Padova	Ravenna	Italy
Cevasco	Giorgio	Università di Genova	GENOVA	Italy
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Chhipa	Abu Sufiyan	University of Turin	Turin	Italy
Chiaia	Valentina	Università degli Studi di Messina	Messina	Italy
Chianese	Elena	Università degli Studi di Napoli Parthenope	Napoli	Italy
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Ciaglia	Tania	University of Salerno	Fisciano	Italy
Ciambelli	Paolo	Narrando	Salerno	Italy
Ciampoli	Davide	Sapienza Università di Roma	ROMA	Italy
Cianchino	Davide	Università di Pisa	Pisa	Italy
Cianci	Chiara	Università degli studi di Firenze	Sesto Fiorentino	Italy
Cianfoni	Gabriele	Sapienza Università di Roma	Roma	Italy
Ciani	Marta	Università degli studi di Perugia	Atella, PZ	Italy
Ciani	Rebecca	Università degli Studi di Palermo	Palermo	Italy
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Cicco	Luciana	Università degli Studi di Baro Aldo Moro	Bari	Italy
Ciccola	Alessandro	Sapienza Università di Roma	Roma	Italy
Cicero	Nicola	Università di Messina	Messina	Italy
Ciciriello	Riccardo	Univesità degli studi di Bari	Bari	Italy
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Ciulu	Marco	Università di Verona	Verona	Italy
Civalleri	Bartolomeo	Università di Torino	Torino	Italy
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Clemente	Ilaria	Università degli Studi di Siena	Firenze	Italy
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Colarusso	Ester	University of Salerno	Fisciano	Italy
Colella	Marco	Università di Bari	Bari	Italy
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Coniglio	Davide	Università di Bari Aldo Moro	Bari	Italy
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Conte	Gualtiero	Università degli studi di Milano bicocca	Bergamo	Italy
Conte	Andrea	Università degli Studi di Padova	Arzergrande	Italy
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Conti	Aldo	AC Scientific	Albavilla	Italy
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Coppola	Federico	Scuola Superiore Meridionale	Cava de' Tirreni	Italy
Coppolino	Carmelo	Università degli Studi di Messina	Messina	Italy
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Corti	Vasco	Università di Padova	Padova	Italy
Corti	Matteo	Università degli Studi di Milano	Milano	Italy
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Cosentino	Giuseppe	Università di Catania	Catania	Italy
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D'Angelo	Paola	Sapienza	Roma	Italy
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D'Anna	Francesca	Università degli studi di Palermo	Palermo	Italy
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D'Urso	Alessandro	Università degli Studi di Catania	Catania	Italy
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Dall'Asta	Chiara	University of Parma	Parma	Italy
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Dallanoce	Clelia	Università degli Studi di Milano	Milano	Italy
Dallavalle	Sabrina	Università degli studi di Milano	Milano	Italy
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De Angelis	Filippo	Università di Perugia	Perugia	Italy
De Bonis	Beatrice	Università degli studi di Siena	Siena	Italy
De Castro	Cristina	Università di Napoli	Napoli	Italy
De Cesaris	Massimo Giuseppe	Sapienza Università di Roma	rome	Italy
De Cola	Luisa	Universita' degli Studi di Milano	Milano	Italy
De Conto	Marco	university of trieste	trieste	Italy
De Cristofaro	Mariano	Università di Pisa	Pisa	Italy
De Cristofaro	Ilaria	Università degli Studi di Napoli "Federico II"	Napoli	Italy
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De Gregorio	Rosa	Università di Napoli "Federico II"	Napoli	Italy
De Luca	Laura	Università di Messina	Messina	Italy
De Luca	Chiara	Università degli Studi di Ferrara	Ferrara	Italy
De Marchi	Elisa	Università degli Studi della Tuscia	Viterbo	Italy
De Marco	Antonio	Università di Bologna	Campobasso	Italy
De Nardi	Federica	Università di Torino	Torino	Italy
De Nisco	Mauro	Università della Basilicata	Napoli	Italy
De Poli	Marco	Università degli Studi di Ferrara	Ferrara	Italy
De Riccardis	Francesco	Università di Salerno	Fisciano	Italy
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Del Vecchio	Antonio	Università degli Studi di Pisa	Pisa	Italy
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Dell'Orletta	Gianluca	Università degli Studi dell'Aquila	L'Aquila	Italy
Dell’Anna	Maria Michela	Politecnico di Bari	Bari	Italy
Della Ca'	Nicola	Università di Parma	Parma	Italy
Della Giovanna	Dania	Federchimica	Milano	Italy
Della Latta	Elisa	Università di Pisa	Pisa	Italy
Della Pelle	Flavio	University of Teramo	Guardiagrele	Italy
Della Posta	Susanna	Università Campus Bio-Medico	Ardea	Italy
Della Sala	Paolo	Università degli Studi di Salerno	Fisciano	Italy
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Della Vedova	Larissa	Università degli Studi di Milano	Milano	Italy
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Di Fidio	Nicola	Università di Pisa	Pisa	Italy
Di Fonte	Nico	Università Dell'Aquila	Sulmona	Italy
Di Francesco	Fabio	Università di Pisa	Pisa	Italy
Di Francesco	Antonella	Università degli Studi di Catania	Catania	Italy
Di Francesco	Gaia	La Sapienza	Roma	Italy
Di Gilio	Alessia	Università di Bari	grumo appula	Italy
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Di Lecce	Roberta	Alma Mater Studiorum - Università di Bologna	Rimini	Italy
Di Lena	Denise	Università di Parma	TARANTO	Italy
Di Leo	Riccardo	Università di Pisa	Pisa	Italy
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Di Lorenzo	Chiara Maria	Università degli Studi di Milano	Milano	Italy
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Di Stefano	Vita	University of Palermo	Palermo	Italy
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Failla	Mattia	Università degli Studi di Milano	Turate	Italy
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Fanfoni	Simone	Società Chimica Italiana	Roma	Italy
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Fanti	Federico	Università degli Studi di Teramo	Teramo	Italy
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Liotta	Leonarda Francesca	https://www.ismn.cnr.it/index.php	Palermo/Italy	Italy
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Marra	Francesco	Università degli Studi di Torino	Torino	Italy
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Marzullo	Paola	Università degli Studi di Palermo	Castellana Sicula	Italy
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Menegazzo	Federica	Università Ca' Foscari Venezia	Venezia Mestre	Italy
Meneghetti	Moreno	Università di Padova	Padova	Italy
Meneghetti	Fiorella	UNIVERSITA' DEGLI STUDI DI MILANO	MILANO	Italy
Menichetti	Stefano	Università di Firenze	Sesto Fiorentino	Italy
Menna	Enzo	Università di Padova	Padova	Italy
Mensah	Wendy Appiagyei	Università di Bologna	Bologna	Italy
Mentana	Annalisa	Istituto Zooprofilattico Sperimentale della Puglia e Basilicata	foggia	Italy
Menziani	Maria Cristina	Università di Modena e Reggio Emilia	Modena	Italy
Meraviglia	Silvia	Università degli Studi di Milano	Milano	Italy
Mercedi	Anna	Università degli Studi di Padova	PADOVA	Italy
Mercolini	Laura	Alma Mater Studiorum - Università di Bologna	Bologna	Italy
Merli	Daniele	Università degli Studi di Pavia	Pavia	Italy
Merli	Elena	Next Technology Tecnotessile Società Nazionale di Ricerca r.l.	Prato	Italy
Merlini	Lucio	Università di Milano	VIAREGGIO	Italy
Merlo	Francesca	Università di Pavia	Pavia	Italy
Merola	Assunta	Technip Energies	Roma	Italy
Meroni	Francesca	Jacobacci & Partners	Milano	Italy
Meroni	Elvira	Carlo Erba Reagents	Cornaredo	Italy
Messina	Salvatore Gabriele	Indena SpA	Milano	Italy
Mesto	Davide	Università degli Studi di Bari	Cassano delle Murge	Italy
Metrangolo	Pierangelo	Politecnico di Milano	Pioltello	Italy
Mezzetta	Andrea	Consorzio INSTM	Firenze	Italy
Micalizzi	Giuseppe	Università degli Studi di Messina	Messina	Italy
Miceli	Francesca Cosimina	Università degli Studi di Roma Tor Vergata	Colleferro	Italy
Micheli	Laura	Università degli Studi di Roma Tor Vergata	Rome	Italy
Michelini	Elisa	Università di Bologna	Bologna	Italy
Micheloni	Simone	Università degli Studi di Trieste	Trieste	Italy
Miciaccia	Morena	Università degli Studi di Bari	Orta Nova	Italy
Miele	Margherita	University of Torino	Torino	Italy
Miele	Valentina	Università degli studi di Napoli Federico II	NOLA	Italy
Miglione	Antonella	Federico II University of Naples	Pomigliano d'Arco	Italy
Miguel Sainz	Carmen	University of Almeria	Almeria	Spain
Milan	Emil	Università degli studi di Verona	Zevio-santa Maria	Italy
Milanese	Chiara	Università di Pavia	Pavia	Italy
Milanesi	Matteo	Politecnico di Torino	Torino	Italy
Milani	Barbara	Unviersità degli Studi di Trieste	Trieste	Italy
Milardi	Danilo	Consiglio Nazionale delle Ricerche	Viagrande - CT	Italy
Milea	Demetrio	Università degli Studi di Messin	Messina	Italy
Milesi	Pietro	Politecnico di Milano	Besana in Brianza	Italy
Millini	Roberto	Eni S.p.A.	San Donato Milanese	Italy
Milone	Candida	Università di Messina	Messina	Italy
Minassi	Alberto	università del piemonte orientale	novara	Italy
Minella	Marco	Università di Torino	Torinio	Italy
Minero	Claudio	Università di Torino	Torino	Italy
Minghetti	Paola	unimi	Milano	Italy
Minguzzi	Alessandro	Università degli Studi di Milano	Milano	Italy
Minio	Francesco	Università di Perugia	Perugia	Italy
Minnelli	Cristina	Università Politecnica delle Marche	Ancona	Italy
Mion	Giuliana	Nerviano Medical Sciences srl	Nerviano	Italy
Mirasoli	Mara	Università di Bologna	Bologna	Italy
Mirizzi	Lorenzo	Università Milano Bicocca	Milano	Italy
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Miyake	Toshiko	Università di Milano-Bicocca	Milano	Italy
Mobbili	Giovanna	Università Politecnica delle Marche	Ancona	Italy
Modesto	Daniele	Zero Farms	Pordenone	Italy
Modugno	Francesca	Università di Pisa	Pisa	Italy
Moftakharianasorimovahed	Saman	Cà Foscari Università di Venezia	VENEZIA MESTRE	Italy
Mohammadi	Susan	Scuola Superiore Meridionale	Pozzuoli (NA)	Italy
Molinaro	Antonio	Universita di Napoli Federico II	Napoli	Italy
Molteni	Silvia Laura	Politecnico di Milano	Monza	Italy
Molteni	Linda	Università degli Studi di Milano-Bicocca	Milano	Italy
Momoli	Caterina	Università degli studi dell'Aquila	L'Aquila	Italy
Monari	Alessandro	Università di Modena e Reggio Emilia	Novellara	Italy
Moncelsi	Giulia	Elsevier	Amsterdam	Netherlands
Mondello	Luigi	Università di Messina	Messina	Italy
Mondini	Federico	Versalis	Mantova	Italy
Mongiovi'	Chiara	CNR	Bari	Italy
Monopoli	Antonio	Università degli Studi di Bari Aldo Moro	Bari	Italy
Montalbano	Marco	Università degli Studi di Milano	Rho	Italy
Montalbano	Letizia	Opificio delle Pietre Dure	Firenze	Italy
Montefusco	Antonica Valeria	Politecnico di Bari	Bari	Italy
Monteleone	Giulia	ENEA	ROMA	Italy
Montesano	Camilla	Sapienza Università di Roma	ROMA	Italy
Montini	Tiziano	Universita' degli Studi di Trieste	Trieste	Italy
Montis	Costanza	Università di Firenze	Firenze	Italy
Montoli	Arianna	Università degli Studi di Milano	Milano	Italy
Montone	Carmela Maria	University of Rome "La Sapienza"	ROMA	Italy
Montoro	Paola	Università di Salerno	Fisciano	Italy
Monza	Nicole	Università di Milano Bicocca	muggiò	Italy
Mor	Matteo	CNR-ISSMC	Faenza	Italy
Morandi	Vittorio	CNR-ISMN	Montelibretti (RM)	Italy
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Moras	Beatrice	Università degli Studi di Padova	Padova	Italy
Mordini	Alessandro	Consiglio Nazionale delle Ricerche	Sesto Fiorentino	Italy
Morelli	Carlo Francesco	Università di Milano	Milano	Italy
Moretti	Luca	Università degli Studi di Milano-Bicocca	Milano	Italy
Moretti	Elisa	Ca' Foscari University of Venice	Venice	Italy
Moretti	Simone	Università degli Studi di Perugia	Perugia	Italy
Moretto	Giulia	Università di Pavia	Pavia	Italy
Mori	Matteo	Università degli Studi di Milano	Milano	Italy
Moro	Stefano	Università degli Studi di Padova	Paodva	Italy
Moroni	Elisabetta	Consiglio Nazionale delle Ricerche	Milano	Italy
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Mortalò	Cecilia	CNR	Padova	Italy
Moscato	Davide	Università degli Studi di Milano	Milano	Italy
Motta	Stefano	Università degli Studi di Milano-Bicocca	Milano	Italy
Motta	Irene	Università degli Studi di Padova	Cologna Veneta	Italy
Motto	Ilaria	Nerviano Medical Sciences	Nerviano (MI)	Italy
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Muccilli	Vera	Università di Catania	Catania	Italy
Muccini	Michele	CNR	Bologna	Italy
Mudassir	Muhammad	University of Rome Tor Vergata	Rome	Italy
Mugnaini	Giulia	Università degli Studi di Firenze	Sesto Fiorentino (FI)	Italy
Muhyuddin	Mohsin	University of Milano Bicocca	Milan	Italy
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Murgia	Fabrizio	Università di Sassari	Sassari	Italy
Musazzi	Umberto Maria	Università degli Studi di Milano	Milano	Italy
Musco	Giovanna	IRCCS Ospedale San Raffaele	milano	Italy
Muscolino	Emanuela	Università degli Studi di Palermo	Palermo	Italy
Musiani	Francesco	Università di Bologna	Bologna	Italy
Musio	Biagia	Polytechnic University of Bari	Bari	Italy
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Muzzi	Beatrice	CNR-ICCOM	Sesto Fiorentino	Italy
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Napolitano	Alessandra	Università di Napoli Federico II	Napoli	Italy
Nardi	Alberto	Università degli Studi di Torino	Locana	Italy
Nardin	Raffaello	Università di Siena	Prato	Italy
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Natalucci	Angelo	MIUR	Roma	Italy
Natho	Philipp	Universita degli studi di Bari Aldo Moro	Bari	Italy
Naumov	Pance	New York University Abu Dhabi	Abu Dhabi	United Arab Emirates
Nava	Giuseppe	Politecnico di Milano	Cantu	Italy
Navarra	Maria Assunta	Sapienza Università di Roma	Roma	Italy
Nefedova	Darya	Politecnico di Bari	Bari	Italy
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Nejrotti	Stefano	Università degli Studi di Torino	Torino	Italy
Nele	Valeria	Università degli Studi di Napoli Federico II	Napoli	Italy
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Nespoli	Luca	Università degli Studi di Milano	Arosio	Italy
Nezi	Paola	Toscana Life Sciences	Siena	Italy
Ni	Qianqian	National University of Singapore	Singapore	Singapore
Nicastro	Gloria	Politecnico di Milano	Milano	Italy
Nicchio	Luca	Università di Pavia	Roncoferraro	Italy
Nicolini	Alessio	Università di Modena e Reggio Emilia	Modena	Italy
Nicolotti	Orazio	Università degli Studi di Bari 'Aldo Moro'	Bari	Italy
Nicosia	Angelo	Università di Catania	Catania	Italy
Nicotra	Francesco	Università degli Studi di Milkano-Bicocca	Milano	Italy
Nijs	Anne	Wiley-VCH	Berlin	Germany
Nistico'	Roberto	Universita' degli studi di Milano-Bicocca	Milano	Italy
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Noce	Beatrice	Sapienza Università di Roma	Roma	Italy
Nocito	Giuseppe	Consiglio Nazionale delle Ricerche	Messina	Italy
Nogueira	Leandro Lunardini Alves	Syrris	Cascais	Portugal
Nolli	Maria Grazia	University of Naples Federico II	Acerra	Italy
Nomicisio	Cristian	Università di Pavia	Ceranova	Italy
Nosengo	Chiara	Università degli Studi di Ferrara	Ferrara	Italy
Novello	Mariangela	Università della Calabria	Rende	Italy
Nucera	Alessandro	Università del Piemonte Orientale "Amedeo Avogadro"	Casale Monferrato	Italy
Offidani	Michele	Università di Bologna	Bologna	Italy
Okeke	Udodinma Jude	University of Urbino Carlo Bo, Italy	Urbino	Italy
Olarini	Alessandra	Università degli studi di Modena e Reggio Emilia	Modena	Italy
Oliva	Eleonora	University of Teramo	Teramo	Italy
Oliva	Rosario	Università degli Studi di Napoli Federico II	Napoli	Italy
Oliveri	Paolo	Università degli Studi di Genova	Genova	Italy
Oliveri	Ivan Pietro	Università di Catania	Catania	Italy
Oliveri	Valentina	Università degli Studi di Catania	Catania	Italy
Olivieri	Elena	Università Roma Tre	Roma	Italy
Oliviero	Giorgia	Università degli Studi di Napoli Federico II	Napoli	Italy
Orabona	Federica	Università degli studi di Napoli Federico II / Åbo Akademi University	Turku	Finland
Orecchio	Ciro	Università degli Studi di Torino	Torino	Italy
Orian	Laura	Università degli Studi di Padova	Padova	Italy
Orioli	Rebecca	University of Bologna	Bologna	Italy
Orlandi	Marco	Università Milano Bicocca	Milano	Italy
Orlandini	Bruno	Assing Spa	Agrate	Italy
Orlando	Paolo	Università degli Studi di Milano	Rho	Italy
Ostacolo	Carmine	Università degli Studi di Salerno	Fisciano	Italy
Ottonelli	Ilaria	Università degli Studi di Modena e Reggio Emilia	Modena	Italy
Pacchioni	Gianfranco	Università degli Studi di Milano-Bicocca	Milano	Italy
Paccoia	Federico	università degli studi di Perugia	Perugia	Italy
Pace	Vittorio	Univ Torino	Torino	Italy
Pace	Alessandra	CNR	Sesto Fiorentino	Italy
Pace	Andrea	Università di Palermo	Palermo	Italy
Pacetti	Martina	Università degli Studi di Perugia	Terni	Italy
Pachaiappan	Praveena	University of Brescia	Brescia	Italy
Paci	Davide	Medica S.p.A.	Medolla (MO)	Italy
Paganini	Maria Cristina	Univeristà di Torino	Torino	Italy
Pagano	Flavia	La Sapienza Università di Roma	Rim	Italy

Pagano	Rita	Università Federico II	Pomigliano D'Arco, NA	Italy
Pagliari	Stefania	Università Milano-Bicocca	Milano	Italy
Pagliaricci	Noemi	University of Camerino	Recanati	Italy
Pagliaricci	Sara	University of Camerino	Recanati	Italy
Pagliaro	Maria Vincenza	CNR	Sesto Fiorentino (FI)	Italy
Pagot	Gioele	Università degli Studi di Padova	Padova	Italy
Paialunga	Elisa	Università di Roma Tor Vergata	Ciampino (RM)	Italy
Paini	Jacopo	Consiglio Nazionale delle Ricerche	Parma	Italy
Paja	Herald	università degli studi di torino	priola	Italy
Palazzi	Sergio	ISIS di Setificio "Paolo Carcano", Como	Lomazzo	Italy
Palermo	Vincenzo	CNR	Bologna	Italy
Palmeri	Federica	Università La Sapienza di Roma	Roma	Italy
Palmieri	Alessandro	Università di Camerino	Camerino	Italy
Palmioli	Alessandro	Università degli studi di Milano Bicocca	Milano	Italy
Palmisani	Jolanda	Università degli Studi di Bari	BARI	Italy
Palumbo	Arianna	Università di Bologna	Campoformido	Italy
Palumbo	Bianca	Sapienza Università di Roma	roma	Italy
Panico	Francesco	Università degli Studi di Milano	Milano	Italy
Panzarella	Giulia	Università Magna Graecia di Catanzaro	Catanzaro	Italy
Panzeca	Giovanna	University of Siena	Siena	Italy
Panzella	Lucia	Università di Napoli Federico II	Napoli	Italy
Paoletti	Francesca	CNR	Basovizza (TS)	Italy
Paolino	Marco	Università degli Studi di Siena	Siena	Italy
Paolucci	Francesco	università di Bologna	Bologna	Italy
Paone	Emilia	Università Mediterranea di Reggio Calabria	Reggio Calabria	Italy
Paparo	Rosanna	University of Naples Federico II	Mariglianella	Spain
Papeo	Gianluca	Nerviano Medical Sciences	Nerviano	Italy
Papis	Marta	Università degli Studi dell'Insubria	Como	Italy
Pappaianni	Giulio	Università degli studi di Firenze	Prato	Italy
Pappalardo	Andrea	Università di Catania	Catania	Italy
Paraboschi	Sara	Università di Pavia	Pavia	Italy
Paraschiv	Andrei	Università degli Studi di Torino	Chieri	Italy
Pargoletti	Eleonora	Università degli Studi di Milano	Milano	Italy
Parise	Angela	CNR - Consiglio Nazionale delle Ricerche at SISSA	Trieste	Italy
Parisi	Maria Laura	Università di Siena	Siena	Italy
Parisotto	Stefano	Unversità di Torino	Torino	Italy
Parisse	Gianluca	Università degli Studi dell'Aquila	L'Aquila	Italy
Parrinello	Michele	Istituto Italiano di Tecnologia	Genova	Italy
Pasca	Francesco	Università di Bari "Aldo Moro"	Bari	Italy
Pasini	Mariacecilia	CNR	MI - MILANO	Italy
Pasquato	Lucia	Università degli Studi di Trieste	Trieste	Italy
Pasquini	Benedetta	Università di Firenze	Sesto Fiorentino	Italy
Passarella	Daniele	Università degli Studi di Milano	Milano	Italy
Passarini	Fabrizio	Università di Bologna	Bologna	Italy
Passet	Chiara	Unito	Pinerolo	Italy
Pasti	Luisa	Università degli Studi di Ferrara	Ferrara	Italy
Pastore	Andrea	università padova	Padua	Italy
Pastore	Genny	Univeristà Camerino	Civitanova Marche	Italy
Pastori	Nadia	Politecnico di Milano	Milano	Italy
Pastran	Domingo	SHIMADZU ITALIA S.R.L.	MILANO	Italy
Pasut	Gianfranco	Università di Padova	Padova	Italy
Patacchini	Elisa	La Sapienza Università di Roma	Roma	Italy
Patamia	Vincenzo	Università di Catania	Catania	Italy
Patriarca	Marina	Eurachem	Roma	Italy
Pavan	Cristina	Università di Torino	Torino	Italy
Pecchini	Pietro	Universitá di Bologna	Bologna	Italy
Pecoraro	Tania	univeristy of milan	MILANO	Italy
Pedatella	Silvana	Università di Napoli Federico II	Napoli	Italy
Pedone	Alfonso	Università di Modena e Reggio Emilia	Modena	Italy
Pedraza González	Laura Milena	Università di Pisa	Pisa	Italy
Pedretti	Alessandro	Università degli Studi di Milano	Milano	Italy
Pedrini	Federica	Università degli Studi di Roma Tor Vergata	Castelleone	Italy
Pelagatti	Paolo	Università di Parma	Parma	Italy
Pellacani	Samuele	Università degli Studi di Modena e Reggio Emilia	Modena	Italy
Pellacani	Lucio	Università di Roma La Sapienza	Roma	Italy
Pellegrino	Francesco	Università di Torino	Torino	Italy
Pellegrino	Simone	Università degli studi di Torino	Boves	Italy
Pellini	Ivan Claudio	University of Milano-Bicocca	Milano	Italy
Pellis	Giulia	Università degli Studi di Torino	Torino	Italy
Penasa	Roberto	Università degli Studi di Padova	Robbi	Italy
Penconi	Marta	CNR	Milano	Italy

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Perego	Simone	Istituto Italiano di Tecnologia	Genova	Italy
Peri	Francesco	University of Milano-Bicocca	Milano	Italy
Perina	Maria Luisa	Università degli Studi di Catania	Catania	Italy
Perinelli	Diego Romano	University of Camerino	Camerino	Italy
Perna	Filippo	Università degli Studi di Bari	Bari	Italy
Peron	Gregorio	Università di Brescia	Brescia	Italy
Perrero	Jessica	Autonomous University of Barcelona	Bellaterra	Spain
Perrucci	Miryam	università degli Studi di Teramo	Mesagne	Italy
Perucchini	Mariasofia	Università di Pavia	Pavia	Italy
Peruzzi	Greta	Sapienza Università di Roma	Roma	Italy
Peruzzini	Maurizio	CNR	Sesto Fiorentina	Italy
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Petrone	Alessio	Università degli Studi di Napoli Federico II	Napoli	Italy
Petrongari	Angelica	Sapienza Università di Roma	Roma	Italy
Petroselli	Chiara	Università degli Studi di Perugia	Perugia	Italy
Petrozza	Annamaria	Istituto Italiano di tecnologia	Genova	Italy
Petruzzelli	Rossella	Università di Bologna	Bologna	Italy
Pettignano	Alberto	Università di Palermo	Palermo	Italy
Pettinari	Claudio	Università di Camerino	Camerino	Italy
Pettinari	Riccardo	Università degli Studi di Camerino	Camerino	Italy
Pezzella	Alessandro	Università di Napoli Federico II	Napoli	Italy
Pezzola	Silvia	Universita "Tor Vergata" Roma	Roma	Italy
Pezzoli	Stefano	Università degli Studi di Milano	Milano	Italy
Pezzuti	Gianmarco	Università di Roma "La Sapienza"	Roma	Italy
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Piacenza	Pietro	Università del Piemonte Orientale	Alessandria	Italy
Pianta	Nicolò	Università degli Studi di Milano - Bicocca	Valenza	Italy
Piarulli	Umberto	Università degli Studi dell'Insubria	Varese	Italy
Picca	Rosaria Anna	Università degli studi di Bari Aldo Moro	Bari	Italy
Piccardi	Margherita	Università di Pisa	Pisa	Italy
Picchi	Alberto	Università di Pisa	Santa Maria a Monte	Italy
Picci	Maria Valeria	Polizia di Stato	Milano	Italy
Piccialli	Gennaro	Università degli Studi di Napoli Federico II	Napoli	Italy
Piccini	GiovanniMaria	Università di Modena e Reggio Emilia	Modena	Italy
Piccoli	Alberto	VIACQUA S. P. A.	Vicenza	Italy
Piccolo	Vincenzo	University of Naples Federico II	Napoli	Italy
Picconi	Pietro	NMS	Vigevano	Italy
Picerno	Rita	Politecnico di Milano	Nocera Inferiore	Italy
Piergiovanni	Maurizio	Università di Parma	Parma	Italy
Pieri	Riccardo	Syensqo	Bollate	Italy
Pierigé	Michele	Università di Pisa	Pisa	Italy
Pierini	Adriano	Università di Roma La Sapienza	Roma	Italy
Piermatti	Oriana	Università di Perugia	Perugia	Italy
Piersanti	Giovanni	Università degli studi di Urbino Carlo Bo	Urbino	Italy
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Pietropaoli	Eva	Università di Roma, La Sapienza	Roma	Italy
Pifferi	Valentina	Università degli Studi di Milano	Milano	Italy
Pigliacelli	Claudia	Politecnico di Milano	Milano	Italy
Pignataro	Luca	Università degli Studi di Milano	Gallarate	Italy
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Pineschi	Mauro	Università di Pisa	Pisa	Italy
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Pinzi	Luca	University of Modena and Reggio Emilia	Modena	Italy
Piovano	Alessandro	Politecnico di Torino	Torino	Italy
Piovesana	Susy	Sapienza Università di Roma	Roma	Italy
Pipolo	Silvio	Universita di Lille	Lille	France
Piras	Maria Vittoria	Università degli studi di Cagliari	Cagliari	Italy
Pirrone	Noemi	Politecnico di Torino	Torino	Italy
Pisati	Arianna	Università degli Studi di Milano	Milano	Italy
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Pittalà	Maria Gaetana Giovanna	Università degli Studi di Catania	CT	Italy
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XXVIII Congresso Nazionale

MILANO, 26 - 30 Agosto 2024

SCI 2024

Chimica

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Accardo	Francesca	Department of Food and Drug Sciences, University of Parma, Italia	224	151	ORG-2D
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Acuto	Santina	Campus di ematologia con malattie rare, AOOR Villa Sofia Cervello, Palermo, Italy	1681	74	TEC-A
Adami	Gianpiero	Department of Chemical and Pharmaceutical Sciences, University of Trieste, Via Giorgieri 1, Trieste	1510, 1518	214, 214	POSTER-B, POSTER-B
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Adams	David J.	Illawarra Health and Medical Research Institute, University of Wollongong, Wollongong, New South Wales, Australia	758	136	FAR-1D
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Agnes	Marco	Istituto per la Sintesi Organica e Fotoreattività (ISOF), CNR, Via Piero Gobetti, 101, 40129 Bologna, Italy	1651	31	POSTER-A
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Aidli	Wafa	ELectroANaliytical Chemistry Group, Dipartimento di Chimica, Università degli Studi di Milano,via Golgi 19, 20133 Milano, Italy	239	31	POSTER-A
Aiello	Daniele	Università di Modena e Reggio Emilia, Italia	1682	214	POSTER-B
Aiello	Donatella	Università della Calabria, Italia	508	31	POSTER-A
Aiello	Gilda	Department of Human Science and Quality of Life Promotion, Telematic University San Raffaele, 00166 Rome, Italy	1922	31	POSTER-A
Aieta	Chiara	Università degli studi di Milano, Italia	919	75	TEO-A
Ailuno	Giorgia	Dept. of Pharmacy, University of Genova, Viale Cembrano 4, 16148 Genova, Italy	1778	70	TEF-2
Aime	Silvio	IBB-CNR, Università degli Studi di Torino, Via Nizza 52, 10126, Torino, Italy. e-mail: francesca.garello@unito.it	1328	67	INO-1A
Aimola	Giorgia	CNR-IRSA, Italia	1765	31	POSTER-A
Aimone	Clelia	University Of Turin, Italia	1853	158	IND-1C
Airi	Alessia	Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15, 10135 and Via P. Giuria 7, 10125, Torino, Italy.	1058	160	FIS-1B
Airoldi	Barbara	Dipartimento di Chimica, Università degli studi di Milano, Milano	910	31	POSTER-A
Airoldi	Cristina	Università di Parma, Italia	664, 913, 926, 1829, 1847	214, 214, 214, 214, 214	POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B
Aita	Sara Elsa	Università degli Studi di Roma "La Sapienza", Italia	449, 450, 358	31, 214, 66	POSTER-A, POSTER-B, ANA-1A
Ajdini	Behixhe	Università Politecnica delle Marche, Italia	907, 479, 416	31, 78, 150	POSTER-A, ALI-1A, ANA-2D
Ajo	Alessandro	Università degli Studi di Milano, Italia	156, 1707	31, 31	POSTER-A, POSTER-A
Akintola	Oluseun	IAAC, Friedrich-Schiller-Universität Jena	801	214	POSTER-B
Alaviuhkola	Juho	University of Oulu	1456	214	POSTER-B
Albanese	Paola	Dipartimento di Biotecnologie, Chimica e Farmacia, Università degli Studi di Siena, Italia; Dipartimento di Scienze Fisiche della Terra e dell'Ambiente, Università degli Studi di Siena, Italia	1578	31	POSTER-A
Albanese	Valentina	Università degli studi di Ferrara, Department of Environmental and Prevention Sciences	688	143	ORG-1C
Albani	Marco	Department of Pharmaceutical Sciences, University of Milan, 20133 Milan, Italy	827	31	POSTER-A
Albano	Aurora	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210	31	POSTER-A
Albano	Aurora	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, "Sapienza" Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1626, 1684, 1616, 1627, 1955	31, 31, 214, 214, 134	POSTER-A, POSTER-A, POSTER-B, POSTER-B, FAR-1C
Albano	Gianluigi	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Via Edoardo Orabona 4, 70126 Bari, Italy; Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Via Giuseppe Moruzzi 13, 56124 Pisa, Italy	130, 1782, 1824	31, 265, 256	POSTER-A, DID-B, ORG-4A
Albarano	Luisa	Dipartimento di Biologia, Università degli Studi di Napoli Federico II, Italia	303	31	POSTER-A
Alberti	Diego	Università di Torino, Italia	1353, 870	31, 189	POSTER-A, ParallelTopic04 - ID: 189
Alberti	Giancarla	Università degli Studi di Pavia, Dipartimento di Chimica, Viale Taramelli 12, Pavia, 27100, Italy	686	142	ANA-1C
Alberti	M.	Università of Piemonte Orientale, Italia	1673	31	POSTER-A
Alberti	Marta	Department of Pharmaceutical Sciences, University of Eastern Piedmont, Novara, Italy	1591, 382	214, 132	POSTER-B, FAR-1B
Alberti	Matteo	Università degli Studi di Milano, Italia	921	241	INO-2B
Albertini	Stefano	Sabio fuels s.r.l - Campomorone (GE), Italy	210	214	POSTER-B
Alberto	Figoli	ITM-CNR, Italia.	464	214	POSTER-B
Albinati	Alberto	CNR-ICCOM, Sesto Fiorentino, Italy and University of Milano, Milan Italy	1284	74	TEC-A
Albini	Bendetta	Università degli studi di Pavia, Dipartimento di Fisica, Italia	898	254	INO-3
Albino	Martin	CNR-ICCOM, Sesto Fiorentino, Italia	931	31	POSTER-A
Albino	Martin	ICCOM – CNR	1925	31	POSTER-A
Albonetti	Giorgia	Università degli studi di Ferrara, Italia	1184	141	ORG-1A
Albonetti	Stefania	Department of Industrial Chemistry "Toso Montanari" and Center for Chemical Catalysis-C3, University of Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	469	158	IND-1C

Alcaro	Stefano	Dipartimento di Scienze della Salute, Università "Magna Græcia" di Catanzaro, Campus Universitario "S. Venuta", Viale Europa, 88100 Catanzaro, Italy; Associazione CRISEA - Centro di Ricerca e Servizi Avanzati per l'Innovazione Rurale, Località Condoleo, 88055 Belcastro (CZ), Italy; Net4Science Academic Spinoff, Università "Magna Græcia" di Catanzaro, Campus Universitario "S. Venuta", Viale Europa, 88100 Catanzaro, Italy	253, 797, 251, 869, 1631, 755, 306	31, 31, 214, 214, 214, 154, 255	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, CSB-1B, FAR-2A
Alchera	Federica	Dipartimento di Chimica, Università degli Studi di Torino, Italia	802	31	POSTER-A
Alcolea-Rodriguez	Victor	CSIC-ICP, Marie Curie 2, E-28049-Madrid, Spain	764	31	POSTER-A
Aldini	Giancarlo	Department of Pharmaceutical Sciences, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy	601, 696, 1596, 1922, 803, 1752	31, 31, 31, 31, 214, 255	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, FAR-2A
Alduina	Valeria	Università degli Studi di Palermo, Italia	1452	244	ORG-3A
Alessandri	Ivano	Università degli Studi di Brescia, Italia	1397	214	POSTER-B
Alessandrini	Silvia	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Italia	121	161	TEO-B
Alessandro	Riccardo	Università degli Studi di Perugia, Italia	610	31	POSTER-A
Alessandroni	Laura	School of Pharmacy, Chemistry Interdisciplinary Project (ChIP), University of Camerino, Camerino, Italy	478, 621, 1478, 714	31, 31, 60, 214	POSTER-A, POSTER-A, ParallelTopic14, POSTER-B
Alessi	Sabina	Dipartimento di Ingegneria, Università degli Studi di Palermo, Viale delle Scienze 6, 90128 Palermo, Italy	1126, 1199	214, 74	POSTER-B, TEC-A
Alfano	Antonella Ilenia	Università degli studi di Napoli Federico II, Italia	1842, 858	31, 214	POSTER-A, POSTER-B
Alfano	Brigida	ENEA Portici	1230	214	POSTER-B
Alfaouri	Dina	University of Helsinki	1044	31	POSTER-A
Alfieri	Maria Laura	Università degli Studi di Napoli Federico II, Italia	1188, 723, 724	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Alfonso	Alfonso	UNIMORE	203	31	POSTER-A
Algieri	Vincenzo	IRCCS Neuromed - Istituto Neurologico Mediterraneo, Via Atinense 18, 86077 - Pozzilli (IS), IT.	268	31	POSTER-A
Ali	Asjad	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy	1155, 1153, 1428	31, 214, 67	POSTER-A, POSTER-B, INO-1A
Ali	Mukhtiar	University of Turin, Italy	629	249	ANA-3B
Aliberti	Michela	Università di Salerno, Italia	1162, 1507	31, 31	POSTER-A, POSTER-A
Alibrando	Filippo	Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy	1304, 1349	31, 31	POSTER-A, POSTER-A
Alimonti	Andrea	Institute of Oncology Research (IOR), Oncology Institute of Southern Switzerland (IOSI), 6500 Bellinzona, Switzerland	1034	255	FAR-2A
Aliotta	Chiara	CNR-ISMN (Palermo, Italy)	1384	265	DID-B
Aliprandi	Alessandro	Dipartimento di Scienze Chimiche, DiSC, Università degli Studi di Padova, Italy	1707, 157	31, 214	POSTER-A, POSTER-B
Alladio	Eugenio	Dipartimento di Chimica, Università di Torino, Italia; Centro Regionale Antidoping "A. Bertinaria" di Orbassano (Torino), Italia; DataBloom Srl, Torino, Italia	987, 1412, 128, 710, 1558, 1788, 255	193, 193, 214, 214, 214, 214, 258	ParallelTopic09 - ID: 193, ParallelTopic09 - ID: 193, POSTER-B, POSTER-B, POSTER-B, POSTER-B, ANA-4A
Allegrini	Pietro	Indena, Italia	749, 745	214, 149	POSTER-B, ORG-2C
Alletto	Paola	Università di Trieste, Italia	763	31	POSTER-A
Allevi	Dario	Università cattolica del sacro cuore, Roma	1524	237	TEC-C
Allkanjari	Davide	Dipartimento di Chimica Industriale "Toso Montanari" and Center for Chemical Catalysis-C3, Università di Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	937	31	POSTER-A
Almerico	Anna Maria	Università di Palermo, Italia	573	31	POSTER-A
Almondes	Raila Raiany	University of Sao Paulo, Brazil	369	214	POSTER-B
Aloia	Andrea	Università degli Studi di Bari Aldo Moro, Italia	1120	246	ORG-3C
Aloia	Andrea Liberato	Università degli Studi di Bari, Italia	1446	31	POSTER-A
Alonso Martínez	Maria Mercedes	ANFACO-CECOPESCA, Department of Circular Economy, Colexio Universitario, 36310 Vigo, Spain	404	211	ParallelTopic14 - ID: 211
Alonso Martínez	Maria Mercedes	ANFACO-CECOPESCA, Department of Circular Economy, Colexio Universitario, 36310 Vigo, Spain	1316	261	ALI-2B
Altamura	Concetta	Section of Pharmacology, Department of Precision and Regenerative Medicine, School of Medicine, University of Bari Aldo Moro, 70124 Bari, Italy	1634	214	POSTER-B
Altamura	Davide	Istituto di Cristallografia-CNR, Bari, Italia	1458, 201	214, 243	POSTER-B, FIS-2B
Alterio	Agata	Department of Environmental Sciences, Informatics and Statistics, Ca' Foscari University of Venice, Via Torino, 155-30172 Venice Mestre, VE, Italy	903	31	POSTER-A
Altieri	Fabio	Dipartimento di scienze biochimiche "Alessandro Rossi Fanelli", Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210	31	POSTER-A
Altieri	Saverio	Department of Physics, University of Pavia	870	189	ParallelTopic04 - ID: 189
Altinier	Alessandro	Università degli studi di Padova, Italia	1545	31	POSTER-A
Altomare	Alessandra	Department of Pharmaceutical Sciences, University of Milan	1596, 803, 1752	31, 214, 255	POSTER-A, POSTER-B, FAR-2A
Altomare	Alessandra Anna	Università degli studi di Milano, Italia	1302	31	POSTER-A
Altomare	Cosimo Damiano	università degli Studi di Bari, Italia	1309, 1464, 1180	31, 214, 134	POSTER-A, POSTER-B, FAR-1C
Altucci	Carlo	Dipartimento di Scienze Biomediche Avanzate, Università degli Studi di Napoli Federico II, 8013, Napoli, Italia; Istituto Nazionale Di Fisica Nucleare, sezione di Napoli, Napoli, 80126, Italia	1600	214	POSTER-B
Altucci	Lucia	Department of Precision Medicine, University of Campania "Luigi Vanvitelli", Vico L. De Crecchio 7, 80138 Naples, Italy	1643, 985, 851	56, 214, 132	ParallelTopic12, POSTER-B, FAR-1B
Alviano	Francesco	University of Bologna Italia, Stem sel srl	1624	146	ANA-2B
Amante	Giuseppe	Scuola Superiore Meridionale, Largo S. Marcellino 10, Napoli	1608	31	POSTER-A
Amariglio	Mattia	Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale, Università di Parma, Italia	580	31	POSTER-A
Amata	Emanuele	Università deli studi di Catania, Italia	792, 1597, 306, 788	31, 31, 255, 136	POSTER-A, POSTER-A, FAR-2A, FAR-1D
Amati	Agnese	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, Ferrara (Italy)	623	165	INO-1B
Amato	Francesco	Department of Chemistry, Sapienza University of Rome, Piazzale Aldo Moro, 5, 00185, Rome, Italy	143	253	INO-2C
Amato	J.	Università di Napoli, Italia	618	31	POSTER-A
Amato	Jussara	Università di Napoli Federico II, Italia	236, 276, 858, 1529, 1743, 512, 772, 1034	175, 214, 214, 214, 138, 243, 266, 255	ParallelTopic04 - ID: 175, POSTER-B, POSTER-B, POSTER-B, ANA-2A, FIS-2B, CSB-2, FAR-2A
Amato	Paola	Università degli Studi di Napoli Federico II, Italia	1918, 1593	31, 236	POSTER-A, TEC-D
Amatore	Donatella	Army Medical Center, Scientific Department, p.za Celimontana 50, Rome 00184, Italy.	1626	31	POSTER-A
Amatore	Donatella	Army Medical Center, Scientific Department, p.za Celimontana 50, Rome 00184, Italy	1955	134	FAR-1C
Amatori	Simone	Sciences Department, Roma Tre University	1488, 1774	214, 165	POSTER-B, INO-1B
Ambrogi	Paola	DDSCI, Italia	567, 905	265, 265	DID-B, DID-B
Ambrogi	Veronica	Department of Chemical, Materials and Production Engineering, University of Naples Federico II	151	153	TEC-B
Ambrogi	Veronica	Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università degli Studi di Napoli Federico II, Italia	719	247	ORG-3D
Ambrogio	Giacomo	Dipartimento di Chimica, Università di Torino, via Giuria 5, 10125 Torino, Italy	1208	31	POSTER-A
Ambrosetti	Matteo	Politecnico di Milano, Italia	1704, 1897	31, 31	POSTER-A, POSTER-A
Ambrosio	Carmen M.S.	Division of Human Nutrition and Health, Wageningen University & Research, Stippeneng 4, Wageningen (The Netherlands)	1693	259	ALI-1B
Ambrosio	Francesca alessandra	Department of Health Sciences, Campus "S. Venuta", "Magna Græcia" University of Catanzaro, Viale Europa, 88100 Catanzaro, Italy	1118	31	POSTER-A
Ambrosio	Nicola	Università degli Studi "Magna Graecia", Italia	1668, 1329	214, 70	POSTER-B, TEF-2
Amendola	Valeria	Università di Pavia, Italia	1230, 1207	214, 234	POSTER-B, FIS-1C
Amendolia	Maria	National Center for Innovative Technologies in Public Health, Istituto Superiore di Sanità, Rome 00161; Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Roma1, Rome	1296	214	POSTER-B
Amici	Julia	Politecnico di Torino	570, 429	31, 72	POSTER-A, ELE-1
Ammendolia	Maria Grazia	National Center for Innovative Technologies in Public Health, Istituto Superiore di Sanità, Rome, Italy	1476	31	POSTER-A
Amorati	Riccardo	Università di Bologna, Italia	1188	31	POSTER-A
Amorello	Diana	Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF), University of Palermo, 90128 Palermo, Italy	263	251	ANA-3D
Amoresano	Angela	Università Federico II di Napoli,Italia	508	31	POSTER-A

Amoroso	Nicola	Dipartimento di Farmacia-Scienze del Farmaco, Università degli Studi di Bari 'Aldo Moro', Italia; Istituto Nazionale di Fisica Nucleare, Sezione di Bari, 70125, Bari, Italy	1180	134	FAR-1C
Ampelli	Claudio	Università degli Studi di Messina, Italia	737	31	POSTER-A
Amuso	Roberta	Laboratory of Industrial and Synthetic Organic Chemistry (LISOC), Department of Chemistry and Chemical Technologies, University of Calabria, Via P. Bucci, 12/C, 87036 Arcavacata di Rende (CS), Italy	884	31	POSTER-A
Ancona	Valeria	CNR-IRSA, Italia	1765	31	POSTER-A
Anderlini	Alessandro	NanotechLab, Università degli Studi di Modena e Reggio Emilia, Italia	875	70	TEF-2
Anderluzzi	Giulia	Università degli Studi di Milano, Italia	1727	214	POSTER-B
Anderson	Don	WHOI, Woods Hole Oceanographic Institution, Woods Hole, MA, USA	1566	150	ANA-2D
Andolfi	Anna	Department of Chemical Science, University of Naples Federico II, Naples, Italy	1293	31	POSTER-A
Andolina	Stefano	Università degli studi di Milano, Italia	1143, 495	31, 214	POSTER-A, POSTER-B
Andrea	Casini	Dipartimento di Chimica & CSGI - Università degli Studi di Firenze, Italia	957	235	FIS-1D
Andreadou	Ioanna	Laboratory of Pharmacology, Faculty of Pharmacy, National and Kapodistrian University of Athens, Greece	1226	31	POSTER-A
Andreev	M	Moscow State University	1759	214	POSTER-B
Andreoni	Stefano	Unit of Microbiology and Virology, "Maggiore della Carità" University Hospital, Novara, Italy	1563	31	POSTER-A
Andresini	Michael	Department of Pharmacy – Drug Sciences, University of Bari "A. Moro" Via E. Orabona 4, 70125 – Italy FLAME-Lab –Flow Chemistry and Microreactor Technology Laboratory	150, 595, 1813, 1491, 1700	31, 31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B
Andretta	Emanuela	Università degli studi di Napoli "Federico II", Italia	1688	147	ORG-2B
Andreu Martinez	David	Department of Medicine and Life Sciences Universitat Pompeu Fabra Barcelona Biomedical Research Par	515	31	POSTER-A
Andrisano	Vincenza	Department for Life Quality Studies, University of Bologna, Corso D' Augusto 237, Rimini, Italy	1868	31	POSTER-A
Anesi	Andrea	Unit of Metabolomics, Research and Innovation Centre, Fondazione Edmund Mach, San Michele all'Adige,Italy	757	195	ParallelTopic12 - ID: 195
Anfossi	Laura	Dipartimento di Chimica, Università di Torino, Italia	414, 415, 160	214, 248, 146	POSTER-B, ANA-3A, ANA-2B
Angela	D'Amico	Department of Biological, Chemical and Pharmaceutical Science and Technology (STEBICEF), Università degli Studi di Palermo	752	31	POSTER-A
Angeletti	Carlo	Università Politecnica delle Marche, Ancona, Italia	1366	136	FAR-1D
Angeli	Andrea	Università degli Studi di Firenze, Italia	850	31	POSTER-A
Angelillo	Alessia	Università di Napoli Federico II, Italia	460	31	POSTER-A
Angelini	Alessandro	Ca' Foscari - Università di Venezia, Italia; European Centre for Living Technology (ECLT), Italy.	1502, 1222	214, 144	POSTER-B, ANA-1D
Angelini	Antonella	CNR-IRSA, Italia	1765	31	POSTER-A
Angelini	Elisa	Department of Chemistry, University of Pavia, Viale Taramelli 12, 27100 Pavia, Italy	1907	214	POSTER-B
Angellotti	Giuseppe	Istituto per lo Studio dei Materiali Nanostrutturati, CNR, via U. La Malfa 153, 90146 Palermo, Italy	1346	245	ORG-3B
Angeloni	Simone	Chemistry Interdisciplinary Project (ChIP), School of Pharmacy, University of Camerino, Italy	714	214	POSTER-B
Angelucci	Andrea	Sapienza Università di Roma, Italia	1826	31	POSTER-A
Anguita	Juan	CIC bioGUNE, Parque Tecnológico de Bizkaia, Edificio 801 A - 48160 Derio, Spain	284	266	CSB-2
Annatelli	Mattia	Università Ca' Foscari Venezia, Italia	152	207	ParallelTopic10 - ID: 207
Annetta	Marco	Università degli Studi di Napoli Federico II, Italia	179	31	POSTER-A
Annibaldi	Anna	Università Politecnica delle Marche, Italia; Fano Marine Center, Italia	907	31	POSTER-A
Annibaldi	Anna	Università Politecnica delle Marche, Italia	479	78	ALI-1A
Annibaldi	Anna	DiSVA, Università Politecnica delle Marche, Italia	416	150	ANA-2D
Annunziata	Francesca	Department of Food, Environmental and Nutritional Sciences, University of Milan, via Celoria, 2, 20133, Milan	962, 1020, 1453, 1601, 1540, 961, 1322	31, 31, 31, 31, 214, 255, 259	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, FAR-2A, ALI-1B
Ansari	Mohammed Dilsad	Politecnico di Milano, Italy	730	31	POSTER-A
Anselmi Tamburini	Umberto	Università degli studi di Pavia, Italia; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Italia	1083	51	ParallelTopic09
Anselmi Tamburini	Umberto	Università degli Studi di Pavia, Italia	1295	214	POSTER-B
Anselmi-Tamburini	Umberto	Università degli studi di Pavia, Dipertimento di Chimica, viale Taramelli 12, Pavia, Italy	1156	31	POSTER-A
Anselmi	Michele	D3-PharmaChemistry, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genoa, Italy	964	214	POSTER-B
Antenucci	Stefano	G.P.S. Tech, Italia	1912	45	ParallelTopic06
Anticò	Enriqueta	Universitat de Girona, Spain	581	249	ANA-3B
Antinucci	Arianna	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", Italy	168	138	ANA-2A
Antinucci	Giuseppe	Federico II University of Naples (Italy) - Dept. Chemical Sciences, Italia	1319	204	ParallelTopic07 - ID: 204
Antolini	Beatrice	Università degli Studi di Parma, Italia	915	31	POSTER-A
Antonelli	Lorenzo	Sapienza Università di Roma, Italia	1697	31	POSTER-A
Antonelli	Lorenzo	Institute of Molecular Biology and Pathology (IBPM), National Research Council of Italy (CNR), 00185 Rome, Italy	1616	214	POSTER-B
Antonelli	Lorenzo	Sapienza Università di Roma, Italia	1856	248	ANA-3A
Antonelli	Manuela	Dip Civil Enviromental Engineering Politecnico di Milano, Italia	1053, 1447	214, 214	POSTER-B, POSTER-B
Antonello	Aurora	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", CNR-SCITEC, v. Fantoli 16/15, I-20138 Milano (IT), and SmartMatLab Center, v. Golgi 19, II-20133 Milano (IT)	820	31	POSTER-A
Antonello	Sabrina	Università degli Studi di Padova, Italia	1314, 1849	31, 214	POSTER-A, POSTER-B
Antonetti	Claudia	Università di Pisa, Italia	756, 1991, 1021	47, 203, 214	ParallelTopic07, ParallelTopic06 - ID: 203, POSTER-B
Antonini	Carlo	Università degli Studi di Milano-Bicocca, Italia	441	214	POSTER-B
Antonini	Giulia	Università degli Studi di Milano, Italia	144, 1109, 1147	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Antonino	Maria Cabrero	Universitat Politecnica de Valencia, Spain	1834	214	POSTER-B
Antonio	Carrieri	Università degli Studi di Bari "Aldo Moro", Italia	1224	136	FAR-1D
Anyanwu	Margrate	Università degli Studi di Brescia, Italia	620	255	FAR-2A
Anzellotti	Sara	Università di Parma, Italia	1281	31	POSTER-A
Aouf	Chahinez	INRAE-University of Montpellier, UMR IATE, Montpellier (France)	725	237	TEC-C
Apollaro	Carmine	DiBEST-Università della Calabria, Rende (CS) Italia	1194	31	POSTER-A
Appavou	Marie-Sousai	Forschungszentrum Jülich GmbH, Jülich Centre for Neutron Science at MLZ, Lichtenbergstraße 1 D-85748 Garching, Deutschland.	389	237	TEC-C
Appiagyei Mensah	Wendy	Università di Bologna, Italia	967	214	POSTER-B
Aprea	Eugenio	Center Agriculture Food Environment (C3A), University of Trento, San Michele All'Adige, Italy	172	261	ALI-2B
Aprile	Alessio	Department of Biological and Environmental Sciences and Technologies, University of Salento, Lecce, Italy	1023	214	POSTER-B
Aprile	Silvio	Università del Piemonte Orientale, Italia	555, 859, 697	31, 214, 65	POSTER-A, POSTER-B, FAR-1A
Aprile	Simona	Università degli studi di Ferrara, Italia	1163	141	ORG-1A
Aquilini	Andrea	SynCat Lab, Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italia	1812	31	POSTER-A
Aquilini	Eleonora	DD-SCI, Italia	440	76	DID-A
Aquino	Marco	Dept. of Environmental Engineering (DIAm), University of Calabria, Via P. Bucci 45, 87036 Rende (CS), Italy	1711	159	IND-1D
Arachchi	Nuwan H.	University of Wollongong, Australia	1484	31	POSTER-A
Araneo	Federico	ISPRA Istituto Superiore per la Protezione e Ricerca Ambietale, Italia	1917	173	ParallelTopic02 - ID: 173
Araneo	Silvia	Università degli Studi di Milano, Dipartimento di Chimica	1298	138	ANA-2A
Arbizzani	Catia	University of Bologna, Chemistry Department "Giacomo Ciamician", Via F. Selmi, 2, 40126, Bologna, Italy	1138, 1408, 810	31, 31, 72	POSTER-A, POSTER-A, ELE-1
Arcadi	Antonio	Università degli studi dell'Aquila, Italia	1664	214	POSTER-B
Arcadio	Francesco	Dipartimento di Ingegneria, Università degli Studi della Campania 'Luigi Vanvitelli',, via Roma 29, 80031 Aversa, Italy	354, 352	214, 65	POSTER-B, FAR-1A
Arcadio	Francesco	Università della Campania Luigi Vanvitelli, Dipartimento di Ingegneria, Via Roma, 29, 81031 Aversa	417	142	ANA-1C
Arcidiacono	Amanda	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	672	31	POSTER-A
Arciello	Angela	Dipartimento di Scienze Chimiche, Università di Napoli Federico II, Napoli	910	31	POSTER-A
Arciuolo	Valentina	Dipartimento di Farmacia, Università degli Studi di Napoli Federico II	772	266	CSB-2
Arcoleo	Giuseppe	Enbiotech s.r.l, Via Quarto dei Mille 6, 90129 – Palermo, Italy	1243	31	POSTER-A
Arcuri	Giorgia	Comprehensive Cancer Center, UOC Medical Oncology, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Roma, Italy	168	138	ANA-2A
Ardemani	Leandro	CNR Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", via Golgi 19, 20133 Milano, Italy	469	158	IND-1C
Ardini	Elena	Nerviano Medical Sciences, Italy	1973	41	ParallelTopic04

Ardini	Francisco	University of Genoa, Italy	1028	214	POSTER-B
Ardino	Claudia	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, via Aldo Moro 2, I-53100, Siena, Italy	1173	136	FAR-1D
Arduini	Fabiana	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", Via della Ricerca Scientifica 1, 00133 Rome, Italy; SENSE4MED, Via Bitonto, 139, 00133, Rome, Italy	176, 304, 1499	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Arduino	Ilaria	Department of Pharmacy-Pharmaceutical Sciences, University of Bari "Aldo Moro", Via E. Orabona, 4, I-70125 Bari, Italy	652	70	TEF-2
Arena	Alessia	Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1235, 1273, 1252	31, 214, 66	POSTER-A, POSTER-B, ANA-1A
Arena	Katia	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina	1361, 1370	31, 214	POSTER-A, POSTER-B
Arena	Katia	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1418	214	POSTER-B
Arena	Katia	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1333	78	ALI-1A
Arena	Riccardo	Università degli Studi di Palermo, Italia	366	214	POSTER-B
Arevalo	Maria Angeles	Instituto Cajal, Consejo Superior de Investigaciones Científicas (CSIC), Universidad Autónoma de Madrid, Madrid, Spain	836	31	POSTER-A
Arfelli	Francesco	Department of Industrial Chemistry "Toso Montanari", University of Bologna	1919, 590	31, 214	POSTER-A, POSTER-B
Argentini	Alberto	University of Milano-Bicocca, School of Medicine and Surgery, via Raoul Follereau 3, Vedano al Lambro (MB)	633	214	POSTER-B
Argenziano	Rita	Department of Chemical Sciences, University of Naples Federico II	151	153	TEC-B
Argurio	Pietro	Dipartimento di Ingegneria dell'Ambiente, Università della Calabria, via P. Bucci, Cubo 44/A, Rende (CS), Italia	1490, 1466	214, 153	POSTER-B, TEC-B
Aricò	Fabio	Università Ca' Foscari Venezia, Italia	152	207	ParallelTopic10 - ID: 207
Arigo	Adriana	Department of Pure and Applied Sciences, University of Urbino Carlo Bo – Urbino, Italy	1695	214	POSTER-B
Arigò	Adriana	Department of Pure and Applied Sciences, University of Urbino Carlo Bo, Piazza Rinascimento, 6, 61029 – Urbino, Italy	1819	66	ANA-1A
Arimondi	Marco	Pirelli Tyre SpA, Viale Piero e Alberto Pirelli, 25. Milano, 20126, Italy.	1396	250	ANA-3C
Arizzi	Simone	WEMBRANEX SRL, Cosenza, Italu	1777	45	ParallelTopic06
Arleo	A.	Università di Bologna, Italia	618	31	POSTER-A
Armandi	Marco	Politecnico di Torino, Italia	835	72	ELE-1
Armaroli	Nicola	Istituto per la Sintesi Organica e Fotoreattività (ISOF), CNR, Via Piero Gobetti, 101, 40129 Bologna, Italy	1651, 1714	31, 31	POSTER-A, POSTER-A
Armaroli	Nicola	Istituto per la Sintesi Organica e la Fotoreattività, Consiglio Nazionale delle Ricerche, Bologna, Italy	1926	187	ParallelTopic02 - ID: 187
Armelao	Lidia	Dipartimento di Scienze Chimiche, Università di Padova, via Marzolo 1, I-35131 Padova; Dipartimento di Scienze Chimiche e Tecnologie dei Materiali (DSCTM), Consiglio Nazionale delle Ricerche (CNR), Piazzale A. Moro 7, 00185 Roma (Italy)	1610, 1860, 1763	214, 214, 241	POSTER-B, POSTER-B, INO-2B
Armeli Iapichino	Maria Teresa	Università di Catania, Italia	482, 516	31, 159	POSTER-A, IND-1D
Armenia	Silvia	Department of Clinical and Experimental Medicine, University of Pisa, Via Roma 67, Pisa, Italy	1747, 1438	31, 258	POSTER-A, ANA-4A
Armenise	Vincenza	Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", Via Orabona 4, 70126 Bari, Italy	1414	253	INO-2C
Armetta	Francesco	Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF)-University of Palermo, Viale delle Scienze, Bld.17, I-90128, Palermo, Italy; National Research Council of Italy (CNR), Institute for Chemical-Physical Processes (IPCF), V.le F. S. d'Alcontres 37, I-98158, Messina, Italy	242	153	TEC-B
Arnaboldi	Serena	Università degli Studi di Milano, Dipartimento di Chimica	1298	138	ANA-2A
Arnal	Lorenzo	Department of Biochemistry and Molecular Pharmacology, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Via Mario Negri 2, Milan 20156, Italy	1707	31	POSTER-A
Arnodo	Davide	Dipartimento di Chimica, Università degli Studi di Torino, Via P. Giuria 7, 10125 Torino (Italy)	1402	31	POSTER-A
Arnoldi	Lolita	Indena, Italia	749	214	POSTER-B
Aronne	Antonio	Università degli Studi di Napoli Federico II, Italia	1918, 387, 1593	31, 237, 236	POSTER-A, TEC-C, TEC-D
Arosio	Daniela	Istituto di Scienze e Tecnologie Chimiche "G. Natta" (SCITEC) - CNR, Via C. Golgi 19, 20133 Milan, Italy	703, 568	31, 214	POSTER-A, POSTER-B
Arpacioglu	Merve	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, "Sapienza" Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1626, 1684, 1616, 1627, 1955	31, 31, 214, 214, 134	POSTER-A, POSTER-A, POSTER-B, POSTER-B, FAR-1C
Arpaciouglu	Merve	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210	31	POSTER-A
Arques	Antonio	Universitat Politècnica de València, Campus de Alcoy, Departamento de Ingeniería Textil y Papelera, Grupo de Procesos de Oxidación Avanzada. Alcoy	590, 442	214, 249	POSTER-B, ANA-3B
Arrabito	Giuseppe	Dipartimento di Fisica e Chimica - Emilio Segrè, Università di Palermo, V.le delle Scienze, Ed. 17, 90128, Palermo	716, 916, 1362	248, 248, 234	ANA-3A, ANA-3A, FIS-1C
Arrabito	Giuseppe Domenico	Department of Physics and Chemistry - Emilio Segrè, University of Palermo, Viale delle Scienze, building 17, 90128 Palermo, Italy	263	251	ANA-3D
Arrigoni	Federica	Dipartimento di Biotecnologie e Bioscienze, Università degli studi di Milano-Bicocca, Italia	1793, 1740	31, 214	POSTER-A, POSTER-B
Arrigoni	Federico	University of Insubria, Department of Science and High Technology, Italy	1373, 497	214, 139	POSTER-B, ORG-2A
Artali	Roberto	Scientia Advice di Roberto Artali, 20811 Cesano Maderno (MB), Italy	1906	214	POSTER-B
Artasensi	Angelica	Università degli Studi di Milano, Italia	1297, 1132	31, 255	POSTER-A, FAR-2A
Artese	Anna	Dipartimento di Scienze della Salute, Università degli Studi "Magna Graecia" di Catanzaro, Italia; Net4Science Srl, Università degli Studi "Magna Græcia" di Catanzaro, Italia	797	31	POSTER-A
Arthanari	Haribabu	Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School (HMS), Building C, 240 Longwood Ave, 02115 Boston, MA, USA; Department of Cancer Biology, Dana-Farber Cancer Institute (DFCI), 450 Brookline Ave, 02215 Boston, MA, USA	1643, 985	56, 214	ParallelTopic12, POSTER-B
Artino	Emanuele	Università degli Studi di Perugia, Dipartimento di Chimica, Biologia e Biotecnologie	1921	214	POSTER-B
Artizzu	Flavia	Università degli Studi del Piemonte Orientale, Italia	796	31	POSTER-A
Artuso	Andrea	VIACQUA s.p.a.	1016	31	POSTER-A
Aschi	Massimiliano	Università degli Studi dell'Aquila, Via Vetoio-Coppito, L' Aquila	122, 1398, 1430	31, 31, 161	POSTER-A, POSTER-A, TEO-B
Ascione	Alessandro	Istituto Superiore di Sanità, Italia	918	146	ANA-2B
Ascrizzi	Eleonora	Dipartimento di Chimica, Università di Torino, via Giuria 5, 10125 Torino, Italy	823	257	TEO-C
Aspesi	Anna	Department of Health Sciences, University of Piemonte Orientale, Novara, Italy	1375	214	POSTER-B
Assanelli	Giulio	Eni, Research & Technical Innovation, Via F. Maritano 26, San Donato Milanese 20097, Italia	447, 943	31, 214	POSTER-A, POSTER-B
Assfalg	Michael	Department of Biotechnology, University of Verona, Strada le Grazie 15, 37134 Verona, Italy	1739	31	POSTER-A
Astel	Aleksander M	Department of Environmental Chemistry and Toxicology, Pomeranian University in Słupsk, 22a Arciszewskiego Str., 76-200 Słupsk, Poland	1511	249	ANA-3B
Asti	Mattia	Radiopharmaceutical Chemistry Section, Nuclear Medicine Unit, AUSL-IRCCS di Reggio Emilia, Reggio Emilia	721, 213, 193	41, 214, 67	ParallelTopic04, POSTER-B, INO-1A
Astolfi	Andrea	Department of Pharmaceutical Sciences, Università degli Studi di Perugia, Piazza Università 1, 06123, Perugia, Italy	1557, 1672, 135	31, 31, 206	POSTER-A, POSTER-A, ParallelTopic09 - ID: 206
Astolfi	Eleonora	University of Bologna, Italia	174	31	POSTER-A
Astolfi	Paola	Università Politecnica delle Marche, Italia	1724	214	POSTER-B
Astone	Armando	Università degli Studi di Salerno, Italia	1435	31	POSTER-A
Atanassov	Plamen	University of California, Irvine	777	214	POSTER-B
Athanassopoulos	Constantinos	Department of Chemistry, University of Patras, Greece	1801	139	ORG-2A

Attili	Andrea	University of Roma Tre and INFN Sezione Roma Tre, Rome	1296	214	POSTER-B
Attinà	Agostino	Università dagli Studi di Catania, Italia	1237, 1680	31, 236	POSTER-A, TEC-D
Atzeni	Marco	Eni, Research & Technical Innovation, Via F. Maritano 26, San Donato Milanese 20097, Italia	447	31	POSTER-A
Aulitto	Martina	Università di Napoli Federico II, Dipartimento di Biologia, Napoli, Italia; NBFC, Centro Nazionale della Biodiversità	1797	140	ANA-1B
Aunan	Erlend	SMN Centre for Material Science and Nanotechnology, Department of Chemistry, University of Oslo, N-0315, Oslo, Norway	423	31	POSTER-A
Aupič	Jana	SISSA Scuola Internazionale Superiore di Studi Avanzati	1335, 393	31, 214	POSTER-A, POSTER-B
Aupič	Jana	CNR-IOM c/o International School for Advanced Studies (SISSA), Trieste, Italy	355	77	CSB-1A
Aureli	Simone	Institute of Pharmaceutical Sciences of Western Switzerland, University of Geneve, 1205 Geneva, Switzerland	1034	255	FAR-2A
Auriemma	Finizia	Università di Napoli Federico II, Italia	349, 1822	31, 240	POSTER-A, INO-2A
Avalle	Lidia	Dipartimento di Biotecnologie Molecolari e Scienze per la Salute, Torino, Italia	867	214	POSTER-B
Avataneo	Marco	Syensqo, Italia	706	214	POSTER-B
Avesani	Sara	Department of General Psychology, University of Padova, Via Venezia 8, 35131 Padova (PD), Italy	310	31	POSTER-A
Avinò	Anna	Institute for Advanced Chemistry of Catalonia (IQAC), CSIC	1906	214	POSTER-B
Avitabile	Concetta	CNR-Institute of Crystallography, Via Vivaldi 43, 81100 Caserta, Italy	547	214	POSTER-B
Avolio	Roberto	Istituto di Polimeri, Compositi e Biomateriali - CNR, Italia	1742	263	CSB-3
Axioti	Eleni	School of Chemistry, University of Nottingham	1460	69	IND-1A
Azam	Shakir Ul	Silesian University of Technology, Poland; Politecnico di Milano, Italy	604	31	POSTER-A
Azzali	Alessandro	Sapienza Università di Roma, Italia	170	31	POSTER-A
Azzarelli	Simone	Dipartimento di Chimica, Biologia, Biotecnologie, Università di Perugia; CSGI, Università di Firenze	1713	31	POSTER-A
Baccelli	Davide	Università di Parma, Italia	511	31	POSTER-A
Bacchi	Alessia	Università di Parma, Italia	863, 1054	31, 241	POSTER-A, INO-2B
Badetti	Elena	Ca' Foscari University of Venice, Italy	764, 806, 1358, 1517	31, 73, 238, 239	POSTER-A, ABC-A, ABC-B, ABC-D
Badocco	Denis	università padova, Italia	425	249	ANA-3B
Baggiani	Claudio	Dipartimento di Chimica, Università di Torino, Italia	414, 415, 160	214, 248, 146	POSTER-B, ANA-3A, ANA-2B
Bagheri	Neda	Department of Sciences and Chemical Technologies, University of Rome, Tor Vergata, Via della Ricerca Scientifica 1, 00133, Rome, Italy.	673, 1723	31, 31	POSTER-A, POSTER-A
Baglietto	Matteo	Università di Genova, Dipartimento di Chimica e Chimica Industriale, Italia	541	31	POSTER-A
Baglioni	Michele	Università di Siena, Italia; CSGI - Center for Colloid and Surface Science	1815, 1214, 1379	31, 150, 235	POSTER-A, ANA-2D, FIS-1D
Baglioni	Piero	CSGI - Consorzio Interuniversitario per lo sviluppo dei Sistemi a Grande Interfase, Firenze, Italia	1614	235	FIS-1D
Bagnati	Renzo	) Department of Environmental Health Sciences, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milano, Italy	382	132	FAR-1B
Bagnolini	G.	Università di Bologna, Italia	1324	214	POSTER-B
Bagnolini	Greta	University of Bologna, Italia	1374, 707	31, 132	POSTER-A, FAR-1B
Baia	Valerio	Università degli studi di Napoli Federico II, Italia	1842	31	POSTER-A
Baiocco	Paola	Department of Biochemical Sciences, Sapienza University of Rome, Italy	1801	139	ORG-2A
Bakota	Lidia	Department of Neurobiology, Osnabrück University, Osnabrück, Germany.	956	134	FAR-1C
Balanikas	Evangelos	University of Geneva	1869	31	POSTER-A
Balas	Laurence	Institut des Biomolécules Max Mousseron IBMM, UMR 5247 CNRS, Université de Montpellier, BP 14 491 15 av Charles Flahault, 34090, ENSCN, France	1438	258	ANA-4A
Balbo	Andrea	Università di Ferrara, Italia	1505, 923	31, 69	POSTER-A, IND-1A
Balbuena	José	FCIAC, Cordoba, Spain	764	31	POSTER-A
Baldassari	Sara	Dept. of Pharmacy, University of Genova, Viale Cembrano 4, 16148 Genova, Italy	1778	70	TEF-2
Baldassarre	Francesca	Università del Salento, Italia	1913	31	POSTER-A
Baldassin	Davide	CATMAT Lab, Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice and INSTM-RU Ve, Via Torino 155 (30172), Venezia Mestre (Italy)	126	31	POSTER-A
Baldelli Bombelli	Francesca	Politecnico di Milano	258, 299, 1984, 155, 262, 351, 1209, 1863, 197	31, 31, 189, 214, 214, 214, 214, 214, 74	POSTER-A, POSTER-A, ParallelTopic04 - ID: 189, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, TEC-A
Baldelli	Alessio	Dipartimento di Chimica Industriale "Toso Montanari" and Center for Chemical Catalysis-C3, Università di Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	436	31	POSTER-A
Baldelli	Tommaso	Dipartimento di Chimica Industriale "Toso Montanari". Università di Bologna, Italia	1326	239	ABC-D
Baldi	Giovanni	COLOROBBIA CONSULTING S.r.l	1061	253	INO-2C
Baldini	Benedetta	Università di Pisa, Italia	739	214	POSTER-B
Baldini	Laura	Università di Parma, Italia	511, 571, 664, 926, 644	31, 214, 214, 214, 244	POSTER-A, POSTER-B, POSTER-B, POSTER-B, ORG-3A
Baldini	S.	Department of Chemistry "Ugo Schiff" & CSGI, University of Florence, Via della Lastruccia, 3-13, 50019 Sesto Fiorentino (FI), Italy	400	31	POSTER-A
Baldino	Lucia	University of Salerno, 84084 Fisciano (SA), Italy	1633	165	INO-1B
Baldoli	Clara	CNR Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", Via C. Golgi 19, 20133 Milano. Italy	1313	214	POSTER-B
Balducci	Gabriele	Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, via Licio Giorgieri 1, Italia	364, 1050	31, 214	POSTER-A, POSTER-B
Balestrero	Federica Carolina	Department of Pharmaceutical Sciences, Università degli Studi del Piemonte Orientale, Largo Donegani 2, 28100 Novara, Italy	676	31	POSTER-A
Balestri	Arianna	Università di Firenze e CSGI, Italia	499	183	ParallelTopic13 - ID: 183
Balestri	Davide	Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale, Università di Parma, Italia	644	244	ORG-3A
Ballabio	Davide	Department of Earth and Environmental Sciences, University of Milano-Bicocca, Milan, Italy	954	140	ANA-1B
Ballabio	Giorgia	Università degli Studi di Milano, Italia	133	31	POSTER-A
Ballarin	Barbara	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Via Gobetti 85, 40129,Italia	1850, 117	31, 165	POSTER-A, INO-1B
Ballarini	Elisa	University of Milano-Bicocca, School of Medicine and Surgery, via Raoul Follereau 3, Vedano al Lambro (MB)	633	214	POSTER-B
Balliana	Eleonora	Università Ca' Foscari di Venezia, Italia	1892	31	POSTER-A
Balu Balu	Alina Mariana	SCI, Italia	1522	31	POSTER-A
Balu	Alina M.	Departamento de Quimica Organica, Campus de Rabanales, Edificio Marie Curie (C–3), Ctra Nnal IV-A, Km 396, E14014 Cordoba, Spain	123	214	POSTER-B
Balucani	Nadia	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Italia	443, 1769	68, 68	FIS-1A, FIS-1A
Banares	Miguel	CSIC-ICP, Marie Curie 2, E-28049-Madrid, Spain	764	31	POSTER-A
Banci	Lucia	University of Florence, Italy	1965	56	ParallelTopic12
Banci	Lucia	Università degli Studi di Firenze, Italia	1982	209	ParallelTopic12 - ID: 209
Bandelli	Damiano	Departement of Chemistry "Ugo Schiff" and CSGI Consortium, University of Florence, Via della Lastruccia 3-13, 50019, Sesto Fiorentino, FI, Italy	1286, 1614	214, 235	POSTER-B, FIS-1D
Bandiera	Tiziano	D3-PharmaChemistry, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genoa, Italy	964	214	POSTER-B
Bandini	Elisa	Istituto per la Sintesi Organica e la Fotoreattività (ISOF), Consiglio Nazionale delle Ricerche (CNR), Via Gobetti 101, 40129 - Bologna	1714	31	POSTER-A
Bandini	Marco	Università di Bologna, Italia; C3 - Center for Chemical Catalysis	659, 1501, 1433, 861	31, 31, 214, 143	POSTER-A, POSTER-A, POSTER-B, ORG-1C
Banfi	Luca	Department of Chemistry and Industrial Chemistry, University of Genoa, Genoa (GE), Italy	314	262	IND-2A
Bani	Corinne	Università degli Studi di Milano, Italia	585	197	ParallelTopic14 - ID: 197
Bannò	Mariasole	Università di Brescia, Italia	1382, 1038	171, 208	ParallelTopic11, ParallelTopic11 - ID: 208
Bañobre-Lopez	Manuel	International Iberian Nanotechnology Laboratory-INL, Braga, Portogallo	931	31	POSTER-A
Baptiste	Charrier	University of Turin, Italy	424	31	POSTER-A
Baraldo	Nada	Università degli Studi di Ferrara, Italia	1348	31	POSTER-A
Baraldo	Nada	Università di Ferrara, Italia	1119	261	ALI-2B
Baranyai	Zsolt	Bracco Imaging SpA, CRB Trieste, Italia	1014	31	POSTER-A
Baratta	Walter	University of Udine, Italia	327	62	ParallelTopic15
Barbacane	Nadia	Department of Pharmacy, University "G. d'Annunzio" of Chieti-Pescara, via dei Vestini 31, 66010 Chieti, Italy	1776	245	ORG-3B
Barbaro	Elena	Department of Environmental Sciences, Informatics and Statistics, Ca' Foscari University of Venice, Via Torino, 155-30172 Venice Mestre, VE, Italy; Institute of Polar Sciences, National Research Council (CNR-ISP), Via Torino, 155-30172 Venice Mestre, VE, Italy	903	31	POSTER-A

Barbaro	Pierluigi	Consiglio Nazionale delle Ricerche, Istituto di Chimica dei Composti Organo Metallici	1709	69	IND-1A
Barbarulo	Maria Vittoria	Liceo classico Eugenio Montale, Roma	679	76	DID-A
Barbera	Marcella	University of Palermo, Department of Earth and Marine Sciences, 90123 Palermo	1152	249	ANA-3B
Barbera	Vincenzina	Politecnico di Milano, Italia	782, 857, 997, 998, 1204, 493, 593, 943, 996, 609	31, 31, 31, 31, 177, 214, 214, 214, 214, 153	POSTER-A, POSTER-A, POSTER-A, POSTER-A, ParallelTopic06 - ID: 177, POSTER-B, POSTER-B, POSTER-B, POSTER-B, TEC-B
Barberis	Elettra	University of Piemonte Orientale, Department of Science and Technological Innovation, Viale Teresa Michel 11, 15121 Alessandria, Italy.; Biological Mass Spectrometry Lab, Center for Translational Research on Autoimmune and Allergic Diseases, University of Piemonte Orientale, Corso Trieste 15/A, 28100 Novara, Italy	1563, 1375	31, 214	POSTER-A, POSTER-B
Barberis	Marta	Università di Pavia, Italia	1336	31	POSTER-A
Barbero	Alice	University of Torino. Italy, Italia	613, 746, 1651	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Barbero	Nadia	Dipartimento di Chimica - Università di Torino, Italia	669, 1809, 1828, 892, 510, 794, 1677	31, 31, 31, 201, 214, 214, 159	POSTER-A, POSTER-A, POSTER-A, ParallelTopic03 - ID: 201, POSTER-B, POSTER-B, IND-1D
Barbetta	Aurelio	Institute for the Study of Nanostructured Materials (ISMN), National Research Council (CNR)	1268	31	POSTER-A
Barbetta	Ismaele	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", SCITEC - CNR	1125	31	POSTER-A
Barbieri	Andrea	Istituto per la Sintesi Organica e la Fotoreattività (ISOF), Consiglio Nazionale delle Ricerche (CNR), Via Gobetti 101, 40129 - Bologna	1714	31	POSTER-A
Barbieri	Francesca	Università degli Studi di Parma, Italia	1091	214	POSTER-B
Barbieri	Luisa	University of Modena and Reggio Emilia	642	31	POSTER-A
Barbieri	Marco	Sciences Department, Roma Tre University	1488	214	POSTER-B
Barbieri	Pierluigi	Università degli Studi di Trieste, Italia	324, 1511	73, 249	ABC-A, ANA-3B
Barbieri	Sara	Alma Mater Studiorum - Università di Bologna	1401	214	POSTER-B
Barbiero	Davide	EPFL, Svizzera	1245	31	POSTER-A
Barboni	Davide	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, Ferrara, Italy	456	31	POSTER-A
Barcelo	Damia	Chemistry and Physics Department, University of Almeria, Ctra Sacramento s/n, 04120, Almería, Spain	281	24	MD-A
Baretta	Roberto	Università degli Studi di Padova, Italia	446, 881	31, 138	POSTER-A, ANA-2A
Bargnesi	Luca	Department of Chemistry "Giacomo Ciamician", University of Bologna, Via Selmi, 2, Bologna	1408	31	POSTER-A
Bari	Elia	Università del Piemonte Orientale, Dipartimento di Scienze del Farmaco, Via Bovio 6, 28100 Novara, Italia	697	65	FAR-1A
Barile	Lucio	Istituto Cardiocentro Ticino, Ente Ospedaliero Cantonale, Bellinzona, Switzerland	1950	175	ParallelTopic04 - ID: 175
Bariosco	Vittorio	Università di Torino, Dipartimento di Chimica, ITALIA	599	214	POSTER-B
Barison	Simona	CNR	1599	188	ParallelTopic03 - ID: 188
Barlocco	Ilaria	Università degli Studi Milano Bicocca, Italia	343, 350	214, 214	POSTER-B, POSTER-B
Barlocco	Ilaria	Università degli Studi di Milano	619	240	INO-2A
Barlozzini	Barbara	Linneus Consulting, Roma, Italia	1221	214	POSTER-B
Barlucchi	Leonardo	Department of Chemistry and Industrial Chemistry, University of Pisa, Via Giuseppe Moruzzi 13 56124, Pisa	332	214	POSTER-B
Barneschi	Leonardo	università degli studi di siena, Italia	1859	214	POSTER-B
Barni	Benedetta	Università degli studi dell'Insubria, Italia	1114	31	POSTER-A
Baroccio	Francesca	PREF IV, Central Inspectorate for Fraud Repression and Quality Protection of the Agrifood Products and Foodstuffs - Italian Ministry of Agriculture, Food Sovereignty and Forests	1401	214	POSTER-B
Barolo	Claudia	Dipartimento di Chimica - Università di Torino, Italia	669, 1092, 1241, 1764, 1809, 1828, 892, 510, 791, 794, 742, 1677, 561	31, 31, 31, 31, 31, 31, 201, 214, 214, 214, 253, 159, 262	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, ParallelTopic03 - ID: 201, POSTER-B, POSTER-B, POSTER-B, INO-2C, IND-1D, IND-2A
Baron	Giovanna	Department of Pharmaceutical Sciences, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy.	601, 696, 803, 1752	31, 31, 214, 255	POSTER-A, POSTER-A, POSTER-B, FAR-2A
Baron	Marco	University of Padova, Department of Chemical Sciences, via Marzolo 1, 35131, Padova, Italy	1193	155	ELE-2
Barone	Giampaolo	Department of Biological, Chemical and Pharmaceutical Sciences, University of Palermo, Italy	1220, 483	154, 167	CSB-1B, INO-1D
Barone	Gianluca	Laboratorio Antidoping, Federazione Medico Sportiva Italiana, Largo Giulio Onesti, 1, 00197, Rome, Italy; Dipartimento di Scienze e Tecnologie Chimiche, Università di Roma "Tor Vergata", 00133 Rome, Italy	1836	31	POSTER-A
Barone	Simona	Università degli studi di Napoli Federico II, Italia	1842, 1483	31, 132	POSTER-A, FAR-1B
Baroni	Giulia	ISMN-CNR, Bologna, Italia	1768	214	POSTER-B
Baroni	Massimo	Molecular Discovery Ltd, Kinetic Business Centre, Elstree, Borehamwood, Hertfordshire, UK	1422	134	FAR-1C
Barozza	Alessandro	Procos s.p.a., Italia	616	214	POSTER-B
Barracchia	Carlo Giorgio	Department of Biotechnology, University of Verona, Strada le Grazie 15, 37134 Verona, Italy	1739	31	POSTER-A
Barracu	Francesco	Dipartimento di Agraria, Università degli Studi di Sassari, Viale Italia 39A, 07100-Sassari, Italia	728	150	ANA-2D
Barreca	Maria Letizia	Department of Pharmaceutical Sciences, Università degli Studi di Perugia, Piazza Università 1, 06123, Perugia, Italy	1557, 1672, 1164, 135, 1982	31, 31, 182, 206, 209	POSTER-A, POSTER-A, ParallelTopic12 - ID: 182, ParallelTopic09 - ID: 206, ParallelTopic12 - ID: 209
Barreca	Salvatore	Department of Chemical Sciences (DSC), University of Catania, Viale Andrea Doria n 6, building 1, 95125 Catania, Italy	263	251	ANA-3D
Barresi	Elisabetta	Università di Pisa, Italia	994	264	ORG-1B
Barrino	Federico	Università di Palermo, Italia	1174	31	POSTER-A
Barroso Martin	Isabel	Department of Inorganic Chemistry, Crystallography and Mineralogy. Faculty of Sciences, University of Malaga, Campus de Teatinos, 29071, Malaga, Spain	1498	155	ELE-2
Bartik	Kristin	Engineering of Molecular NanoSystems, Université libre de Bruxelles	1085	246	ORG-3C
Bartoccini	Francesca	Università degli Studi di Urbino Carlo Bo, Italia	582	141	ORG-1A
Bartolini	Francesco	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia	951, 963, 971, 1123, 760, 1015	31, 31, 31, 31, 214, 258	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, ANA-4A
Bartolini	Manuela	University of Bologna, Italia	834, 848, 967, 1069, 1457	214, 214, 214, 214, 132	POSTER-B, POSTER-B, POSTER-B, POSTER-B, FAR-1B
Bartolomei	Beatrice	Department of Chemical and Pharmaceutical Sciences, University of Trieste, via Licio Giorgieri 1, 34127 Trieste, Italy	1827	246	ORG-3C
Bartolucci	Eugenia	ISPRA Istituto Superiore per la Protezione e Ricerca Ambietale, Italia	1917	173	ParallelTopic02 - ID: 173
Barucca	Gianni	Università Politecnica delle Marche	513	242	FIS-2A
Baruzzi	Federico	Institute of Sciences of Food Production, National Research Council of Italy, via G. Amendola 122/o, 70126 Bari	1020	31	POSTER-A
Basile	Lorenzo	Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, Via Ferrata 5, 27100 Pavia, Italy	1643, 985	56, 214	ParallelTopic12, POSTER-B
Basilico	Nicoletta	Department of Pharmaceutical Sciences, University of Milan	1596	31	POSTER-A
Basoccu	Francesco	Università di Cagliari	1544	264	ORG-1B
Basoli	Francesco	Università Campus Bio-Medico di Roma	1833	31	POSTER-A
Bassan	Giovanni Adriano	Università degli Studi di Trieste, Dipartimento di Scienze Chimiche e Farmaceutiche, Via Licio Giorgieri 1, 34127 Trieste	685	31	POSTER-A
Bassanini	Ivan	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" CNR, Via Mario Bianco 9, 20131 Milano, Italy	1277, 1102, 1132	31, 154, 255	POSTER-A, CSB-1B, FAR-2A
Basso	Andrea	WEMBRANEX SRL, Cosenza, Italu; Progress Tech Transfer, MITO Technology Srl, Milano, Italy	1777	45	ParallelTopic06
Basso	Daniele	HBI S.r.l.	1860	214	POSTER-B
Bastide	Stephane	Université Paris Est, Institut de Chimie et des Matériaux Paris-Est, ICMPE (UMR 7182), CNRS, UPEC	1860	214	POSTER-B
Batalha	Iris L.	Molecular Bionics Group, Institute for Bioengineering of Catalonia (IBEC), C. Baldiri Reixac 10-12, 08028 Barcelona, Spain	693	214	POSTER-B
Batista	Alzir Azevedo	Federal University of São Carlos, São Carlos, SP, Brazil	340	31	POSTER-A
Batistoni	Chiara	Università degli studi di Firenze, Department of Chemistry "Ugo Schiff", Via della Lastruccia 3, Florence	605	214	POSTER-B
Battaglia	Filippo Piero	Università di Bologna, Italia	1113	214	POSTER-B
Battaglia	Giuseppe	Molecular Bionics Group, Institute for Bioengineering of Catalonia (IBEC), C. Baldiri Reixac 10-12, 08028 Barcelona, Spain; Catalan Institution of Research and Advanced Studies, (ICREA), Passeig de Lluís Companys, 23, 08010 Barcelona, Spain	693	214	POSTER-B
Battaglia	Luigi	Università degli Studi di Torino, Italia	832	267	TEF-1
Battaglia	Vincenzo	Università degli Studi di Salerno, Italia	1435	31	POSTER-A
Battaglini	Elena	Sherwin-Williams	1881	211	ParallelTopic14 - ID: 211
Battegazzore	Daniele	Politecnico di Torino, Italia	387	237	TEC-C
Battisti	Marco	Università degli studi di Modena e Reggio Emilia, Italia	839	249	ANA-3B
Battistini	Luca	Neuroimmunology Unit, Santa Lucia Foundation IRCCS, Rome 00143 (IT)	934	214	POSTER-B
Battistini	Lucia	Department of Food and Drug, University of Parma, Parco Area delle Scienze 27A, 43124 Parma, Italy	637, 887, 941	31, 31, 31	POSTER-A, POSTER-A, POSTER-A

Battistutta	Roberto	Department of Chemical Sciences, University of Padova (Italy)	539	77	CSB-1A
Battocchio	Chiara	Sciences Dept. Roma Tre University, Via della Vasca navale 79, 446, Rome; University of Roma Tre and INFN Sezione Roma Tre, Rome	1296, 1488, 385	214, 214, 153	POSTER-B, POSTER-B, TEC-B
Battochio	Chiara	Sciences Department, Roma Tre University, via della Vasca Navale 79, 00146 Rome (IT)	934	214	POSTER-B
Bauer	Elvira Maria	Institute of Structure of Matter, Italian National Research Council (ISM-CNR) Via Salaria km 29.3, 00015, Monterotondo	1241, 1242, 1233	31, 31, 254	POSTER-A, POSTER-A, INO-3
Baumgartner	Bettina	Utrecht University, the Netherlands	1481	204	ParallelTopic07 - ID: 204
Bazzica	Edoardo	Università degli Studi di Perugia, Italia	413	31	POSTER-A
Bazzicalupi	Carla	Dipartimento di Chimica "Ugo Schiff", Università degli Studi di Firenze, via della Lastruccia 3, 50019 Sesto F. No (FI), Italy	691, 603	31, 214	POSTER-A, POSTER-B
Beccalli	Egle	University of Milano, Italia	1094	145	ORG-1D
Beccalli	Martina	Politecnico di Milano	258, 1209	31, 214	POSTER-A, POSTER-B
Beccari	Andrea R.	EXSCALATE, Dompé Farmaceutici SpA	1195	214	POSTER-B
Beccaria	Marco	Dept of chemical, pharmaceutical and agricultural sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy	537, 188	181, 214	ParallelTopic10 - ID: 181, POSTER-B
Becchi	Alessandro	Universita' Milano Bicocca	1784	214	POSTER-B
Becchi	Matteo	Politecnico of Turin, Italia	1285	31	POSTER-A
Bedeschi	Martina	Medical Oncology Unit, IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST) "Dino Amadori", 47014 Meldola, Italy	904	255	FAR-2A
Bedognetti	Davide	Università di Padova, Italia	995	199	ParallelTopic01 - ID: 199
Bedogni	Federico	Department of Industrial Chemistry "Toso Montanari", University of Bologna	1919	31	POSTER-A
Bedogni	Matteo	Parma University, Italia	134	161	TEO-B
Begato	Federico	Università degli studi di Padova, Italia	1592	31	POSTER-A
Beghelli	Daniela	School of Biosciences and Veterinary Medicine, University of Camerino, Camerino (MC), Italy.	1653	261	ALI-2B
Beghetto	Valentina	Università Ca' Foscari Venezia- Università della Campania "Luigi Vanvitelli", Italia	1099	214	POSTER-B
Behera	Sourav	Università degli Studi di Cagliari, Italy	1469	31	POSTER-A
Behrens	Malte	Institute for Inorganic Chemistry, Christian-Albrechts Univerisity of Kiel, 24118 Kiel, Germany	200	160	FIS-1B
Bekiyeva	Guller	Bolu Abant Izzet Baysal University	410	214	POSTER-B
Belay	Masho	Università del Piemonte Orientale, Italia; Department of Chemistry, Mekelle University, Mekelle, Ethiopia	1645, 1661, 1731	31, 31, 150	POSTER-A, POSTER-A, ANA-2D
Belfiore	Cristina Maria	Department of Biological Geological and Environmental Sciences, University of Catania	632	214	POSTER-B
Belforte	Erica	Università degli studi di Roma Tor Vergata, Italia	1722, 1723	31, 31	POSTER-A, POSTER-A
Belgiovine	Valentina	Dipartimento di Farmacia-Scienze del Farmaco, Università degli Studi di Bari 'Aldo Moro', Italia	1180	134	FAR-1C
Beljonne	David	University of Mons, Laboratory for Chemistry of Novel Materials, Mons, Belgium	767	75	TEO-A
Bella	Federico	Politecnico di Torino, Corso Duca degli Abruzzi, 24, 10129 Turin, Italy	214, 380, 737, 1527, 765, 865, 984, 835	31, 31, 31, 31, 214, 214, 214, 72	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, ELE-1
Bellabarba	Agnese	Laboratory of Phenomics, Genomics, and Proteomics (GENEXPRESS), University of Florence; Department of Agriculture, Food, Environmental and Forestry Sciences (DAGRI), University of Florence	1121, 291	214, 146	POSTER-B, ANA-2B
Bellagamba	Lorenzo	Università Milano-Bicocca, Italia	1872	214	POSTER-B
Bellanda	Massimo	Department of Chemical Sciences (DiSC), University of Padua, via Marzolo 1, 35131, Padova	472, 539	185, 77	ParallelTopic15 - ID: 185, CSB-1A
Bellatreccia	Caterina	Università di Bologna, Italia	1113	214	POSTER-B
Belletti	Angela	Università degli Studi di Napoli Federico II, Italia	178	73	ABC-A
Bellina	Fabio	Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Pisa, Italia	1380, 1523	31, 264	POSTER-A, ORG-1B
Bellini Puglielli	Raffaele	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739	31	POSTER-A
Bello Madruga	Roberto	Biochemistry and Molecular Biology Biosciences Faculty Building C, Office C2/423.2 Campus de la UAB - 08193 Bellaterra.BCN	515	31	POSTER-A
Bello	Ivana	Department of Pharmacy, University Federico II of Naples, Via Domenico Montesano 49, 80131, Naples, Italy	1483	132	FAR-1B
Bellomo	Chiara	Department of Chemistry, University of Turin, Italy; "G. Scansetti" Interdepartmental Centre for Studies on Asbestos and Other Toxic Particulates, University of Turin, Italy	1519	214	POSTER-B
Bellone	Maria Laura	Department of Medicine, Surgery and Dentistry "Scuola Medica Salernitana" University of Salerno, SA, Salerno, Italy	1854	31	POSTER-A
Bellotti	Denise	Università degli Studi di Ferrara, Italia	329, 399	214, 148	POSTER-B, ANA-2C
Bellumori	Maria	Department of NEUROFARBA, University of Florence	1485, 1568, 1093, 1693	214, 214, 78, 259	POSTER-B, POSTER-B, ALI-1A, ALI-1B
Belluti	Federica	University of Bologna, Italia	834	214	POSTER-B
Belluti	Silvia	Department of Life Sciences, University of Modena e Reggio Emilia, Via G. Campi 103, 41125, Modena, Italy	744	31	POSTER-A
Belousov	Y	Moscow State University	1759	214	POSTER-B
Belvedere	Raffaella	Università degli Studi di Salerno, Italia	132, 654	132, 151	FAR-1B, ORG-2D
Belvisi	Laura	Università degli Studi di Milano, Italia	144, 887, 1109, 1147, 484	31, 31, 31, 214, 147	POSTER-A, POSTER-A, POSTER-A, POSTER-B, ORG-2B
Belviso	Sandra	Università degli Studi della Basilicata, Italia	1699	31	POSTER-A
Bemfert	Lucas	Institute for Inorganic and Analytical Chemistry, Justus-Liebig University Giessen, Germany	1439	254	INO-3
Benaglia	Maurizio	Università degli studi di Milano, Italia	229, 371, 372, 373, 455, 465, 467, 645, 1143, 272, 495, 390, 392	31, 31, 31, 31, 31, 31, 31, 31, 31, 214, 214, 264, 145	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, ORG-1B, ORG-1D
Benazzato	Stefania	Università degli studi di Padova, Italia	681, 754, 395	31, 31, 246	POSTER-A, POSTER-A, ORG-3C
Benazzi	Stefano	Università di Bologna, Italia	1459	238	ABC-B
Benazzi	Valentina	Università degli Studi di Pavia, Italia; National and Kapodistrian University of Athens, Greece	877	31	POSTER-A
Bendikov	Tatyana	Weizmann Institute of Science, Department of Chemical Research Support, 7610001 Rehovot, Israel	1022	242	FIS-2A
Bendini	Alessandra	Alma Mater Studiorum - Università di Bologna	1401	214	POSTER-B
Benedetti	Alessia	Conservatorio di Musica "Nino Rota" - Monopoli, Italia	1942	205	ParallelTopic08 - ID: 205
Benedetti	Barbara	Università di Genova, Dipartimento di Chimica e Chimica Industriale, Italia	541, 1911, 437	31, 31, 249	POSTER-A, POSTER-A, ANA-3B
Benedetti	Barbara	Università degli studi di Genova	839	249	ANA-3B
Benedetti	Michele	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy	1155, 1023, 1153, 1428	31, 214, 214, 67	POSTER-A, POSTER-B, POSTER-B, INO-1A
Benedetto	Anna	Dipartimento DISFARM, Università di Milano, Via Camillo Golgi 19, 20133 Milano, Italia	154	31	POSTER-A
Benedetto	Eleonora	Politecnico di Milano, Italia	1238	262	IND-2A
Beneduci	Amerigo	Dipartimento di Chimica e Tecnologie Chimiche - Università della Calabria, Italia	799	214	POSTER-B
Benelli	Tiziana	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Bologna, Italia	558	262	IND-2A
Benesperi	Iacopo	Università di Torino, Italia	1487	31	POSTER-A
Benetti	Federico	ECSIN-ECAMRICERT SRL, Corso Stati Uniti, 4, 35127, Padova (Italy)	1093	78	ALI-1A
Benettin	Tommaso	università degli studi di milano, Italia	455	31	POSTER-A
Beneventi	Davide	Université Grenoble Alpes, CNRS, Grenoble INP, LGP2, F-38000 Grenoble, France	419	247	ORG-3D
Beninati	Fabio	Gesco Sca, Cesena, Italy	481	261	ALI-2B
Benincasa	Cinzia	CREA Research Centre for Olive, Fruit and Citrus Crops, Rende (CS), Italy	509, 584	31, 78	POSTER-A, ALI-1A
Benincori	Tiziana	Università degli studi dell'Insubria, Italia	1114, 1298	31, 138	POSTER-A, ANA-2A
Benito	Patricia	Università di Bologna, Italia	457	238	ABC-B
Beretta	Alessandra	Politecnico di Milano, Italia	1704, 1897, 1215, 1238	31, 31, 214, 262	POSTER-A, POSTER-A, POSTER-B, IND-2A
Bergamaschi	Greta	SCITEC CNR, Italia	1950	175	ParallelTopic04 - ID: 175
Bergamaschi	Greta	Consiglio Nazionale delle Ricerche, SCITEC	155	214	POSTER-B
Bergomi	Andrea	Department of Chemistry, University of Milan, Via Golgi 19, 20133 Milano, Italy	1735, 1165	31, 239	POSTER-A, ABC-D
Berlier	Gloria	Università di Torino, Italia	566	214	POSTER-B
Bernabò	Nicola	Faculty of Bioscience and Technology for Food, Agriculture and Environment, University of Teramo, Italy	1701	214	POSTER-B
Bernal	Leonardo	Department of Life Sciences, University of Modena e Reggio Emilia, Via G. Campi 103, 41125, Modena, Italy; Ph.D. Program "Clinical and Experimental Medicine", University of Modena e Reggio Emilia, Via G. Campi, 287, 41125, Modena, Italy	744	31	POSTER-A
Bernardi	Anna	Università degli Studi di Milano, Italia	144, 1109, 1147, 1271	31, 31, 214, 139	POSTER-A, POSTER-A, POSTER-B, ORG-2A
Bernardi	Elena	Università di Bologna, Italia	1505	31	POSTER-A
Bernardi	Luca	Università di Bologna, Italia	912	247	ORG-3D
Bernardini	Marianna	La Sapienza, Italia	1640	31	POSTER-A

Bernardo	Enrico	University of Padova	642	31	POSTER-A
Bernardoni	Bianca Laura	University of Pisa, Italy	1307	214	POSTER-B
Bernardos	Andrea	Universitat Politècnica de València, Spagna	1257	214	POSTER-B
Bernasconi	Roberto	Dipartimento di Chimica, Materiali e Ingegneria Chimica "Giulio Natta", Politecnico di Milano, via Mancinelli 7, 20131, Milano, Italy	206	31	POSTER-A
Bernazzani	Luca	Department of Chemistry and Industrial Chemistry, University of Pisa, Via G. Moruzzi 13, 56124 Pisa, Italy	761	214	POSTER-B
Berrettoni	Mario	Scuola di Scienze e Tecnologie, Università di Camerino, Camerino	668, 1181	31, 214	POSTER-A, POSTER-B
Berrie	B.	National Gallery of Art, Department of Scientific Research, 2000 South Club Drive, Landover, Maryland 20785 – USA	400	31	POSTER-A
Berrocal	José Augusto	Institut Català d'Investigació Química (ICIQ), Avinguda dels Països Catalans 16, 43007, Tarragona (ES)	571	214	POSTER-B
Bertagnin	Chiara	Dipartimento di Medicina Molecolare, Università degli Studi di Padova, Italia	1013	214	POSTER-B
Bertaina	Gianluca	INRIM, Torino	1245	31	POSTER-A
Bertamino	Alessia	University of Salerno, Italia	250	136	FAR-1D
Bertani	Marco	Università di Modena e Reggio Emilia, Italia	247	257	TEO-C
Bertani	Roberta	Università degli studi di Padova, Italia	1642, 1284	31, 74	POSTER-A, TEC-A
Bertazzo	Giulia	Department of Chemistry and Industrial Chemistry, University of Pisa, Moruzzi 13, Pisa, Italy	1438	258	ANA-4A
Bertelà	Federica	Sciences Department, Roma Tre University, via della Vasca Navale 79, 00146 Rome (IT)	934, 1488	214, 214	POSTER-B, POSTER-B
Bertelli	Davide	University of Florence, Italia	1568	214	POSTER-B
Berthelot	Romain	ICGM, Université de Montpellier, France	945	234	FIS-1C
Berti	Claudia	Barilla, Italia	428	190	ParallelTopic06 - ID: 190
Berti	Debora	Università di Firenze e CSGI, Italia	499	183	ParallelTopic13 - ID: 183
Bertin	Lorenzo	Department of Civil, Chemical, Environmental and Materials Engineering (DICAM), University of Bologna, Via Terracini 28, 40131 Bologna, Italy	937	31	POSTER-A
Bertinaria	Massimo	Università degli Studi di Torino, Italia	1302	31	POSTER-A
Bertinetti	Stefano	Department of Chemistry, University of Turin, via Pietro Giuria 7, Turin (TO)	1116, 1345, 801	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Bertini	Fabio	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" SCITEC-CNR, Via Corti 12, 20133 Milano, Italy	1603	214	POSTER-B
Bertini	Luca	Dipartimento di Biotecnologie e Bioscienze, Università degli studi di Milano-Bicocca, Italia	1793	31	POSTER-A
Bertini	Sabrina	Istituto di Ricerche Chimiche e Biochimiche G. Ronzoni, Italia	639	246	ORG-3C
Berto	Silvia	Dipartimento di Chimica, Università di Torino, Via P. Giuria 7, 10125, Torino, Italy	1345, 801	31, 214	POSTER-A, POSTER-B
Bertoldo	Monica	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via. L. Borsari, 46, 44121, Ferrara, Italy	1090	31	POSTER-A
Bertoldo	Monica	Dipartimento di Scienze Chimiche, Farmaceutiche e Agrarie, Università di Ferrara, Italia	923	69	IND-1A
Bertolini	Giulia	IRCCS Istituto Nazionale dei Tumori, Milan, Italia	701	214	POSTER-B
Bertolotti	Federica	Università degli Studi dell'Insubria, Italia	709	166	INO-1C
Bertolotti	Silvia	Dipartimento di Scienze della Vita e Biologia dei Sistemi, Università di Torino, Torino, Italy; Université Clermont Auvergne, CNRS, Clermont Auvergne INP, ICCF, F-63000 Clermont-Ferrand, France	908, 1733	156, 239	ABC-C, ABC-D
Bertolotti	Viola	Università degli Studi di Milano, Italia	1727	214	POSTER-B
Bertoluzzo	William	Università di Padova, Italia	1159, 1160, 1135	31, 31, 247	POSTER-A, POSTER-A, ORG-3D
Bertoncini	Benedetta	Dipartimento di Chimica e Chimica Industriale, University of Pisa, Via G. Moruzzi 13, 56124, Pisa, Italy	214	31	POSTER-A
Bertoni	Francesco	Institute of Oncology Research (IOR), Via Francesco Chiesa 5, 6500 Bellinzona	853, 1854	31, 31	POSTER-A, POSTER-A
Bertozzi	Fabio	D3-PharmaChemistry, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genoa, Italy	964	214	POSTER-B
Bertrand	Loic	Université Paris-Saclay, ENS-Paris Saclay, CNRS, Gif-sur-Yvette, France	1905	214	POSTER-B
Bertucci	Alessandro	Università di Parma, Italia	379, 518, 376, 615, 776	31, 31, 214, 214, 138	POSTER-A, POSTER-A, POSTER-B, POSTER-B, ANA-2A
Bertuzzi	Giulio	Università di Bologna, Italia; C3 - Center for Chemical Catalysis	659, 1501, 861	31, 31, 143	POSTER-A, POSTER-A, ORG-1C
Betelu	Claire	HiCSA Laboratory, Paris I Pantheon-Sorbonne University, Paris, France.	1905	214	POSTER-B
Betta	Emanuela	Research and Innovation Centre, Fondazione Edmund Mach, San Michele All'Adige, Italy	172	261	ALI-2B
Bettati	Stefano	Department of Medicine and Surgery, University of Parma, Parma, Italy	1422	134	FAR-1C
Betti	Elena	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	672, 1712	31, 31	POSTER-A, POSTER-A
Bettini	Ruggero	Dipartimento di Scienze degli Alimenti e del Farmaco, Università di Parma, Italia	1079, 1048	214, 70	POSTER-B, TEF-2
Bettucci	Ottavia	Università degli Studi di Milano Bicocca, Dipartimento di Scienza dei Materiali	1887	192	ParallelTopic08 - ID: 192
Bettucci	Ottavia	Università Milano Bicocca, Italia	115, 116	214, 244	POSTER-B, ORG-3A
Beverina	Luca	Università di Milano-Bicocca, Italia	783, 1114, 1315, 1685, 1715, 1800, 1760, 367	31, 31, 31, 31, 31, 31, 214, 245	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, ORG-3B
Bezzecchi	Andrea	Acetaia San Giacomo (Novellara)	331	31	POSTER-A
Biagi	Roberto	Dept. of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia, I-41125, Modena	662	241	INO-2B
Biagini	Denise	Department of Chemistry and Industrial Chemistry University of Pisa, Via Giuseppe Moruzzi 13, Pisa, Italy	1747, 1536, 1438	31, 214, 258	POSTER-A, POSTER-B, ANA-4A
Biagioli	Michele	Università di Perugia, Italia	655	214	POSTER-B
Biagiotti	Giacomo	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019, Sesto Fiorentino (FI), Italy	880, 661, 375	31, 214, 247	POSTER-A, POSTER-B, ORG-3D
Biale	Greta	Department of Chemistry and Industrial Chemistry, University of Pisa, Via Giuseppe Moruzzi 13 56124, Pisa	332	214	POSTER-B
Biancalana	Lorenzo	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	947, 750	214, 67	POSTER-B, INO-1A
Biancarosa	Irene	Nutrinsect, Montecassiano, Italia	479	78	ALI-1A
Bianchera	Annalisa	Food and Drug Department, University of Parma, Italy; Biopharmanet-TEC, University of Parma, Italy	1048	70	TEF-2
Bianchi	Andrea	Università degli Studi di Pavia, Italia	1295	214	POSTER-B
Bianchi	Andrea	Università di Pavia, Italia	1520	148	ANA-2C
Bianchi	Anna	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via Fossato di Mortara 19, I-44121 Ferrara, Italy	1301	31	POSTER-A
Bianchi	Antonio	Università degli Studi di Firenze, Italia	909	31	POSTER-A
Bianchi	Claudia	Dipartimento di Chimica, Università degli Studi di Milano, via C. Golgi, 19, 20133, Milano, Italy	206	31	POSTER-A
Bianchi	Claudia L.	Università degli Studi di Milano, Italia	589, 195	177, 159	ParallelTopic06 - ID: 177, IND-1D
Bianchi	Claudia Letizia	Università degli studi di Milano, Italia; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (UdR–UniMi)	653	31	POSTER-A
Bianchi	Eleonora	Università di Pavia, Italia	931, 1040	31, 183	POSTER-A, ParallelTopic13 - ID: 183
Bianchi	Elisa	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019, Sesto Fiorentino (FI), Italy	880, 769	31, 245	POSTER-A, ORG-3B
Bianchi	Federica	Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma	1369, 954, 1368	31, 140, 251	POSTER-A, ANA-1B, ANA-3D
Bianchi	Margherita	Department of General Psychology, University of Padova, Via Venezia 8, 35131 Padova (PD), Italy	310	31	POSTER-A
Bianchi	Nicoletta	Department of Translational Medicine, University of Ferrara, Ferrara, Italy	456	31	POSTER-A
Bianchini	Emanuele	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino, Italy	807	158	IND-1C
Bianchini	Francesca	Department of Experimental and Clinical Biomedical Sciences "Mario Serio", University of Florence, Viale Morgagni 50, 50134 Florence, Italy	637, 941	31, 31	POSTER-A, POSTER-A
Bianchini	Petra	Università di Pavia, Italia	562, 614	31, 31	POSTER-A, POSTER-A
Bianco Prevot	Alessandra	UNIVERSITA' DI TORINO, Italia	1131	31	POSTER-A
Bianco	Angelica	Université Clermont Auvergne	1044	31	POSTER-A
Bianco	Ettore	Università degli studi di Torino, Italia	893, 1589	31, 249	POSTER-A, ANA-3B
Bianco	Giuliana	Department of Sciences, University of Basilicata, Via dell'Ateneo Lucano 10-85100, Potenza	729, 933, 1903	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Bianco	Mariachiara	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, via Orabona 4, 70126, Bari	906, 532	140, 146	ANA-1B, ANA-2B
Biancolillo	Alessandra	Department of Physical and Chemical Sciences, University of L'Aquila, Via Vetoio, 67100, Coppito, L'Aquila, Italy	1902, 1770	31, 251	POSTER-A, ANA-3D
Bianconi	Elisa	Department of Pharmaceutical Sciences, University of Perugia, 06123, Perugia, Italy	468	31	POSTER-A
Bianconi	Tommaso	University of Wisconsin-Madison, Stati Uniti	1869	31	POSTER-A

Bianconi	Tommaso	Università degli Studi di Perugia, Italia	1378	58	ParallelTopic13
Bicchi	Carlo	Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Via Pietro Giuria 9, I-10125 Torino, Italy	238	186	ParallelTopic01 - ID: 186
Biesuz	Raffaela	Università degli studi di Pavia, Dipertimento di Chimica, viale Taramelli 12, Pavia, Italy; INSTM, Unità di Ricerca di Pavia, Via G. Giusti 9, Firenze, 50121, Italy	1156, 1083	31, 51	POSTER-A, ParallelTopic09
Biesuz	Raffaela	Università degli Studi di Pavia, Dipartimento di Chimica, Viale Taramelli 12, Pavia, 27100, Italy; INSTM, Unità di Ricerca di Pavia, Via G. Giusti 9, Firenze, 50121, Italy	686	142	ANA-1C
Biesuz	Raffaela	Università di Pavia, Italia	1520	148	ANA-2C
Biffi	Beatrice	Agenzia Regionale Protezione Ambiente, Italia	1165	239	ABC-D
Biffis	Andrea	Università di Padova	496	67	INO-1A
Biffo	Stefano	National Institute of Molecular Genetics, Fondazione Romeo ed Enrica Invernizzi, INGM, 20122 Milan, Italy; Department of Biosciences, University of Milan, 20133 Milan, Italy	827	31	POSTER-A
Biffoli	Fabio	Università di Firenze, Italia	575, 691, 909	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Bifulco	Aurelio	Università degli Studi di Napoli Federico II, Italia	1918, 387, 1593	31, 237, 236	POSTER-A, TEC-C, TEC-D
Bifulco	Giuseppe	Department of Pharmacy, University of Salerno, Via Giovanni Paolo II 132, 84084 Fisciano, Italy	312, 1162, 1371, 1506, 1507, 259, 1150, 1521, 1027	31, 31, 31, 31, 31, 214, 214, 147, 149	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, ORG-2B, ORG-2C
Biggio	Deborah	Dipartimento di Scienze Chimiche e Geologiche, Universita di Cagliari,Cittadella Universitaria,09042, Monserrato, Cagliari, Italy	1810, 1554	31, 250	POSTER-A, ANA-3C
Bigi	Franca	Università di Parma, Italia	1172	31	POSTER-A
Bigliardi	Martina	Department of Food, Nutrition and Environmental Sciences, University of Milan, via Celoria 2, Italy	1003	31	POSTER-A
Bigliardi	Martina	University of Milan, Italia	1322	259	ALI-1B
Bigoni	Marco	Università degli Studi Milano Bicocca, Milan, Italy	542	31	POSTER-A
Bigossi	Giorgia	IRCCS INRCA, Italia	508	31	POSTER-A
Bilotta	Marina	Dipartimento di Scienze della Salute, Università "Magna Græcia" of Catanzaro, Campus Universitario "S. Venuta", Viale Europa, 88100 Catanzaro, Italy	251	214	POSTER-B
Bindi	Greta	Proteomics and Metabolomics Unit, Department of Medicine and Surgery, University of Milano Bicocca	1535, 992	31, 71	POSTER-A, MAS
Binelli	Ludovica	Sciences Dept. Roma Tre University, Via della Vasca navale 79, 446, Rome; University of Roma Tre and INFN Sezione Roma Tre, Rome	1296, 1774	214, 165	POSTER-B, INO-1B
Binetti	Simona	Department of Materials Science and Solar Energy Research Center (MIB-SOLAR), University of Milano-Bicocca, Via Cozzi 55, 20125, Milano	218, 129	31, 160	POSTER-A, FIS-1B
Bini	Arianna	Dipartimento di Chimica, Università di Pavia, Italia	317	214	POSTER-B
Bini	Roberto	LENS, European Laboratory for Non-linear Spectroscopy, Via N. Carrara 1, I-50019 Sesto Fiorentino, Firenze, Italy; Dipartimento di Chimica "Ugo Schiff ", Università degli Studi di Firenze, Via della Lastruccia 3, I-50019 Sesto Fiorentino, Firenze, Italy	1873	198	ParallelTopic15 - ID: 198
Bionda	Andrea	Università di Milano-Bicocca, Italia	783, 367	31, 245	POSTER-A, ORG-3B
Biondi	Mariassunta	Dipartimento di Chimica "G. Ciamician", Università di Bologna, Italia	494	238	ABC-B
Birarda	Giovanni	Elettra Sincrotrone Trieste, Basovizza, Trieste, Italy	1679	151	ORG-2D
Biscari	Giuseppina	Università Degli Studi di Palermo, Italia	365	70	TEF-2
Bisi	Alessandra	University of Bologna, Italia	834	214	POSTER-B
Bisi	Nicolo	Department of Neurobiology, Osnabrück University, Osnabrück, Germany.	956	134	FAR-1C
Bisicchia	Sonia	Fidia Farmaceutici, Via Ponte della Fabbrica 3A, 35031 Abano Terme (PD), Italy	803	214	POSTER-B
Bisio	Alessandra	Department of Cellular, Computational and Integrative Biology (CIBIO), University of Trento	721	41	ParallelTopic04
Bisio	Chiara	Università del Piemonte Orientale, Italia; CNR-SCITEC Institute of Chemical Science and Technology, Italia	1858	235	FIS-1D
Bisozzi	Flavia	Università di Siena, Italia; CSGI - Center for Colloid and Surface Science	1815	31	POSTER-A
Bisozzi	Flavia	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	1214	150	ANA-2D
Bistoni	Giovanni	Università degli studi di Perugia, Italia	1261	185	ParallelTopic15 - ID: 185
Bitonto	Valeria	Department of Molecular Biotechnology and Health sciences, University of Turin	870	189	ParallelTopic04 - ID: 189
Bitossi	Samuele	Dipartimento di Chimica, Università degli Studi di Firenze, Sesto Fiorentino, Italia	602	155	ELE-2
Bizzarri	Bruno Mattia	Università degli Studi della Tuscia, Italia	874	31	POSTER-A
Bizzarri	Claudia	Karlsruhe Institute of Technology, Germania	377	201	ParallelTopic03 - ID: 201
Bizzocchi	Luca	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna	1900	214	POSTER-B
Björkström	Kim	The Faculty of Science and Engineering, Åbo Akademi University, 20500 Turku, Finland	689	142	ANA-1C
Blanco	Ignazio	Università degli studi di Catania, Italia	1182	31	POSTER-A
Blangetti	Marco	Dipartimento di Chimica, Università degli Studi di Torino, via P. Giuria 7, 10125 Torino, Italia	1393, 1402, 473, 695, 1331, 1330, 1394	31, 31, 214, 214, 214, 143, 143	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, ORG-1C, ORG-1C
Blasi	Davide	Università degli Studi di Bari Aldo Moro, Italia	1425	31	POSTER-A
Blasi	Davide	Dipartimento di Chimica, Università degli Studi di Bari, via Orabona 4, 70126, Italia	829	214	POSTER-B
Blasi	Delia	Dipartimento di Chimica, Università degli Studi di Milano, Via Golgi 19, 20133 Milano, Italia	1579	214	POSTER-B
Blasi	Paolo	University of Bologna, Dept. of Pharmacy and Biotechnology, via San Donato 19/2, Bologna, Italy.	1598	31	POSTER-A
Blazina	Marco	MM SpA, Italy	315	153	TEC-B
Bloino	Julien	Scuola Normale Superiore, Italia	1832	31	POSTER-A
Bloise	Andrea	Dip. Biologia, Ecologia e Scienze della Terra Università di Cagliari	953	214	POSTER-B
Blosi	Magda	ISSMC-CNR, Faenza, Italy	764, 1598	31, 31	POSTER-A, POSTER-A
Blua	Federica	Università degli Studi di Torino, Italia	1302	31	POSTER-A
Boccaccini	Francesca	Institute for the Study of Nanostructured Materials (ISMN), National Research Council (CNR)	1268, 1486	31, 235	POSTER-A, FIS-1D
Boccafoschi	Francesca	Department of Health Sciences, University of Piemonte Orientale, & Tissuegraft srl., Novara (Italy)	201	243	FIS-2B
Boccato	Francesca	Università degli Studi di Torino, Italia	1302	31	POSTER-A
Bocchi	Letizia	Medica SpA, Italia	1930	45	ParallelTopic06
Bocchi	Letizia	Medica s.p.a	1263, 1264	214, 214	POSTER-B, POSTER-B
Bocchinfuso	Gianfranco	Università "Tor Vergata" Roma, Italia	316	161	TEO-B
Bocchini	Sergio	Dipartimento di Scienza Applicata e Tecnologia (DISAT), Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy; Center for Sustainable Future Technologies, Istituto Italiano di Tecnologia, Via Livorno 60, 10144 Torino, Italy	1564, 1771	31, 153	POSTER-A, TEC-B
Boccia	Eleonora	Università degli Studi di Salerno, Italia	259	214	POSTER-B
Bocerani	Filippo	Università degli studi di Perugia, Italia	412	31	POSTER-A
Bochenkova	Elena	University of Zurich, Zurich CH-8057, Switzerland	565	154	CSB-1B
Bochicchio	Rocco	Comando Provinciale dei Vigili del Fuoco Basilicata, Via Appia 321/b, 85100, Potenza	729	31	POSTER-A
Bodero	Lizeth Alicia	University of Insubria, Department of Science and High Technology, Italy	1373	214	POSTER-B
Bodo	Enrico	Università di Roma, "La Sapienza", Italia	122, 170	31, 31	POSTER-A, POSTER-A
Bodo	Enrico	Università di Roma "La Sapienza", Italia	171	31	POSTER-A
Bodo	Enrico	Department of Chemistry, Sapienza University of Rome, P.le Aldo Moro 5, Rome, 00185, Italy	167, 320, 1696, 507	214, 214, 214, 257	POSTER-B, POSTER-B, POSTER-B, TEO-C
Bodoardo	Silvia	Politecnico di Torino	570, 429	31, 72	POSTER-A, ELE-1
Boffi	Alberto	Department of Biochemical Sciences, Sapienza University of Rome, Italy	1801	139	ORG-2A
Boffito	Daria C.	Polytechnique Montréal – Génie Chimique 2900 Boul, Edouard Montpetit – H3T 1J4, Montréal, Québec, Canada	195	159	IND-1D
Boggia	Raffaella	DIFAR, Department of Pharmacy, University of Genoa, Viale Cembrano 4, 16148 Genova, Italy	404, 1316	211, 261	ParallelTopic14 - ID: 211, ALI-2B
Bogialli	Sara	università padova, Italia	425	249	ANA-3B
Boi	Sara	Università degli Studi di Cagliari, Italia	625	31	POSTER-A
Boiko	Vitalii	Institute of Low Temperature and Structure Research, Polish Academy of Sciences, ul Okólna 2, PL-50-422, Wrocław, Poland	242	153	TEC-B
Bokan	Maksym	Department of Chemistry, NIS Interdepartmental and INSTM Reference Centre, University of Torino, Via Pietro Giuria 7, 10125, Torino, ItalyUniversity of Turin, Italy	1809, 1828, 892, 794	31, 31, 201, 214	POSTER-A, POSTER-A, ParallelTopic03 - ID: 201, POSTER-B
Bolchi	Cristiano	Department of Pharmaceutical Sciences, University of Milan, via Mangiagalli 25, I-20133 Milano, Italy	758	136	FAR-1D
Boldrin Zanoni	Maria Valnice	Institute of Chemistry, São Paulo State University (UNESP); National Institute for Alternative Technologies of Detection, Toxicological Evaluation and Removal of Micropollutants and Radioactives (INCT-DATREM)	1450	210	ParallelTopic13 - ID: 210

Boldrini	Amedeo	Environmental Spectroscopy Group, Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro, Siena, Italy	1513, 1635, 1379	31, 248, 235	POSTER-A, ANA-3A, FIS-1D
Bolea-Fernandez	Eduardo	University of Zaragoza, Spain	1028	214	POSTER-B
Boll	Felix	Justus Liebig University Giessen, Heinrich Buff-Ring 17, 35392 Giessen, Germany.	381	153	TEC-B
bollella	paolo	università di bari aldo moro, Italia	680, 1149, 663, 817, 819, 596, 708, 845	31, 31, 214, 214, 214, 142, 142, 144	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, ANA-1C, ANA-1C, ANA-1D
Bolognesi	M. L.	Università di Bologna, Italia	1324	214	POSTER-B
Bolognesi	Margherita	ISMN-CNR, Bologna, Italia	1768	214	POSTER-B
Bolognesi	Maria Laura	Dipartimento di Farmacia e Biotecnologie, Alma Mater Studiorum - Università di Bologna, Via Belmeloro 6, 40126 Bologna, Italia	1069, 1494, 1543, 1553, 1561, 1623	214, 214, 214, 214, 214, 134	POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, FAR-1C
Bolognesi	Maria-Laura	Alma Mater Studiorum - Università di Bologna, Italia	1980	202	ParallelTopic04 - ID: 202
Bolognesi	Tessa	Magnetic Resonance Center, University of Florence, Via L. Sacconi 6, Sesto F.no (IT); Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3, Sesto F.no (IT	1560, 1367	31, 154	POSTER-A, CSB-1B
Bolte	Michael	Institut für Anorganische Chemie, Goethe-Universität Frankfurt, Max-von-Laue-Strasse 7,60438 Frankfurt. Germany	1313	214	POSTER-B
Bona	Beatrice Lucia	Laboratory of Supramolecular and Bio-Nanomaterials (SBNLab), Department of Chemistry, Materials, and Chemical Engineering "Giulio Natta", Politecnico di Milano, Via L. Mancinelli 7, 20131 – Milano, Italia	246, 197	31, 74	POSTER-A, TEC-A
Bonabello	Silvia	Università degli Studi del Piemonte Orientale, Italia	796	31	POSTER-A
Bonacchi	Sara	Università degli Studi di Padova, Italia	1314, 1849	31, 214	POSTER-A, POSTER-B
Bonaccorsi	Ivana	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1311	214	POSTER-B
Bonaccorsi	Ivana	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1559	258	ANA-4A
Bonaccorso	Carmela	Dipartimento di Scienze Chimiche (DSC), Università di Catania, V.le A.Doria 6, Catania, 95125, Italy	1594	31	POSTER-A
Bonaccorso	Giulia	Università degli Studi di Firenze, Italia	435, 248	31, 248	POSTER-A, ANA-3A
Bonacucina	Giulia	Università di Camerino, Italia	296	143	ORG-1C
Bonacucina	Giulia	University of Camerino, Italia	634	70	TEF-2
Bonaldi	Lorenzo	University of Pisa, Italia	1021	214	POSTER-B
Bonandi	Elisa	Università degli Studi di Milano, Italia	1196	31	POSTER-A
Bonardi	Alessandro	Università degli Studi di Firenze, Italia	850	31	POSTER-A
Bonati	Laura	Università degli Studi di Milano-Bicocca, Italia	822	161	TEO-B
Bonati	Luigi	Atomistic Simulations, Istituto Italiano di Tecnologia, Italia	1835, 1753	180, 68	ParallelTopic09 - ID: 180, FIS-1A
Bonato	Bianca	Department of General Psychology, University of Padova, Via Venezia 8, 35131 Padova (PD), Italy	310	31	POSTER-A
Bonato	Francesca	Università degli Studi di Milano, Italia	1196	31	POSTER-A
Bonavia	Daniele	ESRF-The European Synchrotron, Grenoble, France	1178, 1205	160, 160	FIS-1B, FIS-1B
Bonchio	Marcella	Università degli studi di Padova, Italia	1549, 1056, 1766	31, 201, 214	POSTER-A, ParallelTopic03 - ID: 201, POSTER-B
Bondanza	Mattia	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Via Giuseppe Moruzzi, 13, 56124 Pisa, Italy	520	214	POSTER-B
Bondar	Kateryna	Dipartimento di Scienze Agrarie Forestali e Alimentari, University of Torino, Largo Paolo Braccini 2, 10095 Grugliasco, Italy	1809, 892	31, 201	POSTER-A, ParallelTopic03 - ID: 201
Bondi	Danilo	Department of Neurosciences, Imaging and Clinical Sciences, University of Chieti–Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy	301	258	ANA-4A
Bondi	Roberto	Università degli Studi di Perugia, Italia	360	242	FIS-2A
Bonechi	Claudia	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	230, 1176, 1632, 1379	214, 165, 243, 235	POSTER-B, INO-1B, FIS-2B, FIS-1D
Bonechi	Marco	Università di Firenze, Italia	575, 909, 687	31, 31, 138	POSTER-A, POSTER-A, ANA-2A
Bonetto	Alessandro	Università Cà Foscari, Italia	1016, 1108, 1517	31, 31, 239	POSTER-A, POSTER-A, ABC-D
Bongiolo	Samuele	University of Insubria, Department of Science and High Technology, Italy	1373	214	POSTER-B
Bongiovanni	Roberta	Politecnico di Torino, Italia	782	31	POSTER-A
Boniburini	Matteo	Università degli Studi di Modena e Reggio Emilia, Dipartimento di Scienze Chimiche e Geologiche, via G. Campi 103, 41125 Modena, Italia	213	214	POSTER-B
Bonini	Andrea	Department of Chemistry and Industrial Chemistry, University of Pisa, via Giuseppe Moruzzi 13, 56124 Pisa, Italy; Department of Biology, University of Pisa, via San Zeno 37, 56127 Pisa, Italy	1781, 1536	31, 214	POSTER-A, POSTER-B
Bonini	Massimo	Università degli Studi di Firenze, Italia	133, 575, 1325	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Bonino	Francesca	Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15, 10135 and Via P. Giuria 7, 10125, Torino, Italy	1059, 1058	214, 160	POSTER-B, FIS-1B
Bono	Ludovica	Università degli Studi di Milano, Italia	1195	214	POSTER-B
Bono	Nina	Politecnico di Milano, Italia	405	31	POSTER-A
Bonoldi	Lucia	Eni S.p.A. - TECH Technology, R&D and Digital	943	214	POSTER-B
Bonometti	Alessandro	Università degli Studi di Brescia, Italia	1397, 1587	214, 236	POSTER-B, TEC-D
Bonomini	Anna	Dipartimento di Medicina Molecolare, Università degli Studi di Padova, Italia	1013	214	POSTER-B
Bonomo	Matteo	Department of Chemistry and NIS Interdepartmental Centre, University of Turin, Via Pietro Giuria 7, Torino, 10125, Italy; National Reference Center for Electrochemical Energy Storage - INSTM, Firenze 50121, Italy	1092	31	POSTER-A
Bonomo	Matteo	Department of Chemistry, NIS Interdepartmental Center and INSTM Reference Centre, University of Torino, Via Gioacchino Quarello 15/a, 10135 Torino, Italy.	1241	31	POSTER-A
Bonomo	Matteo	Dipartimento di Chimica, Università di Torino	1270, 1764, 1809, 892, 510, 671, 1677, 561	31, 31, 31, 201, 214, 234, 159, 262	POSTER-A, POSTER-A, POSTER-A, ParallelTopic03 - ID: 201, POSTER-B, FIS-1C, IND-1D, IND-2A
Bontempi	Elza	University of Brescia, Italia	196, 264, 1397, 315, 1587	45, 214, 214, 153, 236	ParallelTopic06, POSTER-B, POSTER-B, TEC-B, TEC-D
Bontempo	Luana	Research and Innovation Centre, Fondazione Edmund Mach, San Michele All'Adige, Italy	172	261	ALI-2B
Bonvicini	Francesca	Department of Pharmacy and Biotechnology, University of Bologna, 40138-Bologna, Italy	117, 914	165, 147	INO-1B, ORG-2B
Borbély	Adina	MTA-ELTE Lendület Ion Mobility Mass Spectrometry Research Group and Faculty of Science, Institute of Chemistry, ELTE Eötvös Loránd University, Hungary	1373	214	POSTER-B
Bordiga	Silvia	Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15/A, I-10135, and Via P. Giuria 7, I-10125, Turin, Italy	423	31	POSTER-A
Bordiga	Silvia	Department of Chemistry, NIS and INSTM Reference Centre, University of Turin, Via G. Quarello 15/A I-10135, Turin, Italy	1764, 510, 566, 1059, 1282, 1058, 671, 1409	31, 214, 214, 214, 214, 160, 234, 235	POSTER-A, POSTER-B, POSTER-B, POSTER-B, POSTER-B, FIS-1B, FIS-1C, FIS-1D
Bordin	Matteo	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Via Torino 155, 30172 Venice, Italy	1498	155	ELE-2
Bordoni	Laura	Università di Camerino, Italia	296	143	ORG-1C
Bordoni	Silvia	Department of Industrial Chemistry "Toso Montanari", Alma Mater Studiorum, University of Bologna, Via Piero Gobetti, 85, 40129 Bologna BO	1134	31	POSTER-A
Borelli	Mattia	Department of Chemistry, University of Milan, Via Golgi 19, 20133 Milano, Italy	1735	31	POSTER-A
Borfecchia	Elisa	Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15/A, I-10135, and Via P. Giuria 7, I-10125, Turin, Italy	423	31	POSTER-A
Borges	Fernanda	CIQUP-IMS, Department of Chemistry and Biochemistry, Faculty of Sciences, University of Porto, Rua do Campo Alegre s/n, 4169-007 Porto, Portugal	704	31	POSTER-A
Borghi	Federica	University of Modena and Reggio Emilia (UNIMORE), Via Giuseppe Campi, 103, Modena	743	31	POSTER-A
Borgogno	Marco	IAMA Therapeutics, via Filippo Turati 2, 16128 Genoa, Italy	1002	193	ParallelTopic09 - ID: 193
Borgonovo	Gigliola	University of Milan, Italia	1601, 1906	31, 214	POSTER-A, POSTER-B
Borio	Caterina	Università degli Studi di Firenze, Italia	603	214	POSTER-B
Borišek	Jure	National institute of chemistry, Slovenia	1670, 355	31, 77	POSTER-A, CSB-1A
Bormetti	Marco	Università di Parma, Italia	1172	31	POSTER-A
Borrelli	Angelina	Nanomaterials Research Group, Department of Biotechnology, University of Verona and INSTM, RU of Verona, Strada le Grazie 15, 37134 Verona, Italy.	1605	214	POSTER-B

Borrelli	Raffaele	Dipartimento di Scienze Agrarie Forestali e Alimentari, University of Torino, Largo Paolo Braccini 2, 10095 Grugliasco, Italy	1809, 892, 1552	31, 201, 214	POSTER-A, ParallelTopic03 - ID: 201, POSTER-B
Borri	Marco	Martur Italy srl, Grugliasco (TO), Italy	1677	159	IND-1D
Borrini	Vittoria	Department of Translational Medicine, University of Piemonte Orientale, Novara, Italy	1375	214	POSTER-B
Borsacchi	Silvia	ICCOM-CNR, Pisa, Italia; CISUP, Università di Pisa, Italia	1768, 814	214, 242	POSTER-B, FIS-2A
Borsari	Chiara	Dept. of Pharmaceutical Sciences, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy	598, 1596, 961	31, 31, 255	POSTER-A, POSTER-A, FAR-2A
Borsari	Marco	Dept. of Chemical and Geological Sciences & INSTM RU, University of Modena and Reggio Emilia, I-41125, Modena	662	241	INO-2B
Borsatti	Giulia	PhotoGreen Lab, Department of Chemistry, University of Pavia, V. Le Taramelli 12, Pavia 27100, Italy	1006	31	POSTER-A
Borsellino	Giovanna	Neuroimmunology Unit, Santa Lucia Foundation IRCCS, Rome 00143 (IT)	934	214	POSTER-B
Borsoi	Simone	Università degli Studi di Milano, Italia	1196	31	POSTER-A
Borysova	Kateryna	Institute for Inorganic and Analytical Chemistry, Justus-Liebig University Giessen, Germany	1439	254	INO-3
Boscaro	Valentina	University of Turin, Italia	1078	31	POSTER-A
Bosch-Roig	Pilar	Universitat Politècnica de València, Spagna	1257	214	POSTER-B
Bosch-Roig	Pilar	Instituto Universitario de Restauración del Patrimonio, Universitat Politècnica de València, Valencia, Spain	252	73	ABC-A
Boschi	D.	Università di Torino, Italia	1673	31	POSTER-A
Boschi	Donatella	Department of Drug Science and Technology, University of Turin (UniTo), via Pietro Giuria 9, 10125 Torino (Italy)	1087, 1591, 382	214, 214, 132	POSTER-B, POSTER-B, FAR-1B
boscia	donato	Institute for Sustainable Plant Protection	680	31	POSTER-A
Boselli	Cinzia	Department of Drug Sciences, University of Pavia, Italy	1179	214	POSTER-B
Boselli	Monica Fiorenza	Università degli studi di Milano, Italia	372, 465, 467	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Bosello	Viviana	Department of Chemistry, Materials and Chemical Engineering "G. Natta" – Politecnico di Milano	540	237	TEC-C
Bosetti	Emanuele	Department of chemistry, University of Pavia	811	31	POSTER-A
Bosi	Adele	Institute for Complex Systems, National Research Council (ISC-CNR), P.le Aldo Moro 5, Rome (RM), Italy;	1761	214	POSTER-B
Bossi	Alberto	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" (SCITEC) del Consiglio Nazionale delle Ricerche (CNR), via Fantoli 16/15, 20138 Milano	124	31	POSTER-A
Bossi	Alberto	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", CNR-SCITEC, v. Fantoli 16/15, I-20138 Milano (IT), and SmartMatLab Center, v. Golgi 19, II-20133 Milano (IT)	820, 1125, 1463	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Bossi	Alessandra Maria	Università di Verona, Italia	1227, 733, 417	214, 146, 142	POSTER-B, ANA-2B, ANA-1C
Bossi	Eleonora	Università degli Studi di Milano-Bicocca, Italia	717	31	POSTER-A
Bossi	Eleonora	Department of Medicine and Surgery, Proteomics and Metabolomics Unit, University of Milano-Bicocca, Vedano al Lambro (MB), Italy	715	71	MAS
Bossola	Filippo	CNR-Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", 20133 Milan, Italy	1449	157	IND-1B
Botrè	Francesco	Laboratorio Antidoping, Federazione Medico Sportiva Italiana, Largo Giulio Onesti, 1, 00197, Rome, Italy; ISSUL - Institute of Sport Sciences, University of Lausanne, Synathlon - Quartier Centre, 1015, Lausanne, Switzerland	1836	31	POSTER-A
Botrè	Teresa	CatMat Lab, Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice and INSTM RUVe, Via Torino 155, 30172 Venice, Italy	586	31	POSTER-A
Botta	Bruno	Department of Chemistry and Technologies of Drug, Sapienza University of Rome, Italy	1801	139	ORG-2A
Botta	Chiara	Istituto di Scienze Chimiche e Tecnologiche "Giulio Natta" (SCITEC) del CNR, via Corti 12, Milano, IT	631	214	POSTER-B
Botta	Lorenzo	Università degli Studi della Tuscia, Italia	874, 1173	31, 136	POSTER-A, FAR-1D
Botta	Mauro	Dipartimento di Scienze e Innovazione Tecnologica, Università del Piemonte Orientale, Viale Teresa Michel 11, 15121 Alessandria, Italy	431, 432, 433, 434	214, 214, 214, 165	POSTER-B, POSTER-B, POSTER-B, INO-1B
Bottari	Alberto	Politecnico di Milano, Italia	857	31	POSTER-A
Bottari	Teresa	IRBIM –CNR Messina, Spianata San Raineri – Messina, Italy	1310	31	POSTER-A
Bottaro	Gregorio	Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia (ICMATE), Consiglio Nazionale delle Ricerche (CNR), c/o Dipartimento di Scienze Chimiche, Università di Padova, via Marzolo 1, I-35131 Padova	1610, 1763	214, 241	POSTER-B, INO-2B
Bottegoni	Giovanni	Università di Urbino, Italia	1441, 1606, 1611	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Botti	Giada	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via Fossato di Mortara 19, I-44121 Ferrara, Italy; Center for Translational Neurophysiology of Speech and Communication (CTNSC@UniFe), Italian Institute of Technology (IIT), via Fossato di Mortara 19, I-44121 Ferrara, Italy	1301	31	POSTER-A
Boudjelida	Soufiane	Sezione di Chimica per le Tecnologie, Dipartimento di Ingegneria Industriale, Università degli Studi di Padova, Via F. Marzolo 9, 35131Padova, Italia	1585	31	POSTER-A
Boudries	Dahmane	University of Bordeaux-CNRS, France	1353	31	POSTER-A
Bournez	Colin	SpiroChem AG, Mattenstrasse 22, 4058 Basel, Switzerland	1907	214	POSTER-B
Bozza	Desiree	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, Ferrara, Italy	456	31	POSTER-A
Bozza	Desiree	Università degli Studi di Ferrara, Italia	458, 574	214, 140	POSTER-B, ANA-1B
Bpnsi	Laura	University of Bologna Italia, Stem sel srl	1624	146	ANA-2B
Bracaglia	Ilenia	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia; Dipartimento di Salute Pubblica e Malattie Infettive, Sapienza Università di Roma, Roma, Italia	951	31	POSTER-A
Bracaglia	Ilenia	Dipartimento di Igiene e Sanità Pubblica-La Sapienza	963	31	POSTER-A
Bracaglia	Ilenia	Department of Public Health and Infectious Diseases, Sapienza University of Rome	971, 1123, 760, 1015	31, 31, 214, 258	POSTER-A, POSTER-A, POSTER-B, ANA-4A
Bracaglia	Sara	Università degli Studi di Roma Tor Vergata, Italia	439	214	POSTER-B
Bracchi	Maddalena	Università degli Studi Milano Bicocca, Milan, Italy	542, 633	31, 214	POSTER-A, POSTER-B
Bracco	Pierangiola	University of Turin, Italia	1044	31	POSTER-A
Bracco	Silvia	Università di Milano Bicocca	1282	214	POSTER-B
Braconi	Laura	Università degli Studi di Firenze, Italia	1342	214	POSTER-B
Bradshaw	Tracey	University of Nottingham, UK	445	31	POSTER-A
Braga	Andrea	Dipartimento Politecnico e INSTM, Università degli Studi di Udine, Italia	789	31	POSTER-A
Braghetti	Tommaso	La Sapienza, Italia	1640	31	POSTER-A
Bragioto	Filippo	Università degli studi di Padova, Italia	1642	31	POSTER-A
Bragolusi	Marco	Istituto Zooprofilattico Sperimentale Delle Venezie, Laboratorio di Chimica Sperimentale, Viale Fiume 78, 36100, Vicenza	326	250	ANA-3C
Braido	Rachele	Università Ca' Foscari Venezia, Italia	169, 118	31, 157	POSTER-A, IND-1B
Brambilla	Elisa	Università degli Studi di Milano, Italia	1024, 713	31, 214	POSTER-A, POSTER-B
Brambilla	Luca	Politecnico di Milano, Italia	262	214	POSTER-B
Branca	Gabriele	Scientific Investigation Department, Carabinieri RIS, Via Monsignor D'Arrigo 7, 98122 Messina, Italy	1349	31	POSTER-A
Brancaccio	Diego	University of Naples Federico II, Italy	858, 1034	214, 255	POSTER-B, FAR-2A
Brancale	Andrea	Department of Organic Chemistry, University of Chemistry and Technology, Prague, 16628, Prague, Czech Republic	305	214	POSTER-B
Brandi	Francesco	Consiglio Nazionale delle Ricerche, Istituto di Chimica dei Composti Organo Metallici	1709	69	IND-1A
Brandi	Jessica	Department of Biotechnology, Strada Le Grazie 15, University of Verona, Verona, Italy	519	251	ANA-3D
Brandt	Roland	Department of Neurobiology, Osnabrück University, Osnabrück, Germany.	956	134	FAR-1C
Brannetti	Simone	Università degli studi di Roma Tor Vergata, Italia	821	31	POSTER-A
Bras	Julien	Univ. Grenoble Alpes, CNRS, Grenoble INP, LGP2, Grenoble 38000, France	1099	214	POSTER-B
Brataszn	Lucatzs	Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Krakow, Poland	1905	214	POSTER-B
Brea	Jose	Centro di Ricerca in Molecular Medicine and Chronic Diseases (CIMUS), Università di Santiago de Compostela, 15782, Santiago de Compostela, Spagna	137	31	POSTER-A
Brea	Jose Manuel	Center for Research in Molecular Medicine and Chronic Diseases (CIMUS), University of Santiago de Compostela, Spain	159	31	POSTER-A
Břehová	Petra	Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, v.v.i. Flemingovo nám. 2, 16610 Prague 6, Czech Republic	674	65	FAR-1A

Brenna	Maria Elisabetta	Politecnico di Milano, Italia	139	264	ORG-1B
Bresci	Arianna	Department of Physics, Politecnico di Milano, P.zza Leonardo da Vinci 32, 20133 Milan, Italy	199	214	POSTER-B
Bresciani	Letizia	Human Nutrition Unit, Department of Food&Drug, University of Parma, Via Volturno 39, Parma, Italy	1752	255	FAR-2A
Bresser	Dominic	Helmholtz Institute Ulm (HIU); Karlsruhe Institute of Technology (KIT)	570, 1943	31, 39	POSTER-A, ParallelTopic03
Bressi	Viviana	SCI, Italia	1522	31	POSTER-A
Bretti	Clemente	Università degli Studi di Messina, Italia	1249, 1345, 1451	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Bretti	Clemente	Università degli Studi di Messina, Italia	969, 1248	214, 214	POSTER-B, POSTER-B
Bretti	Clemente	Università degli Studi di Messina, Italia	1247, 911, 1520	248, 148, 148	ANA-3A, ANA-2C, ANA-2C
Brienza	Monica	Università degli Studi della Basilicata, Italia	933	214	POSTER-B
Brigante	Marcello	Institut de Chimie de Clermont-Ferrand, Université Clermont Auvergne, France	825	156	ABC-C
Brighenti	Daniele	Politecnico di Milano, Italia	857	31	POSTER-A
Brighenti	Daniele	Politecnico di Milano, Italia	997	31	POSTER-A
Brigliadori	Andrea	National Research Council of Italy, Institute of Science, Technology and Sustainability for Ceramics (CNR-ISSMC former CNR-ISTEC), Via Granarolo 64, Faenza, Italy	1598	31	POSTER-A
Briguglio	Sara	Regional Environmental Protection Agency—ARPA-FVG, Via Cairoli 14, 33057 Palmanova, Italy	1511	249	ANA-3B
Brindisi	Margherita	Department of Pharmacy, University of Napoli "Federico II", via D. Montesano 49, 80131, Naples Italy	1455, 1842, 1483	31, 31, 132	POSTER-A, POSTER-A, FAR-1B
Brioschi	Giulia	University of Milan, Italia	1601	31	POSTER-A
Brioschi	Maura	Università degli Studi di Milano-Bicocca, Italia	913, 1847	214, 214	POSTER-B, POSTER-B
Bro	Rasmus	Department of Food Science, University of Copenhagen, Rolighedsvej 30, Frederiksberg C, DK-1958, Denmark	544	214	POSTER-B
Brocchi	Emiliana	Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia-Romagna, Brescia, Italia	160	146	ANA-2B
Broggini	Gianluigi	Università degli Studi dell'Insubria, Italia	474, 594	214, 145	POSTER-B, ORG-1D
Brogi	Simone	University of Pisa	1576	136	FAR-1D
Brombin	Federico	Università degli Studi di Padova, Italia	1581	214	POSTER-B
Brosio	Giorgia	Istituto Italiano di Tecnologia, Italia	798	31	POSTER-A
Brovelli	Sergio	Università di Milano-Bicocca, Italia	1760	214	POSTER-B
Bruderer	Tobias	University of Pisa, Italy	1525	214	POSTER-B
Brufani	Giulia	Università degli studi di Perugia, Italia	321, 413, 490	31, 31, 244	POSTER-A, POSTER-A, ORG-3A
Brugnoli	Benedetta	Sapienza Università di Roma, Italia	1107	31	POSTER-A
Brugnoli	Benedetta	Department of Chemistry, Sapienza University of Rome, Italy	1460	69	IND-1A
Brullo	Chiara	Università degli Studi di Genova, Italia, Dipartimento di Farmacia	223, 132	31, 132	POSTER-A, FAR-1B
Brun	Linda Maria	Università degli Studi di Padova, Italia	607, 754, 395	31, 31, 246	POSTER-A, POSTER-A, ORG-3C
Brunella	Valentina	Università di Torino, Italia	690	31	POSTER-A
Brunelli	Andrea	Ca' Foscari University of Venice, Italy	764, 806, 1517	31, 73, 239	POSTER-A, ABC-A, ABC-D
Brunelli	Francesca	Università del Piemonte Orientale, Italia	555, 669	31, 31	POSTER-A, POSTER-A
Brunetti	Andrea	Università di Bologna, Italia; C3 - Center for Chemical Catalysis	659	31	POSTER-A
Brunetti	Bruno	Consorzio INSTM, Università di Perugia	243	176	ParallelTopic05 - ID: 176
Brunetti	Gennaro	Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli studi di Bari Aldo Moro, via Amendola 165/a, Bari, Italy	1555	247	ORG-3D
Brunetti	Jlenia	MedBiotech Hub and Competence Centre, Dipartimento di Biotecnologie Mediche, Università degli Studi di Siena, Italia	1578	31	POSTER-A
Brunetti	Leonardo	Dipartimento di Farmacia - Scienze del Farmaco, Università degli Studi di Bari Aldo Moro, Italia	1660	31	POSTER-A
Bruno	Daniele	Università degli Studi dell'Insubria, Italia	996	214	POSTER-B
Bruno	Ferdinando	Department of Science and Technology, University of Sannio, Benevento, Italy; Advanced Medical Pharma (AMP-Biotec), Healthcare Research and Innovation Center, Benevento, Italy	1445	151	ORG-2D
Bruno	Ines	Department of Pharmacy, University of Salerno, Via Giovanni Paolo II 132, 84084 Fisciano, Italy	312, 259, 654	31, 214, 151	POSTER-A, POSTER-B, ORG-2D
Bruno	Maurizio	Dip. STEBICEF, Università di Palermo	1473	31	POSTER-A
Bruno	Stefano	Food and Drug Department, University of Parma, 43124 Parma, Italy	598	31	POSTER-A
Bruscagin	Matteo	Eni S.p.A. - TECH Technology, R&D and Digital	943	214	POSTER-B
Bruschetta	Chiara	Università degli Studi di TORINO, Italia	418	158	IND-1C
Brutti	Sergio	Department of Chemistry, Sapienza University of Rome; ALISTORE European Research Institute; GISEL-Centro di Riferimento Nazionale per i Sistemi di Accumulo Elettrochimico di Energia; Istituto dei Sistemi Complessi, Consiglio Nazionale delle Ricerche	718, 1599, 167, 1696, 507	39, 188, 214, 214, 257	ParallelTopic03, ParallelTopic03 - ID: 188, POSTER-B, POSTER-B, TEO-C
Bruzzone	Santina	Università degli Studi di Genova, Italia, Dipartimento di Medicina Sperimentale	223, 1440	31, 214	POSTER-A, POSTER-B
Bruzzoniti	Maria	University of Turin, Italia	2003	200	ParallelTopic02 - ID: 200
Bruzzoniti	Maria Concetta	Department of Chemistry, University of Turin, Via Pietro Giuria 7, Turin, 10125, Italy	248	248	ANA-3A
Bruzzoniti	Maria Concetta	Università di Torino, Italia	415	248	ANA-3A
Bryant	Sharon	Inte: Ligand GmbH, Mariahilferstrasse, Vienna, 1070, Austria	1118	31	POSTER-A
Buccafuri	Antonella	Università della Calabria, Italia	509, 584	31, 78	POSTER-A, ALI-1A
Buccheri	Rocco	Università degli studi di Catania, Italia	1597	31	POSTER-A
Bucci	Raffaella	Università degli Studi di Milano, Italia	1196	31	POSTER-A
Bucciantini	Monica	Department of Experimental and Clinical Biomedical Sciences "Mario Serio", University of Florence, 50134 Florence, Italy	704	31	POSTER-A
Buccioni	Michela	Università di Camerino, Scuola di Scienze del Farmaco e dei Prodotti per la Salute, Italia	968	31	POSTER-A
Buccolieri	Riccardo	Dep. of Biological and Environmental Sciences and Technologies, University of Salento, 73100, Lecce	924	156	ABC-C
Budriesi	Roberta	Department of Pharmacy and Biotechnology, Food Chemistry and Nutraceutical Lab, Alma Mater Studiorum-University of Bologna, Bologna, Italy	1634, 978	214, 259	POSTER-B, ALI-1B
Bufano	Marianna	Sapienza Università di Roma, Italia	1547	214	POSTER-B
Bufo	Sabino Aurelio	Università degli Studi della Basilicata, Italia; University of Johannesburg, South Africa	933	214	POSTER-B
Bugaev	Aram	Paul Scherrer Institut, Villigen, Switzerland	1794	214	POSTER-B
Bugatti	Kelly	Department of Food and Drug, University of Parma, Parco Area delle Scienze 27A, 43124 Parma, Italy	637, 887, 941	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Bugli	Federico	Dipartimento di Chimica Industriale "Toso Montanari" and Center for Chemical Catalysis-C3, Università di Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	436	31	POSTER-A
Bugli	Francesca	Department of Basic Biotechnological Sciences, Intensive and Perioperative Clinics, Università Cattolica del Sacro Cuore, Largo A. Gemelli, 00168, Rome, Italy	880	31	POSTER-A
Buiarelli	Francesca	Department of Chemistry, Sapienza University of Rome, P.le Aldo Moro 5 00185, Rome	332	214	POSTER-B
Bullone	Michela	Università di Torino, Italia	1732	31	POSTER-A
Bunk	Oliver	Paul Scherrer Institut, 5232 Villigen, PSI (Switzerland)	201	243	FIS-2B
Buoio	Eleonora	Dipartimento di Medicina Veterinaria e Scienze Animali, Università degli studi di Milano	1308	214	POSTER-B
Buoli Comani	Valeria	Department of Food and Drug, University of Parma, Parma, Italy	1422	134	FAR-1C
Buommino	Elisabetta	Università degli Studi di Napoli Federico II, Italia	1686	31	POSTER-A
Buonerba	Antonio	Università degli Studi di Salerno, Italia	349, 1001, 1633	31, 69, 165	POSTER-A, IND-1A, INO-1B
Buonsenso	Fabio	Department of Chemistry 'Ugo Schiff', University of Florence, via della Lastruccia 3-13, 50019 Sesto Fiorentino (FI), Italy	452	31	POSTER-A
Buratti	Elena	Dipartimento di Scienze Chimiche, Farmaceutiche e Agrarie, Università di Ferrara, Italia	923	69	IND-1A
Buratti	Simone	Department of Earth and Environmental Sciences (DSTA), University of Pavia, Pavia	1662	214	POSTER-B
Burduja	Nina	CNR-ISMN URT of Messina at Dept. ChiBioFarAm, University of Messina, Viale F. Stagno d'Alcontres 31, Messina; Dept. ChiBioFarAm, University of Messina, Viale F. Stagno d'Alcontres 31, Messina	1291	166	INO-1C
Burgo	Silvia	Dipartimento di Scienze Chimiche, Università degli Studi di Padova, Italia	754	31	POSTER-A
Burico	Michela	Aboca S.p.A., Italia	774, 781, 773	31, 214, 71	POSTER-A, POSTER-B, MAS
Buroni	Silvia	Università di Pavia, Italia	1547	214	POSTER-B
Burrello	Jacopo	Istituto Cardiocentro Ticino, Ente Ospedaliero Cantonale, Bellinzona, Switzerland	1950	175	ParallelTopic04 - ID: 175

Busato	Matteo	Department of Chemistry, Sapienza University of Rome; ALISTORE European Research Institute	718, 838	39, 68	ParallelTopic03, FIS-1A
Buscaglia	Maria Teresa	CNR ICMATE, Italia	1923	214	POSTER-B
Buscemi	Gabriella	Università degli Studi di Bari Aldo Moro, Italia	1838	214	POSTER-B
Buseck	Peter R.	Arizona State University, USA	119	214	POSTER-B
Busetto	Maddalena	ARPA Lombardia /OICFL, Italia	1388	171	ParallelTopic11
Busetto	Rebecca	Dipartimento di Scienze Chimiche, Università degli Studi di Padova, Italia; Dipartimento di Biologia, Università degli Studi di Padova, Italia	754	31	POSTER-A
Busico	Vincenzo	Federico II University of Naples (Italy) - Dept. Chemical Sciences, Italia	1319, 1386	204, 214	ParallelTopic07 - ID: 204, POSTER-B
Bussetti	Gianlorenzo	Department of Physics, Politecnico di Milano, p.za Leonardo da Vinci 32, I-20133 Milano	1463, 974	31, 241	POSTER-A, INO-2B
Bussoli	Guido	Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italy	1791	31	POSTER-A
Butera	Valeria	Department of Biological, Chemical and Pharmaceutical Sciences, University of Palermo, Italy	1220	154	CSB-1B
Butini	Stefania	Dipartimento di Biotecnologie, Chimica e Farmacia, Università di Siena, Via Aldo Moro 2, 53100, Siena, Italia	1628, 1576	214, 136	POSTER-B, FAR-1D
Buzzanca	Carla	Department of Biological, Chemical and Pharmaceutical Science and Technology (STEBICEF), Università degli Studi di Palermo	752, 973	31, 31	POSTER-A, POSTER-A
Buzzoni	Luna	Università di Ferrara, Italia	1119	261	ALI-2B
C Neto	Albano N	Università di Aveiro, Portogallo	528	254	INO-3
Caboni	Pierluigi	Università di Cagliari, Dipartimento scienze della vita e ambiente, Cagliari, Italia	1244	78	ALI-1A
Cabri	Walter	Università di Bologna, Italia	1837, 914	31, 147	POSTER-A, ORG-2B
Cabua	Maria Chiara	Università degli Studi di Cagliari, Italia	1757	141	ORG-1A
Cacaci	Margherita	Department of Basic Biotechnological Sciences, Intensive and Perioperative Clinics, Università Cattolica del Sacro Cuore, Largo A. Gemelli, 00168, Rome, Italy	880	31	POSTER-A
Cacciarini	Martina	Department of Chemistry 'Ugo Schiff', University of Florence, via della Lastruccia 3-13, 50019 Sesto Fiorentino (FI), Italy	452	31	POSTER-A
Cacciatore	Giuseppina	Università della Calabria, Italia	508	31	POSTER-A
Cacciatori	Fausto	museo del violino, Italia	2033	43	ParallelTopic05
Cacciola	Francesco	Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Via Consolare Valeria, 98125, Messina, Italy	1276, 1361, 267	31, 31, 197	POSTER-A, POSTER-A, ParallelTopic14 - ID: 197
Cacciola	Francesco	Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Via Consolare Valeria, 98125 – Messina	1370	214	POSTER-B
Cacciola	Francesco	Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Via Consolare Valeria, 98125, Messina, Italy	1333	78	ALI-1A
Cachet-Viver	Christine	Université Paris Est, Institut de Chimie et des Matériaux Paris-Est, ICMPE (UMR 7182), CNRS, UPEC	1860	214	POSTER-B
Cacioppo	Michele	Università degli Studi di Palermo, Italia	366, 722	214, 244	POSTER-B, ORG-3A
Cadamura	Francesca	University of Milano-Bicocca, School of Medicine and Surgery, via Raoul Follereau 3, Vedano al Lambro (MB)	633	214	POSTER-B
Cadamuro	Francesca	Università degli Studi Milano Bicocca, Milan, Italy	542, 754, 701, 700	31, 31, 214, 139	POSTER-A, POSTER-A, POSTER-B, ORG-2A
Cafarella	Cinzia	Messina Institute of Technology c/o Deparment of Chemical, Biological, Pharmaceutical and Environmental Science, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 - Messina, Italy	1407, 1944	31, 193	POSTER-A, ParallelTopic09 - ID: 193
Cafarella	Cinzia	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1418, 1259	214, 261	POSTER-B, ALI-2B
Cafeo	Giovanna	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy	1304, 1341, 1279, 1503	31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B
Caflisch	Amedeo	University of Zurich, Zurich CH-8057, Switzerland	565	154	CSB-1B
Cagavi	Esra	ISTANBUL MEDIPOL UNIVERSITY, Turkey	1102	154	CSB-1B
Caggiu	Laura	Department of Chemical, Physical, Mathematical, and Natural Sciences, University of Sassari, Via Vienna 2, 07100 Sassari, Italy	1240, 945	31, 234	POSTER-A, FIS-1C
Cagna	Laura	Department of Science and Technological Innovation, University of Piemonte Orientale, Viale Teresa Michel 11, 15121 Alessandria (Italy)	1755	251	ANA-3D
Cagnato	Clarissa	Ca' Foscari University of Venice, Italia	806	73	ABC-A
Cagossi	Giorgio	Università di Parma, Italia	863, 1054	31, 241	POSTER-A, INO-2B
Cai	Zhengxu	Università degli Studi di Perugia, Italia	1378	58	ParallelTopic13
Cai	Zhiqiang	Luoyang Normal University, College of Chemistry and Chemical Engineering, Luoyang 471934, P. R. China	339	140	ANA-1B
Caielli	Tommaso	Università degli Studi di Milano Bicocca, Italia	1146, 1537	214, 72	POSTER-B, ELE-1
Cairoli	Aurora	Sapienza Università di Roma, Italia; Ca' Foscari Università di Venezia, Italia	1895	156	ABC-C
Cairoli	Sara	Ospedale Pediatrico Bambino Gesù, Roma, Italia	1841	267	TEF-1
Cairone	Francesco	Sapienza università di Roma	1524	237	TEC-C
Caironi	Mario	Center for Nano Science and Technology, Istituto Italiano di Tecnologia, Via Rubattino 81, 20134, Milan, Italy	683, 689	31, 142	POSTER-A, ANA-1C
Calabrese	Antonio N.	School of Molecular and Cellular Biology, Astbury Centre, University of Leeds, UK	502	214	POSTER-B
Calabrese	Carla	Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF)- University of Palermo and INSTM UdR – Palermo, Viale delle Scienze, Ed.17, Palermo I-90128, Italy	711	214	POSTER-B
Calabrese	Giulia	Università degli Studi di Messina, Italia	397	236	TEC-D
Calabrese	Luigi	Università degli Studi di Messina, Italia	396	237	TEC-C
Calabrese	Luigi	Università di Messina, Italia	254	236	TEC-D
Calabretta	Maria Maddalena	Department of Chemistry "Giacomo Ciamician", University of Bologna, Via P. Gobetti 85, 40129, Bologna, Italy; Center for Applied Biomedical Research (CRBA), Azienda Ospedaliero-Universitaria Policlinico S. Orso-la-Malpighi, 40138 Bologna, Italy	538, 1612, 650	31, 214, 142	POSTER-A, POSTER-B, ANA-1C
Calabria	Donato	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Italia	1533	144	ANA-1D
Calamante	Massimo	Istituto di Chimica dei Composti Organometallici - CNR, Sesto Fiorentino, Italia; Dipartimento di Chimica "Ugo Schiff", Università di Firenze, Sesto Fiorentino, Italia	576	31	POSTER-A
Calamante	Massimo	ICCOM-CNR; Università degli Studi di Firenze	1477	31	POSTER-A
Calamante	Massimo	Istituto di Chimica dei Composti Organometallici - CNR, Via Madonna del Piano 10, Sesto Fiorentino, Italia; Dipartimento di Chimica "Ugo Schiff", Università di Firenze,Via della Lastruccia 3, Sesto Fiorentino, Italia	1890	31	POSTER-A
Calamante	Massimo	CNR,ICCOM, Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy; Dipartimento di Chimica, Università di Firenze, Via della Lastruccia 13, 50019 Sesto Fiorentino, Italy	667	214	POSTER-B
Calandra Buonaura	Giovanna	IRCCS Istituto delle Scienze Neurologiche di Bologna, Italia; Dipartimento di Scienze Biomediche e Neuromotorie, Università di Bologna, Bologna, Italia	1846	214	POSTER-B
Calascibetta	Franco	Università Sapienza, Roma, in pensione, Italia	679	76	DID-A
Calcabrini	Annarica	National Center for Drug Research and Evaluation, Istituto Superiore di Sanità, V.le Regina Elena 299 Rome 00161 (IT)	934	214	POSTER-B
Calcagno	Damiano	ICCS- Fondazione Bietti, Via Santo Stefano Rotondo 6, Roma, Italia	1236	266	CSB-2
Calcio Gaudino	Emanuela	Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Italia	1562, 418	31, 158	POSTER-A, IND-1C
Caldera	Fabrizio	Department of Chemistry, University of Torino, Via Pietro Giuria 7, Torino, Italy	1187	214	POSTER-B
Calderone	Vito	Magnetic Resonance Center CERM, University of Florence, Via Luigi Sacconi 6, 50019 Sesto Fiorentino, Florence, Italy; Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739	31	POSTER-A
Calenda	Sara	Università di Firenze, Dipartimento Neuroscienze, Area del Farmaco e Salute del Bambino, Italia	968	31	POSTER-A
Calgaro	Loris	Università Cà Foscari, Italia	1016, 1108, 747	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Calia	Domenico	Università degli Studi di Bari Aldo Moro, Italia	860	214	POSTER-B
Caliandro	I.	Università di Torino, Italia	1673	31	POSTER-A
Caliandro	Rocco	IC-CNR, via G. Amendola, 122, 70126 Bari, Italy	1171	31	POSTER-A
Calice	Umberto	Dipartimento di Scienze, Università della Basilicata	1775	31	POSTER-A

Caliceti	Paolo	Università degli Studi di Padova, Italia	1980	202	ParallelTopic04 - ID: 202
Caligiani	Augusta	Università degli Studi di Parma, Italia	1031	78	ALI-1A
Caligiuri	Isabella	Pathology Unit, Centro di Rif. Oncologico di Aviano (CRO) IRCCS, via F. Gallini 2, 33081 Aviano (PN), Italy	1550	243	FIS-2B
Callea	Lara	Università degli Studi di Milano-Bicocca, Italia	822	161	TEO-B
Callegari	Camilla	Department of chemistry, University of Pavia	811	31	POSTER-A
Callegher	Bruno	Department of Humanities, University of Trieste, Via del Lazzaretto Vecchio 8, 34123 Trieste	1518	214	POSTER-B
Calloni	Alberto	Dipartimento di Fisica, Politecnico di Milano	1125	31	POSTER-A
Calogero	Francesco	Alma Mater Studiorum – Università di Bologna, Italia; Center for Chemical Catalysis – C3, Alma Mater Studiorum–Università di Bologna	866	145	ORG-1D
Calonghi	Natalia	Department of Pharmacy and Biotechnology, University of Bologna, Via San Donato 15, 40127 Bologna, Italy	1134	31	POSTER-A
Calosi	Matteo	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via. L. Borsari, 46, 44121, Ferrara, Italy	1090, 923	31, 69	POSTER-A, IND-1A
Calucci	Lucia	Istituto di Chimica dei Composti OrganoMetallici, Consiglio Nazionale delle Ricerche	1064, 1409	214, 235	POSTER-B, FIS-1D
Calvano	Cosima D.	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, via Orabona 4, 70126 Bari, Italy; Centro Interdipartimentale SMART, Università degli Studi di Bari Aldo Moro, via Orabona 4, 70126, Bari, Italy	1431	78	ALI-1A
Calvano	Cosima Damiana	Dipartimento di Chimica - Università degli studi di Bari "Aldo Moro"; Centro Interdipartimentale SMART - Università degli studi di Bari "Aldo Moro"	1101, 1574, 1637, 1042, 906, 532, 900	31, 31, 214, 71, 140, 146, 146	POSTER-A, POSTER-A, POSTER-B, MAS, ANA-1B, ANA-2B, ANA-2B
Calvaresi	Matteo	NanoBio Interface Lab, Dipartimento di Chimica "Giacomo Ciamician", Alma Mater Studiorum - Università di Bologna, Italia	1357, 1421, 1556, 1254	31, 214, 214, 154	POSTER-A, POSTER-B, POSTER-B, CSB-1B
Calvillo	Laura	Università degli studi di Padova, Italia	681, 395	31, 246	POSTER-A, ORG-3C
Calvini	Rosalba	Università di Modena e Reggio Emilia, Dipartimento di Scienze della Vita	331, 326	31, 250	POSTER-A, ANA-3C
Camagni	Valentina	Università di Bologna, Italia; Università degli Studi di Roma "La Sapienza", Italia	1758	31	POSTER-A
Camaioni	Emidio	Department of Pharmaceutical Sciences, University of Perugia, Via del Liceo 1, 06123 Perugia, Italy	286	31	POSTER-A
Camazzola	Davide	Institute of Neuroscience, National Research Council (CNR), Milan, Italy	715	71	MAS
Cambiotti	Elena	Nano4Light Lab - Università di Perugia; CSGI, Florence	608	31	POSTER-A
Cambiotti	Elena	Dipartimento di Chimca, Biologia e Biotecnologie, Università di Perugia	1270	31	POSTER-A
Cambise	Paolo	Eni S.p.A., Italia	1323	203	ParallelTopic06 - ID: 203
Camilloni	Carlo	Universita' degli Studi di Milano, Italia	524	263	CSB-3
Caminade	Anne-Marie	CNRS, France	1962	196	ParallelTopic13 - ID: 196
Camisa	Roberto	Gestione Impianti di Depurazione Acque (G.I.D.A.) S.p.A., Via di Baciacavallo 36, Prato, 59100 (Italy)	1071	239	ABC-D
Cammarota	Mattia	Università di Napoli Federico II, Italia	1371	31	POSTER-A
Campagna	Erica	Università degli studi della Campania L. Vanvitelli, Italia	515, 354, 547	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Campana	Filippo	Università degli Studi di Perugia, Italia	489, 1851	31, 31	POSTER-A, POSTER-A
Campanella	Luigi	Università La Sapienza di Roma, Italia	145	214	POSTER-B
Campani	Virginia	Università di Napoli Federico II, Italia	460	31	POSTER-A
Campaniello	Maria	Laboratorio Nazionale di Riferimento per il trattamento degli alimenti e dei loro ingredienti con radiazioni ionizzanti – Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Via Manfredonia, 20 – 71121 Foggia	1424, 1431	31, 78	POSTER-A, ALI-1A
Campanile	Floriana	Department of Biomedical and Biotechnological Sciences, University of Catania, 95123 Catania, Italy	916	248	ANA-3A
Campanile	Giuseppa	Università degli Studi di Salerno, Italia	454	245	ORG-3B
Campanini	Barbara	Department of Food and Drug, University of Parma, Parma, Italy	1422	134	FAR-1C
Campi	Martina	Dept. of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia, I-41125, Modena	662	241	INO-2B
Campiani	Giuseppe	Dipartimento di Biotecnologie, Chimica e Farmacia, Università di Siena, Via Aldo Moro 2, 53100, Siena, Italia	1628, 1576	214, 136	POSTER-B, FAR-1D
Campiglia	Pietro	Department of Pharmacy, University of Salerno, Via Giovanni Paolo II, 132, 84084 Fisciano, Italy	1531, 250	250, 136	ANA-3C, FAR-1D
Campinoti	Caterina	Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Pisa, Italia	1380, 526	31, 244	POSTER-A, ORG-3A
Campione	Marcello	Dep. of Earth and Environmental Science, Università degli Studi di Milano – Bicocca, p.za della Scienza 4, Milano	1463	31	POSTER-A
Campisi	Sebastiano	Università degli studi di Milano	645	31	POSTER-A
Campitelli	Patrizio	University of Camerino, Italia	958	214	POSTER-B
Campmajó	Guillem	Università di Parma, Italia	948	31	POSTER-A
Campone	Luca	Università Milano-Bicocca, Italia	1872	214	POSTER-B
Campopiano	Antonella	Dip. Medicina, Epidemiologia, Igiene del Lavoro e Ambientale_INAIL, Roma	953	214	POSTER-B
Campora	Simona	Dipartimento di Scienze e Tecnologie Biologiche Chimiche e Farmaceutiche (STEBICEF), Università degli Studi di Palermo, Viale delle Scienze 16, 90128, Palermo, Italy	1126	214	POSTER-B
Campostrini	Andrea	CatMat Lab, Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice and INSTM RUVe, Via Torino 155, 30172 Venice, Italy	586, 252	31, 73	POSTER-A, ABC-A
Canaletti	Vanessa	Ca' Foscari, Italia	1517	239	ABC-D
Cananà	Stefania	Dipartimento di Chimica, Università degli Studi di Torino, Via P. Giuria 7, 10125 Torino (Italy); Scuola Universitaria Superiore I.U.S.S. Pavia, Piazza Vittoria 15, 2700 Pavia (Italy)	1402	31	POSTER-A
Cancedda	Laura	IAMA Therapeutics, via Filippo Turati 2, 16128 Genoa, Italy; Brain Development & Disease Laboratory, Istituto Italiano di Tecnologia, via Morego, 30, 16163 Genoa, Italy	1002	193	ParallelTopic09 - ID: 193
Cancelliere	Rocco	Department of Chemical Sciences and Technologies, University of Rome Tor Vergata, Via della Ricerca Scientifica 1, 00133 Roma, Italy	844, 1779	214, 144	POSTER-B, ANA-1D
Candiani	Gabriele	Politecnico di Milano, Italia	405	31	POSTER-A
Caneschi	Andrea	Università di Firenze, Italia	575	31	POSTER-A
Canesi	Ilaria	Next Technology Tecnotessile Società Nazionale di Ricerca r.l., Italia	751	214	POSTER-B
Canettieri	Gianuca	Sapienza Università di Roma, Italia; Istituto Pasteur Italia, Fondazione Cenci-Bolognetti, Roma, Italia	1841	267	TEF-1
Cangialosi	Federico	Tecnologia e Ambiente, Via Michele Mummolo 13, 70017 Putignano (Ba), Italia	1168	214	POSTER-B
Cangiano	Alessandro	Università degli Studi di Napoli Federico II, Italia; CSGI - Center for Colloid and Surface Science, 50019, Sesto Fiorentino, Italy	1539, 408	31, 242	POSTER-A, FIS-2A
Caniglia	Giada	Institute of Analytical and Bioanalytical Chemistry, Ulm University, Albert Einstein Allee, 11, 89081, Ulm, Germany	677	250	ANA-3C
Cannas	Carla	Università degli Studi di Cagliari (Dipartimento di Chimica), Italia	990, 1674	47, 160	ParallelTopic07, FIS-1B
Cannavacciuolo	Antonio	Stazione Zoologica Anton Dohrn, Italia	907	31	POSTER-A
Cannavacciuolo	Felicia Daniela	Dipartimento di Scienze Chimiche, Università di Napoli Federico II, 80126 Napoli, Italy; DPI, 5600 AX Eindhoven, the Netherlands	1822	240	INO-2A
Cannizzaro	Francesca	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy	1305, 1349	31, 31	POSTER-A, POSTER-A
Cannone	Salvatore	Dipartimento ENERGIA (DENERG) Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy	1564	31	POSTER-A
Cantatore	Eugenio	Department of Electrical Engineering, Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands	683, 689	31, 142	POSTER-A, ANA-1C
Cantini	Francesca	Magnetic Resonance Center CERM, University of Florence, Via Luigi Sacconi 6, 50019 Sesto Fiorentino, Florence, Italy; Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739	31	POSTER-A
Cantini	Francesca	Università Degli Studi di Firenze, Italia	1852	31	POSTER-A
Canton	Patrizia	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Stevanato Center for Electron Microscopy and CSGI RU of Venice, Via Torino 155, 30172, Venice, Italy	114, 841, 1198, 1605	31, 214, 214, 214	POSTER-A, POSTER-B, POSTER-B, POSTER-B
Cantoni	Beatrice	Dip Civil Enviromental Engineering Politecnico di Milano, Italia	1053, 1447	214, 214	POSTER-B, POSTER-B
Cantoni	Matteo	Politecnico di Milano, Italia	591	240	INO-2A
Canuti	Lisa	Università di Bologna, Italia	457	238	ABC-B

Cao	Ning	SMN Centre for Material Science and Nanotechnology, Department of Chemistry, University of Oslo, N-0315, Oslo, Norway	423	31	POSTER-A
Capacchione	Carmine	Università degli Studi di Salerno, Italia	349, 991, 1001, 1633	31, 31, 69, 165	POSTER-A, POSTER-A, IND-1A, INO-1B
Capaldi	Giorgio	Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Italia	1562, 1853	31, 158	POSTER-A, IND-1C
Capaldo	Luca	SynCat Lab, Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italia	1812, 237, 1569	31, 62, 214	POSTER-A, ParallelTopic15, POSTER-B
Capasso	Domenica	Dipartimento di Fisica, Università degli Studi di Napoli "Federico II", Italia	979, 980, 826	31, 139, 266	POSTER-A, ORG-2A, CSB-2
Capasso	Lucia	Department of Precision Medicine, University of Campania "Luigi Vanvitelli", Vico L. De Crecchio 7, 80138 Naples, Italy	1643, 985	56, 214	ParallelTopic12, POSTER-B
Capasso	Salvatore	Università degli Studi di Napoli Federico II, Dipartimento di Scienze Chimiche, via Cintia, IT-80126 Napoli	476	158	IND-1C
Capecchi	Eliana	Università degli studi della Tuscia, Dipartimento di Scienze Ecologiche e Biologiche Italia	257	141	ORG-1A
Capelli	Davide	Istituto di Cristallografia, CNR, Strada Provinciale 35, n. 9 - 00010 Montelibretti (RM), Italy	1277	31	POSTER-A
Capelli	Luca	Università di Parma, Italia	379, 615	31, 214	POSTER-A, POSTER-B
Capelli	Sofia	Sabio fuels s.r.l - Campomorone (GE), Italy	210	214	POSTER-B
Capitoli	Giulia	Bicocca Bioinformatics Biostatistics and Bioimaging B4 Center, School of Medicine and Surgery, University of Milano-Bicocca, Monza, Italy	1535	31	POSTER-A
Capone	Emily	Department of Innovative Technologies in Medicine and Dentistry, Center for Advanced Studies and Technology (CAST), University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy; Center for Advanced Studies and Technology (CAST), University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy	1607	214	POSTER-B
Capone	Matteo	Università degli Studi dell'Aquila, Via Vetoio-Coppito, L' Aquila	122	31	POSTER-A
Capone	Matteo	S3 Center, CNR Institute of Nanoscience, Modena, Italy; Department of Physical and Chemical Sciences, University of L'Aquila, Italy	1398	31	POSTER-A
Capone	Matteo	University of L'Aquila, via Vetoio, L'Aquila 67010, Italy	1430	161	TEO-B
Caponigro	Vicky	Università degli Studi di Salerno, Italia	1730, 1531	66, 250	ANA-1A, ANA-3C
Caporale	Marilena	Università degli studi della Basilicata, Italia	1675, 1831	31, 256	POSTER-A, ORG-4A
Caporali	Maria	CNR - Istituto di Chimica dei Composti Organometallici (CNR-ICCOM), Via Madonna del Piano 10, Sesto Fiorentino I-50019, Italy	335	243	FIS-2B
Capozza	Martina	Dipartimento di Biotecnologie Molecolari e Scienze per la Salute, Torino, Italia	867	214	POSTER-B
Cappai	Rosita	Università di Sassari, Italia	1045	148	ANA-2C
Cappellacci	Loredana	Università degli Studi di Camerino, Camerino, Italia	1366	136	FAR-1D
Cappelletti	David	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Italia	348, 494	73, 238	ABC-A, ABC-B
Cappelletti	Giuseppe	Università degli Studi di Milano, Italia	133, 183	31, 155	POSTER-A, ELE-2
Cappelli	Andrea	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	230, 1859	214, 214	POSTER-B, POSTER-B
Cappelli	Chiara	Scuola Normale Superiore, Italia	888, 1169, 1551, 1756, 1077	214, 214, 214, 214, 68	POSTER-B, POSTER-B, POSTER-B, POSTER-B, FIS-1A
Cappellin	Luca	università padova, Italia	425	249	ANA-3B
Capperucci	Antonella	Università di Firenze, Dipartimento di Chimica Ugo Schiff, Italia	968, 1495	31, 214	POSTER-A, POSTER-B
Cappiello	Achille	Department of Pure and Applied Sciences, University of Urbino Carlo Bo, Piazza Rinascimento, 6, 61029 – Urbino, Italy; Vancouver Island University, 900 Fifth St, BC V9R 5S5, Nanaimo – Canada	1819	66	ANA-1A
Cappitelli	Francesca	University of Milan, Italy	1484	31	POSTER-A
Cappitti	Alice	Università di Firenze, Italia	1814	214	POSTER-B
Cappitti	Alice	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino, Italy	807	158	IND-1C
Capranico	G.	Università di Bologna, Italia	618	31	POSTER-A
Capriati	Vito	Dipartimento di Farmacia-Scienze del Farmaco, Università di Bari Aldo Moro, Consorzio C.I.N.M.P.I.S, Via E. Orabona 4, I-70125 Bari, Italy	1007, 1030, 1622, 1638, 988	31, 214, 214, 214, 145	POSTER-A, POSTER-B, POSTER-B, POSTER-B, ORG-1D
caprioglio	diego	università del piemonte orientale, Italia	1027	149	ORG-2C
Caprioli	Giovanni	Chemistry Interdisciplinary Project (ChIP), School of Pharmacy, University of Camerino, Italy	714, 1653	214, 261	POSTER-B, ALI-2B
Capriotti	Anna Laura	Università degli Studi di Roma "La Sapienza", Italia	449, 232, 1982, 450, 358, 475	31, 195, 209, 214, 66, 146	POSTER-A, ParallelTopic12 - ID: 195, ParallelTopic12 - ID: 209, POSTER-B, ANA-1A, ANA-2B
Caputo	Gaetano	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania Luigi Vanvitelli	1293, 1737	31, 266	POSTER-A, CSB-2
Caputo	Mariapia	Dipartimento di Farmacia-Scienze del Farmaco - Università degli studi di Bari Aldo Moro, Via Orabona 4, Bari	683, 663, 689, 708	31, 214, 142, 142	POSTER-A, POSTER-B, ANA-1C, ANA-1C
Caputo	Massimo	University of Bristol, Bristol, UK	1531	250	ANA-3C
Cara	Andrea	National Center for Global Health, Istituto Superiore di Sanità, Rome, Italy.	1627	214	POSTER-B
Caracciolo	Giulio	Dipartimento di Medicina Molecolare, Sapienza Università di Roma, Viale Regina Margherita 291, 00185, Roma , Italia	232	195	ParallelTopic12 - ID: 195
Carafa	Maria	Department of Drug Chemistry and Technology, Sapienza University of Rome, Italy	1476, 1841	31, 267	POSTER-A, TEF-1
Caraffi	Riccardo	Department of Life Sciences, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO, 41125; Clinical and Experimental Medicine PhD Program, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO 41125	630	267	TEF-1
Caraffi	Riccardo	NanotechLab, Università degli Studi di Modena e Reggio Emilia, Italia; Clinical and Experimental Medicine PhD Program, Università degli Studi di Modena e Reggio Emilia, Italy	875	70	TEF-2
Caramia	Sara	Eni, Research & Technical Innovation, Via F. Maritano 26, San Donato Milanese 20097, Italia	447	31	POSTER-A
Caratti	Andrea	Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Via Pietro Giuria 9, I-10125 Torino, Italy	238	186	ParallelTopic01 - ID: 186
Carbone	Anna	Università degli Studi di Genova, Italia, Dipartimento di Farmacia	223, 1604	31, 31	POSTER-A, POSTER-A
Carbone	Claudia	Università degli Studi di Milano, Italia	735	31	POSTER-A
Carbone	Daniela	Università Degli Studi Di Palermo, Italia	1528	31	POSTER-A
Carbone	Giorgio	University of Milano – Bicocca, Department of Earth and Environmental Sciences	378	214	POSTER-B
Carbone	Marilena	Startnetics, Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata	1241, 1242, 1270, 1385, 1239, 1233	31, 31, 31, 214, 241, 254	POSTER-A, POSTER-A, POSTER-A, POSTER-B, INO-2B, INO-3
Carcelli	Mauro	Università di Parma, Italia	546	214	POSTER-B
Cardano	Francesca	Dipartimento di Chimica - Università di Torino, Italia	669, 1656, 1702, 1595	31, 31, 31, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B
Cardellini	Jacopo	Università di Firenze e CSGI, Italia	499	183	ParallelTopic13 - ID: 183
Cardiano	Paola	Università di Messina, Italia	1451	31	POSTER-A
Cardiano	Paola	Università degli Studi di Messina, Italia	969, 1248	214, 214	POSTER-B, POSTER-B
Cardiano	Paola	Università degli Studi di Messina, Italia	1247, 911	248, 148	ANA-3A, ANA-2C
Cardillo	Maria Rosaria	Dipartimento di Medicina Sperimentale, Università degli studi della Campania Luigi Vanvitelli	512	243	FIS-2B
Cardinaletti	Gloriana	Università di Udine, Italia	479	78	ALI-1A
Cardito	Alice	Dipartimento di Chimica e Biologia, Università degli Studi di Salerno, Italia	303	31	POSTER-A
Cardona	Francesca	Department of Chemistry 'Ugo Schiff', University of Florence, via della Lastruccia 3-13, 50019 Sesto Fiorentino (FI), Italy	452, 732, 283	31, 214, 141	POSTER-A, POSTER-B, ORG-1A
Cardoni	Francesco	University of Padua, Italia	902	31	POSTER-A
Cardoso Gomes	Guelber	Dipartimento di Farmacia, Università di Pisa, Italia	1124	31	POSTER-A
Cardullo	Nunzio	Università degli Studi di Catania, Italia	890, 647, 1035	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Cardullo	Nunzio	Università di Catania, Italia	1573	214	POSTER-B
Cardullo	Nunzio	Università di Catania, Italia	1275	151	ORG-2D
Careddu	Fabrizio	Department of Chemistry, NIS Interdepartmental and INSTM Reference Centre, University of Torino, Torino, Italy	510	214	POSTER-B
Carena	Luca	University of Turin, Italia	1044, 1345, 353, 629, 908, 1733	31, 31, 214, 249, 156, 239	POSTER-A, POSTER-A, POSTER-B, ANA-3B, ABC-C, ABC-D
Carenzi	Giacomo	Fondazione Istituto Insubrico Ricerca per la Vita, Via Roberto Lepetit 34, 21040 – Gerenzano (VA), Italia	246	31	POSTER-A
Careri	Maria	Università di Parma, Italia	1200, 1369, 466, 776, 954, 1368	31, 31, 184, 138, 140, 251	POSTER-A, POSTER-A, ParallelTopic14 - ID: 184, ANA-2A, ANA-1B, ANA-3D
Caretti	Daniele	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Via Gobetti 85, 40129,Italia	1850	31	POSTER-A
Carfora	Raoul	Scuola Superiore Meridionale, Largo S. Marcellino, 10, Napoli, 80138, Italia; Università degli Studi di Napoli Federico II, Dipartimento di Scienze Chimiche, Napoli, 80126,Italia	1609, 1318	31, 75	POSTER-A, TEO-A
Cargnoni	Fausto	Istituto di Scienze e Tecnologie Chimiche "G. Natta", Italia	921	241	INO-2B

Cariati	Elena	Dipartimento di Chimica, Università degli studi di Milano, Milano	910, 1392, 631, 1579	31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B
Cariglia	Michela	Agrimaster s.r.l., Stornarella, Italia	1574	31	POSTER-A
Carignani	Elisa	ICCOM-CNR, Pisa, Italia; CISUP, Università di Pisa, Italia	1768	214	POSTER-B
Carini	Marina	Department of Pharmaceutical Sciences, University of Milan, 20133 Milan, Italy	1922, 803, 1752	31, 214, 255	POSTER-A, POSTER-B, FAR-2A
Carioscia	Alessio	Università degli studi dell'Aquila, Italia	940	141	ORG-1A
Carlin	Silvia	Center Research and Innovation, Edmund Mach Foundation, San Michele all'Adige (TN)	2012	71	MAS
Carlone	Armando	Università degli studi dell'Aquila, Italia	940	141	ORG-1A
Carloni	Patricia	D3A, Università Politecnica delle Marche, Italia	416	150	ANA-2D
Carlotti	Benedetta	University of Perugia	1869	31	POSTER-A
Carlotti	Benedetta	Università degli Studi di Perugia, Italia	1378	58	ParallelTopic13
Carlotti	Marco	Dipartimento di Chimica e Chimica Industriale, University of Pisa, Via G. Moruzzi 13, 56124, Pisa, Italy; Center for Materials Interfaces, Istituto Italiano di Tecnologia, Viale R. Piaggio 34, 56025, Pontedera, Italy	214, 394, 1650	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Carlotti	Marco	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italy; Center for Materials Interfaces, Istituto Italiano di Tecnologia, Italy	266, 407	159, 159	IND-1D, IND-1D
Carlotto	Silvia	Dipartimento Scienze Chimiche, Università di Padova, via Marzolo 1, Padova	1763	241	INO-2B
Carlucci	Lucia	University of Milan - Dept. of Chemistry	1392, 631, 1579	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Carmassi	Leonardo	Università di Pisa, Italia	756	47	ParallelTopic07
Carmine	Apollaro	Università della Calabria, Italia.	464	214	POSTER-B
Carnelli	Luca	Soffieria Bertolini SpA, Via Sestriere 7, Candiolo, Italy	1055	214	POSTER-B
Carnevale	MariaConcetta	Institute on Membrane Technology (CNR-ITM), Via P. Bucci 17/C 87036 Rende (CS), Italy	1711	159	IND-1D
Carniato	Fabio	Dipartimento di Scienze e Innovazione Tecnologica, Università del Piemonte Orientale, Viale Teresa Michel 11, 15121 Alessandria, Italy	431, 433, 434	214, 214, 165	POSTER-B, POSTER-B, INO-1B
Carnio	Francesco	Università degli studi di Padova, Italia	1592	31	POSTER-A
Caro	Dario	Università degli Studi di Siena, Italia	1026	156	ABC-C
Carofiglio	Marco	Instituto di Ricerche Farmacologiche Mario Negri, Italia	156, 199	31, 214	POSTER-A, POSTER-B
Carofiglio	Tommaso	Università di Padova, Italia	1160	31	POSTER-A
Carollo	Francesco	University of Padova	642	31	POSTER-A
Caroppo	Simona	Unit of Microbiology and Virology, "Maggiore della Carità" University Hospital, Novara, Italy	1563	31	POSTER-A
Carosi	Antonella	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Italia	348	73	ABC-A
Carota	Angela	Department of Chemistry and Industrial Chemistry, University of Pisa, via Giuseppe Moruzzi 13, 56124, Pisa, Italy	1536	214	POSTER-B
Carota	Angela Gilda	Department of Chemistry and Industrial Chemistry, University of Pisa, via Giuseppe Moruzzi 13, 56124 Pisa, Italy	1781	31	POSTER-A
Carotenuto	Alfonso	University of Naples Federico II, Italy	858	214	POSTER-B
Carotenuto	Maria Rosalia	University of Palermo, Italy	1516	239	ABC-D
Carotenuto	Maurizio	Dipartimento di Chimica e Biologia, Università degli Studi di Salerno, Italia	303	31	POSTER-A
Carotti	Andrea	Università degli Studi di Perugia, Italia	523, 487	66, 255	ANA-1A, FAR-2A
Carpentier	Romain	Laboratoire de Chimie Organique (LCO), Université Libre de Bruxelles (ULB); Engineering of Molecular NanoSystems, Université libre de Bruxelles	1085	246	ORG-3C
Carpino	Stefania	PREF IV, Central Inspectorate for Fraud Repression and Quality Protection of the Agrifood Products and Foodstuffs - Italian Ministry of Agriculture, Food Sovereignty and Forests	1401	214	POSTER-B
Carradori	Simone	"G. d'Annunzio" University of Chieti-Pescara, Italy	1448	197	ParallelTopic14 - ID: 197
Carrara	Elena	Università degli Studi di Milano, Italia	1165	239	ABC-D
Carrella	Emanuele	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli "Federico II", Italia	979, 980	31, 139	POSTER-A, ORG-2A
Carrera	Carla	Centro di Imaging Molecolare e Preclinico, Dipartimento di Biotecnologie Molecolari e Scienze per la salute, Università degli Studi di Torino, Piazza Nizza 44/bis, 10126 Torino, Italy.	1328	67	INO-1A
Carrese	Barbara	Dept. Molecular Medicine and Medical Biotechnology, Univ. Naples Federico II, Naples, Italy	724	214	POSTER-B
Carretti	E.	Department of Chemistry "Ugo Schiff" & CSGI, University of Florence, Via della Lastruccia, 3-13, 50019 Sesto Fiorentino (FI), Italy	400	31	POSTER-A
Carretti	Emiliano	Departement of Chemistry "Ugo Schiff" and CSGI Consortium, University of Florence, Via della Lastruccia 3-13, 50019, Sesto Fiorentino, FI, Italy; National Research Council - National Institute of Optics (CNR-INO), Largo E. Fermi 6, 50125 Florence, FI, Italy	1286, 806, 833	214, 73, 238	POSTER-B, ABC-A, ABC-B
Carrieri	Antonio	Dipartimento di Farmacia - Scienze del Farmaco, Italia	1634	214	POSTER-B
Carroccio	Sabrina Carola	Instituto per i polimeri compositi e biomateriali (IPCB-CNR), Catania, Italia	1035	214	POSTER-B
Carrozza	Debora	Università di Modena e Reggio Emilia, Italia	244	31	POSTER-A
Cartoni	Antonella	Università La Sapienza di Roma, Italia; Istituto di Struttura del la Materia (ISM), National Research Council (CNR), Italia	849	214	POSTER-B
Carullo	Alessio	Dipartimento di Elettronica e Telecomunicazioni, Politecnico di Torino, Italia	1644	156	ABC-C
Carullo	Gabriele	University of Siena	1576	136	FAR-1D
Caruso	Donatella	* Dipartimento di Scienze Farmacologiche e Biomolecolari, Neuroendocinology unit, Università degli Studi di Milano, via Giuseppe Balzaretti 9, 20133, Milan, Italy	836	31	POSTER-A
Casadei	Enrico	Alma Mater Studiorum - Università di Bologna	1401	214	POSTER-B
Casale	Michael	Università degli studi di Genova, Italia	1317	253	INO-2C
Casale	Monica	Dipartimento di Farmacia, Università degli studi di Genova, Italia	517, 544	31, 214	POSTER-A, POSTER-B
Casalegno	Mosè	Politecnico di Milano, Italia	346	199	ParallelTopic01 - ID: 199
Casapu	Maria	Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology, Germany	1191	241	INO-2B
Casapullo	Agostino	Università di Salerno, Italia	1162, 259, 1150	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Casartelli	Morena	Università degli Studi di Milano, Italia	996	214	POSTER-B
Casati	Sara	Department of Biomedical, Surgical and Dental Sciences, Università degli Studi di Milano, Via Mangiagalli 37, Milan, Italy	1752	255	FAR-2A
Casavecchia	Piergiorgio	DCBB - Università degli Studi di Perugia, Italia	1769	68	FIS-1A
Cascella	Anna	Università Milano-Bicocca, Italia	1872	214	POSTER-B
Casciari	Marta	Department of Pharmaceutical Sciences, University of Perugia, Italy	1672, 1013	31, 214	POSTER-A, POSTER-B
Cascioferro	Stella Maria	Università Degli Studi Di Palermo, Italia	1528	31	POSTER-A
Casella	Girolamo	Dipartimento di Scienze della Terra e del Mare, University of Palermo, Palermo, Italy	1284	74	TEC-A
Caselli	Alessandro	Università degli Studi di Milano, Italia	921	241	INO-2B
Caselli	Lurezia	Università di Firenze e CSGI, Italia	499	183	ParallelTopic13 - ID: 183
Casertano	Marcello	Dipartimento di Farmacia, Università degli Studi di Napoli Federico II, Italia	1754	139	ORG-2A
Casettari	Luca	Università degli Studi di Urbino Carlo Bo, Urbino, Italia	931	31	POSTER-A
Casiello	Michele	CNR-ICCOM	1120	246	ORG-3C
Casini	Andrea	CSGI - Consorzio Interuniversitario per lo sviluppo dei Sistemi a Grande Interfase, Firenze, Italia	1614	235	FIS-1D
Casini	Giulia	Enbiotech s.r.l, Via Quarto dei Mille 6, 90129 – Palermo, Italy	1243	31	POSTER-A
Casiraghi	Antonella	Università degli Studi di Milano, Italia	1620	214	POSTER-B
Casnati	Alessandro	Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale, Università di Parma, Parco Area delle Scienze 17/A, Parma 43124, Italia	447, 915, 664, 926, 1183, 644	31, 31, 214, 214, 214, 244	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, ORG-3A
Casoli	Lorenzo	Startnetics, Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata	1241, 1242, 1385, 1239, 1233	31, 31, 214, 241, 254	POSTER-A, POSTER-A, POSTER-B, INO-2B, INO-3
Cassani	Maria Cristina	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Via Gobetti 85, 40129,Italia	1850, 117	31, 165	POSTER-A, INO-1B
Cassese	Emilia	Department of Pharmacy, Università degli Studi di Napoli "Federico II," Via D. Montesano 49, 80131, Napoli, Italy	1557	31	POSTER-A
Cassetta	Alberto	Istituto di Cristallografia, Consiglio Nazionale delle Ricerche, 34149 Trieste, Italy	393	214	POSTER-B
Cassetta	Alberto	Institute of Crystallography - C.N.R.- Trieste Outstation. Area Science Park. Trieste, Italy	502	214	POSTER-B
Cassetta	Alberto	Istituto di Cristallografia, Consiglio Nazionale delle Ricerche, Trieste, Italia	1082	214	POSTER-B
Cassiano	Chiara	Università di Napoli Federico II, Italia	818, 656, 658	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Cassone	Giuseppe	Istituto per i Processi Chimico-Fisici, Consiglio Nazionale delle Ricerche, Italia	1287	185	ParallelTopic15 - ID: 185
Castagno	Nicolina	University of Salerno, 84084 Fisciano (SA), Italy	1633	165	INO-1B

Castagnolo	Daniele	University College London, Londra	1494	214	POSTER-B
Castaldo	Rachele	Institute for Polymers, Composites and Biomaterials, Italian National Research Council, Via Campi Flegrei 34, 80078 Pozzuoli (Naples) Italy	938, 678, 1742	214, 243, 263	POSTER-B, FIS-2B, CSB-3
Castellaneta	Andrea	Dipartimento di Chimica - Università degli studi di Bari "Aldo Moro"	1101	31	POSTER-A
Castellaneta	Andrea	Dipartimento di Chimica, Università degli Studi di Bari, Via Edoardo Orabona 4, 70126 Bari, Italy	1042, 532	71, 146	MAS, ANA-2B
Castellano	Eduardo Ernesto	University of São Paulo, São Paulo, SP, Brazil	340	31	POSTER-A
Castellano	Sabrina	University of Salerno, Via Giovanni Paolo II 132 Fisciano, 84084 Salerno, Italy	276, 834	214, 214	POSTER-B, POSTER-B
Castelli	Matteo	Department of Chemistry, University of Pavia	1641	214	POSTER-B
Castelli	Riccardo	Università di Parma, Italia	1787	132	FAR-1B
Castellino	Irene	Department of Chemistry, University of Hraadec Kralove, 50030, Hradec Karlove, Czeck Republic	1553, 1561	214, 214	POSTER-B, POSTER-B
Castellino	Lorenzo	Dipartimento di Chimica, Università di Torino, Italia	987	193	ParallelTopic09 - ID: 193
Casti	Federico	Università degli Studi di Cagliari, Italia	1804	31	POSTER-A
Castiello	Carola	Laboratory of Pharmacology, Faculty of Pharmacy, National and Kapodistrian University of Athens, Greece ; Department of Drug Chemistry and Technologies; University of Rome; Sapienza, Rome, Italy	1226, 855, 851	31, 214, 132	POSTER-A, POSTER-B, FAR-1B
Castiello	Umberto	Department of General Psychology, University of Padova, Via Venezia 8, 35131 Padova (PD), Italy	310	31	POSTER-A
Castiglione	Franca	Politecnico di Milano, Italia	346, 221	199, 237	ParallelTopic01 - ID: 199, TEC-C
Castoldi	Laura	University of Milano, Italia	1094	145	ORG-1D
Castrovilli	Mattea Carmen	Istituto di Struttura del la Materia (ISM), National Research Council (CNR), Italia	849	214	POSTER-B
Castrucci	Mauro	Università La Sapienza di Roma, Italia	145	214	POSTER-B
Casula	Mattia	Università di Cagliari, Dipartimento scienze della vita e ambiente, Cagliari, Italia	1244	78	ALI-1A
Catacchio	Michele	università di bari aldo moro, Italia	680, 683, 663, 689, 708	31, 31, 214, 142, 142	POSTER-A, POSTER-A, POSTER-B, ANA-1C, ANA-1C
Catalani	Elisabetta	Department DIBAF, della Tuscia University of Viterbo, 01100 Viterbo, Italy	1750	143	ORG-1C
Catalanotti	Bruno	Università di Napoli Federico II, Italia	655, 657	214, 147	POSTER-B, ORG-2B
Cataldi	Tommaso	Dipartimento di Chimica - Università degli studi di Bari "Aldo Moro"; Centro Interdipartimentale SMART - Università degli studi di Bari "Aldo Moro"	1101, 1574, 1042, 906	31, 31, 71, 140	POSTER-A, POSTER-A, MAS, ANA-1B
Cataldi	Tommaso R. I.	University of Bari Aldo Moro, Department of Chemistry, via E. Orabona 4, 70125, Bari (Italy)	1637, 900	214, 146	POSTER-B, ANA-2B
Cataldi	Tommaso R.I.	Università degli studi di Bari, Italia	532, 1431	146, 78	ANA-2B, ALI-1A
Cataldini	Simone	Dipartimento di Biotecnologie, Chimica e Farmacia, Università degli Studi di Siena, Italia; Acquedotto del Fiora SpA, Grosseto, Italia	1578	31	POSTER-A
Cataldo	Salvatore	Università degli Studi di Palermo, Italia	572, 716	214, 248	POSTER-B, ANA-3A
Catalini	Francesco	Università di Camerino, Italia	1225	31	POSTER-A
Catani	Lucia	Institute of Hematology "L. e A. Seràgnoli", Department of Surgical and Medical Sciences, University of Bologna, Via Giuseppe Massarenti 9, Bologna; IRCCS Azienda Ospedaliero-Universitaria di Bologna-UOC Ematologia, Via Albertoni 15, Bologna	1383	214	POSTER-B
Catani	Martina	Università degli studi di Ferrara, Italia	270, 456, 537	31, 31, 181	POSTER-A, POSTER-A, ParallelTopic10 - ID: 181
Catani	Martina	Università degli Studi di Ferrara, Italia	458	214	POSTER-B
Catani	Martina	Università degli studi di Ferrara, Italia	1163, 498	141, 140	ORG-1A, ANA-1B
Catani	Martina	Dept. of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy	574, 842, 688	140, 140, 143	ANA-1B, ANA-1B, ORG-1C
Catarzi	Daniela	Università di Firenze, Dipartimento Neuroscienze, Area del Farmaco e Salute del Bambino, Italia	968	31	POSTER-A
Catauro	Michelina	University of Campania "Luigi Vanvitelli"	642	31	POSTER-A
Catellani	Lisa	Acetaia San Giacomo (Novellara)	331	31	POSTER-A
Catelli	Emilio	Department of Chemistry "G. Ciamician", University of Bologna, Ravenna Campus, 48121 Ravenna, Italy	1558, 1788, 1459	214, 214, 238	POSTER-B, POSTER-B, ABC-B
Catelli	Emilio	Department of Chemistry "G. Ciamician", University of Bologna, Ravenna Campus, Via Guaccimanni, 42, 48121 Ravenna	1790	156	ABC-C
Catena	Antonio Maria	Institute of Legal Medicine, University of Rome 2 "Tor Vergata", Rome 00133, Italy	301	258	ANA-4A
Caterina	Deruvo	Università degli Studi di Bari "Aldo Moro", Italia	1224	136	FAR-1D
Cattaneo	Elena	Department of Biosciences, University of Milan, Via Giovanni Celoria, 26, Milano MI, 20133; Istituto Nazionale di Genetica Molecolare "Romeo ed Enrica Invernizzi", Via Francesco Sforza, 35, Milan MI, 20122	630	267	TEF-1
Cattaneo	Pietro	Università di Pavia	748	31	POSTER-A
Cattani	Jonathan	School of Medicine, University of Piemonte Orientale, Novara, Piemonte, Italy	1563	31	POSTER-A
Cattelan	Marco	Università degli Studi di Padova, Italia	556	31	POSTER-A
Cattelan	Mattia	Dipartimento di Scienze Chimiche, Università di Padova, Italia; Consorzio INSTM, Firenze, Italia	974	241	INO-2B
Cattò	Cristina	University of Milan, Italy	1484	31	POSTER-A
Catto	Marco	università degli Studi di Bari, Italia	1309, 1464, 1180	31, 214, 134	POSTER-A, POSTER-B, FAR-1C
Catucci	Gianluca	Dipartimento Scienze della Vita e Biologia dei Sistemi, Università di Torino, Italia	1702	31	POSTER-A
Catucci	Lucia	Department of Chemistry, University of Bari, Via Orabona 4, 70126 Bari, Italy	966	235	FIS-1D
Cau	Costantino	Department of Chemical, Physical, Mathematical, and Natural Sciences, University of Sassari, Via Vienna 2, 07100 Sassari, Italy	1240, 1666	31, 235	POSTER-A, FIS-1D
Causa	Andrea	Pirelli Tyre SpA	1064	214	POSTER-B
Cauteruccio	Silvia	Dipartimento di Chimica, Università degli Studi di Milano	1125, 1702, 560	31, 31, 149	POSTER-A, POSTER-A, ORG-2C
Cauzzi	Daniele	Università Degli Studi di Parma, Italia	1580	31	POSTER-A
Cavalera	Simone	Dipartimento di Chimica, Università di Torino, Italia	414, 415, 160	214, 248, 146	POSTER-B, ANA-3A, ANA-2B
Cavaletti	Guido	University of Milano-Bicocca, School of Medicine and Surgery, via Raoul Follereau 3, Vedano al Lambro (MB); IRCCS San Gerardo dei Tintori, Via Pergolesi 33, Monza	633	214	POSTER-B
Cavaliere	Chiara	Università degli Studi di Roma "La Sapienza", Italia	449, 450, 358	31, 214, 66	POSTER-A, POSTER-B, ANA-1A
Cavallaro	Alessia	Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95100 Catania, Italy	527, 626	214, 214	POSTER-B, POSTER-B
Cavallaro	Giuseppe	Università degli Studi di Palermo, Italia	366, 716, 1516	214, 248, 239	POSTER-B, ANA-3A, ABC-D
Cavalli	Andrea	Istituto Italiano di Tecnologia, Italia	798	31	POSTER-A
Cavalli	Andrea	Computational & Chemical Biology, Fondazione Istituto Italiano di Tecnologia, Via Morego 30, I-16163 Genova, Italy	1103	31	POSTER-A
Cavalli	Andrea	CECAM, EPFL, Lausanne, Switzerland	1374	31	POSTER-A
Cavalli	Andrea	ISTITUTO ITALIANO DI TECNOLOGIA, Italia	1904	206	ParallelTopic09 - ID: 206
Cavalli	Andrea	CECAM, EPFL, Avenue Forel 3, CH - 1015 Lausanne, Switzerland	707	132	FAR-1B
Cavalli	Enrico	Università di Parma, Italia	528	254	INO-3
Cavallo	Gabriella	Politecnico di Milano, Italia	338, 197	214, 74	POSTER-B, TEC-A
Cavallo	Margherita	University of Torino, Italia	1409	235	FIS-1D
Cavalloro	Valeria	Department of Earth and Environmental Sciences, University of Pavia Via Ferrata 1, 27100 Pavia, Italy; National Biodiversity Future Center, Piazza Marina 61, 90133 Palermo, Italy	1118, 944	31, 214	POSTER-A, POSTER-B
Cavalluzzi	Maria Maddalena	Dipartimento di Farmacia - Scienze del Farmaco, Italia	1634, 978	214, 259	POSTER-B, ALI-1B
Cavana	Stefano	Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia (ICMATE), Consiglio Nazionale delle Ricerche (CNR); Università degli Studi di Padova, Italia	1860	214	POSTER-B
Cavani	Fabrizio	Dipartimento di Chimica Industriale "Toso Montanari" and Center for Chemical Catalysis-C3, Università di Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	436, 937, 1406, 469, 558	31, 31, 53, 158, 262	POSTER-A, POSTER-A, ParallelTopic10, IND-1C, IND-2A
Cavazza	Antonella	Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma	1369, 1710, 1741	31, 31, 140	POSTER-A, POSTER-A, ANA-1B
Cavazzini	Alberto	Università degli studi di Ferrara, Italia; Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria (CREA)	270, 456	31, 31	POSTER-A, POSTER-A
Cavazzini	Alberto	Department of Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, Via Luigi Borsari n. 46 -44121, Ferrara, Italy; Council for Agricultural Research and Economics, CREA, Via della Navicella n. 2/4 - 00184, Rome, Italy	491, 1348	31, 31	POSTER-A, POSTER-A
Cavazzini	Alberto	Dept of chemical, pharmaceutical and agricultural sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy; Council for agricultural research and economics, CREA, via della Navicella 2-4, Rome, Italy	537	181	ParallelTopic10 - ID: 181

Cavazzini	Alberto	Università degli Studi di Ferrara, Via Luigi Borsari 46, Ferrara (Italy)	188, 458	214, 214	POSTER-B, POSTER-B
Cavazzini	Alberto	Department of Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, via L. Borsari 46, 44121 Ferrara, Italy	578	214	POSTER-B
Cavazzini	Alberto	Department of Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, Via Luigi Borsari n. 46 - 44121, Ferrara, Italy; Council for Agricultural Research and Economics, CREA, Via della Navicella n. 2/4 - 00184, Rome, Italy dplmrc@unife.it	646	66	ANA-1A
Cavazzini	Alberto	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via L. Borsari 46, 44121 Ferrara, Italy; Council for Agricultural Research and Economics, CREA, via della Navicella 2/4, Rome, 00184, Italy	498, 574	140, 140	ANA-1B, ANA-1B
Cavazzini	Alberto	Department of Chemical, Pharmaceutical, and Agricultural Sciences, Via Luigi Borsari 46, University of Ferrara, 44121 Ferrara, Italy; Council for Agricultural Research and Economics, CREA, via della Navicella 2/4, Rome, 00184, Italy	842, 1068, 1119, 1223	140, 148, 261, 239	ANA-1B, ANA-2C, ALI-2B, ABC-D
Cavazzini	Marco	Consiglio Nazionale delle Ricerche (CNR)	258	31	POSTER-A
Cavazzoli	Chiara	UNIMORE	203, 323	31, 167	POSTER-A, INO-1D
Cavazzoli	Gianluca	Università degli Studi di Milano, Milano, Italia	1271	139	ORG-2A
Caviglia	Miriam	Università degli Studi di Camerino, Italia	949	31	POSTER-A
Caviglioli	Gabriele	Dept. of Pharmacy, University of Genova, Viale Cembrano 4, 16148 Genova, Italy; IRCCS Ospedale Policlinico San Martino, Largo R. Benzi 10, 16132 Genova, Italy	1778	70	TEF-2
Cavinato	Luca M.	Chair of Biogenic Functional Materials,Technical University of Munich	791, 113, 742	214, 155, 253	POSTER-B, ELE-2, INO-2C
Cavinato	Miriam	Department of Biosciences, University of Milan, Via Celoria 26, 20133 Milano, Italy, Milano, Italy	1201	147	ORG-2B
Cazzador	Giulia	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Via Torino 155, Venezia, 30172, Italy	1090	31	POSTER-A
Cazzadori	Francesco	University of Padova, Department of Chemical Sciences, via Marzolo 1, 35131, Padova, Italy	1193	155	ELE-2
Cazzaniga	Giulia	Università degli Studi di Milano, Italia	1277, 1484, 693, 1081, 1082	31, 31, 214, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B
Cazzanti	Silvia	Fiamm Energy Technology Spa	556	31	POSTER-A
Ceccardi	Erica	Università degli studi di Genova, Italia	437	249	ANA-3B
Ceccarelli	Cecilia	Universite Grenoble Alpes, Grenoble, FRANCE	599, 1117	214, 68	POSTER-B, FIS-1A
Ceccarelli	Giada	Department of Pharmaceutical Sciences, University of Perugia, Perugia, Italy.	287	214	POSTER-B
Ceccarelli	Matteo	Università degli Studi di Cagliari, Italia	625	31	POSTER-A
Ceccarini	Alessio	Department of Chemistry and Industrial Chemistry, University of Pisa, Via Giuseppe Moruzzi 13 56124, Pisa	332	214	POSTER-B
Ceccherini	Valentina	Università degli Studi di Firenze, Italia	345	67	INO-1A
Cecchetti	Violetta	Dept. of Pharmaceutical Sciences, University of Perugia, Via del Liceo 1, 06123, Perugia	402, 675, 1672	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Cecchi	Lorenzo	DAGRI – Department of Agricultural, Food, Environmental, and Forestry Sciences and Technologies – University of Florence, via Donizetti, 6 – 50144 Firenze (Italy)	226, 1568	214, 214	POSTER-B, POSTER-B
Cecchi	Teresa	ITT Montani, Italia	871	208	ParallelTopic11 - ID: 208
Cecconi	Daniela	Department of Biotechnology, Strada Le Grazie 15, University of Verona, Verona, Italy	519	251	ANA-3D
Cecone	Claudio	Dipartimento di Chimica, Università degli Studi di Torino, Italia	802, 1480	31, 262	POSTER-A, IND-2A
Cederfeldt	Daniela	Department of Chemistry – BMC and Science for Life Laboratory, Uppsala University, Uppsala, Sweden	1457	132	FAR-1B
Cei	Noemi	Next Technology Tecnotessile Società Nazionale di Ricerca r.l., Italia	751	214	POSTER-B
Cela	Eidi	Università degli Studi di Perugia, Italia	411	31	POSTER-A
Celeste	Arcangelo	Department of Chemistry, Sapienza University of Rome; ALISTORE European Research Institute; Department of Energy Technologies and Renewable Sources, ENEA, C.R. Casaccia	718	39	ParallelTopic03
Celesti	Consuelo	Università di Messina, Italia	254	236	TEC-D
Cenciarelli	Fabia	Università di Bologna, Italia	1033	31	POSTER-A
Ceni	Costanza	Università di Firenze, Dipartimento Neuroscienze, Area del Farmaco e Salute del Bambino, Italia	968	31	POSTER-A
Cennamo	Nunzio	Dipartimento di Ingegneria, Università degli Studi della Campania 'Luigi Vanvitelli',, via Roma 29, 80031 Aversa, Italy	354, 352, 417	214, 65, 142	POSTER-B, FAR-1A, ANA-1C
Centrella	Barbara	Department of Chemistry, NIS and INSTM Reference Centre, University of Turin, Via G. Quarello 15/A I-10135, Turin, Italy	1764	31	POSTER-A
Ceotto	Michele	Università degli Studi, Milano	1245, 520, 919	31, 214, 75	POSTER-A, POSTER-B, TEO-A
Ceppatelli	Matteo	ICCOM-CNR, Institute of Chemistry of OrganoMetallic Compounds, National Research Council of Italy, Via Madonna del Piano 10, I-50019 Sesto Fiorentino, Firenze, Italy; LENS, European Laboratory for Non-linear Spectroscopy, Via N. Carrara 1, I-50019 Sesto Fiorentino, Firenze, Italy	1873	198	ParallelTopic15 - ID: 198
Cerasino	Leonardo	Fondazione Edmund Mach	1924	31	POSTER-A
Cercatillo	Silvia	Università di Bologna, Italia	1459	238	ABC-B
Cerchiai	Alberto	Department of Chemistry and Industrial Chemistry, Via G. Moruzzi 13, University of Pisa, 56124-Pisa, Italy	1489	31	POSTER-A
Cerea	Matteo	Dipartimento di Scienze Farmaceutiche, Sez. Tecnologia e Legislazione Farmaceutiche "M.E. Sangalli", Università degli Studi di Milano, Via G. Colombo 71, 20133 Milan	1548	214	POSTER-B
Ceriotti	Davide	Politecnico di Milano, Italia	653, 800	31, 31	POSTER-A, POSTER-A
Ceriotti	Michele	EPFL, Svizzera	228	51	ParallelTopic09
Cernicchi	Giada	Dept. of Pharmaceutical Sciences, University of Perugia, Via del Liceo 1, 06123, Perugia	402, 1043	31, 214	POSTER-A, POSTER-B
Černý	Radovan	DQMP, Université de Genève, Switzerland	945	234	FIS-1C
Ceroni	Ludovica	Università degli studi di Padova, Italia	681	31	POSTER-A
Ceroni	Ludovica	Università di Padova, Italia	395	246	ORG-3C
Ceroni	Paola	Università di Bologna, Italia	1113, 866	214, 145	POSTER-B, ORG-1D
Cerra	Bruno	Department of Pharmaceutical Sciences, University of Perugia, Via del Liceo 1, 06123 Perugia, Italy	286	31	POSTER-A
Cerrato	Andrea	Università degli Studi di Roma "La Sapienza", Italia	449, 450	31, 214	POSTER-A, POSTER-B
Cerrato	Andrea	University of Rome "La Sapienza", Italia	358	66	ANA-1A
Cerrato	Andrea	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia; Istituto Nazionale di Biostrutture e Biosistemi (INBB), Roma, Italia	475	146	ANA-2B
Cerrato	Giuseppina	UNITO	203, 1762, 195	31, 165, 159	POSTER-A, INO-1B, IND-1D
Cerri	Elisa	University of Genoa, Italy	1028	214	POSTER-B
Cerruti	Marta	Mining and Materials Engineering, McGill University, 3610 Rue University, Montreal, Quebec H3A 0C5, Canada	199	214	POSTER-B
Cerruti	Simone	Department of Sciences and Technological Innovation, University of Piemonte Orientale, Viale Michel 11, 15121 Alessandria, Italy	1731, 1755	150, 251	ANA-2D, ANA-3D
Cerullo	Giulio	Department of Physics, Politecnico di Milano, P.zza Leonardo da Vinci 32, 20133 Milan, Italy; CNR-Institute for Photonics and Nanotechnologies (IFN-CNR), P.zza Leonardo Da Vinci 32, 20133 Milan, Italy	199	214	POSTER-B
Cervellino	Antonio	SLS, Laboratory for Synchrotron Radiation-Condensed Matter, Switzerland	709	166	INO-1C
Cerveri	Alessandro	Università degli Studi di Parma, Italia	1694, 1877	214, 141	POSTER-B, ORG-1A
Cervia	Davide	Department DIBAF, della Tuscia University of Viterbo, 01100 Viterbo, Italy	1750	143	ORG-1C
Cerza	Elisa	Università degli Studi di Perugia, Italia	409	31	POSTER-A
Cesano	Federico	Università degli Studi di Torino, Italia	1037	214	POSTER-B
Cesaretti	Alessio	Università degli Studi di Perugia, Italia	1378	58	ParallelTopic13
Cesari	Andrea	Department of Chemistry and Industrial Chemistry, University of Pisa	989, 1523	214, 264	POSTER-B, ORG-1B
Cesari	Cristiana	Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italy	1791	31	POSTER-A
Cescon	Eleonora	Università degli Studi di Trieste, Dipartimento di Scienze Chimiche e Farmaceutiche, Via Licio Giorgieri 1, 34127 Trieste	685, 684	31, 214	POSTER-A, POSTER-B
Cescon	Mirco	Department of Chemical, Pharmaceutical, and Agricultural Sciences, Via Luigi Borsari 46, University of Ferrara, 44121 Ferrara, Italy	842, 1068, 1223	140, 148, 239	ANA-1B, ANA-2C, ABC-D
Cespi	Daniele	University of Bologna, Department of Industrial Chemistry Toso Montanari. Bologna; University of Bologna, Interdepartmental Centre of Industrial Research "Renewable Resources, Environment, Sea and Energy". Rimini	590, 165	214, 73	POSTER-B, ABC-A
Cesprini	Emanuele	Università di Padova, Italia	1159	31	POSTER-A
Cesprini	Emanuele	Università di Padova, Italia	1135	247	ORG-3D
Cettolin	Mattia	Pirelli Tyre SpA	1064, 1396	214, 250	POSTER-B, ANA-3C
Cevoli	Chiara	Alma Mater Studiorum - Università di Bologna	1401	214	POSTER-B
Chamorro	Alejandro	Department of Sciences and Chemical Technologies, University of Rome, Tor Vergata, Via della Ricerca Scientifica 1, 00133, Rome, Italy.	673	31	POSTER-A

Chamorro	Alejandro	Università degli Studi di Roma Tor Vergata, Italia	1411	146	ANA-2B
Chamoso-Sanchez	David	Centro de Metabolómica y Bioanálisis (CEMBIO), San Pablo CEU University, Madrid, Spain	1846	214	POSTER-B
Chan	Kitti Wing Ki	Program in Emerging Infectious Diseases, Duke-NUS Medical School, Singapore	675	31	POSTER-A
Chania	Christina	Laboratory of Pharmacology, Faculty of Pharmacy, National and Kapodistrian University of Athens, Greece	1226	31	POSTER-A
Chebil	Achref	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", Rome-Italy.	304	31	POSTER-A
Checchia	Stefano	ESRF-The European Synchrotron, Grenoble, France	1178, 1205	160, 160	FIS-1B, FIS-1B
Checchini	Leonardo	Università degli Studi di Firenze, Italia	435	31	POSTER-A
Chegaev	Konstantin	Universita di Torino, Italia	1219	31	POSTER-A
Chelazzi	David	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence; CSGI, University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino, Florence	1602	214	POSTER-B
Chelazzi	David	Dipartimento di Chimica & CSGI - Università degli Studi di Firenze, Italia	957	235	FIS-1D
Chen	De	Norwegian University of Science and Technology, Norway	1238	262	IND-2A
Chen	Jack Li-Yang	Dipartimento di Biotecnologie, Chimica e Farmacia, Università degli Studi di Siena, Italia; Centre for Biomedical and Chemical Sciences, Auckland University of Technology, New Zealand	1578	31	POSTER-A
Chen	Shaomin	Laboratory of Green S.O.C. – Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Via Elce di Sotto 8, 06123, Perugia, Italy; Key Laboratory of Material Chemistry for Energy Conversion and Storage, Ministry of Education, Hubei Key Laboratory of Material Chemistry and Service Failure, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China	490	244	ORG-3A
Chen	Shuang	Shihezi University	410	214	POSTER-B
Chenet	Tatiana	Department of Environmental and Prevention Sciences, University of Ferrara, Via L. Borsari 46, 44121 Ferrara, Ital	842, 1068	140, 148	ANA-1B, ANA-2C
Chenet	Tatiana	Department of Environmental and Prevention Sciences, Via L.Borsari 46, Ferrara	1223	239	ABC-D
Cheula	Raffaele	Politecnico di Milano, Italia	1356	214	POSTER-B
Chhabra	Tripti	SCI, Italia	1522	31	POSTER-A
Chhipa	Abu Sufiyan	Nirma University, India; University of Turin, Italia	1078	31	POSTER-A
Chiacchio	Maria Assunta	Università di Catania, Italia	661	214	POSTER-B
Chiaia	Valentina	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina – Messina, Italy	1310, 1349, 1695, 1259	31, 31, 214, 261	POSTER-A, POSTER-A, POSTER-B, ALI-2B
Chiancone	Benedetta	Università di Parma, Italia	948	31	POSTER-A
Chianella	Iva	Cranfield University, United Kingdom	1532	214	POSTER-B
Chianese	Elena	Dipartimento di Scienze e Tecnologie, Università degli Studi di Napoli Parthenope, Centro Direzionale di Napoli, 80143, Napoli, Italia.	1823		
Chianese	Giuseppina	Università degli Studi di Napoli Federico II, Italia	1686	31	POSTER-A
Chianese	Simeone	Department of Engineering, University of Campania "Luigi Vanvitelli", Via Roma 29, 81031 Aversa (CE)	1916	31	POSTER-A
Chiappe	Cinzia	Università di Pisa, Italia	464	214	POSTER-B
Chiappetta	Giampiero	CNR-ITM, Italy	1855	214	POSTER-B
Chiappini	Viviana	Sapienza Università di Roma, Italia	1570	31	POSTER-A
Chiara	Francesco	Università degli Studi di Torino, Italia	1468	214	POSTER-B
Chiara	Francesco	Laboratory of Clinical Pharmacology, "Franco Ghezzo", Department of Clinical and Biological Sciences, University of Turin, S. Luigi Gonzaga Hospital, Torin, Italy	168	138	ANA-2A
Chiarelli	Laurent R.	Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, via A. Ferrata 9, 27100 Pavia, Italy	693, 1081, 1082	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Chiarello	Gian Luca	University of Milan, Italy	1798, 330, 1308, 1669, 1449	31, 214, 214, 214, 157	POSTER-A, POSTER-B, POSTER-B, POSTER-B, IND-1B
Chiarini	Marco	Università degli studi di Teramo,Italia	1664	214	POSTER-B
Chiavari	Cristina	Università di Bologna, Italia	1505	31	POSTER-A
Chiaverini	Lorenzo	Department of Pharmacy, University of Pisa, Via Bonanno Pisano 6, 56126, Pisa, Italy	341	165	INO-1B
Chicharo	Beatriz	Università Ca' Foscari Venezia, Italia	152	207	ParallelTopic10 - ID: 207
Chiesa	Mario	Università di Torino, Italia	1983, 1985	191, 191	ParallelTopic07 - ID: 191, ParallelTopic07 - ID: 191
Chignola	Roberto	Department of Biotechnology, University of Verona, Strada le Grazie, 15, 37134, Verona (Italy)	1093	78	ALI-1A
Chiminelli	Maurizio	Università degli Studi di Parma, Italia	1274	31	POSTER-A
Chinello	Clizia	University of Milano Bicocca, School of Medicine and Surgery, Vedano al Lambro (Monza), Italy	1158	214	POSTER-B
Chini	Maria Giovanna	Università del Molise, Italia	1162, 1371, 1506, 1507, 1150, 1521	31, 31, 31, 31, 214, 147	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, ORG-2B
Chinnici	Ileana	INAF-Astronomical Observatory of Palermo, Italy	1516	239	ABC-D
Chino	Marco	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, 80126 Napoli, Italia	1145, 1652	214, 243	POSTER-B, FIS-2B
Chioccioli	Matteo	Istituto Scolastico "Marsilio Ficino" - Figline e Incisa Valdarno (FI), Italia	1582	265	DID-B
Chionna	Donatella	ARPA Puglia Dep. Lecce	1840	31	POSTER-A
Chiriacò	Maria Serena	CNR NANOTEC - Institute of Nanotechnology, Via per Monteroni, 73100 Lecce, Italy	1691	150	ANA-2D
Chirizzi	Daniela	Experimental Zooprophylactic Institute of Puglia and Basilicata (IZSPB), Via Manfredonia 20, I-71100 Foggia, Italy	1218, 1231	214, 214	POSTER-B, POSTER-B
Chiroli	Valerio	Università degli studi di Milano, Italia	229	31	POSTER-A
Chiummiento	Lucia	Università della Basilicata, Italia	1206	31	POSTER-A
Christodoulou	Michael S.	Department of Chemistry, University of Milan, Milan, Italy.	956	134	FAR-1C
Christodoulou	Michail	Department of Food, Environmental and Nutritional Sciences, University of Milan, via Celoria, 2, 20133, Milan	962, 1003, 795	31, 31, 139	POSTER-A, POSTER-A, ORG-2A
Ciacci	Luca	Università di Bologna, Italia	1988, 457	200, 238	ParallelTopic02 - ID: 200, ABC-B
Ciaglia	Elena	Department of Medicine, Surgery and Dentistry, University of Salerno, Via S. Allende, 84081 Baronissi, Italy.	873	214	POSTER-B
Ciaglia	Tania	University of Salerno, Italia	250	136	FAR-1D
Ciallella	Miriam	Università di Milano-Bicocca, Italia	1800	31	POSTER-A
Ciampa	Alessandra	Istituto Poligrafico e Zecca Dello Stato, Foggia, Italia	831	214	POSTER-B
Ciampoli	Davide	Department of Drug Chemistry and Technologies, Sapienza University of Rome, P.le A. Moro 5 00185, Rome	853	31	POSTER-A
Ciancaleoni	Gianluca	Department of Chemistry and Industrial Chemistry, University of Pisa, Via G. Moruzzi 13, 56124 Pisa, Italy	761, 296	214, 143	POSTER-B, ORG-1C
Cianchino	Davide	Università di Pisa, Italia	705	31	POSTER-A
Cianci	Chiara	Università degli studi di Firenze e CSGI, Italia	1351	31	POSTER-A
Cianfanelli	Elisabetta	Università di Firenze, Italia	575	31	POSTER-A
Cianfoni	Gabriele	Department of Chemistry and Technologies of Drug, Sapienza University of Rome, Italy	1801	139	ORG-2A
Ciani	Marta	Università degli studi di Perugia, Italia	321	31	POSTER-A
Ciani	Rebecca	Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), Università di Palermo, V.le delle Scienze, Ed. 17, 90128, Palermo.	1604	31	POSTER-A
Ciaramelli	Carlotta	Università degli Studi di Milano-Bicocca, Italia	913, 1829, 1847	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Ciardullo	Giada	Dipartimento di Chimica E Tecnologie Chimiche, Laboratorio PROMOCS Cubo 14C, Università della Calabria, Rende (CS)	1615	266	CSB-2
Cicaloni	Vittoria	Fondazione Toscana Life Sciences, Siena, Italia	1221	214	POSTER-B
Cicatiello	Assunta	Department of Clinical Medicine and Surgery, University of Naples Federico II, via S. Pansini 5, 80131, Naples, Italy	1454	214	POSTER-B
Ciccarella	Giuseppe	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy	1155, 1913	31, 31	POSTER-A, POSTER-A
Cicchello	Domenico	Università di Sannio, Piazza Guerrazzi, Benevento	311	31	POSTER-A
Cicchi	Stefano	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019, Sesto Fiorentino (FI), Italy	880, 769	31, 245	POSTER-A, ORG-3B
Ciccioli	Andrea	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia	838	68	FIS-1A
Cicco	Luciana	Dipartimento di Farmacia-Scienze del Farmaco, Università di Bari Aldo Moro, Consorzio C.I.N.M.P.I.S, Via E. Orabona 4, I-70125 Bari, Italy	1007, 988	31, 145	POSTER-A, ORG-1D
Cicco	Stefania	Istituto di Chimica organometallica, CNR-ICCOM, Via Orabona 4, Bari	828	31	POSTER-A
Cicco	Stefania Roberta	Istituto di Chimica dei Composti Organometallici, CNR, Italia	775, 1010, 1555	31, 214, 247	POSTER-A, POSTER-B, ORG-3D
Ciccola	Alessandro	Department of Chemistry, Sapienza University of Rome	971, 1473, 1590, 1761, 1471	31, 31, 214, 214, 238	POSTER-A, POSTER-A, POSTER-B, POSTER-B, ABC-B
Ciccone	Claudio	Chmitec s.r.l	780	214	POSTER-B

Cicero	Arrigo Francesco Giuseppe	Department of Medical and Surgical Sciences, Alma Mater Studiorum - University of Bologna, Bologna, Italy	478	31	POSTER-A
Cicero	Daniel O.	STARTNETICS, Italia	1385	214	POSTER-B
Cicero	Nicola	Università di Messina, Italia; Science4life Srl, start up, Via Leonardo Sciascia Messina.	311, 1746, 333	31, 31, 261	POSTER-A, POSTER-A, ALI-2B
Cichero	Elena	Università degli Studi di Genova, Italia, Dipartimento di Farmacia	223, 1440	31, 214	POSTER-A, POSTER-B
Ciciriello	Riccardo	Univesità degli studi di Bari, Italia	977	31	POSTER-A
Cigala	Rosalia Maria	Università degli Studi di Messina, Italia	1247, 911	248, 148	ANA-3A, ANA-2C
Cignolo	Domenico	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, 70126 Bari, Italy	670	31	POSTER-A
Cignolo	Domenico	University of Bari Aldo Moro - Department of Chemistry, Via Orabona 4- 70125, Bari	1420	214	POSTER-B
Cignoni	Edoardo	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	672, 1712	31, 31	POSTER-A, POSTER-A
Cilurzo	Francesco	Università degli Studi di Milano, Italia	1620	214	POSTER-B
Cimadamore	Nicolò	Università di Torino, Italia	864	76	DID-A
Cimarelli	Cristina	Università di Camerino, Italia	1225	31	POSTER-A
Cimino	Alessandra	Dipartimento di Farmacia-Scienze Del Farmaco, Università degli Studi di Bari Aldo Moro, Via E. Orabona, 4 - 70125 Bari Italy	1149	31	POSTER-A
Cimmino	Giovanna	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania "Luigi Vanvitelli", Caserta, Italy	1866	31	POSTER-A
Cimmino	Wanda	Università di Napoli Federico II, Italia	460	31	POSTER-A
Cinà	Giuseppe	Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), Università di Palermo, V.le delle Scienze, Palermo, 90128, Italy	1594, 1573, 1595	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Cincinelli	Alessandra	Department of Chemistry "Ugo Schiff" (DICUS), University of Florence; Center for Colloid and Surface Science (CSGI), University of Florence	1121, 1532, 1602, 291	214, 214, 214, 146	POSTER-B, POSTER-B, POSTER-B, ANA-2B
Cinquepalmi	Valeria	Dipartimento di Chimica - Università degli studi di Bari "Aldo Moro"	1101	31	POSTER-A
Cinti	Stefano	Università di Napoli Federico II, Italia; BAT Center - Interuniversity Center for Studies on Bioinspired Agro-Environmental Technology, University of Naples "Federico II"	460, 363, 1743	31, 189, 138	POSTER-A, ParallelTopic04 - ID: 189, ANA-2A
Cioffi	Lucia	* Dipartimento di Scienze Farmacologiche e Biomolecolari, Neuroendocinology unit, Università degli Studi di Milano, via Giuseppe Balzaretti 9, 20133, Milan, Italy	836	31	POSTER-A
Cioffi	Nicola	Università degli Studi di Bari Aldo Moro, Italia; CSGI (Center for Colloid and Surface Science)- Unità di Bari, Italia	860, 862, 1004, 677, 854	214, 214, 214, 250, 250	POSTER-B, POSTER-B, POSTER-B, ANA-3C, ANA-3C
Ciofi-Baffoni	Simone	Magnetic Resonance Center CERM, University of Florence, Via Luigi Sacconi 6, 50019 Sesto Fiorentino, Florence, Italy; Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739	31	POSTER-A
Ciofini	Ilaria	Chimie ParisTech, PSL Research University, CNRS, Institut de Recherche de Chimie Paris, Paris, France	1737	266	CSB-2
Cione	Erika	Università della Calabria, Italia	584	78	ALI-1A
Cioni	Andrea	COLOROBBIA CONSULTING S.r.l	1061	253	INO-2C
Cioni	Matteo	Politecnico of Turin, Italia	1285, 1060	31, 180	POSTER-A, ParallelTopic09 - ID: 180
Cipolat Gotet	Claudio	Department of Veterinary Science, University of Parma	1368	251	ANA-3D
Cipriani	Edoardo	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, Sesto Fiorentino, I-50019, Italy	946	31	POSTER-A
Cipriano	Luis	Università degli Studi di Milano Bicocca	619	240	INO-2A
Cipullo	Roberta	Federico II University of Naples (Italy) - Dept. Chemical Sciences, Italia	1319, 1822	204, 240	ParallelTopic07 - ID: 204, INO-2A
Circosta	Paola	Molecular Biotechnology Center, University of Torino, Italy	382	132	FAR-1B
Cirella	Roberta	Università degli studi di Napoli "Federico II", Italia	1688	147	ORG-2B
Ciriaco	Fulvio	Dipartimento di Chimica, Università degli Studi di Bari 'Aldo Moro', Italia	1180	134	FAR-1C
Ciriello	Rosanna	Università degli Studi della Basilicata, Italia	933, 1903	214, 214	POSTER-B, POSTER-B
Cirilli	Roberto	Istituto Superiore di Sanità, Centro Nazionale per il Controllo e la Valutazione dei Farmaci	1298	138	ANA-2A
Ciriminna	Rosaria	Istituto per lo Studio dei Materiali Nanostrutturati, Via Ugo La Malfa 153, Palermo	521, 1346	31, 245	POSTER-A, ORG-3B
Cirlini	Martina	Università di Parma, Italia	948, 481	31, 261	POSTER-A, ALI-2B
Cirone	Italo	Department of Pharmacy, University of Pisa, Via Bonanno 6, 56126 Pisa, Italy	1854	31	POSTER-A
Cirone	Martina	Institute on Membrane Technology, CNR-ITM; Department of Biology, Ecology and Earth Sciences, University of Calabria	632	214	POSTER-B
Cirrincione	Girolamo	Università Degli Studi Di Palermo, Italia	1528	31	POSTER-A
Cirrone	Riccardo	Environmental Spectroscopy Group, Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro, Siena, Italy	1513, 1635	31, 248	POSTER-A, ANA-3A
Citarella	Andrea	Department of Chemistry Università degli Studi di Milano Via Camillo Golgi, 19, 20133 Milano (Italy)	1046, 1047, 1167, 1201	31, 31, 214, 147	POSTER-A, POSTER-A, POSTER-B, ORG-2B
Ciuffi	Benedetta	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, Sesto Fiorentino, I-50019, Italy	946	31	POSTER-A
Ciuffreda	Elena	Department of Chemical, Pharmaceutical, and Agricultural Sciences, Via L. Borsari 46, University of Ferrara, 44121 Ferrara	1068	148	ANA-2C
Ciulla	Maria Gessica	University of Milan, Italy	882	214	POSTER-B
Ciulla	Michele	Department of Pharmacy, University "G. d'Annunzio" of Chieti-Pescara, via dei Vestini 31, 66010 Chieti, Italy	1776	245	ORG-3B
Ciulu	Marco	Università degli studi di Verona, Italia	1074, 1901	214, 214	POSTER-B, POSTER-B
Civalleri	Bartolomeo	Department of Chemistry, University of Turin, via Pietro Giuria 7, 10125, Torino TO, Italy	289, 260, 136	51, 214, 75	ParallelTopic09, POSTER-B, TEO-A
Civera	Monica	Università di Milano, Italia	887, 882, 638	31, 214, 256	POSTER-A, POSTER-B, ORG-4A
Civra	Andrea	Università di Torino, Italia	1161	214	POSTER-B
Claudia	Barolo	University of Turin, Italy	424	31	POSTER-A
Cleland	Timothy P.	Museum Conservation Institute, Smithsonian Institution	1471	238	ABC-B
Clemente	Francesca	Department of Chemistry 'Ugo Schiff', University of Florence, via della Lastruccia 3-13, 50019 Sesto Fiorentino (FI), Italy	452, 732, 283	31, 214, 141	POSTER-A, POSTER-B, ORG-1A
Clemente	Ilaria	Università di Siena, Dipartimento di Biotecnologie, Chimica e Farmacia, Italia; CSGI - Consorzio Interuniversitario per i Sistemi a Grande Interfase, Firenze, Italia	1176, 1632	165, 243	INO-1B, FIS-2B
Clemente	Nausicaa	Università del Piemonte Orientale	1302	31	POSTER-A
Clemenza	Massimiliano	INFN	1784	214	POSTER-B
Cliceri	Danny	Center Agriculture Food Environment (C3A), University of Trento, San Michele All'Adige, Italy	172	261	ALI-2B
Climaco	Immacolata	Università degli Studi di Napoli Federico II, Italia	387	237	TEC-C
Clodoveo	Maria Lisa	Interdisciplinary department of medicine, University of Bari "Aldo Moro", Italy	648	78	ALI-1A
Clougher	Suzanne Bianca	Università di Bologna, Italia	1894	214	POSTER-B
Cocca	Mariacristina	Istituto di Polimeri, Compositi e Biomateriali - CNR, Italia	1742	263	CSB-3
Coccè	Valentina	CRC StaMeTec Department of Biomedical, Surgical and Dental Sciences, University of Milan, 20122 Milan, Italy	191	31	POSTER-A
Cocchi	Marina	Università di Modena e Reggio Emilia, Italia	815, 885, 1689, 839, 1417	214, 214, 214, 249, 150	POSTER-B, POSTER-B, POSTER-B, ANA-3B, ANA-2D
Coco	Alessandro	Università deli studi di Catania, Italia	792, 1597	31, 31	POSTER-A, POSTER-A
Cocorullo	Mario	Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, via A. Ferrata 9, 27100 Pavia, Italy	693	214	POSTER-B
Cocorullo	Mario	Università degli Studi di Pavia, Italia	1082	214	POSTER-B
Cocozza	Claudio	Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli studi di Bari Aldo Moro, via Amendola 165/a, Bari, Italy	1555	247	ORG-3D
Coduri	Mauro	Università degli studi di Pavia, Italia; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Italia	1083, 1295	51, 214	ParallelTopic09, POSTER-B
Coecke	Sandra	European Commission Joint Research Centre, Ispra, (VA) Italy	251	214	POSTER-B
Coffetti	Giulia	Department of Pharmaceutical Science, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy	191	31	POSTER-A
Cofini	Elena	Università di Bologna, Italia	1505	31	POSTER-A
Coisson	Jean Daniel	Department of Pharmaceutical Sciences, Università del Piemonte Orientale, Novara, Italy	478	31	POSTER-A
Cojocaru	Paula	Syensqo, Italia	706	214	POSTER-B
Colabufo	Nicola Antonio	Università degli studi di Bari Aldo Moro, Italia	159	31	POSTER-A
Colacicco	Agostina	Università degli studi di Milano, Italia	1148, 1453, 1322	31, 31, 259	POSTER-A, POSTER-A, ALI-1B
Colarusso	Ester	Università di Salerno, Italia	1162, 1371, 1506, 1521	31, 31, 31, 147	POSTER-A, POSTER-A, POSTER-A, ORG-2B
Coldham	Iain	Università di Sheffield, Regno Unito	1330	143	ORG-1C

Colella	Marco	Department of Pharmacy – Drug Sciences, University of Bari "A. Moro" Via E. Orabona 4, 70125 – Italy FLAME-Lab –Flow Chemistry and Microreactor Technology Laboratory	150, 595, 1813, 1700	31, 31, 31, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B
Colella	Silvia	CNR NANOTEC - c/o Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", Via Orabona 4, 70126 Bari, Italy	1414	253	INO-2C
Coletti	Alice	Department of Pharmaceutical Sciences, University of Perugia, 06123, Perugia, Italy	468	31	POSTER-A
Coletti	Francesca	Dept. of Classics, Sapienza University of Rome	1471	238	ABC-B
Colitti	Barbara	Università degli Studi di Torino, Dipartimento di Scienze Veterinarie, Grugliasco (TO), Italia	160	146	ANA-2B
Colleoni	Alessio	Department of Pharmaceutical Sciences, University of Milan, 20133 Milan, Italy	827, 944	31, 214	POSTER-A, POSTER-B
Collevecchio	Chiara	Università degli studi "G. D'annunzio" Chieti-Pescara, Italia	894, 356	31, 211	POSTER-A, ParallelTopic14 - ID: 211
Collina	Elena	Universita' Milano Bicocca	1784	214	POSTER-B
Collina	Simona	Department of Drug Sciences, University of Pavia Viale Taramelli 12, 27100 Pavia, Italy	1118, 944, 560, 959	31, 214, 149, 136	POSTER-A, POSTER-B, ORG-2C, FAR-1D
Collora	Arianna	Politecnico di Milano, Italia	653	31	POSTER-A
Colombara	Diego	Università degli studi di Genova, Italia	1317, 1960	253, 167	INO-2C, INO-1D
Colombi Manzi	Emanuel	Università degli studi di Milano-Bicocca, Italia	362	31	POSTER-A
Colombi	Cristina	Agenzia Regionale Protezione Ambiente, Italia	1165	239	ABC-D
Colombini	Maria Perla	Università di Pisa, Italia	243	176	ParallelTopic05 - ID: 176
Colombo	Alessia	Università degli Studi di Milano, Italia	290	253	INO-2C
Colombo	Eleonora	Università degli studi di Milano, Italia	372	31	POSTER-A
Colombo	Eleonora	Università degli studi di Milano, Italia	467	31	POSTER-A
Colombo	Eleonora	Università degli Studi di Milano, Italia	1196	31	POSTER-A
Colombo	Giorgio	Università di Pavia, Italia	600, 1982, 1641	195, 209, 214	ParallelTopic12 - ID: 195, ParallelTopic12 - ID: 209, POSTER-B
Colombo	Laura	Department of Molecular Biochemistry and Pharmacology, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, 20156 Milano, Italy	1829	214	POSTER-B
Colombo	Raffaella	Università di Pavia, Italia	1336, 1337	31, 214	POSTER-A, POSTER-B
Colombo	Riccardo	Politecnico di Milano, Italia	1654	157	IND-1B
Colombo	Sara	Università degli Studi dell'Insubria, Italia	474	214	POSTER-B
Colombo	Sveva	University of Insubria, Department of Science and High Technology, Italy	1373	214	POSTER-B
Colombo	Valentina	università degli studi di Milano, Italia	1232	31	POSTER-A
Colone	Marisa	National Center for Drug Research and Evaluation, Istituto Superiore di Sanità, V.le Regina Elena 299 Rome 00161 (IT)	934	214	POSTER-B
Colotta	Vittoria	Università di Firenze, Dipartimento Neuroscienze, Area del Farmaco e Salute del Bambino, Italia	968	31	POSTER-A
Colpo	Pascal	European Commission, Joint Research Centre (JRC), Ispra, Italy	389	237	TEC-C
Colucci	Manuel	Institute of Oncology Research (IOR), Oncology Institute of Southern Switzerland (IOSI), 6500 Bellinzona, Switzerland	1034	255	FAR-2A
Coluccia	Antonio	Sapienza Università di Roma, Italia	1547	214	POSTER-B
Colussi	Sara	Dipartimento Politecnico e INSTM, Università degli Studi di Udine, Italia	789	31	POSTER-A
Comite	Antonio	Department of Chemistry and Industrial Chemistry, University of Genoa, Genoa (GE), Italy	314	262	IND-2A
Comite	Valeria	Department of Chemistry, University of Milan, Via Golgi 19, 20133 Milano, Italy	1735, 1165	31, 239	POSTER-A, ABC-D
Comito	Rossana	Dipartimento di Scienze mediche e chirurgiche, Alma Mater Studiorum-University of Bologna, Italia	1350, 1894	31, 214	POSTER-A, POSTER-B
Comoretto	Davide	Università di Genova, Dipartimento di Chimica e Chimica Industriale	529	31	POSTER-A
Comotti	Angiolina	Università di Milano Bicocca	1282, 1409	214, 235	POSTER-B, FIS-1D
Compagnin	Greta	Università degli studi di Ferrara, Italia	270	31	POSTER-A
Compagnin	Greta	Università degli studi di Ferrara, Department of Chemical, Pharmaceutical and Agricultural Sciences	688	143	ORG-1C
Compagnini	Giuseppe	Università di Catania, Italia	534	199	ParallelTopic01 - ID: 199
Compagnini	Giuseppe Romano	Università di Catania, Italia	482	31	POSTER-A
Compagno	Concetta	Department of Food, Environmental and Nutritional Sciences (DeFENS), University of Milan, Via L. Mangiagalli 25, Milan, 20133, Italy	955, 1003	31, 31	POSTER-A, POSTER-A
Compagnone	Dario	Università degli studi di Teramo, Italia	843, 1123, 1796, 844, 1005, 596, 847, 1015	31, 31, 31, 214, 214, 142, 144, 258	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, ANA-1C, ANA-1D, ANA-4A
Comparelli	Roberto	Institute for Chemical and Physical Processes, Italian National Research Council, Bari, c/o Department of Chemistry, University of Bari, Via Orabona 4, 70126 (Bari) Italy	938	214	POSTER-B
Comparelli	Roberto	Consiglio Nazionale delle Ricerca, Bari, Italia	1780	214	POSTER-B
Comparelli	Roberto	CNR-IPCF	1874, 1415, 678	214, 240, 243	POSTER-B, INO-2A, FIS-2B
Compari	Carlotta	Department of Food and Drug, University of Parma, Parma, Italy	1422	134	FAR-1C
Comparini	Lucrezia Margherita	Università di Pisa, Italia	739, 738	214, 149	POSTER-B, ORG-2C
Compostella	Federica	Dipartimento di Biotecnologie mediche e medicina traslazionale, Università degli Studi di Milano, Italia	1708	214	POSTER-B
Condorelli	Fabrizio	Department of Pharmaceutical Sciences, Università degli Studi del Piemonte Orientale, Largo Donegani 2, 28100 Novara, Italy	676, 1057	31, 31	POSTER-A, POSTER-A
Condorelli	Gerolama	Experimental Oncology and Immunology, Department of Molecular and Translational Medicine, University of Brescia, 25123, Italy; IRCCS Neuromed – Istituto Neurologico Mediterraneo Pozzilli	1717, 784	161, 144	TEO-B, ANA-1D
Condurso	Concetta	Dipartimento di Scienze Veterinarie, Università di Messina, Italia	1746	31	POSTER-A
Conelli	Daniele	Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari, Via Orabona 4, 70125 Bari, Italy	1110, 1292	31, 236	POSTER-A, TEC-D
Confalonieri	Laura	CIC biomaGUNE, Spain	1766	214	POSTER-B
Coniglio	Davide	Dipartimento di chimica, Università degli Studi di Bari Aldo Moro, Italia	1574, 532	31, 146	POSTER-A, ANA-2B
Conoci	Sabrina	Università di Messina, Italia	1200	31	POSTER-A
Consentino	Luca	ISMN-CNR, Via U. La Malfa 153, 900146 Palermo, Italy; STEBICEF Department Ed. 17, University of Palermo, Viale delle Scienze, 90128 Palermo, Italy	1171	31	POSTER-A
Consentino	Luca	Institute for the Study of Nanostructured Materials (ISMN), (Italian) National Research Council (CNR)	896	157	IND-1B
Consiglio	Giuseppe	Università di Catania, Italia	1680	236	TEC-D
Consoli	Grazia Maria Letizia	Istituto di Chimica Biomolecolare, CNR, Via Paolo Gaifami 18, 95126 Catania, Italy	1534	148	ANA-2C
Consoli	Valeria	Department of Drug and Health Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	970	214	POSTER-B
Consolini	Daniele Alessandro	Department of Food, Environmental and Nutritional Sciences, via G. Celoria 2, 20133 Milano	1020, 1567	31, 31	POSTER-A, POSTER-A
Consonni	Viviana	Department of Earth and Environmental Sciences, University of Milano-Bicocca, Milan, Italy	954	140	ANA-1B
Constantin	Ana Maria	SynCat Lab, Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italia	1812, 1334, 1544	31, 214, 264	POSTER-A, POSTER-B, ORG-1B
Constrantin	Gabriela	Dipartimento di Medicina, Sezione di Patologia Generale, Università di Verona, Strada le Grazie 8, 37134 Verona, Italia	1069	214	POSTER-B
Consumi	Marco	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	1214	150	ANA-2D
Contaldo	Gabriele	Politecnico di Milano, Italia	1356	214	POSTER-B
Conte	Andrea	Università degli Studi di Padova, Italia	1314	31	POSTER-A
Conte	Claudia	Università degli studi di Napoli Federico II, Italia	656	214	POSTER-B
Conte	Flavia	Università degli Studi di Napoli Federico II, Italia	179, 180	31, 214	POSTER-A, POSTER-B
Conte	Gualtiero	Università degli studi di Milano bicocca, Italia	1818, 1808	31, 214	POSTER-A, POSTER-B
Conte	Riccardo	Università degli Studi, Milano	1245	31	POSTER-A
Conte	Riccardo	Dipartimento di Chimica, Università degli Studi di Milano, Via Golgi, 19, 20133 Milano, Italy	520, 919	214, 75	POSTER-B, TEO-A
Conte	Valeria	Università di Roma Tor Vergata, Italia	1255, 1932, 1008, 316	31, 47, 214, 161	POSTER-A, ParallelTopic07, POSTER-B, TEO-B
Contente	Martina	Department of Food, Nutrition and Environmental Sciences, University of Milan, via Celoria 2, Italy	1003	31	POSTER-A
Contente	Martina L.	Department of Food, Environmental and Nutritional Sciences, University of Milan, via Celoria, 2, 20133, Milan	962	31	POSTER-A
Contente	Martina Letizia	Department of Food, Environmental and Nutritional Sciences, via G. Celoria 2, 20133 Milano	1020, 1148, 1453, 1567, 1601, 868, 961, 1322	31, 31, 31, 31, 31, 266, 255, 259	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, CSB-2, FAR-2A, ALI-1B
Contento	Irene	Department of Chemistry and Biology "Adolfo Zambelli", University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano (SA) (Italy); Consorzio InterUniversitario Reattività e Catalisi (CIRCC), Via Celso Ulpiani, 27- 70126 Bari, Italy	1001	69	IND-1A
Contento	Irene	University of Salerno, 84084 Fisciano (SA), Italy	1633	165	INO-1B
Conterosito	Eleonora	University of Eastern Piedmont, Italia	1343, 1665, 1111	31, 214, 249	POSTER-A, POSTER-B, ANA-3B
Conti-Nibali	Stefano	Università di Catania, Italia	837	256	ORG-4A
Conti	Andrea Carlotta	Università degli Studi di Firenze, Italia	1342	214	POSTER-B

Conti	Emanuele	Università di Pavia, Italia	1230, 1662, 1207	214, 214, 234	POSTER-B, POSTER-B, FIS-1C
Conti	Luca	Università degli Studi di Firenze, Italia	345	67	INO-1A
Conti	Paola	Dept. of Pharmaceutical Sciences, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy	598, 1596, 961	31, 31, 255	POSTER-A, POSTER-A, FAR-2A
Conti	Roberto	GVS S.p.A., via Roma, 50, 40069 Zona Industriale, Zola Predosa (Bologna), Italy	1711	159	IND-1D
Contino	Annalinda	Department of Chemical Sciences (DSC), University of Catania, Viale Andrea Doria n 6, building 1, 95125 Catania, Italy	263	251	ANA-3D
Contino	Marialessandra	università degli studi di Bari Aldo Moro, 70125, Bari, Italia	137, 159	31, 31	POSTER-A, POSTER-A
Contursi	Patrizia	Università di Napoli Federico II, Dipartimento di Biologia, Napoli, Italia; NBFC, Centro Nazionale della Biodiversità	1797	140	ANA-1B
Conway	Stuart	Department of Chemistry, Chemistry Research Laboratory, University of Oxford, UK; Department of Chemistry & Biochemistry, University of California Los Angeles, USA	273	214	POSTER-B
Conze	Christian	Department of Neurobiology, Osnabrück University, Osnabrück, Germany.	956	134	FAR-1C
Conzuelo	Felipe	Universidade NOVA de Lisboa	1004	214	POSTER-B
Coppini	Davide A.	Università degli Studi di Milano, Italia	1196	31	POSTER-A
Coppola	Carmen	Department of Biotechnology, Chemistry and Pharmacy, R2ES Lab, University of Siena, 53100 Siena, Italy; CSGI, Center for Colloids and Surface Science, 50019 Sesto Fiorentino, ItalyCSGI, Center for Colloids and Surface Science, 50019 Sesto Fiorentino, Italy	245, 1216	31, 31	POSTER-A, POSTER-A
Coppola	Carmen	Università degli Studi di Siena; Consorzio per lo Sviluppo dei Sistemi a Grande Interfase (CSGI)	1477	31	POSTER-A
Coppola	Federico	Scuola Superiore Meridionale, Largo S. Marcellino, 10, Napoli, 80138, Italia	1609, 1509	31, 185	POSTER-A, ParallelTopic15 - ID: 185
Coppola	Federico	Scuola Superiore Meridionale, Largo San Marcellino 10, I-80138, Napoli, Italy	1318	75	TEO-A
Coppolino	Carmelo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1262, 1338	31, 214	POSTER-A, POSTER-B
Coppolino	Carmelo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy	1299	66	ANA-1A
Coralli	Irene	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Tecnopolo di Rimini, via Dario Campana 71 47922, Rimini, Italia	1413, 1326	31, 239	POSTER-A, ABC-D
Corazza	Ivan	Department of Medical and Surgical Sciences (DIMEC), Alma Mater Studiorum-University of Bologna, Italy	978	259	ALI-1B
Corbeski	Ivan	University of Zurich, Zurich CH-8057, Switzerland	565	154	CSB-1B
Corbisiero	Dario	Department of Chemistry "G. Ciamician"	1848, 914	31, 147	POSTER-A, ORG-2B
Corbo	Alessia	Department of chemistry, University of Pavia	811	31	POSTER-A
Corbo	Filomena	Department of pharmacy - drug science, University of Bari "Aldo Moro", Italy	648, 978	78, 259	ALI-1A, ALI-1B
Cordeiro da Silva	Anabela	University of Porto, Portugual	1658	31	POSTER-A
Cordeiro-da-Silva	Anabela	Institute for Research and Innovation in Health (i3S), University of Porto	1596	31	POSTER-A
Cordero	Chiara Emilia	Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Via Pietro Giuria 9, I-10125 Torino, Italy	238	186	ParallelTopic01 - ID: 186
Cordero	Franca Maria	Department of Chemistry 'Ugo Schiff', University of Florence, via della Lastruccia 3-13, 50019 Sesto Fiorentino (FI), Italy	452	31	POSTER-A
Corfu	Alexandra Ioana	Dept. of Pharmaceutical Sciences, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy	598	31	POSTER-A
Corfu	Ioana Alexandra	Department of Pharmaceutical Sciences, University of Milan	1596	31	POSTER-A
Cormano	José	FCIAC, Cordoba, Spain	764	31	POSTER-A
Cornelio	Antonella	Università degli Studi di Brescia, Italia	1397, 1587	214, 236	POSTER-B, TEC-D
Corni	Stefano	Dipartimento di Chimica, Universita di Padova, Italia	1805	75	TEO-A
Cornia	Andrea	Dept. of Chemical and Geological Sciences & INSTM RU, University of Modena and Reggio Emilia, I-41125, Modena	662	241	INO-2B
Corno	Marta	Università di Torino, Italia	690, 599, 443	31, 214, 68	POSTER-A, POSTER-B, FIS-1A
Corona	Angela	Department of Life and Environmental Sciences, University of Cagliari, Monserrato, Italy	1455, 1626, 1043	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Corona	Angela	Department of Life and Environmental Sciences, University of Cagliari, Cittadella Universitaria di Monserrato, 09124 Cagliari, Italy	1631	214	POSTER-B
Corona	Angela	Department of Life and Environmental Sciences, University of Cagliari, Cittadella Universitaria di Monserrato, SS554 -09042 Monserrato (CA) Italy	1955	134	FAR-1C
Coronado	Juan Manuel	Instituto de Catálisis y Petroleoquímica (ICP-CSIC), Madrid, Spain	396	237	TEC-C
Corpuz	Mary Vermi Aizza	Sanitary Environmental Engineering Division (SEED), Department of Civil Engineering,University of Study of Salerno, Italia	219	31	POSTER-A
Corradini	Danilo	Consiglio Nazionale delle Ricerche, Italia	897	140	ANA-1B
Corradini	Roberto	Department of Chemistry, Life Sciences and Envirnmental Sustainability, University of Parma, Italy	734	151	ORG-2D
Corrente	Giuseppina Anna	Dipartimento di Chimica e Tecnologie Chimiche - Università della Calabria, Italia	799	214	POSTER-B
Corsaro	Carmelo	Department of Mathematical and Computational Sciences, Physical Sciences and Earth Sciences, University of Messina, V.le F. Stagno d'Alcontres 31, 98166 Messina, Italy	1776	245	ORG-3B
Corsetti	Samanta	Unicam, Italia	621	31	POSTER-A
Corsi	Ilaria	Department of Physical, Earth and Environmental Sciences, University of Siena, Italy	385	153	TEC-B
Corsi	Pierantonio	Dipartimento di Chimica "Ugo Schiff", Università degli Studi di Firenze, via della Lastruccia 3, 50019 Sesto F. No (FI), Italy	691	31	POSTER-A
Cortajarena	Aitziber	Center for Cooperative Research in Biomaterials (CIC biomaGUNE), Basque Research and Technology Alliance, Donostia - San Sebastián; Ikerbasque, Basque Foundation for Science, Bilbao	794	214	POSTER-B
Cortelli	Carlotta	Polynt Group	1372	47	ParallelTopic07
Cortelli	Pietro	IRCCS Istituto delle Scienze Neurologiche di Bologna, Italia; Dipartimento di Scienze Biomediche e Neuromotorie, Università di Bologna, Bologna, Italia	1846	214	POSTER-B
Cortesi	Paolo	Università degli Studi di Milano, Italia	1540, 795	214, 139	POSTER-B, ORG-2A
Cortesi	Rita	University of Ferrara, Italia	816	31	POSTER-A
Corti	Matteo	Department of Food, Environmental and Nutritional Sciences, via G. Celoria 2, 20133 Milano	1453	31	POSTER-A
Corti	Matteo	Politecnico di Milano, Italia	925	214	POSTER-B
Corti	Vasco	Università di Padova, Italia	488	31	POSTER-A
Corviseri	Maria C	Department of Environmental and Prevention Sciences, University of Ferrara, Via Luigi Borsari n. 46 - 44121, Ferrara, Italy	646	66	ANA-1A
Cosanne	Nicolas	Institute for Inorganic Chemistry, Christian-Albrechts Univerisity of Kiel, 24118 Kiel, Germany	200	160	FIS-1B
Cosco	Donato	Università degli Studi "Magna Graecia", Italia	1668, 1329	214, 70	POSTER-B, TEF-2
Cosconati	Sandro	Università degli Studi della Campania "Luigi Vanvitelli", Italia	275, 276, 354, 547, 1616, 352	214, 214, 214, 214, 214, 65	POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, FAR-1A
Cosentino	Cesare	Istituto di Ricerche Chimiche e Biochimiche G. Ronzoni, Italia	639	246	ORG-3C
Cosentino	Giuseppe	Università deli studi di Catania, Italia	792, 788	31, 136	POSTER-A, FAR-1D
Cosentino	Ugo	University of Milano – Bicocca, Department of Earth and Environmental Sciences	378, 422, 1377, 1740, 300	214, 214, 214, 214, 265	POSTER-B, POSTER-B, POSTER-B, POSTER-B, DID-B
Cosimo Damiano	Altomare	Università degli Studi di Bari "Aldo Moro", Italia	1224	136	FAR-1D
Cosma	Pinalysa	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, 70126 Bari, Italy; Consiglio Nazionale delle Ricerche CNR-IPCF, UOS Bari, Via Orabona, 70126 Bari, Italy	670, 1420	31, 214	POSTER-A, POSTER-B
Cosottini	Lucrezia	Università degli Studi di Firenze, Italia	445	31	POSTER-A
Cossaro	Albano	Università degli Studi di Trieste, Dipartimento di Scienze Chimiche e Farmaceutiche, Trieste; CNR-IOM, Istituto Officina dei Materiali, Trieste	1041, 1050, 1492	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Cossu	Beatrice	Università di Genova, Dipartimento di Chimica e Chimica Industriale, Italia	541	31	POSTER-A
Costa	Anna	ISSMC-CNR, Faenza, Italy	764	31	POSTER-A

Costa	Anna L.	National Research Council of Italy, Institute of Science, Technology and Sustainability for Ceramics (CNR-ISSMC former CNR-ISTEC), Via Granarolo 64, Faenza, Italy.	1598	31	POSTER-A
Costa	Annamaria	Dipartimento di Medicina Veterinaria e Scienze Animali, Università degli studi di Milano	1308	214	POSTER-B
Costa	Barbara Simona	Università di Milano-Bicocca, Italia	741	214	POSTER-B
Costa	Giosuè	Department of Health Sciences, Campus "S. Venuta", "Magna Græcia" University of Catanzaro, Viale Europa, 88100 Catanzaro, Italy	1118	31	POSTER-A
Costa	Rosaria	Università di Messina, Italia	311, 1746, 333	31, 31, 261	POSTER-A, POSTER-A, ALI-2B
Costa	Rubén	Technical University of Munich, Chair of Biogenic Functional Materials, Straubing	794	214	POSTER-B
Costa	Rubén D.	Technical University of Munich, Germany	1828, 791, 112	31, 214, 155	POSTER-A, POSTER-B, ELE-2
Costa	Ruben D.	Technical University of Munich, 94315 Straubing, Germany	113	155	ELE-2
Costa	Rubén D.	Chair of Biogenic Functional Materials, Technical University of Munich	742	253	INO-2C
Costa	Valentina	Università degli studi di Ferrara, Italia	1163, 1068, 1223	141, 148, 239	ORG-1A, ANA-2C, ABC-D
Costantini	Francesca	Dip. Biologia Ambientale, Sapienza Università di Roma, Italia	1590	214	POSTER-B
Costantini	Paolo Emidio	Dipartimento di Farmacia e Biotecnologie, Alma Mater Studiorum – Università di Bologna, Italia	1357	31	POSTER-A
Costantini	Roberto	Università degli Studi di Trieste, Dipartimento di Fisica, Trieste; CNR-IOM, Istituto Officina dei Materiali, Trieste	1041	214	POSTER-B
Costantini	Roberto	Department of Physics, University of Trieste, via A. Valerio 2, 34127, Trieste, Italy; CNR - Istituto Officina dei Materiali (IOM), Strada Statale 14 – km 163.5, 34149 Trieste, Italy	1050	214	POSTER-B
Costantini	Sara	Università di Siena, Italia; CSGI - Center for Colloid and Surface Science	1815	31	POSTER-A
Costantini	Sara	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Italy	1379	235	FIS-1D
Costantino	Ferdinando	University of Perugia, Italia	1409	235	FIS-1D
Costanzo	Diana	Centro di Imaging Molecolare e Preclinico, Dipartimento di Biotecnologie Molecolari e Scienze per la salute, Università degli Studi di Torino, Piazza Nizza 44/bis, 10126 Torino, Italy.	1328	67	INO-1A
Costanzo	Giuliana	Università di Catania, Italia	788	136	FAR-1D
Costanzo	Guliana	Università deli studi di Catania, Italia	792	31	POSTER-A
Costanzo	Michele	Department of Molecular Medicine and Medical Biotechnology, University of Naples Federico II, via Domenico Montesano, 49, 80131 Napoli; CEINGE–Biotecnologie Avanzate Franco Salvatore, via Gaetano Salvatore, 486, 8013, Napoli	976	71	MAS
Costanzo	Paola	Dipartimento di Chimica e Tecnologie Chimiche - CTC, Università della Calabria, Via P. Bucci, Cubo 12C, 87036 - Rende (CS), IT	268, 916	31, 248	POSTER-A, ANA-3A
Costanzo	Salvatore	Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università di Napoli Federico II, Napoli 80125, Italy; DPI, 5600 AX Eindhoven, the Netherlands	1822	240	INO-2A
Costi	M Paola	University of Modena and Reggio Emilia (Università degli Studi di Modena e Reggio Emilia), Italia	904	255	FAR-2A
Costi	Maria Paola	Università di Modena e Reggio Emilia, Italia	1658, 1682	31, 214	POSTER-A, POSTER-B
Costi	Roberta	Dipartimento di scienze biochimiche "Alessandro Rossi Fanelli", Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210, 1626, 1684, 1616, 1627, 1955	31, 31, 31, 214, 214, 134	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, FAR-1C
Coto	Pedro	Materials Physics Center (CFM)-Spanish National Research Council (CSIC) and Donostia International Physics Center (DIPC),Donostia-San Sebastián	794	214	POSTER-B
Coto	Pedro B.	Materials Physics Center (CFM)-Spanish National Research Council (CSIC) and Donostia International Physics Center (DIPC), Spain	1828	31	POSTER-A
Cotte	Marine	ESRF, The European Synchrotron Radiation Facility, 38000, Grenoble, France; Sorbonne Université, Laboratoire d'Archéologie Moléculaire et Structurale (LAMS), CNRS, 75005, Paris, France	1880	21	PL-B
Cotugno	Davide	Department of Biotechnology and Biosciences, University of Milano-Bicocca, 20126 Milano, Italy.	393	214	POSTER-B
Cotugno	Pietro	Università di Bari "Aldo Moro", Italia, Dipartimento di Chimica	775, 828, 977, 1725, 1010, 1168, 1824, 830	31, 31, 31, 31, 214, 214, 256, 145	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, ORG-4A, ORG-1D
Covaceuszach	Sonia	Istituto di Cristallografia, Consiglio Nazionale delle Ricerche, 34149 Trieste, Italy	393, 502	214, 214	POSTER-B, POSTER-B
Covaceuszach	Sonia	Istituto di Cristallografia, Consiglio Nazionale delle Ricerche, Trieste, Italia	1082	214	POSTER-B
Covella	Sara	Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", Via Orabona 4, 70126 Bari, Italy; Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Via Elce di Sotto 8, 06123 Perugia, Italy	1414	253	INO-2C
Covelli	Stefano	Department of Mathematics, Informatics and Geosciences, University of Trieste, Via Weiss 2, Trieste	1510	214	POSTER-B
Cowieson	Nathan	Diamond Light Source Ltd, Harwell Science and Innovation Campus, Didcot, Oxfordshire OX11 0DE, United Kingdom	1539	31	POSTER-A
Cox 3rd	Huel	Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School, Boston, MA, USA.; Department of Cancer Biology, Dana-Farber Cancer Institute, Boston, MA, USA.	985	214	POSTER-B
Cox	Huel	Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School (HMS), Building C, 240 Longwood Ave, 02115 Boston, MA, USA; Department of Cancer Biology, Dana-Farber Cancer Institute (DFCI), 450 Brookline Ave, 02215 Boston, MA, USA	1643	56	ParallelTopic12
Cozzi	Monica	Department of Food and Drug, University of Parma, Parma, Italy	1422	134	FAR-1C
Cozzi	Pier Giorgio	Department of Chemistry "G. Ciamician"	1848, 866	31, 145	POSTER-A, ORG-1D
Cozzolino	Rosaria	Institute of Food Science ISA CNR, Italia	328	60	ParallelTopic14
Cracchiolo	Maria	Polytechnic Department of Engineering and Architecture, Laboratory of Chemical Technology, University of Udine, via del Cotonificio 108, 33100, Udine, Italy	1039	74	TEC-A
Cravotto	Giancarlo	Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Italia	1562, 202, 261, 418, 1853	31, 212, 214, 158, 158	POSTER-A, ParallelTopic15 - ID: 212, POSTER-B, IND-1C, IND-1C
Crea	Francesco	Università degli Studi di Messina, Italia	1247, 911	248, 148	ANA-3A, ANA-2C
Crea	Ilaria	Università di Padova, Italia	1056	201	ParallelTopic03 - ID: 201
Crea	Ilaria	Università di Padova, Italy	1766	214	POSTER-B
Cremonesi	Veronica	Federchimica, Italia	368	205	ParallelTopic08 - ID: 205
Cremonini	Maria	Università degli Studi di Parma, Italia	915	31	POSTER-A
Cresca	Sofia	National institute of chemistry, Slovenia	1670	31	POSTER-A
Cresca	Sofia	Consiglio Nazionale delle ricerche (CNR)-IOM c/o International School for Advanced Studies (SISSA/ISAS), via Bonomea 265, 34136 Trieste, Italy	361	266	CSB-2
Crescenzi	Carlo	Università degli Studi di Salerno, Italia	1730	66	ANA-1A
Crespi	Stefania	University of Milan, Italy	1484	31	POSTER-A
Cressoni	Chiara	NRG, Department of Biotechnology, University of Verona and INSTM, RU Verona, Strada Le Grazie 15, Verona	1198	214	POSTER-B
Crestini	Claudia	Ca' Foscari University of Venice, Department of Molecular Sciences and Nanosystems, Via Torino 155, Venice, 30172, Italy	436, 1833	31, 31	POSTER-A, POSTER-A
Cretich	Marina	SCITEC CNR, Italia	1950, 155	175, 214	ParallelTopic04 - ID: 175, POSTER-B
Crippa	Luca	University of Milano-Bicocca, School of Medicine and Surgery, via Raoul Follereau 3, Vedano al Lambro (MB)	633	214	POSTER-B
Crippa	Marco	Università degli Studi Milano Bicocca, Milan, Italy	542	31	POSTER-A
Crisci	Luigi	Scuola Normale Superiore, Italia	1175	75	TEO-A
Crisci	Matteo	Justus Liebig University Giessen, Heinrich Buff-Ring 17, 35392 Giessen, Germany.	381	153	TEC-B
Criscuoli	Alessandra	Istituto per la Tecnologia delle Membrane (CNR-ITM), Rende (CS) Italia	1194, 1711	31, 159	POSTER-A, IND-1D
Criscuolo	Lucrezia	Politecnico di Milano, Italia	782	31	POSTER-A
Crispini	Alessandra	Università della Calabria, Italia	935	240	INO-2A
Crisponi	Guido	Università di Cagliari	1045	148	ANA-2C
Cristino	Luigia	Istituto di Chimica Biomolecolare, Consiglio Nazionale delle Ricerche (CNR), Italia	1972	172	ParallelTopic01 - ID: 172
Cristofori	Virginia	Università di Ferrara, Italia Department of Chemical, Pharmaceutical and Agricultural Science	1657	31	POSTER-A
Crocchianti	Stefano	Dipartimento di Chimica, Biologia e Biotecnologie, Università di Perugia, Italia	494	238	ABC-B
Croce	Alessandro	Department of Science and Technological Innovation, University of Piemonte Orientale, Viale Teresa Michel 11, 15121 Alessandria (Italy)	1755	251	ANA-3D

Croce	Martina	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia; Dipartimento di Salute Pubblica e Malattie Infettive, Sapienza Università di Roma, Roma, Italia	951, 963, 971, 1123, 760, 1015	31, 31, 31, 31, 214, 258	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, ANA-4A
Crocellà	Valentina	Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15, 10135 and Via P. Giuria 7, 10125, Torino, Italy	1059, 1282, 1058, 1178	214, 214, 160, 160	POSTER-B, POSTER-B, FIS-1B, FIS-1B
Crocellà	Valentina	University of Torino, Italia	1409	235	FIS-1D
Croci	Stefania	Clinical Immunology, Allergy, and Advanced Biotechnologies Unit, AUSL-IRCCS di Reggio Emilia, Reggio Emilia,	721	41	ParallelTopic04
Crosera	Matteo	Department of Chemical and Pharmaceutical Sciences, University of Trieste, Via Giorgieri 1, Trieste	1510, 1518	214, 214	POSTER-B, POSTER-B
Crucianelli	Marcello	Dipartimento di Scienze Fisiche e Chimiche, Università degli Studi dell'Aquila, Italia	947	214	POSTER-B
Cruciani	Gabriele	Università degli Studi di Perugia, Dipartimento di Chimica, Biologia e Biotecnologie	1921, 421, 1422	214, 264, 134	POSTER-B, ORG-1B, FAR-1C
Cruciani	Giuseppe	Università di Ferrara, Italia	169, 118	31, 157	POSTER-A, IND-1B
Crupi	Pasquale	Interdisciplinary department of medicine, University of Bari "Aldo Moro", Italy	648	78	ALI-1A
Cruz Muñoz	Enmanuel	Department of Earth and Environmental Sciences, University of Milano-Bicocca, Piazza della Scienza 20126, Milano	218	31	POSTER-A
Cuccia	Eleonora	Agenzia Regionale Protezione Ambiente, Italia	1165	239	ABC-D
Cucciniello	Raffaele	Dipartimento di Chimica e Biologia 'Adolfo Zambelli', Università di Salerno, Via Giovanni Paolo II,132 - 84084 Fisciano SA, Italy	165	73	ABC-A
Cuccioloni	Massimiliano	University of Camerino, Italia	1619	214	POSTER-B
Cucina	Annamaria	Università di Catania, Italia	837	256	ORG-4A
Cucinotta	Lorenzo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy	1304	31	POSTER-A
Cucinotta	Lorenzo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy	1305, 1349, 1299	31, 31, 66	POSTER-A, POSTER-A, ANA-1A
Cucolo	Claudia	Università degli Studi di Napoli Federico II, Italia	179, 180, 178	31, 214, 73	POSTER-A, POSTER-B, ABC-A
Cugudda	Alessia	Department of Pharmacy, University of Naples "Federico II", 80131, Naples, Italy	1751	67	INO-1A
Culletta	Giulia	Università di Palermo, Italia	573	31	POSTER-A
Cunha	Pablyana Leila	Federal University of Ceará, Brazil	369	214	POSTER-B
Cunsolo	Vincenzo	Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	624, 588, 1472, 583, 837	31, 214, 214, 264, 256	POSTER-A, POSTER-B, POSTER-B, ORG-1B, ORG-4A
Cuoghi	Sabrina	Department of Life Sciences, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO, 41125	630	267	TEF-1
Cuoghi	Sabrina	NanotechLab, Università degli Studi di Modena e Reggio Emilia, Italia	875	70	TEF-2
Cupellini	Lorenzo	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	672, 1712, 665, 1189	31, 31, 161, 161	POSTER-A, POSTER-A, TEO-B, TEO-B
Curcio	Antonio	Dipartimento di Scienze della Salute, Università degli Studi "Magna Graecia" di Catanzaro, Italia	797	31	POSTER-A
Curcio	Efrem	Dept. of Environmental Engineering (DIAm), University of Calabria, Via P. Bucci 45, 87036 Rende (CS), Italy	1711	159	IND-1D
Curcio	Massimiliano	Department of Industrial Chemistry "Toso Montanari", University of Bologna, via Gobetti 85 40129 Bologna, Italy	141	214	POSTER-B
Curini	Roberta	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia	951, 971, 1825	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Curri	Lucia	CNR-IPCF, Consiglio Nazionale delle Ricerche, via E. Orabona 4, Bari, 70125, Italy; Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", via E. Orabona 4, Bari, 70125, Italy; National Interuniversity Consortium of Materials Science and Technology, INSTM, Bari Research Unit, 70126, Bari, Italy	740	252	FIS-3
Curri	M. Lucia	Department of Chemistry, University of Bari, Via Orabona 4, 70126 (Bari) Italy; Institute for Chemical and Physical Processes, Italian National Research Council, Bari, c/o Department of Chemistry, University of Bari, Via Orabona 4, 70126 (Bari) Italy; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Bari Research Unit	938	214	POSTER-B
Curri	Maria Lucia	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Via Orabona 4, 70126 Bari,Italy; Istituto per i Processi Chimico-Fisici, CNR, c/o Dip. Chimica Via Orabona 4, 70126 Bari, Italy	1415	240	INO-2A
Curri	Maria Lucia	Institute for Chemical and Physical Processes (IPCF)-CNR SS Bari, 70126, Italy; National Interuniversity Consortium of Materials Science and Technology (INSTM), Bari, 70126, Italy; Department of Chemistry, University of Bari, 70126, Italy	678	243	FIS-2B
Curti	Claudio	Department of Food and Drug, University of Parma	297	31	POSTER-A
Cusanno	Angela	DMMM - Politecnico di Bari, Bari, Italia	1203	74	TEC-A
Cutarella	Luigi	Università degli studi di Siena, Italia	1842	31	POSTER-A
Cuté	Erica	università campus biomedico di roma, Italia	1151	31	POSTER-A
Cutolo	Roberto	Università degli Studi della Campania Luigi Vanvitelli, Italia	354, 547	214, 214	POSTER-B, POSTER-B
Cutrignelli	Annalisa	Department of Pharmacy – Pharmaceutical Sciences, University of Bari Aldo Moro, Via E. Orabona 4, Bari (Italy)	651	267	TEF-1
Cutropia	Francesca	Dipartimento di Farmacia-Scienze del Farmaco, Università degli Studi di Bari 'Aldo Moro', Italia	1180	134	FAR-1C
Czerska	Angelika	Sapienza Università di Roma, Italia	1185	160	FIS-1B
D. Marforio	Tainah	Alma Mater Studiorum – University of Bologna, Department of Chemistry 'G. Ciamician', Bologna, Italy	1421	214	POSTER-B
D'Abrosca	Gianluca	Department of clinical and experimental medicine, University of Foggia, Foggia, Italy	1293, 1737, 1742	31, 266, 263	POSTER-A, CSB-2, CSB-3
d'Agostino	Danilo	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Italia	677	250	ANA-3C
D'Agostino	Ilaria	University of Pisa, Italy	1307, 1173	214, 136	POSTER-B, FAR-1D
D'Aleo	Carlotta	University of Florence and CSGI, Via della Lastruccia 3-13, 50019, Sesto Fiorentino, Italy.	833	238	ABC-B
D'Alonzo	Daniele	Department of Chemical Sciences, University of Naples Federico II – Via Cintia, 80126 Naples, Italy	1265, 1652	67, 243	INO-1A, FIS-2B
D'Altri	Giada	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Via Gobetti 85, 40129,Italia	1850, 141	31, 214	POSTER-A, POSTER-B
D'Amario	Isabella	Center for Advanced Studies and Technology (CAST), "G.d'Annunzio" University of Chieti-Pescara, 66100 Chieti, Italy; Department of Medicine and Aging Sciences, "G. d'Annunzio" University of Chieti-Pescara, Chieti, Italy	1795	31	POSTER-A
D'Amato	Alfonsina	Department of Pharmaceutical Sciences, University of Milan, 20133 Milan, Italy	1922, 1752	31, 255	POSTER-A, FAR-2A
D'Amato	Assunta	Università degli Studi di Salerno, Italia	349, 1025	31, 241	POSTER-A, INO-2B
D'Amato	Marco	IRCCS Istituto Neurologico Carlo Besta; Politecnico di Milano, Italia	1154	31	POSTER-A
D'Amato	Roberto	Dipartimento di Chimca, Biologia e Biotecnologie, Università di Perugia	1270, 1889	31, 214	POSTER-A, POSTER-B
D'Ambrosio	Francesca	Università di Roma "La Sapienza", Italia	171	31	POSTER-A
D'Amico	Angela	Department of Biological, Chemical and Pharmaceutical Science and Technology (STEBICEF), Università degli Studi di Palermo, Via Archirafi, 90123 Palermo, Italy	973	31	POSTER-A
D'Amico	Francesco	Istituto di Chimica dei Composti Organometallici - CNR, Via Madonna del Piano 10, Sesto Fiorentino, Italia; Dipartimento di Biotecnologie, Chimica e Farmacia, Università degli studi di Siena, Via A. Moro 2, Siena, Italy.	1890	31	POSTER-A
D'Amico	Francesco	Università degli studi di Siena, Italia	530	245	ORG-3B
D'Amico	Vita	Department of Pharmacy-Pharmaceutical Sciences, University of Bari "Aldo Moro", Via E. Orabona, 4, I-70125 Bari, Italy	652	70	TEF-2
D'Amore	Vincenzo Maria	University of Naples Federico II, Italy	858, 1717	214, 161	POSTER-B, TEO-B
D'Andrea	Felicia	Dipartimento di Farmacia, Università di Pisa, Italia	1124	31	POSTER-A
D'Angelo	Antonio	Abo Akademi, Finlandia	406	31	POSTER-A
D'Angelo	Antonio	University of Campania "Luigi Vanvitelli"	642	31	POSTER-A
D'Angelo	Giovanna	Laboratory of Ecology, Systematics, Biodiversity Conservation (LESCB) URL-CNRST N18, Faculty of Sciences, Abdelmalek Essaadi University, Tetouan – Morocco	1310	31	POSTER-A
D'Angelo	Paola	Department of Chemistry, Sapienza University of Rome; ALISTORE European Research Institute	718, 838	39, 68	ParallelTopic03, FIS-1A

D'Aniello	Antonia	Università degli studi della Campania L. Vanvitelli, Italia	515, 354, 547	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
D'Anna	Andrea	MM SpA, Italy	315	153	TEC-B
D'Anna	Francesca	Università degli studi di Palermo, Italia	374	31	POSTER-A
D'Anna	Francesca	Università degli Studi di Palermo, Italia	366	214	POSTER-B
D'Anna	Francesca	Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), Università Degli Studi di Palermo, Viale Delle Scienze, Ed. 17, Palermo, 90128, Italia	722, 1452	244, 244	ORG-3A, ORG-3A
D'Anna	Pasquale	Università degli studi di Napoli Federico II, Italia	656	214	POSTER-B
D'Aprile	Fiorenza	Syensqo, Italia	748	31	POSTER-A
d'Arca	Domenico	Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Via Campi 287, 41125 Modena, Italy	904	255	FAR-2A
D'Arcangelo	Giacomo	Scuola Normale Superiore, Italia; Institute of Chemistry of Organometallic Compounds, Research Area of National Research Council, Italia	1832	31	POSTER-A
D'Archivio	Angelo Antonio	Department of Physical and Chemical Sciences, University of L'Aquila, Via Vetoio, 67100, Coppito, L'Aquila, Italy	1902, 1770	31, 251	POSTER-A, ANA-3D
D'Aria	Federica	Dipartimento di Farmacia, Università di Napoli Federico II	535, 1529, 512	31, 214, 243	POSTER-A, POSTER-B, FIS-2B
D'Arienzo	Massimiliano	Università Milano Bicocca, Italia	777	214	POSTER-B
D'auria	Maria Valeria	Università di Napoli Federico II, Italia	1371	31	POSTER-A
D'Epifanio	Alessandra	Università di Roma Tor Vergata, Italia	753, 525, 1283	31, 174, 214	POSTER-A, ParallelTopic03 - ID: 174, POSTER-B
D'Errico	Chiara	Istituto per la Protezione Sostenibile delle Piante (CNR-IPSP)	710	214	POSTER-B
D'Errico	Chiara	CNR-IBE (Firenze, Italy)	1384	265	DID-B
D'Ettore	Alessio	R2ES group, Department of Biotechnology, Chemistry and Farmacy, University of Siena, Italy	1216	31	POSTER-A
d'Ettorre	Alessio	Università di Siena, Italia	1363	31	POSTER-A
D'Ingiullo	Sara	Università degli Studi "G. d'Annunzio" Chieti-Pescara, Italia	1795	31	POSTER-A
D'Ilorio	Andrea	Dipartimento di Scienze Chimiche, Farmaceutiche e Agrarie, Università di Ferrara, Italia	923	69	IND-1A
d'Ippolito	Giuliana	Istituto di Chimica Biomolecolare (ICB), Dipartimento Scienze Chimiche e Tecnologie dei Materiali (DSCTM), Consiglio Nazionale delle Ricerche (CNR). Via Campi Flegrei, 34 – 80078 Pozzuoli, Napoli	1974	212	ParallelTopic15 - ID: 212
D'Oca	Gaetano	ARPA Sicilia, Agenzia Regionale Protezione Ambiente, UOS L2.2 Divisione Analitica 2 e Centro Riferimento Diossine, via Nairobi, 90129 Palermo, Italy	1400	214	POSTER-B
D'Onghia	Gianfranco	Department of Bioscence, Biotechnology and Environment, University of Bari "Aldo Moro"	1725	31	POSTER-A
D'orazi	Gabriella	IRCCS Regina Elena, Italia	935	240	INO-2A
D'Orazio	Giuseppe	Università degli Studi di Milano, Italia	1646	147	ORG-2B
D'Ottavi	Cadia	University of Rome Tor Vergata, Italia	1360	214	POSTER-B
D'Ovidio	Cristian	Department of Medicine and Aging Sciences, Section of Legal Medicine, University of Chieti–Pescara "G. d'Annunzio", Chieti 66100, Italy	301	258	ANA-4A
D'Urso	Alessandro	Università degli Studi di Catania, Italia	485	77	CSB-1A
D'Urso	Gilda	Università degli Studi di Salerno, Italia	259, 1150	214, 214	POSTER-B, POSTER-B
D'Arienzo	Massimiliano	Department of Materials Science University of Milano-Bicocca , Building U5,Via Roberto Cozzi 55, 20125, Milano, Italy.	280	72	ELE-1
d'Ercole	Claudia	1 Laboratory for Environmental and Life Sciences, University of Nova Gorica, 5000 Nova Gorica, Slovenia	393	214	POSTER-B
D'Onofrio	Mariapina	Department of Biotechnology, University of Verona, Strada le Grazie 15, 37134 Verona, Italy	1739	31	POSTER-A
Da Dalt	Chiara	Università di Padova, Padova, Italia	692	260	ALI-2A
Da Pian	Giulia	Università Ca' Foscari Venezia, Italia	169, 118	31, 157	POSTER-A, IND-1B
Da Pian	Marta	Elsevier B.V. Radarweg 29, 1043 NX Amsterdam	1038, 1782	208, 265	ParallelTopic11 - ID: 208, DID-B
Da Pozzo	Eleonora	Department of Pharmacy, University of Pisa, via Bonanno 6, 56127 Pisa, Italy	518	31	POSTER-A
Da Roit	Nicola	Institut fuer Katalyseforschung und technologie, Germany	840	254	INO-3
Da Settimo Passetti	Federico	Università di Pisa, Italia	994	264	ORG-1B
da Silva Freitas	Williane	Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata, Roma, Italy.	1283	214	POSTER-B
da Silva Santos	Jocimar	Department of Pharmacy (DIFAR), University of Genova, Viale Cembrano, 4, Genova	1788	214	POSTER-B
Dabalà	Manuele	Università degli studi di Padova, Italia	1642	31	POSTER-A
Dacarro	Giacomo	Università di Pavia, Italia	1649	31	POSTER-A
Dadda	Marco	Department of General Psychology, University of Padova, Via Venezia 8, 35131 Padova (PD), Italy	310	31	POSTER-A
Dagostino	Silvia	University of Florence, Italia	1568	214	POSTER-B
Dai	Yasi	Universita di Bologna, Italia	1425	31	POSTER-A
Daidone	Isabella	Università degli Studi dell'Aquila, Via Vetoio-Coppito, L' Aquila	122, 1398, 1430, 1389	31, 31, 161, 257	POSTER-A, POSTER-A, TEO-B, TEO-C
Dal Ben	Diego	Università di Camerino, Scuola di Scienze del Farmaco e dei Prodotti per la Salute, Italia	968	31	POSTER-A
Dal Bosco	Chiara	Sapienza University of Rome, Italy	1479	72	ELE-1
Dal Corso	Alberto	Università degli Studi di Milano, Dipartimento di Chimica, Via C. Golgi, 19, 20133 Milano	124, 484	31, 147	POSTER-A, ORG-2B
Dal Piaz	Fabrizio	Department of Medicine, Surgery and Dentistry "Scuola Medica Salernitana" University of Salerno, SA, Salerno, Italy	1854	31	POSTER-A
Dalboni	Martina	NRG, Department of Biotechnology, University of Verona and INSTM, RU Verona, Strada Le Grazie 15, Verona	1198	214	POSTER-B
Dale	Olivia R.	National Center for Natural Products Research, School of Pharmacy, The University of Mississippi, Mississippi, 38677, United States.	601	31	POSTER-A
Dall'Acqua	Stefano	Università di Padova, Padova, Italia	692	260	ALI-2A
Dall'Asta	Chiara	Università di Parma, Italia	948, 1861, 403	31, 184, 193	POSTER-A, ParallelTopic14 - ID: 184, ParallelTopic09 - ID: 193
Dalla Torre	Gabriele	Department of Life Sciences, University of Modena and Reggio Emilia, Modena, Italy.	956	134	FAR-1C
Dallavalle	Sabrina	Department of Food, Environmental and Nutritional Sciences, University of Milan, via Celoria, 2, 20133, Milan	962, 1003, 1020, 1453, 1601, 1540, 1906, 795, 961	31, 31, 31, 31, 31, 214, 214, 139, 255	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, ORG-2A, FAR-2A
Dalli	Andrea	Department of Biology, University of Pisa, Via San Zeno 35-39, 56127, Pisa, Italy	341	165	INO-1B
Dallinger	Alexander	Institute of Solid State Physics, NAWI Graz, Graz University of Technology, 8010 Graz, Austria	1536	214	POSTER-B
Dalpiaz	Alessandro	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via Fossato di Mortara 19, I-44121 Ferrara, Italy	1301	31	POSTER-A
Dambruoso	Paolo	Institute of Organic Synthesis and Photoreactivity, Consiglio Nazionale delle Ricerche, Via P. Gobetti, 101, 40129 Bologna, Italy	1493	245	ORG-3B
Dami	Valentina	COLOROBBIA CONSULTING S.r.l	1061	253	INO-2C
Damian	Serena	Department of Chemical Sciences, University of Naples Federico II, Naples, Italy	724	214	POSTER-B
Damiani	Elisabetta	DiSVA, Università Politecnica delle Marche, Italia	416	150	ANA-2D
Damiano	Caterina	Department of Chemistry, University of Milan, Via C. Golgi 19, 20133 Milano, Italy	1651	31	POSTER-A
Damin	Alessandro	Department of Chemistry and NIS Interdepartmental Centre, University of Turin, Via Pietro Giuria 7, Torino, 10125, Italy	1092, 1764	31, 31	POSTER-A, POSTER-A
Damin	Alessandro Ali	Dipartimento di Chimica, Università di Torino	1270	31	POSTER-A
Damjana	Drobne	Dept. of Biology, Biotechnical Faculty, University of Ljubljana, Ljubljana, Slovenia	128	214	POSTER-B
Damjanovic	Anja	Faculty of food technology and biotechnology, University of Zagreb, Croatia	648	78	ALI-1A
Daniel	Giorgia	Fiamm Energy Technology Spa	556	31	POSTER-A
Daniela	Daniela	University of Surrey	203	31	POSTER-A
Danielis	Maila	Dipartimento Politecnico e INSTM, Università degli Studi di Udine, Italia	789	31	POSTER-A
Danielli	Alberto	Dipartimento di Farmacia e Biotecnologie, Alma Mater Studiorum – Università di Bologna, Italia	1357, 1556	31, 214	POSTER-A, POSTER-B
Danielson	U. Helena	Department of Chemistry – BMC and Science for Life Laboratory, Uppsala University, Uppsala, Sweden	1457	132	FAR-1B
Daniliuc	Constantin	Universität Münster, Germany	294	256	ORG-4A
Danowski	Wojciech	ISIS, University of Strasbourg, France	1584	214	POSTER-B
Daolio	Andrea	Università di Parma, Italia	863, 1054	31, 241	POSTER-A, INO-2B
Dariol	Andrea	università degli studi di milano, Italia	1344	31	POSTER-A
Darjazi	Hamideh	Politecnico di Torino, Italia; National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM	1063, 1419	214, 72	POSTER-B, ELE-1
Das	Shibam	University of Turin, Italia	1044	31	POSTER-A
Dativo	Giusy	Università di Catania, Italia	482	31	POSTER-A
Dattilo	Marco	Department of Pharmacy, Health and Nutritional Sciences, University of Calabria, Rende (CS), Italy	1676	31	POSTER-A
dattoma	giusy	Institute for Sustainable Plant Protection	680	31	POSTER-A

Daugulis	Olafs	Depertment of Chemistry, University of Houston, Houston, Texas 77204-5003, US	364	31	POSTER-A
Davani	Lara	Department of Pharmaceutical Sciences, University of Milan, via Mangiagalli 25, Milan, Italy	1868	31	POSTER-A
Dawn Duan	Jiaxin	Northwestern University, Evanston, Illinois	958	214	POSTER-B
De Amici	Marco	Department of Pharmaceutical Sciences, University of Milan, 20133 Milan, Italy	827	31	POSTER-A
De Amicis	Giuditta	Università degli Studi di Pavia	486	31	POSTER-A
De Angelis	Cinzia	Istituto Superiore di Sanità, Italia	1696	214	POSTER-B
De Angelis	Filippo	Università di Perugia, Italia	1963	201	ParallelTopic03 - ID: 201
De Bei	Omar	Department of Medicine and Surgery, University of Parma, Via Volturno, 39, 43125, Parma, Italy	1103	31	POSTER-A
De Bei	Omar	Department of Medicine and Surgery, University of Parma, Parma, Italy	1422	134	FAR-1C
De Bellis	Palmira	Istituto di scienze delle produzioni alimentari (ISPA), CNR, 70126 Bari, Italy.	1416	214	POSTER-B
De Berardis	Barbara	National Center for Innovative Technologies in Public Health, Istituto Superiore di Sanità, Rome 00161; Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Roma1, Rome	1296	214	POSTER-B
De Bonis	Angela	Department of Science, Università degli Studi della Basilicata, Potenza, Italia	1203	74	TEC-A
De Bonis	Beatrice	Dipartimento di Biotecnologie Chimica e Farmacia, Università di Siena, Siena, Italia; Diamond Light Source, Ltd., Harwell Science and Innovation Campus, Didcot, OX11 0DE, Oxfordshire, United Kingdom	1577	31	POSTER-A
de Bruin	Bas	Van 't Hoff Institute for Molecular Sciences, University of Amsterdam, Science Park 904, 1090 GD Amsterdam	237	62	ParallelTopic15
de Candia	Modesto	università degli Studi di Bari, Italia	1309, 1180	31, 134	POSTER-A, FAR-1C
De Caro	Liberato	Institute of Crystallography, National Research Council (IC-CNR), v. Amendola 122/O, Bari, (Italy)	201	243	FIS-2B
De Castro	Cristina	Department of Chemical Sciences, University of Napoli, Via Cintia 26, 80126 Napoli	1029	154	CSB-1B
De Castro	Federica	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy	1155, 1023, 1153, 1428	31, 214, 214, 67	POSTER-A, POSTER-B, POSTER-B, INO-1A
De Cesaris	Massimo Giuseppe	Sapienza Università di Roma, Italia	1697, 1856	31, 248	POSTER-A, ANA-3A
De Chiara	Ida	Università degli studi della Campania L. Vanvitelli, Italia	515	31	POSTER-A
De Chirico	Paola	Sapienza Università di Roma, Dipartimento di Chimica	1015	258	ANA-4A
De Cicco	Annalisa	Università di Salerno, Italia	628	147	ORG-2B
De Cola	Luisa	Istituto di Ricerche Farmacologiche Mario Negri, Via Mario Negri 2, 20156, Italia; Dipartimento DISFARM, Università di Milano, Via Camillo Golgi 19, 20133 Milano, Italia	154	31	POSTER-A
De Cola	Luisa	Università degli Studi di Milano, Italia; Instituto di Ricerche Farmacologiche Mario Negri, Italia	156, 1707, 157	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
De Cola	Luisa	Department of Molecular Biochemistry and Pharmacology, Istituto di Ricerche Farmacologiche Mario Negri "IRCCS, Via Mario Negri 2, 20156 Milan, Italy; Department of Pharmaceutical Sciences, DISFARM, Università degli Studi di Milano, Via Golgi 19, 20133 Milan, Italy	199	214	POSTER-B
De Cola	Luisa	Università degli Studi di Milano, Italia; Karlsruhe Institute of Technology, Germania	205, 391, 162, 234, 2004	214, 214, 165, 246, 30	POSTER-B, POSTER-B, INO-1B, ORG-3C, TOPIC-F
De Conto	Marco	university of trieste, Italia	1365	31	POSTER-A
De Cristofaro	Ilaria	Università degli Studi di Napoli Federico II, Italia	1652	243	FIS-2B
De Cristofaro	Mariano	Department of Chemistry and Industrial Chemistry University of Pisa, Via Giuseppe Moruzzi 13, Pisa, Italy	1747	31	POSTER-A
De Felice	Beatrice	University of Milan	1343, 1111	31, 249	POSTER-A, ANA-3B
De Felice	Vincenzo	Università del Molise, Italia	1162, 1150	31, 214	POSTER-A, POSTER-B
De Fenza	Maria	Department of Chemical Sciences, University of Naples Federico II – Via Cintia, 80126 Naples, Italy	1265	67	INO-1A
De Franco	Michele	Memorial Sloan Kettering Cancer Center	1807	132	FAR-1B
De gara	Laura	università campus biomedico di roma, Italia	1151, 1062, 1075	31, 214, 258	POSTER-A, POSTER-B, ANA-4A
de Gennaro	Gianluigi	Department of Bioscience, Biotechnologies and Environment, University of Bari, Italy, Bari	1381, 1427	214, 239	POSTER-B, ABC-D
De Gioia	Luca	Dipartimento di Biotecnologie e Bioscienze, Università degli studi di Milano-Bicocca, Italia	1793	31	POSTER-A
De Giorgis	Veronica	Department of Translational Medicine, University of Piemonte Orientale, Novara, Italy	1375	214	POSTER-B
De Giuli	Chiara	Università di Torino, Italia	1732, 953	31, 214	POSTER-A, POSTER-B
De Gregorio	Rosa	Dipartimento di Farmacia, Università di Napoli "Federico II", Italia	657	147	ORG-2B
De Guidi	Guido	Department of Chemical Sciences, University of Catania, V.le A.Doria 6, Catania (Italy)	1269	69	IND-1A
De Iudicibus	Giulio	Conservatorio di Musica "Nino Rota" - Monopoli, Italia	1942	205	ParallelTopic08 - ID: 205
de Julián Fernández	César	IMEM-CNR	1925	31	POSTER-A
de la Torre	Xavier	Laboratorio Antidoping, Federazione Medico Sportiva Italiana, Largo Giulio Onesti, 1, 00197, Rome, Italy	1836	31	POSTER-A
De Laurenzi	Vincenzo	Department of Innovative Technologies in Medicine and Dentistry, Center for Advanced Studies and Technology (CAST), University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy	1607, 301	214, 258	POSTER-B, ANA-4A
De Leo	Alessandro	Department of Drug Chemistry and Technologies, Pasteur Institute - Cenci Bolognetti Foundation, Sapienza University, 00185 Rome, Italy	1627	214	POSTER-B
De Leo	Gioacchino	Laboratory of Prion Biology, Department of Neuroscience, Scuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste, Italy	1543	214	POSTER-B
De Leo	Vincenzo	Department of Chemistry, University of Bari, Via Orabona 4, 70126 Bari, Italy	966	235	FIS-1D
De Luca	Antonio	Università di Firenze, Italia	575	31	POSTER-A
De Luca	Chiara	Università degli studi di Ferrara, Italia	270, 456	31, 31	POSTER-A, POSTER-A
De Luca	Chiara	Dept of chemical, pharmaceutical and agricultural sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy	537, 458	181, 214	ParallelTopic10 - ID: 181, POSTER-B
De Luca	Chiara	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via L. Borsari 46, 44121 Ferrara, Italy	498	140	ANA-1B
De Luca	Chiara	Dept. of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy	574, 842	140, 140	ANA-1B, ANA-1B
De Luca	Giovanna	Università degli Studi di Messina, Italia	1248	214	POSTER-B
De Luca	Laura	Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, Viale F. Stagno D'Alcontres 31, I-98125 Messina, Italy	305, 306	214, 255	POSTER-B, FAR-2A
De March	Matteo	1 Laboratory for Environmental and Life Sciences, University of Nova Gorica, 5000 Nova Gorica, Slovenia	393	214	POSTER-B
De Marchi	Elisa	Università degli Studi della Tuscia, Italia	874	31	POSTER-A
De Marchi	Elisa	Dipartimento di Chimica 'Ugo Schiff' Università degli Studi di Firenze, Via della Lastruccia 13, 50019 Sesto Fiorentino (Italy)	1402	31	POSTER-A
De Marco	Antonio	University of Bologna, Chemistry Department "Giacomo Ciamician", Via F. Selmi, 2, 40126, Bologna, Italy	1138	31	POSTER-A
de Marco	Ario	1 Laboratory for Environmental and Life Sciences, University of Nova Gorica, 5000 Nova Gorica, Slovenia	393	214	POSTER-B
De Maria	Laura	University of Messina, Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, Via Consolare Valeria, Messina.	333	261	ALI-2B
De Marino	Simona	Università di Napoli Federico II, Italia	818, 1371	31, 31	POSTER-A, POSTER-A
De Maron	Jacopo	Dipartimento di Chimica Industriale "Toso Montanari" and Center for Chemical Catalysis-C3, Università di Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	937	31	POSTER-A
De Martin	Stefano	Regional Environmental Protection Agency—ARPA-FVG, Via Cairoli 14, 33057 Palmanova, Italy	1511	249	ANA-3B
De Mastro	Francesco	Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli studi di Bari Aldo Moro, via Amendola 165/a, Bari, Italy	1555	247	ORG-3D
de Melo Barbosa	Raquel	Department of Pharmacy and Pharmaceutical Technology, School of Pharmacy, University of Seville, C/Professor García González, 2. 41012, Seville, Spain	1594, 1604	31, 31	POSTER-A, POSTER-A
de Melo Barbosa	Raquel	Università di Siviglia	1573	214	POSTER-B
De Miccolis Angelini	Rita Milvia	Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli studi di Bari Aldo Moro, via Amendola 165/a, Bari, Italy	1555	247	ORG-3D

de Moura Torquato	Lilian Danielle	Università degli Studi di Bari "Aldo Moro", Italia; Institute of Chemistry, São Paulo State University (UNESP); National Institute for Alternative Technologies of Detection, Toxicological Evaluation and Removal of Micropollutants and Radioactives (INCT-DATREM)	1450	210	ParallelTopic13 - ID: 210
De Nardi	Federica	Dipartimento di Chimica, Università degli Studi di Torino, via P. Giuria 7, 10125 Torino, Italia	1393, 1402, 1630, 695, 1394	31, 31, 31, 214, 143	POSTER-A, POSTER-A, POSTER-A, POSTER-B, ORG-1C
De Nardo	Eugenio	Dipartimento di Chimica, Università degli Studi di Torino, Via P. Giuria 7, 10125 Torino (Italy)	1402	31	POSTER-A
De Nardo	Luigi	Politecnico di Milano, Italy	730	31	POSTER-A
De Nicola	Dario	Dipartimento di Scienze Chimiche (DiSC), University of Padova, Via Marzolo 1, 35131, Padova, Italy	1066	214	POSTER-B
De Nino	Antonio	Dipartimento di Chimica e Tecnologie Chimiche - CTC, Università della Calabria, Via P. Bucci, Cubo 12C, 87036 - Rende (CS), IT	268	31	POSTER-A
De Nisco	Mauro	Department of Sciences, University of Basilicata, Potenza, Italy	1866, 1734	31, 245	POSTER-A, ORG-3B
De Pasquale	Ilaria	Institute for Chemical and Physical Processes, Italian National Research Council, Bari, c/o Department of Chemistry, University of Bari, Via Orabona 4, 70126 (Bari) Italy	938	214	POSTER-B
De Pasquale	Rita	Science4life Srl, start up, Via Leonardo Sciascia Messina	333	261	ALI-2B
De Pinto	Maria Concetta	Università degli Studi di Bari Aldo Moro, Italia	1427	239	ABC-D
De Pinto	Vito	Università di Catania, Italia	837	256	ORG-4A
De Plano	Laura Maria	Università di Messina, Italia	1200	31	POSTER-A
De Poli	Marco	Department of Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, Via Luigi Borsari n. 46 -44121, Ferrara, Italy	491	31	POSTER-A
De Poli	Marco	Department of Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, Via Luigi Borsari n. 46 - 44121, Ferrara, Italy	646	66	ANA-1A
De Riccardis	Alberto	Euroapi Italy s.r.l. Via Angelo Titi, 72100 Brindisi Italy	1149	31	POSTER-A
De Riccardis	Francesco	Università di Salerno, Italia	628	147	ORG-2B
De Rienzo	Emanuele	University of Modena and Reggio Emilia	642	31	POSTER-A
De Rosa	Giuseppe	Università di Napoli Federico II, Italia	460	31	POSTER-A
De Rosa	Laura	Dipartimento di Medicina Molecolare e Biotecnologie Mediche, Università degli Studi di Napoli Federico II, Dipartimento di Scienze Mediche e Chirurgiche Avanzate, Università degli studi della Campania Luigi Vanvitelli	512	243	FIS-2B
De Rosa	Margherita	Dipartimento di Chimica e Biologia, Università degli Studi di Salerno, Italia	1716, 454	71, 245	MAS, ORG-3B
De Rosa	Maria Cristina	CNR, Italia	298	51	ParallelTopic09
De Rosa	Rosanna	DiBEST-Università della Calabria, Rende (CS) Italia	1194	31	POSTER-A
De Salvo	Alex	Università della Calabria, Italia	592, 856	31, 214	POSTER-A, POSTER-B
De Sanctis	Marianna	L'Immagine ritrovata SRL, Via Riva di Reno, 72, 40122, Bologna, Italy.	833	238	ABC-B
De Santis	Alessia	Magnetic Resonance Center CERM, University of Florence, Via Luigi Sacconi 6, 50019 Sesto Fiorentino, Florence, Italy; Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739, 1852	31, 31	POSTER-A, POSTER-A
De Santis	Arianna	Politecnico di Milano, Italia	269	31	POSTER-A
De Santis	Giulia	Università degli Studi di Bari, Italia	595	31	POSTER-A
De Santis	Michele Andrea	Department of Agriculture, Food, Natural Resources and Engineering (DAFNE), Via Napoli 25, 71122, Foggia, Italya	588, 583	214, 264	POSTER-B, ORG-1B
De Santis	Riccardo	Army Medical Center, Scientific Department, p.za Celimontana 50, Rome 00184, Italy.	1626	31	POSTER-A
De Santis	Riccardo	Army Medical Center, Scientific Department, p.za Celimontana 50, Rome 00184, Italy	1955	134	FAR-1C
De Santis	Serena	Department of Industrial, Electronic and Mechanical Engineering, University of Roma Tre, Rome (Italy)	725	237	TEC-C
De Santo	Riccardo	Department of Chemistry, Sapienza University, P.le Aldo Moro, 5, 00185, Rome, Italy	1462	31	POSTER-A
De Simone Carone	Luca	Università degli studi di Napoli "Federico II", Italia	1688	147	ORG-2B
De Simone	Alfonso	Department of Pharmacy, University of Naples Federico II, via D. Montesano 49, 80131-Naples, Italy	1106	31	POSTER-A
De Simone	Angela	Department of Drug Science and Technology University of Torino, via P. Giuria 9, Turin, Italy	1868	31	POSTER-A
de Simone	Gaia	Università di Camerino, Italia	296	143	ORG-1C
De Stefano	Concetta	Università degli Studi di Messina, Italia	1249, 1451	31, 31	POSTER-A, POSTER-A
De Stefano	Concetta	Università di Messina	2005, 2006, 2007, 969, 1248	37, 173, 187, 214, 214	ParallelTopic02, ParallelTopic02 - ID: 173, ParallelTopic02 - ID: 187, POSTER-B, POSTER-B
De Stefano	Concetta	Università degli Studi di Messina, Italia	1247, 911, 1520	248, 148, 148	ANA-3A, ANA-2C, ANA-2C
De Toro	Jose	Universidad de Castilla-La Mancha	513	242	FIS-2A
De Vita	Simona	Department of Pharmacy, University of Salerno, via Giovanni Paolo II, 132, 84084, Fisciano, Italy	1506	31	POSTER-A
De Vivo	Marco	Istituto Italiano di Tecnologia, Italia	798, 1002, 989	31, 193, 214	POSTER-A, ParallelTopic09 - ID: 193, POSTER-B
De Zotti	Marta	Department of Chemical Sciences, University of Padova (Italy)	539	77	CSB-1A
de Zwart	Felix	Van 't Hoff Institute for Molecular Sciences, University of Amsterdam, Science Park 904, 1090 GD Amsterdam	237	62	ParallelTopic15
Deagostino	Annamaria	Department of Chemistry, University of Turin	870, 1434	189, 256	ParallelTopic04 - ID: 189, ORG-4A
Deambrosis	Silvia Maria	National Research Council of Italy (CNR), Institute of Condensed Matter Chemistry and Technologies for Energy (ICMATE), Corso Stati Uniti 4, I-35127, Padova, Italy	242	153	TEC-B
deAzevedo	Eduardo Ribeiro	USP – Institute of Physics of São Carlos	1064	214	POSTER-B
Debbi	Gianfranco	Smalticeram Unicer S.p.A. via della Repubblica 10, Roteglia (RE), Italy	1156	31	POSTER-A
Decandia	Gianfranco	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Via Edoardo Orabona 4, 70126 Bari, Italy	130	31	POSTER-A
Decarli	Denise	ABOCA SPA, Italia	773	71	MAS
Decherchi	Sergio	Istituto Italiano di Tecnologia, Italia	798, 1103	31, 31	POSTER-A, POSTER-A
Deganello	Francesca	Consiglio Nazionale delle Ricerche - Istituto per lo Studio di Materiali Nanostrutturati ISMN-CNR, Palermo	2025, 1384	192, 265	ParallelTopic08 - ID: 192, DID-B
Degano	Ilaria	Università di Pisa, Italia	235, 231	214, 73	POSTER-B, ABC-A
Degennaro	Leonardo	Department of Pharmacy – Drug Sciences, University of Bari "A. Moro" Via E. Orabona 4, 70125 – Italy FLAME-Lab –Flow Chemistry and Microreactor Technology Laboratory	150, 595, 1813, 1491, 1700	31, 31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B
Degerli	Simge Naz	INSTM Unit Milano-Università, Dip. Chimica, Università degli Studi di Milano, via C. Golgi 19, 20133 Milan, Italy	307, 120, 308	31, 157, 262	POSTER-A, IND-1B, IND-2A
Dei	L.	Department of Chemistry "Ugo Schiff" & CSGI, University of Florence, Via della Lastruccia, 3-13, 50019 Sesto Fiorentino (FI), Italy	400	31	POSTER-A
Dei	Luigi	University of Florence, Via della Lastruccia 3, Sesto Fiorentino	806, 833	73, 238	ABC-A, ABC-B
Del Bello	Fabio	University of Camerino, Italia	634, 1366	70, 136	TEF-2, FAR-1D
Del Bene	Alessandra	Università degli studi della Campania L. Vanvitelli, Italia	515, 354, 547	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Del Bianco	Martina	Max Planck Institute of Colloids and Interfaces, Potsdam, Germany	1100	214	POSTER-B
Del Bino	Linda	GSK, Siena, Italia	1646	147	ORG-2B
Del Bo'	Cristian	Department of Food, Environmental and Nutritional Sciences, Università degli Studi di Milano, Via Mangiagalli 25, Milan, Italy	1752	255	FAR-2A
Del Bubba	Massimo	Università degli Studi di Firenze, Italia	435, 248, 1071	31, 248, 239	POSTER-A, ANA-3A, ABC-D
Del Carlo	Michele	Università degli studi di Teramo, Italia	843, 1796, 1005	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Del Corso	Antonella	Department of Biology, University of Pisa, Via S. Zeno 51, 56123 Pisa, Italy	1754	139	ORG-2A
Del Favero	Elena	Università degli Studi di Milano, Milano, Italia	931, 1476	31, 31	POSTER-A, POSTER-A
Del Gatto	Annarita	CNR-Institute of Biostructures and Bioimaging	553	56	ParallelTopic12
Del Giudice	Alessandra	Sapienza Università di Roma, Italia	1095, 1460, 1229	214, 69, 243	POSTER-B, IND-1A, FIS-2B
Del Giudice	Daniele	Eindhoven University of Technology	1084, 1229	31, 243	POSTER-A, FIS-2B
Del Grosso	Erica	Università degli studi di Roma Tor Vergata, Italia	821, 615, 1718	31, 214, 144	POSTER-A, POSTER-B, ANA-1D
Del Grosso	Erika	Università del Piemonte Orientale, Italia	859	214	POSTER-B
Del Re	Pietro	CNR-Istituto di Cristallografia, 70126, Bari, Italia	137	31	POSTER-A
Del Regno	Rocco	Laboratory of Supramolecular Chemistry (SupraLab@UniSa), Department of Chemistry and Biology 'A. Zambelli', University of Salerno, Via Giovanni Paolo II 132, I-84984 Fisciano (SA), Italy	452	31	POSTER-A
Del Rio	Alberto	Institute of Organic Synthesis and Photoreactivity - National Research Council, via P. Gobetti 101, Bologna, Italy; Innovamol Consulting Srl, via San Faustino 167, Modena, Italy	1457	132	FAR-1B
Del Rio	Daniele	Human Nutrition Unit, Department of Food&Drug, University of Parma, Via Volturno 39, Parma, Italy	1752	255	FAR-2A
Del Sole	Regina	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Via Orabona 4, 70126 Bari,Italy	1415	240	INO-2A
Del Sorbo	Luca	Department of Veterinary Medicine and Animal Production, University of Naples Federico II	1293	31	POSTER-A
Del Vecchio	Antonio	Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Pisa, Italia	1380	31	POSTER-A

Del Vecchio	Lorenzo	Università di Parma, Italia	948, 481	31, 261	POSTER-A, ALI-2B
Del Vecchio	Pompea Giuseppina Grazia	Università degli Studi di Napoli Federico II, Italia	1652	243	FIS-2B
Delaney	Seamus	Deakin University, Australia	282	76	DID-A
Delaunay	Clara	Université Grenoble Alpes, CNRS, CEA, Institut de Biologie Structurale, Grenoble, France	1271	139	ORG-2A
Delbue	Serena	Department of Biomedical, Surgical and Dental Sciences, University of Milan, Via Pascal 36, Milan, Italy.	1598	31	POSTER-A
Dell'Accantera	Davide	Università di Parma, Italia	1281	31	POSTER-A
Dell'Aglio	Emanuele	Università La Sapienza di Roma, Italia	145	214	POSTER-B
Dell'Amico	Luca	Università di Padova, Italia	488, 227	31, 143	POSTER-A, ORG-1C
Dell'Angela	Martina	Università degli Studi di Trieste, Dipartimento di Fisica, Trieste; CNR-IOM, Istituto Officina dei Materiali, Trieste	1041	214	POSTER-B
Dell'Anna	Maria Michela	Politecnico di Bari, Italy	1899, 336, 1780	31, 204, 214	POSTER-A, ParallelTopic07 - ID: 204, POSTER-B
Dell'Aquila	Vincenzo	Eco-Tech Finish s.r.l, Arezzo, Italia	602	155	ELE-2
Dell'Aversano	Carmela	UNINA DF, University of Naples Federico II, School of Medicine and Surgery, Department of Pharmacy, Napoli, Italy; NBFC, National Biodiversity Future Center, Palermo, Italy	1566	150	ANA-2D
Dell'Orletta	Gianluca	University of L'Aquila, via Vetoio, L'Aquila 67010, Italy	1430	161	TEO-B
Dell'Anna	Maria Michela	Politecnico di Bari, Italia	1913, 1874	31, 214	POSTER-A, POSTER-B
Della Ca'	Nicola	SynCat Lab, Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italia	1812, 1334, 1569	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Della Latta	Elisa	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	814	242	FIS-2A
Della Pelle	Flavio	Università degli studi di Teramo, Italia	843, 844, 596, 847	31, 214, 142, 144	POSTER-A, POSTER-B, ANA-1C, ANA-1D
Della Pergola	Roberto	University of Milano – Bicocca, Department of Earth and Environmental Sciences	1740	214	POSTER-B
Della Pietra	Massimiliano	ENEA R. C. Casaccia, TERIN-PSU-ABI, Via Anguillarese 301, 00123 Rome, Italy	1256	214	POSTER-B
Della Pina	Cristina	Department of Chemistry, Università degli Studi di Mlilano, Via Golgi 19, Milano	521	31	POSTER-A
Della Posta	Susanna	Università Campus Bio-Medico di Roma, Italia	1032, 1151, 1062, 1073, 1075	31, 31, 214, 214, 258	POSTER-A, POSTER-A, POSTER-B, POSTER-B, ANA-4A
Della Sala	Giorgio	Università di Salerno, Italia	628	147	ORG-2B
Della Sala	Paolo	Dipartimento di Chimica e Biologia, "A. Zambelli" Università di Salerno	1775, 1716, 454	31, 71, 245	POSTER-A, MAS, ORG-3B
Della Torre	Federico	Università degli Studi Milano Bicocca, Milan, Italy	542	31	POSTER-A
della Valle	Maria	Dipartimento di Scienze e Tecnologie, Ambientali, Biologiche e Farmaceutiche, Università degli Studi della Campania "Luigi Vanvitelli", Italia	1742	263	CSB-3
Della Vedova	Larissa	Department of Pharmaceutical Sciences, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy.	601, 696, 1752	31, 31, 255	POSTER-A, POSTER-A, FAR-2A
Dellafiora	Luca	Department of Food and Drug, University of Parma, Parma, Italy	403	193	ParallelTopic09 - ID: 193
Delle Piane	Massimo	Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy	1060	180	ParallelTopic09 - ID: 180
dellePiane	Massimo	Politecnico of Turin, Italia	1285	31	POSTER-A
Delli Castelli	Daniela	Università degli Studi di Torino, Italia	950	35	ParallelTopic01
Delogu	Lucia Gemma	Università di Padova, Italia; Khalifa University	995	199	ParallelTopic01 - ID: 199
Delre	Pietro	CNR – Institute of Crystallography, Bari, Italy	159, 1082	31, 214	POSTER-A, POSTER-B
Demingo	Miriam	Startnetics, Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata	1241, 1242, 1385, 1239, 1233	31, 31, 214, 241, 254	POSTER-A, POSTER-A, POSTER-B, INO-2B, INO-3
Demitri	Nicola	Elettra Sincrotrone Trieste, Italia	197	74	TEC-A
Dengo	Nicola	Università degli Studi dell'Insubria, Italia	709	166	INO-1C
Denora	Nunzio	Department of Pharmacy – Pharmaceutical Sciences, University of Bari Aldo Moro, Via E. Orabona 4, Bari (Italy)	651, 652	267, 70	TEF-1, TEF-2
Denti	Vanna	Università degli Studi di Milano-Bicocca, Italia	717, 1535, 1158, 715, 992	31, 31, 214, 71, 71	POSTER-A, POSTER-A, POSTER-B, MAS, MAS
Dentice	Monica	Department of Clinical Medicine and Surgery, University of Naples Federico II, via S. Pansini 5, 80131, Naples, Italy	1454	214	POSTER-B
Depalo	Nicoletta	Institute for Chemical and Physical Processes, Italian National Research Council, Bari, c/o Department of Chemistry, University of Bari, Via Orabona 4, 70126 (Bari) Italy	938, 678	214, 243	POSTER-B, FIS-2B
Depetris	Rosamarie	Università degli studi di Torino, Italia; UniTo-ITT JointLab, Università degli studi di Torino, Italia	893	31	POSTER-A
Derets	Nikita	Department of Condensed Matter Physics, Jožef Stefan Institute, Slovenia.; Ioffe Institute, Politekhnicheskaya 26, 194021 St. Petersburg, Russia.	1105	242	FIS-2A
Derobertis	Francesca	Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari, Italia	336	204	ParallelTopic07 - ID: 204
Deroma	Mario Antonello	Dipartimento di Agraria, Università degli Studi di Sassari, Viale Italia 39A, 07100-Sassari, Italia	728	150	ANA-2D
Deruvo	Caterina	università degli Studi di Bari, Italia	1309	31	POSTER-A
Desantis	Jenny	Department of Chemistry, Biology, and Biotechnology, University of Perugia, Via dell'Elce di Sotto 8, Perugia, Italy	421	264	ORG-1B
Desaphy	Jean-Francois	Section of Pharmacology, Department of Precision and Regenerative Medicine, School of Medicine, University of Bari Aldo Moro, 70124 Bari, Italy	1634	214	POSTER-B
Desideri	Umberto	DESTEC, University of Pisa, Via Carlo Francesco Gabba 22, 56122 Pisa (Italy)	103	153	TEC-B
Dessì	Alessio	Istituto di Chimica dei Composti Organometallici - CNR, Sesto Fiorentino, Italia	576	31	POSTER-A
Dessì	Alessio	ICCOM-CNR	1477, 1890	31, 31	POSTER-A, POSTER-A
Dessì	Alessio	CNR - ICCOM, Italia	1251, 667	192, 214	ParallelTopic08 - ID: 192, POSTER-B
Destefani	Marco	Università Ca' Foscari di Venezia, Italia	1892	31	POSTER-A
Destro	Gianluca	Centro di Imaging Molecolare e Preclinico, Dipartimento di Biotecnologie Molecolari e Scienze per la salute, Università degli Studi di Torino, Piazza Nizza 44/bis, 10126 Torino, Italy.	1328	67	INO-1A
Detta	Nicola	Dompè farmaceutici, L'Aquila, Italia	1176	165	INO-1B
Detti	Serena	Dipartimento Sicurezza Pubblica, Direzione Centrale Anticrimine Polizia Nazionale Italiana, Servizio Polizia Scientifica Forense (DAC-SPS)	963	31	POSTER-A
Di Bari	Lorenzo	Università di Pisa, Italia	526, 528	244, 254	ORG-3A, INO-3
Di Bartolomeo	Elisabetta	University of Rome Tor Vergata, Italia	1360	214	POSTER-B
Di Battista	Paolo	Department of Bioscience and Technologies for Food, Agriculture and Environment, University of Teramo, Via R. Balzarini, 1, 64100 Teramo TE, Italy	847	144	ANA-1D
Di Bella	Giuseppa	Dipartimento BIOMORF, Università di Messina, Italia	1746	31	POSTER-A
Di Bella	Santo	Università dagli Studi di Catania, Italia	1237, 448	31, 241	POSTER-A, INO-2B
Di Bella	Santo	Università di Catania, Italia	1680	236	TEC-D
Di Bello	Elisabetta	Department of Drug Chemistry and Technologies, Sapienza University of Rome, P. le A. Moro 5 00185 Rome (Italy)	851	132	FAR-1B
Di Berto Mancini	Marika	La Sapienza, Italia	1640	31	POSTER-A
Di Bona	Stefano	Department of Chemistry, Biology and Biotechnology, University of Perugia, Perugia, Italy.	287	214	POSTER-B
Di Capua	Angela	Department of Sciences, University of Basilicata, Via dell'Ateneo Lucano 10-85100, Potenza	729, 1903	31, 214	POSTER-A, POSTER-B
Di Carlo	Aldo	Università di Roma "Tor Vergata", Italia	607, 892	31, 201	POSTER-A, ParallelTopic03 - ID: 201
Di Carlo	Gabriele	Università degli Studi di Milano, Italia	183	155	ELE-2
Di Carlo	Gabriella	Institute for the Study of Nanostructured Materials (ISMN), National Research Council (CNR)	1268, 1486	31, 235	POSTER-A, FIS-1D
Di Carlo	Maria Cristina	Dip Scienze della Terra_Sapienza Università di Roma	953	214	POSTER-B
Di Carmine	Graziano	Università degli studi di Ferrara, Italia	1184	141	ORG-1A
Di Carro	Marina	Università di Genova, Dipartimento di Chimica e Chimica Industriale, Italia	541, 1911, 437	31, 31, 249	POSTER-A, POSTER-A, ANA-3B
Di Ciolo	Stefano	Dipartimento di Chimica, Università degli studi di Milano, Milano	910	31	POSTER-A
Di Consiglio	Micol	Sapienza Università di Roma, Italia	1107	31	POSTER-A
Di Corato	Riccardo	CNR-IMM Lecce, SP Lecce-Monteroni km 1,200, Lecce	1291	166	INO-1C
Di Cosmo	Domenico	Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli studi di Bari Aldo Moro, via Amendola 165/a, Bari, Italy	1555	247	ORG-3D
Di Costanzo	Luigi Franklin	Dipartimento di Agraria, Università degli studi di Napoli Federico II, 80055 Portici (NA), Italia	1145	214	POSTER-B
Di Erasmo	Benedetta	Università degli Studi di Perugia, Italia	413, 427	31, 31	POSTER-A, POSTER-A
Di Fabio	Giovanni	Department of Chemical Sciences, University of Naples Federico II, Via Cintia, 6, 80126 Napoli, (NA), Italy	824, 565, 825, 826	214, 154, 156, 266	POSTER-B, CSB-1B, ABC-C, CSB-2
Di Fidio	Nicola	Università di Pisa, Italia	756, 1021	47, 214	ParallelTopic07, POSTER-B
Di Filippo	Maria Francesca	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Via Selmi 2, 40126, Italia	1850	31	POSTER-A

Di Filippo	Maria Francesca	Department of Chemistry "G. Ciamician", University of Bologna, 40126-Bologna, Italy	117	165	INO-1B
Di Filippo	Patrizia	DIT, Italian Workers' Compensation Authority (INAIL), P.le Pastore 6 00144, Rome	332	214	POSTER-B
Di Fonte	Nico	Università Dell'Aquila, Italia	1389	257	TEO-C
Di Fonzo	Daniela	Università di Genova, Dipartimento di Chimica e Chimica Industriale	529	31	POSTER-A
Di Francesco	Antonella	Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	624	31	POSTER-A
Di Francesco	Antonella	Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	588	214	POSTER-B
Di Francesco	Antonella	Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania	1472, 583, 837	214, 264, 256	POSTER-B, ORG-1B, ORG-4A
Di Francesco	Fabio	Department of Chemistry and Industrial Chemistry, Via G. Moruzzi 13, University of Pisa, 56124-Pisa, Italy	1489, 1747, 1781, 1512, 1525, 1536, 1438	31, 31, 31, 214, 214, 214, 258	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, ANA-4A
Di Francesco	Gaia	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia	951, 963, 971, 1123, 760, 1015	31, 31, 31, 31, 214, 258	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, ANA-4A
di franco	cinzia	università di bari aldo moro, Italia	680, 683, 663	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Di Franco	Cinzia	Istituto di Fotonica e Nanotecnologie CNR, c/o Dipartimento Interateneo di Fisica, Università degli Studi di Bari Aldo Moro, Bari, 70125 Italy	819	214	POSTER-B
Di Franco	Cinzia	CNR IFN, 70126 Bari, Italy	689, 708	142, 142	ANA-1C, ANA-1C
Di Gaetano	Sonia	IBB-CNR di Napoli	980	139	ORG-2A
Di Gaetano	Sonia	Institute of Biostructures and Bioimaging, National Research Council, Naples, Italy	826	266	CSB-2
Di Gaetano	Sonia	Istituto di Biostrutture e Bioimmagini - CNR, Italia	1742	263	CSB-3
Di Gennaro	Patrizia	Dipartimento di Biotecnologie e Bioscienze, Università degli studi di Milano-Bicocca, Italia	1793	31	POSTER-A
Di Giacomo	Stefano	Department of Pharmacy, University G. d'Annunzio of Chieti-Pescara, Italy	1701	214	POSTER-B
Di Giancamillo	Alessia	Dipartimento di Medicina Veterinaria e Scienze Animali, Università degli studi di Milano	1308	214	POSTER-B
Di Gilio	Alessia	Department of Bioscience, Biotechnologies and Environment, University of Bari, Italy, Bari	1381, 1427	214, 239	POSTER-B, ABC-D
Di Giorgio	Cristina	Università di Perugia, Italia	655, 657	214, 147	POSTER-B, ORG-2B
Di Giosia	Matteo	NanoBio Interface Lab, Dipartimento di Chimica "Giacomo Ciamician", Alma Mater Studiorum - Università di Bologna, Italia	1357, 1556, 1254	31, 214, 154	POSTER-A, POSTER-B, CSB-1B
Di Girolamo	Rocco	Università degli Studi di Napoli Federico II, Italia	408, 1633	242, 165	FIS-2A, INO-1B
Di Giuseppe	Andrea	Dipartimento di Scienze Fisiche e Chimiche, Università degli Studi dell'Aquila, Italia	947	214	POSTER-B
Di Grande	Silvia	Scuola Normale Superiore, Piazza dei Cavalieri 7, 56126 Pisa, Italy; Scuola Superiore Meridionale, Largo San Marcellino 10, 80138 Napoli, Italy	986	31	POSTER-A
di Gregorio	Maria Chiara	Sapienza Università di Roma, Italia	1095, 1022	214, 242	POSTER-B, FIS-2A
Di Lecce	Roberta	Department for Life Quality Studies (QuVi), Alma Mater Studiorum – University of Bologna, Corso d'Augusto 237, Rimini, Italy	1811	31	POSTER-A
Di Lena	Denise	Ulisse BioMed Labs, Area Science Park, 31149 Trieste, Italy; Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Parco Area Delle Scienze 17/A, 43124, Parma, Italy	518	31	POSTER-A
Di Leo	Riccardo	Department of Pharmacy, University of Pisa, Via Bonanno Pisano 6, 56126, Pisa, Italy	341	165	INO-1B
Di Leva	Francesco Saverio	University of Naples Federico II, Italy	858, 1717	214, 161	POSTER-B, TEO-B
Di Liberto	Giovanni	Università degli studi di Milano-Bicocca, Italia	362, 451, 343, 350, 619, 453	31, 31, 214, 214, 240, 257	POSTER-A, POSTER-A, POSTER-B, POSTER-B, INO-2A, TEO-C
Di Lorenzo	Chiara Maria	Università degli Studi di Milano, Italia	585	197	ParallelTopic14 - ID: 197
Di Lorenzo	Flaviana	Università degli studi di Napoli "Federico II", Italia	1688	147	ORG-2B
Di Luca	Mariagrazia	Department of Biology, University of Pisa, Via San Zeno 35-39, 56127, Pisa, Italy	341	165	INO-1B
Di Magno	Laura	Sapienza Università di Roma, Italia	1841	267	TEF-1
Di Maiolo	Francesco	Parma University, Italia	134	161	TEO-B
Di Maro	Salvatore	Università degli studi della Campania L. Vanvitelli, Italia	515, 275, 354, 547, 352	31, 214, 214, 214, 65	POSTER-A, POSTER-B, POSTER-B, POSTER-B, FAR-1A
Di Martino	Luciano	Majella Seed Bank-Parco Nazionale della Majella, Via Badia 28, Sulmona, 67039, Italy	1902	31	POSTER-A
Di Martino	Rita Maria Concetta	Department of Pharmaceutical Sciences, Università degli Studi del Piemonte Orientale, Largo Donegani 2, 28100 Novara, Italy	676, 1057, 859, 697	31, 31, 214, 65	POSTER-A, POSTER-A, POSTER-B, FAR-1A
Di Matteo	Valentina	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Via Gobetti 85, 40129,Italia	1850	31	POSTER-A
Di Matteo	Valentina	Department of Industrial Chemistry "Toso Montanari", University of Bologna, 40136-Bologna, IT	117	165	INO-1B
Di Mauro	Erika	Dip. Fisica e Chimica, Università di Palermo, Italia	1473	31	POSTER-A
Di Micco	Simone	Fondazione Ebris, Via S. De Renzi 50, 84125, Salerno, Italy	250	136	FAR-1D
Di Michele	Alessandro	Università degli Studi di Perugia, Italia	523, 487	66, 255	ANA-1A, FAR-2A
Di Michele	Lorenzo	University of Cambridge, UK	438	214	POSTER-B
Di Napoli	Antonella	Department of NEUROFARBA, University of Florence, V.le G. Pieraccini 6, 50139, Firenze, Italy	1572	259	ALI-1B
Di Nardo	Fabio	Dipartimento di Chimica, Università di Torino, Italia	414, 415, 160	214, 248, 146	POSTER-B, ANA-3A, ANA-2B
Di Nardo	Giovanna	Dipartimento Scienze della Vita e Biologia dei Sistemi, Università di Torino, Italia	1702	31	POSTER-A
Di Natale	Gabriella	Università degli Studi di Napoli Federico II, Italia	178	73	ABC-A
Di Nicola	Corrado	University of Camerino, Italia	958, 935	214, 240	POSTER-B, INO-2A
Di Noto	Vito	Sezione di Chimica per le Tecnologie, Dipartimento di Ingegneria Industriale, Università degli Studi di Padova, Via F. Marzolo 9, 35131Padova, Italia	1585, 1066, 1581, 1659	31, 214, 214, 214	POSTER-A, POSTER-B, POSTER-B, POSTER-B
Di Pede	Andrea Celeste	Università degli studi di Roma Tor Vergata, Italia	1722, 1723	31, 31	POSTER-A, POSTER-A
Di Pietro	Jonathan	Università degli studi dell'Aquila, Italia	940	141	ORG-1A
Di Pietro	Maria Enrica	Politecnico di Milano, Italia	346, 540, 712	199, 237, 236	ParallelTopic01 - ID: 199, TEC-C, TEC-D
Di Pietro	Sebastiano	Università di Pisa, Italia	739	214	POSTER-B
Di Primio	Cristina	Institute of Neuroscience, Italian National Research Council (CNR), Pisa, Italia	792	31	POSTER-A
Di Prisco	Daria	Istituto di Ricerche Farmacologiche Mario Negri, Via Mario Negri 2, 20156, Italia	154	31	POSTER-A
Di Profio	Pietro	Department of Pharmacy, University "G. d'Annunzio" of Chieti-Pescara, via dei Vestini 31, 66010 Chieti, Italy	1776	245	ORG-3B
Di Rienzo	Laura	Università degli studi di Napoli Federico II, Italia	1404	31	POSTER-A
Di Rosa	Fabiana	Carabinieri, Dept. of Scientific Investigations (RIS), V.le Tor di Quinto 151, Rome, Italy	760	214	POSTER-B
Di Salvo	Eleonora	Università di Messina, Italia	311	31	POSTER-A
Di Salvo	Eleonora	University of Messina, Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, Via Consolare Valeria, Messina.	333	261	ALI-2B
Di Sante	Manuele	NanoBio Interface Lab, Dipartimento di Chimica "Giacomo Ciamician", Alma Mater Studiorum - Università di Bologna, Italia	1357	31	POSTER-A
Di Santo	Roberto	Dipartimento di scienze biochimiche "Alessandro Rossi Fanelli", Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210, 1626, 1684, 1616, 1627, 1955	31, 31, 31, 214, 214, 134	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, FAR-1C
Di Sarno	Veronica	University of Salerno, Italia	250	136	FAR-1D
Di Serio	Martino	Università di Napoli Federico II, Italia	177	31	POSTER-A
Di Serio	Martino	Università degli Studi di Napoli Federico II, Dipartimento di Scienze Chimiche, via Cintia, IT-80126 Napoli	476, 879, 982, 127	158, 158, 158, 159	IND-1C, IND-1C, IND-1C, IND-1D
Di Stefano	Anna Barbara	BIOPLAST-Laboratory of BIOlogy and Regenerative Medicine-PLASTic Surgery, Dipartimento di Discipline Chirurgiche, Oncologiche e Stomatologiche, University of Palermo, via del Vespro 129, 90127 Palermo, Italy	1681	74	TEC-A
Di Stefano	Ilaria	Department of Chemistry "G. Ciamician", University of Bologna, Via P. Gobetti 85, Bologna	914	147	ORG-2B
Di Stefano	Stefano	Sapienza Università di Roma, Italia	1084	31	POSTER-A
Di Stefano	Stefano	Università di Roma "La Sapienza", Italia	1621	31	POSTER-A
Di Stefano	Stefano	Sapienza Università di Roma, Italia	1229	243	FIS-2B
Di Stefano	Vita	Department of Biological, Chemical and Pharmaceutical Science and Technology (STEBICEF), Università degli Studi di Palermo; National Biodiversity Future Center (NBFC), 90133 Palermo, Italy;	752, 973	31, 31	POSTER-A, POSTER-A
Di Terlizzi	Lorenzo	Università degli Studi di Pavia, Italia	877, 1006, 1542, 804	31, 31, 214, 264	POSTER-A, POSTER-A, POSTER-B, ORG-1B
Di Tolla	Antonio	Università degli Studi di Milano Bicocca, Italia	1146	214	POSTER-B
Di vera	Andrea	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Stevanato Center for Electron Microscopy and CSGI RU of Venice, Via Torino 155, 30172, Venice, Italy	114	31	POSTER-A
Diakogiannaki	Isidora	Department of Pharmacy, University of Napoli Federico II, Via Domenico Montesano 49, 80131 Napoli, Italy	1717	161	TEO-B

Diamanti	Eleonora	Universita´ di Bologna, Italia	1623	134	FAR-1C
Diana	Eliano	Department of Chemistry, University of Torino, Via Pietro Giuria 7, Torino, Italy	1783, 1399	214, 238	POSTER-B, ABC-B
Diana	Patrizia	Università Degli Studi Di Palermo, Italia	1528	31	POSTER-A
Dianzani	Irma	Department of Health Sciences, University of Piemonte Orientale, Novara, Italy	1375	214	POSTER-B
Dibenedetto	Carlo Nazareno	Dipartimento di Chimica, Università degli Studi di Bari, via Orabona 4, 70126, Italia	829	214	POSTER-B
Dichiara	Maria	Università di Catania, Italia	788	136	FAR-1D
Dichiarante	Valentina	Politecnico di Milano	258, 357	31, 237	POSTER-A, TEC-C
Diémoz	Henri	Environmental Protection Agency of Aosta Valley, Rue de la Maladiere, 48, Saint-Christophe (AO)	1116	31	POSTER-A
Digiglio	Irene	Department of NEUROFARBA, University of Florence, Via Ugo Schiff 6, Sesto Fiorentino (Italy)	1693	259	ALI-1B
Digilio	Filomena Anna	Istituto di Ricerca sugli Ecosistemi Terrestri, UOS Napoli-CNR	512	243	FIS-2B
Digregorio	Alessandro	Università di Bari "Aldo Moro", Italia, Dipartimento di Chimica	775	31	POSTER-A
Digregorio	Alessandro	Dipartimento di Chimica, Università degli Studi di Bari, Via Orabona 4, Bari	828, 1010	31, 214	POSTER-A, POSTER-B
Dimasi	A.	Università degli Studi di Milano, Italia	1260	214	POSTER-B
Dimasi	Alessandro	Department of Chemistry Università degli Studi di Milano Via Camillo Golgi, 19, 20133 Milano (Italy)	1046, 1047	31, 31	POSTER-A, POSTER-A
Dimitratos	Nikolaos	Department of Industrial Chemistry "Toso Montanari" and Center for Chemical Catalysis-C3, University of Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	469	158	IND-1C
Dinca	Mircea	Massachussets Institute of Technology, USA	671	234	FIS-1C
Dini	Amirhossein	University of Milan, Italy	1798	31	POSTER-A
Dini	Valentina	National Center for Innovative Technologies in Public Health, Istituto Superiore di Sanità, Rome 00161; Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Roma1, Rome	1296	214	POSTER-B
Diotallevi	Francesca	Università degli Studi di Urbino Carlo Bo, Italia	582	141	ORG-1A
Dirin	Dmitry N	ETH Zurich, Switzerland; Empa-Swiss Federal Laboratories for Materials Science and Technology, Switzerland	709	166	INO-1C
Dispenza	Clelia	Dipartimento di Ingegneria, Università degli Studi di Palermo, Viale delle Scienze 6, 90128 Palermo, Italy	1126, 1199, 1681	214, 74, 74	POSTER-B, TEC-A, TEC-A
Distefano	Alessia	Università degli Studi di Catania, Italia	1144	31	POSTER-A
Ditaranto	Nicoletta	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Italia	336, 1821	204, 250	ParallelTopic07 - ID: 204, ANA-3C
Diviccaro	Silvia	* Dipartimento di Scienze Farmacologiche e Biomolecolari, Neuroendocinology unit, Università degli Studi di Milano, via Giuseppe Balzaretti 9, 20133, Milan, Italy	836	31	POSTER-A
Djossou	Jonas	Van 't Hoff Institute for Molecular Sciences, University of Amsterdam, Science Park 904, 1090 GD Amsterdam	237	62	ParallelTopic15
Docquier	Jean-Denis	Università degli studi di Siena, Italia	1842, 1173	31, 136	POSTER-A, FAR-1D
Dogra	Raghav	University of Turin, Italia	1044	31	POSTER-A
Dolcet	Paolo	Department of Chemical Sciences, University of Padova, Italy; Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology, Germany	1191, 1439	241, 254	INO-2B, INO-3
Dolcini	Luigi	Università degli Studi di Milano, Dipartimento di Chimica, Via C. Golgi, 19, 20133 Milano	124	31	POSTER-A
Dolzhenko	V	Moscow State University	1759	214	POSTER-B
Domenici	Sara	Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy	380, 381	31, 153	POSTER-A, TEC-B
Domenici	Valentina	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	1105	242	FIS-2A
Donà	Lorenzo	Dipartimento di Chimica, Università di Torino, via Giuria 5, 10125 Torino, Italy	1208, 289, 260, 136	31, 51, 214, 75	POSTER-A, ParallelTopic09, POSTER-B, TEO-A
Donadelli	Massimo	Dept. of Neurosciences, Biomedicine and Movement Sciences, University of Verona, 37134 Verona, Italy	598	31	POSTER-A
Donati	Chiara	Università Degli Studi Di Padova, Italia	1528	31	POSTER-A
Donati	Greta	Department of Pharmacy, University of Napoli Federico II, Via Domenico Montesano 49, 80131 Napoli, Italy	1717	161	TEO-B
Donato	Emanuela	Università degli studi di Milano, Italia	229	31	POSTER-A
Donato	Laura	Institute on Membrane Technology, National Research Council of Italy (CNR-ITM), Rende (CS), Italy	1676	31	POSTER-A
Donato	Paola	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1262, 1289	31, 214	POSTER-A, POSTER-B
Donato	Paola	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1338, 1299, 1559	214, 66, 258	POSTER-B, ANA-1A, ANA-4A
Donato	Paola Agata Eustochia	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1311	214	POSTER-B
Doneda	Luigia	CRC StaMeTec Department of Biomedical, Surgical and Dental Sciences, University of Milan, 20122 Milan, Italy	191	31	POSTER-A
Donghi	Sabrina	Istituto Comprensivo Luigi Galvani Milano, Italia	905	265	DID-B
Donnarumma	Danilo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1235	31	POSTER-A
Donnarumma	Danilo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy	1243	31	POSTER-A
Donofrio	Gaetano	Università di Parma, Italia	776	138	ANA-2A
Donzella	Silvia	Department of Food, Environmental and Nutritional Sciences (DeFENS), University of Milan, Via L. Mangiagalli 25, Milan, 20133, Italy	955, 868, 961	31, 266, 255	POSTER-A, CSB-2, FAR-2A
Donzello	Maria Pia	Sapienza Università di Roma, Italia	1826	31	POSTER-A
Doria	Domiziano	Politecnico of Turin, Italia	1285	31	POSTER-A
Dorigato	Andrea	Department of Industrial Engineering and INSTM Research Unit, University of Trento, Via Sommarive 9, 38123, Trento, Italy	1408	31	POSTER-A
Dorigo	Lorenzo	Politecnico di Milano, Italia	262	214	POSTER-B
Dotta	Davide	Dipartimento di Chimica - Università di Torino, Italia	669	31	POSTER-A
Dozio	Denise	Department of Food, Environmental and Nutritional Sciences, via G. Celoria 2, 20133 Milano	1020	31	POSTER-A
Dozzi	Maria Vittoria	Università degli Studi di Milano, Italia	812, 1875, 779, 591, 778, 635, 643	31, 31, 214, 240, 160, 234, 234	POSTER-A, POSTER-A, POSTER-B, INO-2A, FIS-1B, FIS-1C, FIS-1C
Draghi	Lorenza	Politecnico di Milano, Italia	351	214	POSTER-B
Dragone	Martina	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania Luigi Vanvitelli	1293, 1737	31, 266	POSTER-A, CSB-2
Dragonetti	Claudia	Università degli Studi di Milano, Italia	290	253	INO-2C
Dreassi	Elena	Università degli Studi di Siena	1456, 755, 1173	214, 154, 136	POSTER-B, CSB-1B, FAR-1D
Drechsler	Markus	University of Bayreuth, Germany	816	31	POSTER-A
Drioli	Enrico	istituto per la tecnologia a membrana-consiglio nazionale delle ricerche (CNR-ITM), Italia	1514	31	POSTER-A
Drius	Giacomo	Department of Industrial Chemistry "Toso Montanari", Alma Mater Studiorum, University of Bologna, Via Piero Gobetti, 85, 40129 Bologna BO	1134	31	POSTER-A
Drozdov	A	Moscow State University	1759	214	POSTER-B
Duca	Maria	Université Côte d'Azur, CNRS, Institute of Chemistry of Nice (ICN), 06100 Nice, France	964	214	POSTER-B
Ducale	Federico	Italmatch Chemicals S.p.A., Via S. Tommaso, 13, 06049 Spoleto (PG), Italia	1432	214	POSTER-B
Dufossè	Laurent	CHEMBIOPRO Laboratoire de Chimie et Biotechnologie des Produits Naturels, ESIROI Agroalimentaire, Université de La Réunion, 15 Avenue René Cassin, F-97400 Saint-Denis, Ile de La Réunion, France	1259	261	ALI-2B
Dufresne	Alain	Université Grenoble Alpes, CNRS, Grenoble INP, LGP2, F-38000 Grenoble, France	419	247	ORG-3D
Dugo	Laura	Department of Sciences and Technologies for Human and Environment, University Campus Bio-Medico of Rome, 00128 – Rome	1370	214	POSTER-B

Dugo	Paola	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy	1243	31	POSTER-A
Dugo	Paola	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy; Chromaleont S.R.L., C/O Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy	1276, 1304	31, 31	POSTER-A, POSTER-A
Dugo	Paola	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168, Messina; Chromaleont s.r.l., c/o Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168, Messina	1341	31	POSTER-A
Dugo	Paola	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina; Chromaleont s.r.l., c/o Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1361	31	POSTER-A
Dugo	Paola	Messina Institute of Technology c/o Deparment of Chemical, Biological, Pharmaceutical and Environmental Science, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 - Messina, Italy; Chromaleont s.r.l. c/o Deparment of Chemical, Biological, Pharmaceutical and Environmental Science, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 - Messina, Italy	1407	31	POSTER-A
Dugo	Paola	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1944, 267, 1250	193, 197, 214	ParallelTopic09 - ID: 193, ParallelTopic14 - ID: 197, POSTER-B
Dugo	Paola	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1279, 1280, 1289, 1370, 1418, 1503, 1306	214, 214, 214, 214, 214, 214, 140	POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, ANA-1B
Dugo	Paola	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1333	78	ALI-1A
Duncan	T.	National Gallery of Art, Department of Scientific Research, 2000 South Club Drive, Landover, Maryland 20785 – USA	400	31	POSTER-A
Duponchel	Ludovic	Université de Lille, Laboratoire de Spectroscopie pour les Interactions, la Réactivité et l'Environnement, Cité Scientifique, 59650, Villeneuve d'Ascq, France	885	214	POSTER-B
Dupont	Didier	Institut Agro UMR 1253 STLO 65 rue de Saint-Brieuc 35042 Rennes Cedex	1244	78	ALI-1A
Durand	Alexandre	IGBMC - Institut de Génétique et de Biologie Moléculaire et Cellulaire, Parc D'Innovation 1 Rue Laurent Fries, BP 10142 67404 Illkirch Cedex, France	393	214	POSTER-B
Durand	Thierry	Institut des Biomolécules Max Mousseron IBMM, UMR 5247 CNRS, Université de Montpellier, BP 14 491 15 av Charles Flahault, 34090, ENSCN, France	1438	258	ANA-4A
Durante	Caterina	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia, via Campi 103, Modena, 41125, Italy	544	214	POSTER-B
Durante	Caterina	Università di Modena e Reggio Emilia, Italia	815	214	POSTER-B
Durante	Caterina	Università degli studi di Modena e Reggio Emilia, Italia	839	249	ANA-3B
Durante	Caterina	Università degli Studi di Modena e Reggio Emilia, Italia	1417	150	ANA-2D
Durante	Christian	Università degli Studi di Padova, Italia	556, 1193	31, 155	POSTER-A, ELE-2
Durazzo	Alessandra	CREA-Research Centre for Food and Nutrition, Rome, Italy	478	31	POSTER-A
Durrant	James	Imperial College London, Regno Unito; Gran Bretagna	1977	234	FIS-1C
Duskey	Jason Thomas	Department of Life Sciences, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO, 41125	630, 875	267, 70	TEF-1, TEF-2
Dutra	Jocely Lucena	Federal University of São Carlos, São Carlos, SP, Brazil	340	31	POSTER-A
Duyar	Melis S.	School of Chemistry and Chemical Engineering, University of Surrey, United Kingdom	789	31	POSTER-A
Dyson	Paul J.	Institute of Chemical Sciences and Engineering, Switzerland	1619	214	POSTER-B
Dziedzic-Kocurek	Katarzyna	Marian Smoluchowski Institute of Physics, Jagiellonian University, Poland	204	214	POSTER-B
Dziubek	Kamil	Institut für Mineralogie und Kristallographie, Universität Wien, Josef-Holaubek-Platz 2,A-1090, Wien, Austria	1873	198	ParallelTopic15 - ID: 198
Dzyhovskyi	Valentyn	Università degli Studi di Ferrara, Italia	329	214	POSTER-B
Econdi	Stefano	CNR-SCITEC, Italia	1392	31	POSTER-A
Efentakis	Panagiotis	Laboratory of Pharmacology, Faculty of Pharmacy, National and Kapodistrian University of Athens, Greece	1226	31	POSTER-A
Egidi	Franco	Software for Chemistry and Materials, The Netherlands	1077	68	FIS-1A
Eijsink	Vincent GH	Faculty of Chemistry, Biotechnology and Food Science, NMBU-Norwegian University of Life Sciences, Ås, Norway	510	214	POSTER-B
El-Tayeb	Ali	PharmaCenter Bonn, Pharmaceutical Institute, Pharmaceutical & Medicinal Chemistry, University of Bonn, An der Immenburg 4, 53121 Bonn, Germany	674	65	FAR-1A
Elbaz	Lior	Chemistry Department, Bar-Ilan Center for Nanotechnology and Advanced Materials, Bar- Ilan University, Ramat-Gan 5290002, Israel.	280	72	ELE-1
Eletto	Daniela	Università Degli Studi di Salerno, Italia	656	214	POSTER-B
Eleuteri	Michela	Department of Chemistry, Biology, and Biotechnology, University of Perugia, Via dell'Elce di Sotto 8, Perugia, Italy	421	264	ORG-1B
Elia	Giuseppe Antonio	Politecnico di Torino, Italia; National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM	759, 1092, 1981, 1063, 1429, 1419	31, 31, 201, 214, 214, 72	POSTER-A, POSTER-A, ParallelTopic03 - ID: 201, POSTER-B, POSTER-B, ELE-1
elicio	vito	Agritest Srl, Tecnopolis Casamassima	680	31	POSTER-A
Elisi	Gian Marco	Università di Urbino, Italia	1441, 1611	31, 214	POSTER-A, POSTER-B
Elkhanoufi	Sabrina	Università di Torino, Italia	1353	31	POSTER-A
Elli	Stefano	Politecnico di Milano, Italia	221	237	TEC-C
Elli	Stefano	Istituto di Ricerche Chimiche e Biochimiche 'G. Ronzoni' via Giuseppe Colombo 81, 20133 Milano, Italy	638	256	ORG-4A
Elsener	Bernhard	Dipartimento di Scienze Chimiche e Geologiche, Universita di Cagliari,Cittadella Universitaria,09042, Monserrato, Cagliari, Italy	1810	31	POSTER-A
Elsener	Bernhard	Dipartimento di Scienze Chimiche e Geologiche, Università di Cagliari, Cagliari, Italia	1554	250	ANA-3C
Emmolo	Roberta	Department of Life and Environmental Sciences, University of Cagliari, Monserrato, Italy	1455	31	POSTER-A
Emmolo	Roberta	Department of Life and Environmental Sciences, University of Cagliari, Cittadella Universitaria di Monserrato, SS554 -09042 Monserrato (CA) Italy	1626	31	POSTER-A

Emmolo	Roberta	Department of Life and Environmental Sciences, University of Cagliari, Cittadella Universitaria di Monserrato, SS554 -09042 Monserrato (CA) Italy	1955	134	FAR-1C
Emrich-Mills	Tom	Faculty of Chemistry, Biotechnology and Food Science, NMBU-Norwegian University of Life Sciences, Ås, Norway	510	214	POSTER-B
Enzo	Stefano	DSCFMN, Università di Sassari, Italia	945, 1666	234, 235	FIS-1C, FIS-1D
Epifano	Francesco	Università degli studi "G. D'annunzio" Chieti-Pescara, Italia	894	31	POSTER-A
Epifano	Francesco	Università "Gabriele d'Annunzio" Chieti-Pescara, Italia, Dipartimento di Farmacia	356	211	ParallelTopic14 - ID: 211
Eränen	Kari	Åbo Akademi, Laboratory of Industrial Chemistry and Reaction Engineering, Henrikinkatu 2, FI-20500 Turku/Åbo	476, 879	158, 158	IND-1C, IND-1C
Erba	Alessandro	Dipartimento di Chimica, Università di Torino, via Giuria 5, 10125 Torino, Italy	1208, 899	31, 75	POSTER-A, TEO-A
Ercolani	Claudio	Sapienza Università di Roma, Italia	1826	31	POSTER-A
Eremeeva	Elena	Department of Chemistry and Industrial Chemistry, Via G. Moruzzi 13, University of Pisa, 56124-Pisa, Italy	1489	31	POSTER-A
Eritja	Ramon	Institute for Advanced Chemistry of Catalonia (IQAC), CSIC	1906	214	POSTER-B
Ermini	Elena	Istituto di Chimica dei Composti Organometallici - CNR, Sesto Fiorentino, Italia	576	31	POSTER-A
Errani	Francesco	University of Zurich, Zurich CH-8057, Switzerland	565	154	CSB-1B
Errichiello	Giulia	Università degli studi di Padova, Italia	1549	31	POSTER-A
Errico	Maria Emanuela	Istituto di Polimeri, Compositi e Biomateriali - CNR, Italia	1742	263	CSB-3
Erroi	Andrea	Università di Milano-Bicocca, Italia	1760	214	POSTER-B
Escudero-Casao	Margarita	Università di Padova, Italia	1135	247	ORG-3D
Eslava	Salvador	Chemical Engineering Department, Imperial College London, SW7 2AZ London, UK	1449	157	IND-1B
Esposito	Alessandra	Department of Chemical Sciences, University of Naples Federico II, via Cintia 21, 80126-Naples, Italy	1106	31	POSTER-A
Esposito	Alessandro	Institute of Neuroscience, National Research Council (CNR), Milan, Italy	715	71	MAS
Esposito	D.	Università di Bologna, Italia	618	31	POSTER-A
Esposito	Elisa	Institute on Membrane Technology, National Research Council of Italy (CNR-ITM), Rende (Italy)	1738	174	ParallelTopic03 - ID: 174
Esposito	Francesca	Università degli Studi di Cagliari	1684, 1043	31, 214	POSTER-A, POSTER-B
Esposito	Irene	Institute of Pathology, Heinrich-Heine University and University Hospital of Düsseldorf, 40225, Germany	683, 689	31, 142	POSTER-A, ANA-1C
Esposito	Sara	Università degli Studi di Salerno, Italia; Consorzio InterUniversitario Reattività e Catalisi (CIRCC), Italia	991	31	POSTER-A
Esposito	Serena	Politecnico di Torino, Italia	984	214	POSTER-B
Esposito	Teresa	Department of Translational Medicine, University of Piemonte Orientale, Via Solaroli 17, 28100 Novara, Italy; Anesthesia and Intensive Care, "Maggiore della Carità" University Hospital, Corso Mazzini 18, 28100 Novara, Italy	1563	31	POSTER-A
Espro	Claudia	SCI, Italia	1522	31	POSTER-A
Etiope	Paolo	Fondazione Toscana Life Sciences, Siena, Italia	1221	214	POSTER-B
Eugelio	Fabiola	Università degli studi di Teramo, Italia; Universidad de Almeria, Spagna	1796, 1005	31, 214	POSTER-A, POSTER-B
Evangelista	Dominga	Università di Bologna, Italia	1213	31	POSTER-A
Evangelisti	Claudio	ICCOM-CNR, Via G. Moruzzi, 1, 56124 Pisa, Italy	1171	31	POSTER-A
Evidente	Antonio	Università di Napoli, Federico II.	1675	31	POSTER-A
Fabbian	Simone	Department of Chemical Sciences (DiSC), University of Padua, via Marzolo 1, 35131, Padova	472, 539	185, 77	ParallelTopic15 - ID: 185, CSB-1A
Fabbri	Andrea	University of Roma Tre and INFN Sezione Roma Tre, Rome; National Center for Innovative Technologies in Public Health, Istituto Superiore di Sanità, Rome 00161	1296	214	POSTER-B
Fabbri	Daniele	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Tecnopolo di Rimini, via Dario Campana 71 47922, Rimini, Italia	1413	31	POSTER-A
Fabbri	Daniele	Dipartimento di Chimica "G.Ciamician". Università di Bologna, Italia	1326	239	ABC-D
Fabbri	Debora	University of Turin, Italia	1044, 1131	31, 31	POSTER-A, POSTER-A
Fabbri	Stefano	Università di Firenze, Italia	1814	214	POSTER-B
Fabbris	Alessia	Università del Piemonte Orientale, Italia	1645, 1661, 1731	31, 31, 150	POSTER-A, POSTER-A, ANA-2D
Fabbrizio	Vincenzo	Dipartimento di Chimica, Università degli Studi di Milano, via C. Golgi, 19, 20133, Milano, Italy	206, 195	31, 159	POSTER-A, IND-1D
Fabbro	Cinzia	National Institute of Oceanography and Applied Geophysics – OGS, via A. Piccard 54, 34151 Santa Croce, Trieste	1068	148	ANA-2C
Fabiano	Maria Gioia	Department of Drug Chemistry and Technology, Sapienza University of Rome, Italy	1476	31	POSTER-A
FabIni	Edoardo	Department of Pharmacy and Biotechnology, Alma Mater Studiorum University of Bologna, via Belmeloro 6, Bologna, Italy	1457	132	FAR-1B
Fabio	Palumbo	NANOTECH-CNR, Italia.	464	214	POSTER-B
Fabrile	Maria Pia	Department of Food and Drug, University of Parma	1369	31	POSTER-A
Fabris	Daniele	Fiamm Energy Technology Spa	556	31	POSTER-A
Fabrizi	Giancarlo	Sapienza università di Roma	1524	237	TEC-C
Facchetti	Giorgio	Department of Pharmaceutical Science, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy	191	31	POSTER-A
Facchetti	Giorgio	Univeristy of Milan, Italia	157	214	POSTER-B
Facchetti	Giorgio	Department of Pharmaceutical Science, Università degli Studi di Milano, Milan 20133, Italy	234	246	ORG-3C
Facchi	Daniele	Syensqo SA, Italia	1052	31	POSTER-A
Facchin	Alessandro	Technical University of Munich, Department of Chemistry, Lichtenbergstraße 4D-85748 Garching	1193	155	ELE-2
Facchini	Massimo	Herambiente S.p.A., Business Unit Rifiuti Industriali, Bologna	1919	31	POSTER-A
Faccio	Chiara	Scuola normale Superiore di Pisa, Università di Padova, Italia	1389	257	TEO-C
Facen	Elisa	CIBIO Department, University of Trento, Via Sommarive 9, 38123 Trento, Italy	703	31	POSTER-A
Faggi	Cristina	Università degli Studi di Firenze, Dipartimento di Chimica "Ugo Schiff" (DICUS), Italia	283	141	ORG-1A
Faggiano	Antonio	Department of Chemistry and Biology "Adolfo Zambelli", University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano, SA, Italy	293, 292	31, 73	POSTER-A, ABC-A
Faggiano	Serena	Department of Food and Drug, University of Parma, Parma, Italy	1422	134	FAR-1C
Faggioli	Elisa Giovanna	Politecnico di Milano, Italia	405	31	POSTER-A
Faggioni	Giovanni	Army Medical Center, Scientific Department, p.za Celimontana 50, Rome 00184, Italy.	1626, 1955	31, 134	POSTER-A, FAR-1C
Fagiolari	Lucia	Politecnico di Torino, Italia	1527	31	POSTER-A
Fagnani	Francesco	Università degli Studi di Milano, Italia	290	253	INO-2C
Fagnano	Alessandro	Università di Roma "La Sapienza", Italia	1621	31	POSTER-A
Fagnoni	Maurizio	Università degli Studi di Pavia, Italia	877, 1006, 1542, 804	31, 31, 214, 264	POSTER-A, POSTER-A, POSTER-B, ORG-1B
Fahimi	Ario	University of Nevada, Reno, USA	264	214	POSTER-B
Failla	Maria Beatrice	Dipartimento di Studi Storici, Università di Torino, Via S. Ottavio, 20 - 10124 Torino	1426	214	POSTER-B
Failla	Mariacristina	Department of Drug Science and Technology, University of Turin, Turin, Italy	1422	134	FAR-1C
Failla	Mattia	Department of Chemistry Università degli Studi di Milano Via Camillo Golgi, 19, 20133 Milano (Italy)	1046, 1047	31, 31	POSTER-A, POSTER-A
Failla	Salvatore	Università di Catania, Italia	1680	236	TEC-D
Fakhry	Hussein A.	A. Fakhry & Co. 1081 Comiche El-Nil, Cairo 1145l, EGYPT	1306	140	ANA-1B
Falanga	Andrea Patrizia	Department of Pharmacy, University of Naples Federico II, via Domenico Montesano, 49, 80131 Naples, Italy	1595	214	POSTER-B
Falchi	F.	Università di Bologna, Italia	1324	214	POSTER-B
Falchi	Federico	University of Bologna, Italia	1374, 1682	31, 214	POSTER-A, POSTER-B
Falchi	Laura	Università Ca' Foscari di Venezia, Italia	1892	31	POSTER-A
Falciola	Luigi	ELectroANaliytical Chemistry Group, Dipartimento di Chimica, Università degli Studi di Milano,via Golgi 19, 20133 Milano, Italy	239, 181, 905, 1782	31, 155, 265, 265	POSTER-A, ELE-2, DID-B, DID-B
Falco	Francesca	Institute for Marine Biological Resources and Biotechnology (IRBIM) – CNR – Mazara del Vallo, Italy	1310	31	POSTER-A
Falco	Giovanni	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania "Luigi Vanvitelli", via Vivaldi 43, 81100, Caserta	1916	31	POSTER-A
Falco	Marisa	Politecnico di Torino, Italia; National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM	759, 1419	31, 72	POSTER-A, ELE-1
Falesiedi	Marta	Università degli Studi di Genova, Italia, Dipartimento di Farmacia	223	31	POSTER-A
Falini	Giuseppe	Università di Bologna, Italia	1033	31	POSTER-A
Fallarini	Silvia	Department of Pharmaceutical Sciences, University of Piemonte Orientale, Largo Donegani 2, 28100, Novara, Italy	1057, 859, 697	31, 214, 65	POSTER-A, POSTER-B, FAR-1A

Falletta	Ermelinda	Dipartimento di Chimica, Università degli Studi di Milano, via C. Golgi, 19, 20133, Milano, Italy	206, 589, 195	31, 177, 159	POSTER-A, ParallelTopic06 - ID: 177, IND-1D
Fama	Francesco	Ca' Foscari, Italia	1089	31	POSTER-A
Famiglini	Giorgio	Department of Pure and Applied Sciences, University of Urbino Carlo Bo, Piazza Rinascimento, 6, 61029 – Urbino, Italy	1819	66	ANA-1A
Famlonga	Luca	Università di Pisa, Italia	994	264	ORG-1B
Famulari	Antonino	Politecnico di Milano, Italia; INSTM Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Italia	221	237	TEC-C
Fanali	Chiara	Università Campus Bio-Medico di Roma, Italia	1032, 1151, 1062, 1073, 1075	31, 31, 214, 214, 258	POSTER-A, POSTER-A, POSTER-B, POSTER-B, ANA-4A
Fanelli	Matteo	Università Politecnica delle Marche, Italia	907, 479, 416	31, 78, 150	POSTER-A, ALI-1A, ANA-2D
Fanizza	Elisabetta	Department of Chemistry, University of Bari, Via Orabona 4, 70126 (Bari) Italy; Institute for Chemical and Physical Processes, Italian National Research Council, Bari, c/o Department of Chemistry, University of Bari, Via Orabona 4, 70126 (Bari) Italy; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Bari Research Unit	938, 678, 740	214, 243, 252	POSTER-B, FIS-2B, FIS-3
Fanizzi	Annalisa	università degli studi di Bari Aldo Moro, 70125, Bari, Italia	137, 159	31, 31	POSTER-A, POSTER-A
Fanizzi	Francesco Paolo	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy	1155, 1023, 1153, 1428	31, 214, 214, 67	POSTER-A, POSTER-B, POSTER-B, INO-1A
Fantasia	Alessandra	Università di Cagliari	1045	148	ANA-2C
Fantasia	Serena Maria	Department of Synthetic Molecules Technical Development, Process Chemistry & Catalysis, F. Hoffmann-La Roche Ltd, Basel, Switzerland	166	240	INO-2A
Fantasma	Francesca	Università del Molise, Italia	1162, 1150	31, 214	POSTER-A, POSTER-B
Fantauzzi	Marzia	Dipartimento di Scienze Chimiche e Geologiche, Universita di Cagliari,Cittadella Universitaria,09042, Monserrato, Cagliari, Italy	1810, 953, 1554, 1593	31, 214, 250, 236	POSTER-A, POSTER-B, ANA-3C, TEC-D
Fanti	Federico	Università degli Studi di Teramo, Dipartimento di Bioscienze e Tecnologie Agro-alimentari ed Ambientali	1123, 1796, 1005, 1015	31, 31, 214, 258	POSTER-A, POSTER-A, POSTER-B, ANA-4A
Fantinati	Anna	Università degli studi di Ferrara, Department of Environmental and Prevention Sciences	688	143	ORG-1C
Fantoni	Tommaso	Università di Bologna, Italia	1837	31	POSTER-A
Fappani	Alice	Università di Milano-Bicocca, Italia	1760	214	POSTER-B
Faraoni	Paola	Department of Experimental and Clinical Medicine, University of Florence	1485	214	POSTER-B
Faravelli	Tiziano	Politecnico di Milano, Italia	1238	262	IND-2A
Farina	Matteo	Università di Roma, "La Sapienza", Italia	122	31	POSTER-A
Farinini	Emanuele	Dipartimento di Farmacia, Università degli Studi di Genova, Italia	1574	31	POSTER-A
Farinola	Gianluca	Università degli Studi di Bari Aldo Moro, Italia	1425, 1721	31, 214	POSTER-A, POSTER-B
Farinola	Gianluca M.	Dipartimento di Chimica, Università degli Studi di Bari, Via Orabona 4, Bari	828, 829	31, 214	POSTER-A, POSTER-B
Farinola	Gianluca M.	Dipartimento di Chimica Università degli Studi di Bari, Via Orabona 4, 70126 Bari, Italia	830	145	ORG-1D
Farinola	Gianluca Maria	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Via Edoardo Orabona 4, 70126 Bari, Italy	130, 775, 977	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Farinola	Gianluca Maria	Department of Chemistry, University of Bari "Aldo Moro"	1725	31	POSTER-A
Farinola	Gianluca Maria	Università degli Studi di Bari "Aldo Moro", Italia	1450, 1010, 1168, 1838	210, 214, 214, 214	ParallelTopic13 - ID: 210, POSTER-B, POSTER-B, POSTER-B
Farinola	Gianluca Maria	Department of Chemistry, Università degli Studi di Bari "Aldo Moro", Italia	1327	252	FIS-3
Farinola	Gianluca Maria	Università degli studi di Bari Aldo Moro, Italia	1824	256	ORG-4A
Farris	Stefano	Università degli studi di Milano, Italia	1148	31	POSTER-A
Fasano	Dominga	Dipartimento di Medicina Molecolare e Biotecnologie Mediche, Università degli Studi di Napoli Federico II, Dipartimento di Scienze Mediche e Chirurgiche Avanzate, Università degli studi della Campania Luigi Vanvitelli; Dipartimento di Scienze Mediche e Chirurgiche Avanzate, Università degli studi della Campania Luigi Vanvitelli	512	243	FIS-2B
Fasano	Valerio	Department of Chemistry Università degli Studi di Milano Via Camillo Golgi, 19, 20133 Milano (Italy)	1046, 1047, 1196, 1167, 1260	31, 31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B
Fasola	Elettra	University of Insubria, Department of Science and High Technology, Italy	1373	214	POSTER-B
Fasoli	Elisa	Politecnico di Milano, Italia	996	214	POSTER-B
Fassi	Enrico	Università degli Studi di Milano, Italia	1277	31	POSTER-A
Fassi	Enrico Mario Alessandro	Department of Pharmaceutical Sciences, University of Milan, 20133 Milan, Italy	827	31	POSTER-A
Fasulo	Francesca	Università degli studi di Napoli Federico II, Italia	666	257	TEO-C
Fattalini	Marco	Università degli studi di Milano, Italia	467	31	POSTER-A
Fattibene	Paola	Istituto Superiore di Sanità, Italia	1696	214	POSTER-B
Fattobene	Martina	UNICAM, Italia	1181	214	POSTER-B
Fattori	Giacomo	Università di Siena, Italia; CSGI - Center for Colloid and Surface Science	1815	31	POSTER-A
Fattori	Giacomo	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Italy	1379	235	FIS-1D
Fattorusso	Caterina	Department of Pharmacy, University of Naples Federico II, Via Domenico Montesano, 49, 80131 Napoli, (NA), Italy	824	214	POSTER-B
Fattorusso	Roberto	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania Luigi Vanvitelli	1293, 547, 905, 1782, 1737, 1742	31, 214, 265, 265, 266, 263	POSTER-A, POSTER-B, DID-B, DID-B, CSB-2, CSB-3
Favaro	Eleonora	Department of Environmental Sciences, Informatics and Statistics, Ca' Foscari University of Venice, Via Torino, 155-30172 Venice Mestre, VE, Italy	903	31	POSTER-A
Faverio	Chiara	università degli studi di Milano, Italia	390	264	ORG-1B
Favero	Gabriele	Dip. Biologia Ambientale, Sapienza Università di Roma, Italia	1473, 1590, 1761, 1471	31, 214, 214, 238	POSTER-A, POSTER-B, POSTER-B, ABC-B
Favero	Lucilla	Università di Pisa, Italia	738	149	ORG-2C
Favia	Pietro	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, 70126 Bari, Italy; Istituto di Nanotecnologie, CNR, 70126 Bari, Italy	1416, 1436	214, 214	POSTER-B, POSTER-B
Fazio	Alessia	Università della Calabria, Italia	1437	31	POSTER-A
Fazio	Alessia	Università della Calabria, Italia	584	78	ALI-1A
Fazio	Alessia	Università della Calabria, Italia	564	259	ALI-1B
Federici	Luca	Department of Innovative Technologies in Medicine and Dentistry, Center for Advanced Studies and Technology (CAST), University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy; Center for Advanced Studies and Technology (CAST), University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy	1607	214	POSTER-B
Federico	Stephanie	Università degli Studi di Trieste, Dipartimento di Scienze Chimiche e Farmaceutiche, Via Licio Giorgieri 1, 34127 Trieste	685, 684, 674	31, 214, 65	POSTER-A, POSTER-B, FAR-1A
Fegatelli	Greta	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", Italy	168	138	ANA-2A
Felicetti	Tommaso	Dept. of Pharmaceutical Sciences, University of Perugia, Via del Liceo 1, 06123, Perugia	402, 675, 1455	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Felicetti	Tommaso	Dipartimento di Scienze farmaceutiche, Università degli Studi di Perugia, Italia	1013	214	POSTER-B
Felici	Antonio	Evotec, Italia	929	190	ParallelTopic06 - ID: 190
Felizzato	Giorgio	University of Bergamo, Department of Law, Via Moroni 255, 24127 Bergamo, Italy	334, 928	31, 214	POSTER-A, POSTER-B
Felletti	Simona	Università degli studi di Ferrara, Italia	270, 456	31, 31	POSTER-A, POSTER-A
Felletti	Simona	Departmenit of Environmental and Prevention Sciences, University of Ferrara, Via Luigi Borsari n. 46 - 44121, Ferrara, Italy	491, 537	31, 181	POSTER-A, ParallelTopic10 - ID: 181
Felletti	Simona	Department of Environmental and Prevention Sciences, University of Ferrara, via L. Borsari 46, Ferrara, 44121, Italy	458	214	POSTER-B
Felletti	Simona	Department of Environmental and Prevention Sciences, University of Ferrara, via L. Borsari 46, 44121 Ferrara,	498	140	ANA-1B
Felletti	Simona	Dept. of Environmental and Prevention Sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy	574, 842	140, 140	ANA-1B, ANA-1B
Felli	Isabella Caterina	Magnetic Resonance Center, University of Florence, Via L. Sacconi 6, Sesto F.no (IT); Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3, Sesto F.no (IT	1560, 1367	31, 154	POSTER-A, CSB-1B
Felli	Nina	Sapienza Università di Roma, Italia	1698	31	POSTER-A
Feltracco	Matteo	Department of Environmental Sciences, Informatics and Statistics, Ca' Foscari University of Venice, Via Torino, 155-30172 Venice Mestre, VE, Italy	903	31	POSTER-A
Femoni	Cristina	Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italy	1791	31	POSTER-A

Feni	Lucia	dipartimento di Scienze Farmaceutiche, Università degli Studi di Milano, Italia	1132	255	FAR-2A
Fenizia	Simona	University of Piemonte Orientale, Department of Science and Technological Innovation, Viale Teresa Michel 11, 15121 Alessandria, Italy.; Biological Mass Spectrometry Lab, Center for Translational Research on Autoimmune and Allergic Diseases, University of Piemonte Orientale, Corso Trieste 15/A, 28100 Novara, Italy	1563	31	POSTER-A
Fenoglio	Stefano	Dipartimento di Scienze della Vita e Biologia dei Sistemi, Università di Torino, Torino, Italy; ALPSTREAM - Alpine Stream Research Center, Ostana (CN), Italy	1733	239	ABC-D
Fenti	Angelo	Department of Engineering, University of Campania "Luigi Vanvitelli", Via Roma 29, 81031 Aversa (CE)	1916	31	POSTER-A
Feoli	Alessandra	University of Salerno, Italia	834	214	POSTER-B
Ferdeghini	Claudio	Dipartimento di Farmacia, Università di Pisa, Italia	1124	31	POSTER-A
Ferlin	Francesco	Università degli studi di Perugia, Italia	412	31	POSTER-A
Ferlin	Francesco	Università degli studi di Perugia, Italia	1851	31	POSTER-A
Ferlin	Francesco	Università degli Studi di Perugia, Italia	1538	214	POSTER-B
Ferlito	Chiara	Università degli studi di Palermo, Italia	514	160	FIS-1B
Fermi	Andrea	Alma Mater Studiorum – Università di Bologna, Italia; Center for Chemical Catalysis – C3, Alma Mater Studiorum–Università di Bologna	866	145	ORG-1D
Fermo	Paola	Department of Chemistry, University of Milan, Via Golgi 19, 20133 Milano, Italy	1735, 1257, 1644, 1165, 1748	31, 214, 156, 239, 251	POSTER-A, POSTER-B, ABC-C, ABC-D, ANA-3D
Fernandes	Annabel	Universidade da Beira Interior (UBI), Covilhã, Portugal	629, 908	249, 156	ANA-3B, ABC-C
Fernández-Tejada	Alberto	CIC bioGUNE, Parque Tecnológico de Bizkaia, Edificio 801 A - 48160 Derio, Spain	284	266	CSB-2
Fernandez	Ernesto Gonzalez	ITENE, Paterna, Spain	764	31	POSTER-A
Fero	Erisa	UNIVERSITA DEGLI STUDI DI MILANO, Italia	766	31	POSTER-A
Feroci	Marta	Dept. Fundamental and Applied Sciences for Engineering (SBAI), Sapienza University of Rome, via Castro Laurenziano, 7, 00161 Rome, Italy	138	214	POSTER-B
Ferracane	Antonio	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1235	31	POSTER-A
Ferracane	Antonio	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina – Messina, Italy	1695	214	POSTER-B
Ferramosca	Antonio	University of Bergamo, Department of Management, Information and Production Engineering, Bergamo	633	214	POSTER-B
Ferrandi	Erica	CONSIGLIO NAZIONALE DELLE RICERCHE, Italia	1102	154	CSB-1B
Ferrandi	Erica E.	Istituto di Scienze e Tecnologie Chimiche ''Giulio Natta'', Consiglio Nazionale delle Ricerche	1132	255	FAR-2A
Ferrandi	Giovanni	University of Bologna, Italia	1374, 707	31, 132	POSTER-A, FAR-1B
Ferrando	Angelo	Centro di ricerca "C. Buonerba", Versalis s.p.a., Mantova, Italy	558	262	IND-2A
Ferrante	Antonio	Università degli Studi di Milano, Italia	1891	214	POSTER-B
Ferrara	Chiara	Università Milano Bicocca, Italia	777, 1267	214, 214	POSTER-B, POSTER-B
Ferrara	Francesca	University of Ferrara, Italia	816	31	POSTER-A
Ferrara	Sara	Technical University of Munich, Germany	1828, 794, 112	31, 214, 155	POSTER-A, POSTER-B, ELE-2
Ferrara	Vittorio	Department of Physics and Chemistry-Emilio Segrè, University of Palermo, 90128 Palermo, Italy	916, 1362	248, 234	ANA-3A, FIS-1C
Ferrarese	Irene	Università di Padova, Padova, Italia	692	260	ALI-2A
Ferrari	Alessandro	Università degli Studi di Milano Bicocca, Italia	1146	214	POSTER-B
Ferrari	Alessandro Raffaele	Università degli studi di Milano-Bicocca, Italia	1537	72	ELE-1
Ferrari	Ana	Takis S.r.l., Via Castel Romano 100, 00128, Rome, Italy	497	139	ORG-2A
Ferrari	Anna Maria	Dipartimento di Chimica, Università di Torino, via Giuria 5, 10125 Torino, Italy	823	257	TEO-C
Ferrari	Davide	Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Parma, Italy	1375	214	POSTER-B
Ferrari	Domenico	Syensqo	142	251	ANA-3D
Ferrari	Erika	Università degli Studi di Modena e Reggio Emilia, Dipartimento di Scienze Chimiche e Geologiche, via G. Campi 103, 41125 Modena, Italia	213, 193	214, 67	POSTER-B, INO-1A
Ferrari	Luca	Università di Pavia, Italia	614	31	POSTER-A
Ferrari	Veronica	Dipartimento di Scienze della Vita, Università di Modena e Reggio Emilia, Pad. Besta, Via Amendola 2, 42122, Reggio Emilia	326	250	ANA-3C
Ferrario	Giulio	Department of Pharmaceutical Sciences, University of Milan	1596	31	POSTER-A
Ferrario	Sara	Università degli Studi di Milano, Italia	373	31	POSTER-A
Ferraro	Anastasia	Department of Pharmacy, University of Napoli "Federico II", via D. Montesano 49, 80131, Naples Italy	1455	31	POSTER-A
Ferraro	Giorgia	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice and INSTM RU of Venice, via Torino 155, 30172 Venice, Italy	114, 1908	31, 31	POSTER-A, POSTER-A
Ferraro	Giovanni	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, Sesto Fiorentino, I-50019, Italy; Center for Colloid and Surface Science (CSGI), University of Florence, Via della Lastruccia 3, Florence, 50019, Italy	946	31	POSTER-A
Ferraro	Giuseppe	Dipartimento di Scienza Applicata e Tecnologia (DISAT), Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy	1564, 1771	31, 153	POSTER-A, TEC-B
Ferraro	Valeria	Department of Pharmacy—Pharmaceutical Sciences, University Aldo Moro-Bari, Via Orabona 4, 70126 Bari, Italy	978	259	ALI-1B
Ferrazzano	Lucia	Università di Bologna, Italia	1837, 914	31, 147	POSTER-A, ORG-2B
Ferreri	Loredana	Istituto di Chimica Biomolecolare, CNR, Via Paolo Gaifami 18, 95126 Catania, Italy	1534	148	ANA-2C
Ferrero	Riccardo	Università di Torino, Italia	690	31	POSTER-A
Ferretti	Anna Maria	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" (SCITEC)-CNR, via G. Fantoli 16/15 20138 Milano, Italy	1364	214	POSTER-B
Ferretti	Caterina	Department of Biology, University of Pisa, Via San Zeno 35-39, 56127, Pisa, Italy	341	165	INO-1B
Ferretti	Francesco	università degli studi di milano, Italia	1344	31	POSTER-A
Ferretti	Marysol	Department of Sviluppo Sostenibile e La Transizione Ecologica, University of Piemonte Orientale, Piazza S. Eusebio 5, 13100 Vercelli	1665	214	POSTER-B
Ferretti	Matteo	Department of Chemistry, University of Pavia, via T. Taramelli 12, 27100 Pavia	401, 398	31, 73	POSTER-A, ABC-A
Ferrettti	Francesco	Università degli studi di Milano, Italia	557	31	POSTER-A
Ferri	Davide	Paul Scherrer Institut PSI, Villigen, Switzerland	1178, 1205	160, 160	FIS-1B, FIS-1B
Ferri	Giulia	Politecnico di Milano, Italia	1704	31	POSTER-A
Ferri	Nicola	Università di Padova, Italia	1080	31	POSTER-A
Ferrini	Erica	Università di Parma, Italia; Chiesi Farmaceutici SpA, Italia	941	31	POSTER-A
Ferrino	Giuseppina	Università degli Studi di Salerno, Italia	454	245	ORG-3B
Ferrisi	Rebecca	Department of Pharmacy, University of Pisa, 56126 Pisa, Italy; Department of Pharmaceutical Sciences, University of Milan, 20133 Milano, Italy	1957	65	FAR-1A
Ferro	Jacopo	Dipartimento di Scienze e Innovazione Tecnologica, Università del Piemonte Orientale, Italia	1014	31	POSTER-A
Fessard	Thomas	SpiroChem AG, Mattenstrasse 22, 4058 Basel, Switzerland	1907	214	POSTER-B
Fessas	Dimitrios	Università degli Studi di Milano, Italia	1540	214	POSTER-B
Festa	Carmen	Università di Napoli Federico II, Italia	818, 1371	31, 31	POSTER-A, POSTER-A
Festa	Elisa	Università degli Studi di Milano, Italia	1165	239	ABC-D
Fetter	Lisa	University of California, Santa Barbara, California, United States	1411	146	ANA-2B
Fibbi	Donatella	Gestione Impianti di Depurazione Acque (G.I.D.A.) S.p.A., Via di Baciacavallo 36, Prato, 59100 (Italy)	1071	239	ABC-D
Fica	Sebastian M.	Department of Biochemistry, University of Oxford, Oxford, UK	355	77	CSB-1A
Fichera	Michelangelo	Department of Chemistry, University of Florence, Via della Lastruccia 3, 50019, Sesto Fiorentino, Florence, Italy	248, 1071	248, 239	ANA-3A, ABC-D
Fierri	Ilaria	Università degli studi di Verona, Italia	1074, 1093	214, 78	POSTER-B, ALI-1A
Fieschi	Franck	Université Grenoble Alpes, CNRS, CEA, Institut de Biologie Structurale, Grenoble, France	1271	139	ORG-2A
Figoli	Alberto	Istituto per la Tecnologia delle Membrane (CNR-ITM), Rende (CS) Italia	1194	31	POSTER-A
Figoli	Alberto	istituto per la tecnologia a membrana-consiglio nazionale delle ricerche (CNR-ITM), Italia	1514	31	POSTER-A
Figoli	Alberto	Institute on Membrane Technology, National Research Council of Italy (CNR-ITM), Rende (CS), Italy	1676, 1777, 1738, 632, 1490, 1728, 1855, 1466, 1711	31, 45, 174, 214, 214, 214, 214, 153, 159	POSTER-A, ParallelTopic06, ParallelTopic03 - ID: 174, POSTER-B, POSTER-B, POSTER-B, POSTER-B, TEC-B, IND-1D

Filice	Marco	Universidad Complutense de Madrid (UCM), Spain	1803	214	POSTER-B
Filiddani	Gianluca	Martur Italy srl, Grugliasco (TO), Italy	1677	159	IND-1D
Filippini	Francesco	Dipartimento di Biologia, Università degli Studi di Padova, Italia	754	31	POSTER-A
Filippini	Giacomo	Università di Trieste, Italia	1931	141	ORG-1A
Filipponi	Paolo	Department of Pharmaceutical Sciences, University of Perugia, Via del Liceo 1, 06123 Perugia, Italy; Novartis Pharma AG, CH-4002 Basel, Switzerland	286	31	POSTER-A
Filosa	Rosanna	Department of Science and Technology, University of Sannio, Benevento, Italy; Advanced Medical Pharma (AMP-Biotec), Healthcare Research and Innovation Center, Benevento, Italy	1445	151	ORG-2D
Fimognari	Carmela	Alma Mater Studiorum - Università di Bologna, Bologna	1556	214	POSTER-B
Fin	Andrea	Dipartimento di Chimica - Università di Torino, Italia	669, 1656, 1702, 1828, 794, 1595	31, 31, 31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B
Fina	Angelica	Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Via Pietro Giuria 9, I-10125 Torino, Italy	238	186	ParallelTopic01 - ID: 186
Finamore	Claudia	Università di Napoli Federico II, Italia	818, 655	31, 214	POSTER-A, POSTER-B
Finelli	Valeria	Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15/A, I-10135, and Via P. Giuria 7, I-10125, Turin, Italy; University School of Advanced Studies, IUSS Pavia, Palazzo del Broletto, Piazza della Vittoria 15, I-27100, Pavia, Italy	423	31	POSTER-A
Fini	Paola	Consiglio Nazionale delle Ricerche CNR-IPCF, UOS Bari, Via Orabona, 70126 Bari, Italy	670	31	POSTER-A
Fiore	Luca	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", Via della Ricerca Scientifica 1, 00133 Rome, Italy; SENSE4MED, Via Bitonto, 139, 00133, Rome, Italy	176, 168	31, 138	POSTER-A, ANA-2A
Fiore	Tiziana	Department of Physics and Chemistry - Emilio Segrè, University of Palermo, Viale delle Scienze, building 17, 90128 Palermo, Italy	263	251	ANA-3D
Fiorentini	Carlo	Divisione didattica SCI, Italia	2031	179	ParallelTopic08 - ID: 179
Fiorentino	Antonino	Department of Chemistry and Biology "Adolfo Zambelli", University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano, SA, Italy	293	31	POSTER-A
Fiorenza	Roberto	Università di Catania, Italia	482, 896, 516	31, 157, 159	POSTER-A, IND-1B, IND-1D
Fiori	Jessica	Dipartimento di Chimica "G. Ciamician", Alma Mater Studiorum-Università di Bologna	1350, 1846	31, 214	POSTER-A, POSTER-B
Fiori	Selene	Università degli studi di Teramo, Italia	843, 596	31, 142	POSTER-A, ANA-1C
Fiorica	Calogero	Università Degli Studi di Palermo, Italia	365	70	TEF-2
Fiorillo	Bianca	Università di Napoli Federico II, Italia	655	214	POSTER-B
Fiorini	Federica	Department of Pharmaceutical Science, Università degli Studi di Milano, Milan 20133, Italy.	162	165	INO-1B
Fiorini	Gloria	University of Rome "La Sapienza", Dept. of Chemistry, P.le Aldo Moro 5, Rome, Italy	760	214	POSTER-B
Fiorini	Maurizio	DICAM Università di Bologna	1881	211	ParallelTopic14 - ID: 211
Fiorini	Valentina	Dipartimento di Chimica Industriale 'Toso Montanari', Università degli Studi di Bologna, Italy	204, 302	214, 166	POSTER-B, INO-1C
Fiorino	Ferdinando	Department of Pharmacy, "Federico II" University of Naples, 80131 Naples, Italy	970	214	POSTER-B
Fiorito	Daniele	Dipartimento di Chimica, Materiali e Ingegneria Chimica "Giulio Natta", Politecnico di Milano, Via Mancinelli 7, 20131, Milano	124, 139	31, 264	POSTER-A, ORG-1B
Fiorito	Filomena	Department of Veterinary Medicine and Animal Production, University of Naples Federico II	1293	31	POSTER-A
Fiorito	Serena	Università degli studi "G. D'annunzio" Chieti-Pescara, Italia	894, 356	31, 211	POSTER-A, ParallelTopic14 - ID: 211
Fiorucci	Stefano	University of Perugia, Perugia, Italy	818, 655, 658, 657	31, 214, 214, 147	POSTER-A, POSTER-B, POSTER-B, ORG-2B
Fito	Carlos	ITENE, Paterna, Spain	764	31	POSTER-A
Fittavolini	Corrado	Eni S.p.A., Italia	1354	203	ParallelTopic06 - ID: 203
Flagella	Zina	Department of Agriculture, Food, Natural Resources and Engineering (DAFNE), Via Napoli 25, 71122, Foggia, Italya	588, 583	214, 264	POSTER-B, ORG-1B
Flemma	Annarita	Università di Bari "Aldo Moro", Italia, Dipartimento di Chimica	775, 828, 1010	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Flint	Lucy Ellen	AstraZeneca, United Kingdom	1928	172	ParallelTopic01 - ID: 172
Flores	Ainara	SMN Centre for Material Science and Nanotechnology, Department of Chemistry, University of Oslo, N-0315, Oslo, Norway	423	31	POSTER-A
Floresta	Giuseppe	Università degli studi di Catania, Italia	1597, 493, 970, 1940	31, 214, 214, 149	POSTER-A, POSTER-B, POSTER-B, ORG-2C
Florio	Daniele	Department of Pharmacy, University of Naples "Federico II", 80131, Naples, Italy	1751	67	INO-1A
Florio	Piero	Politecnico di Milano, Italia	925	214	POSTER-B
Foca	Giorgia	Università di Modena e Reggio Emilia, Dipartimento di Scienze della Vita; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Firenze	331, 211, 326	31, 214, 250	POSTER-A, POSTER-B, ANA-3C
Fochi	Mariafrancesca	Università di Bologna, Italia	912	247	ORG-3D
Foddai	Aurora Francesca	DSCFMN, Università di Sassari, Italia	945	234	FIS-1C
Fogar	Greta	Department of Chemical and Pharmaceutical Sciences, University of Trieste, Trieste (Italy)	623	165	INO-1B
Foglia	Efrem Alessandro	Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia-Romagna, Brescia, Italia	160	146	ANA-2B
Fonderico	Tommaso	University of Ferrara, Italia	975	214	POSTER-B
Fontana	Angelo	Istituto di Chimica Biomolecolare (ICB), Dipartimento Scienze Chimiche e Tecnologie dei Materiali (DSCTM), Consiglio Nazionale delle Ricerche (CNR), Via Campi Flegrei, 34 – 80078 Pozzuoli, Napoli	1974	212	ParallelTopic15 - ID: 212
Fontana	Antonella	Department of Pharmacy, University G. d'Annunzio of Chieti-Pescara, Italy	1701	214	POSTER-B
Fontana	Daniela	COMAU, Italia	429	72	ELE-1
Fontana	Francesca	Università degli Studi di Bergamo, Dipartimento di Ingegneria e Scienze Applicate	1298	138	ANA-2A
Fontana	Raffaella	National Research Council - National Institute of Optics (CNR-INO), Largo E. Fermi 6, 50125 Florence, FI, Italy	1286	214	POSTER-B
Fontananova	Enrica	Institute on Membrane Technology, National Research Council of Italy (CNR-ITM), Rende (Italy)	1738	174	ParallelTopic03 - ID: 174
Fontanarosa	Marco	University of Parma, Department of Chemistry, Life Sciences and Environmental Sustainability, Parco Area delle Scienze 17/A, Parma, Italy	1710, 1741	31, 140	POSTER-A, ANA-1B
Fontanesi	Claudio	Università di Modena e Reggio Emilia, Italia	909	31	POSTER-A
Fontàs	Claudia	Universitat de Girona, Spain	581	249	ANA-3B
Fonte	Patrizia	nessuna, Italia	1355	31	POSTER-A
Foppoli	Anastasia	Dipartimento di Scienze Farmaceutiche, Sez. Tecnologia e Legislazione Farmaceutiche "M.E. Sangalli", Università degli Studi di Milano, Via G. Colombo 71, 20133 Milan	1548	214	POSTER-B
Foransiero	Paolo	Universita' degli Studi di Trieste, Italia	1481	204	ParallelTopic07 - ID: 204
Forcellini	Camilla	University of Florence and CSGI, Via della Lastruccia 3-13, 50019, Sesto Fiorentino, Italy.	833	238	ABC-B
Forghieri	Giulia	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice and INSTM RU of Venice, via Torino 155, 30172 Venice, Italy	114, 1908	31, 31	POSTER-A, POSTER-A
Formenti	Matteo	Department of Chemistry, Università degli Studi di Milano, Via Golgi 19, Milano	521, 1392	31, 31	POSTER-A, POSTER-A
Formica	Mauro	Università degli Studi di Urbino "Carlo Bo", Italia	1451, 1248	31, 214	POSTER-A, POSTER-B
Fornara	Matthieu	Università degli Studi di Milano, Dipartimento di Chimica, Via C. Golgi, 19, 20133 Milano	124	31	POSTER-A
Fornarini	Paola	R2ES group, Department of Biotechnology, Chemistry and Farmacy, University of Siena, Italy	1216	31	POSTER-A
Fornasaro	Stefano	Department of Chemical and Pharmaceutical Sciences, University of Trieste, Via Giorgieri 1, 34127 Trieste, Italy	1511	249	ANA-3B
Fornaseri	Federico	Università di Torino, Italia	1673	31	POSTER-A
Fornasiero	Paolo	Università di Trieste, Italia	1983, 1985, 702	191, 191, 214	ParallelTopic07 - ID: 191, ParallelTopic07 - ID: 191, POSTER-B
Forni	Alessandra	Consiglio Nazionale delle Ricerche, Istituto di Scienze e Tecnologie Chimiche "G. Natta" (CNR-SCITEC), Italy	204, 631, 1579	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Forte	Jacopo	Department of Drug Chemistry and Technology, Sapienza University of Rome, Italy	1476	31	POSTER-A
Fortino	Mariagrazia	Università "Magna Graecia" di Catanzaro, Italia	217	166	INO-1C
Fortuna	Cosimo	Dipartimento di Scienze Chimiche (DSC), Università di Catania, V.le A.Doria 6, Catania, 95125, Italy	1594	31	POSTER-A
Fortuna	Cosimo Gianluca	Università di Catania, Italia	1197	149	ORG-2C
Fortunati	Simone	Università di Parma, Italia	1200, 776	31, 138	POSTER-A, ANA-2A
Fortunato	Marco	CNR ICMATE, Italia	1923	214	POSTER-B

Fortunato	Michele Emanuele	Università di Napoli "Federico II", Dipartimento di Scienze Chimiche, 80126 Napoli, Italy.; CIRCC, Consorzio Interuniversitario di Reattività Chimica e Catalisi,, 70126 Bari, Italia	982	158	IND-1C
Fortunato	Stefania	Università degli Studi di Bari Aldo Moro, Italia	1427	239	ABC-D
Forza	Michele	università degli studi di Milano, Italia	1232	31	POSTER-A
Foschi	Martina	Department of Physical and Chemical Sciences, University of L'Aquila, Via Vetoio, 67100, Coppito, L'Aquila, Italy	1902, 1770	31, 251	POSTER-A, ANA-3D
Foti	Claudia	Università degli Studi di Messina	872	148	ANA-2C
Foti	Salvatore	Università di Catania, Italia	837	256	ORG-4A
Fouad	Manar	Università degli studi di Milano, Italia; Alexandria University	557	31	POSTER-A
Fracassi	Francesco	University of Bari Aldo Moro - Department of Chemistry, Via Orabona 4-70125, Bari; Institute of Nanotechnology CNR NANOTEC, c/o Department of Chemistry, University of Bari Aldo Moro, Via Orabona, 4 - 70125 Bari	1420, 1415, 1414	214, 240, 253	POSTER-B, INO-2A, INO-2C
Fracchia	Martina	Università degli studi di Pavia, Italia; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Italia	1083	51	ParallelTopic09
Fracchia	Martina	Università degli Studi di Pavia, Italia	1295	214	POSTER-B
Fracchia	Martina Ilaria	Università degli studi di Pavia, Dipertimento di Chimica, viale Taramelli 12, Pavia, Italy	1156	31	POSTER-A
Francavilla	Fabio	Dipartimento di Farmacia - Scienze del Farmaco, Università degli Studi di Bari Aldo Moro, Italia	1660	31	POSTER-A
Francesca	Derobertis	Politecnico di Bari, Italia	1913	31	POSTER-A
Franceschi	Clizia	Fomet SpA, San Pietro di Morubio, Verona, Italia	692	260	ALI-2A
Francesco	Cacciola	Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Via Consolare Valeria, 98125, Messina, Italy	1290	214	POSTER-B
Franchi	Daniele	Istituto di Chimica dei Composti Organometallici - CNR, Sesto Fiorentino, Italia	576, 1477	31, 31	POSTER-A, POSTER-A
Franchi	Daniele	Istituto di Chimica dei Composti Organometallici - CNR, Via Madonna del Piano 10, Sesto Fiorentino, Italia	1890	31	POSTER-A
Franchi	Daniele	CNR,ICCOM, Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy	667	214	POSTER-B
Franchi	Federico Sascha	Politecnico di Milano, Italy	1215	214	POSTER-B
Franchi	Federico Sasha	Politecnico di Milano, Italia	1897	31	POSTER-A
Franchi	Paola	Department of chemistry "Giacomo Ciamician", University of Bologna, via Gobetti 85 40129 Bologna, Italy	141	214	POSTER-B
Franchina	Flavio A	Department of Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, Via Luigi Borsari n. 46 - 44121, Ferrara, Italy	646	66	ANA-1A
Franchina	Flavio A.	Department of Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, Via Luigi Borsari n. 46 -44121, Ferrara, Italy	491, 578	31, 214	POSTER-A, POSTER-B
Franchina	Flavio Antonio	Dept of chemical, pharmaceutical and agricultural sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy	537, 188, 842	181, 214, 140	ParallelTopic10 - ID: 181, POSTER-B, ANA-1B
Franchini	Silvia	University of Modena and Reggio Emilia (UNIMORE), Via Giuseppe Campi, 103, Modena	743	31	POSTER-A
Francia	Carlotta	Politecnico di Torino, Italia	835	72	ELE-1
Franck	Barath	G-lyte SAS, France	424	31	POSTER-A
Franco	Ana Rita	Università di Milano-Bicocca, Italia	741	214	POSTER-B
Franco	Federico	Department of Chemical and Pharmaceutical Sciences University of Trieste	702	214	POSTER-B
Franco	Francesca	Università degli studi di Milano, Italia	545, 390	31, 264	POSTER-A, ORG-1B
Franco	Massimo	Department of Pharmacy-Pharmaceutical Sciences, University of Bari "Aldo Moro", Via E. Orabona, 4, I-70125 Bari, Italy	652	70	TEF-2
Francolini	Iolanda	Sapienza Università di Roma, Italia	1107, 1698, 1460	31, 31, 69	POSTER-A, POSTER-A, IND-1A
Franconi	Jean Michel	University of Bordeaux-CNRS, France	1353	31	POSTER-A
Franzè	Silvia	Università degli Studi di Milano, Italia	1620, 1727	214, 214	POSTER-B, POSTER-B
Franzini	Marcello	Department of Chemistry, NIS Interdepartmental Centre and INSTM Reference Centre. University of Turin, Torino, Italy; National Interuniversity Consortium of Materials Science and Technology (INSTM), Firenze, Italy	1677	159	IND-1D
Franzoni	Giulia	Università degli Studi di Milano, Italia	1891	214	POSTER-B
Frapiccini	Emanuela	National Research Council (CNR), Institute for Biological Resources and Marine Biotechnology (IRBIM), Ancona, Italy	478	31	POSTER-A
Frappa	Mirko	istituto per la tecnologia a membrana-consiglio nazionale delle ricerche (CNR-ITM), Italia	1514	31	POSTER-A
Frasconi	Marco	Università degli Studi di Padova, Italia	446, 883, 881	31, 31, 138	POSTER-A, POSTER-A, ANA-2A
Frascotti	Gianni	Department of Biotechnology and Biosciences, University of Milano-Bicocca, 20126 Milano, Italy.	393	214	POSTER-B
Frassoldati	Alessio	Politecnico di Milano, Italia	1238	262	IND-2A
Fratello	Chiara	Institute for the Study of Nanostructured Materials (ISMN), National Research Council (CNR), SP35d, 9, 00010 Montelibretti (Rome); Department of Chemical Engineering Materials Environment, Sapienza University of Rome, Via Eudossiana, 18, 00184 Rome	1486	235	FIS-1D
Fratelloreto	Federico	Università di Roma "La Sapienza", Italia	1621	31	POSTER-A
Fratepietro	Annapia	Università di Milano-Bicocca, Italia	1800	31	POSTER-A
Fratini	Emiliano	CSGI, Florence	608	31	POSTER-A
Fratini	Emiliano	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, Sesto Fiorentino, I-50019, Italy; Center for Colloid and Surface Science (CSGI), University of Florence, Via della Lastruccia 3, Florence, 50019, Italy	946, 1713	31, 31	POSTER-A, POSTER-A
Fratini	Michele	ISPRA Istituto Superiore per la Protezione e Ricerca Ambietale, Italia	1917	173	ParallelTopic02 - ID: 173
Frattini	Valeria	ARPA Lombardia /OICFL, Italia	1388	171	ParallelTopic11
Fraulini	Francesca	Università di Modena e Reggio Emilia, Italia	208, 323	31, 167	POSTER-A, INO-1D
Frédéric	Sauvage	University of Turin, Italy; CNRS of Amiens, France	424	31	POSTER-A
Fredi	Giulia	Department of Industrial Engineering and INSTM Research Unit, University of Trento, Via Sommarive 9, 38123, Trento, Italy	1408	31	POSTER-A
Frei	Angelo	Department of Chemistry, Biochemistry & Pharmaceutical Sciences, University of Bern, Freiestrasse 3, 3012 Bern, Switzerland	2022	167	INO-1D
Freitag	Marina	School of Natural and Environmental Science, Newcastle University, Newcastle upon Tyne,UK	1677	159	IND-1D
Freunberger	Stefan	ALISTORE European Research Institute; Institute of Science and Technology Austria (ISTA)	718	39	ParallelTopic03
Frezza	Chiara	Department of Chemistry, Sapienza University of Rome, Italy	1460	69	IND-1A
Frigerio	Alessandra	Università Milano Bicocca, Italia	777	214	POSTER-B
Frigerio	Giorgia	Università degli Studi di Milano, Italia	1467	70	TEF-2
Frigerio	Roberto	SCITEC CNR, Italia	1950	175	ParallelTopic04 - ID: 175
Frigerio	Roberto	Consiglio Nazionale delle Ricerche, SCITEC	155	214	POSTER-B
Frignani	Elia	Università di Modena e Reggio Emilia, Italia	212	31	POSTER-A
Frignani	Elia	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia, via G. Campi 103, 41125, Modena, Italy.	193	67	INO-1A
Frigo	Stefano	University of Pisa, Italia	1021	214	POSTER-B
Frondaroli	Maria Chiara	Università Campus Bio-Medico di Roma, Italia	1032	31	POSTER-A
Fronzoni	Giovanna	Department of Chemical and Pharmaceutical Sciences, University of Trieste, via L. Giorgieri 1, 34127, Italy	1050, 1492	214, 214	POSTER-B, POSTER-B
Fuente	Asunción	Centro de Astrobiología (CSIC/INTA), Torrejón de Ardoz, 28806, Spain	184	68	FIS-1A
Fulignati	Sara	Università di Pisa, Italia	756	47	ParallelTopic07
Fulignati	Sara	University of Pisa, Italia	1021	214	POSTER-B
Fumagalli	Daniele	ELectroANaliytical Chemistry Group, Dipartimento di Chimica, Università degli Studi di Milano,via Golgi 19, 20133 Milano, Italy	239, 181	31, 155	POSTER-A, ELE-2
Fumagalli	Laura	Università degli Studi di Milano, Italia	1297, 1132, 1752	31, 255, 255	POSTER-A, FAR-2A, FAR-2A
Fumagalli	Lorenzo	Department of Chemistry, Materials, and Chemical Engineering "Giulio Natta", Politecnico di Milano, 20131 Milan, Italy	299	31	POSTER-A
Fumanti	Fiorenzo	ISPRA - Geological Survey of Italy, Italia	2030		
Funicello	Maria	Università della Basilicata, Italia	1206, 577	31, 265	POSTER-A, DID-B
Fuochi	Virginia	Dipartimento di Scienze Biomediche e Biotecnologiche (Biometec), Università di Catania, Via S. Sofia 97, 95123, Catania, Italia	493	214	POSTER-B
Fuoco	Ilaria	Istituto per la Tecnologia delle Membrane (CNR-ITM), Rende (CS) Italia	1194	31	POSTER-A
Furlan	Chiara	Molecular Imaging Centre, Department of Molecular Biotechnology and Health Sciences, University of Turin, Via Nizza 52, Turin	434	165	INO-1B
Furlan	Nicola	Ca' Foscari, Italia	1089	31	POSTER-A
Furlanetto	Sandra	Università di Firenze, Italia	918	146	ANA-2B
Furneri	Pio Maria	Dipartimento di Scienze Biomediche e Biotecnologiche (Biometec), Università di Catania, Via S. Sofia 97, 95123, Catania, Italia	493	214	POSTER-B

Fusaro	Luca	Department of Health Sciences, University of Piemonte Orientale, & Tissuegraft srl., Novara (Italy)	201	243	FIS-2B
Fusco	Giuliana	Department of Pharmacy, University of Naples Federico II, via D. Montesano 49, 80131-Naples, Italy	1106	31	POSTER-A
Fusco	Laura	Università di Padova, Italia	995	199	ParallelTopic01 - ID: 199
Fusè	Marco	Università degli studi di Brescia, Italia	1545	31	POSTER-A
Fuso	Andrea	Department of Experimental Medicine, Sapienza University of Rome, Viale Regina Elena 324, 00161 Rome, Italy	1743	138	ANA-2A
Fuso	Andrea	Università degli Studi di Parma, Italia	1031	78	ALI-1A
Fuster-López	Laura	Università Politècnica di Valencia	1896	31	POSTER-A
G Rees	Matthew	Broad Institute of Harvard and MIT, Cambridge, USA.	985	214	POSTER-B
Gabbani	Alessio	Department of Chemistry and Industrial Chemistry, University of Pisa, Via Moruzzi 3, 56124, Pisa (PI), Italy; Department of Physics and Astronomy, University of Florence, via Sansone 1, 50019, Sesto Fiorentino (FI), Italy	769	245	ORG-3B
Gabbianelli	Rosita	Università di Camerino, Italia	296	143	ORG-1C
Gabbricci	Giulia	Università di Siena, Dipartimento di Biotecnologie, Chimica e Farmacia, Italia; CSGI - Consorzio Interuniversitario per i Sistemi a Grande Interfase, Firenze, Italia	1176, 1632	165, 243	INO-1B, FIS-2B
Gabellini	Alessio	Università degli Studi di Firenze, Italia	850	31	POSTER-A
Gabriele	Bartolo	Laboratory of Industrial and Synthetic Organic Chemistry (LISOC), Department of Chemistry and Chemical Technologies, University of Calabria, Via P. Bucci, 12/C, 87036 Arcavacata di Rende (CS), Italy	884	31	POSTER-A
Gabriele	Bartolo	Laboratory of Industrial and Synthetic Organic Chemistry (LISOC), Department of Chemistry and Chemical Technology (CTC), University of Calabria, Rende (CS), Italy	1777	45	ParallelTopic06
Gabriele	Bartolo	Università della Calabria, Italia	459, 464, 682, 711, 799, 856, 579	62, 214, 214, 214, 214, 214, 256	ParallelTopic15, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, ORG-4A
Gabriele	Caterina	Università degli Studi "Magna Graecia" di Catanzaro, Italia	1497	31	POSTER-A
Gabrielli	Serena	Università di Camerino, Italia	1225, 296, 1750	31, 143, 143	POSTER-A, ORG-1C, ORG-1C
Gado	Francesca	Department of Pharmaceutical Sciences, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy.	601, 696, 1752	31, 31, 255	POSTER-A, POSTER-A, FAR-2A
Gado	Irene	Università di Milano, Italia	887, 560	31, 149	POSTER-A, ORG-2C
Gaeta	Carmine	Laboratory of Supramolecular Chemistry (SupraLab@UniSa), Department of Chemistry and Biology 'A. Zambelli', University of Salerno, Via Giovanni Paolo II 132, I-84984 Fisciano (SA), Italy	452, 1775, 1716, 454	31, 31, 71, 245	POSTER-A, POSTER-A, MAS, ORG-3B
Gaeta	Massimiliano	Università degli Studi di Catania, Italia	448	241	INO-2B
Gagliardi	Agnese	Università degli Studi "Magna Graecia", Italia	1668, 1329	214, 70	POSTER-B, TEF-2
Gagliardi	Laura	University of Chicago, United States of America	1939	20	PL-A
Gaglio	Raimondo	Department of Agricultural, Food and Forest Sciences (SAAF), Università degli Studi di Palermo	752	31	POSTER-A
Gaglione	Rosa	Dipartimento di Scienze Chimiche, Università di Napoli Federico II, Napoli	910	31	POSTER-A
Gagni	Paola	SCITEC CNR, Italia	1950	175	ParallelTopic04 - ID: 175
Gaillard	Sylvain	Normandie University, ENSICAEN, UNICAEN, CNRS, LCMT, 14000 Caen, France	113	155	ELE-2
Gajewska	Agnieszka	Institute of Physical Chemistry, Polish Academy of Science, Kasprzaka 44/52, Warsaw (PL); Faculty of Mathematics and Science, Cardinal Stefan Wyszyński University, Dewajtis 5,01-815 Warsaw (PL)	1463	31	POSTER-A
Galano	Jean-Marie	Institut des Biomolécules Max Mousseron IBMM, UMR 5247 CNRS, Université de Montpellier, BP 14 491 15 av Charles Flahault, 34090, ENSCN, France	1438	258	ANA-4A
Galano	Silvia	Dipartimento di Fisica "E.Pancini", Università degli Studi di Napoli Federico II, Italia	768	265	DID-B
Galantini	Luciano	Sapienza Università di Roma, Italia	1095, 1460, 1229	214, 69, 243	POSTER-B, IND-1A, FIS-2B
Galarini	Roberta	IZS DELL'UMBRIA E DELLE MARCHE "TOGO ROSATI", Italia	720	184	ParallelTopic14 - ID: 184
Galassi	Francesco Maria	Dept. Anthropology, University of Lodz, Polonia	1473	31	POSTER-A
Galassi	Lucrezia	University of Bologna, Dept. of Pharmacy and Biotechnology, via San Donato 19/2, Bologna, Italy.	1598	31	POSTER-A
Galassi	Rossana	University of Camerino, Italia	1104, 1140	214, 240	POSTER-B, INO-2A
Galathri	Eirini M.	National and Kapodistrian University of Athens, Greece	877	31	POSTER-A
Galati	Salvatore	Department of Pharmacy, University of Pisa, via Bonanno Pisano 6, I-56126, Pisa, Italy	1173	136	FAR-1D
Galaverna	Gianni	Università di Parma, Italia	948, 403	31, 193	POSTER-A, ParallelTopic09 - ID: 193
Galeazzi	Roberta	Università Politecnica delle Marche, Italia	1706, 1679	214, 151	POSTER-B, ORG-2D
Galej	Wojciech P.	European Molecular Biology Laboratory, Grenoble, France	355	77	CSB-1A
Galeotti	Armando	Versalis S.p.A.	164	262	IND-2A
Galgano	Pierantonio	Università della Basilicata, Italia	1206	31	POSTER-A
Galiano	Francesco	Istituto per la Tecnologia delle Membrane (CNR-ITM), Rende (CS) Italia	1194, 1514, 1676	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Galiano	Francesco	Institute on Membrane Technology, National Research Council of Italy (CNR-ITM), Rende (CS), Italy; WEMBRANEX SRL, Cosenza, Italu	1777, 1738, 464, 632, 1711	45, 174, 214, 214, 159	ParallelTopic06, ParallelTopic03 - ID: 174, POSTER-B, POSTER-B, IND-1D
Galić	Nives	Faculty of Science, University of Zagreb, Zagreb, Croatia	1893	214	POSTER-B
Galiè	Simone	Università degli studi di Milano, Italia	557	31	POSTER-A
Galimberti	Maurizio	Politecnico di Milano, Italia	782, 997, 998, 993, 1204, 593, 943, 609	31, 31, 31, 45, 177, 214, 214, 153	POSTER-A, POSTER-A, POSTER-A, ParallelTopic06, ParallelTopic06 - ID: 177, POSTER-B, POSTER-B, TEC-B
Galimberti	Maurizio Stefano	Politecnico di Milano, Italia	857, 996	31, 214	POSTER-A, POSTER-B
Galimberti	Stefania	Bicocca Bioinformatics Biostatistics and Bioimaging B4 Center, School of Medicine and Surgery, University of Milano-Bicocca, Monza, Italy	1535	31	POSTER-A
Galindo	Agustin	Università di Siviglia, Spagna	935	240	INO-2A
Galinetto	Pietro	Università degli studi di Pavia, Dipartimento di Fisica, Italia	898	254	INO-3
Galletta	Micaela	Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Via Consolare Valeria, 98125, Messina, Italy	1276, 1290	31, 214	POSTER-A, POSTER-B
Galli	Elisa	Università degli Studi di Brescia, Italia	1397	214	POSTER-B
Galli	Federico	Université de Sherbrooke, Département de génie chimique et de génie biotechnologique, 2500 boul. de l'Université, Sherbrooke Québec, Canada, J1K 2R1	120	157	IND-1B
Galli	Marco	Dept. of Classics, Sapienza University of Rome	1471	238	ABC-B
Galli	Michela	Department of Chemistry, University of Milan, Via Golgi 19, 20133 Milano, Italy, Milano, Italy	1201	147	ORG-2B
Galli	Paolo	University of Dubai	1784	214	POSTER-B
Galli	Simona	Università degli Studi dell'Insubria	958	214	POSTER-B
Galliano	Simone	Department of Chemistry and NIS Interdepartmental Centre, University of Turin, Via Pietro Giuria 7, Torino, 10125, Italy; National Reference Center for Electrochemical Energy Storage - INSTM, Firenze 50121, Italy	1092, 1241, 1809, 892, 1677, 561	31, 31, 31, 201, 159, 262	POSTER-A, POSTER-A, POSTER-A, ParallelTopic03 - ID: 201, IND-1D, IND-2A
Gallichi Nottiani	Duccio	University of Parma, Department of Engineering and Architecture, Parco Area delle Scienze, 181/A, Parma, Italy	1710	31	POSTER-A
Gallina Toschi	Tullia	Alma Mater Studiorum - Università di Bologna	1401	214	POSTER-B
Gallo	Alessandra	Dept. of Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn, Napoli, Italy	385	153	TEC-B
Gallo	Angelo	Università di Torino, Torino, Italia	501	31	POSTER-A
Gallo	Emma	Department of Chemistry, University of Milan, Via C. Golgi 19, 20133 Milano, Italy	1651	31	POSTER-A
Gallo	Raffaella	Dept. of Clinical and Experimental Medicine, University Magna Grecia of Catanzaro, 88100 Catanzaro, Italy	598	31	POSTER-A
Gallo	Valeria	Università Campus Bio-Medico di Roma, Italia	1075	258	ANA-4A
Gallo	Vito	Politecnico di Bari, Italia; Innovative Solutions S.r.l., Italia	1098, 831, 1729	31, 214, 236	POSTER-A, POSTER-B, TEC-D
Galloni	Melissa	Dipartimento di Chimica, Università degli Studi di Milano, via C. Golgi, 19, 20133, Milano, Italy	206	31	POSTER-A
Galloni	Melissa Greta	Dipartimento di Chimica, Università degli Studi di Milano, via Golgi 19, 20133 Milano, Italia	195	159	IND-1D
Galloni	Pierluca	Università di Roma Tor Vergata, Italia	753, 1255, 1008, 316	31, 31, 214, 161	POSTER-A, POSTER-A, POSTER-B, TEO-B
Gallorini	Giulio	Università di Bologna, Italia; Center for Chemical Catalysis -C3-	861	143	ORG-1C
Gallorini	Giulio	Università di Pisa, Italia	738	149	ORG-2C
Gallorini	Riccardo	Università degli Studi di Firenze, Sesto Fiorentino, Italia	939	31	POSTER-A
Gallucci	Noemi	Università degli Studi di Napoli Federico II, Italia; CSGI - Center for Colloid and Surface Science, 50019, Sesto Fiorentino, Italy	1539, 408, 1652	31, 242, 243	POSTER-A, FIS-2A, FIS-2B
Galluppo	Elisabetta	Istituto di Chimica Biomolecolare del CNR, Padova, IT	1508	77	CSB-1A

Galoppo	Simona	Department of Engineering, University of Campania "Luigi Vanvitelli", Via Roma 29, 81031 Aversa (CE)	1916	31	POSTER-A
Galvagno	Rosaria	University of Catania, Via Santa Sofia 63, 95123 Catania, Italy	1735	31	POSTER-A
Galvani	Francesca	Dipartimento di Scienze degli Alimenti e del Farmaco, Università di Parma, Parco Area delle Scienze 27/A, 43124, Parma, Italia	1628	214	POSTER-B
Gama	Sofia	Instituto Superior Técnico, Universidade de Lisboa, Portugal	1249, 801, 1534	31, 214, 148	POSTER-A, POSTER-B, ANA-2C
Gamba	Elia	University of Bergamo, Department of Management, Information and Production Engineering, Bergamo	633	214	POSTER-B
Gambacorta	Nicola	Dipartimento di Farmacia-Scienze del Farmaco, Università degli Studi di Bari 'Aldo Moro', Italia; Divisione di Genetica Medica, IRCSS Casa Sollievo della Sofferenza, Viale Cappuccini, S.C., San Giovanni Rotondo (FG), 71013, Italy.	1180	134	FAR-1C
Gambardella	Mariarosaria C.	Università degli Studi di Salerno, Italia	349	31	POSTER-A
Gambaro	Andrea	Department of Environmental Sciences, Informatics and Statistics, Ca' Foscari University of Venice, Via Torino, 155-30172 Venice Mestre, VE, Italy; Institute of Polar Sciences, National Research Council (CNR-ISP), Via Torino, 155-30172 Venice Mestre, VE, Italy	903	31	POSTER-A
Gambaro	Andrea	Ca' Foscari, Italia	1089	31	POSTER-A
Gamberoni	Sara	Dipartimento di Chimica-La Sapienza	963	31	POSTER-A
Gambetta Vianna	Julia	aDepartment of Chemistry and Industrial Chemistry, University of Genoa, Italy	1911	31	POSTER-A
Gambini	Andrea	Indena, Italia	745	149	ORG-2C
Gambini	Anna	Università degli Studi di Modena e Reggio Emilia, Italia	808	214	POSTER-B
Gambino	Francesco	Politecnico di Torino, Italia; National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM	759	31	POSTER-A
Gandin	Valentina	Università Degli Studi Di Padova, Italia	1528, 546, 496, 1284, 1807	31, 214, 67, 74, 132	POSTER-A, POSTER-B, INO-1A, TEC-A, FAR-1B
Gandolfi	Raffaella	dipartimento di Scienze Farmaceutiche, Università degli Studi di Milano, Italia	1132	255	FAR-2A
Gandolfo	Matteo	Politecnico di Torino	570, 429	31, 72	POSTER-A, ELE-1
Gangemi	Chiara Maria Antonietta	Dipartimento di Chimica, Biologia, Farmacia e Ambiente, Università di Messina, Italia	1086	214	POSTER-B
Gangupam	Bhavani	1 Laboratory for Environmental and Life Sciences, University of Nova Gorica, 5000 Nova Gorica, Slovenia	393	214	POSTER-B
Gannuscio	Riccardo	Department of Agricultural, Food and Forest Sciences (SAAF), Università degli Studi di Palermo, Viale delle Scienze, 90128 Palermo, Italy	973	31	POSTER-A
Garanzini	Anna	Brain Development & Disease Laboratory, Istituto Italiano di Tecnologia, via Morego, 30, 16163 Genoa, Italy	1002	193	ParallelTopic09 - ID: 193
Garattini	Enrico	Istituto Mario Negri, Milano, Italia	573	31	POSTER-A
Garavaglia	Silvia	University of Piemonte Orientale, Italy	1307	214	POSTER-B
Garbagnoli	Martina	Università degli studi di Pavia, Italia	560	149	ORG-2C
Garbarino	Gaston	ESRF, European Synchrotron Radiation Facility, 71 Avenue des Martyrs, CS40220, 38043 Grenoble Cedex 9, France	1873	198	ParallelTopic15 - ID: 198
Garcia Ballesteros	Sara	Politecnico di Torino, Italia	1527, 984	31, 214	POSTER-A, POSTER-B
García González	Liher	Center for Cooperative Research in Biomaterials (CIC biomaGUNE), Basque Research and Technology Alliance, Donostia - San Sebastián	794	214	POSTER-B
Garcia Lopez	Elisa Isabel	Università di Palermo, Viale delle Scienze, 90128 Palermo (PA)	536	214	POSTER-B
Garcia-Ballesteros	Sara	Politecnico di Torino, Italia	765, 865	214, 214	POSTER-B, POSTER-B
García-Castillo	Ana Maria	Università Politècnica di Valencia	1896	31	POSTER-A
Garcia-Segura	Luis-Miguel	Instituto Cajal, Consejo Superior de Investigaciones Cientificas (CSIC), Universidad Autónoma de Madrid, Madrid, Spain	836	31	POSTER-A
Garcia	Ana Maria	Universidad Castilla La Mancha, Spain	763	31	POSTER-A
Garcia	Hermenegildo	Universitat Politecnica de Valencia, Spain	1834	214	POSTER-B
Garello	Francesca	Centro di Imaging Molecolare e Preclinico, Dipartimento di Biotecnologie Molecolari e Scienze per la salute, Università degli Studi di Torino, Piazza Nizza 44/bis, 10126 Torino, Italy.	1328, 434	67, 165	INO-1A, INO-1B
Garetto	Beatrice	Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15/A, I-10135, and Via P. Giuria 7, I-10125, Turin, Italy	423	31	POSTER-A
Gargallo	Raimundo	Department of Chemical Engineering and Analytical Chemistry, University of Barcelona	1906	214	POSTER-B
Gargano	Adriana	Dipartimento di Scienze della Salute, Università "Magna Græcia" di Catanzaro, Campus Universitario "S. Venuta", Viale Europa, 88100 Catanzaro, Italy; Associazione CRISEA - Centro di Ricerca e Servizi Avanzati per l'Innovazione Rurale, Località Condoleo, 88055 Belcastro (CZ), Italy	253	31	POSTER-A
Gargini	Claudia	University of Pisa	1576	136	FAR-1D
Gargiulo	Ernesto	Università degli Studi di Napoli Federico II, Italia	1686	31	POSTER-A
Gariboldi	Andrea	Department of Humanities, University of Trieste, Via del Lazzaretto Vecchio 8, 34123 Trieste	1518	214	POSTER-B
Gariboldi	Davide	Università degli studi di Milano, Italia	545	31	POSTER-A
Gariglio	Sara	Dipartimento di Farmacia, Università degli studi di Genova, Italia; Dipartimento di Chimica e Chimica Industriale, Università degli studi di Genova, Italia	517, 1788, 1152	31, 214, 249	POSTER-A, POSTER-B, ANA-3B
Garino	Claudio	Department of Chemistry, University of Turin	791, 742	214, 253	POSTER-B, INO-2C
Garmendia Aguirre	Irantzu	European Commission, Joint Research Centre (JRC), Ispra, Italy	764	31	POSTER-A
Garofalo	Giuliana	Department of Agricultural, Food and Forest Sciences (SAAF), Università degli Studi di Palermo	752	31	POSTER-A
Garofalo	Stefano	Department of Physiology and Pharmacology, Sapienza University, P.le A. Moro 5, 00185 Rome, Italy	1643	56	ParallelTopic12
Garofano	Paolo	Centro Regionale Antidoping "A. Bertinaria", 10043 Orbassano, Italy	1558	214	POSTER-B
Garrido Frenich	Antonia	Universidad de Almeria, Spagna	1796	31	POSTER-A
Garroni	Sebastiano	Department of Chemical, Physical, Mathematical, and Natural Sciences, University of Sassari, Via Vienna 2, 07100 Sassari, Italy	1240, 945, 1666	31, 234, 235	POSTER-A, FIS-1C, FIS-1D
Garstka	Kinga	Univeristy of Wroclaw	329	214	POSTER-B
Garstka	Kinga	Faculty of Chemistry, University of Wroclaw, ul. F. Joliot Curie 14, 50-383 Wroclaw, Poland	399	148	ANA-2C
Garzulino	Arianna	Università del Piemonte Orientale, Italia	617	31	POSTER-A
Gaspari	Marco	Università degli Studi "Magna Graecia" di Catanzaro, Italia	1497	31	POSTER-A
Gasparotto	Francesca	Università degli studi di Padova, Italia	190	262	IND-2A
Gasperi	Flavia	Center Agriculture Food Environment (C3A), University of Trento, San Michele All'Adige, Italy	172	261	ALI-2B
Gasperi	Tecla	Roma Tre University, Italy	1479	72	ELE-1
Gasperin	Alessio	Department of Sciences and Drug Technology, University of Turin, Torino, Italy	1591	214	POSTER-B
Gastaldi	Matteo	Dipartimento di Chimica - Università di Torino, Italia	669	31	POSTER-A
Gastaldi	Matteo	Politecnico di Torino, Italia; National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM	759, 1419	31, 72	POSTER-A, ELE-1
Gatti	Beatrice	Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale, Università di Parma, Parco Area delle Scienze 17/A, Parma 43124, Italia	447	31	POSTER-A
Gatti	Francesco Gilberto	Politecnico di Milano, Italia	139	264	ORG-1B
Gatti	Giorgio	Department for Sustainable Development and Ecological Transition, University of Piemonte Orientale, Piazza S. Eusebio 5, 13100 Vercelli (Italy)	1755	251	ANA-3D
Gatti	Lodovico	Istituto Europeo di Oncologia, Milano, Italia	262	214	POSTER-B
Gatti	Lucrezia	Università di Bologna, Italia	1758, 1459	31, 238	POSTER-A, ABC-B
Gatti	Teresa	Politecnico di Torino, Italia	148, 380, 381	31, 31, 153	POSTER-A, POSTER-A, TEC-B
Gatto*	Emanuela	University of Rome Tor Vergata, Italia	1360	214	POSTER-B
Gattullo	Concetta Eliana	Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli studi di Bari Aldo Moro, via Amendola 165/a, Bari, Italy	1555	247	ORG-3D
Gattuso	Giuseppe	Università di Messina, Italia	911	148	ANA-2C
Gaucel	Sébastien	INRAE-University of Montpellier, UMR IATE, Montpellier (France)	725	237	TEC-C
Gaudin	Pierrick	University of Montpellier	912	247	ORG-3D
Gaudio	Eugenio	Institute of Oncology Research, Faculty of Biomedical Sciences, USI, Bellinzona, Switzerland italo.cirone@phd.unipi.it	1854	31	POSTER-A
Gauss	Jürgen	Johannes Gutenberg-Universität Mainz, Germany	705, 927	31, 214	POSTER-A, POSTER-B

Gavini	Elisabetta	Università degli studi di Sassari, Italia	1667	214	POSTER-B
Gazzaniga	Andrea	Dipartimento di Scienze Farmaceutiche, Sez. Tecnologia e Legislazione Farmaceutiche "M.E. Sangalli", Università degli Studi di Milano, Via G. Colombo 71, 20133 Milan	1548	214	POSTER-B
Gazzano	Andrea	University of Pavia, Department of Biology and Biotechnology "L. Spallanzani", Via Ferrata 9, 27100 Pavia, Italy.	959	136	FAR-1D
Gazzato	Luana	Università di Padova, Italia	883	31	POSTER-A
Gazzi	Arianna	Università di Padova, Italia	995	199	ParallelTopic01 - ID: 199
Gazzillo	Erica	University of Salerno, Italia	1521	147	ORG-2B
Gazzola	Silvia	University of Insubria, Department of Science and High Technology, Italy	1373, 497	214, 139	POSTER-B, ORG-2A
Gazzoli	Delia	Università La Sapienza Roma, Italia	990	47	ParallelTopic07
Gazzoti	Margherita	Università degli Studi di Milano, Italia	392	145	ORG-1D
Gazzotti	Margherita	Università degli Studi di Milano, Italia	371	31	POSTER-A
Gazzotti	Stefano	Università degli Studi di Milano, Italia	812, 857, 1343, 1111	31, 31, 31, 249	POSTER-A, POSTER-A, POSTER-A, ANA-3B
Gelain	Arianna	University of Milan, Italy	1484, 1081, 1082	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Gelao	Vito	Regional Environmental Protection Agency—ARPA-FVG, Via Cairoli 14, 33057 Palmanova, Italy	1511	249	ANA-3B
Gelati	Leonardo	Università degli studi di Milano; Università degli studi della Campania Luigi Vanvitelli	645	31	POSTER-A
Gelato	Yuri	Department of Pharmacy – Drug Sciences, University of Bari "A. Moro" Via E. Orabona 4, 70125 – Italy FLAME-Lab –Flow Chemistry and Microreactor Technology Laboratory	150, 1813	31, 31	POSTER-A, POSTER-A
Gelli	Rita	Università degli Studi di Firenze, Italia	133, 1051	31, 243	POSTER-A, FIS-2B
Gellini	Cristina	Dipartimento di Chimica "Ugo Schiff", Università degli Studi di Firenze, via della Lastruccia 3, 50019 Sesto F. No (FI), Italy	691	31	POSTER-A
Gemignani	Federica	Department of Biology, University of Pisa, Pisa, Italy	1220	154	CSB-1B
Gemma	Sandra	Dipartimento di Biotecnologie, Chimica e Farmacia, Università di Siena, Via Aldo Moro 2, 53100, Siena, Italia	1628, 1576	214, 136	POSTER-B, FAR-1D
Genga	Alessandra	DiSTeBA, Università del Salento, Italia	1840, 924	31, 156	POSTER-A, ABC-C
Geninatti Crich	Simonetta	Università di Torino, Italia	1353, 870	31, 189	POSTER-A, ParallelTopic04 - ID: 189
Genna	Irene	Department of Chemistry, University of Turin, via Pietro Giuria 7, Turin (TO)	1116	31	POSTER-A
Gennari	Alessandro	Università di Siena, Dipartimento di Biotecnologie, Chimica e Farmacia, Italia	1176	165	INO-1B
Gennari	Cesare	Università degli Studi di Milano, Dipartimento di Chimica, Via C. Golgi, 19, 20133 Milano	124	31	POSTER-A
Genovese	Claudia	Institute for Agriculture and Forestry Systems in the Mediterranean, National Research Council of Italy, Via Empedocle, Catania.	311, 333	31, 261	POSTER-A, ALI-2B
Genovese	Ilaria	Center for Life Nano and Neuro Science, Istituto Italiano di Tecnologia (IIT), Rome, Italy	1616	214	POSTER-B
Genovese	Massimo	Department of Experimental and Clinical Biomedical Sciences, University of Firenze, Italy	1754	139	ORG-2A
Genovese	Salvatore	Università degli studi "G. D'annunzio" Chieti-Pescara, Italia	894	31	POSTER-A
Genovese	Salvatore	Università "Gabriele d'Annunzio" Chieti-Pescara, Italia, Dipartimento di Farmacia	356	211	ParallelTopic14 - ID: 211
Gentile	Antonio	Ricerca sul Sistema Energetico – RSE S.p.A., Via R. Rubattino 54, Milano 20134, Italy	167, 1267	214, 214	POSTER-B, POSTER-B
Gentile	Davide	Politecnico di Milano, Italia	857, 998, 609	31, 31, 153	POSTER-A, POSTER-A, TEC-B
Gentile	Gennaro	Institute for Polymers, Composites and Biomaterials, Italian National Research Council, Via Campi Flegrei 34, 80078 Pozzuoli (Naples) Italy	938	214	POSTER-B
Gentile	Gennaro	Istituto di Polimeri, Compositi e Biomateriali - CNR, Italia	1742	263	CSB-3
Gentile	Giulia	Department of Pharmacy, "G. D'Annunzio" University of Chieti-Pescara, 66100 Chieti, Italy	1136	260	ALI-2A
Gentile	Luigi	Centre for Colloid and Surface Science, Università degli Studi di Bari Aldo Moro, 70125, Bari, Italy; Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Bari, 70125 Italy	819, 1120, 854, 845	214, 246, 250, 144	POSTER-B, ORG-3C, ANA-3C, ANA-1D
Gentile	Maria Teresa	Dipartimento di Scienze e Tecnologie, Ambientali, Biologiche e Farmaceutiche, Università degli Studi della Campania "Luigi Vanvitelli", Italia	1742	263	CSB-3
Gentile	Serena	Università cattolica del Sacro Cuore, Italia	821	31	POSTER-A
Gentile	Serena	Università degli Studi di Roma "Tor Vergata", Roma	1718	144	ANA-1D
Gentili	Alessandra	Department of Chemistry, Sapienza University, P.le Aldo Moro, 5, 00185, Rome, Italy	1462, 1697, 1698, 1856, 1479, 1075	31, 31, 31, 248, 72, 258	POSTER-A, POSTER-A, POSTER-A, ANA-3A, ELE-1, ANA-4A
Gentili	Dario	Università di Camerino, Italia	1225, 1750	31, 143	POSTER-A, ORG-1C
Gentili	Pier Luigi	Università degli Studi di Perugia, Italia	813	49	ParallelTopic08
Gentilomi	Giovanna Angela	Department of Pharmacy and Biotechnology, University of Bologna, Via Massarenti 9, Bologna	914	147	ORG-2B
Genua	Francesco	Dipartimento di Ingegneria "Enzo Ferrari", Università degli Studi di Modena e Reggio Emilia, Modena	668, 1181	31, 214	POSTER-A, POSTER-B
Geppi	Marco	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Via G. Moruzzi 13, 56124, Pisa, Italia; CISUP, Centro per l'Integrazione della Strumentazione dell'Università di Pisa, Lungarno Pacinotti 43, 56126, Pisa, Italy	522, 1064, 1768, 814	31, 214, 214, 242	POSTER-A, POSTER-B, POSTER-B, FIS-2A
Gerace	Alessandro	Dept. of Chemistry "U. Schiff", Univ. of Florence	1925	31	POSTER-A
Gerbaldi	Claudio	Politecnico di Torino, Italia; National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM	759, 1092, 1063, 1429, 1419, 671	31, 31, 214, 214, 72, 234	POSTER-A, POSTER-A, POSTER-B, POSTER-B, ELE-1, FIS-1C
Germani	Raimondo	Department of Chemistry, Biology, and Biotechnology, University of Perugia, Via dell'Elce di Sotto 8, Perugia, Italy	421	264	ORG-1B
Gervasini	Antonella	Università degli studi di Milano	645	31	POSTER-A
Geschwender	Daniel	GC Image, PO Box 57403, Lincoln, NE 68505-7403, USA	238	186	ParallelTopic01 - ID: 186
Ghebretinsae Tewelde	Awet	Dipartimento di Scienze e Tecnologie, Ambientali, Biologiche e Farmaceutiche, Università degli Studi della Campania "Luigi Vanvitelli", Italia	1742	263	CSB-3
Ghedini	Elena	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice and INSTM RU of Venice, via Torino 155, 30172 Venice, Italy	114, 586, 252	31, 31, 73	POSTER-A, POSTER-A, ABC-A
Ghersi	Giulio	Dipartimento di Scienze e Tecnologie Biologiche Chimiche e Farmaceutiche (STEBICEF), Università degli Studi di Palermo, Viale delle Scienze 16, 90128, Palermo, Italy	1126, 1573	214, 214	POSTER-B, POSTER-B
Ghezzo	M.	Università di Padova, Italia	1324	214	POSTER-B
Ghibaudi	Elena Maria	Università di Torino, Italia	864	76	DID-A
Ghidini	Sergio	Department of Food and Drug, University of Parma	1369	31	POSTER-A
Ghidoni	Laura	Università di Pavia, Italia	1649	31	POSTER-A
Ghiglietti	Erika	Università di MilanoBicocca, Italia	1685	31	POSTER-A
Ghiglione	Riccardo	Università di Pavia, Italia	581	249	ANA-3B
Ghigna	Paolo	Università degli Studi di Pavia	486, 1156, 1083	31, 31, 51	POSTER-A, POSTER-A, ParallelTopic09
Ghignone	Arianna	Università del Piemonte Orientale, Italia	1645, 1661, 1731	31, 31, 150	POSTER-A, POSTER-A, ANA-2D
Ghigo	Giovanni	Università di Torino, Italia	1434	256	ORG-4A
Ghimenti	Silvia	Department of Chemistry and Industrial Chemistry University of Pisa, Via Giuseppe Moruzzi 13, Pisa, Italy	1747, 1438	31, 258	POSTER-A, ANA-4A
Ghinato	Simone	Dipartimento di Chimica, Università degli Studi di Torino, via P. Giuria 7, 10125 Torino, Italia	1393, 695, 1394	31, 214, 143	POSTER-A, POSTER-B, ORG-1C
Ghini	Veronica	Univerisità degli Studi di Firenze, Italia	444	77	CSB-1A
Ghirardello	Davide	Mare S.p.A, Milano, Italia	269	31	POSTER-A
Ghirardi	Marco	Università di Torino, Italia; ITIS Quintino Sella, Biella (Italy)	864	76	DID-A
Ghirardi	Sara	Università degli studi dell'Insubria, Italia	1114	31	POSTER-A
Ghirga	Francesca	Department of Chemistry and Technologies of Drug, Sapienza University of Rome, Italy	1801	139	ORG-2A
Ghiringhelli	Giacomo	Politecnico di Milano, Italia	925	214	POSTER-B
Ghosh	Sharmila	Department of Food, Environmental and Nutritional Sciences, via G. Celoria 2, 20133 Milano	1020	31	POSTER-A
Giacalone	Francesco	Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF)- University of Palermo and INSTM UdR – Palermo, Viale delle Scienze, Ed.17, Palermo I-90128, Italy	711	214	POSTER-B
Giacalone	Giovanna	Dipartimento di Scienze Agrarie, Forestali e Alimentari, Università degli Studi di Torino, Italia	802	31	POSTER-A
Giaccari	Leonardo	Department of Chemistry, Sapienza University of Rome, Piazzale Aldo Moro, 5, 00185, Rome, Italy	143	253	INO-2C
Giaccari	Roberta	Department of Food and Drug, University of Parma, Parma, Italy	1422	134	FAR-1C
Giachin	Gabriele	Department of Chemical Sciences (DiSC), University of Padua, via Marzolo 1, 35131, Padova	472, 539	185, 77	ParallelTopic15 - ID: 185, CSB-1A
Giacomazza	Daniela	Istituto di BioFisica, Consiglio Nazionale delle Ricerche, Via U. La Malfa 153, 90146 Palermo, Italy	1199	74	TEC-A
Giacomazzo	Gina Elena	Università degli Studi di Firenze, Italia	345	67	INO-1A

Giacometti Schieroni	Alberto	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" (SCITEC)-CNR, via A. Corti 12, 20133 Milano, Italy	1364	214	POSTER-B
Giacometti-Schieroni	Alberto	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" SCITEC-CNR, Via Corti 12, 20133 Milano, Italy	1603	214	POSTER-B
Giacon	Chiara	VIACQUA s.p.a.	1016	31	POSTER-A
Giaffreda	Stefano Luca	PolyCrystalLine SPA, Italia	587	177	ParallelTopic06 - ID: 177
Giambanelli	Elisa	Carapelli Firenze S.p.A., Via Leonardo da Vinci 31, Tavarnelle Val di Pesa, 50028, Firenze, Italy.	226	214	POSTER-B
Giambastiani	Giuliano	Istituto di Chimica dei Composti Organometallici (CNR-ICCOM)	958	214	POSTER-B
Giamello	Elio	Università di Torino, Italia	1061	253	INO-2C
Gianani	Ilaria	Sciences Department, Roma Tre University	1488	214	POSTER-B
Giancola	Concetta	Dipartimento di Farmacia, Università di Napoli Federico II	535, 512	31, 243	POSTER-A, FIS-2B
Gianelli	Michele	LabService Analytica S.r.l., Via Emilia, 51 Anzola dell'Emilia (BO)	639	246	ORG-3C
Giannangeli	Matteo	Università degli Studi di Brescia, Italia	620	255	FAR-2A
Giannarou	Stamatia	Imperial College London, UK	1927	35	ParallelTopic01
Giannattasio	Alessia	Department of Chemistry and Biology,University of Study of Salerno, Italia	219	31	POSTER-A
Giannessi	Lisa	Università di Parma, Italia	1080	31	POSTER-A
Giannetti	Micaela	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", and CSGI unit of Rome, Via della Ricerca Scientifica, 00133 Rome, Italy	1550	243	FIS-2B
Giannetto	Marco	Università di Parma, Italia	1200, 1375, 776	31, 214, 138	POSTER-A, POSTER-B, ANA-2A
Gianni	Ivan	Università degli Studi di Pisa, Italia	610	31	POSTER-A
Gianni	Mattia	Aboca S.p.A., Italia	774	31	POSTER-A
Gianni	Mattia	Aboca S.p.a., Italia	781	214	POSTER-B
Gianni	Mattia	ABOCA SPA, Italia	773	71	MAS
Gianni	Paola	Università degli Studi di Roma Tor Vergata, Italia	1833	31	POSTER-A
Giannini	Cinzia	IC-CNR, via G. Amendola, 122, 70126 Bari, Italy	1171	31	POSTER-A
Giannini	Cinzia	Istituto di Cristallografia-CNR, Bari, Italia	1458, 201	214, 243	POSTER-B, FIS-2B
Giannini	Clelia	Dipartimento di Chimica, Università degli studi di Milano, Milano	910, 631	31, 214	POSTER-A, POSTER-B
Giannini	Luca	Pirelli Tyre S.p.A., Viale Piero e Alberto Pirelli, 25, I-20126 Milan, Italia	991, 1064	31, 214	POSTER-A, POSTER-B
Giannini	Samuele	CNR-ICCOM, Pisa, Italy	767	75	TEO-A
Gianoncelli	Alessandra	Università degli Studi di Brescia, Italia	620	255	FAR-2A
Gianotti	Valentina	University of Eastern Piedmont, Italia	1343, 1665, 1111	31, 214, 249	POSTER-A, POSTER-B, ANA-3B
Gianquinto	Eleonora	Department of Drug Science and Technology, University of Turin, Via Giuria, 9, 10125, Turin, Italy	1103, 1422	31, 134	POSTER-A, FAR-1C
Giaquinto	Domenico	Sanitary Environmental Engineering Division (SEED), Department of Civil Engineering,University of Study of Salerno, Italia	219	31	POSTER-A
Giarnieri	Ilenia	Università di Bologna, Italia	457	238	ABC-B
Giarra	Antonella	Università degli Studi di Napoli Federico II, Italia	179, 180, 178	31, 214, 73	POSTER-A, POSTER-B, ABC-A
Giarrizzo	Andrea	Politecnico di Torino, Italia	1527	31	POSTER-A
Giatti	Silvia	* Dipartimento di Scienze Farmacologiche e Biomolecolari, Neuroendocinology unit, Università degli Studi di Milano, via Giuseppe Balzaretti 9, 20133, Milan, Italy	836	31	POSTER-A
Giavazzi	Davide	Parma University, Italia	134	161	TEO-B
Giese	Ulrich	Deutsches Institut für Kautschuktechnologie e. V, Germania	593, 996	214, 214	POSTER-B, POSTER-B
Gigli	Alessandro	Università Degli Studi di Firenze, Italia	1852	31	POSTER-A
Gigli	Matteo	Ca' Foscari University of Venice, Department of Molecular Sciences and Nanosystems, Via Torino 155, Venice, 30172, Italy	436, 1567, 1833	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Gilardi	Gianfranco	Dipartimento Scienze della Vita e Biologia dei Sistemi, Università di Torino, Italia	1702	31	POSTER-A
Gilardoni	Stefania	Institute of Polar Sciences, CNR, via Via Piero Gobetti, 101, Bologna (BO)	1116	31	POSTER-A
Gillett	Alexander J.	University of Cambridge, Cavendish Laboratory, United Kingdom	767	75	TEO-A
Gimenez	A. J.	San Andrés University, Bolivia	1673	31	POSTER-A
Ginepro	Marco	Dipartimento di Chimica, Università degli Studi di Torino, Italia	802, 1480	31, 262	POSTER-A, IND-2A
Giobbio	Ginevra	Normandie University, ENSICAEN, UNICAEN, CNRS, LCMT, 14000 Caen, France	113	155	ELE-2
Giofrè	Salvatore Vincenzo	Università di Messina, Italia	254	236	TEC-D
Gioiella	Lucia	Department of Chemical, Materials and Production Engineering, University of Naples Federico II	151	153	TEC-B
Gioiello	Antimo	Department of Pharmaceutical Sciences, University of Perugia, Via del Liceo 1, 06123 Perugia, Italy	286, 287	31, 214	POSTER-A, POSTER-B
Gioiello	Laura	Department of Pharmaceutical Sciences, Università degli Studi del Piemonte Orientale, Largo Donegani 2, 28100 Novara, Italy	676, 1057	31, 31	POSTER-A, POSTER-A
Giomi	Donatella	Università di Firenze, Italia; Laboratorio congiunto VALORE	1814	214	POSTER-B
Giordana	Alessia	Università degli Studi di Torino, Italia	1762	165	INO-1B
Giordana	Alessia	Dipartimento di Chimica, Università degli Studi di Torio, via Giuria 7, 10121 Torino, Italia	195	159	IND-1D
Giordani	Stefano	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, via Piero Gobetti 83 40129, Bologna, Italia	1413, 1096, 1157, 1383, 1097, 1691	31, 214, 214, 214, 146, 150	POSTER-A, POSTER-B, POSTER-B, POSTER-B, ANA-2B, ANA-2D
Giordano	Alessandro	NuclearMedicine Unit, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome 00168; Università Cattolica del S. Cuore, Rome, Rome 00168	1296	214	POSTER-B
Giordano	Assunta	University of Salerno, Italia; Consiglio Nazionale Delle Ricerche, Italia	1521	147	ORG-2B
Giordano	Giorgia	Università degli studi di Catania, Italia	1597	31	POSTER-A
Giordano	Livia	Università degli Studi di Milano-Bicocca, Italia	451	31	POSTER-A
Giordano	Sabrina	Università degli Studi di Napoli Federico II, Italia	108	31	POSTER-A
Giorgetti	Marco	2 University of Bologna, Industrial Chemistry Department "Toso Montanari", Via P. Gobetti 85, 40129 Bologna, Italy	1138	31	POSTER-A
Giorgi	Claudia	Università degli Studi di Firenze, Italia	345	67	INO-1A
Giorgi	G.	Università di Siena, Italia	618	31	POSTER-A
Giorgi	Rodorico	Università degli studi di Firenze e CSGI, Italia	1351, 2021	31, 176	POSTER-A, ParallelTopic05 - ID: 176
Giorgini	Loris	Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italia	302, 558	166, 262	INO-1C, IND-2A
Giorgioni	Gianfabio	Università degli Studi di Camerino, Camerino, Italia	1366	136	FAR-1D
Giorgis	M.	Università di Torino, Italia	1673	31	POSTER-A
Giorgis	Marta	Department of Drug Science and Technology, University of Torino, Italy	382	132	FAR-1B
Giorno	Lidietta	Institute on Membrane Technology (CNR-ITM), Rende, CS, Italy	1728, 1749, 1844	214, 214, 153	POSTER-B, POSTER-B, TEC-B
Giotta	Livia	Dep. of Biological and Environmental Sciences and Technologies, University of Salento, Via per Monteroni 73100, Lecce (Italy)	1218, 1231	214, 214	POSTER-B, POSTER-B
Giovagnoli	Angelica	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Via Gobetti 85, 40129,Italia	1850	31	POSTER-A
Giovanelli	Andrea	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Via G. Moruzzi 13, 56124, Pisa, Italia	522	31	POSTER-A
Giovani	Claudia	Dipartimento di Chimica, Università degli Studi di Firenze, Sesto Fiorentino, Italia	602	155	ELE-2
Giovannetti	Rita	Università di Camerino, Italia	917	156	ABC-C
Giovannini	Pier Paolo	University of Ferrara, Italia	975	214	POSTER-B
Giovannini	Pier Paolo	Università degli studi di Ferrara, Italia	1163	141	ORG-1A
Giovannini	Tommaso	Scuola Normale Superiore, Italia	888, 1169, 1551, 1756, 1077	214, 214, 214, 214, 68	POSTER-B, POSTER-B, POSTER-B, POSTER-B, FIS-1A
Giovannuzzi	Simone	NEUROFARBA Department, Pharmaceutical and Nutraceutical Section, University of Florence, Via U. Schiff 6, Sesto Fiorentino, 50019 Florence, Italy	704	31	POSTER-A
Giovenzana	Giovanni Battista	Università degli Studi del Piemonte Orientale, Italia	796	31	POSTER-A
Giovilli	Giulia	Department of chemistry, University of Pavia	811	31	POSTER-A
Giraudo	Alessandro	Department of Pharmaceutical Sciences, University of Milan, via Mangiagalli 25, I-20133 Milano, Italy	758	136	FAR-1D
Girella	Alessandro	Università di Pavia, Italia	1230, 1662, 1207	214, 214, 234	POSTER-B, POSTER-B, FIS-1C
Girelli	Anna Maria	Sapienza Università di Roma, Italia	1570	31	POSTER-A
Girolametti	Federico	Università Politecnica delle Marche, Italia; Fano Marine Center, Italia	907, 479, 416	31, 78, 150	POSTER-A, ALI-1A, ANA-2D
Girometta	Carolina Elena	Department of Earth and Environmental Sciences (DSTA), University of Pavia, Pavia	1662	214	POSTER-B
Gironi	Beatrice	Aboca S.p.A., Italia	774, 781, 773	31, 214, 71	POSTER-A, POSTER-B, MAS
Girotto	Stefania	Computational & Chemical Biology, Istituto Italiano di Tecnologia, 16163 Genova, Italy	707	132	FAR-1B
Gitto	Rosaria	Department of CHIBIOFARAM, University of Messina, Viale Ferdinando Stagno d'Alcontres 31, 98166, Messina	306	255	FAR-2A
Giubilato	Elisa	Ca'Foscari University of Venice, Italia	1108	31	POSTER-A
Giubilato	Elisa	GreenDecision s.r.l., Scientific Campus, via Torino 155, 30172 Mestre, VE, Italy	1358	238	ABC-B

Giudice	Vittoria	ARPA Sicilia, Agenzia Regionale Protezione Ambiente, UOS L2.2 Divisione Analitica 2 e Centro Riferimento Diossine, via Nairobi, 90129 Palermo, Italy	1400	214	POSTER-B
Giuffrè	Ottavia	Università degli Studi di Messina; CNR-IPCF	872	148	ANA-2C
Giuffrida	Alessandro	Department of Chemical Sciences (DSC), University of Catania, Viale Andrea Doria n 6, building 1, 95125 Catania, Italy	263, 1617	251, 258	ANA-3D, ANA-4A
Giuffrida	Daniele	Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Via Consolare Valeria, 98125 Messina, Italy	1259	261	ALI-2B
Giuliani	Arianna	ITT Montani, Italia	871	208	ParallelTopic11 - ID: 208
Giuliani	Germano	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	230	214	POSTER-B
Giuliano	Annarita	Università degli Studi "Magna Graecia" di Catanzaro, Italia	1497	31	POSTER-A
Giuliano	Elena	Università degli Studi "Magna Graecia", Italia	1668	214	POSTER-B
Giuliano	Federica	Dipartimento di Ingegneria, University of Palermo, Viale delle Scienze, Edificio 6, 90128 Palermo, Italy	1681	74	TEC-A
Giulini	Nicolò	Università degli Studi di Milano-Bicocca, Italia	1715	31	POSTER-A
Giuri	Demetra	Università di Bologna, Italia	1033	31	POSTER-A
Giurlani	Walter	Università di Firenze, Italia	575, 605, 687, 602	31, 214, 138, 155	POSTER-A, POSTER-B, ANA-2A, ELE-2
Giussani	Barbara	Science and High Technology Department, Università degli Studi dell'Insubria, Via Valleggio 9, Como, Italy	1187	214	POSTER-B
Giussani	Ilaria	Università degli Studi di Milano, Italia	144, 1109, 1147	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Giustini	Mauro	Sapienza Università di Roma, Italia	1696	214	POSTER-B
Giustiniano	Mariateresa	University of Naples Federico II, Italy	858, 873, 149	214, 214, 255	POSTER-B, POSTER-B, FAR-2A
Giustra	Chiara Maria	Università Milano-Bicocca, Italia	1872	214	POSTER-B
Gmeiner	Peter	Department of Chemistry and Pharmacy, Friedrich-Alexander-University of Erlangen-Nürnberg, Nikolaus-Fiebiger-Str. 10, 91058 Erlangen, Germany	1634	214	POSTER-B
Gnavi	Riccardo	Università di Torino, Italia	1394	143	ORG-1C
Gnemmi	Margherita	Università Sapienza di Roma, Università Ca' Foscari di Venezia; Università Ca' Foscari di Venezia	1896	31	POSTER-A
Gobbato	Thomas	Università degli studi di Padova, Italia	1549, 1056	31, 201	POSTER-A, ParallelTopic03 - ID: 201
Gobbi	Silvia	University of Bologna, Italia	834	214	POSTER-B
Gobbo	Dorothea	Computational & Chemical Biology, Fondazione Istituto Italiano di Tecnologia, Via Morego 30, I-16163 Genova, Italy	1103	31	POSTER-A
Gobbo	Marina	Department of Chemical Sciences, University of Padova, via F. Marzolo 1, 35131 Padova, Italy.	1550	243	FIS-2B
Gobbo	Pierangelo	Università degli Studi di Trieste, Italia	1183	214	POSTER-B
Gobec	Martina	University of Ljubljana, Slovenia	858	214	POSTER-B
Gobetto	Roberto	University of Torino, Italy, Italia	613, 746	31, 31	POSTER-A, POSTER-A
Goffredo	Bianca Maria	Ospedale Pediatrico Bambino Gesù, Roma, Italia	1841	267	TEF-1
Goggi	Eleonora	Department of Sciences and Technological Innovation, University of Piemonte Orientale, Viale Michel 11, 15121 Alessandria, Italy	1731	150	ANA-2D
Goggiamani	Antonella	Sapienza università di Roma	1524	237	TEC-C
Gogotsi	Yury	Università di Padova, Italia	995	199	ParallelTopic01 - ID: 199
Goletto	Linda	Scuola Normale Superiore, Italia	1756	214	POSTER-B
Golič Grdadolnik	Simona	Laboratory for Molecular Structural Dynamics, National Institute of Chemistry. Ljubljana, Slovenia.	502	214	POSTER-B
Gómez-Laserna	Olivia	University of the Basque Country (EHU/UPV), Spain	1247	248	ANA-3A
Gómez	Sara	Scuola Normale Superiore, Italia	888	214	POSTER-B
Gomez	Sara	Scuola Normale Superiore, Italia	1169	214	POSTER-B
Goniakowski	Jacek	CNRS, Sorbonne Université, Institut des NanoSciences de Paris, UMR 7588, 4 Place Jussieu, F-75005 Paris, France	823	257	TEO-C
Gontrani	Lorenzo	Startnetics, Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata	1241, 1242, 1270, 1385, 1239, 1233	31, 31, 31, 214, 241, 254	POSTER-A, POSTER-A, POSTER-A, POSTER-B, INO-2B, INO-3
Gonzalez Monroy	Michelle Andrea	Università degli Studi di Siena, Italia	1212	31	POSTER-A
González-Sálamo	Javier	Department of Chemistry, Sapienza University, P.le Aldo Moro, 5, 00185, Rome, Italy; Departamento de Química, Unidad Departamental de Química Analítica, Facultad de Ciencias, Universidad de La Laguna (ULL), Avda. Astrofísico Fco. Sánchez, s/n, 38206, San Cristóbal de La Laguna, Spain; Instituto Universitario de Enfermedades Tropicales y Salud Pública de Canarias, Universidad de La Laguna (ULL), Avda. Astrofísico Fco. Sánchez, s/n, 38206, San Cristóbal de La Laguna, Spain	1462	31	POSTER-A
González	Claudia	Department of Chemical Sciences, University of Naples Federico II, Naples, Italy	1866	31	POSTER-A
Goracci	Laura	Department of Chemistry, Biology and Biotechnology, University of Perugia, Perugia, Italy.	287, 1921, 421	214, 214, 264	POSTER-B, POSTER-B, ORG-1B
Gordano	Amalia	Institute on Membrane Technology (CNR-ITM), Via P. Bucci 17/C 87036 Rende (CS), Italy	1711	159	IND-1D
Gorgulla	Christoph	Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School (HMS), Building C, 240 Longwood Ave, 02115 Boston, MA, USA; Department of Cancer Biology, Dana-Farber Cancer Institute (DFCI), 450 Brookline Ave, 02215 Boston, MA, USA; Department of Physics, Faculty of Arts and Sciences, Harvard University, 17 Oxford St, 02138 Cambridge, MA, USA	1643	56	ParallelTopic12
Gorgulla	Cristoph	Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School, Boston, MA, USA.; Department of Cancer Biology, Dana-Farber Cancer Institute, Boston, MA, USA.; Department of Physics, Faculty of Arts and Sciences, Harvard University, Cambridge, MA, USA.	985	214	POSTER-B
Gori	Alessandro	SCITEC CNR, Italia	1950, 155	175, 214	ParallelTopic04 - ID: 175, POSTER-B
Gorreta	Giulia	Dipartimento di Chimica, Università degli Studi di Torino, via P. Giuria 7, 10125 Torino, Italia	1393	31	POSTER-A
Gosetti	Fabio	Department of Earth and Environmental Sciences, POLARIS Research Center, University of Milano-Bicocca, Piazza della Scienza 1, 20126, Milano	218, 1797, 129	31, 140, 160	POSTER-A, ANA-1B, FIS-1B
Gosh	Sharmila	Università degli Studi di Milano, Italia	1540	214	POSTER-B
Goswami	Subhadip	Northwestern University, Evanston, Illinois	958	214	POSTER-B
Goti	Andrea	Department of Chemistry 'Ugo Schiff', University of Florence, via della Lastruccia 3-13, 50019 Sesto Fiorentino (FI), Italy	452, 732, 283	31, 214, 141	POSTER-A, POSTER-B, ORG-1A
Goti	Giulio	ICCOM-CNR; Università degli Studi di Firenze	1477	31	POSTER-A
Gotti	Cecilia	Institute of Neuroscience, CNR, I-20129 Milano, Italy	758	136	FAR-1D
Gotti	Roberto	Università di Bologna, Italia	918	146	ANA-2B
Gouiller	Aurelie	Department of Pharmaceutical Biochemistry, School of Pharmaceutical Sciences, University of Geneva, CMU- Rue Michel-Servet 1, Geneva	1464	214	POSTER-B
Goutsiou	Georgia	Department of Pharmaceutical Sciences, Università degli Studi del Piemonte Orientale, Largo Donegani 2, 28100 Novara, Italy	676, 1057	31, 31	POSTER-A, POSTER-A
Grabrucker	Andreas Martin	Department of Biological Sciences, University of Limerick, V94 T9PX Limerick, Ireland; Bernal Institute, University of Limerick, V94 T9PX Limerick, Ireland; Health Research Institute (HRI), University of Limerick, V94 T9PX Limerick, Ireland	630	267	TEF-1
Gradella	Cecilia	Versalis S.p.A.	164	262	IND-2A
Grainca	Arian	Università degli Studi di Milano, Dipartimento di Chimica – Milano (MI), Italy	210, 190	214, 262	POSTER-B, IND-2A
Gramegna	Alice	INSTM Unit Milano-Università, Dip. Chimica, Università degli Studi di Milano, via C. Golgi 19, 20133 Milan, Italy	307	31	POSTER-A
Gramegna	Alice	INSTM Unit Milano-Università, Via C. Golgi 19, 20133 Milan, Italy	120	157	IND-1B
Gramegna	Alice	INSTM Unit Milano-Università, Via C. Golgi 19,20133 Milan, Italy	308	262	IND-2A
Gramigni	Davide	Department of Chemistry "G. Ciamician", University of Bologna, via Selmi 2, 40126, Bologna, Italy	288	31	POSTER-A
Granata	Claudia	Università degli Studi di Messina, Italia	1249, 969	31, 214	POSTER-A, POSTER-B
Grande	Sveva	National Center for Innovative Technologies in Public Health, Istituto Superiore di Sanità, Rome 00161; Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Roma1, Rome	1296	214	POSTER-B
Grandhi	G Krishna Murthy	Hybrid Solar Cells, Faculty of Engineering and Natural Sciences, P.O. Box 541, FI-33014 Tampere University, Finland.	1110	31	POSTER-A
Grandi	Andrea	Chiesi Farmaceutici SpA, Italia	941	31	POSTER-A
Granucci	Giovanni	Università di Pisa, Italia	665	161	TEO-B

Grassi	Alfonso	Department of Chemistry and Biology "Adolfo Zambelli", University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano (SA) (Italy); Consorzio InterUniversitario Reattività e Catalisi (CIRCC), Via Celso Ulpiani, 27- 70126 Bari, Italy	1001, 1633	69, 165	IND-1A, INO-1B
Grassi	Claudio	Università Cattolica del Sacro Cuore, 00168 Rome, Italy	1633	165	INO-1B
Grassi	Daniela	Instituto Cajal, Consejo Superior de Investigaciones Científicas (CSIC), Universidad Autónoma de Madrid, Madrid, Spain	836	31	POSTER-A
Grassi	Nicola	Universita' degli Studi di Trieste, Italia	1481	204	ParallelTopic07 - ID: 204
Grasso	Federica	DIFAR, Department of Pharmacy, University of Genoa, Viale Cembrano 4, 16148 Genova, Italy	404, 1316	211, 261	ParallelTopic14 - ID: 211, ALI-2B
Grasso	Giulia	Institute of Crystallography CNR via P. Gaifami 18-95126 Catania	824	214	POSTER-B
Grasso	Giuseppe	Università degli Studi di Catania, Italia	1144, 1236	31, 266	POSTER-A, CSB-2
Grasso	Susanna	Sapienza Università di Roma, Italia	1697, 1856	31, 248	POSTER-A, ANA-3A
Grasso	Valentina	CNR-IBE (Firenze, Italy)	1384	265	DID-B
Grattagliano	Asia	Università di Roma Tor Vergata, Italia	753	31	POSTER-A
Gratteri	Paola	Università degli Studi di Firenze, Italia	850	31	POSTER-A
Grattieri	Matteo	Università degli Studi di Bari "Aldo Moro", Italia; CNR-IPCF, Consiglio Nazionale delle Ricerche	1450, 1070, 1721, 740, 1327	210, 214, 214, 252, 252	ParallelTopic13 - ID: 210, POSTER-B, POSTER-B, FIS-3, FIS-3
Grau	Veronika	Department of General and Thoracic Surgery, Justus-Liebig-University, Giessen, Germany	758	136	FAR-1D
Graulich	Nicole	Justus-Liebig University Gießen Germany	1789	265	DID-B
Graziano	Giovanni	università degli studi di Bari Aldo Moro, 70125, Bari, Italia	137, 159	31, 31	POSTER-A, POSTER-A
Grazioli	Santina	Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia-Romagna, Brescia, Italia	160	146	ANA-2B
Grazioso	Giovanni	Department of Pharmaceutical Sciences, University of Milan, 20133 Milan, Italy	827, 1277	31, 31	POSTER-A, POSTER-A
Grdadolnik	Jože	Laboratory for Molecular Structural Dynamics, National Institute of Chemistry. Ljubljana, Slovenia.	502	214	POSTER-B
Grecchi	Sara	Dipartimento di Chimica, Università di Milano, Via C. Golgi 19, 20133 Milano. Italy	1313, 1298	214, 138	POSTER-B, ANA-2A
Greco	Alessandro	Department of Pharmacy, University of Pisa	1596	31	POSTER-A
Greco	Annamaria	Politecnico di Bari, Italia	1098	31	POSTER-A
Greco	Carlo	Research Centre for Plant Protection and Certification, Council for Agricultural Research and Economics, 90011 Bagheria, Italy	752	31	POSTER-A
Greco	Claudio	Dipartimento di Scienze dell'Ambiente e della Terra, Università degli studi di Milano-Bicocca, Italia	1793, 378, 422, 1377, 1740	31, 214, 214, 214, 214	POSTER-A, POSTER-B, POSTER-B, POSTER-B, POSTER-B
Greco	Enrico	Università degli Studi di Trieste, Italia	324	73	ABC-A
Greco	Francesco	Institute of Solid State Physics, NAWI Graz, Graz University of Technology, 8010 Graz, Austria; The Biorobotics Institute, Sant'Anna School of Advanced Studies, Viale R. Piaggio 34, 56025 Pontedera, Italy	1536	214	POSTER-B
Greco	Giulia	Alma Mater Studiorum - Università di Bologna, Bologna	1556	214	POSTER-B
Greco	Valentina	Università di Catania, Italia	1617	258	ANA-4A
Greggio	Nicolas	Department of Biological, Geological, and Environmental Sciences, University of Bologna, Via Alberto 163, Ravenna	1510	214	POSTER-B
Gregori	Adolfo	Carabinieri, Dept. of Scientific Investigations (RIS), V.le Tor di Quinto 151, Rome, Italy	760	214	POSTER-B
Gregori	Emanuela	Istituto Superiore di Sanità, Italia	1946	184	ParallelTopic14 - ID: 184
Gregori	Marco	Tomra Sorting GmbH	142	251	ANA-3D
Gregorio	Marco	Dipartimento di Chimica, Materiali e Ingegneria Chimica "G.Natta", Politecnico di Milano, via Mancinelli 7, Milano, Italia	805	214	POSTER-B
Gregucci	Denise	Department of Chemistry "Giacomo Ciamician", University of Bologna, Via P. Gobetti 85, 40129, Bologna, Italy; Center for Applied Biomedical Research (CRBA), Azienda Ospedaliero-Universitaria Policlinico S. Orso-la-Malpighi, 40138 Bologna, Italy	538, 650	31, 142	POSTER-A, ANA-1C
Greison	Gabriella	Me stessa, Italia	207	29	TOPIC-E
Grénman	Henrik	Abo Akademi, Finlandia	406	31	POSTER-A
Grieco	Ilenia	Università degli Studi di Trieste, Dipartimento di Scienze Chimiche e Farmaceutiche, Via Licio Giorgieri 1, 34127, Trieste, Italy	684	214	POSTER-B
Grieco	Paolo	Università di Napoli Federico II, Italia	1883	49	ParallelTopic08
Griego	Anna	Department of Pharmaceutical Sciences, University of Milan, Via L. Mangiagalli 25, 20133 Milano, Italy; National Institute of Molecular Genetic (INGM), Via F. Sforza 35, 20122 Milano, Italy	693	214	POSTER-B
Grifagni	Deborah	Magnetic Resonance Center CERM, University of Florence, Via Luigi Sacconi 6, 50019 Sesto Fiorentino, Florence, Italy; Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739	31	POSTER-A
Griffini	Gianmarco	Politecnico di Milano	290	253	INO-2C
Griffith	Darren	Università di Dublino	1045	148	ANA-2C
Grifoni	Fionnuala	CNRS, Université Picardie Jules Verne, Laboratoire de réactivité et Chimie du Solide, UMR 7314, Amiens, Francia	892	201	ParallelTopic03 - ID: 201
Grigioni	Ivan	Università degli Studi di Milano, Italia	812, 1875, 779, 635, 643	31, 31, 214, 234, 234	POSTER-A, POSTER-A, POSTER-B, FIS-1C, FIS-1C
Grigolato	Riccardo	Università di Bologna, Italia	1837	31	POSTER-A
Grigoras	Amalia Malina	Nano4Light Lab, Department of Chemistry Biology and Biotechnology of Perugia, Italia	551, 335	160, 243	FIS-1B, FIS-2B
Grilli	Maria Luisa	Energy Technologies and Renewable Sources Department, Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Casaccia Research Center, Via Anguillarese 301, 00123 Rome, Italy	138	214	POSTER-B
Grillo	Giorgio	Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Italia	1562, 1853	31, 158	POSTER-A, IND-1C
Grimaldi	Ilaria	Università degli Studi di Salerno, Italia	349	31	POSTER-A
Grimaldi	Maria	University of Parma, Department of Engineering and Architecture, Parco Area delle Scienze, 181/A, Parma, Italy	1710, 1741	31, 140	POSTER-A, ANA-1B
Grimaldi	Stefano	Dipartimento di Lettere e Filosofia, Università di Trento, Italia	1644	156	ABC-C
Grisorio	Roberto	Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari, Via Orabona 4, 70125 Bari, Italy	1110, 1292	31, 236	POSTER-A, TEC-D
Gritti	Alessandra	Università degli Studi di Milano, Italia	1024	31	POSTER-A
Grizzuti	Nino	Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università di Napoli Federico II, Napoli 80125, Italy; DPI, 5600 AX Eindhoven, the Netherlands	1822	240	INO-2A
Grolla	Ambra	Department of Pharmaceutical Sciences, Università degli Studi del Piemonte Orientale, Largo Donegani 2, 28100 Novara, Italy	676	31	POSTER-A
Groppi	Gianpiero	Politecnico di Milano, Italia	1704, 1897	31, 31	POSTER-A, POSTER-A
Groppo	Elena	Università degli Studi di Torino, Italy	1794, 1178, 1205	214, 160, 160	POSTER-B, FIS-1B, FIS-1B
Gross	Silvia	Università degli studi di Padova, Italia	1642, 1066, 1655, 1439	31, 214, 214, 254	POSTER-A, POSTER-B, POSTER-B, INO-3
Gross	Silvia.	Università degli Studi di Padova	1599	188	ParallelTopic03 - ID: 188
Grossi	Giancarlo	Università degli Studi di Genova, Italia, Dipartimento di Farmacia	223, 1604	31, 31	POSTER-A, POSTER-A
Grosso	Martina	Università degli Studi di Modena e Reggio Emilia, Italia	808	214	POSTER-B
Grotti	Marco	University of Genoa, Italy	1028, 597	214, 251	POSTER-B, ANA-3D
Grumati	Paolo	Telethon Institute of Genetics and Medicine (TIGEM), via Campi Flegrei 34, 80078 Pozzuoli; Department of Clinical Medicine and Surgery, Federico II University, via Sergio Pansini, 5, 80131 Napoli	976	71	MAS
Grunwaldt	Jan-Dierk	Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology, Germany	1191	241	INO-2B
Gruttadauria	Michelangelo	STEBICEF Department Ed. 17, University of Palermo, Viale delle Scienze, 90128 Palermo, Italy	1171, 711, 1452	31, 214, 244	POSTER-A, POSTER-B, ORG-3A
Gu	Xing-Wei	Leibniz-Institut für Katalyse, Germania	592	31	POSTER-A
Guagliardi	Antonietta	Istituto di Cristallografia CNR, Italia	709	166	INO-1C
Gualandi	Andrea	Department of Chemistry "G. Ciamician"	1848, 528, 866	31, 254, 145	POSTER-A, INO-3, ORG-1D
Gualandi	Isacco	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Via Gobetti 85, 40129,Italia	1850, 141	31, 214	POSTER-A, POSTER-B
Gualano	Stefania	International Centre for Advanced Mediterranean Agronomic Studies of Bari, Italia	1098, 1729	31, 236	POSTER-A, TEC-D
Gualdani	Roberta	Institute of Neuroscience, Université Catholique de Louvain, 1200 Brussels, Belgium	1634	214	POSTER-B
Gualtieri	Gianmarco	Dipartimento di Scienze della Salute, Università "Magna Græcia" di Catanzaro, Campus "S. Venuta", Viale Europa, 88100 Catanzaro, Italy	1631	214	POSTER-B
Guaragnone	Teresa	CSGI - Consorzio Interuniversitario per lo sviluppo dei Sistemi a Grande Interfase, Firenze, Italia	1614	235	FIS-1D
Guardavaccaro	Daniele	Department of Biotechnology, University of Verona, Strada le Grazie 15, 37134 Verona, Italy	1739	31	POSTER-A
Guardigli	Massimo	Department of Chemistry "Giacomo Ciamician", University of Bologna, Via P. Gobetti 85, 40129, Bologna, Italy	538, 1533	31, 144	POSTER-A, ANA-1D

Guarnieri	Fabrizia Claudia	Institute of Neuroscience, National Research Council (CNR), Milan, Italy	715	71	MAS
Guascito	Maria Rachele	Dep. of Biological and Environmental Sciences and Technologies, University of Salento, Via per Monteroni 73100, Lecce (Italy)	1218, 1231	214, 214	POSTER-B, POSTER-B
Guazzelli	Elisa	Department of Chemistry and Industrial Chemistry, University of Pisa, via G. Moruzzi 13, Pisa (Italy)	1523	264	ORG-1B
Guazzelli	Lorenzo	Dipartimento di Farmacia, Università di Pisa, Italia	1124, 464, 1298, 994	31, 214, 138, 264	POSTER-A, POSTER-B, ANA-2A, ORG-1B
Guazzetti	Debora	Department of Food and Drug, University of Parma	297	31	POSTER-A
Gubitosa	Jennifer	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, 70126 Bari, Italy	670, 1420	31, 214	POSTER-A, POSTER-B
Gucciardi	Pietro Giuseppe	CNR-IPCF, Consiglio Nazionale delle Ricerche, Italia	552	186	ParallelTopic01 - ID: 186
Guedes Alonso	Rayco	Instituto Universitario de Estudios Ambientales y Recursos Naturales (i-UNAT), Universidad de Las Palmas de Gran Canaria, 35017 Las Palmas de Gran Canaria, Spain	1071	239	ABC-D
Guedes	Rita	University of Lisbon, Portugal	1561	214	POSTER-B
Gueli	Anna	University of Catania, Via Santa Sofia 63, 95123 Catania, Italy	1735	31	POSTER-A
Guercia	Elena	illycaffè SpA, Area Science Park, Aromalab, 34149 Trieste, Italia	274	197	ParallelTopic14 - ID: 197
Guerra	Gaetano	Dipartimento di Chimica e Biologia, Unità di Ricerca INSTM, Università di Salerno, Via Ponte don Melillo, 84084 Fisciano, Italia	549	214	POSTER-B
Guerra	Silvia	Department of General Psychology, University of Padova, Via Venezia 8, 35131 Padova (PD), Italy	310	31	POSTER-A
Guerra	Silvia	Pirelli Tyre S.p.A., Viale Piero e Alberto Pirelli, 25, I-20126 Milan, Italia	991	31	POSTER-A
Guerriero	Ettore	CNR - Istituto sull'Inquinamento Atmosferico (CNR-IIA), Italia	1730	66	ANA-1A
Guerrini	Marco	Istituto di Ricerche Chimiche e Biochimiche G. Ronzoni, Italia	639, 638	246, 256	ORG-3C, ORG-4A
Guerrini	Marzia	Università degli studi di Pavia, Dipertimento di Chimica, viale Taramelli 12, Pavia, Italy	1156	31	POSTER-A
Guerrini	Remo	Università degli studi di Ferrara, Department of Chemical, Pharmaceutical and Agricultural Sciences	688	143	ORG-1C
Gugliandolo	Concetta	Università di Messina, Italia	254	236	TEC-D
Guglielmero	Luca	Scuola Normale Superiore, Italia	1124	31	POSTER-A
Guglielmi	Vittoria	università di milano, Italia	1257, 1644	214, 156	POSTER-B, ABC-C
Guidetti	Gloria	Tetra Pak Packaging Solutions	1976	183	ParallelTopic13 - ID: 183
Guidetti	Lorenzo	Università di Parma, Italia	1787	132	FAR-1B
Guido	Ciro A.	Università del Piemonte Orientale, Italia	876, 852	214, 75	POSTER-B, TEO-A
Guidoni	Leonardo	Department of Physical and Chemical Sciences, University of L'Aquila, Via Vetoio – 67100 Coppito, L'Aquila, Italy	1648	214	POSTER-B
Guidotti	Giulia	Department of Civil, Chemical, Environmental, and Materials Engineering, University of Bologna, Via Terracini 28, Bologna, Italy	1423	214	POSTER-B
Guidotti	Matteo	CNR-SCITEC, Italia	1392	31	POSTER-A
Guigo	Nathanaël	Institute of chemistry, University Côte d'Azur, Nice (France)	725	237	TEC-C
Guiotto	Virginia	University of Torino, Italia	1409	235	FIS-1D
Gul	Sheraz	Fraunhofer ITMP, Schnackenburgallee 114, D-22525 Hamburg, Germany	598, 1596	31, 31	POSTER-A, POSTER-A
Guldi	Dirk	Friedrich-Alexander-University Erlangen-Nuremberg, Germania	1425	31	POSTER-A
Gulino	Antonino	Dept. of Chemical Sciences, University of Catania, Viale A. Doria 6, Catania	1291	166	INO-1C
Gulino	Federica	Dipartimento di Ingegneria, Università degli Studi di Palermo, Viale delle Scienze 6, 90128 Palermo, Italy	1199	74	TEC-A
Gullo	Giorgia	Università di Parma, Italia	1172	31	POSTER-A
Gullo	Ludovica	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", Via della Ricerca Scientifica 1, 00133 Rome, Italy	176	31	POSTER-A
Guntner	Andreas	Department of Mechanical and Process Engineering, ETH, Sonneggstrasse 3, 8092-Zürich, Switzerland	1489	31	POSTER-A
Guolo	Pier Paolo	Università Cà Foscari, Italia	1016, 1108	31, 31	POSTER-A, POSTER-A
Gurevich	Vsevolod	VANDERBILT UNIVERSITY, Usa	1102	154	CSB-1B
Gutfreund	Philipp	ILL Institut Laue-Langevin, Grenoble, France	408	242	FIS-2A
Gutierréz-Armayor	David	Technical University of Munich	112	155	ELE-2
Guzelj	Samo	University of Ljubljana, Slovenia	858	214	POSTER-B
Guzman-Puyol	Susana	Department of Plant Breeding and Biotechnology, Institute for Mediterranean and Subtropical Horticulture "La Mayora" (IHSM-UMA-CSIC), Campus de Teatinos, Bulevar Louis Pasteur 49, 29010, Málaga	729	31	POSTER-A
Guzzi	Beatrice	Acetyca Srl (Saronno)	331	31	POSTER-A
Guzzo	Beniamino	Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, via Licio Giorgieri 1, Italia	364, 1386	31, 214	POSTER-A, POSTER-B
Gwee	Chin Piaw	Program in Emerging Infectious Diseases, Duke-NUS Medical School, Singapore	675	31	POSTER-A
Hall	Kelsi	Faculty of Chemistry, Biotechnology and Food Science, NMBU-Norwegian University of Life Sciences, Ås, Norway	510	214	POSTER-B
Hamidizadeh	Peyman	Politecnico di Bari, Italy	1899	31	POSTER-A
Hannachi	Raouaa	Dipartimento di Scienze Chimiche e Geologiche, Universita di Cagliari,Cittadella Universitaria,09042, Monserrato, Cagliari, Italy	1810	31	POSTER-A
Hartung	Ingo V.	Merck Healthcare KGaA, Germany	194	21	PL-B
Hasler	Marco	Technical University of Munich, Germany	1828	31	POSTER-A
Hayes	Patricia	University of Wollongong, Australia	1484	31	POSTER-A
Hee Yang	Moon	Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School, Boston, MA, USA.; Department of Cancer Biology, Dana-Farber Cancer Institute, Boston, MA, USA.	985	214	POSTER-B
Helli	Hanieh	ELectroANaliytical Chemistry Group, Dipartimento di Chimica, Università degli Studi di Milano,via Golgi 19, 20133 Milano, Italy	239	31	POSTER-A
Hellwig	Andrea	Department of Neurobiology, Heidelberg University, Heidelberg, Germany.	956	134	FAR-1C
Heredia-Guerrero	Josè Alejandro	Department of Plant Breeding and Biotechnology, Institute for Mediterranean and Subtropical Horticulture "La Mayora" (IHSM-UMA-CSIC), Campus de Teatinos, Bulevar Louis Pasteur 49, 29010, Málaga	729	31	POSTER-A
Hermosilla	Jorge Salvador	ITENE, Paterna, Spain	764	31	POSTER-A
Hernández	Simelys	Politecnico di Torino, Italia	865	214	POSTER-B
Herok	Marcin	University of Zurich, Zurich CH-8057, Switzerland	565	154	CSB-1B
Herrera	Miriam	University of Cadiz, Spain	840	254	INO-3
Herrero-Cortell	Miguel Anguel	Università Politècnica di Valencia	1896	31	POSTER-A
Hesse	Salma S.	Department of Chemistry, Università degli Studi di Milano, Via C. Golgi 19, 20133 Milan, Italy	703	31	POSTER-A
Hirsch	Anna	Helmholtz Institute for Pharmaceutical Research (HIPS) – Helmholtz Centre for Infection Research (HZI), Saarbrücken, Germany	1623	134	FAR-1C
Hirsch	Anna K.H.	HZI, Helmholtz Institute for Pharmaceutical Research Saarland (HIPS), 66123 Saarbrucken, Germany	707	132	FAR-1B
Hluhova	Polina	Igor Sikorsky Kyiv Polytechnic Institute,	1786	214	POSTER-B
Höbartner	Claudia	University of Würzburg, Germany	1964	56	ParallelTopic12
Hoch	Matteo	Università Degli Studi di Parma, Italia	1580, 1694	31, 214	POSTER-A, POSTER-B
Hoinkis	Jan	Karlsruhe University of Applied Sciences (HKA), Karlsruhe, Germany	1777	45	ParallelTopic06
Holakooei	Parvin	Università degli studi di Perugia, Italia	337	31	POSTER-A
Honig	Hilah C.	Chemistry Department, Bar-Ilan Center for Nanotechnology and Advanced Materials, Bar- Ilan University, Ramat-Gan 5290002, Israel.	280	72	ELE-1
Honisch	Claudia	Istituto di Chimica Biomolecolare del CNR, Padova, IT	1508	77	CSB-1A
Honorato	João	University of São Paulo, São Paulo, SP, Brazil	340	31	POSTER-A
Honorio Franco	Jefferson	Università degli Studi di Bari "Aldo Moro", Italia	1450	210	ParallelTopic13 - ID: 210
Honorio Franco	Jefferson	Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", via E. Orabona 4, Bari, 70125, Italy	740	252	FIS-3
Honorio Franco	Jefferson	Department of Chemistry, Università degli Studi di Bari "Aldo Moro", Italia	1327	252	FIS-3
Hooshyari Ardakani	Mohammad	Department of Phytochemistry, Medicinal Plants and Drugs Research Institute, Shahid Beheshti University, G.C., Evin, Tehran, Iran	498	140	ANA-1B
Hortbartner	Claudia	University of Würzburg (Germany)	1982	209	ParallelTopic12 - ID: 209
Houser	Josef	Central European Institute of Technology, Masaryk University, Kamenice 753/5, 625 00 Brno, Czech Republic	703	31	POSTER-A
Hreniak	Dariusz	Institute of Low Temperature and Structure Research, Polish Academy of Sciences, ul Okólna 2, PL-50-422, Wrocław, Poland	242	153	TEC-B
Hristozov	Danail	GreenDecision Srl, Venice, Italy	764	31	POSTER-A
Huang	Fan	Università degli Studi di Perugia, Italia	411, 694	31, 31	POSTER-A, POSTER-A
Huaux	François	Louvain Center for Toxicology and Applied Pharmacology, Universite catholique de Louvain, Belgium	1519	214	POSTER-B

Huebner	Harald	Department of Chemistry and Pharmacy, Friedrich-Alexander-University of Erlangen-Nürnberg, Nikolaus-Fiebiger-Str. 10, 91058 Erlangen, Germany	1634	214	POSTER-B
Husain	Islam	National Center for Natural Products Research, School of Pharmacy, The University of Mississippi, Mississippi, 38677, United States.	601	31	POSTER-A
Husien	Amin Hasan	Department of Materials Science and Solar Energy Research Center (MIB-SOLAR), University of Milano-Bicocca, Via Cozzi 55, 20125, Milan, Italy	129	160	FIS-1B
Huskens	Jurriaan	University of Twente, Netherlands, The	185, 664	183, 214	ParallelTopic13 - ID: 183, POSTER-B
Hussain	Rohanah	Diamond Light Source, Harwell Science and Innovation Campus, Didcot, UK	1508	77	CSB-1A
Hyster	Todd K.	Princeton University, Princeton 08544, United States	1430	161	TEO-B
Iacobazzi	Rosa Maria	Department of Pharmacy-Pharmaceutical Sciences, University of Bari "Aldo Moro", Via E. Orabona, 4, I-70125 Bari, Italy	652	70	TEF-2
Iacobelli	Stefano	MediaPharma s.r.l., Via Colle dell'Ara, Chieti 66100, Italy	1607	214	POSTER-B
Iacomini	Antonio	Electronic Ceramics Department, Jozef Stefan Institute, 1000 Ljubljana, Slovenia	1240	31	POSTER-A
Iaconis	Daniela	EXSCALATE – Dompè Farmaceutici SpA, via Tommaso De Amicis 95, 80131, Napoli, Italy	1955	134	FAR-1C
Iacovino	Rosa	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania Luigi Vanvitelli	1293, 1737	31, 266	POSTER-A, CSB-2
Iadonisi	Alfonso	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli "Federico II", Italia	979, 980	31, 139	POSTER-A, ORG-2A
Ialongo	Davide	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210, 1626, 1684, 1616, 1627, 1955	31, 31, 31, 214, 214, 134	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, FAR-1C
Iammarino	Marco	Laboratorio Nazionale di Riferimento per il trattamento degli alimenti e dei loro ingredienti con radiazioni ionizzanti – Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Via Manfredonia, 20 – 71121 Foggia	1424	31	POSTER-A
Ianev	Daiana	Università degli Studi di Pavia, Italia	1139	31	POSTER-A
Iannazzo	Daniela	Università di Messina, Italia	254	236	TEC-D
Iannibelli	Elena	Università di Roma "Tor Vergata", Italia	607	31	POSTER-A
Iannini	Alessandro	Università degli Studi di Roma Tor Vergata, Italia	1008	214	POSTER-B
Iapadre	Debora	Università degli studi dell'Aquila, Italia	940	141	ORG-1A
Iapalucci	Maria carmela	Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italy	1791	31	POSTER-A
Iazzetti	Antonia	Università cattolica del sacro cuore, Roma	1524	237	TEC-C
Icaro Cornaglia	Antonia	Department of Public Health, Experimental and Forensic Medicine, University of Pavia, Italy	1179	214	POSTER-B
Idili	Andrea	Department of Sciences and Chemical Technologies, University of Rome, Tor Vergata, Via della Ricerca Scientifica 1, 00133, Rome, Italy.	673, 1411	31, 146	POSTER-A, ANA-2B
Iebole	Andrea	Department of Chemistry and Industrial Chemistry, University of Genoa, Genoa (GE), Italy	314	262	IND-2A
Ienco	Andrea	Consiglio Nazionale delle Ricerche - Istituto Chimica Composti OrganoMetallici-ICCOM-CNR	2025, 335	192, 243	ParallelTopic08 - ID: 192, FIS-2B
Ienco	Andrea	CNR-ICCOM (Firenze, Italy)	1384	265	DID-B
Iengo	Elisabetta	Department of Chemical and Pharmaceutical Sciences, University of Trieste, Trieste (Italy)	623	165	INO-1B
Iervasi	Erika	IRCSS Ospedale Policlinico San Martino Genova, Italia	132	132	FAR-1B
Ilari	Andrea	Institute of Molecular Biology and Pathology (IBPM), National Research Council of Italy (CNR), 00185 Rome, Italy	1616	214	POSTER-B
Ilarioni	Massimo	I&S srl, Via F.lli Chiaruffi 12, 50067 Rignano sull'Arno, Firenze, Italy	407	159	IND-1D
Illuminati	Davide	Università degli studi di Modena e Reggio Emilia, Department of Life Sciences	688	143	ORG-1C
Illuminati	Silvia	Università Politecnica delle Marche, Italia	907	31	POSTER-A
Illuminati	Silvia	Università Politecnica delle Marche, Italia	479	78	ALI-1A
Illuminati	Silvia	DiSVA, Università Politecnica delle Marche, Italia	416	150	ANA-2D
Imbriano	Carol	Department of Life Sciences, University of Modena e Reggio Emilia, Via G. Campi 103, 41125, Modena, Italy	744	31	POSTER-A
Imparato	Claudio	Università degli Studi di Napoli Federico II, Italia	1918, 387, 1593	31, 237, 236	POSTER-A, TEC-C, TEC-D
Imperatore	Concetta	Dipartimento di Farmacia, Università degli Studi di Napoli Federico II, Italia	1754	139	ORG-2A
Imperio	Daniela	Università del Piemonte Orientale, Italia	617	31	POSTER-A
Incarbone	Elena Aurora	Università degli Studi di Milano - Bicocca, Italia	1315, 1685	31, 31	POSTER-A, POSTER-A
Incerti	Matteo	Università degli Studi di Parma, Italia	1091	214	POSTER-B
Incerto	Elena	Università degli studi dell'Aquila, Italia	940	141	ORG-1A
Infantino	Rossella	Istituto di Chimica dei Composti Organometallici - CNR, Sesto Fiorentino, Italia	576	31	POSTER-A
ingallina	cinzia	università la sapienza, italia	1027	149	ORG-2C
Ingenito	Emis	Department of Pharmacy, University of Salerno, Via Giovanni Paolo II 132, 84084 Fisciano, Italy	312, 259	31, 214	POSTER-A, POSTER-B
Ingenito	Francesco	Experimental Oncology and Immunology, Department of Molecular and Translational Medicine, University of Brescia, 25123, Italy	1717	161	TEO-B
Inguscio	Valentina	Euroapi Italy s.r.l. Via Angelo Titi, 72100 Brindisi Italy	1149	31	POSTER-A
Inico	Elisabetta	Università degli Studi di Milano-Bicocca, Italia	451	31	POSTER-A
Innocenti	Marzia	Department of NEUROFARBA, University of Florence	1485, 1572, 1693	214, 259, 259	POSTER-B, ALI-1B, ALI-1B
Innocenti	Massimo	Università di Firenze, Italia	575, 691, 909, 603, 605, 687, 602	31, 31, 31, 214, 214, 138, 155	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, ANA-2A, ELE-2
Insero	Giacomo	Department of Biomedical, Experimental and Clinical Sciences "Mario Serio", University of Florence, Viale Morgagni 50, 50134, Florence (FI), Italy	769	245	ORG-3B
Insogna	Raimondo	CNR SCITEC, Italia	529	31	POSTER-A
Intagliata	Sebastiano	Department of Drug and Health Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	970	214	POSTER-B
Interino	Nicolò	IRCCS Istituto delle Scienze Neurologiche di Bologna, Italia; Dipartimento di Chimica "G. Ciamician", Università di Bologna, Bologna, Italia	1846	214	POSTER-B
Intini	Gianluca	Tecnologia e Ambiente, Via Michele Mummolo 13, 70017 Putignano (Ba), Italia	1168	214	POSTER-B
Intini	Niccolò	Università degli Studi di Milano, Italia	373, 272	31, 214	POSTER-A, POSTER-B
Inturri	Rosanna	Fidia Farmaceutici, Via Ponte della Fabbrica 3A, 35031 Abano Terme (PD), Italy	803	214	POSTER-B
Invernizzi	Annalisa	University of Zurich, Zurich CH-8057, Switzerland	565	154	CSB-1B
Iorizzi	Maria	Università del Molise, Italia	1162, 1150	31, 214	POSTER-A, POSTER-B
Iovino	Pasquale	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania "Luigi Vanvitelli", via Vivaldi 43, 81100, Caserta	1916	31	POSTER-A
Ippodrino	Rudy	Ulisse BioMed Labs, Area Science Park, 31149 Trieste, Italy	518	31	POSTER-A
Ippoliti	Rodolfo	Department of Life, Health and Environmental Sciences, University of L'Aquila, 67100 Coppito, Italy	1607	214	POSTER-B
Iraci	Nunzio	Laboratory of Molecular Biology, Department of Biomedical and Biotechnology Sciences, University of Catania	1472	214	POSTER-B
Irrera	Elisa	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1279, 1299	214, 66	POSTER-B, ANA-1A
Irto	Anna	Università di Messina, Italia	1451, 969, 1248, 1247, 911	31, 214, 214, 248, 148	POSTER-A, POSTER-B, POSTER-B, ANA-3A, ANA-2C
Isa	Valerio	Universita' Milano Bicocca	1784	214	POSTER-B
Isernia	Carla	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania Luigi Vanvitelli	1293, 1737, 1742	31, 266, 263	POSTER-A, CSB-2, CSB-3
Islamov	I	Moscow State University	1759	214	POSTER-B
Isoldi	Giovanni	Materia Medica Processing, Siena, Italia	1221	214	POSTER-B
Italia	Alice	University of Milan-Bicocca, Milano Italia	698, 741, 192, 284	214, 214, 77, 266	POSTER-B, POSTER-B, CSB-1A, CSB-2
Itri	Giulia Maria	Dipartimento DICEAM, Università degli Studi Mediterranea di Reggio Calabria, IT89123 Reggio Calabria, Italy	536	214	POSTER-B
Iucci	Giovanna	Sciences Department, Roma Tre University, via della Vasca Navale 79, 00146 Rome (IT)	934, 1296, 1488, 1774	214, 214, 214, 165	POSTER-B, POSTER-B, POSTER-B, INO-1B
Iuliano	Veronica	Dipartimento di Chimica e Biologia, Università degli Studi di Salerno, Italia	1716	71	MAS
Iuzzolino	Gabriele	Scuola Superiore Meridionale, Napoli, 80138, Italia; Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Napoli, 80126, Italia	1600	214	POSTER-B
Ivaldi	Chiara	Università del Piemonte Orientale, Dipartimento per lo sviluppo sostenibile e la transizione ecologica, Italia	1111	249	ANA-3B
Ivanov	G	Moscow State University	1759	214	POSTER-B
Izzi	Margherita	Università degli Studi di Bari, Italia	1446, 860, 862, 1004, 854	31, 214, 214, 214, 250	POSTER-A, POSTER-B, POSTER-B, POSTER-B, ANA-3C
Izzo	Francesca	Università Ca' Foscari di Venezia	1896	31	POSTER-A

Izzo	Irene	Università di Salerno, Italia	628	147	ORG-2B
J. W. Shimon	Linda	Weizmann Institute of Science, Department of Chemical Research Support, 7610001 Rehovot, Israel	1022	242	FIS-2A
Jabbarli	Narmin	UNIVERSITA DEGLI STUDI DI MILANO, Italia	787	214	POSTER-B
Jabin	Ivan	Laboratoire de Chimie Organique (LCO), Université Libre de Bruxelles (ULB)	1085	246	ORG-3C
Jaconis	Paolo	Univeristà di Torino, Italia	1019	214	POSTER-B
Jain	Swareena	University of Torino, Italia	636	214	POSTER-B
Jakopin	Žiga	University of Ljubljana, Slovenia	858	214	POSTER-B
Janeba	Zlatko	Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, v.v.i. Flemingovo nám. 2, 16610 Prague 6, Czech Republic	674	65	FAR-1A
Jansen	Johannes Carolus	Institute on Membrane Technology, National Research Council of Italy (CNR-ITM), Rende (Italy)	1738	174	ParallelTopic03 - ID: 174
Janssens	Ton V.W.	Umicore Denmark ApS, Denmark	566	214	POSTER-B
Jimenez de Aberasturi	Dorleta	CIC biomaGUNE, San Sebastián, Spain	902	31	POSTER-A
Jiménéz-Osés	Gonzalo	Center for Cooperative Research in Biosciences (CIC bioGUNE), Basque Research and Technology Alliance (BRTA), 48160 Derio, Spain; Ikerbasque, Basque Foundation for Science, 48013 Bilbao, Spain	690	31	POSTER-A
Jin	Zongxin	Università di Bologna, Italia	1188	31	POSTER-A
Jiritano	Antonio	Dipartimento di Chimica e Tecnologie Chimiche - CTC, Università della Calabria, Via P. Bucci, Cubo 12C, 87036 - Rende (CS), IT	268	31	POSTER-A
Joerg	Radnik	Federal Institute for Materials Research and Testing (BAM), Unter den Eichen 44-46, 12203 Berlin, Germany	128	214	POSTER-B
Joseph	Edith	Haute Ecole Arc Conservation-Restauration, HES-SO, Neuchatel, Switzerland	1905	214	POSTER-B
Jug	Mario	Faculty of Pharmacy and Biochemistry, University of Zagreb, Zagreb, Croatia	1893	214	POSTER-B
Jurinovich	Sandro	IT "C. Cattaneo", San Miniato (PI), Italia	1993	53	ParallelTopic10
Just-Baringo	Xavier	Universitat de Barcelona, Spain	1444	214	POSTER-B
Kabir	Abuzar	Department of Chemistry and Biochemistry, International Forensic Research Institute, Florida International Univeristy, 11200 SW 8th Street, Miami, FL (USA)	1811	31	POSTER-A
Kállay	Mihály	Budapest University of Technology and Economics, Műegyetem rkp. 3, H-1111 Budapest, Hungary	986	31	POSTER-A
Kampasis	Dionysis	University of Bologna, Italy	1561	214	POSTER-B
Kantarod	Kritchasorn	Department of Chemistry, Faculty of Science, Mahidol University, Bangkok 10400, Thailand	407	159	IND-1D
Kapelyushko	Valeriy	Syensqo, Italia	748	31	POSTER-A
Kaplan-Ashiri	Ifat	Weizmann Institute of Science, Department of Chemical Research Support, 7610001 Rehovot, Israel	1022	242	FIS-2A
Kasmiarti	Getari	Universitas Sriwijaya, Indonesia	756	47	ParallelTopic07
Kassouf	Nicholas	Alma Mater studiorum Università di Bologna	1157	214	POSTER-B
Kathib	Mohamad	Department of NEUROFARBA, University of Florence, Via Ugo Schiff 6, Sesto Fiorentino (Italy)	1693	259	ALI-1B
Kavich	Gwénaëlle M.	Museum Conservation Institute, Smithsonian Institution	1471	238	ABC-B
Kayahan	Emine	Center for Industrial Process Technology, Department of Chemical Engineering, KU Leuven, Agoralaan Building B, 3590 Diepenbeek, Belgium	1493	245	ORG-3B
Kazes	Miri	Weizmann Institute of Science, Department of Molecular Chemistry and Materials Science, 7610001 Rehovot, Israel	1022	242	FIS-2A
Kebria	Mohammad	Università degli Studi di Milano Bicocca, Italia	1146	214	POSTER-B
Keivani	Niloufar	Department of Pharmacy, School of Medicine and Surgery, University of Naples Federico II, Via Domenico Montesano 49, 80131, Naples, Italy	1475	214	POSTER-B
Keminer	Oliver	Fraunhofer Institute for Translational Medicine and Pharmacology ITMP	1596	31	POSTER-A
Kennedy	Breandan	University College Dublin	1576	136	FAR-1D
Keren	Leat	Università di Padova, Italia	995	199	ParallelTopic01 - ID: 199
Keune	Katrien	Van 't Hoff Institute for Molecular Sciences, University of Amsterdam, Amsterdam, The Netherlands; Conservation & Science Department, Rijksmuseum, Amsterdam, The Netherlands	1905	214	POSTER-B
Khaleghi Abasabadi	Reza	Università di Torino, Italia; Umicore Denmark ApS, Denmark	566	214	POSTER-B
Khalid	Shahid	Università degli studi di Milano bicocca, Italia	1818, 1808	31, 214	POSTER-A, POSTER-B
Khalid	Shahid	University of Milano Bicocca, Italy	1867	214	POSTER-B
Khalid	Shahid	University of Milano-Bicocca, via Roberto Cozzi 55, 20125	1112	72	ELE-1
Khaliha	Sara	Institute for Organic Synthesis and Photoreactivity (ISOF), National Research Council of Italy (CNR)	1263, 1264	214, 214	POSTER-B, POSTER-B
Khan	Ikhlas A.	National Center for Natural Products Research, School of Pharmacy, The University of Mississippi, Mississippi, 38677, United States.	601	31	POSTER-A
Khan	Shabana I.	National Center for Natural Products Research, School of Pharmacy, The University of Mississippi, Mississippi, 38677, United States.	601	31	POSTER-A
Khatib	Mohamad	Department of NEUROFARBA, University of Florence	1485, 1568	214, 214	POSTER-B, POSTER-B
Khodaei Dolouei	Maryam	Department of Neurobiology, Osnabrück University, Osnabrück, Germany.	956	134	FAR-1C
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Kim	Beom Soo	Department of Chemical Engineering, Chungbuk National University, Cheongju, Chungbuk 28644, Republic of Korea	1259	261	ALI-2B
Kintzel	Benjamin	IAAC, Friedrich-Schiller-Universität Jena	801	214	POSTER-B
Kippin	Tod	University of California, Santa Barbara, California, United States	1411	146	ANA-2B
Kipyator	Mercy Jelagat	University of Siena, Italy	793	214	POSTER-B
Kirpotina	Liliya N.	Department of Microbiology and Cell Biology, Montana State University	1660	31	POSTER-A
Klarić	David	Faculty of Science, University of Zagreb, Zagreb, Croatia	1893	214	POSTER-B
Kleij	W. Arjan	Institute of Chemical Research of Catalonia (ICIQ), The Barcelona Institute for Science & Technology (BIST), 4300 Tarragona, Spain; Catalan Institute of Research and Advanced Studies (ICREA), Pg. Lluis Companys 23, 08010, Barcelona, Spain	1843	214	POSTER-B
Koeberle	Andreas	Michael Popp Institute, Center for Molecular Biosciences Innsbruck (CMBI), University of Innsbruck, Tirol, Innsbruck, Austria	826	266	CSB-2
Koeberle	Solveigh	Michael Popp Institute, Center for Molecular Biosciences Innsbruck (CMBI), University of Innsbruck, Tirol, Innsbruck, Austria	826	266	CSB-2
Kohout	Claudia Vera	Università degli Studi di Milano, Italia	1646	147	ORG-2B
Kokotos	Christoforos G.	National and Kapodistrian University of Athens, Greece	877	31	POSTER-A
Kolagkis	Periklis X.	National and Kapodistrian University of Athens, Greece	877	31	POSTER-A
Kolman	Michiel	Elsevier, Netherlands, The	901	171	ParallelTopic11
Korb	Jean-Pierre	Sorbonne-université, CNRS, PHENIX, Paris, France	158	240	INO-2A
Korom	Sasa	Department of Chemistry, Life Sciences and Envirnmental Sustainability, University of Parma, Italy	734	151	ORG-2D
Kostomitsopoulos	Nikolaos	Biomedical Research Foundation of the Academy of Athens, Athens, Greece	1226	31	POSTER-A
Kothapalli	Hari Babu	National Center for Natural Products Research, School of Pharmacy, The University of Mississippi, Mississippi, 38677, United States.	601	31	POSTER-A
KOVAČEVIĆ	Anđela	Dipartimento Politecnico di Ingegneria e Architettura, Laboratorio di Tecnologie Chimiche, Università di Udine, Via Cotonificio 108, 33100, Udine, Italy.	786	214	POSTER-B
Kovačević	Anđela	Università di Udine, Dipartimento Politecnico di Ingegneria e Architettura	1166	214	POSTER-B
Kovachka	Sandra	The Herbert Wertheim UF Scripps Institute for Biomedical Innovation & Technology, Jupiter, Florida, USA	1422	134	FAR-1C
Kovalenko	Maksym V	ETH Zurich, Switzerland; Empa-Swiss Federal Laboratories for Materials Science and Technology, Switzerland	709	166	INO-1C
Kovinchuk	Iryna	University of Palermo; Igor Sikorsky Kyiv Polytechnic Institute,	1786	214	POSTER-B
Kovtun	Alessandro	Institute for the Organic Synthesis and Photoreactivity, National Research Council, Bologna, 40129, Italy	1090, 1264, 1433	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Kowalik	Remigiusz	AGH University of Krakow, Poland	909	31	POSTER-A
Kozyr	Elizaveta	Università degli Studi di Torino, Italy	1794	214	POSTER-B
Kralj	Slavko	Materials Synthesis Dept., Jožef Stefan Institute, Jamova 39, 1000, Ljubljana, Slovenia	550	244	ORG-3A
Kranz	Christine	Institute of Analytical and Bioanalytical Chemistry, Ulm University, Albert Einstein Allee, 11, 89081, Ulm, Germany	677	250	ANA-3C

Kronik	Leeor	Weizmann Institute of Science, Israel	215	20	PL-A
Krusenbaum	Andrea	Department of Neurobiology, Osnabrück University, Osnabrück, Germany.	956	134	FAR-1C
Kulis	David	WHOI, Woods Hole Oceanographic Institution, Woods Hole, MA, USA	1566	150	ANA-2D
Kunova	Andrea	Department of Food, Environmental and Nutritional Sciences, via G. Celoria 2, 20133 Milano	1020, 1540, 795	31, 214, 139	POSTER-A, POSTER-B, ORG-2A
Kurt	Han	ISTANBUL MEDIPOL UNIVERSITY, Turkey	1102	154	CSB-1B
L'Imperio	Vincenzo	Università degli studi di Milano Bicocca, Italia	1884	35	ParallelTopic01
L'Imperio	Vincenzo	University of Milano-Bicocca, IRCCS Fondazione San Gerardo dei Tintori, Via G. B. Pergolesi, 33, Monza, Italy	992	71	MAS
L`Imperio	Vincenzo	Department of Medicine and Surgery, Pathology, University of Milano-Bicocca, IRCCS Fondazione San Gerardo dei Tintori, Monza, Italy	1535	31	POSTER-A
La Cognata	Sonia	Università di Pavia, Italia	1230, 1662, 1207	214, 214, 234	POSTER-B, POSTER-B, FIS-1C
La Deda	Massimo	Università della Calabria, Italia	935	240	INO-2A
La Ferla	Barbara	Dipartimento di Scienze dell'Ambiente e della Terra, Università degli Studi di Milano-Bicocca	1320, 732, 1588	210, 214, 214	ParallelTopic13 - ID: 210, POSTER-B, POSTER-B
La Gambina	Valerio	Sapienza Università di Roma, Italia	1095	214	POSTER-B
La Gatta	Salvatore	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, 80126 Napoli, Italia	1145	214	POSTER-B
La Greca	Eleonora	Università di Catania, Italia	482, 1171, 896	31, 31, 157	POSTER-A, POSTER-A, IND-1B
La Manna	Sara	Department of Pharmacy, University of Naples "Federico II", 80131, Naples, Italy	1751	67	INO-1A
La Mantia	Fabio	Universität Bremen, Germany	1979	39	ParallelTopic03
la Marca	Giancarlo	Mass spectrometry service centre (CISM), University of Florence, V.le G. Pieraccini 6, 50139, Firenze, Italy	1572	259	ALI-1B
La Mendola	Diego	Department of Pharmacy, University of Pisa, Via Bonanno Pisano 6, 56126, Pisa, Italy	341	165	INO-1B
La Motta	Concettina	University of Pisa, Italy	1307	214	POSTER-B
La Nasa	Jacopo	Università di Pisa, Italia	235, 332, 231	214, 214, 73	POSTER-B, POSTER-B, ABC-A
La Noce	Daniela Francesca	UVR,Spin-off sector, National Research Council of Italy (CNR), Roma, Italy	1777	45	ParallelTopic06
La Parola	Valeria	ISMN-CNR, Via U. La Malfa 153, 900146 Palermo, Italy	1171, 896	31, 157	POSTER-A, IND-1B
La Regina	Giuseppe	Laboratory Affiliated with the Institute Pasteur Italy - Cenci Bolognetti Foundation, Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza University of Rome, 00185 Rome, Italy	533	132	FAR-1B
La Rocca	Roberto	Sorpintendenza del Mare, Italia	1941	43	ParallelTopic05
La Russa	Mauro Francesco	Department of Biology, Ecology and Earth Sciences, University of Calabria	632	214	POSTER-B
La Spada	Gabriella	Department of Pharmacy-Pharmaceutical Sciences, University of Bari Aldo M oro, via E. Orabona 4, Bari	1464	214	POSTER-B
La Tella	Roberta	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1289	214	POSTER-B
La Tella	Roberta	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1259	261	ALI-2B
La Terza	Antonietta	School of Biosciences and Veterinary Medicine, University of Camerino, Camerino (MC), Italy.	1653	261	ALI-2B
La Torre	Chiara	Università della Calabria, Italia	1437, 584, 564	31, 78, 259	POSTER-A, ALI-1A, ALI-1B
La Vecchia	Marta	Department of Health Sciences, University of Piemonte Orientale, Novara, Italy	1375	214	POSTER-B
Labarile	Rossella	Istituto per i Processi Chimico-Fisici, (CNR), Italia	775, 1450, 1070, 1721, 1327	31, 210, 214, 214, 252	POSTER-A, ParallelTopic13 - ID: 210, POSTER-B, POSTER-B, FIS-3
Labate	Maria	Università di Torino, Italia	1857, 1399	31, 238	POSTER-A, ABC-B
Lacalamita	Dario	Università degli Studi di Bari "Aldo Moro", Italia	1450, 1327	210, 252	ParallelTopic13 - ID: 210, FIS-3
Lacarbonara	Giampaolo	Università di Bologna, Italia	810	72	ELE-1
Lacivita	Enza	Dipartimento di Farmacia - Scienze del Farmaco, Università degli Studi di Bari Aldo Moro, Italia	1660	31	POSTER-A
Ladogana	Franca	Consorzio Tutela Aceto Balsamico di Modena, Via Ganaceto 113, Modena, 41121, Italy	544	214	POSTER-B
Lafiosca	Piero	Scuola Normale Superiore, Italia	1169, 1551, 1756, 1077	214, 214, 214, 68	POSTER-B, POSTER-B, POSTER-B, FIS-1A
Laganà Vinci	Roberto	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina	1361, 1370	31, 214	POSTER-A, POSTER-B
Laganà	Aldo	Università degli Studi di Roma "La Sapienza", Italia	449, 232, 450	31, 195, 214	POSTER-A, ParallelTopic12 - ID: 195, POSTER-B
Laganà	Aldo	University of Rome "La Sapienza", Italia	358	66	ANA-1A
Laganà	Aldo	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia; Istituto Nazionale di Biostrutture e Biosistemi (INBB), Roma, Italia	475	146	ANA-2B
Laghezza	antonio	Department of Pharmaceutical Sciences, Università degli Studi di Bari, Via Orabona 4, 70125 Bari, Italy	1277	31	POSTER-A
Laghi	Laura	Dipartimento di Ingegneria Industriale, Università di Bologna, Italia	494	238	ABC-B
Lagostina	Valeria	Univeristà di Torino, Italia	1019	214	POSTER-B
Lagostina	Valeria	Department of Chemistry, University of Turin, Italy	1519	214	POSTER-B
Lahav	Michal	Weizmann Institute of Science, Department of Molecular Chemistry and Materials Science, 7610001 Rehovot, Israel	1022	242	FIS-2A
Lai	Michele	Department of Translational Research and New Technologies in Medicine and Surgery, University of Pisa	1663	214	POSTER-B
Lai	Sarah	Sotacarbo SpA, Italia	1674	160	FIS-1B
Lalli	Daniela	Dipartimento di Scienze ed Innovazione Tecnologica, Università degli Studi del Piemonte Orientale "A. Avogadro", Viale T. Michel 11, 15121 Alessandria, Italy.	432	214	POSTER-B
Lamba	Doriano	Institute of Crystallography - C.N.R.- Trieste Outstation. Area Science Park. Trieste, Italy; Interuniversity Consortium "Biostructures and Biosystems National Institute". Roma, Italy	502	214	POSTER-B
Lamberti	Andrea	Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy; Istituto Italiano di Tecnologia, Via Livorno 60, 10144 Torino , Italy	380	31	POSTER-A
Lamberti	Annalisa	Dept. Molecular Medicine and Medical Biotechnology, Univ. Naples Federico II, Naples, Italy	724	214	POSTER-B
Lamberti	Giuseppe	Dep. of Mathematics and Physics, Ennio De Giorgi, University of Salento, Via per Arnesano - Lecce (Italy)	1218, 1231	214, 214	POSTER-B, POSTER-B
Lambertini	Mattia	University of Turin, Italia	746	31	POSTER-A
Lambona	Chiara	Department of Drug Chemistry and Technologies, Sapienza University of Rome, P.le A. Moro 5 00185, Rome	853, 1643, 851	31, 56, 132	POSTER-A, ParallelTopic12, FAR-1B
Lamelza	Lara	Sapienza Università di Roma, Italia	1444	214	POSTER-B
Lami	Federico	University of Milan-Bicocca, Milano Italia	698, 741, 192, 284	214, 214, 77, 266	POSTER-B, POSTER-B, CSB-1A, CSB-2
Lami	Matteo	università degli studi di siena, Italia	1859	214	POSTER-B
Lämmerhofer	Michael	Institute of Pharmaceutical Sciences, University of Tuebingen, Auf der Morgenstelle 8, Tuebingen, Germany	1868	31	POSTER-A
Lammi	Carmen	Department of Pharmaceutical Sciences, Università degli Studi di Milano, Via Mangiagalli 25, Milan, Italy	1752	255	FAR-2A
Lamponi	Stefania	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	230, 755	214, 154	POSTER-B, CSB-1B
Lamuraglia	Raffaella	Center for Cultural Heritage Technology, Istituto Italiano di Tecnologia, Italia; Dipartimento Scienze Molecolari e Nanosistemi, Università Ca' Foscari Venezia, Italia	1000	214	POSTER-B
Lana	Giuseppe Cesare	Institute for Polymers, Composites and Biomaterials (IPCB-CNR), CNR, Portici, Italy	177	31	POSTER-A
Lanaro	Daniele	Indena, Italia	745	149	ORG-2C
Lancellotti	Isabella	University of Modena and Reggio Emilia	642, 668, 1181	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Landi	Noemi	ICCOM-CNR, Pisa, Italia	1768	214	POSTER-B
Landi	Stefano	Department of Biology, University of Pisa, Pisa, Italy	1220	154	CSB-1B
Lando	Gabriele	Università di Messina, Italia	1451	31	POSTER-A
Lando	Gabriele	Università degli Studi di Messina, Italia	572, 969, 1248	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Lando	Gabriele	Università di Messina, Italia	911	148	ANA-2C
Lando	Gabriele	Università di Messina, Italia	1520	148	ANA-2C
Landrini	Martina	Università degli Studi di Perugia	2020	167	INO-1D
Landucci	Elisa	Dipartimento di Scienze della Salute, Italia	968	31	POSTER-A
Lanero	Francesco	Università di Padova, Italia	1659	214	POSTER-B
Lanfranco	Alberto	Department of Chemistry, University of Turin	870	189	ParallelTopic04 - ID: 189
Lanfrancone	Luisa	Laboratory of Innovative approaches for tissue engineering and drug delivery, Joint Research Platform "ONCO-TECH LAB - Modeling and Applications for Human Health", Politecnico di Milano - IEO "European Institute of Oncology"; Istituto Europeo di Oncologia, Milano, Italia	262	214	POSTER-B

Langasco	Ilaria	Dipartimento di Scienze Chimiche, Fisiche, Matematiche e Naturali, Università degli Studi di Sassari, Via Vienna 2, 07100-Sassari, Italia	728	150	ANA-2D
Lange	Heiko	Università degli Studi di Milano-Bicocca, Italia	1833, 1797, 1876	31, 140, 165	POSTER-A, ANA-1B, INO-1B
Langella	Aniello	Department of Chemical Sciences, University of Naples Federico II, Naples, Italy; National Reference Center for Electrochemical Energy Storage (GISEL), Firenze, Italy	347	214	POSTER-B
Langellotto	Mattia Danilo	Università degli studi di Sassari, Italia	1667	214	POSTER-B
Lanza	Angelica Maria	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, 70126 Bari, Italy	1416, 1436	214, 214	POSTER-B, POSTER-B
Lanza	Valeria	Institute of Crystallography, National Research Council, Catania, Italy	826	266	CSB-2
Lanzalunga	Osvaldo	La Sapienza, Italia	1640	31	POSTER-A
Lanzanova	Francesca	Dip Chemistry, Materials and Chemical Engineering Politecnico di Milano, Italia	1053	214	POSTER-B
Lanzi	Cecilia	Università degli studi di Milano, Italia	919	75	TEO-A
Lanzi	Matteo	Università Degli Studi di Parma, Italia	1580	31	POSTER-A
Lanzi	Matteo	Institute of Chemical Research of Catalonia (ICIQ), The Barcelona Institute for Science & Technology (BIST), 4300 Tarragona, Spain	1843	214	POSTER-B
Lanzoni	Aldo	Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	624, 588, 1472, 583, 837	31, 214, 214, 264, 256	POSTER-A, POSTER-B, POSTER-B, ORG-1B, ORG-4A
Lapenta	Fabio	International Center for Genetic Engineering and Biotechnology, Italia; 1 Laboratory for Environmental and Life Sciences, University of Nova Gorica, 5000 Nova Gorica, Slovenia	393	214	POSTER-B
Laprairie	Robert	College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, SK S7N 5E5, Canada	1957	65	FAR-1A
Laquintana	Valentino	Department of Pharmacy – Pharmaceutical Sciences, University of Bari Aldo Moro, Via E. Orabona 4, Bari (Italy)	651	267	TEF-1
Larotonda	Giuseppe	Università degli Studi della Basilicata, Italia	1699	31	POSTER-A
Lasagni	Marina	Universita' Milano Bicocca	1784	214	POSTER-B
Lasala	Pierluigi	Department of Chemistry, University of Bari, Via Orabona 4, 70126 (Bari) Italy	938, 678, 740	214, 243, 252	POSTER-B, FIS-2B, FIS-3
Lascari	Davide	Università degli Studi di Palermo, Italia	572, 969, 716	214, 214, 248	POSTER-B, POSTER-B, ANA-3A
Laschi	Serena	Università di Firenze, Dipartimento di Chimica "Ugo Schiff" (DICUS)	771, 780, 784	214, 214, 144	POSTER-B, POSTER-B, ANA-1D
Lascialfari	Alessandro	Università di Pavia, Italia	931	31	POSTER-A
Lastoria	Secondo	Nuclear Medicine Division, Istituto Nazionale Tumori - IRCCS Fondazione G. Pascale, Napoli, Italy.	352	65	FAR-1A
Latronico	Mario	Politecnico di Bari, Italia; Innovative Solutions S.r.l., Italia	1098, 831	31, 214	POSTER-A, POSTER-B
Lattanzi	Alessandra	Università degli Studi di Salerno, Italia	1435, 1935	31, 198	POSTER-A, ParallelTopic15 - ID: 198
Lattanzi	Giulia	Aptuit (Verona) Srl, an Evotec company	983	212	ParallelTopic15 - ID: 212
Latterini	Loredana	Nano4Light Lab - Università di Perugia	608, 1270, 1713, 1584, 1889, 360, 551, 335	31, 31, 31, 214, 214, 242, 160, 243	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, FIS-2A, FIS-1B, FIS-2B
Lattuada	Luciano	Bracco Imaging, Italia	189, 1192	189, 214	ParallelTopic04 - ID: 189, POSTER-B
Laudadio	Emiliano	Università Politecnica delle Marche, Italia	1706, 1679	214, 151	POSTER-B, ORG-2D
Laurenza	Saverio	Comando Provinciale dei Vigili del Fuoco Basilicata, Via Appia 321/b, 85100, Potenza	729	31	POSTER-A
Lauria	Federica	Università degli Studi di Torino, Italia	695	214	POSTER-B
Lauriola	Angela	Department of Biotechnology, University of Verona, Strada le Grazie 15, 37134 Verona, Italy	1739	31	POSTER-A
Lauro	Gianluigi	Department of Pharmacy, University of Salerno, Via Giovanni Paolo II 132, 84084 Fisciano, Italy	312, 1162, 1371, 1506, 1507, 259, 1150, 1521, 1027	31, 31, 31, 31, 31, 214, 214, 147, 149	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, ORG-2B, ORG-2C
Laus	Antonio	University of Modena and Reggio Emilia (UNIMORE), Via Giuseppe Campi, 103, Modena	743	31	POSTER-A
Laus	Antonio	UniMORE, Italia	785	214	POSTER-B
Lavorano	Silvia	Acquario di Genova	1784	214	POSTER-B
Lavorato	Cristina	Dipartimento di Ingegneria dell'Ambiente, Università della Calabria, via P. Bucci, Cubo 44/A, Rende (CS), Italia	1490, 1466	214, 153	POSTER-B, TEC-B
Lay	Luigi	Dipartimento di Chimica, Università degli Studi di Milano, Italia	1708, 1646	214, 147	POSTER-B, ORG-2B
Lazaro	Ariadna	Karlsruhe Institute of Technology, Germania	205	214	POSTER-B
Lázaro	Ariadna	Institut für Funktionelle Grenzflächen (IFG), Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen 76344, Germany	162	165	INO-1B
Lazaro	Ariadna	Institut für Funktionelle Grenzflächen (IFG), Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen 76344, Germany	234	246	ORG-3C
Lazzara	Giuseppe	Università degli Studi di Palermo, Italia	366, 1786, 716, 514, 1516	214, 214, 248, 160, 239	POSTER-B, POSTER-B, ANA-3A, FIS-1B, ABC-D
Lazzarato	Loretta	Universita di Torino, Italia	1219, 1422	31, 134	POSTER-A, FAR-1C
Lazzari	Federico	Scuola Normale Superiore, Pisa, Italia	895	49	ParallelTopic08
Lazzarin	Luca	Università degli Studi di Padova, Italia	607	31	POSTER-A
Lazzarini	Elisa	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Italia	1533	144	ANA-1D
Lazzarini	Paolo	Università di Torino, Italia	1178, 1205	160, 160	FIS-1B, FIS-1B
Leblebici	Mumin Enis	Center for Industrial Process Technology, Department of Chemical Engineering, KU Leuven, Agoralaan Building B, 3590 Diepenbeek, Belgium	1493	245	ORG-3B
Leccese	Gabriella	Institute of Nanotechnology (NANOTEC)-CNR, Lecce, 73100, Italy	678	243	FIS-2B
Lecchi	Davide	Department of Pharmaceutical Sciences, University of Milan, 20133 Milan, Italy	827	31	POSTER-A
Leccioli	Leonardo	Politecnico di Milano, Italia	338	214	POSTER-B
Lechner	Horst	Institute of Biochemistry, Graz University of Technology, Graz	794	214	POSTER-B
Lee	Chaehoon	Department of Chemistry, University of Pavia, via T. Taramelli 12, 27100 Pavia; Arvedi Laboratory of non-Invasive Diagnostics, CISRiC, University of Pavia, via Bell'Aspa 3, 26100 Cremona, Italy	401	31	POSTER-A
Lee	Sunghee	Department of Chemistry & Biochemistry, Iona University, New Rochelle, NY US	1701	214	POSTER-B
Leech	Donal	School of Biological and Chemical Sciences and Ryan Institute, University of Galway, University Road, Galway H91 TK33, Ireland	817	214	POSTER-B
Lefebvre	Quentin	SpiroChem AG, Mattenstrasse 22, 4058 Basel, Switzerland	1907	214	POSTER-B
Leggerini	Chiara	University of Brescia, via Branze 38, 25123, Brescia	1038	208	ParallelTopic11 - ID: 208
Leggio	Loredana	Laboratory of Molecular Biology, Department of Biomedical and Biotechnology Sciences, University of Catania	1472	214	POSTER-B
Legnaioli	Stefano	Institute of Chemistry of Organometallic Compounds, Research Area of National Research Council, Italia	1832	31	POSTER-A
Legname	Giuseppe	Laboratory of Prion Biology, Department of Neuroscience, Scuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste, Italy	1543	214	POSTER-B
Legnani	Laura	Università di Milano, Italia ; Università di Catania, Italia	661	214	POSTER-B
Legnani	Laura	Università degli Studi di Milano-Bicocca, Italia	926	214	POSTER-B
Lehn	Jean-Marie	University of Strasbourg, Francia	161	215	NB
Lehtiö	Lari	University of Oulu	1456	214	POSTER-B
Leinardi	Riccardo	Louvain Center for Toxicology and Applied Pharmacology, Universite catholique de Louvain, Belgium	1519	214	POSTER-B
Leitus	Gregory	Weizmann Institute of Science, Department of Chemical Research Support, 7610001 Rehovot, Israel	1022	242	FIS-2A
Lelario	Filomena	Università degli Studi della Basilicata, Italia	933, 1903	214, 214	POSTER-B, POSTER-B
Lembo	Angelo	Startnetics, Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata	1241, 1242, 1385, 1239, 1233	31, 31, 214, 241, 254	POSTER-A, POSTER-A, POSTER-B, INO-2B, INO-3
Lembo	David	Università di Torino, Italia	1161	214	POSTER-B
Lembo	Francesca	Università degli Studi di Napoli Federico II, Italia	1686	31	POSTER-A
Lembo	Vittorio	Università di Urbino, Italia	1441	31	POSTER-A
Lemos	Reinier	Università degli Studi di Napoli Federico II, Italia; Universidad de la Habana, Cuba	1734	245	ORG-3B
Lenci	Elena	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739	31	POSTER-A
Lentini Campallegio	Claudio	Università degli Studi di Trieste, Dipartimento di Fisica, Trieste	1041	214	POSTER-B
Lentini	Giovanni	Dipartimento di Farmacia - Scienze del Farmaco, Italia	1634, 978	214, 259	POSTER-B, ALI-1B
Lenzi	Alessio	Department of Chemistry and Industrial Chemistry University of Pisa, Via Giuseppe Moruzzi 13, Pisa, Italy	1747, 1438	31, 258	POSTER-A, ANA-4A
Lenzi	Chiara	Department of Industrial Chemistry "Toso Montanari", University of Bologna, via Gobetti 85 40129 Bologna, Italy	141	214	POSTER-B
Leona	Marco	The Metropolitan Museum of Art, United States of America	1995	30	TOPIC-F
Leonardi	Maurizio	Italmatch Chemicals S.p.A., Via S. Tommaso, 13, 06049 Spoleto (PG), Italia	1432	214	POSTER-B
Leone	Alessandro	Department of Food, Environmental and Nutritional Sciences, Università degli Studi di Milano, Via Mangiagalli 25, Milan, Italy	1752	255	FAR-2A
Leone	Federica	STEBICEF Department, University of Palermo, Viale delle Scienze 17, 90128 Palermo, Italy	1595	214	POSTER-B

Leone	Gemma	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	230, 1176, 1632	214, 165, 243	POSTER-B, INO-1B, FIS-2B
Leone	Gian Paolo	ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Department for Sustainability - CR Casaccia, Rome, Italy	478	31	POSTER-A
Leone	Linda	Department of Chemical Sciences, University of Naples Federico II, via Cintia 21, 80126-Naples, Italy	1106, 1145, 1265	31, 214, 67	POSTER-A, POSTER-B, INO-1A
Leone	Maria Stella	Politecnico di Bari, Italia	1780	214	POSTER-B
Leonelli	Cristina	University of Modena and Reggio Emilia	642, 668, 1181, 242	31, 31, 214, 153	POSTER-A, POSTER-A, POSTER-B, TEC-B
Leonetti	Francesco	università degli studi di Bari Aldo Moro, 70125, Bari, Italia	137, 159, 1149	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Leoni	A.	Università di Bologna, Italia	618	31	POSTER-A
Leoni	Beniamino	Dipartimento di Scienze del Suolo e della Pianta - Università degli studi di Bari "Aldo Moro"	1101, 1042	31, 71	POSTER-A, MAS
Leopoldo	Marcello	Dipartimento di Farmacia - Scienze del Farmaco, Università degli Studi di Bari Aldo Moro, Italia	1660	31	POSTER-A
Leotta	Giorgia	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", Italy	168	138	ANA-2A
Leowanawat	Pawaret	Department of Chemistry, Faculty of Science, Mahidol University, Bangkok 10400, Thailand	407	159	IND-1D
Lepore	Elison	Università di Camerino, Italia	296	143	ORG-1C
Lerin	Lindomar Alberto	University of Ferrara, Italia	975	214	POSTER-B
Lerin	Lindomar Alberto	Dipartimento di Scienze Chimiche, Farmaceutiche e Agrarie, Università di Ferrara, Italia	923	69	IND-1A
Lerin	Lindomar Alberto	Università degli studi di Ferrara, Italia	1163	141	ORG-1A
Lerner	Hans-Wolfram	Institut für Anorganische Chemie, Goethe-Universität Frankfurt, Max-von-Laue-Strasse 7,60438 Frankfurt. Germany	1313	214	POSTER-B
Lessi	Marco	Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Pisa, Italia	1380, 526, 1523, 1409	31, 244, 264, 235	POSTER-A, ORG-3A, ORG-1B, FIS-1D
Letardi	Paola	cInstitute of Anthropic Impacts and Sustainability in the Marine Environment, CNR, Via De Marini 6, Genova, Italy	1187	214	POSTER-B
Lettera	Vincenzo	Università della Calabria, Italia	508	31	POSTER-A
Lettieri	Raffaella	University of Rome Tor Vergata, Italia	1360	214	POSTER-B
Leusciatti	Marco	Università di Padova; Università di Pavia	1504	214	POSTER-B
Leveraro	Silvia	Università degli Studi di Ferrara, Italia	329, 399	214, 148	POSTER-B, ANA-2C
Lewis	Jason	Memorial Sloan Kettering Cancer Center	1807	132	FAR-1B
Li Destri Nicosia	Giovanni	Università di Catania, Italia; CSGI, Consorzio Interuniversitario per lo Sviluppo dei Sistemi a Grande Interfase, Italia	1404	31	POSTER-A
Li Petri	Giovanna	Istituto per lo Studio dei Materiali Nanostrutturati, CNR, via U. La Malfa 153, 90146 Palermo, Italy	1346	245	ORG-3B
Li	Chao-Jun	McGill University, Montréal (QC), Canada	427	31	POSTER-A
Li	Meng	Department of Chemistry, University of Cambridge, Lensfield Road, CB2 1EW, Cambridge, United Kingdom	550	244	ORG-3A
Li	Xue	CNR-ITM, Italy; University of Padua, Italy	1855	214	POSTER-B
Li	Zelan	Department of Chemistry "G. Ciamician", University of Bologna, Ravenna Campus, Via Guaccimanni, 42, Ravenna	1788	214	POSTER-B
Li	Zelan	Department of Chemistry "G. Ciamician", University of Bologna, Ravenna Campus, Via Guaccimanni, 42, 48121 Ravenna	1790	156	ABC-C
Liberatore	Nicola	Consorzio CREO, 67100 L'Aquila, Italy	928	214	POSTER-B
Liberti	Valentina	Sapienza University of Rome, Italy	1479	72	ELE-1
Liberto	Erica	Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Via Pietro Giuria 9, I-10125 Torino, Italy	238	186	ParallelTopic01 - ID: 186
Libralato	Giovanni	Dipartimento di Biologia, Università degli Studi di Napoli Federico II, Italia	303	31	POSTER-A
Libri	Sofia	Università di Milano-Bicocca, Dipartimento di Scienze della Terra e dell'ambiente, Milano, Italia; NBFC, Centro Nazionale della Biodiversità	1797, 1876	140, 165	ANA-1B, INO-1B
Licandro	Emanuela	Dipartimento di Chimica, Università di Milano, Via C. Golgi 19, 20133 Milano, Italy	1313, 1595, 1298	214, 214, 138	POSTER-B, POSTER-B, ANA-2A
Liccardo	Letizia	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Via Torino 155, 30172 Venice, Italy	1498, 2023	155, 167	ELE-2, INO-1D
Licchelli	Maurizio	Department of Chemistry, University of Pavia, via T. Taramelli 12, 27100 Pavia; CISRiC, University of Pavia, via A. Ferrata 3, 27100, Pavia	401, 398	31, 73	POSTER-A, ABC-A
Licciardello	Antonino	Dipartimento di Scienze Chimiche, Università di Catania, V.le Andrea Doria, 6 - 95125 Catania, (IT)	820	31	POSTER-A
Licciardi	Mariano	Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF), University of Palermo, Via Archirafi 32, 90123 Palermo, Italy	230	214	POSTER-B
Licen	Sabina	Department of Chemical and Pharmaceutical Sciences, University of Trieste, Via Giorgieri 1, 34127 Trieste, Italy	1511	249	ANA-3B
Licini	Giulia	Università di Padova, Italia	1159, 1160, 1592, 2008, 2009, 2010, 2011, 1613, 1789, 1135	31, 31, 31, 181, 194, 207, 207, 214, 265, 247	POSTER-A, POSTER-A, POSTER-A, ParallelTopic10 - ID: 181, ParallelTopic10 - ID: 194, ParallelTopic10 - ID: 207, ParallelTopic10 - ID: 207, POSTER-B, DID-B, ORG-3D
Licursi	Domenico	Università di Pisa, Italia	756, 1021	47, 214	ParallelTopic07, POSTER-B
Lieber	Leonie	Justus-Liebig University Gießen Germany	1789	265	DID-B
Lietti	Luca	Dipartimento di Energia, Politecnico di Milano, Italia	1647, 1526, 1571, 1238	214, 157, 157, 262	POSTER-B, IND-1B, IND-1B, IND-2A
Ligresti	Alessia	Istituto di Biomolecular Chemistry, National Research Council of Italy, 80078, Pozzuoli, Italia	137	31	POSTER-A
Ligresti	Alessia	Institute of Biomolecular Chemistry, National Research Council of Italy,Pozzuoli, NA, Italy	159	31	POSTER-A
Ligresti	Alessia	Institute of Biomolecular Chemistry ICB, National Research Council of Italy	250	136	FAR-1D
Liguori	Francesca	Consiglio Nazionale delle Ricerche, Istituto di Chimica dei Composti Organo Metallici	1709	69	IND-1A
Limatola	Cristina	Department of Physiology and Pharmacology, Sapienza University, P.le A. Moro 5, 00185 Rome, Italy	1643	56	ParallelTopic12
Limo	Elena	Università degli Studi di Milano-Bicocca, Italia	717, 715	31, 71	POSTER-A, MAS
Limongelli	Francesco	Department of food and soil science, University of Bari "Aldo Moro", Italy	648	78	ALI-1A
Limongelli	Vittorio	Faculty of Biomedical Sciences, Euler Institute, Università della Svizzera italiana (USI), 6900 Lugano, Switzerland	1034	255	FAR-2A
Limonti	Carlo	Department of Environmental Engineering (DIAm), University of Calabria, Via P. Bucci cubo 44/A, Rende (CS), Italy	1466	153	TEC-B
Linciano	Pasquale	Università degli studi di Pavia, Italia	560, 959	149, 136	ORG-2C, FAR-1D
Lingua	Gabriele	National Reference Center for Electrochemical Energy Storage - INSTM, Firenze 50121, Italy; GAME Lab, Department of Applied Science and Technology, Politecnico di Torino, Torino 10129, Italy	1092	31	POSTER-A
Lingua	Gabriele	POLYMAT, University of the Basque Country	835	72	ELE-1
Lioniello	Pasquale	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Italia	723	214	POSTER-B
Liotta	Domenico	Università degli Studi di Bari Aldo Moro, Italia	1120	246	ORG-3C
Liotta	Leonarda Francesca	ISMN-CNR, Via U. La Malfa 153, 900146 Palermo, Italy	1171, 1599, 1452, 896	31, 188, 244, 157	POSTER-A, ParallelTopic03 - ID: 188, ORG-3A, IND-1B
Lipani	Diego	Sciences Dept. Roma Tre University, Via della Vasca navale 79, 446, Rome	1296, 1488	214, 214	POSTER-B, POSTER-B
Lipira	Nello	Centro ricerche FIAT	1282	214	POSTER-B
Lipparini	Filippo	Università degli Studi di Pisa, Italia	610, 705, 520, 927	31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B
Lique	François	Univ. Rennes, CNRS, IPR (Institut de Physique de Rennes) – UMR 6251, F-35000 Rennes, France.	1900	214	POSTER-B
Lisi	Lorenzo	University of Florence and CSGI, Via della Lastruccia 3-13, 50019, Sesto Fiorentino, Italy.	833	238	ABC-B
Lista	Florigio	Army Medical Center, Scientific Department, p.za Celimontana 50, Rome 00184, Italy.	1626	31	POSTER-A
Lista	Florigio	Army Medical Center, Scientific Department, p.za Celimontana 50, Rome 00184, Italy	1955	134	FAR-1C
Listkowski	Arkadiusz	Institute of Physical Chemistry, Polish Academy of Science, Kasprzaka 44/52, Warsaw (PL); Faculty of Mathematics and Science, Cardinal Stefan Wyszyński University, Dewajtis 5,01-815 Warsaw (PL)	1463	31	POSTER-A
Listorti	Andrea	Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", Via Orabona 4, 70126 Bari, Italy; CNR NANOTEC – Istituto di Nanotecnologia, c/o Campus Ecotekne, Via Monteroni, 73100 Lecce, Italy sara.covella@uniba.it	1414	253	INO-2C

Listro	Roberta	Department of Drug Science, University of Pavia, Viale Taramelli 12, 27100, Pavia, Italy	944, 560	214, 149	POSTER-B, ORG-2C
Lisuzzo	Lorenzo	Università degli studi di Palermo, Italia	514	160	FIS-1B
Litti	Lucio	University of Padua, Italia	902, 1049, 1550	31, 214, 243	POSTER-A, POSTER-B, FIS-2B
Liu	Dahuan	University of Chemical Technology, Beijing	958	214	POSTER-B
Liu	Xianming	Luoyang Normal University, College of Chemistry and Chemical Engineering, Luoyang 471934, P. R. China	339	140	ANA-1B
Liu	Xin	University of Siena, Italia	1635	248	ANA-3A
Liu	Yiwei	Mining and Materials Engineering, McGill University, 3610 Rue University, Montreal, Quebec H3A 0C5, Canada	199	214	POSTER-B
Liuzzi	Simona	Università degli Studi di Torino, Italia	1468	214	POSTER-B
Livolsi	Simone	Dipartimento di chimica, Università degli studi di Milano, Italia	1308, 1449	214, 157	POSTER-B, IND-1B
Livraghi	Stefano	Università di Torino, Italia	1061	253	INO-2C
Llorent Martinez	Eulogio José	Department of Physical and Analytical Chemistry, University of Jaén, Campus Las Lagunillas S/N, E-23071 Jaén, Spain	1136	260	ALI-2A
Lo Buglio	Gabriele	Dipartimento di Scienze e Tecnologie Biologiche Chimiche e Farmaceutiche (STEBICEF), Università degli Studi di Palermo, Viale delle Scienze 16, 90128, Palermo, Italy	1126	214	POSTER-B
Lo Celso	Fabrizio	Università degli studi di Palermo, Italia	1185	160	FIS-1B
Lo Cicero	Alessandra	Dipartimento di Scienze e Tecnologie Biologiche Chimiche e Farmaceutiche (STEBICEF), Università degli Studi di Palermo, Viale delle Scienze 16, 90128, Palermo, Italy	1126	214	POSTER-B
Lo Nostro	Pierandrea	Dipartimento di Chimica, Università degli Studi di Firenze, Sesto Fiorentino, Italia	602	155	ELE-2
Lo Porto	Chiara	Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari, Via Orabona 4, 70125 Bari, Italy	1110, 1415, 1292	31, 240, 236	POSTER-A, INO-2A, TEC-D
Locardi	Federico	University of Genoa, Italy	1028	214	POSTER-B
Locatelli	A.	Università di Bologna, Italia	618	31	POSTER-A
Locatelli	Marcello	Advanced Bioanalytical Laboratory, Department of Pharmacy, University "G. d'Annunzio" of Chieti-Pescara, Via dei Vestini 31, Chieti, Italy	1811	31	POSTER-A
Locatelli	Marcello	Department of Pharmacy, University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy	1607	214	POSTER-B
Locatelli	Marcello	Department of Pharmacy, University of Chieti–Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy	301	258	ANA-4A
Locci	Antonio	Department of Mechanical, Chemical and Materials Engineering, University of Cagliari, Cagliari, Italy	1240	31	POSTER-A
loconsole	giuliana	Institute for Sustainable Plant Protection	680	31	POSTER-A
Lodato	Valentina	Department of Chemistry and Biology "Adolfo Zambelli", University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano (SA) (Italy)	1001	69	IND-1A
Lodigiani	Giulia	SCITEC CNR, Italia	1950, 155	175, 214	ParallelTopic04 - ID: 175, POSTER-B
Lodola	Alessio	Dipartimento di Scienze degli Alimenti e del Farmaco, Università di Parma, Parco Area delle Scienze 27/A, 43124, Parma, Italia	1628, 1787	214, 132	POSTER-B, FAR-1B
Loertscher	Brad	Dipharma Inc, US	1958	256	ORG-4A
Lofrano	Giusy	Dipartimento di Scienze Motorie, Umane e della Salute, Università degli Studi di Roma "Foro Italico", Italia	303	31	POSTER-A
Loianno	Valerio	Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università degli Studi di Napoli Federico II, Piazzale Tecchio 80, 80125 Napoli Italia	549	214	POSTER-B
Loiodice	Fulvio	Department of Pharmaceutical Sciences, Università degli Studi di Bari, Via Orabona 4, 70125 Bari, Italy	1277	31	POSTER-A
Loiselle	Steven	Environmental Spectroscopy Group, Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro, Siena, Italy	1513, 1635	31, 248	POSTER-A, ANA-3A
Lolli	M. L.	Università di Torino, Italia	1673	31	POSTER-A
Lolli	Marco	Department of Drug Science and Technology, University of Turin (UniTo), via Pietro Giuria 9, 10125 Torino (Italy)	1087	214	POSTER-B
Lolli	Marco Lucio	Department of Sciences and Drug Technology, University of Turin, Torino, Italy	1591, 382	214, 132	POSTER-B, FAR-1B
Lombardi	Alessio	Università di Bologna, Italia	912	247	ORG-3D
Lombardi	Angela	Department of Chemical Sciences, University of Naples Federico II, via Cintia 21, 80126-Naples, Italy	1106, 1145	31, 214	POSTER-A, POSTER-B
Lombardi	Angelina	Department of Chemical Sciences, University of Naples Federico II – Via Cintia, 80126 Naples, Italy	1265	67	INO-1A
Lombardi	Chiara Andrea	Department of Chemistry, University of Milan, Via Golgi 19, 20133 Milano, Italy	1735	31	POSTER-A
Lombardi	Livia	Carabinieri, Reparto Investigazioni Scientifiche (RIS), Italia	1412, 1558	193, 214	ParallelTopic09 - ID: 193, POSTER-B
Lombardo	Francesco	Università degli Studi di Napoli Federico II, Italia	179	31	POSTER-A
Lombardo	Lisa	Department of CHIBIOFARAM, University of Messina, Viale Ferdinando Stagno d'Alcontres 31, 98166, Messina	306	255	FAR-2A
Lombardozzi	Antonietta	Dipartimento Sicurezza Pubblica, Direzione Centrale Anticrimine Polizia Nazionale Italiana, Servizio Polizia Scientifica Forense (DAC-SPS)	963	31	POSTER-A
Lomonaco	Tommaso	Department of Chemistry and Industrial Chemistry University of Pisa, Via Giuseppe Moruzzi 13, Pisa, Italy	1747, 1525, 1438	31, 214, 258	POSTER-A, POSTER-B, ANA-4A
Lonardi	Giovanni	Università di Padova, Italia	1160	31	POSTER-A
Londi	Giacomo	Università di Pisa, Italia	1189	161	TEO-B
Longhi	Elena	Department of Pharmaceutical Science, Università degli Studi di Milano, Milan 20133, Italy.	162	165	INO-1B
Longhi	Giovanna	Università degli studi di Brescia, Italia	1545, 1313	31, 214	POSTER-A, POSTER-B
Longhi	Mariangela	Università degli studi di Milano, Italia	591, 146	240, 157	INO-2A, IND-1B
Longo	Claudia	Università degli Studi di Padova, Italia	607	31	POSTER-A
Longo	Laura	Ca' Foscari University of Venice, Italia	806	73	ABC-A
Longo	Lilia	CATMAT Lab, Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice and INSTM-RU Ve, Via Torino 155 (30172), Venezia Mestre (Italy)	126, 164	31, 262	POSTER-A, IND-2A
Longo	Matteo	Università di Parma, Italia	1080, 1183	31, 214	POSTER-A, POSTER-B
Longo	Mattia	Politecnico di Torino	570	31	POSTER-A
Longo	Mattia	Politecnico di Torino, Italia	429	72	ELE-1
Longo	Pasquale	Università degli Studi di Salerno, Italia	1025	241	INO-2B
Longobardi	Francesco	Dipartimento di chimica, Università degli Studi di Bari Aldo Moro, Italia	1574	31	POSTER-A
Lopalco	Antonio	Department of Pharmacy-Pharmaceutical Sciences, University of Bari "Aldo Moro", Via E. Orabona, 4, I-70125 Bari, Italy	652	70	TEF-2
Lopane	Giovanna	IRCCS Istituto delle Scienze Neurologiche di Bologna, Italia	1846	214	POSTER-B
Lopedota	Angela Assunta	Department of Pharmacy – Pharmaceutical Sciences, University of Bari Aldo Moro, Via E. Orabona 4, Bari (Italy)	651, 652	267, 70	TEF-1, TEF-2
Lopes	Ana	Universidade da Beira Interior (UBI), Covilhã, Portugal	629, 908	249, 156	ANA-3B, ABC-C
López-Timoner	Rubén	Universitat Politècnica de València, Campus de Alcoy, Departamento de Ingeniería Textil y Papelera, Grupo de Procesos de Oxidación Avanzada. Alcoy	590	214	POSTER-B
Lopez	Alberto	Department of Sciences, Roma Tre University, Via della Vasca Navale 79, 00146, Rome, Italy	1774	165	INO-1B
Lorè	Rosaria	University of Pisa, Italia	1021	214	POSTER-B
Loregian	Arianna	Dipartimento di Medicina Molecolare, Università degli Studi di Padova, Italia	1013	214	POSTER-B
Lorenzi	Giada	COLOROBBIA CONSULTING S.r.l	1061	253	INO-2C
Lorenzoni	Francesca	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Italia	348	73	ABC-A
Lorenzoni	Massimo	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Italia	348	73	ABC-A
Loro	Camilla	Università degli Studi dell'Insubria, Italia	474	214	POSTER-B
Loschi	Francesca	Nanomaterials Reisearch Group, Department of Botechnology, University of Verona	841, 1198, 1605, 840	214, 214, 214, 254	POSTER-B, POSTER-B, POSTER-B, INO-3
Losito	Ilario	Dipartimento di Chimica - Università degli studi di Bari "Aldo Moro"; Centro Interdipartimentale SMART - Università degli studi di Bari "Aldo Moro"	1101, 1042, 906, 532, 900	31, 71, 140, 146, 146	POSTER-A, MAS, ANA-1B, ANA-2B, ANA-2B
Lotito	Sara	University of Bari Aldo Moro - Department of Chemistry, Via Orabona 4-70125, Bari	1420	214	POSTER-B
Lotti	Alessio	Lotti srl, Via Maestri del Lavoro 14/16, Florence	605	214	POSTER-B
Lotti	Cesare	Center Research and Innovation, Edmund Mach Foundation, San Michele all'Adige (TN)	2012	71	MAS
Lotti	Marina	Dipartimento di Biotecnologie e Bioscienze, Università degli studi di Milano-Bicocca, Italia	1793	31	POSTER-A

Lotti	Nadia	Department of Civil, Chemical, Environmental, and Materials Engineering, University of Bologna,Via Terracini 28,40131, Bologna, Italy; Interdepartmental Center for Industrial Research on Advanced Applications in Mechanical Engineering and Materials Technology, CIRI-MAM, University of Bologna, Bologna, Italy.; Interdepartmental Center for Agro-Food Research, CIRI-AGRO, University of Bologna, Bologna, Italy.	1408, 1881, 1423	31, 211, 214	POSTER-A, ParallelTopic14 - ID: 211, POSTER-B
Lova	Paola	Università di Genova, Dipartimento di Chimica e Chimica Industriale	529	31	POSTER-A
Lovati	Giulia	Istituto Europeo di Oncologia, Milano, Italia	262	214	POSTER-B
Lovato	Giulio	Department of Innovative Technologies in Medicine and Dentistry, Center for Advanced Studies and Technology (CAST), University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy; Center for Advanced Studies and Technology (CAST), University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy	1607	214	POSTER-B
Lovisa	Sara	Humanitas University Campus	741	214	POSTER-B
Loza	Mabel	Centro di Ricerca in Molecular Medicine and Chronic Diseases (CIMUS), Università di Santiago de Compostela, 15782, Santiago de Compostela, Spagna	137	31	POSTER-A
Loza	Maria Isabel	Center for Research in Molecular Medicine and Chronic Diseases (CIMUS), University of Santiago de Compostela, Spain	159	31	POSTER-A
Lubritto	Carmine	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies and MAReA Centre, University of Campania, Via Vivaldi 43, 81100 Caserta, Italy	1735	31	POSTER-A
Lucarelli	Francesca	Magnetic Resonance Center CERM, University of Florence, Via Luigi Sacconi 6, 50019 Sesto Fiorentino, Florence, Italy; Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739	31	POSTER-A
Lucarelli	Marco	Department of Experimental Medicine, Sapienza University of Rome, Viale Regina Elena 324, 00161 Rome, Italy; Pasteur Institute Cenci Bolognetti Foundation, Sapienza University of Rome, Rome, Italy	1743	138	ANA-2A
Lucarini	Marco	Department of chemistry "Giacomo Ciamician", University of Bologna, via Gobetti 85 40129 Bologna, Italy	141	214	POSTER-B
Lucarini	Massimo	CREA-Research Centre for Food and Nutrition, Rome, Italy	478	31	POSTER-A
Lucenti	Elena	CNR-SCITEC, Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", Milano	910, 1392, 631, 1579	31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B
Lucentini	Riccardo	Istituto per la Sintesi Organica e la Fotoreattività - Consiglio Nazionale delle Ricerche, Italia	846, 1887, 2025	49, 192, 192	ParallelTopic08, ParallelTopic08 - ID: 192, ParallelTopic08 - ID: 192
Luchinat	Claudio	Magnetic Imaging Center (CERM) and Department of Chemistry "Ugo Shiff", University of Florence, Via Luigi Sacconi 6, Florence	434	165	INO-1B
Luciani	Giuseppina	Dept. Chemical, Materials and Industrial Production Engineering, Univ. Naples Federico II, Naples, Italy	724	214	POSTER-B
Luciani	Lorenzo	University of Camerino, Italia	1104, 1140	214, 240	POSTER-B, INO-2A
Luciano	Giorgio	CNR SCITEC, Italia	529	31	POSTER-A
Luciano	Giorgio	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", Consiglio Nazionale delle Ricerche, SCITEC-CNR, Via De Marini 6. 16149, Genova, Italy.	1396	250	ANA-3C
Lucidi	Massimiliano	Department of Science, Roma Tre University, Viale G. Marconi 446, 00146, Roma, Italy	1557	31	POSTER-A
Luelmo	Sara	Institute for Research and Innovation in Health (i3S), University of Porto	1596	31	POSTER-A
Luglio	Alberto	Università degli studi dell'Insubria, Italia	1114	31	POSTER-A
Luigi	Mondello	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy; Chromaleont S.R.L., C/O Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy	1290	214	POSTER-B
Luisi	Renzo	Department of Pharmacy – Drug Sciences, University of Bari "A. Moro" Via E. Orabona 4, 70125 – Italy FLAME-Lab –Flow Chemistry and Microreactor Technology Laboratory	150, 595, 1813, 1491, 1700, 107	31, 31, 31, 214, 214, 145	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, ORG-1D
Lulli	Thomas	Department of Chemistry 'Ugo Schiff', University of Florence, via della Lastruccia 3-13, 50019 Sesto Fiorentino (FI), Italy	452	31	POSTER-A
Lunghini	Filippo	EXSCALATE, Dompé Farmaceutici SpA	1195	214	POSTER-B
Luo	Nengchao	Dalian Institute of Chemical Physics, China	1481	204	ParallelTopic07 - ID: 204
Lupi	Michela	Department of Chemistry "Ugo Schiff" (DICUS) & INSTM Research Unit, University of Florence, Via della Lastruccia 3-13, Sesto Fiorentino 50019, Italy.	1959	143	ORG-1C
Lupia	Antonio	Università di Cagliari, Italia	655	214	POSTER-B
Lupidi	Gabriele	Università di Camerino, Italia	1225, 1750	31, 143	POSTER-A, ORG-1C
Lupinelli	Stefania	ILSA S.p.A., Vicenza, Italia	1891	214	POSTER-B
Lupo	Maria Giovanna	Università di Padova, Italia	1080	31	POSTER-A
Luque	Rafa	SCI, Italia	1522	31	POSTER-A
Lusardi	Matteo	Università degli Studi di Genova, Italia	132	132	FAR-1B
Lushaj	Edlind	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Via Torino 155, 30172 Venice, Italy	1498	155	ELE-2
Lusvardi	Gigliola	UNIMORE	203, 208, 1762, 323	31, 31, 165, 167	POSTER-A, POSTER-A, INO-1B, INO-1D
Luzi	Francesca	Università Politecnica delle Marche, Italia	1724	214	POSTER-B
M Ronan	Melissa	Broad Institute of Harvard and MIT, Cambridge, USA.	985	214	POSTER-B
Maccari	Chiara	università di Parma, Italia	1726	71	MAS
Maccarino	Lorenzo	Università del Piemonte Orientale, Italia	1858	235	FIS-1D
Maccarronello	Anna Elisabetta	Università degli Studi di Catania, Italia	890, 647	31, 214	POSTER-A, POSTER-B
Macchi	Piero	Politecnico di Milano	1344, 1141	31, 180	POSTER-A, ParallelTopic09 - ID: 180
Macchia	Andrea	Department of Biology, Ecology and Earth Sciences, University of Calabria	632	214	POSTER-B
macchia	eleonora	università di bari aldo moro, Italia	680, 683, 1149, 663, 817	31, 31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B
Macchia	Eleonora	Dipartimento di Farmacia-Scienze Del Farmaco, Università degli Studi di Bari Aldo Moro,70125 Bari Italy;; Centre for Colloid and Surface Science, Università degli Studi di Bari Aldo Moro, 70125, Bari, Italy; Faculty of Science and Engineering, Åbo Akademi University, 20500 Turku, Finland	819	214	POSTER-B
Macchia	Eleonora	Dipartimento di Farmacia-Scienze del Farmaco - Università degli studi di Bari Aldo Moro, Via Orabona 4, Bari; The Faculty of Science and Engineering, Åbo Akademi University, 20500 Turku, Finland	689, 708, 845	142, 142, 144	ANA-1C, ANA-1C, ANA-1D
Macchia	Maria Ludovica	Dipartimento di Scienze e Innovazione Tecnologica, Università del Piemonte Orientale, Viale Teresa Michel 11, 15121 Alessandria, Italy	431, 433	214, 214	POSTER-B, POSTER-B
Macchiarulo	Antonio	Department of Pharmaceutical Sciences, University of Perugia, 06123, Perugia, Italy	468, 697, 487	31, 65, 255	POSTER-A, FAR-1A, FAR-2A
Macchioni	Alceo	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Via Elce di Sotto 8, 06123, Perugia, Italia	1432, 1915	214, 214	POSTER-B, POSTER-B
Macchioni	Sergio	Hangar Lab Srl, via Mirandola 37a, 37026 Settimo (VR), Italy	1010	214	POSTER-B
Maccotta	Antonella	Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), Università degli Studi di Palermo, Palermo 90123, Italy; NBFC, National Biodiversity Future Center, 90133 Palermo, Italy	1400	214	POSTER-B
Macedi	Eleonora	Università degli Studi di Urbino "Carlo Bo", Italia	1451	31	POSTER-A
Macedonio	Francesca	istituto per la tecnologia a membrana-consiglio nazionale delle ricerche (CNR-ITM), Italia	1514	31	POSTER-A
Macis	Marco	Fresenius Kabi iPSUM, via San Leonardo 23, Villadose, Rovigo, Italy	574	140	ANA-1B
MacKeown	Henry	Università di Genova, Dipartimento di Chimica e Chimica Industriale, Italia	541, 437	31, 249	POSTER-A, ANA-3B
Macorano	Alessio	Università degli Studi di Milano, Italia	1297, 1752	31, 255	POSTER-A, FAR-2A
Madabeni	Andrea	Università degli Studi di Padova, Italia	1613	214	POSTER-B
Madheswaran	Manoj	Dipartimento di Scienze e Tecnologie, Ambientali, Biologiche e Farmaceutiche, Università degli Studi della Campania "Luigi Vanvitelli", Italia	1742	263	CSB-3
Madia	Valentina Noemi	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210, 1626, 1684, 1616, 1627, 1955	31, 31, 31, 214, 214, 134	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, FAR-1C
Maestri	Giovanni	Università degli Studi di Parma, Italia	1274, 1580, 1694	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Maestri	Matteo	Politecnico di Milano, Italia	1356, 1654	214, 157	POSTER-B, IND-1B

Maffettone	Pier Luca	Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università di Napoli Federico II, Napoli 80125, Italy; DPI, 5600 AX Eindhoven, the Netherlands	1822	240	INO-2A
Maffioli	Sonia	Naicons, Italia	1982	209	ParallelTopic12 - ID: 209
Maffioli	Sonia Ilaria	NAICONS srl, Italia	313	182	ParallelTopic12 - ID: 182
Magagnin	Luca	Politecnico di Milano, Italia; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (UdR–PoliMi)	653, 800, 1990, 805	31, 31, 187, 214	POSTER-A, POSTER-A, ParallelTopic02 - ID: 187, POSTER-B
Magaletti	Federica	Dipartimento di Chimica, Materiali e Ingegneria Chimica "G. Natta", Politecnico di Milano, Via Mancinelli 7, 20133, Milano, Italia	493, 593, 609	214, 214, 153	POSTER-B, POSTER-B, TEC-B
Maggi	Maria Anna	Hortus Novus, Via Campo Sportivo 2, 67050 Canistro, L'Aquila, Italy	1770	251	ANA-3D
Maggi	Raimondo	SynCat Lab, Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italia	1812, 1334, 1544	31, 214, 264	POSTER-A, POSTER-B, ORG-1B
Maggiore	Maria	Department of Physics and Chemistry-Emilio Segrè, University of Palermo, 90128 Palermo, Italy	916	248	ANA-3A
Magi	Emanuele	Università di Genova, Dipartimento di Chimica e Chimica Industriale, Italia	541, 1911, 437	31, 31, 249	POSTER-A, POSTER-A, ANA-3B
Magistrato	Alessandra	SISSA Scuola Internazionale Superiore di Studi Avanzati	1335, 1670	31, 31	POSTER-A, POSTER-A
Magistrato	Alessandra	National Research Council of Italy - Materials Foundry Istituto Officina dei Materiali c/o International School for Advanced Studies, 34136 Trieste, Italy	393	214	POSTER-B
Magistrato	Alessandra	CNR-IOM c/o International School for Advanced Studies (SISSA), Trieste, Italy	355, 361	77, 266	CSB-1A, CSB-2
Magli	Elisa	Department of Public Health, "Federico II" University of Naples, 80131 Naples, Italy	970	214	POSTER-B
Maglio	Ornella	Department of Chemical Sciences, University of Naples Federico II – Via Cintia, 80126 Naples, Italy; Institute of Biostructures and Bioimaging, National Research Council, Naples, Italy	1265	67	INO-1A
Magliocco	Stefano	Università di Torino, Italia; Università degli Studi di Messina, Italy	566	214	POSTER-B
Magnaghi	Lisa Rita	Università degli studi di Pavia, Dipertimento di Chimica, viale Taramelli 12, Pavia, Italy; INSTM, Unità di Ricerca di Pavia, Via G. Giusti 9, Firenze, 50121, Italy	1156, 1083, 686, 1520	31, 51, 142, 148	POSTER-A, ParallelTopic09, ANA-1C, ANA-2C
Magnani	Agnese	Università di Siena, Dipartimento di Biotecnologie, Chimica e Farmacia, Italia; CSGI - Consorzio Interuniversitario per i Sistemi a Grande Interfase, Firenze, Italia; INSTM Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Firenze, Italia	1176, 1632	165, 243	INO-1B, FIS-2B
Magnani	Chiara	Università di Parma, Italia	546	214	POSTER-B
Magnani	Giacomo	Università di Parma, Italia	1207	234	FIS-1C
Magnano	Elena	IOM CNR, Laboratorio TASC, Trieste, Italia; Department of Physics, University of Johannesburg, Johannesburg, South Africa	974	241	INO-2B
Magni	Fulvio	Proteomics and Metabolomics Unit, Department of Medicine and Surgery, University of Milano Bicocca	1535, 1158, 992	31, 214, 71	POSTER-A, POSTER-B, MAS
Magni	Mirko	Università degli Studi di Milano, Italia	589	177	ParallelTopic06 - ID: 177
Mahdavijalal	Mohammadreza	Research group of Pharmaco-Toxicological Analysis (PTA Lab), Department of Pharmacy and Biotechnology (FaBiT), Alma Mater Studiorum – University of Bologna, Via Belmeloro 6, 40126 Bologna, Italy	1811	31	POSTER-A
Mahdi	Iktedar	University of Bari 'Aldo Moro', Italy	1403	214	POSTER-B
Mai	Antonello	Department of Drug Chemistry and Technologies, Sapienza University of Rome, P.le A. Moro 5 00185, Rome	853, 1226, 1643, 855, 985, 851	31, 31, 56, 214, 214, 132	POSTER-A, POSTER-A, ParallelTopic12, POSTER-B, POSTER-B, FAR-1B
Maiano	Alessia	University of Florence and CSGI, Via della Lastruccia 3-13, 50019, Sesto Fiorentino, Italy.	833	238	ABC-B
Maida	Pietro	Scientific Investigation Department, Carabinieri RIS, Via Monsignor D'Arrigo 7, 98122 Messina, Italy	1349	31	POSTER-A
Maietti	Annalisa	Università degli Studi di Ferrara, Italia	1348	31	POSTER-A
Maina	Kevin K.	Department of Biomedical, Surgical and Dental Sciences, University of Milan, Via Pascal 36, Milan, Italy.	1598	31	POSTER-A
Maiocchi	Alice	Università degli Studi di Milano, Milan, Italy	295	214	POSTER-B
maioli	chiara	università del piemonte orientale, Italia	1027	149	ORG-2C
Maione	Francesco	University of Naples Federico II	1521	147	ORG-2B
Maiorano	Emanuela	Department of Chemistry "Giacomo Ciamician", University of Bologna, Via Selmi 2, 40126, Bologna, Italy	1612	214	POSTER-B
Maiorano	Emanuela	University of Bologna, Dept of Chemistry "Giacomo Ciamician", Italia	650	142	ANA-1C
Maiorano	Gabriele	Institute of Nanotechnology (NANOTEC)-CNR, Lecce, 73100, Italy	678	243	FIS-2B
Mais	Laura	Università degli Studi di Cagliari, Italia	1968	173	ParallelTopic02 - ID: 173
Maisto	Constantina	Nuclear Medicine Division, Istituto Nazionale Tumori - IRCCS Fondazione G. Pascale, Napoli, Italy.	352	65	FAR-1A
Maisto	Maria	Department of Pharmacy, School of Medicine and Surgery, University of Naples Federico II, Via Domenico Montesano 49, 80131, Naples, Italy	1475, 548	214, 259	POSTER-B, ALI-1B
Maistrello	Luca	Dipartimento di chimica, Università degli studi di Milano, Italia	1308	214	POSTER-B
Maisuradze	Mariam	2 University of Bologna, Industrial Chemistry Department "Toso Montanari", Via P. Gobetti 85, 40129 Bologna, Italy	1138	31	POSTER-A
Maiuolo	Loredana	Dipartimento di Chimica e Tecnologie Chimiche - CTC, Università della Calabria, Via P. Bucci, Cubo 12C, 87036 - Rende (CS), IT	268	31	POSTER-A
Makgieri	Gaetano	Department of Environmental, Biological and Pharmaceutical Science and Technology, University of Campania Luigi Vanvitelli, Caserta, Italy	1737	266	CSB-2
Mäki-Arvela	Päivi	Åbo Akademi University, Finlandia	1352	214	POSTER-B
Maksimović-Ivanić	Danijela	Department of Immunology, Institute for Biological Research "Sinisa Stankovic" - National Institute of Republic of Serbia, University of Belgrade, Serbia	750	67	INO-1A
Malagodi	Marco	Università di Pavia, Italia	2002	43	ParallelTopic05
Malandrino	Mery	Department of Chemistry, University of Turin, via Pietro Giuria 7, Turin (TO)	1116	31	POSTER-A
Malavasi	Lorenzo	Department of chemistry, University of Pavia	811, 606	31, 214	POSTER-A, POSTER-B
Malavolta	Marco	IRCCS INRCA, Italia	508	31	POSTER-A
Maldonado Carmona	Nidia	Department of Biomedical, Experimental and Clinical Sciences "Mario Serio", University of Florence, Viale Morgagni 50, 50134, Florence (FI), Italy	769	245	ORG-3B
Malegori	Cristina	Dipartimento di Famacia, Università degli studi di Genova, Italia	517, 1788, 1152, 1459, 1396	31, 214, 249, 238, 250	POSTER-A, POSTER-B, ANA-3B, ABC-B, ANA-3C
Malfacini	Davide	Università degli studi di Padova, Department of Pharmaceutical and Pharmacological Sciences	688	143	ORG-1C
Malfatto	Gabriella	Auxologico San Luca	717	31	POSTER-A
Malfitano	Anna Maria	Dipartimento di Scienze Mediche Traslazionali, Università degli Studi di Napoli Federico II	772	266	CSB-2
Malgieri	Gaetano	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania Luigi Vanvitelli	1293, 1742	31, 263	POSTER-A, CSB-3
Mali	Matilda	Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari	1874	214	POSTER-B
Malitesta	Cosimino	Dipartimento di Scienze e Tecnologie Biologiche ed Ambientali, Università del Salento, Italia	723	214	POSTER-B
Maloccu	Stefania	Department of Life and Environmental Sciences, University of Cagliari, Cittadella Universitaria di Monserrato, SS554 -09042 Monserrato (CA) Italy	1626	31	POSTER-A
Malpezzi	Giulia	Università di Modena e Reggio Emilia, Italia	1682	214	POSTER-B
Malpicci	Daniele	Dipartimento di Chimica, Università degli studi di Milano, Milano	910, 631, 1579	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Maltoni	Pierfrancesco	Universita di Genova, Italia; CNR-ISM	513	242	FIS-2A
Malucelli	Giulio	Politecnico di Torino, Italia	387	237	TEC-C
Malune	Paolo	Università degli Studi di Cagliari	1684	31	POSTER-A
Malvermi	R.	Politecnico di Milano, Italia	2002	43	ParallelTopic05
Mambretti	Francesco	Italian Institute of Technology, Italia	1785	204	ParallelTopic07 - ID: 204
Mameli	Valentina	Università degli Studi di Cagliari (Dipartimento di Chimica), Italia	990, 1674	47, 160	ParallelTopic07, FIS-1B
Mammano	Michele Massimo	Research Centre for Plant Protection and Certification, Council for Agricultural Research and Economics, 90011 Bagheria, Italy	752	31	POSTER-A
Mancia	Annalaura	Marine Science Research Institute, Jacksonville, FL (USA)	1119	261	ALI-2B
Mancin	Fabrizio	Department of Chemical Sciences, University of Padova	989	214	POSTER-B
Mancini	Ines	Università degli studi di Trento, Italia	1443	214	POSTER-B
Mancini	Pietro	University of Perugia	1869	31	POSTER-A
Manco	Antonio	DiSTeBA, Università del Salento, Italia	1840, 924	31, 156	POSTER-A, ABC-C
Manco	Imma	ARPA Puglia Dep. Lecce	1840	31	POSTER-A
Mancusi	Francesca	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019, Sesto Fiorentino (FI), Italy	880, 769	31, 245	POSTER-A, ORG-3B

Mancuso	Francesco	Department of Chemical and Pharmaceutical Sciences University of Trieste	702	214	POSTER-B
Mancuso	Monique	IRBIM –CNR Messina, Spianata San Raineri – Messina, Italy	1310	31	POSTER-A
Mancuso	Raffaella	Università della Calabria, Italia	592, 464, 632, 682, 711, 856, 579	31, 214, 214, 214, 214, 214, 256	POSTER-A, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, ORG-4A
Mandalari	Marco	Università degli Studi di Milano, Dipartimento di Chimica, Via Golgi 19 20133 Milano, Italy.; Istituto di Ricerche Chimiche e Biochimiche 'G. Ronzoni' via Giuseppe Colombo 81, 20133 Milano, Italy	638	256	ORG-4A
Mandelli	Giacomo	Dipartimento di Chimica, Università degli Studi di Milano, Via Golgi, 19, 20133 Milano, Italy	520	214	POSTER-B
Mandrioli	Roberto	Department for Life Quality Studies (QuVi), Alma Mater Studiorum – University of Bologna, Corso d'Augusto 237, Rimini, Italy	1811	31	POSTER-A
Manelfi	Candida	EXSCALATE – Dompè Farmaceutici SpA, via Tommaso De Amicis 95, 80131, Napoli, Italy	1955	134	FAR-1C
Manera	Clementina	Department of Pharmacy, University of Pisa, Via Bonanno 6, 56126 Pisa, Italy	1854, 1663, 1957	31, 214, 65	POSTER-A, POSTER-B, FAR-1A
Manera	Ileana	Soremartec Italia Srl, Ferrero Group, 12051 Alba, CN, Italy	1031	78	ALI-1A
Manetti	Dina	Università degli Studi di Firenze, Italia	850, 1342	31, 214	POSTER-A, POSTER-B
Manetti	Francesco	Department of Physics, Politecnico di Milano, P.zza Leonardo da Vinci 32, 20133 Milan, Italy	199	214	POSTER-B
Manetto	Simone	Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza Università di Roma, P.le A. Moro 5, 00185 Roma. Italy	1313	214	POSTER-B
Manfredi	Marcello	Biological Mass Spectrometry Lab, Center for Translational Research on Autoimmune and Allergic Diseases, University of Piemonte Orientale, Corso Trieste 15/A, 28100 Novara, Italy; Department of Translational Medicine, University of Piemonte Orientale, Via Solaroli 17, 28100 Novara, Italy	1563, 1375	31, 214	POSTER-A, POSTER-B
Manfredi	Norberto	Università Milano Bicocca, Italia	115	214	POSTER-B
Manfredi	Norberto	Università degli Studi Milano Bicocca, Italia	116	244	ORG-3A
Manfredi	Riccardo	CNR SCITEC, Italia	1923	214	POSTER-B
Manfroni	Giuseppe	Dipartimento di Scienze Farmaceutiche, Università degli Studi di Perugia, Italia	675, 1455, 1456	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Mangatia	Damiano	Università degli Studi di Torino, Italia	1552	214	POSTER-B
Mangiacapre	Emanuela	Sapienza Università di Roma, Italia	1185	160	FIS-1B
Mangiagalli	Marco	Dipartimento di Biotecnologie e Bioscienze, Università degli studi di Milano-Bicocca, Italia	1793	31	POSTER-A
Mangiatordi	Giuseppe	CNR-Istituto di Cristallografia, 70126, Bari, Italia	137	31	POSTER-A
Mangiatordi	Giuseppe F.	Istituto di Cristallografia, Consiglio Nazionale delle Ricerche, Bari, Italia	1082	214	POSTER-B
Mangiatordi	Giuseppe Felice	CNR – Institute of Crystallography, Bari, Italy	159, 1634	31, 214	POSTER-A, POSTER-B
Mangini	Anna	Politecnico di Torino, Italia	1527, 765	31, 214	POSTER-A, POSTER-B
Mangini	Chiara	Università di Firenze, Italia	661	214	POSTER-B
Mangraviti	Domenica	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy	1243, 1407	31, 31	POSTER-A, POSTER-A
Mangraviti	Domenica	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1944, 1418	193, 214	ParallelTopic09 - ID: 193, POSTER-B
Mangraviti	Domenica	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1306	140	ANA-1B
Manicardi	Alex	Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale, Università di Parma, Italia	580	31	POSTER-A
Manicone	Erika	Department of Biosciences, Biotechnologies and Environment, University of Bari, Via Orabona 4, 70126 (Bari) Italy	938, 1458	214, 214	POSTER-B, POSTER-B
Maniglio	Devid	Department of Industrial Engineering and BIOtech Research Center, University of Trento, Trento	721, 1227, 733	41, 214, 146	ParallelTopic04, POSTER-B, ANA-2B
Manini	Paola	Università degli Studi di Napoli	1599	188	ParallelTopic03 - ID: 188
Manini	Paola	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Italia	723, 724	214, 214	POSTER-B, POSTER-B
Manis	Cristina	Università di Cagliari, Dipartimento scienze della vita e ambiente, Cagliari, Italia	1244	78	ALI-1A
Mannella	Iole	Department of Sciences and Drug Technology, University of Turin, Torino, Italy	1591	214	POSTER-B
Manni	Andrea	c Spectra 2000, Italia	1730	66	ANA-1A
Mannina	Luisa	Laboratory of Food Chemistry, Department of Chemistry and Technology of Drugs, Sapienza University of Rome, P.le Aldo Moro 5, 00185 Rome, Italy	1541	60	ParallelTopic14
Mannu	Alberto	Department of Chemistry, Materials and Chemical Engineering "G. Natta" – Politecnico di Milano	540	237	TEC-C
Mannucci	Giorgia	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia	838	68	FIS-1A
Manoni	Elisabetta	Institute of Organic Synthesis and Photoreactivity - National Research Council, via P. Gobetti 101, Bologna, Italy	1457	132	FAR-1B
Mansuroglu	Yaser	SOTAX AG, Switzerland	187	70	TEF-2
Manthiram	Arumugam	University of Texas at Austin, United States of America	471	270	PL-C
Mantione	Daniele	POLYMAT, University of the Basque Country	835	72	ELE-1
Mantovan	Roberto	CNR-IMM, Italia	591	240	INO-2A
Mantovani	Marco	Universita' Milano Bicocca	1784	214	POSTER-B
Mantovani	Sebastiano	Istituto per la sintesi organica e la fotoreattività (ISOF-CNR)	1264, 1421, 1433	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Manzi	Simone	Department of Pharmaceutical Sciences (DISFARM), Università degli Studi di Milano, Via Mangiagalli 25, 20133 Milan, Italy	803	214	POSTER-B
Manzo	Cosimo	Enbiotech s.r.l, Via Quarto dei Mille 6, 90129 – Palermo, Italy	1243	31	POSTER-A
Manzoli	Maela	Università degli Studi di TORINO, Italia	418	158	IND-1C
Mara	Andrea	Department of Chemical, Physical, Mathematical and Natural Sciences, University of Sassari, Via Vienna 2, Sassari, I-07100, Italy	1901, 728	214, 150	POSTER-B, ANA-2D
Mara	Dimitrije	Università degli Studi del Piemonte Orientale, Italia	796	31	POSTER-A
Marafante	Matteo	Dipartimento di Chimica, Università di Torino, Via P. Giuria 7, 10125, Torino, Italy	1345, 801	31, 214	POSTER-A, POSTER-B
Maramai	Samuele	Dipartimento di Biotecnologie, Chimica e Farmcia, Università degli Studi di Siena, Via Aldo Moro, 2 - 53100, Siena	869, 755	214, 154	POSTER-B, CSB-1B
Maran	Flavio	Department of Chemistry University of Padova, Department of Chemistry University of Connecticut	1736, 1849	210, 214	ParallelTopic13 - ID: 210, POSTER-B
Marangi	Mariella	Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", Via Orabona 4, 70126 Bari, Italia	1168	214	POSTER-B
Marani	Matilde	Università degli studi di Modena e Reggio Emilia, Italia	1816	214	POSTER-B
Maranini	Giulia	Università degli Studi di Pavia, Italia	1295	214	POSTER-B
Marano	Alessandra	Università degli Studi di Napoli Federico II, Italia	179, 180, 178	31, 214, 73	POSTER-A, POSTER-B, ABC-A
Maranzana	Andrea	Università degli Studi di Torino, Italia	695, 1394	214, 143	POSTER-B, ORG-1C
Marasco	Daniela	Department of Pharmacy, University of Naples "Federico II", 80131, Naples, Italy	1751	67	INO-1A
Marassi	Valentina	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, via Piero Gobetti 83 40129, Bologna, Italia	1413, 1096, 1157, 1383, 1097, 1624, 1691	31, 214, 214, 214, 146, 146, 150	POSTER-A, POSTER-B, POSTER-B, POSTER-B, ANA-2B, ANA-2B, ANA-2D
Marazza	Giovanna	Università degli studi di Firenze, Italia	504	214	POSTER-B
Marcaccio	Massimo	Department of Chemistry "G. Ciamician", University of Bologna, via Selmi 2, 40126, Bologna, Italy	288	31	POSTER-A
Marcantoni	Enrico	Università di Camerino, Italia	1225, 1750	31, 143	POSTER-A, ORG-1C
Marchesan	Silvia	Università di Trieste, Italia	763, 550, 1692	31, 244, 263	POSTER-A, ORG-3A, CSB-3
Marchesani	Francesco	Department of Medicine and Surgery, University of Parma, Parma, Italy	1422	134	FAR-1C
Marchese	Leonardo	Università del Piemonte Orientale, Italia	1858	235	FIS-1D
Marchese	Sara	Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, Via Ferrata 5, 27100 Pavia, Italy	1643, 985	56, 214	ParallelTopic12, POSTER-B
Marchesi	Elena	Università degli studi di Ferrara, Italia	1163	141	ORG-1A
Marchesiello	Wadir Mario Valentino	Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Via Consolare Valeria, 98125, Messina, Italy	1290	214	POSTER-B
Marchetti	Alessandro	Laboratory of Supramolecular and Bio-Nanomaterials (SBNLab), Department of Chemistry, Materials, and Chemical Engineering "Giulio Natta", Politecnico di Milano, Via L. Mancinelli 7, 20131 – Milano, Italia	246, 1863	31, 214	POSTER-A, POSTER-B
Marchetti	Fabio	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	947	214	POSTER-B
Marchetti	Fabio	University of Camerino, Italy	1546	214	POSTER-B

Marchetti	Fabio	Department of Chemistry and Industrial Chemistry, University of Pisa, Italy	750	67	INO-1A
Marchetti	Fabio	Università di Camerino, Italia	935	240	INO-2A
Marchetti	Marialaura	Department of Medicine and Surgery, University of Parma, Parma, Italy	1422	134	FAR-1C
Marchetti	Nicola	Università degli Studi di Ferrara, Italia	1348, 1119	31, 261	POSTER-A, ALI-2B
Marchi	Lorenzo	Dipartimento di Scienze Chimiche e Geologiche, Università degli Studi di Modena e Reggio Emilia, Italia	204, 166	214, 240	POSTER-B, INO-2A
Marchianò	Silvia	University of Perugia, Perugia, Italy	818	31	POSTER-A
Marchianò	Verdiana	Dipartimento di Farmacia-Scienze Del Farmaco, Università degli Studi di Bari Aldo Moro, Via E. Orabona, 4 - 70125 Bari Italy	1149, 817, 819, 845	31, 214, 214, 144	POSTER-A, POSTER-B, POSTER-B, ANA-1D
Marchiò	Luciano	Università Degli Studi di Parma, Italia	1580, 644	31, 244	POSTER-A, ORG-3A
Marchionna	Mario Vito	Saipem, Italia	1204	177	ParallelTopic06 - ID: 177
Marchionna	Stefano	Ricerca sul Sistema Energetico – RSE S.p.A., Via R. Rubattino 54, Milano 20134, Italy	167, 1267	214, 214	POSTER-B, POSTER-B
Marchionni	Dario	Università degli Studi di Perugia, Italia	411	31	POSTER-A
Marchionni	Dario	UNIVERSITA DI PERUGIA, Italy	694	31	POSTER-A
Marchiori	Martina	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Stevanato Center for Electron Microscopy and CSGI RU of Venice, Via Torino 155, 30172, Venice, Italy	114	31	POSTER-A
Marchioro	Carla	Consultant, Italia	1956	149	ORG-2C
Marchisiello	Wadir Mario Valentino	Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Via Consolare Valeria, 98125, Messina, Italy	1276	31	POSTER-A
Marcì	Giuseppe	Università di Palermo, Viale delle Scienze, 90128 Palermo (PA)	536	214	POSTER-B
Marco	Catto	Università degli Studi di Bari "Aldo Moro", Italia	1224	136	FAR-1D
Marcocci	Maria Elena	Sapienza University of Rome, 00185 Roma, Italy	1633	165	INO-1B
Marcolini	Eleonora	Dipartimento di Chimica, Università degli Studi di Milano, via C. Golgi, 19, 20133, Milano, Italy	206	31	POSTER-A
Marcolini	Federica	Department of Chemistry, Sapienza University of Rome	971	31	POSTER-A
Marcomini	Antonio	Ca' Foscari University of Venice, Italy	764, 1016	31, 31	POSTER-A, POSTER-A
Marcomini	Antonio	Ca'Foscari University of Venice, Italia	1108, 2005, 2006, 2007	31, 37, 173, 187	POSTER-A, ParallelTopic02, ParallelTopic02 - ID: 173, ParallelTopic02 - ID: 187
Marcomini	Antonio	Cà Foscari Università di Venezia, Italia	747, 806, 1517	214, 73, 239	POSTER-B, ABC-A, ABC-D
Marconi	Alessia	NanoBio Interface Lab, Dipartimento di Chimica "Giacomo Ciamician", Alma Mater Studiorum - Università di Bologna, Italia	1357, 1556, 1254	31, 214, 154	POSTER-A, POSTER-B, CSB-1B
Marcotrigiano	Angelo	Università del Piemonte Orientale, Italia	1017	214	POSTER-B
Marcozzi	Serena	IRCCS INRCA, Italia	508	31	POSTER-A
Marcuzzo	Stefania	Neuroimmunolgy and Neuromuscular Diseases Unit, Fondazione IRCCS Istituto Neurologico Carlo Besta, 20133 Milan, Italy; Brains Lab, Joint Research Platform, Fondazione IRCCS Istituto Neurologico Carlo Besta, 20133 Milan, Italy	299	31	POSTER-A
Marechals	Nils	IGBMC - Institut de Génétique et de Biologie Moléculaire et Cellulaire, Parc D'Innovation 1 Rue Laurent Fries, BP 10142 67404 Illkirch Cedex, France	393	214	POSTER-B
Marelli	Elisa	Politecnico di Milano, Italia	351	214	POSTER-B
Marelli	Federica	Università degli Studi di Milano-Bicocca, Italia	441	214	POSTER-B
Marelli	Marcello	National Research Council, CNR-SCITEC, via G. Fantoli 16/15, Milan, Italy	1482	145	ORG-1D
Marengo	Emilio	Università del Piemonte Orientale, Italia	1645, 1661, 1731, 1755	31, 31, 150, 251	POSTER-A, POSTER-A, ANA-2D, ANA-3D
Maresca	Emanuela	Università di Napoli Federico II, Dipartimento di Biologia, Napoli, Italia; NBFC, Centro Nazionale della Biodiversità	1797	140	ANA-1B
Marforio	Tainah Dorina	Department of Chemistry "G. Ciamician", University of Bologna, Via P. Gobetti 85, Bologna	914	147	ORG-2B
Mari	Matteo	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia, via G. Campi 103, 41125, Modena, Italy.	193	67	INO-1A
Marianecci	Carlotta	Department of Drug Chemistry and Technology, Sapienza University of Rome, Italy	1476, 1841	31, 267	POSTER-A, TEF-1
Mariani	Alessandro	Elettra Sincrotrone Trieste, 34012 Basovizza, Trieste, Italy	1092	31	POSTER-A
Mariani	Elena	Università di Firenze, Italia	575, 603, 602	31, 214, 155	POSTER-A, POSTER-B, ELE-2
Mariano	Alessia	Department of Biomedical Sciences, Sapienza University of Rome, Italy	1460	69	IND-1A
Mariconda	Annaluisa	Università della Basilicata, Italia	1025	241	INO-2B
Marigo	Valeria	Department of Molecular Biology, University of Modena and Reggio Emilia, via Giuseppe Campi 287, Modena MO, 41125; Center for Neuroscience and Neurotechnology, University of Modena and Reggio Emilia, via Giuseppe Campi 287, Modena MO, 41125	630	267	TEF-1
Marin	Elia	Kyoto Institute of Technology, Giappone	463	243	FIS-2B
Marina	Russo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy	1290	214	POSTER-B
Marinaccio	Lorenza	Department of Pharmacy, "G. D'Annunzio" University of Chieti-Pescara, 66100 Chieti, Italy	1136	260	ALI-2A
Marinangeli	Alice	Università di Verona, Italia	1227	214	POSTER-B
Marinelli	Luciana	Department of Pharmacy, University of Naples Federico II, Via D. Montesano 49, 80131 Naples, Italy	703	31	POSTER-A
Marinelli	Luciana	Dipartimento di Farmacia, Università degli Studi di Napoli Federico II	568, 858, 1717	214, 214, 161	POSTER-B, POSTER-B, TEO-B
Marinello	J.	Università di Bologna, Italia	618	31	POSTER-A
Marini	Bruna	Ulisse BioMed Labs, Area Science Park, 31149 Trieste, Italy	518	31	POSTER-A
Marini	Elisabetta	Università degli Studi di Torino, Italia	1302	31	POSTER-A
Marini	Federico	Università La Sapienza di Roma, Italia	145, 1531	214, 250	POSTER-B, ANA-3C
Marino	Mirko	Department of Food, Environmental and Nutritional Sciences, Università degli Studi di Milano, Via Mangiagalli 25, Milan, Italy	1752	255	FAR-2A
Marino	Tiziana	Dipartimento di Chimica e Tecnologie Chimiche, Università degli Studi della Calabria, Rende (CS)	1793	31	POSTER-A
Marino	Tiziana	Laboratory of PROgettazione MOlecolare e Chimica dei Sistemi complessi (PROMOCS) Department of Chemistry and Chemical Technologies, University of Calabria, Via P. Bucci, 14/C, 87036, Arcavacata di Rende (CS), Italy	856	214	POSTER-B
Marino	Tiziana	Dipartimento di Chimica E Tecnologie Chimiche, Laboratorio PROMOCS Cubo 14C, Università della Calabria, Rende (CS)	1615	266	CSB-2
Marinotto	Daniele	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", CNR-SCITEC, v. Fantoli 16/15, I-20138 Milano (IT), and SmartMatLab Center, v. Golgi 19, II-20133 Milano (IT)	820, 631, 1579	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Markevičiūtė	Elena	Dipartimento di Scienza ed Alta Tecnologia, Università degli Studi dell'Insubria, Como, Italy	497	139	ORG-2A
Marocchi	Federica	Istituto Europeo di Oncologia, Milano, Italia	262	214	POSTER-B
Marongiu	Laura	University of Milano-Bicocca, Department of Biotechnology and Biosciences, Piazza della Scienza 2, Milan	633	214	POSTER-B
Maroni	Alessandra	Dipartimento di Scienze Farmaceutiche, Sez. Tecnologia e Legislazione Farmaceutiche "M.E. Sangalli", Università degli Studi di Milano, Via G. Colombo 71, 20133 Milan	1548	214	POSTER-B
Marotta	Angela	Department of Chemical, Materials and Production Engineering, University of Naples Federico II	151	153	TEC-B
Marotta	Ester	Università degli studi di Padova, Italia	681	31	POSTER-A
Marotta	Giambattista	Università degli Studi di Firenze, Italia	1342	214	POSTER-B
Marra	Francesco	Università degli Studi di Torino, Italia	1330	143	ORG-1C
Marra	Gianluigi	ENI S.p.A. Novara Laboratories (NOLAB), Renewable and Material Science Research Center, (DE-R&D)	778	160	FIS-1B
Marra	Sebastiano	Dept. Civil, Architectural and Environmental Engineering, Univ. Naples Federico II, Naples, Italy	724	214	POSTER-B
Marraffa	Laura	Universita degli Studi di Bari Aldo Moro, Italy	1491	214	POSTER-B
Marrancone	Simone	1 Laboratory for Environmental and Life Sciences, University of Nova Gorica, 5000 Nova Gorica, Slovenia	393	214	POSTER-B
Marrani	Andrea Giacomo	Department of Chemistry, Sapienza University of Rome, Piazzale Aldo Moro, 5, 00185, Rome, Italy	143	253	INO-2C
Marrazza	Giovanna	Università di Firenze, Italia	342, 1121, 291	186, 214, 146	ParallelTopic01 - ID: 186, POSTER-B, ANA-2B
Marrazzo	Agostino	Università deli studi di Catania, Italia	792, 1597, 306, 788	31, 31, 255, 136	POSTER-A, POSTER-A, FAR-2A, FAR-1D
Marrocchi	Assunta	Università degli Studi di Perugia, Italia	409, 489	31, 31	POSTER-A, POSTER-A
Marrone	Alessandro	Università degli Studi "G. D' Annunzio" Chieti-Pescara, Via dei Vestini 31, Chieti	122, 341	31, 165	POSTER-A, INO-1B
Marrone	Federico	Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), Università degli Studi di Palermo, Palermo 90123, Italy; NBFC, National Biodiversity Future Center, 90133 Palermo, Italy	1400	214	POSTER-B
Marsani	Simone	Università di Pavia, Dipartimento di Scienze del Farmaco, Pavia, Italia	1130	214	POSTER-B
Marsigliante	Santo	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy	1155, 1153, 1428	31, 214, 67	POSTER-A, POSTER-B, INO-1A

Martano	Giuseppe	Institute of Neuroscience, National Research Council (CNR), Milan, Italy	715	71	MAS
Martegani	Eleonora	CRC StaMeTec Department of Biomedical, Surgical and Dental Sciences, University of Milan, 20122 Milan, Italy	191	31	POSTER-A
Martella	Daniele	Università degli Studi di Firenze, Italia	222, 807	214, 158	POSTER-B, IND-1C
Martelli	Maria Paola	Hematology and Clinical Immunology, Department of Medicine and Surgery, University of Perugia, Italy	1672	31	POSTER-A
Martellini	Tania	Department of Chemistry "Ugo Schiff" (DICUS), University of Florence; Center for Colloid and Surface Science (CSGI), University of Florence	1121, 1532, 1602, 291	214, 214, 214, 146	POSTER-B, POSTER-B, POSTER-B, ANA-2B
Martello	Valentino Gabriel	University School for Advanced Studies IUSS Pavia, Italia; Università di Torino, Italia; Politecnico di Torino, Italia	671	234	FIS-1C
Martí-Rujas	Javier	Politecnico di Milano, Italia	221	237	TEC-C
Martin Santamaria	Sonsoles	Centro de Investigaciones Biologicas, CIB-CSIC, Madrid, Spain	698	214	POSTER-B
Martin	Irene	Istituto Italiano di Tecnologia, Genova, Italia; Politecnico di Torino, Italia	169, 118	31, 157	POSTER-A, IND-1B
Martina	Katia	Department of Drug Science and Technology, University of Turin, Via Pietro Giuria 9, 10125, Turin	261	214	POSTER-B
Martina	Laura	Dep. of Biological and Environmental Sciences and Technologies, University of Salento, Via per Monteroni 73100, Lecce (Italy)	1218, 1231	214, 214	POSTER-B, POSTER-B
Martina	Maria Grazia	Università degli Studi di Parma, Italia	1091	214	POSTER-B
Martina	Matteo Renato	Università degli studi di Bari Aldo Moro, Italia	1824	256	ORG-4A
Martinelli	Elisa	Department of Chemistry and Industrial Chemistry, University of Pisa, via G. Moruzzi 13, Pisa (Italy)	1523	264	ORG-1B
Martinelli	Matteo	Department of Chemistry and Carl R. Woese Institute for Genomic Biology, University of Illinois at Urbana−Champaign, Urbana, Illinois 61801, United States	1907	214	POSTER-B
Martinengo	Bianca	Università di Bologna, Italia; University College London, Londra	1494	214	POSTER-B
Martínez-Bailén	Macarena	Università degli Studi di Firenze, Dipartimento di Chimica "Ugo Schiff" (DICUS), Italia; Universidad de Sevilla, Departamento de Química Orgánica, Facultad de Química, Spain	283	141	ORG-1A
Martinez-Brito	Dayamin	Laboratorio Antidoping, Federazione Medico Sportiva Italiana, Largo Giulio Onesti, 1, 00197, Rome, Italy	1836	31	POSTER-A
Martinez-Gonzalez	Loreto	Centro de Investigaciones Biologicas, CSIC, Avenida Ramiro de Maeztu 9, 28040, Madrid, Spain l	684	214	POSTER-B
Martínez-Piernas	Ana Belen	Department of Analytical Chemistry, Faculty of Sciences, University of Malaga, 29071, Malaga, Spain	293	31	POSTER-A
Martinez-Pomares	Luisa	University of Nottingham, UK	445	31	POSTER-A
Martinez	Ana	Centro de Investigaciones Biologicas, CSIC, Avenida Ramiro de Maeztu 9, 28040, Madrid, Spain l	684	214	POSTER-B
Martinez	Eugenie	CEA-LETI, Grenoble, France	408	242	FIS-2A
Martinez	Gonzalo Agustin	Department of Civil, Chemical, Environmental and Materials Engineering (DICAM), University of Bologna, Via Terracini 28, 40131 Bologna, Italy	937	31	POSTER-A
Martini	Carla	Università di Bologna, Italia	1505	31	POSTER-A
Martini	Francesca	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Via G. Moruzzi 13, 56124, Pisa, Italia; CISUP, Centro per l'Integrazione della Strumentazione dell'Università di Pisa, Lungarno Pacinotti 43, 56126, Pisa, Italy	522, 1064, 814	31, 214, 242	POSTER-A, POSTER-B, FIS-2A
Martino	Emanuela	Department of Earth and Environmental Sciences, University of Pavia Via Ferrata 1, 27100 Pavia, Italy; National Biodiversity Future Center, Piazza Marina 61, 90133 Palermo, Italy	1118, 944	31, 214	POSTER-A, POSTER-B
Martino	Piera Anna	Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, One Health Unit, Università degli Studi di Milano, Via Pascal 36, 20133 Milan	1548, 961	214, 255	POSTER-B, FAR-2A
Martire	Stefano	Istituto Italiano di Tecnologia, Italia	798	31	POSTER-A
Martorelli	F.	CNR SCITEC, Italia	529	31	POSTER-A
Martusciello	Martina	Università di Genova, Dipartimento di Chimica e Chimica Industriale	529	31	POSTER-A
Marucci	Gabriella	Università di Camerino, Scuola di Scienze del Farmaco e dei Prodotti per la Salute, Italia	968	31	POSTER-A
Marullo	Salvatore	Università degli studi di Palermo, Italia	374, 366, 722, 1452	31, 214, 244, 244	POSTER-A, POSTER-B, ORG-3A, ORG-3A
Marussi	Giovanna	Department of Chemical and Pharmaceutical Sciences, University of Trieste, Via Giorgieri 1, Trieste	1510, 1518	214, 214	POSTER-B, POSTER-B
Marverti	Gaetano	Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Via Campi 287, 41125 Modena, Italy	904	255	FAR-2A
Maryam	Maryam	University of Milano Bicocca, Italy	1867	214	POSTER-B
Marzano	Cristina	Department of Pharmaceutical and Pharmacological Sciences, University of Padova, Padova, Italy	1284	74	TEC-A
Marzano	S.	Università di Napoli, Italia	618	31	POSTER-A
Marzano	Simona	Università di Napoli Federico II, Italia	1529, 1743, 772	214, 138, 266	POSTER-B, ANA-2A, CSB-2
Marzari	Sofia	Università di Parma, Italia	379	31	POSTER-A
Marzaro	Giovanni	Department of Pharmaceutical and Pharmacological Sciences, University of Padova, via Marzolo 5, Padova	721	41	ParallelTopic04
Marziali	Michele	Department of Chemistry, University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino (FI), Italy	687	138	ANA-2A
Marziani	Piergiorgio	Politecnico di Milano, Italia	653	31	POSTER-A
Marzo	Tiziano	Department of Pharmacy, University of Pisa, Via Bonanno Pisano 6, 56126, Pisa, Italy	341, 994	165, 264	INO-1B, ORG-1B
Marzocca	Annalisa	Department of Bioscience, Biotechnologies and Environment, University of Bari, Italy, Bari	1381	214	POSTER-B
Marzocchi	Adua	Department of Pharmacy, University of Naples Federico II, Italy	548	259	ALI-1B
Marzocchi	Raffaele	Università di Napoli Federico II, Italia	349	31	POSTER-A
Marzullo	Paola	Università degli Studi di Palermo, Italia	1452	244	ORG-3A
Masci	Domiziana	Department of Basic Biotechnological Sciences, Intensivological and Perioperative Clinics, Catholic University of Sacred Heart, Largo Francesco Vito 1, Rome 00168, Italy	1136	260	ALI-2A
Mascia	Michele	Università degli Studi di Cagliari, Italia	1968	173	ParallelTopic02 - ID: 173
Masciocchi	Norberto	Università degli Studi dell'Insubria, Italia	709	166	INO-1C
Masella	Manuel	Delta APS Service, Roma, Italia	1825	214	POSTER-B
Maselli	Alessandro	Università degli Studi di Perugia, Italia	410	214	POSTER-B
Masetti	Andrea	Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italia	285	241	INO-2B
Masi	Alessandro Antonio	Federico II, Italia	1767	214	POSTER-B
Masi	Stefano	Department of Clinical and Experimental Medicine, University of Pisa, Via Roma 67, Pisa, Italy	1747	31	POSTER-A
Masi	Stefano	Department of Pathology, Cardiology Division, University of Pisa, Savi 10, Pisa, Italy	1438	258	ANA-4A
Masiello	Mario	Istituto di scienze delle produzioni alimentari (ISPA), CNR, 70126 Bari, Italy.	1416	214	POSTER-B
Masiero	Stefano	Università di Bologna, Italia	1033, 1533	31, 144	POSTER-A, ANA-1D
Mason	Mattia	Università degli Studi di Milano, Italia	484	147	ORG-2B
Massa	Mattia	University of Brescia, Italy	315	153	TEC-B
Massano	Marta	Università degli studi di Torino, Italia	255	258	ANA-4A
Massari	Marta	Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, Via Ferrata 5, 27100 Pavia, Italy	1643, 985	56, 214	ParallelTopic12, POSTER-B
Massari	Serena	Department of Pharmaceutical Sciences, University of Perugia, Italy	1672, 135, 1013, 1043, 1456	31, 206, 214, 214, 214	POSTER-A, ParallelTopic09 - ID: 206, POSTER-B, POSTER-B, POSTER-B
Massaro	Arianna	Department of Chemical Sciences, University of Naples Federico II, Naples, Italy; National Reference Center for Electrochemical Energy Storage (GISEL), Firenze, Italy	347	214	POSTER-B
Massaro	Marina	Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), Università di Palermo, V.le delle Scienze, Palermo, 90128, Italy	1594, 1604, 1573, 1595, 1678	31, 31, 214, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B
Massarotti	Alberto	Università del Piemonte Orientale, Dipartimento di Scienze del Farmaco, Via Bovio 6, 28100 Novara, Italia	697	65	FAR-1A
Massi	Alessandro	Università degli studi di Ferrara, Italia	1184, 1493	141, 245	ORG-1A, ORG-3B
Massi	Lorenzo	Università Politecnica delle Marche, Italia; Università Ca' Foscari Venezia, Italia	907	31	POSTER-A
Massi	Lorenzo	Università Politecnica delle Marche, Italia	479	78	ALI-1A
Massi	Lorenzo	DAIS, Università Ca' Foscari Venezia, Italia	416	150	ANA-2D
Massi	Massimiliano	Department of Chemistry, Curtin University Bentley, Australia	302	166	INO-1C

Masson	Geraldine	Institut de Chimie des Substances Naturelles, Université Paris Saclay, UPR2301- CNRS, Avenue de la Terrasse, 91198 Gif-sur-Yvette Cedex, France	1542, 804	214, 264	POSTER-B, ORG-1B
Massot	Philippe	University of Bordeaux-CNRS, France	1353	31	POSTER-A
Mastrangelo	Gianvito	Department of Pharmaceutical Sciences, University of Perugia, 06123, Perugia, Italy	468	31	POSTER-A
Mastrangelo	Rosangela	Dipartimento di Chimica, Università degli Studi di Firenze, Italia	1614	235	FIS-1D
Mastrogiacomo	Rita	Institute for Chemical and Physical Processes (IPCF)-CNR SS Bari, 70126, Italy; National Interuniversity Consortium of Materials Science and Technology (INSTM), Bari, 70126, Italy; Department of Chemistry, University of Bari, 70126, Italy	678	243	FIS-2B
Mastroianni	Luca	Università degli Studi di Napoli Federico II, via Cintia, IT-80126 Napoli, Italy; Åbo Akademi, Laboratory of Industrial Chemistry and Reaction Engineering (TKR), FI-20500 Turku/Åbo, Finland	879	158	IND-1C
Mastrolorito	Fabrizio	Dipartimento di Farmacia-Scienze del Farmaco, Università degli Studi di Bari 'Aldo Moro', Italia	1180	134	FAR-1C
Mastronardi	Giuseppe	University of Turin, Italia	1282	214	POSTER-B
Mastronardo	Emanuela	Università degli Studi di Messina, Italia	396, 397	237, 236	TEC-C, TEC-D
Mastrorilli	Piero	Politecnico di Bari, Italy	1899	31	POSTER-A
Mastrorilli	Piero	Politecnico di Bari, Italia	1913	31	POSTER-A
Mastrorilli	Piero	Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari, Italia	336, 1780, 1874, 1203	204, 214, 214, 74	ParallelTopic07 - ID: 204, POSTER-B, POSTER-B, TEC-A
Mastrorilli	Piero	Polytechnic University of Bari, Italia	1729	236	TEC-D
Mastrorilli	Pietro	Politecnico di Bari, Italia; Innovative Solutions S.r.l., Italia	1098, 831	31, 214	POSTER-A, POSTER-B
Mastrotto	Francesca	Department of Pharmaceutical and Pharmacological Sciences, University of Padova, via Marzolo 5, Padova	721	41	ParallelTopic04
Masutti	Lorenzo	Ca' Foscari - Università di Venezia, Italia	1502	214	POSTER-B
Mataloni	Matilde	University of Genoa, Italy	1028	214	POSTER-B
Mataloni	Simone	ENEA R. C. Casaccia, TERIN-PSU-ABI, Via Anguillarese 301, 00123 Rome, Italy	1256	214	POSTER-B
Matarrese	Roberto	Dipartimento di Energia, Politecnico di Milano, Italia	1647, 1571	214, 157	POSTER-B, IND-1B
Matassini	Camilla	Department of Chemistry 'Ugo Schiff', University of Florence, via della Lastruccia 3-13, 50019 Sesto Fiorentino (FI), Italy	452, 732, 1814, 283	31, 214, 214, 141	POSTER-A, POSTER-B, POSTER-B, ORG-1A
Matera	Carlo	Department of Pharmaceutical Sciences, University of Milan, 20133 Milan, Italy	827	31	POSTER-A
Mathieu	Roland	Uppsala University	513	242	FIS-2A
Mattagli	Federico	DAGRI – Department of Agricultural, Food, Environmental, and Forestry Sciences and Technologies – University of Florence, via Donizetti, 6 – 50144 Firenze (Italy)	226	214	POSTER-B
Mattarozzi	Monica	Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma	1369, 1375, 954, 1368	31, 214, 140, 251	POSTER-A, POSTER-B, ANA-1B, ANA-3D
Matteo	Bonomo	University of Turin, Italy	424	31	POSTER-A
Matteocci	Fabio	CHOSE- Centre for Hybrid and Organic Solar Energy, Department of Electronics Engineering, University of Rome "Tor Vergata", Italia	892	201	ParallelTopic03 - ID: 201
Matteucci	Federica	Università degli Studi di Camerino, Camerino, Italia	1366	136	FAR-1D
Matteucci	Rosa Maria	Politecnico di Bari	1450, 740	210, 252	ParallelTopic13 - ID: 210, FIS-3
Mattevi	Andrea	Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, Via Ferrata 5, 27100 Pavia, Italy	1643, 985, 851	56, 214, 132	ParallelTopic12, POSTER-B, FAR-1B
Mattia	Gianfranco	Center for Gender-specific Medicine, Istituto Superiore di Sanità, Rome, Italy	1476	31	POSTER-A
Mattia	Rubes	University of Turin, Italy	424	31	POSTER-A
Mattiello	Sara	Università di Milano-Bicocca, Italia	783, 1114, 1315, 1685, 1715, 1800, 367	31, 31, 31, 31, 31, 31, 245	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, ORG-3B
Mattio	Luce	Molecular Modeling & Drug Discovery Laboratory, Istituto Italiano di Tecnologia, via Morego, 30, 16163 Genoa, Italy	1002	193	ParallelTopic09 - ID: 193
Mattioli	Edoardo Jun	Alma Mater Studiorum - Università di Bologna, Bologna	1556, 1254	214, 154	POSTER-B, CSB-1B
Mattioli	Laura Beatrice	Department of Pharmacy and Biotechnology, Food Chemistry and Nutraceutical Lab, Alma Mater Studiorum-University of Bologna, Bologna, Italy	1634, 978	214, 259	POSTER-B, ALI-1B
Mattioli	Simone	Dompè farmaceutici, L'Aquila, Italia	1176	165	INO-1B
Mattiussi	Michele	Regional Environmental Protection Agency—ARPA-FVG, Via Cairoli 14, 33057 Palmanova, Italy	1511	249	ANA-3B
Mattivi	Fulvio	Unit of Metabolomics, Research and Innovation Centre, Fondazione Edmund Mach, San Michele all'Adige,Italy	757, 1982, 2012	195, 209, 71	ParallelTopic12 - ID: 195, ParallelTopic12 - ID: 209, MAS
Mattoli	Luisa	Aboca S.p.A., Italia	774, 781, 773	31, 214, 71	POSTER-A, POSTER-B, MAS
Mauceri	Matteo	Università di Padova; Università Ca' Foscari Venezia	496	67	INO-1A
Maul	Jefferson	Materials Science and Engineering Graduate Program, UFPB, João Pessoa, Brazil	899	75	TEO-A
Maurelli	Anna Maria	Institute of Food Sciences, National Research Council of Italy, Bari Research Unit, via Orabona 4, 70126 Bari, Italy	966	235	FIS-1D
Maurer	Florian	Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology, Germany	1191	241	INO-2B
Mauri	Anna	Università degli Studi dell'Insubria	958	214	POSTER-B
Mauri	Emanuele	Department of Chemistry, Materials and Chemical engineering "Giulio Natta", Politecnico di Milano, via Mancinelli 7, 20131 Milano, Italy	1871	74	TEC-A
Mauri	Luca	Università degli Studi di Milano, Italia	290	253	INO-2C
Mauriello	Francesco	Università degli Studi Mediterranea di Reggio Calabria, Italia	1947	53	ParallelTopic10
Mauriello	Francesco	Dipartimento DICEAM, Università degli Studi Mediterranea di Reggio Calabria, IT89123 Reggio Calabria, Italy	123	214	POSTER-B
Mauriello	Francesco	Dipartimento DICEAM, Università degli Studi Mediterranea di Reggio Calabria, IT89123 Reggio Calabria, Italy	536, 490	214, 244	POSTER-B, ORG-3A
Maurino	Valter	Università degli studi di Torino, Italia; UniTo-ITT JointLab, Università degli studi di Torino, Italia	893, 1589	31, 249	POSTER-A, ANA-3B
Maurizio	Quinto	Department of Agriculture, Food, Natural resources and Engineering (DAFNE), University of Foggia, via Napoli 25, 71122 Foggia, Italy	1290	214	POSTER-B
Maver	Daniele	Dipartimento di Chimica, Università degli Studi di Milano, via Golgi 19, 20133, Milano, Italia; Istituto di Scienze Chimiche e Tecnologiche "Giulio Natta" (SCITEC) del CNR, via Golgi 19, Milano, IT	631, 1579	214, 214	POSTER-B, POSTER-B
Mavridi-Printezi	Alexandra	Dept. of Chemistry "G. Ciamician"- University of Bologna, Via Selmi 2, Bologna, Italy	1097	146	ANA-2B
Mazda	Osam	Kyoto Prefectural University of Medicine, Giappone	463	243	FIS-2B
Mazza	Gaia	Department of Pharmaceutical Sciences, University of Milan	1596	31	POSTER-A
Mazzaglia	Antonino	CNR-ISMN URT of Messina at Dept. ChiBioFarAm, University of Messina, Viale F. Stagno d'Alcontres 31, Messina	1291	166	INO-1C
Mazzantini	Costanza	Dipartimento di Scienze della Salute, Italia	968	31	POSTER-A
Mazzaracchio	Vincenzo	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", Rome-Italy.	304, 1499	31, 214	POSTER-A, POSTER-B
Mazzarella	Daniele	Department of Chemical Sciences, University of Padova, Via Francesco Marzolo 1, 35131, Padova (Italy)	227	143	ORG-1C
Mazzarella	Vincenzo	Università degli studi della Campania L. Vanvitelli, Italia	515, 354, 547, 352	31, 214, 214, 65	POSTER-A, POSTER-B, POSTER-B, FAR-1A
Mazzariol	Chiara	Department of Chemical Sciences, University of Padova, Italy; Institute for Inorganic and Analytical Chemistry, Justus-Liebig University Giessen, Germany	1439	254	INO-3
Mazzei	Rosalinda	Istituto per la Tecnologia delle Membrane (CNR-ITM), Italia	1749, 1844	214, 153	POSTER-B, TEC-B
Mazzeo	Giuseppe	Dipartimento di Medicina Molecolare e Traslazionale, Università di Brescia, Viale Europa 11, 25123 Brescia. Italy	1313	214	POSTER-B
Mazzeo	Paolo Pio	Università di Parma, Italia	863, 1054	31, 241	POSTER-A, INO-2B
Mazzeo	Rocco	Università di Bologna, Italia	1758, 1459, 1790	31, 238, 156	POSTER-A, ABC-B, ABC-C
Mazzi	Anna	Università di Padova, Italia	1655	214	POSTER-B
Mazzi	Giovanna	Department of Environmental Sciences, Informatics and Statistics, Ca' Foscari University of Venice, Via Torino, 155-30172 Venice Mestre, VE, Italy	903	31	POSTER-A
Mazzini	Stefania	Università degli Studi di Milano, Italia	1906	214	POSTER-B
Mazzocato	Ylenia	Ca' Foscari - Università di Venezia, Italia	1502, 1222	214, 144	POSTER-B, ANA-1D
Mazzolari	Asia	Dept. of Pharmaceutical Sciences, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy	598	31	POSTER-A
Mazzoleni	Alberto	Università di torino, Italia; Databloom s.r.l, Italia	1412, 1558, 1788	193, 214, 214	ParallelTopic09 - ID: 193, POSTER-B, POSTER-B
Mazzoli	Giulio	Università degli Studi di Firenze, Italia	603	214	POSTER-B
Mazzone	Gloria	Department of Chemistry and Chemical Technologies, University of Calabria, via P. Bucci 87036 Cosenza, Italy	141	214	POSTER-B
Mazzoni	Rita	Department of Industrial Chemistry "Toso Montanari", University of Bologna, via Gobetti 85 40129 Bologna, Italy	141, 204, 285	214, 214, 241	POSTER-B, POSTER-B, INO-2B

Mazzorana	Marco	Diamond Light Source, Ltd., Harwell Science and Innovation Campus, Didcot, OX11 0DE, Oxfordshire, United Kingdom	1577	31	POSTER-A
Mazzotta	Elisabetta	Dipartimento di Scienze e Tecnologie Biologiche ed Ambientali, Università del Salento, Italia	723	214	POSTER-B
Mazzotta	Sarah	Università degli Studi di Milano, Italia	144, 1109, 1147	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Mazzotta	Silvia	Center for Sustainable Future Technologies, Istituto Italiano di Tecnologia, Via Livorno 60, 10144 Torino, Italy; Dipartimento di Ingegneria dell'Ambiente del Territorio e delle Infrastrutture (DIATI), Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy; Scuola Universitaria Superiore (IUSS) Pavia, Palazzo del Broletto-Piazza della Vittoria 15, 27100 Pavia, Italy	1564	31	POSTER-A
Mazzotta	Silvia	Center for Sustainable Future Technologies Istituto Italiano di Tecnologia, Via Livorno 60, 10144 Torino (Italy); Dipartimento di Ingegneria dell'Ambiente, del Territorio e delle Infrastrutture (DIATI) Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino (Italy) ; Scuola Universitaria Superiore (IUSS) Pavia. Palazzo del Broletto-Piazza della Vittoria 15, 27100 Pavia, (Italy)	1771	153	TEC-B
Mazzuca	Claudia	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", and CSGI unit of Rome, Via della Ricerca Scientifica, 00133 Rome, Italy	1550	243	FIS-2B
Mazzucato	Marco	Università degli Studi di Padova, Italia	556	31	POSTER-A
Mazzuoccolo	Immacolata	Università degli Studi di Napoli Federico II, Italia	1918	31	POSTER-A
Mazzuoccolo	Immacolata	Università degli Studi di Napoli Federico II, Italia	387	237	TEC-C
Mba Blazquez	Miriam	Università di Padova, Italia	395	246	ORG-3C
Mba	Miriam	Dipartimento di Scienze Chimiche, Università degli Studi di Padova, Italia	754	31	POSTER-A
Meazzo	Carolina	Dipartimento di Chimica, Università degli Studi di Torino, via P. Giuria 7, 10125 Torino, Italia	1393, 695, 1331, 1394	31, 214, 214, 143	POSTER-A, POSTER-B, POSTER-B, ORG-1C
Mecca	Sara	Università di Milano-Bicocca, Italia	1800, 1760	31, 214	POSTER-A, POSTER-B
Mecerreyes	David	POLYMAT, University of the Basque Country	835	72	ELE-1
Mecheri	Barbara	Università di Roma Tor Vergata, Italia	753, 1599, 1283	31, 188, 214	POSTER-A, ParallelTopic03 - ID: 188, POSTER-B
Medici	Antonio	Department of Chemical Sciences, University of Naples Federico II, Italy	825	156	ABC-C
Medici	Fabrizio	Università degli Studi di Milano, Italia	392	145	ORG-1D
Mei	Gabriele	Basell Polieolefine Italia Srl, Italia	388	190	ParallelTopic06 - ID: 190
Melani	Fabrizio	Department of NEUROFARBA, University of Florence, Via Ugo Schiff 6, 50019 Sesto F.no, Florence, Italy	226	214	POSTER-B
Melcangi	Roberto Cosimo	* Dipartimento di Scienze Farmacologiche e Biomolecolari, Neuroendocinology unit, Università degli Studi di Milano, via Giuseppe Balzaretti 9, 20133, Milan, Italy	836	31	POSTER-A
Melchior	Andrea	Università di Udine, Italia	1451, 786, 1166, 1039, 528	31, 214, 214, 74, 254	POSTER-A, POSTER-B, POSTER-B, TEC-A, INO-3
Melchiorre	Gabriele	Sapienza Università di Roma, Italia	1084	31	POSTER-A
Melchiorre	Massimo	University of Naples Federico II, Italia	1065	181	ParallelTopic10 - ID: 181
Mele	Andrea	Politecnico di Milano, Italia	346, 540, 712	199, 237, 236	ParallelTopic01 - ID: 199, TEC-C, TEC-D
Mele	Francesco	SynCat Lab, Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italia	1812, 1334	31, 214	POSTER-A, POSTER-B
Mele	Stefano	Department of Chemistry, University of Bari, Via Orabona 4, 70126 (Bari) Italy	938	214	POSTER-B
Mele	Vincenza	Dept. Molecular Medicine and Medical Biotechnology, Univ. Naples Federico II, Naples, Italy	724	214	POSTER-B
Melega	Luca	Università di Pisa, Italia	927	214	POSTER-B
Meli	Massimiliano	Istituto di Scienze e Tecnologie Chimiche 'Giulio Natta', Consiglio Nazionale delle Ricerche, Italia	1012	214	POSTER-B
Meli	Massimiliano	CONSIGLIO NAZIONALE DELLE RICERCHE, Italia	1102	154	CSB-1B
Meligrana	Giuseppina	Politecnico di Torino, Italia; National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM	759, 1063, 1419	31, 214, 72	POSTER-A, POSTER-B, ELE-1
Melis	Nicola	Università degli Studi di Cagliari, Italia	1968	173	ParallelTopic02 - ID: 173
Mellet	Philippe	University of Bordeaux-CNRS, France; INSERM, Bordeaux, France	1353	31	POSTER-A
Melloni	Mattia	Centro di ricerca "C. Buonerba", Versalis s.p.a., Mantova, Italy	558	262	IND-2A
Melocchi	Alice	University of Milan, Italy	1484	31	POSTER-A
Melone	Mariarosa Anna Beatrice	Dipartimento di Scienze Mediche e Chirurgiche Avanzate, Università degli studi della Campania Luigi Vanvitelli; Sbarro Institute for Cancer Research and Molecular Medicine, Center for Biotechnology, Temple University, Philadelphia	512	243	FIS-2B
Melosso	Mattia	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna	1900	214	POSTER-B
Melucci	Dora	Alma Mater studiorum Università di Bologna	1157	214	POSTER-B
Melucci	Manuela	Consiglio Nazionale delle Ricerche, Istituto per la Sintesi Organica e la Fotoreattività (CNR-ISOF)	1461	196	ParallelTopic13 - ID: 196
Melucci	Manuela	Institute for Organic Synthesis and Photoreactivity (ISOF), National Research Council of Italy (CNR)	1263, 1264, 1421, 1433	214, 214, 214, 214	POSTER-B, POSTER-B, POSTER-B, POSTER-B
Menard	Olivia	Institut Agro UMR 1253 STLO 65 rue de Saint-Brieuc 35042 Rennes Cedex	1244	78	ALI-1A
Méndez Paz	Diego	ANFACO-CECOPESCA, Department of Circular Economy, Colexio Universitario, 36310 Vigo, Spain	404	211	ParallelTopic14 - ID: 211
Mendez Paz	Diego	ANFACO-CECOPESCA, Department of Circular Economy, Colexio Universitario, 36310 Vigo, Spain	1316	261	ALI-2B
Mendolicchio	Marco	Scuola Normale Superiore, Italia	1177	206	ParallelTopic09 - ID: 206
Menduti	Luigi	Dipartimento DISFARM, Università di Milano, Via Camillo Golgi 19, 20133 Milano, Italia	154, 205, 1313, 234	31, 214, 214, 246	POSTER-A, POSTER-B, POSTER-B, ORG-3C
Menegaldo	Martina	Ca' Foscari University of Venice, Department of Environmental Sciences, Informatics and Statistics, Scientific Campus, via Torino 155, 30172 Mestre, VE, Italy	1358	238	ABC-B
Menegazzo	Federica	CATMAT Lab, Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice and INSTM-RU Ve, Via Torino 155 (30172), Venezia Mestre (Italy)	126, 586	31, 31	POSTER-A, POSTER-A
Menegazzo	Federica	Center for Cultural Heritage Technology, Istituto Italiano di Tecnologia, Italia; Dipartimento Scienze Molecolari e Nanosistemi, Università Ca' Foscari Venezia, Italia	1000	214	POSTER-B
Menegazzo	Federica	CATMAT Lab, Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Venice, Italy	252	73	ABC-A
Meneghetti	Fiorella	Università degli Studi di Milano, Italia	1277, 693, 1081, 1082	31, 214, 214, 214	POSTER-A, POSTER-B, POSTER-B, POSTER-B
Meneghetti	Moreno	University of Padova, Italy	119, 1550	214, 243	POSTER-B, FIS-2B
Meneghini	Carlo	Department of Sciences, Roma Tre University, Via della Vasca Navale 79, 00146, Rome, Italy	1774	165	INO-1B
Menendez Rodriguez	Gabriel	Università degli Studi di Perugia, Italia	1915	214	POSTER-B
Mengali	Sandro	Consorzio CREO, 67100 L'Aquila, Italy	928	214	POSTER-B
Mengozzi	Giulio	A.O.U. Città della Salute e della Scienza, Laboratorio di Biochimica Clinica "Baldi e Riberi", Torino, Italia	1468	214	POSTER-B
Menichetti	Stefano	Department of Chemistry "Ugo Schiff" (DICUS) & INSTM Research Unit, University of Florence, Via della Lastruccia 3-13, Sesto Fiorentino 50019, Italy.	1959	143	ORG-1C
Meninno	Sara	Università degli Studi di Salerno, Italia	1435	31	POSTER-A
Menna	Enzo	Università degli Studi di Padova, Italia	607, 681, 754, 395	31, 31, 31, 246	POSTER-A, POSTER-A, POSTER-A, ORG-3C
Menna	Marialuisa	Dipartimento di Farmacia, Università degli Studi di Napoli Federico II, Italia	1754	139	ORG-2A
Mennucci	Benedetta	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	672, 1712, 520, 665, 1189	31, 31, 214, 161, 161	POSTER-A, POSTER-A, POSTER-B, TEO-B, TEO-B
Menozzi	Alberto	Demak Polymers Srl, Torino	561	262	IND-2A
Menozzi	Camilla	Università di Modena e Reggio Emilia, Dipartimento di Scienze della Vita	331, 326	31, 250	POSTER-A, ANA-3C
Mensah	Afua Adjeiwaa	Institute of Oncology Research (IOR), Via Francesco Chiesa 5, 6500 Bellinzona	853	31	POSTER-A
Mensah	Wendy Appiagyei	Università di Bologna, Italia	848	214	POSTER-B
Mensitieri	Giuseppe	Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università degli Studi di Napoli Federico II, Piazzale Tecchio 80, 80125 Napoli Italia	549	214	POSTER-B
Mentana	Annalisa	Laboratorio Nazionale di Riferimento per il trattamento degli alimenti e dei loro ingredienti con radiazioni ionizzanti – Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Via Manfredonia, 20 – 71121 Foggia	1424, 1431	31, 78	POSTER-A, ALI-1A
Menziani	Maria Cristina	Università di Modena e Reggio Emilia, Italia	2016	206	ParallelTopic09 - ID: 206

Menzyk	Alicja	Institute of Chemistry, University of Silesia in Katowice, Polonia; Institute of Forensic Research in Krakow, Polonia	517	31	POSTER-A
Meola	Domenico	University of Ferrara, Italia	975	214	POSTER-B
Meraviglia	Silvia	Università degli Studi di Milano, Italia	713	214	POSTER-B
Mercedi	Anna	Università degli Studi di Padova, Italia	1049	214	POSTER-B
Mercogliano	Francesca	Università degli Studi di Milano, Italia	585	197	ParallelTopic14 - ID: 197
Mercolini	Laura	Research group of Pharmaco-Toxicological Analysis (PTA Lab), Department of Pharmacy and Biotechnology (FaBiT), Alma Mater Studiorum – University of Bologna, Via Belmeloro 6, 40126 Bologna, Italy	1811, 523	31, 66	POSTER-A, ANA-1A
Mercorelli	Nicolò	NanoBio Interface Lab, Dipartimento di Chimica "Giacomo Ciamician", Alma Mater Studiorum - Università di Bologna, Italia	1357	31	POSTER-A
Merdzo	Ileana	Dipartimento di Scienze Chimiche e Farmacautiche, Università di Trieste, Italia	1014	31	POSTER-A
Meriem	Gouasmi	Department of Chemistry, Università degli Studi di Torino, Via Pietro Giuria 7, 10125, Torino	128	214	POSTER-B
Meringolo	Federica	Dipartimento di Chimica e Tecnologie Chimiche - CTC, Università della Calabria, Via P. Bucci, Cubo 12C, 87036 - Rende (CS), IT	268	31	POSTER-A
Merkoçi	Arben	Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Bellaterra, 08193 Barcelona, Spain; Catalan Institution for Research and Advanced Studies (ICREA); Passeig de Lluís Companys, 23, Barcelona, 08010, Spain	1781	31	POSTER-A
Merkouri	Loukia-Pantzechroula	School of Chemistry and Chemical Engineering, University of Surrey, United Kingdom	789	31	POSTER-A
Merli	Daniele	Dipartimento di Chimica, Università di Pavia, Italia	317	214	POSTER-B
Merli	Elena	Next Technology Tecnotessile Società Nazionale di Ricerca r.l., Italia	751	214	POSTER-B
Merlino	Antonello	Department of Chemical Sciences, University of Naples "Federico II", 80126, Naples, Italy	1751	67	INO-1A
Merlo	Francesca	Università di Pavia, Italia	562, 614, 606, 581	31, 31, 214, 249	POSTER-A, POSTER-A, POSTER-B, ANA-3B
Merola	Carmine	Department of Bioscience and Technology for Food, Agriculture and Environment, University of Teramo, Campus "Aurelio Saliceti" via R. Balzarini 1, 64100 Teramo, Italy	844	214	POSTER-B
Meroni	Daniela	Università degli Studi di Milano, Italia	589	177	ParallelTopic06 - ID: 177
Meroni	Gabriele	Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, One Health Unit, Università degli Studi di Milano, Via Pascal 36, 20133 Milan	1548	214	POSTER-B
Meroni	Gabriele	Department of Food, Environmental and Nutritional Sciences, University of Milan, via Celoria 2, 20133 Milan, Italy	961	255	FAR-2A
Merra	Rosalia	Dip. STEBICEF, Università di Palermo	1473	31	POSTER-A
Merzel	Franci	Laboratory for Molecular Structural Dynamics, National Institute of Chemistry. Ljubljana, Slovenia.	502	214	POSTER-B
Meschiari	Giorgia	Dipartimento di scienze biochimiche "Alessandro Rossi Fanelli", Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210	31	POSTER-A
Messere	Anna	Università degli studi della Campania L. Vanvitelli, Italia	515, 354, 547	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Messina	Elena	Institute for the Study of Nanostructured Materials (ISMN), National Research Council (CNR)	1268, 1486	31, 235	POSTER-A, FIS-1D
Messina	Luciano	Fidia Farmaceutici, Via Ponte della Fabbrica 3A, 35031 Abano Terme (PD), Italy	803	214	POSTER-B
Messina	Salvatore	ARPA Sicilia, Agenzia Regionale Protezione Ambiente, UOS L2.2 Divisione Analitica 2 e Centro Riferimento Diossine, via Nairobi, 90129 Palermo, Italy	1400	214	POSTER-B
Messinese	Edmondo	University of Parma, Department of Chemistry, Life Sciences and Environmental Sustainability	1741	140	ANA-1B
Messore	Antonella	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210, 1626, 1684, 1616, 1627, 1955	31, 31, 31, 214, 214, 134	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, FAR-1C
Messori	Alessandro	Department of Industrial Chemistry "Toso Montanari", University of Bologna, via Gobetti 85 40129 Bologna, Italy	141	214	POSTER-B
Messori	Luigi	Università degli Studi di Firenze, Italia	445	31	POSTER-A
Mesto	Davide	Dipartimento di Chimica, Università degli Studi di Bari, via Orabona 4, 70126, Italia	829	214	POSTER-B
Mesto	Ernesto	Dipartimento di Scienze della Terra e Geoambientali, Università degli Studi di Bari Aldo Moro, Italia	336, 1780, 1874	204, 214, 214	ParallelTopic07 - ID: 204, POSTER-B, POSTER-B
Metrangolo	Pierangelo	Politecnico di Milano, Italia	2038, 246, 299, 1154, 262, 338, 351, 480, 1209, 1863, 197, 1115, 357	268, 31, 31, 31, 214, 214, 214, 214, 214, 214, 74, 74, 237	SATELLITE: IUPAC CrystEng 2024, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, TEC-A, TEC-A, TEC-C
Mezouar	Mohamed	ESRF, European Synchrotron Radiation Facility, 71 Avenue des Martyrs, CS40220, 38043 Grenoble Cedex 9, France	1873	198	ParallelTopic15 - ID: 198
Mezzetta	Andrea	Dipartimento di Farmacia, Università di Pisa, Italia	1124	31	POSTER-A
Mezzina	Lidia	Department of Chemical Sciences, University of Catania, V.le A.Doria 6, Catania (Italy)	1269	69	IND-1A
Mghili	Bilal	Department of Mathematical and Computational Sciences, Physical Science and Earth Science, University of Messina, – Messina, Italy	1310	31	POSTER-A
Micalizzi	Giuseppe	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina – Messina, Italy	1310	31	POSTER-A
Micalizzi	Giuseppe	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168, Messina, Italy	1349	31	POSTER-A
Micalizzi	Giuseppe	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina – Messina, Italy	1695	214	POSTER-B
Micalizzi	Giuseppe	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1259	261	ALI-2B
Miccolis	Lella	Progeva s.r.l., S.C. Madonna delle Grazie-Caione Laterza (TA)	1725	31	POSTER-A
Miceli	Francesca Cosimina	Università degli Studi di Roma Tor Vergata, Italia	439	214	POSTER-B
Micheli	Laura	Department of Chemical Sciences and Technologies, University of Rome Tor Vergata, Via della Ricerca Scientifica 1, 00133 Roma, Italy	844, 1779, 419	214, 144, 247	POSTER-B, ANA-1D, ORG-3D
Michelini	Elisa	Department of Chemistry "Giacomo Ciamician", University of Bologna, Via P. Gobetti 85, 40129, Bologna, Italy; Center for Applied Biomedical Research (CRBA), Azienda Ospedaliero-Universitaria Policlinico S. Orso-la-Malpighi, 40138 Bologna, Italy; Health Sciences and Technologies Interdepartmental Center for Industrial Research (HSTICIR), University of Bologna, 40126, Bologna, Italy	538, 1612, 650	31, 214, 142	POSTER-A, POSTER-B, ANA-1C
Michelini	Zuleika	National Center for Global Health, Istituto Superiore di Sanità, Rome, Italy.	1627	214	POSTER-B
Micheloni	Simone	Università degli Studi di Trieste, Dipartimento di Scienze Chimiche e Farmaceutiche, Trieste; Università degli Studi di Trieste, Dipartimento di Fisica, Trieste	1041, 1492	214, 214	POSTER-B, POSTER-B
Michieli	Paolo	Michieli Floricoltura, Vescovana (PD), Italia	1427	239	ABC-D
Miciaccia	Morena	UNIVERSITA' DEGLI STUDI DI BARI ALDO MORO, Italia	506	214	POSTER-B
Micic	Srdjan	University Children's Hospital Zurich, Switzerland	1525	214	POSTER-B
Miedico	Oto	Laboratorio Nazionale di Riferimento per il trattamento degli alimenti e dei loro ingredienti con radiazioni ionizzanti – Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Via Manfredonia, 20 – 71121 Foggia	1424	31	POSTER-A
Miele	Margherita	University of Torino, Italia; University of Vienna, Austria	1094	145	ORG-1D
Miele	Valentina	UNINA DF, University of Naples Federico II, School of Medicine and Surgery, Department of Pharmacy, Napoli, Italy	1566	150	ANA-2D
Miggiano	R.	Università of Piemonte Orientale, Italia	1673	31	POSTER-A
Miggiano	Riccardo	Department of Pharmaceutical Sciences, University of Eastern Piedmont, Novara, Italy	1591, 697	214, 65	POSTER-B, FAR-1A
Miggiano	Riccardo	Department of Pharmaceutical Sciences, University of Piemonte Orientale, Novara, Italy	382	132	FAR-1B
Migliavacca	Gabriele	Innovhub Stazioni Sperimentali per l'Industria, Italia	1165	239	ABC-D
Miglietta	G.	Università di Bologna, Italia	618	31	POSTER-A
Miglietta	Maria Lucia	ENEA Portici	1230, 1662, 1207	214, 214, 234	POSTER-B, POSTER-B, FIS-1C
Miglioli	Francesca	Università di Parma, Italia	546	214	POSTER-B
Miglione	Antonella	Department of Pharmacy, University of Naples "Federico II", Via Domenico Montesano 49, 80131 Naples, Italy.	1743	138	ANA-2A

Migliorini	Marzia	Carapelli Firenze S.p.A., Via Leonardo da Vinci 31, Tavarnelle Val di Pesa, 50028, Firenze, Italy.	226	214	POSTER-B
Migneco	Luisa Maria	Sapienza Università di Roma, Italia	1107, 1698	31, 31	POSTER-A, POSTER-A
Migni	Anna	Università degli Studi di Perugia, Italia	523	66	ANA-1A
Mihalic	Filip	Department of Chemistry – BMC and Science for Life Laboratory, Uppsala University, Uppsala, Sweden	1457	132	FAR-1B
Mijatović	Sanja	Department of Immunology, Institute for Biological Research "Sinisa Stankovic" - National Institute of Republic of Serbia, University of Belgrade, Serbia	750	67	INO-1A
Mikros	Emmanuel	Department of Pharmaceutical Chemistry, Faculty of Pharmacy, National and Kapodistrian University of Athens, Greece	1226	31	POSTER-A
Milan	Emil	Nanomaterials Reisearch Group, Department of Botechnology, University of Verona	841, 1198, 1605, 840	214, 214, 214, 254	POSTER-B, POSTER-B, POSTER-B, INO-3
Milandri	Elisa	Research group of Pharmaco-Toxicological Analysis (PTA Lab), Department of Pharmacy and Biotechnology (FaBiT), Alma Mater Studiorum – University of Bologna, Via Belmeloro 6, 40126 Bologna, Italy	1811	31	POSTER-A
Milanese	Chiara	Department of Chemistry, University of Pavia, via T. Taramelli 12, 27100 Pavia	401, 614, 1079, 1230, 1662, 1207	31, 31, 214, 214, 214, 234	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, FIS-1C
Milanese	Daniel	CIPACK, Interdepartmental Centre for Packaging, University of Parma, Italy; University of Parma, Department of Engineering and Architecture, Parco Area delle Scienze, 181/A, Parma, Italy	1710	31	POSTER-A
Milanesi	Matteo	Politecnico di Torino, Italia; National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM	1063	214	POSTER-B
Milani	Barbara	Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, via Licio Giorgieri 1, Italia	364, 1386	31, 214	POSTER-A, POSTER-B
Milani	Nicola	Università degli Studi di Padova, Italia	556	31	POSTER-A
Milano	Francesca	Hematology and Clinical Immunology, Department of Medicine and Surgery, University of Perugia, Italy	1672	31	POSTER-A
Milano	Francesco	Consiglio Nazionale delle Ricerche, CNR-ISPA, Italia	1838	214	POSTER-B
Milardi	Danilo	Consiglio Nazionale delle Ricerche, Italia	271, 824, 826	214, 214, 266	POSTER-B, POSTER-B, CSB-2
Milea	Demetrio	Università degli Studi di Messina, Italia	1249, 1345, 801	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Milea	Demetrio	Università degli Studi di Messina, Italia	1248	214	POSTER-B
Milea	Demetrio	Università di Messina, Italia	911, 1520	148, 148	ANA-2C, ANA-2C
Milella	Antonella	University of Bari Aldo Moro - Department of Chemistry, Via Orabona 4- 70125, Bari; Institute of Nanotechnology CNR NANOTEC, c/o Department of Chemistry, University of Bari Aldo Moro, Via Orabona, 4 - 70125 Bari	1420, 1436, 1415, 1414	214, 214, 240, 253	POSTER-B, POSTER-B, INO-2A, INO-2C
Milenkovic	Stefan	Università degli Studi di Cagliari, Italia	625	31	POSTER-A
Milesi	Pietro	Politecnico di Milano, Italia; Laboratory of Innovative approaches for tissue engineering and drug delivery, Joint Research Platform "ONCO-TECH LAB - Modeling and Applications for Human Health", Politecnico di Milano - IEO "European Institute of Oncology"	262	214	POSTER-B
Milioto	Stefana	Università degli studi di Palermo, Italia	514	160	FIS-1B
Millefanti	Stefano	Syensqo, viale Lombardia 20, 20021 Bollate (MI), Italy.	480, 142	214, 251	POSTER-B, ANA-3D
Millini	Roberto	Eni S.p.A., Italia	1211, 1323	178, 203	ParallelTopic07 - ID: 178, ParallelTopic06 - ID: 203
Millo	Enrico	Department of Experimental Medicine, Section of Biochemistry, University of Genoa, Viale Benedetto XV 1, 16132 Genoa, Italy	1440	214	POSTER-B
Milone	Candida	Università degli Studi di Messina, Italia	396, 397	237, 236	TEC-C, TEC-D
Miluzio	Annarita	National Institute of Molecular Genetics, Fondazione Romeo ed Enrica Invernizzi, INGM, 20122 Milan, Italy	827	31	POSTER-A
Minardi	Manuel	Università degli Studi di Milano, Italia	735	31	POSTER-A
Minassi	Alberto	università del piemonte orientale, Italia	1027	149	ORG-2C
Minella	Marco	University of Turin, Italia	1044, 353, 627, 442, 908, 1733, 255	31, 214, 214, 249, 156, 239, 258	POSTER-A, POSTER-B, POSTER-B, ANA-3B, ABC-C, ABC-D, ANA-4A
Mineo	Placido	Dipartimento di Scienze Chimiche (DSC), Università di Catania, V.le A.Doria 6, Catania, 95125, Italy; CNR-IPCF Istituto per I Processi Chimico-Fisici, V.le F. Stagno D'Alcontres 37, Messina, I-98158, Italy	1594, 1573, 1269	31, 214, 69	POSTER-A, POSTER-B, IND-1A
Mineo	Placido	Dept. of Chemical Sciences, University of Catania, Viale A. Doria 6, Catania	1291	166	INO-1C
Mineo	Placido Giuseppe	Dipartimento di Scienze Chimiche, Università di Catania, Viale A. Doria 6, 95100 Catania, Italy	1678	214	POSTER-B
Minero	Claudio	Università di Torino, Dipartimento di Chimica, Via Pietro Giuria 5, 10125 Torino, Italy	442	249	ANA-3B
Minessi	Paolo	Università di Parma, Italia	1172	31	POSTER-A
Minghetti	Paola	Università degli Studi di Milano, Italia	1620	214	POSTER-B
Mingione	Silvia	Olitalia S.r.l.	1401	214	POSTER-B
Minguzzi	Alessandro	Università degli Studi di Milano	486, 735, 1038, 790, 1192, 1067	31, 31, 208, 214, 214, 155	POSTER-A, POSTER-A, ParallelTopic11 - ID: 208, POSTER-B, POSTER-B, ELE-2
Minio	Francesco	SCI, Italia	1522, 477	31, 214	POSTER-A, POSTER-B
Minio	Francesco	Università di Perugia, Italia	731	214	POSTER-B
Minneci	Marco	University of Milan, Italy	882	214	POSTER-B
Minnelli	Cristina	Università Politecnica delle Marche, Italia	1706, 1679	214, 151	POSTER-B, ORG-2D
Mino	Lorenzo	University of Torino, Italia	636, 1519, 1794, 591	214, 214, 214, 240	POSTER-B, POSTER-B, POSTER-B, INO-2A
Minotto	Alessandro	Dipartimento di Scienza dei Materiali, Università degli Studi di Milano - Bicocca, Via Cozzi 55, 20125 Milano, Italy	1186	214	POSTER-B
Minunni	Maria	Department of Pharmacy, University of Pisa, Via Bonanno 6, 56126, Pisa, Pi, Italy	1639	214	POSTER-B
Minutoli	Viola	Dipartimento di Chimica, Università di Torino, Torino, Italy	908	156	ABC-C
Miorin	Enrico	National Research Council of Italy (CNR), Institute of Condensed Matter Chemistry and Technologies for Energy (ICMATE), Corso Stati Uniti 4, I-35127, Padova, Italy	242	153	TEC-B
Miotto	Giovanni	Department of Molecular Medicine, Viale G. Colombo, 3, University of Padova, Padova, Italy	1752	255	FAR-2A
Mirabile	Salvatore	Department of CHIBIOFARAM, University of Messina, Viale Ferdinando Stagno d'Alcontres 31, 98166, Messina	306	255	FAR-2A
Mirasoli	Mara	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Italia	1533	144	ANA-1D
Mires	Stuart	University of Bristol, Bristol, UK	1531	250	ANA-3C
Mirizzi	Lorenzo	Università Milano Bicocca, Italia	777	214	POSTER-B
Misra	Rajneesh	Indian Institute of Technology Indore	1869	31	POSTER-A
Misra	Rajnesh	Università degli Studi di Perugia, Italia	1378	58	ParallelTopic13
Mitarotonda	Viviana	Dipartimento di Farmacia e Biotecnologie, Alma Mater Studiorum - Università di Bologna, Via Belmeloro 6, 40126 Bologna, Italia	1069	214	POSTER-B
Mitoli	Davide	Dipartimento di Chimica, Università di Torino, Torino, Piemonte, Italy	899	75	TEO-A
Miyake	Toshiko	University of Milano – Bicocca, Department of Biotechnology and Biosciences	378, 422	214, 214	POSTER-B, POSTER-B
Mizaikoff	Boris	Institute of Analytical and Bioanalytical Chemistry, Ulm University, Albert Einstein Allee, 11, 89081, Ulm, Germany	677	250	ANA-3C
Mizzoni	Silvia	Università di Verona, Italia	528	254	INO-3
Mobbili	Giovanna	Università Politecnica delle Marche, Italia	1706, 1679	214, 151	POSTER-B, ORG-2D
Mocellin	Paolo	Università degli studi di Padova, Italia	190	262	IND-2A
Modesto	de Candia	Università degli Studi di Bari "Aldo Moro", Italia	1224	136	FAR-1D
Modugno	Francesca	Università di Pisa, Italia	235, 332, 231	214, 214, 73	POSTER-B, POSTER-B, ABC-A
Moeller	Alexander	University Children's Hospital Zurich, Switzerland	1525	214	POSTER-B
Moffa	Samanta	Department of Pharmacy, University G. d'Annunzio of Chieti-Pescara, Italy	1701	214	POSTER-B
Moftakhari Anasori Movahed	Saman	Cà Foscari Università di Venezia, Italia	747	214	POSTER-B
Moglianetti	Mauro	Center for Cultural Heritage Technology, Istituto Italiano di Tecnologia, Italia	1000	214	POSTER-B
Mohammadi	Susan	Department of Chemical Sciences, University of Naples Federico II, Naples, Italy	724	214	POSTER-B
Moi	Davide	Università degli Studi di Cagliari, Italia	1757	141	ORG-1A
Mojić	Marija	Department of Immunology, Institute for Biological Research "Sinisa Stankovic" - National Institute of Republic of Serbia, University of Belgrade, Serbia	750	67	INO-1A
Molinari	Fabricio	Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, V.le F. Stagno d'Alcontres 31, 98166 Messina, Italy	1776	245	ORG-3B
Molinari	Francesco	Department of Food, Environmental and Nutritional Sciences (DeFENS), University of Milan, Via L. Mangiagalli 25, Milan, 20133, Italy	955, 1003, 1148, 868, 1322	31, 31, 31, 266, 259	POSTER-A, POSTER-A, POSTER-A, CSB-2, ALI-1B

Molinari	Francesco Enzo	Department of Food, Environmental and Nutritional Sciences, University of Milan, via Celoria 2, Milano	1567	31	POSTER-A
Molinari	Marco	Indena, Italia	749	214	POSTER-B
Molinari	Raffaele	Dipartimento di Ingegneria dell'Ambiente, Università della Calabria, via P. Bucci, Cubo 44/A, Rende (CS), Italia	1490, 1466	214, 153	POSTER-B, TEC-B
Molinari	Susanna	Università degli Studi di Modena e Reggio Emilia, Italia	808	214	POSTER-B
Molinaro	Antonio	Federico II, Italia	1767, 1029, 1688	214, 154, 147	POSTER-B, CSB-1B, ORG-2B
Molinaro	Simone	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" SCITEC-CNR, Via Corti 12, 20133 Milano, Italy	1186	214	POSTER-B
Molino	Paul J.	University of Wollongong, Australia	1484	31	POSTER-A
Molla	Gianluca	Università degli Studi dell'Insubria, Italia	996	214	POSTER-B
Mollica	Adriano	Università degli Studi "G. d'Annunzio" Chieti-Pescara, Italia	1795	31	POSTER-A
Mollica	Adriano	Department of Pharmacy, "G. D'Annunzio" University of Chieti-Pescara, 66100 Chieti, Italy	1136	260	ALI-2A
Molteni	Linda	Università degli Studi di Milano-Bicocca, Italia	913, 926	214, 214	POSTER-B, POSTER-B
Molteni	Silvia Laura	a Department of Chemistry, Materials, and Chemical Engineering "Giulio Natta", Politecnico di Milano, Via L. Mancinelli 7, 20131 Milano, Italy.	480	214	POSTER-B
Mombelli	Lara	Department of Pharmaceutical Sciences, University of Milan, via Mangiagalli 25, 20133 Milan, Italy	961	255	FAR-2A
Momoli	Caterina	Università degli studi dell'Aquila, Italia	1664	214	POSTER-B
Monaco	Dario	Department of Cultures and Civilizations, Viale dell'Università 4, University of Verona, Verona, Italy	519	251	ANA-3D
Monai	Matteo	Utrecht University, the Netherlands	1481	204	ParallelTopic07 - ID: 204
Monari	Alessandro	University of Modena and Reggio Emilia, Department of Chemical and Geological Sciences	211	214	POSTER-B
Monari	Magda	University of Bologna, Italia	1104	214	POSTER-B
Monasson	Olivier	CY Cergy Paris Université, CNRS, BioCIS, 95000 Cergy Pontoise, France	1144	31	POSTER-A
Mondella	Mattia	Politecnico di Milano, Italia	943	214	POSTER-B
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1235	31	POSTER-A
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy	1243, 1262	31, 31	POSTER-A, POSTER-A
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy; Chromaleont S.R.L., C/O Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy	1276, 1304, 1305	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina – Messina, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, – Messina, Italy	1310, 1341	31, 31	POSTER-A, POSTER-A
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168, Messina, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168, Messina, Italy	1349, 1361	31, 31	POSTER-A, POSTER-A
Mondello	Luigi	Messina Institute of Technology c/o Deparment of Chemical, Biological, Pharmaceutical and Environmental Science, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 - Messina, Italy; Chromaleont s.r.l. c/o Deparment of Chemical, Biological, Pharmaceutical and Environmental Science, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 - Messina, Italy	1407	31	POSTER-A
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy; Chromaleont s.r.l., c/o Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	249, 1944, 267, 1250, 1273	186, 193, 197, 214, 214	ParallelTopic01 - ID: 186, ParallelTopic09 - ID: 193, ParallelTopic14 - ID: 197, POSTER-B, POSTER-B
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1279, 1280, 1289	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1311, 1338	214, 214	POSTER-B, POSTER-B
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina	1370, 1418, 1503	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina – Messina, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina – Messina, Italy	1695, 1252, 1299	214, 66, 66	POSTER-B, ANA-1A, ANA-1A
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy emanuela.trovato1@unime.it	1306	140	ANA-1B

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Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1259	261	ALI-2B
Mondello	Luigi	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy; Chromaleont s.r.l., c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1559	258	ANA-4A
Monge	Chiara	Università degli Studi di Torino, Italia	1302	31	POSTER-A
Mongiovi'	Chiara	Istituto per i Processi Chimico Fisici – CNR	1070	214	POSTER-B
Monica	Donnola	Procos s.p.a., Italia	616	214	POSTER-B
Monopoli	Antonio	Università degli Studi di Bari, Italia	1446, 1120	31, 246	POSTER-A, ORG-3C
Montagner	Diego	Maynooth University, Ireland	546	214	POSTER-B
Montalbano	Letizia	Opificio delle Pietre Dure, Italia	2019	176	ParallelTopic05 - ID: 176
Montalbano	Marco	Università degli Studi di Milano, Italia	778	160	FIS-1B
Montalti	Marco	Dept. of Chemistry "G. Ciamician"- University of Bologna, Via Selmi 2, Bologna, Italy	1097	146	ANA-2B
Montanari	Alice	Department of Chemical and Pharmaceutical Sciences, University of Trieste, Via Giorgieri 1, Trieste	1510	214	POSTER-B
Montanari	Angela	Tomapaint Srl, Parma, Italia	923	69	IND-1A
Montanari	Chiara	Università degli Studi di Perugia, Italia	1378	58	ParallelTopic13
Montanari	Francesco	Università degli studi di Firenze, Department of Chemistry "Ugo Schiff", Via della Lastruccia 3, Florence	605	214	POSTER-B
Montanari	Roberta	Istituto di Cristallografia, CNR, Strada Provinciale 35, n. 9 - 00010 Montelibretti (RM), Italy	1277	31	POSTER-A
Montanari	Serena	Department for Life Quality Studies, University of Bologna, Corso D' Augusto 237, Rimini, Italy	1868	31	POSTER-A
Montano	Simone	Marhe Center	1784	214	POSTER-B
Montefusco	Antonica Valeria	Università degli Studi di Bari Aldo Moro, Italia; CSGI (Center for Colloid and Surface Science)- Unità di Bari, Italia; Politecnico di Bari, Italia	860, 862, 854	214, 214, 250	POSTER-B, POSTER-B, ANA-3C
Montereali	Maria Rita	Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile (ENEA), Roma	953	214	POSTER-B
Montero Martos	José Maria	Servicios Centrales de Apoyo a la Investigación, Universidad de Málaga	1320	210	ParallelTopic13 - ID: 210
Montesano	Camilla	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia	951, 963, 971, 1123, 760, 1825, 1015	31, 31, 31, 31, 214, 214, 258	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, ANA-4A
Montesarchio	Daniela	Dipartimento di Scienze Chimiche, Università di Napoli Federico II, Napoli	910	31	POSTER-A
Montesarchio	Daniela	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II	512	243	FIS-2B
Monti	Maria Chiara	Università di Napoli Federico II, Italia	655, 656, 658, 657, 654	214, 214, 214, 147, 151	POSTER-B, POSTER-B, POSTER-B, ORG-2B, ORG-2D
Montiel Delgado	Alejandro	Institute of Chemical Research of Catalonia (ICIQ), The Barcelona Institute for Science & Technology (BIST), 4300 Tarragona, Spain	1843	214	POSTER-B
Montini	Tiziano	Universita' degli Studi di Trieste, Italia	1481	204	ParallelTopic07 - ID: 204
Montis	Costanza	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019, Sesto Fiorentino (FI), Italy	880, 499, 769	31, 183, 245	POSTER-A, ParallelTopic13 - ID: 183, ORG-3B
Montoli	Arianna	Department of Chemistry Università degli Studi di Milano Via Camillo Golgi, 19, 20133 Milano (Italy)	1046, 1047, 1260	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Montone	Carmela Maria	Università degli Studi di Roma "La Sapienza", Italia	449, 450, 358	31, 214, 66	POSTER-A, POSTER-B, ANA-1A
Monza	Nicole	Proteomics and Metabolomics Unit, Department of Medicine and Surgery, University of Milano Bicocca	1535, 1158, 992	31, 214, 71	POSTER-A, POSTER-B, MAS
Moore	Sarah J.	Picker Engineering Program, Smith College, Northampton, Massachusetts, USA	1220	154	CSB-1B
Mor	Marco	Dipartimento di Scienze degli Alimenti e del Farmaco, Università di Parma, Parco Area delle Scienze 27/A, 43124, Parma, Italia	1628	214	POSTER-B
Moraca	Federica	Dipartimento di Farmacia, Università degli Studi di Napoli Federico II	772	266	CSB-2
Morana	Marta	Dipartimento di Scienze della Terra, Università degli Studi di Firenze, Via La Pira 4,I-50121, Firenze, Firenze, Italy	1873	198	ParallelTopic15 - ID: 198
Morano	Alessio	Dipartimento di chimica "Ugo Schiff" DICUS, Università di Firenze, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Italia	732	214	POSTER-B
Moras	Beatrice	Università degli Studi di Padova, Italia	1009	214	POSTER-B
Morasso	Stefano	Elettra Sincrotone Trieste S.C.p.A, SS14 – km 163,5 in AREA Science Park, Basovizza, 34149 Trieste	685, 684	31, 214	POSTER-A, POSTER-B
Morazzoni	Paolo	Divisione Nutraceutica, Distillerie Umberto Bonollo S.p.A, Via G. Galilei 6, 35035 Mestrino, Italy.	601, 696, 1752	31, 31, 255	POSTER-A, POSTER-A, FAR-2A
Mordini	Alessandro	Istituto di Chimica dei Composti Organometallici - CNR, Sesto Fiorentino, Italia; Dipartimento di Chimica "Ugo Schiff", Università di Firenze, Sesto Fiorentino, Italia	576, 1477, 1890, 667	31, 31, 31, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B
Morelli Venturi	Diletta	University Kiel, Germany	1409	235	FIS-1D
Morelli	Carlo	Università degli Studi di Milano, Italia	1067	155	ELE-2
Morelli	Carlo F.	Università degli studi di Milano	645, 910	31, 31	POSTER-A, POSTER-A
Morelli	Carlo Francesco	Università degli Studi di Milano	1192	214	POSTER-B
Morelli	Laura	Dipartimento di Biotecnologie mediche e medicina traslazionale, Università degli Studi di Milano, Italia	1708	214	POSTER-B
Moreno Marrodan	Carmen	Consiglio Nazionale delle Ricerche, Istituto di Chimica dei Composti Organo Metallici	1709	69	IND-1A
Moretti Sala	Marco	Politecnico di Milano, Italia	925	214	POSTER-B
Moretti	Antonio	Istituto di scienze delle produzioni alimentari (ISPA), CNR, 70126 Bari, Italy.	1416	214	POSTER-B
Moretti	Elisa	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Via Torino 155, 30172 Venice, Italy	1498	155	ELE-2
Moretti	Elisa	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Via Torino 155, 30172 Venezia Mestre, Italy	2023	167	INO-1D
Moretti	Luca	Università degli Studi di Milano-Bicocca, Italia	664, 913	214, 214	POSTER-B, POSTER-B
Moretti	Luca	Università degli Studi di Milano-Bicocca, Italia	926	214	POSTER-B
Moretti	Simone	Università degli Studi di Perugia, Dipartimento di Chimica, Biologia e Biotecnologie	1921	214	POSTER-B
Moretto	Giulia	Università di Pavia, Italia; NBFC, National Biodiversity Future Center	1337	214	POSTER-B
Mori	Matteo	Università degli Studi di Milano, Italia	1277, 1484, 693, 1081, 1082	31, 31, 214, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B
Mori	Mattia	Università degli studi di Siena, Italia	1842, 1307	31, 214	POSTER-A, POSTER-B
Mori	Michela	1MED SA, Svizzera	1139	31	POSTER-A
Morigi	R.	Università di Bologna, Italia	618	31	POSTER-A
Morini	Luca	Dipartimento di Sanità Pubblica, Medicina Sperimentale e Forense, Università di Pavia, Italia	317	214	POSTER-B
Morlacci	Valerio	Università degli studi dell'Aquila, Italia	1664	214	POSTER-B
Mormino	Alessandro	Department of Physiology and Pharmacology, Sapienza University, P.le A. Moro 5, 00185 Rome, Italy	1643	56	ParallelTopic12
Moro	Elisa	Aptuit, an Evotec Company, Via Alessandro Fleming, 4, 37135, Verona, Italy	1134	31	POSTER-A
Moro	Giorgio	Dipartimento di Biotecnologie e Bioscienze, Università degli Studi di Milano - Bicocca, Italia	422, 1377	214, 214	POSTER-B, POSTER-B
Moro	Giulia	Ca' Foscari - Università di Venezia, Italia	1502, 1222	214, 144	POSTER-B, ANA-1D
Moro	Stefano	University of Padova, Molecular Modeling Section (MMS), Dipartimento di Scienze del Farmaco, Via Marzolo 5, 35131 Padova	685, 684	31, 214	POSTER-A, POSTER-B
Moroni	Elisabetta	National Council of Research of Italy, Institute of Chemical Sciences and Technologies (CNR-SCITEC)	1641	214	POSTER-B
Moroni	Gianluca	Politecnico di Milano, Italia	1654	157	IND-1B

Morra	Giulia	SCITEC - CNR Milano	1504, 1102	214, 154	POSTER-B, CSB-1B
Morretta	Elva	Università di Napoli Federico II, Italia; Università di Salerno, Italia	655, 656, 657, 654	214, 214, 147, 151	POSTER-B, POSTER-B, ORG-2B, ORG-2D
Morritt	George Harvey	School of Natural and Environmental Science, Newcastle University, Newcastle upon Tyne,UK	1677	159	IND-1D
Mortalò	Cecilia	National Research Council of Italy (CNR), Institute of Condensed Matter Chemistry and Technologies for Energy (ICMATE), Corso Stati Uniti 4, I-35127, Padova, Italy	242	153	TEC-B
Mosca	Sivia	CNR - Istituto sull'Inquinamento Atmosferico (CNR-IIA), Italia	1730	66	ANA-1A
Moscato	Davide	Dipartimento di Chimica, Università degli Studi di Milano, Via Golgi, 19, 20133 Milano, Italy	520	214	POSTER-B
Moschella	M Gaetana	Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Via Campi 287, 41125 Modena, Italy	904	255	FAR-2A
Moschetti	Giorgia	Department of Pharmaceutical Sciences, University of Milan, Via L. Mangiagalli 25, 20133 Milano, Italy; National Institute of Molecular Genetic (INGM), Via F. Sforza 35, 20122 Milano, Italy	693	214	POSTER-B
Moschini	Gabriele	CSGI & Department of Chemistry 'Ugo Schiff', Università degli Studi di Firenze, Italia	1325	214	POSTER-B
Moschovi	Anastasia Maria	Monolithos Catalysts & Recycling Ltd., 83 Vrilissou, 11476 Athens, Greece	138	214	POSTER-B
Mostoni	Silvia	Università Milano Bicocca, Italia	777, 591, 280	214, 240, 72	POSTER-B, INO-2A, ELE-1
Motta	Alessandro	Department of Chemistry, Sapienza University of Rome, Piazzale Aldo Moro, 5, 00185, Rome, Italy	143	253	INO-2C
Motta	Daniele	Department of Chemistry and NIS Interdepartmental Centre, University of Turin, Via Pietro Giuria 7, Torino, 10125, Italy; National Reference Center for Electrochemical Energy Storage - INSTM, Firenze 50121, Italy	1092	31	POSTER-A
Motta	Irene	Dipartimento di Scienze Chimiche, Università di Padova, via Marzolo 1, I-35131 Padova	1610	214	POSTER-B
Motta	Oriana	Department of Medicine Surgery and Dentistry "Scuola Medica Salernitana", University of Salerno, via S. Allende 1, 84081 Baronissi, SA, Italy	293, 292	31, 73	POSTER-A, ABC-A
Motta	Stefano	Università degli Studi di Milano-Bicocca, Italia	822	161	TEO-B
Mottola	Salvatore	Università degli studi della Campania L. Vanvitelli, Italia	515, 354	31, 214	POSTER-A, POSTER-B
Mottola	Salvatore	Department of Environmental, Biological and Pharmaceutical Science and Technology, University of Campania "Luigi Vanvitelli", 81100 Caserta, Italy	547	214	POSTER-B
Moussaoui	Dihia	BM29 BIOSAXS beamline, European Synchrotron Radiation Facility (ESRF), Grenoble, France	393	214	POSTER-B
Moutaharrik	Saliha	Dipartimento di Scienze Farmaceutiche, Sez. Tecnologia e Legislazione Farmaceutiche "M.E. Sangalli", Università degli Studi di Milano, Via G. Colombo 71, 20133 Milan	1548	214	POSTER-B
Movilla	Santiago	Universitat Jaume I	1335	31	POSTER-A
Mucci	Adele	Università degli Studi di Modena e Reggio Emilia	1599, 808, 662	188, 214, 241	ParallelTopic03 - ID: 188, POSTER-B, INO-2B
Muccilli	Vera	Università degli Studi di Catania, Italia	890, 647, 1035	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Muccilli	Vera	Università di Catania, Italia	1573, 1275	214, 151	POSTER-B, ORG-2D
Mudassir	Muhammad	University of Rome Tor Vergata, Italia	1360	214	POSTER-B
Muggeo	Aldo	Università degli studi di Bari Aldo Moro, Italia	854	250	ANA-3C
Mugnaini	Giulia	CSGI & Department of Chemistry 'Ugo Schiff', Università degli Studi di Firenze, Italia	1325	214	POSTER-B
Muhyuddin	Mohsin	Università degli Studi di Milano-Bicocca, Italia	1715, 280	31, 72	POSTER-A, ELE-1
Mulas	Gabriele	Department of Chemical, Physical, Mathematical, and Natural Sciences, University of Sassari, Via Vienna 2, 07100 Sassari, Italy	1240, 945, 1666	31, 234, 235	POSTER-A, FIS-1C, FIS-1D
Mulinacci	Nadia	Department of NEUROFARBA, University of Florence, Via Ugo Schiff 6, 50019 Sesto F.no, Florence, Italy	226, 1485, 1568, 1572, 1693	214, 214, 214, 259, 259	POSTER-B, POSTER-B, POSTER-B, ALI-1B, ALI-1B
Müller Späth	Thomas	YMC Chromacon, Zürich, Switzerland	458	214	POSTER-B
Müller-Buschbaum	Klaus	Institute for Inorganic and Analytical Chemistry, Justus-Liebig University Giessen, Germany	1439	254	INO-3
Müller	Christa E.	PharmaCenter Bonn, Pharmaceutical Institute, Pharmaceutical & Medicinal Chemistry, University of Bonn, An der Immenburg 4, 53121 Bonn, Germany	674	65	FAR-1A
Müller	Christa Elisabeth	University of Bonn, Germany	1987	21	PL-B
Muniz Miranda	Francesco	Dipartimento di Scienze Chimiche e Geologiche, Università degli Studi di Modena e Reggio Emilia, Italia	204	214	POSTER-B
Muñoz García	Ana Belen	Department of Physics "E.Pancini", University of Naples Federico II, Naples, Italy; National Reference Center for Electrochemical Energy Storage (GISEL), Firenze, Italy	347	214	POSTER-B
Muñoz-Garcia	Ana Belen	Department of Chemical Sciences, Università di Napoli "Federico II", via Cintia 21, 80126, Naples, Italy	1256	214	POSTER-B
Muñoz-García	Ana Belen	Università degli studi di Napoli Federico II, Italia	666	257	TEO-C
Muratore	Nicola	Università degli Studi di Palermo, Italia	572, 969, 716	214, 214, 248	POSTER-B, POSTER-B, ANA-3A
Mureddu	Mauro	Sotacarbo SpA, Italia	1674	160	FIS-1B
Murgia	Fabrizio	Department of Chemical, Physical, Mathematical, and Natural Sciences, University of Sassari, Via Vienna 2, 07100 Sassari, Italy	1240	31	POSTER-A
Murgia	Fabrizio	DSCFMN, Università di Sassari, Italia	945, 1666	234, 235	FIS-1C, FIS-1D
Murphy	Fiona	Heriot-Watt University, Edinburgh, United Kingdom	764	31	POSTER-A
Murray	Robert	Imperial College London, UK	1927	35	ParallelTopic01
Murru	Luca	Institute of Neuroscience, National Research Council (CNR), Milan, Italy	715	71	MAS
Murzin	Dmitry	Åbo Akademi, Laboratory of Industrial Chemistry and Reaction Engineering, Henrikinkatu 2, FI-20500 Turku/Åbo	476	158	IND-1C
Murzin	Dmitry Y.	Åbo Akademi University, Finlandia	1352	214	POSTER-B
Murzin	Dmitry Yu.	Åbo Akademi, Laboratory of Industrial Chemistry and Reaction Engineering (TKR), FI-20500 Turku/Åbo, Finland	879	158	IND-1C
Musazzi	Umberto Maria	Università degli Studi di Milano, Italia	920	267	TEF-1
Muscariello	Lidia	Università degli studi della Campania L. Vanvitelli, Italia	515	31	POSTER-A
Muscella	Antonella	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy	1155, 1153, 1428	31, 214, 67	POSTER-A, POSTER-B, INO-1A
Musco	Giovanna	IRCCS Ospedale San Raffaele, Italia	531	77	CSB-1A
Muscogiuri	Dario	ARPA Puglia Dep. Lecce	1840	31	POSTER-A
Muscolino	Emanuela	Dipartimento di Ingegneria, Università degli Studi di Palermo, Viale delle Scienze 6, 90128 Palermo, Italy	1126, 1199, 1681	214, 74, 74	POSTER-B, TEC-A, TEC-A
Musella	Simona	University of Salerno, Italia	250	136	FAR-1D
Musilek	Kamil	Department of Chemistry, University of Hraadec Kralove, 50030, Hradec Karlove, Czeck Republic	1553, 1561	214, 214	POSTER-B, POSTER-B
Musio	Biagia	Politecnico di Bari, Italia	1098, 831, 1729	31, 214, 236	POSTER-A, POSTER-B, TEC-D
Musio	Silvia	IRCCS Istituto Neurologico Carlo Besta, Milan, Italy	1209	214	POSTER-B
Musmarra	Dino	Department of Engineering, University of Campania "Luigi Vanvitelli", Via Roma 29, 81031 Aversa (CE)	1916	31	POSTER-A
Mussini	Patrizia Romana	Università degli Studi di Milano, Dipartimento di Chimica	1298	138	ANA-2A
Musso	Loana	Università degli Studi di Milano, Italia	1906	214	POSTER-B
Mustarelli	Piercarlo	Università degli Studi di Milano Bicocca, Italia	1146, 1537	214, 72	POSTER-B, ELE-1
Musto	Pellegrino	Istituto per i Polimeri, Compositi e Biomateriali, Consiglio Nazionale delle Ricerche, 80078 Pozzuoli, Italy	549	214	POSTER-B
Musumeci	Domenica	Dipartimento di Scienze Chimiche, Università di Napoli Federico II, Napoli	910	31	POSTER-A
Musumeci	Francesca	Università degli Studi di Genova, Italia, Dipartimento di Farmacia	223, 1440	31, 214	POSTER-A, POSTER-B
Muzzi	Beatrice	ICCOM – CNR	1925	31	POSTER-A
Muzzi	Beatrice	CNR-ICCOM – Istituto di Chimica dei Composti Organometallici, 50019 Sesto Fiorentino (FI), Italy	769, 1405	245, 166	ORG-3B, INO-1C
Myftari	Brunilda	Department of Pharmacy, University of Medicine, Tirana, Albania	456	31	POSTER-A
Mylonas	George	Imperial College London, UK	1927	35	ParallelTopic01
N. Fernandes	Susete	i3N/CENIMAT, Department of Materials Science, NOVA School of Science and Technology, 2825-516 Caparica, Portugal	807	158	IND-1C
Nabissi	Massimo	University of Camerino, Italia	634	70	TEF-2
Nacci	Angelo	Università degli Studi di Bari Aldo Moro, Italia	1120	246	ORG-3C
Nadia	Barbero	University of Turin, Italy	424	31	POSTER-A
Nagendra	Baku	Dipartimento di Chimica e Biologia, Unità di Ricerca INSTM, Università di Salerno, Via Ponte don Melillo, 84084 Fisciano, Italia	549	214	POSTER-B
Najafishirtari	Sharif	Institute for Inorganic Chemistry, Christian-Albrechts Univerisity of Kiel, 24118 Kiel, Germany	200	160	FIS-1B
Naldi	Marina	Università di Bologna, Italia	848, 967, 1457	214, 214, 132	POSTER-B, POSTER-B, FAR-1B
Naldoni	Alberto	University of Torino, Italia	636, 1376	214, 167	POSTER-B, INO-1D

Nalesso	Marco	Dipartimento di Scienze Chimiche, Università di Padova, Italia	974	241	INO-2B
Namba	Kosuke	Faculty of Pharmaceutical Sciences, Tokushima University, Japan	285	241	INO-2B
Nanci	Monteiro-Abreu	Department of Neurobiology, Osnabrück University, Osnabrück, Germany.	956	134	FAR-1C
Napal	Ilargi	IOM CNR, Laboratorio TASC, Trieste, Italia; Dipartimento di Fisica, Università di Trieste, Trieste, Italia	974	241	INO-2B
Napoletano	Sabino	Dipartimento Sicurezza Pubblica, Direzione Centrale Anticrimine Polizia Nazionale Italiana, Servizio Polizia Scientifica Forense (DAC-SPS)	963	31	POSTER-A
Napoli	Anna	Università della Calabria, Italia	508	31	POSTER-A
Napolitano	Alessandra	Università degli Studi di Napoli Federico II, Italia	1188	31	POSTER-A
Nappini	Silvia	IOM CNR, Laboratorio TASC, Trieste, Italia	974	241	INO-2B
Nardelli	Francesca	Istituto di Chimica dei Composti OrganoMetallici, Consiglio Nazionale delle Ricerche	1064, 1409	214, 235	POSTER-B, FIS-1D
Nardelli	Valeria	Laboratorio Nazionale di Riferimento per il trattamento degli alimenti e dei loro ingredienti con radiazioni ionizzanti – Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Via Manfredonia, 20 – 71121 Foggia	1424, 1431	31, 78	POSTER-A, ALI-1A
Nardi	Alberto	Università degli Studi di Torino, Italia	1705	214	POSTER-B
Nardi	Andrea	Gesco Sca, Cesena, Italy	481	261	ALI-2B
Nardi	Elisa	Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), ROMA	953	214	POSTER-B
Nardi	Luca	Politecnico di Milano, Italia	1356	214	POSTER-B
Nardiello	Donatella	University of Foggia, DAFNE, via Napoli 25 - 71122 Foggia - Italy	339	140	ANA-1B
Nardin	Raffaello	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	1214	150	ANA-2D
Nardini	Marco	Department of Biosciences, University of Milan, Via Celoria 26, 20133 Milano, Italy, Milano, Italy	1201	147	ORG-2B
Narendra	Kumar	Åbo Akademi University, Finlandia	1352	214	POSTER-B
Narimanfar	Ghazal	Institute of Hematology "L. e A. Seràgnoli", Department of Surgical and Medical Sciences, University of Bologna, Via Giuseppe Massarenti 9, Bologna	1383	214	POSTER-B
Narzi	Daniele	Department of Physical and Chemical Sciences, University of L'Aquila, Via Vetoio – 67100 Coppito, L'Aquila, Italy	1648	214	POSTER-B
Nasi	Hadar	Weizmann Institute of Science, Department of Molecular Chemistry and Materials Science, 7610001 Rehovot, Israel	1022	242	FIS-2A
Nasta	Giulia	Department of Pharmaceutical Sciences, University of Milan	1596	31	POSTER-A
Nastri	Flavia	Department of Chemical Sciences, University of Naples Federico II, via Cintia 21, 80126-Naples, Italy	1106	31	POSTER-A
Nastri	Flavia	Department of Chemical Sciences, University of Naples Federico II – Via Cintia, 80126 Naples, Italy	1265	67	INO-1A
Natale	Benito	Università degli Studi della Campania "Luigi Vanvitelli", Italia	275, 276	214, 214	POSTER-B, POSTER-B
Natali	Francesco	ARPA Puglia Dep. Lecce	1840	31	POSTER-A
Natali	Mirco	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, Ferrara (Italy)	623	165	INO-1B
Natarajan	Karuppannan	Research and Development Centre, PSGR Krishnammal College for Women, Coimbatore, India	1284	74	TEC-A
Natho	Philipp	Universita degli studi di Bari Aldo Moro, Italy	107	145	ORG-1D
Natile	Marta Maria	Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia (ICMATE), Consiglio Nazionale delle Ricerche (CNR); Università degli Studi di Padova, Italia	1860	214	POSTER-B
Naumov	Pance	NYU Abu Dhabi, Emirati Arabi Uniti	2036	268	SATELLITE: IUPAC CrystEng 2024
Nava	Giuseppe	Dipartimento di Energia, Politecnico di Milano, Italia	1647, 1571	214, 157	POSTER-B, IND-1B
Navarini	Luciano	illycaffè SpA, via Flavia 110, 34147, Trieste, Italia	274	197	ParallelTopic14 - ID: 197
Navarra	Maria Assunta	Sapienza University of Rome, Italy; Hydro-Eco Research Center, Sapienza University of Rome, Italy	1479	72	ELE-1
Nazari Khodadadi	Alireza	Università degli Studi di Perugia, Italia	411	31	POSTER-A
Nazir	Faisal	University of Bologna, Dept of Chemistry "Giacomo Ciamician", Italia	650	142	ANA-1C
Nazzaro	Filomena	Institute of Food Sciences, National Research Council of Italy, Via Roma 64, 83100 Avellino, Italy	966	235	FIS-1D
Nebbioso	Angela	Department of Precision Medicine, University of Campania "Luigi Vanvitelli", Vico L. De Crecchio 7, 80138 Naples, Italy	1643, 985, 851	56, 214, 132	ParallelTopic12, POSTER-B, FAR-1B
Nefedova	Darya	Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari	1874	214	POSTER-B
Negozio	Martina	Dip. Biologia Ambientale, Sapienza Università di Roma, Italia	1473	31	POSTER-A
Negri	Chiara	Politecnico di Milano, Italia	1356	214	POSTER-B
Negri	Chiara	Politecnico di Milano, Italia	1654	157	IND-1B
Negri	Fabrizia	Universita di Bologna, Italia	1425	31	POSTER-A
Negro	Enrico	Sezione di Chimica per le Tecnologie, Dipartimento di Ingegneria Industriale, Università degli Studi di Padova, Via F. Marzolo 9, 35131Padova, Italia	1585, 1581	31, 214	POSTER-A, POSTER-B
Negro	Paolo	Università degli Studi di Torino, Italia	1037	214	POSTER-B
Nejrotti	Stefano	Department of Chemistry and NIS Interdepartmental Centre, University of Turin, Via Pietro Giuria 7, Torino, 10125, Italy; National Reference Center for Electrochemical Energy Storage - INSTM, Firenze 50121, Italy	1092, 1828, 794	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Nele	Valeria	Università di Napoli Federico II, Italia	460, 505	31, 267	POSTER-A, TEF-1
Neri	Giovanni	Università di Messina, Italia	254	236	TEC-D
Neri	Giulia	Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, V.le F. Stagno d'Alcontres 31, 98166 Messina, Italy	1776	245	ORG-3B
Neri	Martina	Department of Chemistry, Life Sciences and Envirnmental Sustainability, University of Parma, Italy	734	151	ORG-2D
Neri	Placido	Dipartimento di Chimica e Biologia, Università degli Studi di Salerno, Italia	1716, 454	71, 245	MAS, ORG-3B
Nervi	Carlo	University of Torino. Italy, Italia	613, 746, 1651	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Nespeca	Martin Joe	Università di Torino, Italia	1353	31	POSTER-A
Nespoli	Luca	University of Milano-Bicocca, School of Medicine and Surgery, via Raoul Follereau 3, Vedano al Lambro (MB); IRCCS San Gerardo dei Tintori, Via Pergolesi 33, Monza	633	214	POSTER-B
Nespoli	Luca	Università degli Studi di Milano, Italia	868	266	CSB-2
Neuville	Luc	Institut de Chimie des Substances Naturelles, Université Paris Saclay, UPR2301- CNRS, Avenue de la Terrasse, 91198 Gif-sur-Yvette Cedex, France	1542, 804	214, 264	POSTER-B, ORG-1B
Nevin	Austin	Department of Conservation, Courtauld Institute of Art, London, UK	1905	214	POSTER-B
Nevola	Giovanna	Department of Pure and Applied Sciences, University of Urbino Carlo Bo, Piazza Rinascimento, 6, 61029 – Urbino, Italy	1819	66	ANA-1A
Nezi	Paola	Fondazione Toscana Life Sciences, Siena, Italia	1221	214	POSTER-B
Ni	Qiangjian	National University of Singapore, Singapore	420	151	ORG-2D
Nicastro	Gloria	Politecnico di Milano, Italia	269, 264	31, 214	POSTER-A, POSTER-B
Nicchio	Luca	PhotoGreen Lab, Department of Chemistry, University of Pavia, V. Le Taramelli 12, Pavia 27100, Italy; Institut de Chimie des Substances Naturelles, Université Paris Saclay, UPR2301- CNRS, Avenue de la Terrasse, 91198 Gif-sur-Yvette Cedex, France	1542, 804	214, 264	POSTER-B, ORG-1B
Nicolais	Luigi	Materias Srl, Naples, Italy	127	159	IND-1D
Nicoletti	Rosa	Department of European and Mediterranean Cultures: Architecture, Environment, and Cultural Heritage, University of Basilicata, Matera (MT), Italy; CREA Research Centre for Olive, Fruit and Citrus Crops, Rende (CS), Italy	509, 584	31, 78	POSTER-A, ALI-1A
Nicoletti	Rosario	Council for Agricultural Research and Economics, Research Centre for Olive, Fruit and Citrus Crops, Caserta, Italy	1293	31	POSTER-A
Nicolini	Alessio	Dept. of Chemical and Geological Sciences & INSTM RU, University of Modena and Reggio Emilia, I-41125, Modena	662	241	INO-2B
Nicolini	Valentina	Università di Modena e Reggio Emilia, Italia	323	167	INO-1D
Nicolotti	Orazio	università degli Studi di Bari, Italia	1309, 1464, 1180	31, 214, 134	POSTER-A, POSTER-B, FAR-1C
Nicosia	Angelo	Dipartimento di Scienze Chimiche (DSC), Università di Catania, V.le A.Doria 6, Catania, 95125, Italy	1594, 1573, 1678, 1269, 1291	31, 214, 214, 69, 166	POSTER-A, POSTER-B, POSTER-B, IND-1A, INO-1C
Nicotera	Isabella	Department of Chemistry and Chemical Technology, University of Calabria, 87036 Rende (CS), Italy;	503, 167	174, 214	ParallelTopic03 - ID: 174, POSTER-B
Nicotra	Francesco	Università degli Studi Milano Bicocca, Milan, Italy	542	31	POSTER-A
Nicotra	Francesco	University of Milano-Bicocca, School of Medicine and Surgery, via Raoul Follereau 3, Vedano al Lambro (MB)	633	214	POSTER-B
Nicotra	Francesco	Università degli Studi Milano-Bicocca, Italia	701, 700	214, 139	POSTER-B, ORG-2A
Nieddu	Mattia	Technical University of Munich	112	155	ELE-2
Nigro	Valentina	ENEA Centro Ricerche Frascati, Italia	1590	214	POSTER-B

Nigro	Valentina	ENEA C.R. Frascati, Via E. Fermi 45, Frascati (RM), Italy	1761	214	POSTER-B
Nikolic	Lea	Laboratory of Prion Biology, Department of Neuroscience, Scuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste, Italy	1543	214	POSTER-B
Nisa	Khair Un	Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata, Roma, Italy.	1283	214	POSTER-B
Nisi	Marirosa	Department of Bioscience, Biotechnologies and Environment, University of Bari, Italy, Bari	1381	214	POSTER-B
Nisticò	Roberto	Università degli Studi di Milano-Bicocca, Italia	441	214	POSTER-B
Nistico'	Roberto	Universita' degli studi di Milano-Bicocca, Italia	591	240	INO-2A
Nitschke	Jonathan Russel	Department of Chemistry, University of Cambridge, Lensfield Road, CB2 1EW, Cambridge, United Kingdom	550	244	ORG-3A
Nitti	Andrea	bOrganic, Supramolecular and Polymeric Materials Research Group, Department of Chemistry, University of Pavia, V. Le Taramelli 12, Pavia 27100, Italy	1006	31	POSTER-A
Nizi	Maria Giulia	Università degli studi di Perugia, Dipartimento di Scienze Farmaceutiche, Italia	1043, 1456, 1631	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Nizzolo	Sofia	Istituto di Ricerche Chimiche e Biochimiche G. Ronzoni, Italia; Università degli Studi di Milano-Bicocca, Piazza dell'Ateneo Nuovo 1, Milano (MI)	639	246	ORG-3C
Nocchetti	Morena	Università di Perugia, Dipartimento di Scienze Farmaceutiche, Perugia	922	214	POSTER-B
Noce	Beatrice	Department of Drug Chemistry and Technologies, Sapienza University of Rome, P.le A. Moro 5 00185, Rome	853, 1643, 985, 851	31, 56, 214, 132	POSTER-A, ParallelTopic12, POSTER-B, FAR-1B
Nocentini	Alessio	NEUROFARBA Department, Pharmaceutical and Nutraceutical Section, University of Florence, Via U. Schiff 6, Sesto Fiorentino, 50019 Florence, Italy	704	31	POSTER-A
Nocito	Giuseppe	CNR-ISMN URT of Messina at Dept. ChiBioFarAm, University of Messina, Viale F. Stagno d'Alcontres 31, Messina	1291	166	INO-1C
Nodari	Mirco	Centro di ricerca "C. Buonerba", Versalis s.p.a., Mantova, Italy	558	262	IND-2A
Noël	Timothy	Van 't Hoff Institute for Molecular Sciences, University of Amsterdam, Science Park 904, 1090 GD Amsterdam	237	62	ParallelTopic15
Nogarol	Chiara	In3Diagnostic, Grugliasco (TO), Italia	160	146	ANA-2B
Nolli	Maria Grazia	University of Naples Federico II, Italia	109	214	POSTER-B
Nomellini	Chiara	Dipartiemento di Chimica, Università degli Studi di Milano, via Golgi 19, 20133 Milano, Italia	635, 643	234, 234	FIS-1C, FIS-1C
Nomicisio	Cristian	Department of Drug Sciences, University of Pavia, Italy	1179	214	POSTER-B
Nonappa	Nonappa	Tampere University, Finlandia	197	74	TEC-A
Noris	Emanuela	Istituto per la Protezione Sostenibile delle Piante (CNR-IPSP)	710	214	POSTER-B
Nosengo	Chiara	Università degli Studi di Ferrara, Italia	458	214	POSTER-B
Nosengo	Chiara	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via L. Borsari 46, 44121 Ferrara, Italy	498	140	ANA-1B
Notarbartolo	Monica	Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), Università di Palermo, V.le delle Scienze, Palermo, 90128, Italy	1594	31	POSTER-A
Notari	Marcello	Eni, Research & Technical Innovation, Via F. Maritano 26, San Donato Milanese 20097, Italia	447, 943	31, 214	POSTER-A, POSTER-B
Notari	Maria Sole	University of Perugia, Italia	1409	235	FIS-1D
Notomista	Ennio	Department of Biology, University of Napoli, Via Cintia 26, 80126 Napoli	1029	154	CSB-1B
Nottoli	Tommaso	Università degli Studi di Pisa, Italia	610, 705, 927	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Novak	Urban	Laboratory for Molecular Structural Dynamics, National Institute of Chemistry. Ljubljana, Slovenia.	502	214	POSTER-B
Novello	Mariangela	Laboratory of Industrial and Synthetic Organic Chemistry (LISOC), Department of Chemistry and Chemical Technologies, University of Calabria, Via Pietro Bucci 12/C, 87036 Arcavacata di Rende (CS), Italy	711	214	POSTER-B
Nucci	Lucia	Dip. Fisica e Chimica, Università di Palermo, Italia	1473	31	POSTER-A
Nucera	Alessandro	Dipartimento di Scienze e Innovazione Tecnologica, Università del Piemonte Orientale, Viale Teresa Michel 11, 15121 Alessandria, Italy	431, 433	214, 214	POSTER-B, POSTER-B
Nurchi	Valeria Marina	Università di Cagliari	1045	148	ANA-2C
Nuzzo	Domenico	Istituto per la Ricerca e l'Innovazione Biomedica, Consiglio Nazionale delle Ricerche, Via U. La Malfa 153, 90146 Palermo, Italy	1199	74	TEC-A
Oberdofer	Gustav	Institute of Biochemistry, Graz University of Technology, Graz	794	214	POSTER-B
Oberhauser	Werner	Consiglio Nazionale delle Ricerche, Istituto di Chimica dei Composti Organo Metallici	1709	69	IND-1A
Occhiato	Ernesto G.	Dipartimento di Chimica 'Ugo Schiff' Università degli Studi di Firenze, Via della Lastruccia 13, 50019 Sesto Fiorentino (Italy)	1402	31	POSTER-A
Occhipinti	Michele	XGLab SRL – Bruker Nano Analytics, 20134 Milano, Italy	1558, 1790	214, 156	POSTER-B, ABC-C
Ockova	Jana	The Institute of Photonic Sciences, Spain	1832	31	POSTER-A
Oddo	Salvatore	Università di Messina, Italia	1200	31	POSTER-A
Odoardo	Andrea	Dipartimento di Scienze Chimiche, Farmaceutiche e Agrarie, Università di Ferrara, Italia	923	69	IND-1A
Offidani	Michele	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Bologna, Italia	558	262	IND-2A
Oger	Camille	Institut des Biomolécules Max Mousseron IBMM, UMR 5247 CNRS, Université de Montpellier, BP 14 491 15 av Charles Flahault, 34090, ENSCN, France	1438	258	ANA-4A
Ogris	Iza	Laboratory for Molecular Structural Dynamics, National Institute of Chemistry. Ljubljana, Slovenia.	502	214	POSTER-B
Olarini	Alessandra	Università degli studi di Modena e Reggio Emilia, Dipartimento di Scienze Chimiche e Geologiche, via G. Campi 103, 41125, Modena, Italia; Université de Lille, Laboratoire de Spectroscopie pour les Interactions, la Réactivité et l'Environnement, Cité Scientifique, 59650, Villeneuve d'Ascq, France	885	214	POSTER-B
Oliva	Eleonora	University of Teramo, Italia	1005	214	POSTER-B
Oliva	Giuseppina	Sanitary Environmental Engineering Division (SEED), Department of Civil Engineering,University of Study of Salerno, Italia	219	31	POSTER-A
Oliva	Rosario	Università degli Studi di Napoli Federico II, Italia	240, 1982	195, 209	ParallelTopic12 - ID: 195, ParallelTopic12 - ID: 209
Oliveri	Ivan Pietro	Università dagli Studi di Catania, Italia	1237, 448, 1680	31, 241, 236	POSTER-A, INO-2B, TEC-D
Oliveri	Paolo	Dipartimento di Famacia, Università degli studi di Genova, Italia	517, 1558, 1788, 1152, 1459, 1790, 1396	31, 214, 214, 249, 238, 156, 250	POSTER-A, POSTER-B, POSTER-B, ANA-3B, ABC-B, ABC-C, ANA-3C
Oliveri	Valentina	Università degli Studi di Catania, Italia	1144, 1236	31, 266	POSTER-A, CSB-2
Olivieri	Cristina	University of Milan, Italy	882	214	POSTER-B
Olivieri	Elena	Sciences Department, Roma Tre University, via della Vasca Navale 79, 00146 Rome (IT)	934	214	POSTER-B
Oliviero	Giorgia	Università degli Studi di Napoli Federico II, Italia	1934	41	ParallelTopic04
Oliviero	Giorgia	Department of Molecular Medicine and Medical Biotechnology, University of Naples Federico II, via Sergio Pansini, 5, 80131 Naples, Italy	1595	214	POSTER-B
Olivo	Giorgio	Università di Roma "La Sapienza", Italia	1621, 1640	31, 31	POSTER-A, POSTER-A
Olivucci	Massimo	università degli studi di siena, Italia	1859	214	POSTER-B
Olsbye	Unni	SMN Centre for Material Science and Nanotechnology, Department of Chemistry, University of Oslo, N-0315, Oslo, Norway	423	31	POSTER-A
Omelyanchik	Alexander	Università degli studi di Genova, Italia; Institute of Structure of Matter, National Research Council, nM2-Lab, Via Salaria km 29.300, Monterotondo Scalo 00015, Roma,	1317	253	INO-2C
Operamolla	Alessandra	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, via Giuseppe Moruzzi 13, 56124, Pisa	419	247	ORG-3D
Operti	Lorenza	Università di Torino, Italia	1857, 1762, 1399	31, 165, 238	POSTER-A, INO-1B, ABC-B
Orabona	Federica	Università di Napoli Federico II, Italia	177	31	POSTER-A
Orabona	Federica	Åbo Akademi, Laboratory of Industrial Chemistry and Reaction Engineering, Henrikinkatu 2, FI-20500 Turku/Åbo; Università degli Studi di Napoli Federico II, Dipartimento di Scienze Chimiche, via Cintia, IT-80126 Napoli	476	158	IND-1C
Orazio	Nicolotti	Università degli Studi di Bari "Aldo Moro", Italia	1224	136	FAR-1D
Orecchio	Ciro	Università degli Studi di Torino, Italia	710	214	POSTER-B
Orecchio	Santino	Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), Università degli Studi di Palermo, Palermo 90123, Italy	1400, 263	214, 251	POSTER-B, ANA-3D
Orecchioni	Marco	Università di Padova, Italia	995	199	ParallelTopic01 - ID: 199
Orian	Laura	Università di Padova, Italia	1160, 1495, 1613, 1789	31, 214, 214, 265	POSTER-A, POSTER-B, POSTER-B, DID-B
Oriani	Andrea Vittorio	Syensqo, Italia	706	214	POSTER-B
Oriente	Pietro	Università di Napoli Federico II, Italia	1386	214	POSTER-B
Orioli	Rebecca	University of Bologna, Italia	834	214	POSTER-B
Orlandi	Armando	Comprehensive Cancer Center, UOC Medical Oncology, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Roma, Italy	168	138	ANA-2A
Orlandi	Marco Emilio	Università di Milano-Bicocca, Dipartimento di Scienze della Terra e dell'ambiente, Milano, Italia; NBFC, Centro Nazionale della Biodiversità	1797	140	ANA-1B

Orlandi	Valentina	DIFAR, Department of Pharmacy, University of Genoa, Viale Cembrano 4, 16148 Genova, Italy	404, 1316	211, 261	ParallelTopic14 - ID: 211, ALI-2B
Orlandini	Serena	Università di Firenze, Italia	918, 1693	146, 259	ANA-2B, ALI-1B
Orlando	Carla	Dipartimento di Biotecnologie e Bioscienze, Università degli studi di Milano-Bicocca, Italia	1793	31	POSTER-A
Orlando	Paolo	Università degli Studi di Milano, Italia	1843	214	POSTER-B
Orlińska	Beata	Silesian University of Technology, Poland	604	31	POSTER-A
Oron	Dan	Weizmann Institute of Science, Israel	215, 1022	20, 242	PL-A, FIS-2A
Orrù	Roberto	Department of Mechanical, Chemical and Materials Engineering, University of Cagliari, Cagliari, Italy	1240	31	POSTER-A
Orsetti	Andrea	Magnetic Resonance Center CERM, University of Florence, Via Luigi Sacconi 6, 50019 Sesto Fiorentino, Florence, Italy; Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739	31	POSTER-A
Orsillo	Elisabetta	Università di Firenze, Dipartimento di Chimica "Ugo Schiff" (DICUS)	771	214	POSTER-B
Orsini	Monica	Department of Industrial, Electronic and Mechanical Engineering, University of Roma Tre, Rome (Italy)	725	237	TEC-C
Ortelli	Simona	ISSMC-CNR, Faenza, Italy	764	31	POSTER-A
Ortenzi	Claudio	ECHT, University of Macerata, 62100 Macerata, Italy	1750	143	ORG-1C
Ortenzi	Marco	University of Milan	1343	31	POSTER-A
Ortenzi	Marco Aldo	Università degli Studi di Milano, Italia	812, 1111	31, 249	POSTER-A, ANA-3B
Ortuso	Francesco	Department of Health Sciences, University "Magna Graecia" of Catanzaro, Viale Europa, 88100, Catanzaro- Net4Science srl, c/o University "Magna Graecia" of Catanzaro, Catanzaro	306	255	FAR-2A
Oscurato	Stefano Luigi	Università degli Studi di Napoli Federico II, Italia	408	242	FIS-2A
Ostacolo	Carmine	University of Salerno, Italia	250	136	FAR-1D
Ostroman	Irene	Dipartimento di Scienza dei Materiali, Università di Milano Bicocca, Via Cozzi 55, Milano 20125, Italy	1267	214	POSTER-B
Othman	Nadine	Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli studi di Bari Aldo Moro, via Amendola 165/a, Bari, Italy	1555	247	ORG-3D
Ottonelli	Ilaria	Department of Life Sciences, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO, 41125	630	267	TEF-1
Ottonelli	Ilaria	NanotechLab, Università degli Studi di Modena e Reggio Emilia, Italia	875	70	TEF-2
P. Birbaumer	Michael	Department of Chemistry, Biochemistry & Pharmaceutical Sciences, University of Bern, Freiestrasse 3, 3012 Bern, Switzerland	2022	167	INO-1D
Pacchiana	Raffaella	Dept. of Neurosciences, Biomedicine and Movement Sciences, University of Verona, 37134 Verona, Italy	598	31	POSTER-A
Pacchioni	Gianfranco	Università degli studi di Milano-Bicocca, Italia	362, 343, 350, 619	31, 214, 214, 240	POSTER-A, POSTER-B, POSTER-B, INO-2A
Pacchioni	Gianfranco	Università degli Studi di Milano - Bicocca, Italia	453	257	TEO-C
Pacchioni	Gianfranco	Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, Italia	225	25	MD-B
Paccoia	Federico	Department of Pharmaceutical Sciences, University of Perugia, Perugia, Italy.	287	214	POSTER-B
Pace	Alessandra	CNR,ICCOM, Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy; Dipartimento di Chimica, Università di Firenze, Via della Lastruccia 13, 50019 Sesto Fiorentino, Italy; Università degli studi di Siena,Via A. Moro 2, 53100 Siena, Italy.	667	214	POSTER-B
Pace	Andrea	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Italia	1533	144	ANA-1D
Pace	Giuseppe	Università di Padova, Italia	1659	214	POSTER-B
Pace	Vittorio	Università degli Studi di Torino, Italia	1705, 1094	214, 145	POSTER-B, ORG-1D
Pacella	Alessandro	Dip Scienze della Terra_Sapienza Università di Roma	953	214	POSTER-B
Pacella	Ilienia	Department of Translational and Precision Medicine, Sapienza University of Rome, P. le A. Moro 5 00185 Rome (Italy)	855	214	POSTER-B
Pacetti	Martina	Department of Pharmaceutical Sciences, University of Perugia, Italy	1672, 1013	31, 214	POSTER-A, POSTER-B
Pachaiappan	Praveena	University of Brescia, Italy	315	153	TEC-B
Pacifico	Severina	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania "Luigi Vanvitelli", Caserta, Italy	1866	31	POSTER-A
Paciok	Paul	Forschungszentrum Jülich GmbH, Jülich, Germany	1794	214	POSTER-B
Padilla-Gamiño	Jacqueline	University of Washington	1784	214	POSTER-B
Paduano	Luigi	Università degli Studi di Napoli Federico II, Italia; CSGI - Center for Colloid and Surface Science, 50019, Sesto Fiorentino, Italy	1539	31	POSTER-A
Paduano	Luigi	Università degli Studi di Napoli Federico II, Italia; CSGI Center for Colloid and Surface Science, Sesto Fiorentino, Italia	408	242	FIS-2A
Paduano	Luigi	Università degli Studi di Napoli Federico II, Italia; CSGI Consorzio Interuniversitario per lo sviluppo dei Sistemi a Grande Interfase, Italia	1652	243	FIS-2B
Padula	Daniele	Università degli Studi di Siena, Italia	876	214	POSTER-B
Paffen	Lars	Eindhoven University of Technology, The Netherlands	376	214	POSTER-B
Paganini	Maria Cristina	Univeristà di Torino, Italia	1019, 1519	214, 214	POSTER-B, POSTER-B
Pagano	Antonio	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, via Orabona 4, 70126, Bari	906	140	ANA-1B
Pagano	B.	Università di Bologna, Italia	618	31	POSTER-A
Pagano	Bruno	University of Naples Federico II, Italy	858, 1529, 1743, 772	214, 214, 138, 266	POSTER-B, POSTER-B, ANA-2A, CSB-2
Pagano	Flavia	La Sapienza Università di Roma, Italia; Delta APS Service, Roma, Italia	1825	214	POSTER-B
Pagano	Rita	Department of Chemical Sciences, University of Naples Federico II, Via Cintia, 6, 80126 Napoli, (NA), Italy	824, 826	214, 266	POSTER-B, CSB-2
Paglia	Giuliano	Dipartimento di scienze biochimiche "Alessandro Rossi Fanelli", Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210	31	POSTER-A
Paglia	Giuseppe	Università degli Studi di Milano-Bicocca, Italia	717, 715	31, 71	POSTER-A, MAS
Pagliai	Marco	Dipartimento di Chimica "Ugo Schiff", Università degli Studi di Firenze, via della Lastruccia 3, 50019 Sesto F. No (FI), Italy	691	31	POSTER-A
Pagliari	Stefania	Università Milano-Bicocca, Italia	1872	214	POSTER-B
Pagliaricci	Noemi	University of Camerino, Italy	1546, 1619	214, 214	POSTER-B, POSTER-B
Pagliaricci	Sara	University of Camerino, Italy	1546, 1619	214, 214	POSTER-B, POSTER-B
Pagliaro	Mario	Istituto per lo Studio dei Materiali Nanostrutturati, Via Ugo La Malfa 153, Palermo	521, 1346	31, 245	POSTER-A, ORG-3B
Pagni	Fabio	Department of Medicine and Surgery, Pathology, University of Milano-Bicocca, IRCCS Fondazione San Gerardo dei Tintori, Monza, Italy	1535, 992	31, 71	POSTER-A, MAS
Pagot	Gioele	Università degli Studi di Padova, Italia	737, 1585, 1066, 1581	31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B
Paialunga	Elisa	Università di Roma Tor Vergata	1806	214	POSTER-B
Painelli	Anna	Parma University, Italia	134	161	TEO-B
Paino	Francesca	CRC StaMeTec Department of Biomedical, Surgical and Dental Sciences, University of Milan, 20122 Milan, Italy	191	31	POSTER-A
Paissoni	Paolo	Procos s.p.a., Italia	616	214	POSTER-B
Paja	Herald	Department of Chemistry, University of Turin, via Pietro Giuria 7, 10125, Torino TO, Italy	289	51	ParallelTopic09
Paladino	Dalila	CIBIO Department, University of Trento, Via Sommarive 9, 38123 Trento, Italy	703	31	POSTER-A
Paladino	Simona	Dipartimento di Medicina Molecolare e Biotecnologie Mediche, Università degli Studi di Napoli Federico II, Dipartimento di Scienze Mediche e Chirurgiche Avanzate, Università degli studi della Campania Luigi Vanvitelli	512	243	FIS-2B
Palamà	Ilaria Elena	Institute of Nanotechnology (NANOTEC)-CNR, Lecce, 73100, Italy	678	243	FIS-2B
Palazzi	Sergio	ISIS di Setificio "Paolo Carcano", Como, Italia	1839	76	DID-A
Palazzotti	Deborah	Department of Pharmaceutical Sciences, University of Perugia, Via del Liceo, 1, Perugia 06123, Italy	135	206	ParallelTopic09 - ID: 206
Palchetti	Ilaria	Università degli studi di Firenze, Italia	504, 771, 780, 1222	214, 214, 214, 144	POSTER-B, POSTER-B, POSTER-B, ANA-1D
Paleček	Dragana	Università di Bologna, Italia	1459	238	ABC-B
Palermo	Vincenzo	Institute for the Organic Synthesis and Photoreactivity, National Research Council, Bologna, 40129, Italy	1090, 1989	31, 196	POSTER-A, ParallelTopic13 - ID: 196
Palladino	Chiara	Università di Bologna, Italia	1837	31	POSTER-A
Palladino	Pasquale	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia, 3-13, 50019 Sesto Fiorentino, FI, Italy	1639	214	POSTER-B
Pallavicini	Marco	Department of Pharmaceutical Sciences, University of Milan, via Mangiagalli 25, I-20133 Milano, Italy	758	136	FAR-1D
Palleschi	Antonio	Department of Chemical Science and Technologies, University of Rome "Tor Vergata", and CSGI unit of Rome, Via della Ricerca Scientifica, 00133 Rome, Italy	1550	243	FIS-2B
Pallini	Francesca	Università di Milano-Bicocca, Italia	1760	214	POSTER-B
Pallomo	Valle	Instituto Madrileño de Estudios Avanzados en Nanociencia, C/ Faraday 9, 28049, Madrid, Spain	1553	214	POSTER-B

Pallotta	Maria Teresa	Università degli Studi di Perugia, Piazza Università 1, 06123 Perugia, Italia	697	65	FAR-1A
Palma	Alessandra	National Center for Innovative Technologies in Public Health, Istituto Superiore di Sanità, Rome 00161; Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Roma1, Rome	1296	214	POSTER-B
Palma	Davide	UNIVERSITA' DI TORINO, Italia	1131	31	POSTER-A
Palma	Pierangela	Department of Pure and Applied Sciences, University of Urbino Carlo Bo, Piazza Rinascimento, 6, 61029 – Urbino, Italy; Vancouver Island University, 900 Fifth St, BC V9R 5S5, Nanaimo – Canada	1819	66	ANA-1A
Palmeri	Federica	Università La Sapienza di Roma, Italia; Istituto di Struttura del la Materia (ISM), National Research Council (CNR), Italia	849, 500	214, 247	POSTER-B, ORG-3D
Palmieri	Anna	Laboratory of Supramolecular Chemistry (SupraLab@UniSa), Department of Chemistry and Biology 'A. Zambelli', University of Salerno, Via Giovanni Paolo II 132, I-84984 Fisciano (SA), Italy	452	31	POSTER-A
Palmieri	Sara	University of Teramo, Italia	1005	214	POSTER-B
Palmioli	Alessandro	Università degli Studi di Milano-Bicocca, Italia	664, 913, 926, 1829, 1847	214, 214, 214, 214, 214	POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B
Palmisani	Jolanda	Department of Bioscience, Biotechnologies and Environment, University of Bari, Italy, Bari	1381	214	POSTER-B
Palmisani	Jolanda	Università degli Studi di Bari Aldo Moro, Italia	1427	239	ABC-D
Palmitessa	Onofrio Davide	Dipartimento di Scienze del Suolo della Pianta e degli Alimenti, Università degli Studi di Bari Aldo Moro, Via Giovanni Amendola, 165/a, 70126 Bari BA 70126 Bari, Italy	1042	71	MAS
Palombi	Laura	Università degli studi dell'Aquila, Italia	1664	214	POSTER-B
Palone	Alessio	Università degli Studi di Roma Tor Vergata, Italia	1723	31	POSTER-A
Palugan	Luca	Dipartimento di Scienze Farmaceutiche, Sez. Tecnologia e Legislazione Farmaceutiche "M.E. Sangalli", Università degli Studi di Milano, Via G. Colombo 71, 20133 Milan	1548	214	POSTER-B
Palumbo Piccionello	Antonio	Università degli studi di Palermo, Italia	514	160	FIS-1B
Palumbo	Arianna	Department of Civil, Chemical, Environmental, and Materials Engineering, University of Bologna, Via Terracini 28, Bologna, Italy	1423	214	POSTER-B
Palumbo	Bianca	Sapienza Università di Roma, Italia	1390	214	POSTER-B
Palumbo	Fabio	Istituto di Nanotecnologie, CNR, 70126 Bari, Italy	1416, 1420, 1436, 1415, 1414	214, 214, 214, 240, 253	POSTER-B, POSTER-B, POSTER-B, INO-2A, INO-2C
Palumbo	Fabio Salvatore	Università Degli Studi di Palermo, Italia	365	70	TEF-2
Palumbo	Gianfranco	DMMM - Politecnico di Bari, Bari, Italia	1203	74	TEC-A
Palumbo	Mauro	Università di Torino, Italia	1399	238	ABC-B
Pan	Wenkai	Università di Bologna, Italia	1188	31	POSTER-A
Pancheri	Lucio	Università di Trento, Italia	1227	214	POSTER-B
Pancotto	Martina	Università di Perugia, Dipartimento di Chimica biologia e Biotecnologie, Perugia	922	214	POSTER-B
Pancrazzi	Francesco	SynCat Lab, Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italia	1812, 1334	31, 214	POSTER-A, POSTER-B
Pandini	Alessandro	Department of Computer Science, Brunel University London, United Kingdom	1012, 822	214, 161	POSTER-B, TEO-B
Pandino	Irene	ICCS- Fondazione Bietti, Via Santo Stefano Rotondo 6, Roma, Italia	1236	266	CSB-2
Panella	Stefano	Istituto Cardiocentro Ticino, Ente Ospedaliero Cantonale, Bellinzona, Switzerland	1950	175	ParallelTopic04 - ID: 175
Panfili	Eleonora	Università degli Studi di Perugia, Piazza Università 1, 06123 Perugia, Italia	697	65	FAR-1A
Panfili	Monica	National Research Council (CNR), Institute for Biological Resources and Marine Biotechnology (IRBIM), Ancona, Italy	478	31	POSTER-A
Panic	Manuela	Faculty of food technology and biotechnology, University of Zagreb, Croatia	648	78	ALI-1A
Panico	Francesco	Dipartimento di Chimica, Università degli Studi di Milano, via Golgi 19, 20133, Milano, Italy	790	214	POSTER-B
Pannacci	Giacomo	DCBB - Università degli Studi di Perugia, Italia	1769	68	FIS-1A
Panniello	Annamaria	Institute for Chemical and Physical Processes (IPCF)-CNR SS Bari, 70126, Italy	678	243	FIS-2B
Pannucci	Elisa	Department of Agriculture and Forest Sciences (DAFNE), University of Tuscia, Via S. Camillo de Lellis, Viterbo, Italy	1305, 1370	31, 214	POSTER-A, POSTER-B
Pantaleo	Giuseppe	ISMN-CNR, Via U. La Malfa 153, 900146 Palermo, Italy	1171, 896	31, 157	POSTER-A, IND-1B
Pantaleone	Stefano	Università di Torino, Italia	690, 599, 443	31, 214, 68	POSTER-A, POSTER-B, FIS-1A
Pantazis	Dimitrios	Max-Planck-Institut für Kohlenforschung, Mülheiman der Ruhr, Germany	1398	31	POSTER-A
Panunti	Alessandro	Università degli Studi Milano Bicocca, Milan, Italy	542	31	POSTER-A
Panza	Elisabetta	Department of Pharmacy, University Federico II of Naples, Via Domenico Montesano 49, 80131, Naples, Italy	1483	132	FAR-1B
Panza	Luigi	Università del Piemonte Orientale, Italia	617, 612	31, 214	POSTER-A, POSTER-B
Panzarella	Giulia	Dipartimento di Scienze della Salute, Università "Magna Græcia" di Catanzaro, Campus Universitario "S. Venuta", Viale Europa, 88100 Catanzaro, Italy	253, 251	31, 214	POSTER-A, POSTER-B
Panzavolta	Silvia	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Via Selmi 2, 40126, Italia	1850, 117	31, 165	POSTER-A, INO-1B
Panzeca	Giovanna	University of Siena	1576	136	FAR-1D
Panzella	Lucia	Università degli Studi di Napoli Federico II, Italia	1188	31	POSTER-A
Panzella	Lucia	Department of Chemical Sciences, University of Naples Federico II	151, 719	153, 247	TEC-B, ORG-3D
Paola	Dugo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy; Chromaleont S.R.L., C/O Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy	1290	214	POSTER-B
Paoletti	Federico	Università degli Studi di Milano-Bicocca, Italia	717	31	POSTER-A
Paoletti	Francesca	Institute of Crystallography - C.N.R.- Trieste Outstation. Area Science Park. Trieste, Italy	502	214	POSTER-B
Paoli	Paolo	Department of Experimental and Clinical Biomedical Sciences, University of Firenze, Italy	1754	139	ORG-2A
Paolini	Davide	Department of Bioscience and Technology for Food, Agriculture and Environment, University of Teramo, Campus "Aurelio Saliceti" Via R. Balzarini 1, 64100 Teramo, Italy	596	142	ANA-1C
Paolino	Marco	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	230, 869, 1859, 755, 1744	214, 214, 214, 154, 246	POSTER-B, POSTER-B, POSTER-B, CSB-1B, ORG-3C
Paolucci	Francesco	Department of Chemistry "G. Ciamician", University of Bologna, via Selmi 2, 40126, Bologna, Italy	288, 820, 173	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Paone	Emilia	Dipartimento DICEAM, Università degli Studi Mediterranea di Reggio Calabria, IT89123 Reggio Calabria, Italy	123, 536	214, 214	POSTER-B, POSTER-B
Papagni	Antonio	Università degli Studi di Milano-Bicocca, Italia	294	256	ORG-4A
Paparella	Andrea Nicola	Università degli Studi di Bari Aldo Moro, Italia	1030, 1622	214, 214	POSTER-B, POSTER-B
Paparo	Luigi	Università degli Studi di Napoli Federico II, Italia	180	214	POSTER-B
Paparo	Rosanna	University of Naples Federico II, Napoli	127	159	IND-1D
Papetti	Adele	Università di Pavia, Italia	1336, 1337	31, 214	POSTER-A, POSTER-B
Papini	Anna Maria	Università degli Studi di Firenze, Sesto Fiorentino, Italia; Laboratorio Interdipartimentale di Chimica e Biologia di Peptidi e Proteine, Sesto Fiorentino, Italia	939	31	POSTER-A
Papis	Marta	Università degli Studi dell'Insubria, Italia	594	145	ORG-1D
Pappaianni	Giulio	Università di Firenze, Italia	575, 605, 687	31, 214, 138	POSTER-A, POSTER-B, ANA-2A
Pappalardo	Andrea	Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95100 Catania, Italy	527, 626, 1086, 1678, 1085	214, 214, 214, 214, 246	POSTER-B, POSTER-B, POSTER-B, POSTER-B, ORG-3C
Paraboschi	Sara	Università di Pavia, Italia	1230, 1662, 1207	214, 214, 234	POSTER-B, POSTER-B, FIS-1C
Paradisi	Enrico	Department of Engineering "Enzo Ferrari", University of Modena and Reggio Emilia, Via P. Vivarelli 10, I-41125 Modena, Italy	242	153	TEC-B
Paradisi	Francesca	University of Bern, Switzerland	1630	31	POSTER-A
Parafioriti	Michela	Istituto di Ricerche Chimiche e Biochimiche 'G. Ronzoni' via Giuseppe Colombo 81, 20133 Milano, Italy	638	256	ORG-4A
Parapini	Silvia	Department of Pharmaceutical Sciences, University of Milan	1596	31	POSTER-A
Paraschiv	Andrei	Department of Drug Science and Technology, University of Turin, Via Pietro Giuria 9, 10125, Turin	261	214	POSTER-B
Parenti	Alessandro	DAGRI – Department of Agricultural, Food, Environmental, and Forestry Sciences and Technologies – University of Florence, via Donizetti, 6 – 50144 Firenze (Italy)	226	214	POSTER-B
Parenti	Marco	Institute of Organic Synthesis and Photoreactivity - National Research Council, via P. Gobetti 101, Bologna, Italy	1457	132	FAR-1B

Pargoletti	Eleonora	Università degli Studi di Milano, Italia	133, 183	31, 155	POSTER-A, ELE-2
Pariani	Luca Carlo Maria	Dipartimento di Chimica, Università degli studi di Milano, Milano	910	31	POSTER-A
Parigi	Giacomo	Magnetic Imaging Center (CERM) and Department of Chemistry "Ugo Shiff", University of Florence, Via Luigi Sacconi 6, Florence	434	165	INO-1B
Parise	Angela	Consiglio Nazionale delle ricerche (CNR)-IOM c/o International School for Advanced Studies (SISSA/ISAS), via Bonomea 265, 34136 Trieste, Italy	361, 1615	266, 266	CSB-2, CSB-2
Parisi	Antonio	Laboratorio Nazionale di Riferimento per il trattamento degli alimenti e dei loro ingredienti con radiazioni ionizzanti – Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Via Manfredonia, 20 – 71121 Foggia	1424, 1431	31, 78	POSTER-A, ALI-1A
Parisi	Ilaria Ortensia	Department of Pharmacy, Health and Nutritional Sciences, University of Calabria, Rende (CS), Italy	1676	31	POSTER-A
Parisi	Maria Laura	Department of Biotechnology, Chemistry and Pharmacy, R2ES Lab, University of Siena, 53100 Siena, Italy; CSGI, Center for Colloids and Surface Science, 50019 Sesto Fiorentino, ItalyCSGI, Center for Colloids and Surface Science, 50019 Sesto Fiorentino, Italy; Institute of Chemistry of Organometallic Compounds (CNR-ICCOM), 50019 Sesto Fiorentino, Italy	245	31	POSTER-A
Parisi	Maria Laura	Università degli Studi di Siena, Italia; Institute of Chemistry of Organometallic Compounds (CNR-ICCOM)	1212, 1216, 793	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Parisi	Miranda	Sciences Department, Roma Tre University	1488	214	POSTER-B
Parisotto	Stefano	Dipartimento di Chimica, Università degli Studi di Torino, Via P. Giuria 7, 10125 Torino (Italy)	1402, 473	31, 214	POSTER-A, POSTER-B
Parisse	Gianluca	Department of Physical and Chemical Sciences, University of L'Aquila, Via Vetoio – 67100 Coppito, L'Aquila, Italy	1648	214	POSTER-B
Park	Sungjin	Department of Electrical and Computer Engineering, University of Toronto, Canada	1875	31	POSTER-A
Parmeggiani	Camilla	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino, Italy	807	158	IND-1C
Parmeggiani	Fabio	Politecnico di Milano, Italia	139	264	ORG-1B
Parolini	Marco	University of Milan	1343, 1111	31, 249	POSTER-A, ANA-3B
Parravano	Maria Cristina	ICCS- Fondazione Bietti, Via Santo Stefano Rotondo 6, Roma, Italia	1236	266	CSB-2
Parrinello	Michele	Atomistic Simulations, Istituto Italiano di Tecnologia, Italia	1835, 1785, 1753, 1278	180, 204, 68, 75	ParallelTopic09 - ID: 180, ParallelTopic07 - ID: 204, FIS-1A, TEO-A
Parrino	Barbara	Università Degli Studi Di Palermo, Italia	1528	31	POSTER-A
Parzy	Elodie	University of Bordeaux-CNRS, France	1353	31	POSTER-A
Pasca	Francesco	Department of Pharmacy – Drug Sciences, University of Bari "A. Moro" Via E. Orabona 4, 70125 – Italy FLAME-Lab –Flow Chemistry and Microreactor Technology Laboratory	150, 1813, 1700	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Pascale	Michelangelo	Institute of Food Sciences, National Research Council of Italy, Via Roma 64, 83100 Avellino, Italy	966	235	FIS-1D
Pasco	Samel Tanner	CIC bioGUNE, Parque Tecnológico de Bizkaia, Edificio 801 A - 48160 Derio, Spain	284	266	CSB-2
Pascucci	Marianna	Institute for the Study of Nanostructured Materials (ISMN), National Research Council (CNR)	1268, 1486	31, 235	POSTER-A, FIS-1D
Pasculli	Donato	Department of Chemistry, NIS Interdepartmental and INSTM Reference Centre, University of Torino, Italia	892	201	ParallelTopic03 - ID: 201
Pasini	Dario	bOrganic, Supramolecular and Polymeric Materials Research Group, Department of Chemistry, University of Pavia, V. Le Taramelli 12, Pavia 27100, Italy	1006	31	POSTER-A
Pasini	Mariacecilia	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" SCITEC-CNR, Via Corti 12, 20133 Milano, Italy	1186, 1603	214, 214	POSTER-B, POSTER-B
Pasini	Mariacecilia	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" (SCITEC),CNR, Italia1	1625	246	ORG-3C
Pasqual Laverdura	Umberto	Energy Technologies and Renewable Sources Department, Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Casaccia Research Center, Via Anguillarese 301, 00123 Rome, Italy	138	214	POSTER-B
Pasquini	Benedetta	Università di Firenze, Italia	918	146	ANA-2B
Pasquino	Rossana	Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università di Napoli Federico II, Napoli 80125, Italy; DPI, 5600 AX Eindhoven, the Netherlands	1822	240	INO-2A
Pasquinucci	Lorella	Università deli studi di Catania, Italia	792	31	POSTER-A
Pasquinucci	Lorella	Università degli studi di Catania, Italia	1597	31	POSTER-A
Pasquinucci	Lorella	Università di Catania, Italia	788	136	FAR-1D
Passananti	Monica	University of Turin, Italia; University of Helsinki	1044	31	POSTER-A
Passardi	Alessandro	Medical Oncology Unit, IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST) "Dino Amadori", 47014 Meldola, Italy	904	255	FAR-2A
Passarella	Daniele	Department of Chemistry Università degli Studi di Milano Via Camillo Golgi, 19, 20133 Milano (Italy)	1046, 1047, 1196, 295, 1167, 1260, 1843, 1201, 956	31, 31, 31, 214, 214, 214, 214, 147, 134	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, POSTER-B, ORG-2B, FAR-1C
Passarini	Fabrizio	Department of Industrial Chemistry "Toso Montanari", University of Bologna; Interdepartmental Centre for Industrial Research "Renewable Sources, Environment, Blue Growth, Energy", University of Bologna	1919, 2018, 590, 165, 457	31, 200, 214, 73, 238	POSTER-A, ParallelTopic02 - ID: 200, POSTER-B, ABC-A, ABC-B
Passeri	Daniela	TES Pharma, Perugia, Italy.	287	214	POSTER-B
Passet	Chiara	Department of Chemistry, University of Turin, Turin, Italy	1055	214	POSTER-B
Passoni	Alice	) Department of Environmental Health Sciences, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milano, Italy	382	132	FAR-1B
Pasti	Luisa	Department of Environmental and Prevention Sciences, University of Ferrara, Ferrara, Italy	456	31	POSTER-A
Pasti	Luisa	Department of Environmental and Prevention Sciences, University of Ferrara, Via Luigi Borsari n. 46 - 44121, Ferrara, Italy	491, 1348, 537	31, 31, 181	POSTER-A, POSTER-A, ParallelTopic10 - ID: 181
Pasti	Luisa	Department of Environmental and Prevention Sciences, University of Ferrara, Via Luigi Borsari n. 46 - 44121, Ferrara, Italy	646	66	ANA-1A
Pasti	Luisa	Department of Environmental and Prevention Sciences, University of Ferrara, Via L. Borsari 46, 44121 Ferrara, Ital	842, 1068, 1119, 1223	140, 148, 261, 239	ANA-1B, ANA-2C, ALI-2B, ABC-D
Pastore	Andrea	università padova, Italia	425	249	ANA-3B
Pastore	Arianna	Department of Pharmacy, School of Medicine and Surgery, University of Naples Federico II, via D. Montesano 49, 80131, Naples, Italy	1454	214	POSTER-B
Pastore	Carlo	CNR-IRSA, Italia	1765	31	POSTER-A
Pastore	Genny	Università di Camerino, Italia	1225, 1442	31, 214	POSTER-A, POSTER-B
Pastore	Lucia	Department of Bioscience, Biotechnologies and Environment, University of Bari, Italy, Bari	1381	214	POSTER-B
Pastore	Paolo	università padova, Italia	425	249	ANA-3B
Pastori	Nadia	Dip Chemistry, Materials and Chemical Engineering Politecnico di Milano, Italia	1053	214	POSTER-B
Pasut	Gianfranco	Dept. Pharmaceutical and Pharmacological Sciences, University of Padova, Via F. Marzolo 5, 35131, Padova, Italy	1496	175	ParallelTopic04 - ID: 175
Patacchini	Elisa	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210, 1626, 1684	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Patacchini	Elisa	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, "Sapienza" Università di Roma, p.le Aldo Moro 5, 00185 Rome, Italy	1616, 1627, 1955	214, 214, 134	POSTER-B, POSTER-B, FAR-1C
Patamia	Vincenzo	Dipartimento di Scienze del Farmaco e della Salute, Università di Catania, Viale A. Doria 6, 95125, Catania, Italia	493	214	POSTER-B
Patel	Snehal	Nirma University, India	1078	31	POSTER-A
Patinec	Veronique	Univ de Brest, UMR-CNRS 6521 CEMCA, 6 avenue Victor le Gorgeu, F-29200 Brest, France.	193	67	INO-1A
Patino	Tania	Eindhoven University of Technology, The Netherlands	376	214	POSTER-B
Patrone	Mauro	Department of Sciences and Technological Innovation, University of Piemonte Orientale, Alessandria, Italy	1375	214	POSTER-B
Patruno	Andrea	Pastificio Marella s.r.l., Gioia del Colle, Italia	1574	31	POSTER-A
Patsilinakos	Alexandros	Sibylla Biotech S.p.A., Via Lillo del Duca 10, 20091, Bresso (MI), Italy	1557	31	POSTER-A
Pavan	Barbara	Department of Neuroscience and Rehabilitation—Section of Physiology, University of Ferrara, via L. Borsari 46, I-44121 Ferrara, Italy; Center for Translational Neurophysiology of Speech and Communication (CTNSC@UniFe), Italian Institute of Technology (IIT), via Fossato di Mortara 19, I-44121 Ferrara, Italy	1301	31	POSTER-A
Pavan	Cristina	Università di Torino, Italia	1732, 953, 1519	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Pavan	Giovanni	Politecnico of Turin, Italia	1285	31	POSTER-A
Pavan	Giovanni M.	Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy	1060	180	ParallelTopic09 - ID: 180

Pavan	Giulio	Dipartimento di Scienze Chimiche, DiSC, Università degli Studi di Padova, Italy	1707	31	POSTER-A
Pavone	Michele	Department of Chemical Sciences, University of Naples Federico II, Naples, Italy; National Reference Center for Electrochemical Energy Storage (GISEL), Firenze, Italy	347, 1256	214, 214	POSTER-B, POSTER-B
Pavone	Michele	Università degli studi di Napoli Federico II, Italia	666	257	TEO-C
Pavone	Vincenzo	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, 80126 Napoli, Italia	1145, 1265	214, 67	POSTER-B, INO-1A
Pavoni	Elena	Department of Mathematics, Informatics and Geosciences, University of Trieste, Via Weiss 2, Trieste	1510	214	POSTER-B
Peccati	Francesca	Center for Cooperative Research in Biosciences (CIC bioGUNE), Basque Research and Technology Alliance (BRTA), 48160 Derio, Spain	690	31	POSTER-A
Pecchini	Pietro	Università di Bologna, Italia	912	247	ORG-3D
Pecorari	Rita	Linneus Consulting, Roma, Italia	1221	214	POSTER-B
Pecoraro	Camilla	Università Degli Studi Di Palermo, Italia	1528	31	POSTER-A
Pecoraro	Tania	Univeristy of Milan, Italia; Department of Molecular Biochemistry and Pharmacology, Istituto di Ricerche Farmacologiche Mario Negri IRCCS	157	214	POSTER-B
Pedatella	Silvana	Department of Chemical Sciences, University of Naples Federico II, Naples, Italy	1866, 1734	31, 245	POSTER-A, ORG-3B
Peddis	Davide	Universita di Genova, Italia; CNR-ISM	513, 1317	242, 253	FIS-2A, INO-2C
Pedersen	Jan Skov	Aarhus University, Denmark	709	166	INO-1C
Pedone	Alfonso	Università di Modena e Reggio Emilia, Italia	216, 247	51, 257	ParallelTopic09, TEO-C
Pedone	Emilia	IBB-CNR di Napoli	980	139	ORG-2A
Pedraza González	Laura Milena	Università di Pisa, Italia	665	161	TEO-B
Pedrazzoli	Marco	Dipartimento di Chimica, Materiali e Ingegneria Chimica, Politecnico di Milano, via Mancinelli 7, 20131 Milano	800	31	POSTER-A
Pedretti	Alessandro	Università degli Studi di Milano, Italia	1297, 1195, 1217	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Pedrini	Federica	Università degli Studi di Roma Tor Vergata, Italia	615	214	POSTER-B
Pedrini	Federica	Università di Parma, Italia	776	138	ANA-2A
Pedrini	Martina	Università degli Studi di Milano, Italia	1167	214	POSTER-B
Pedroni	Lorenzo	Department of Food and Drug, University of Parma, Parma, Italy	403	193	ParallelTopic09 - ID: 193
Peijnenburg	Willie	Leiden University, Leiden, The Netherlands; RIVM, Center for Safety of Substances and Products, Bilthoven, the Netherlands	764	31	POSTER-A
Pelagatti	Ambra	Università degli Studi di Firenze, Italia	603	214	POSTER-B
Pelagatti	Paolo	Università di Parma, Italia	863, 1054	31, 241	POSTER-A, INO-2B
Pellacani	Samuele	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia, via Campi 103, Modena, 41125, Italy	544	214	POSTER-B
Pellacani	Samuele	Università di Modena e Reggio Emilia, Italia	815	214	POSTER-B
Pellacani	Samuele	Università degli Studi di Modena e Reggio Emilia, Italia	1417	150	ANA-2D
Pellacani	Samule	Università degli studi di Modena e Reggio Emilia, Italia	839	249	ANA-3B
Pellegatta	Serena	IRCCS Istituto Neurologico Carlo Besta, Milan, Italy	1209	214	POSTER-B
Pellegrini-Giampietro	Domenico Edoardo	Dipartimento di Scienze della Salute, Italia	968	31	POSTER-A
Pellegrini	Angelica	Dipartimento di Medicina Molecolare, Università di Pavia, Italia	1079	214	POSTER-B
Pellegrini	Riccardo	Chimet SpA-Catalyst Division, Viciomaggio Arezzo, Italy	1794, 1178	214, 160	POSTER-B, FIS-1B
Pellegrini	Riccardo	Chimet S.p.A., Italia	1205	160	FIS-1B
Pellegrino	Francesco	Università degli studi di Torino, Italia; UniTo-ITT JointLab, Università degli studi di Torino, Italia	893, 128, 1589	31, 214, 249	POSTER-A, POSTER-B, ANA-3B
Pellegrino	Simone	Department of Chemistry, University of Torino, Via Pietro Giuria 5, 10125 Torino, Italy	627	214	POSTER-B
Pelliccia	Sveva	Università degli studi di Napoli Federico II, Italia	1842	31	POSTER-A
Pellicorio	Vanessa	Università di Pavia, Italia	1336	31	POSTER-A
Pellini	Ivan Claudio	University of Milano Bicocca, Italy	1808, 1112	214, 72	POSTER-B, ELE-1
Pellis	Alessandro	Università di Genova, Italia	1148, 1567	31, 31	POSTER-A, POSTER-A
Pellis	Giulia	Department of Chemistry, University of Torino, Via Pietro Giuria 7, Torino, Italy	1187	214	POSTER-B
Pelosi	Chiara	Department of Chemistry and Industrial Chemistry, University of Pisa, Via G. Moruzzi 13, 56124 Pisa, Italy	761	214	POSTER-B
Pelosi	Giorgio	Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Parco Area delle Scienze 17, 43124, Parma (Italy)	227, 2022	143, 167	ORG-1C, INO-1D
Penasa	Roberto	Università degli Studi di Padova, Italia	1613	214	POSTER-B
Penconi	Marta	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" (SCITEC) del Consiglio Nazionale delle Ricerche (CNR), via Fantoli 16/15, 20138 Milano	124	31	POSTER-A
Penconi	Marta	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", CNR-SCITEC, v. Fantoli 16/15, I-20138 Milano (IT), and SmartMatLab Center, v. Golgi 19, II-20133 Milano (IT)	820, 1125, 1463	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Penconi	Marta	CNR Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", Via C. Golgi 19, 20133 Milano. Italy	1313	214	POSTER-B
Peng	Ling	CNRS - Aix Marseille University, France	198, 1982, 352	209, 209, 65	ParallelTopic12 - ID: 209, ParallelTopic12 - ID: 209, FAR-1A
Pensotti	Roberta	Department of Biotechnology and Biosciences, University of Milano-Bicocca, 20126 Milano, Italy	1829	214	POSTER-B
Pepi	Simone	Università di Siena, Dipartimento di Biotecnologie, Chimica e Farmacia, Italia; CSGI - Consorzio Interuniversitario per i Sistemi a Grande Interfase, Firenze, Italia; INSTM Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Firenze, Italia	1176, 1632	165, 243	INO-1B, FIS-2B
Perego	Jacopo	Università di Milano Bicocca	1282, 1409	214, 235	POSTER-B, FIS-1D
Perego	Simone	Istituto Italiano di Tecnologia; Università degli Studi di Milano-Bicocca	1753	68	FIS-1A
Pérez-Badell	Yoana	Universidad de la Habana, Cuba	1734	245	ORG-3B
Pérez-Sena	Wander	Åbo Akademi, Laboratory of Industrial Chemistry and Reaction Engineering, Henrikinkatu 2, FI-20500 Turku/Åbo	476	158	IND-1C
Peri	Francesco	Università degli Studi di Milano-Bicocca, Italia	1982, 698, 741, 192, 284	209, 214, 214, 77, 266	ParallelTopic12 - ID: 209, POSTER-B, POSTER-B, CSB-1A, CSB-2
Perin	Elena	University of Eastern Piedmont, Italia	1343, 1111	31, 249	POSTER-A, ANA-3B
Perina	Maria Luisa	Università degli Studi di Catania, Italia	1236	266	CSB-2
Perinelli	Diego Romano	Università di Camerino, Italia	296, 634	143, 70	ORG-1C, TEF-2
Perna	Filippo	Università degli Studi di Bari "Aldo Moro", Italia	988	145	ORG-1D
Perna	Filippo Maria	Dipartimento di Farmacia-Scienze del Farmaco, Università di Bari Aldo Moro, Consorzio C.I.N.M.P.I.S, Via E. Orabona 4, I-70125 Bari, Italy	1007, 1030, 1622, 1638	31, 214, 214, 214	POSTER-A, POSTER-B, POSTER-B, POSTER-B
Peron	Gregorio	Università di Brescia, Brescia, Italia	692	260	ALI-2A
Peroni	Elisa	CY Cergy Paris Université, CNRS, BioCIS, 95000 Cergy Pontoise, France	1144	31	POSTER-A
Perrella	Fulvio	Scuola Superiore Meridionale, Largo San Marcellino 10, I-80138, Napoli, Italy	1509, 1600	185, 214	ParallelTopic15 - ID: 185, POSTER-B
Perrella	Michele	Università degli Studi di Napoli Federico II, Italia	387	237	TEC-C
Perrero	Jessica	Departament de Química, Universitat Autònoma de Barcelona, Bellaterra, 08193, Catalonia, Spain; Dipartimento di Chimica and Nanostructured Interfaces and Surfaces (NIS) Centre, Università degli Studi di Torino, 10125, Torino, Italy	184	68	FIS-1A
Perri	Enzo	CREA Research Centre for Olive, Fruit and Citrus Crops, Rende (CS), Italy	509, 584	31, 78	POSTER-A, ALI-1A
Perrin	Elena	Università degli Studi di Firenze, Italia	1342	214	POSTER-B
Perrone	Daniela	Università degli studi di Ferrara, Italia	1163	141	ORG-1A
Perrone	Mattia	Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy	1060	180	ParallelTopic09 - ID: 180
Perrotta	Alberto	CNR-NANOTEC	1070, 1420, 1436, 1414	214, 214, 214, 253	POSTER-B, POSTER-B, POSTER-B, INO-2C
Perrucci	Miryam	University of Teramo, Department of Biosciences and Agro-Food and Environmental Technologies, Teramo, 64100, Italy.; Department of Innovative Technologies in Medicine & Dentistry, University "G. d'Annunzio" of Chieti-Pescara, Chieti, Italy	1607, 301	214, 258	POSTER-B, ANA-4A
Persico	Marco	Department of Pharmacy, University of Naples Federico II, Via Domenico Montesano, 49, 80131 Napoli, (NA), Italy	824	214	POSTER-B
Perucchini	Mariasofia	Dipartimento di Scienze del farmaco, Università di Pavia, Italia	1079	214	POSTER-B
Perucchini	Mariasofia	Università di Pavia, Italia	1161	214	POSTER-B
Perugino	Florinda	Department of Food and Drug, University of Parma, Parma, Italy; Department of Biology, University of Naples Federico II, Naples, Italy	403	193	ParallelTopic09 - ID: 193
Peruzzi	Greta	Dip. Scienze della Terra, Sapienza Università di Roma, Italia	1473, 1590, 1761	31, 214, 214	POSTER-A, POSTER-B, POSTER-B

Peruzzini	Maurizio	ICCOM-CNR, Institute of Chemistry of OrganoMetallic Compounds, National Research Council of Italy, Via Madonna del Piano 10, I-50019 Sesto Fiorentino, Firenze, Italy	1873	198	ParallelTopic15 - ID: 198
Peruzzini	Maurizio	CNR - Istituto di Chimica dei Composti Organometallici (CNR-ICCOM), Via Madonna del Piano 10, Sesto Fiorentino I-50019, Italy	335	243	FIS-2B
Pes	Federica	Università degli Studi di Pisa, Italia	610	31	POSTER-A
Pesciaioli	Fabio	Università degli studi dell'Aquila, Italia	940	141	ORG-1A
Pescitelli	Gennaro	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Via Giuseppe Moruzzi 13, 56124 Pisa, Italy	130, 526	31, 244	POSTER-A, ORG-3A
Pessina	Marzia	Università di Parma, Italia	1569	214	POSTER-B
Peterlongo	Federico	Indena, Italia	749	214	POSTER-B
Petrarolo	Giovanni	University of Pisa, Italy	1307	214	POSTER-B
Petrella	Antonello	Università degli Studi di Salerno, Italia	132, 654	132, 151	FAR-1B, ORG-2D
Petrella	Greta	STARTNETICS, Italia	1385	214	POSTER-B
Petrelli	Riccardo	Università degli Studi di Camerino, Camerino, Italia	1366	136	FAR-1D
Petrellini	Alessio	Università di Camerino, Italia	1750	143	ORG-1C
Petricci	Elena	Dipartimento di Biotecnologie, Chimica e Farmcia, Università degli Studi di Siena, Via Aldo Moro, 2 - 53100, Siena	869, 755	214, 154	POSTER-B, CSB-1B
Petriglieri	Jasmine R.	Dip Scienze della Terrae Centro Interdipartimentale "G. Scansetti" per lo Studio degli Amianti e di altri Particolati Nocivi_Università di Torino	953	214	POSTER-B
Petriglieri	Jasmine Rita	Università di Torino, Italia	1732	31	POSTER-A
Petrik	Matej	MaSa Tech, s.r.o., Sadová 3018/10, 916 01 Stará Turá, Slovakia; Slovak University of Technology in Bratislava, Faculty of Informatics and Information Technologies, Ilkovičova 2, 842 16 Bratislava 4	334	31	POSTER-A
Petrone	Alessio	Università degli Studi di Napoli Federico II, Dipartimento di Scienze Chimiche, Napoli, 80126,Italia; Scuola Superiore Meridionale, Largo S. Marcellino, 10, Napoli, 80138, Italia; Istituto Nazionale di Fisica Nucleare, Sezione di Napoli, Napoli, Italia	1609, 1509, 1600, 1318	31, 185, 214, 75	POSTER-A, ParallelTopic15 - ID: 185, POSTER-B, TEO-A
Petrone	Maria	Department of Pharmacy, University of Napoli "Federico II", via D. Montesano 49, 80131, Naples Italy	1455, 824	31, 214	POSTER-A, POSTER-B
Petrongari	Angelica	Sapienza Università di Roma, Italia	1696	214	POSTER-B
Petroselli	Chiara	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Italia	348	73	ABC-A
Petroselli	Manuel	Institute of Chemical Research of Catalonia (ICIQ)	626	214	POSTER-B
Petrosilli	Laura	Dipartimento di Chimica, Università degli Studi di Milano, Italia	1708	214	POSTER-B
Petrosino	Sara	Telethon Institute of Genetics and Medicine (TIGEM), via Campi Flegrei 34, 80078 Pozzuoli; Department of Clinical Medicine and Surgery, Federico II University, via Sergio Pansini, 5, 80131 Napoli	976	71	MAS
Petrozza	Annamaria	Istituto Italiano di tecnologia, Italia	1951	210	ParallelTopic13 - ID: 210
Petruzzelli	Rossella	Università di Bologna, Italia	810	72	ELE-1
Pettignano	Alberto	Università degli Studi di Palermo, Italia	572, 969, 716	214, 214, 248	POSTER-B, POSTER-B, ANA-3A
Pettinari	Claudio	Università di Camerino, Italia	1817, 958, 1619, 1759, 935	205, 214, 214, 214, 240	ParallelTopic08 - ID: 205, POSTER-B, POSTER-B, POSTER-B, INO-2A
Pettinari	Riccardo	University of Camerino, Italy	1546, 1619, 1759, 935	214, 214, 214, 240	POSTER-B, POSTER-B, POSTER-B, INO-2A
Peviani	Marco	University of Pavia, Department of Biology and Biotechnology "L. Spallanzani", Via Ferrata 9, 27100 Pavia, Italy.	959	136	FAR-1D
Peyron	Stéphane	INRAE-University of Montpellier, UMR IATE, Montpellier (France)	725	237	TEC-C
Pezzella	Alessandro	Dipartimento di Fisica, Università degli Studi di Napoli "Federico II", Italia	979, 980	31, 139	POSTER-A, ORG-2A
Pezzola	Silvia	Università di Roma Tor Vergata, Italia	753	31	POSTER-A
Pezzola	Silvia	Università di Roma Tor Vergata, Italia	1255, 316	31, 161	POSTER-A, TEO-B
Pezzoli	Stefano	Università degli Studi di Milano, Milano, Italia	330	214	POSTER-B
Pezzotti	Giuseppe	Università Ca' Foscari Venezia, Italia; Kyoto Institute of Technology, Giappone; Kyoto Prefectural University of Medicine, Giappone	463	243	FIS-2B
Pezzuti	Gianmarco	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia	951, 963, 971, 1123, 760, 1015	31, 31, 31, 31, 214, 258	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, ANA-4A
Piacentini	Emma	Institute on Membrane Technology (CNR-ITM), Rende, CS, Italy	1728, 1844	214, 153	POSTER-B, TEC-B
Piacentini	Mattia	Politecnico di Milano, Italia	1526	157	IND-1B
Piacentini	Vanessa	Department of Chemistry, Sapienza University of Rome, P.le Aldo Moro 5, Rome, 00185, Italy	167, 1696, 507	214, 214, 257	POSTER-B, POSTER-B, TEO-C
Piacenza	Pietro	Università del Piemonte Orientale, Italia	1018	214	POSTER-B
Pianta	Nicolò	Università degli studi di Milano bicocca, Italia	1818	31	POSTER-A
Pianta	Nicolo	University of Milano Bicocca, Italy	1867	214	POSTER-B
Piarulli	Umberto	University of Insubria, Department of Science and High Technology, Italy	1373, 497	214, 139	POSTER-B, ORG-2A
Piazza	Veronica	Politecnico di Milano, Italia	1238	262	IND-2A
Piazzese	Daniela	University of Palermo, Department of Earth and Marine Sciences, 90123 Palermo	1152	249	ANA-3B
Piazzi	Andrea	Department of Industrial Chemistry "Toso Montanari", University of Bologna, via Gobetti 85 40129 Bologna, Italy	141	214	POSTER-B
Piazzi	Manuela	CNR Bologna 4Science Laboratory, IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST) "Dino Amadori",47014 Meldola, Italy;	904	255	FAR-2A
Piazzoni	Marco	University of Milano-Bicocca, School of Medicine and Surgery, via Raoul Follereau 3, Vedano al Lambro (MB)	633	214	POSTER-B
Picariello	Gianluca	bIstituto di Scienze dell'Alimentazione – Consiglio Nazionale delle Ricerche, Avellino - Italy	1629	261	ALI-2B
Picca	Rosaria Anna	Università degli Studi di Bari, Italia	1446, 860, 862, 1004, 854	31, 214, 214, 214, 250	POSTER-A, POSTER-B, POSTER-B, POSTER-B, ANA-3C
Piccardi	Margherita	Picker Engineering Program, Smith College, Northampton, Massachusetts, USA; Department of Biology, University of Pisa, Pisa, Italy	1220	154	CSB-1B
Picchetti	Pierre	Karlsruhe Institute of Technology (KIT), Institute of Nanotechnology (INT), Hermann-von-Helmholtz Platz 1, 76344 Eggenstein-Leopoldshafen, Germany	199	214	POSTER-B
Picchi	Alberto	Università degli Studi di Pisa	1477, 394, 407	31, 214, 159	POSTER-A, POSTER-B, IND-1D
Piccinelli	Fabio	Università di Verona, Italia	528	254	INO-3
Piccini	GiovanniMaria	Università di Modena e Reggio Emilia, Italia	265	180	ParallelTopic09 - ID: 180
Piccinini	Giulia	Università di Parma, Italia	1281	31	POSTER-A
Piccinini	Isabella	Department of Life Sciences, University of Modena e Reggio Emilia, Via G. Campi 103, 41125, Modena, Italy	744	31	POSTER-A
Piccinni	Marco	Università degli studi di Genova, Italia	1317	253	INO-2C
Piccinno	Alessandro	Department of Pharmaceutical Sciences, University of Perugia, Via del Liceo 1, 06123 Perugia, Italy	286	31	POSTER-A
Piccirilli	Federica	Elettra Sincrotrone Trieste, 34012 Basovizza, Trieste, Italy	1092	31	POSTER-A
Piccirilli	Federica	Elettra Sincrotrone Trieste, Basovizza, Trieste, Italy	1679	151	ORG-2D
Piccolo	Vincenzo	Department of Pharmacy, School of Medicine and Surgery, University of Naples Federico II, via D. Montesano 49, 80131, Naples, Italy	1454, 1475, 548	214, 214, 259	POSTER-B, POSTER-B, ALI-1B
Picerno	Rita	Politecnico di Milano, Italia	943	214	POSTER-B
Picò	Yolanda	Desertification Research Centre - CIDE (CSIC-UV-GV), University of Valencia, Road CV-315 km 10.7, Valencia, Moncada, 46113, Spain	1901	214	POSTER-B
Picone	Pasquale	Istituto per la Ricerca e l'Innovazione Biomedica, Consiglio Nazionale delle Ricerche, Via U. La Malfa 153, 90146 Palermo, Italy	1199	74	TEC-A
Piconese	Silvia	Department of Translational and Precision Medicine, Sapienza University of Rome, P. le A. Moro 5 00185 Rome (Italy)	855	214	POSTER-B
Piel	Markus	Department Chemie, Johannes Gutenberg-Universität Mainz, Standort TRIGA, Fritz-Strassmann-Weg 2, 55128, Mainz, Germany	213	214	POSTER-B
Pieraccini	Giuseppe	CISM, Università di Firenze, Italia	918, 1572	146, 259	ANA-2B, ALI-1B
Pieraccini	Silvia	Università di Bologna, Italia	1033, 1533	31, 144	POSTER-A, ANA-1D
Pieraccini	Stefano	Università degli Studi di Milano, Italia	1196	31	POSTER-A
Pierattelli	Roberta	Magnetic Resonance Center, University of Florence, Via L. Sacconi 6, Sesto F.no (IT); Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3, Sesto F.no (IT	1560, 1367	31, 154	POSTER-A, CSB-1B
Pieretti	Stefano	Department of Drug Research and Evaluation, Istituto Superiore di Sanità, Roma, Italy	1795	31	POSTER-A
Piergiovanni	Maurizio	Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma	1369, 2012, 954, 1368	31, 71, 140, 251	POSTER-A, MAS, ANA-1B, ANA-3D
Pieri	Riccardo	Syensqo, Italia	706	214	POSTER-B
Pierigé	Michele	Dipartimento di Chimica e Chimica Industriale, Università di Pisa	1064	214	POSTER-B
Pierini	Adriano	Sapienza Università di Roma, Italia	1696, 507	214, 257	POSTER-B, TEO-C
Piermatti	Oriana	Università di Perugia, Dipartimento di Chimica biologia e Biotecnologie, Perugia	922	214	POSTER-B
Piero	Baglioni	Dipartimento di Chimica & CSGI - Università degli Studi di Firenze, Italia	957	235	FIS-1D
Pierri	Giovanni	Università di Salerno, Italia	628	147	ORG-2B
Piersanti	Giovanni	Università degli Studi di Urbino Carlo Bo, Italia	582	141	ORG-1A
Pietrangeli	Giorgia	Università Campus Bio Medico di Roma, Italia	1073	214	POSTER-B

Pietrangelo	Tiziana	Department of Neurosciences, Imaging and Clinical Sciences, University of Chieti–Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy	301	258	ANA-4A
Pietrocola	Giampiero	Dipartimento di Medicina Molecolare, Università di Pavia, Italia	1079	214	POSTER-B
Pietronigro	Enrica Caterina	Dipartimento di Medicina, Sezione di Patologia Generale, Università di Verona, Strada le Grazie 8, 37134 Verona, Italia	1069	214	POSTER-B
Pietropaoli	Eva	Università di Roma, La Sapienza, Italia	1690	214	POSTER-B
Pifferi	Valentina	ELectroANaliytical Chemistry Group, Dipartimento di Chimica, Università degli Studi di Milano,via Golgi 19, 20133 Milano, Italy	239, 181	31, 155	POSTER-A, ELE-2
Piga	Isabella	Department of Biomedical Sciences, University of Cagliari, Cagliari, Italy	1535, 1158	31, 214	POSTER-A, POSTER-B
Pigani	Laura	Università di Modena e Reggio Emilia, Italia	212, 211	31, 214	POSTER-A, POSTER-B
Pigliacelli	Claudia	Laboratory of Supramolecular and Bio-Nanomaterials (SBNLab), Department of Chemistry, Materials, and Chemical Engineering "Giulio Natta", Politecnico di Milano, Via L. Mancinelli 7, 20131 – Milano, Italia	246, 351, 1863	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Pignataro	Bruno	Department of Physics and Chemistry-Emilio Segrè, University of Palermo, 90128 Palermo, Italy	916, 1362	248, 234	ANA-3A, FIS-1C
Pignataro	Luca	Università degli Studi di Milano, Dipartimento di Chimica, Via C. Golgi, 19, 20133 Milano	124, 484	31, 147	POSTER-A, ORG-2B
Pilato	Serena	Department of Pharmacy, University G. d'Annunzio of Chieti-Pescara, Italy	1701	214	POSTER-B
Pillozzi	Serena	Università degli Studi di Firenze, Italia	784	144	ANA-1D
Pilo	Maria Itria	Dipartimento di Scienze Chimiche, Fisiche, Matematiche e Naturali, Università degli Studi di Sassari, Via Vienna 2, 07100-Sassari, Italia	728	150	ANA-2D
Pineider	Francesco	Department of Chemistry and Industrial Chemistry, University of Pisa, Via Moruzzi 3, 56124, Pisa (PI), Italy	769	245	ORG-3B
Pinelli	Silvana	Department of Medicine and Surgery, University of Parma, Via Gramsci 14, 43126 Parma, Italy	2022	167	INO-1D
Pineschi	Mauro	Università di Pisa, Italia	739, 738	214, 149	POSTER-B, ORG-2C
Pini	Elena	Department of Pharmaceutical Sciences, University of Milan, Via L. Mangiagalli 25, 20133 Milano, Italy	693	214	POSTER-B
Pinkowicz	Dawid	Faculty of Chemistry, Jagiellonian University, Poland	204	214	POSTER-B
Pinna	Cecilia	Università degli studi di Milano, Italia	1148, 1601, 795	31, 31, 139	POSTER-A, POSTER-A, ORG-2A
Pinna	Daniela	università di Bologna, Italia	1257	214	POSTER-B
Pinna	Nicola	Humboldt-Universität zu Berlin, Germania	1674	160	FIS-1B
Pinosa	Emanuele	Alma Mater Studiorum – Università di Bologna, Italia; Center for Chemical Catalysis – C3, Alma Mater Studiorum–Università di Bologna	866	145	ORG-1D
Pinter Lauria	Giuseppe	Neuroimmunolgy and Neuromuscular Diseases Unit, Fondazione IRCCS Istituto Neurologico Carlo Besta, 20133 Milan, Italy	299	31	POSTER-A
Pinto	Andrea	Department of Food, Environmental and Nutritional Sciences, University of Milan, via Celoria, 2, 20133, Milan	962, 1003, 1020, 1148, 1453, 1567, 1601, 1540, 795, 961, 1322	31, 31, 31, 31, 31, 31, 31, 214, 139, 255, 259	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, ORG-2A, FAR-2A, ALI-1B
Pinto	Loris	Institute of Sciences of Food Production, National Research Council of Italy, via G. Amendola 122/o, 70126 Bari	1020	31	POSTER-A
Pintus	Angela	Università di Modena e Reggio Emilia, Italia	1264, 1433	214, 214	POSTER-B, POSTER-B
Pinzi	Luca	University of Modena and Reggio Emilia (UNIMORE), Via Giuseppe Campi, 103, Modena	743, 744, 785, 956	31, 31, 214, 134	POSTER-A, POSTER-A, POSTER-B, FAR-1C
Piovani	Daniele	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" SCITEC-CNR, Via Corti 12, 20133 Milano, Italy	1603	214	POSTER-B
Piovano	Alessandro	GAME Lab, Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy; National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM, Via G. Giusti 9, Firenze 50121, Italy	1419, 671	72, 234	ELE-1, FIS-1C
Piovano	Andrea	Institut Laue-Langevin (ILL), Grenoble, France	1178	160	FIS-1B
Piovano	Andrea	Institute Laue Langevin (ILL), Francia	1205	160	FIS-1B
Piovesana	Susy	Università degli Studi di Roma "La Sapienza", Italia	449, 358	31, 66	POSTER-A, ANA-1A
Piozzi	Antonella	Sapienza Università di Roma, Italia	1107	31	POSTER-A
Pipolo	Silvio	Dipartimento di Chimica, Universita di Lille, Francia	1805	75	TEO-A
Pippione	A. C.	Università di Torino, Italia	1673	31	POSTER-A
Pippione	Agnese Chiara	Department of Drug Science and Technology, University of Turin (UniTo), via Pietro Giuria 9, 10125 Torino (Italy)	1087, 382	214, 132	POSTER-B, FAR-1B
Pirali	Tracey	Department of Pharmaceutical Sciences, Università degli Studi del Piemonte Orientale, Largo Donegani 2, 28100 Novara, Italy	676, 1057, 697	31, 31, 65	POSTER-A, POSTER-A, FAR-1A
Pires	Elisabeth	Instituto de Síntesis Química y Catálisis Homogénea, CSIC-Universidad de Zaragoza, Facultad de Ciencias, Pedro Cerbuna 12, E-50009 Zaragoza, Spain	1092	31	POSTER-A
Piro	Roberto	Istituto Zooprofilattico Sperimentale Delle Venezie, Laboratorio di Chimica Sperimentale, Viale Fiume 78, 36100, Vicenza	326	250	ANA-3C
Pirola	Carlo	Università degli Studi di Milano, Dipartimento di Chimica – Milano (MI), Italy	210, 146, 190	214, 157, 262	POSTER-B, IND-1B, IND-2A
Pirone	Luciano	IBB-CNR di Napoli	980	139	ORG-2A
Pirovano	Valentina	Università degli Studi di Milano, Italia	1024, 713	31, 214	POSTER-A, POSTER-B
Pirri	Candido Fabrizio	Dipartimento di Scienza Applicata e Tecnologia (DISAT), Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy; Center for Sustainable Future Technologies, Istituto Italiano di Tecnologia, Via Livorno 60, 10144 Torino, Italy	1564	31	POSTER-A
Pirri	Fabrizio	Center for Sustainable Future Technologies Istituto Italiano di Tecnologia, Via Livorno 60, 10144 Torino (Italy); Dipartimento di Scienza Applicata e Tecnologia (DISAT), Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, (Italy)	1771	153	TEC-B
Pirrone	Noemi	Politecnico di Torino, Italia	1527, 765, 865	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Pisani	Michela	Università Politecnica delle Marche, Italia	1724	214	POSTER-B
Pisati	Arianna	Università degli Studi di Milano, Italia	1217	214	POSTER-B
Piscitelli	Fabiana	Endocannabinoid Research Group, Institute of Biomolecular Chemistry (ICB), National Research Council (CNR), Pozzuoli, Italy	1903	214	POSTER-B
Pistillo	Simone	Università degli studi di Trieste, Italia	1492	214	POSTER-B
Pistone	Monica	Department of Pharmacy – Pharmaceutical Sciences, University of Bari Aldo Moro, Via E. Orabona 4, Bari (Italy)	651	267	TEF-1
Pitarresi	Giovanna	Università Degli Studi di Palermo, Italia	365	70	TEF-2
Pitasi	Giovanna	Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, Viale F. Stagno D'Alcontres 31, I-98125 Messina, Italy	305	214	POSTER-B
Pitirollo	Olimpia	CIPACK, Interdepartmental Centre for Packaging, University of Parma, Italy	1710, 1741	31, 140	POSTER-A, ANA-1B
Pittalà	Maria Gaetana Giovanna	Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	624	31	POSTER-A
Pittalà	Maria Gaetana Giovanna	Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania	1472	214	POSTER-B
Pittalà	Maria Gaetana Giovanna	Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania	583	264	ORG-1B
Pittalà	Maria Gaetana Giovanna	Università di Catania, Italia	837	256	ORG-4A
Pittalà	Maria Giovanna Gaetana	Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	588	214	POSTER-B
Pittalà	Valeria	Department of Drug and Health Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy; Department of Molecular Medicine, Arabian Gulf University, Manama 329, Bahrain	970	214	POSTER-B
Pizzamiglio	Elena	Universitat de Barcelona, Spain	1444	214	POSTER-B
Pizzetti	Fabio	Department of Chemistry, Materials and Chemical engineering "Giulio Natta", Politecnico di Milano, via Mancinelli 7, 20131 Milano, Italy	1871	74	TEC-A
Pizzi	Andrea	Politecnico di Milano, Italia	351	214	POSTER-B
Pizzi	Andrea	Politecnico di Milano, Italia	197	74	TEC-A
Pizzillo	Valentina	Department of Bioscience, Biotechnologies and Environment, University of Bari, Italy, Bari	1381	214	POSTER-B
Pizzimenti	Silvia	Università di Pisa, Italia	235	214	POSTER-B
Pizzimenti	Silvia	Dipartimento di Farmacia, Università di Pisa, Italia; Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	231	73	ABC-A
Pizzo	Elio	Department of Biology, University of Napoli, Via Cintia 26, 80126 Napoli	1029	154	CSB-1B

Pizzol	Lisa	GreenDecision Srl, Venice, Italy	764, 1358	31, 238	POSTER-A, ABC-B
Pizzolato	Marco	Università Ca' Foscari Venezia	118	157	IND-1B
Placci	Anna	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, via Piero Gobetti 83 40129, Bologna, Italia	1413, 1383, 1691	31, 214, 150	POSTER-A, POSTER-B, ANA-2D
Placidi	Giulia	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Italia	348	73	ABC-A
Plass	Winfried	IAAC, Friedrich-Schiller-Universität Jena	801	214	POSTER-B
Plastina	Pierluigi	Università della Calabria, Italia	509, 584	31, 78	POSTER-A, ALI-1A
Platella	Chiara	Dipartimento di Scienze Chimiche, Università di Napoli Federico II, Napoli	910	31	POSTER-A
Plaxco	Kevin	University of California, Santa Barbara, California, United States	1411	146	ANA-2B
Plutino	Maria Rosaria	Institute for the Study of Nanostructured Materials, ISMN–CNR, URT Messina	1967, 1288	58, 214	ParallelTopic13, POSTER-B
Po	Riccardo	ENI, Istituto Guido Donegani, Italia	294	256	ORG-4A
Poddighe	Matteo	Dipartimento di Scienze Chimiche, Fisiche, Matematiche e Naturali, Università degli Studi di Sassari, Italia	1666	235	FIS-1D
Poderini	Aurora	Università degli Studi di Perugia, Italia	409	31	POSTER-A
Poerio	Teresa	ITM-CNR, via P. Bucci, 17/C, Rende (CS), Italia	1490, 1466	214, 153	POSTER-B, TEC-B
Poggi	Giovanna	Dipartimento di Chimica & CSGI - Università degli Studi di Firenze, Italia	957	235	FIS-1D
Poggialini	Federica	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	755	154	CSB-1B
Polato	Elena	University of Milano-Bicocca, via Roberto Cozzi 55, 20125	1112	72	ELE-1
Polcak	Josef	CEITEC-Central European Institute of Technology, Brno University of Technology, Technická 3058/10, 61600 Brno, Czech Republic	389	237	TEC-C
Poles	Maria	Dept. of Neurosciences, Biomedicine and Movement Sciences, University of Verona, 37134 Verona, Italy	598	31	POSTER-A
Poli	Giulio	Department of Pharmacy, University of Pisa, via Bonanno Pisano 6, I-56126, Pisa, Italy	1173	136	FAR-1D
Poli	Tommaso	Department of Chemistry, University of Torino, Via Pietro Giuria 7, Torino, Italy	1187, 1426, 1783	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Poli	Valeria	Dipartimento di Biotecnologie Molecolari e Scienze per la Salute, Torino, Italia	867	214	POSTER-B
Polidoro	Massimo	Think About Science, Italia	1949	192	ParallelTopic08 - ID: 192
Polito	Laura	National Research Council, CNR-SCITEC, via G. Fantoli 16/15, Milan, Italy	1482	145	ORG-1D
Pollastri	Sara	Università degli Studi di Milano, Milano, Italia	1271	139	ORG-2A
Pollegioni	Loredano	Università degli Studi dell'Insubria, Italia	996, 1201	214, 147	POSTER-B, ORG-2B
Polli	Dario	Department of Physics, Politecnico di Milano, P.zza Leonardo da Vinci 32, 20133 Milan, Italy; CNR-Institute for Photonics and Nanotechnologies (IFN-CNR), P.zza Leonardo Da Vinci 32, 20133 Milan, Italy	199	214	POSTER-B
Pollice	Alessia	Department of Chemistry "G. Ciamician", University of Bologna, via Selmi 2, 40126, Bologna, Italy	288, 173	31, 214	POSTER-A, POSTER-B
Pollini	Marta	Department of Drug Sciences, University of Pavia, Viale Taramelli 12, 27100 Pavia, Italy	942, 1127	214, 214	POSTER-B, POSTER-B
Polliotto	Valeria	ITT Italia S.R.L., Motion Technologies Innovation Center, Via Molini 19, 12032 Barge (Italy)	1755	251	ANA-3D
Polo	Annalisa	Dipartiemento di Chimica, Università degli Studi di Milano, via Golgi 19, 20133 Milano, Italia	635, 643	234, 234	FIS-1C, FIS-1C
Polo	Eleonora	Consiglio Nazionale delle Ricerche - Istituto per la Sintesi e la Fotoreattività- ISOF-CNR, Italia	2025	192	ParallelTopic08 - ID: 192
Polo	Federico	Ca' Foscari - Università di Venezia, Italia; European Centre for Living Technology (ECLT), Italy.	1502, 1498, 1222	214, 155, 144	POSTER-B, ELE-2, ANA-1D
Polvani	Alessio	Environmental Spectroscopy Group, Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro, Siena, Italy	1513, 1635	31, 248	POSTER-A, ANA-3A
Poma	Noemi	Department of Biology, University of Pisa, via San Zeno 37, 56127 Pisa, Italy	1781, 1512, 1536, 341	31, 214, 214, 165	POSTER-A, POSTER-B, POSTER-B, INO-1B
Pomata	Donatella	DIT, Italian Workers' Compensation Authority (INAIL), P.le Pastore 6 00144, Rome	332	214	POSTER-B
Pombeiro	Armando J.L.	Instituto Superior Têcnico, Portugal	1546	214	POSTER-B
Pomelli	Christian Silvio	Dipartimento di Farmacia, Università di Pisa, Italia	1124, 464	31, 214	POSTER-A, POSTER-B
Ponassi	Marco	IRCSS Ospedale Policlinico San Martino Genova, Italia	132	132	FAR-1B
Ponce Ortiz	Rocio	Departamento de Quimica Fisica, Universidad de Málaga	1320	210	ParallelTopic13 - ID: 210
Ponterini	Glauco	Università di Modena e Reggio Emilia, Italia	1682	214	POSTER-B
Pontiroli	Daniele	Università di Parma, Italia	1207	234	FIS-1C
Pontremoli	Carlotta	Department of Chemistry, NIS Interdepartmental and INSTM Reference Centre, University of Torino, Torino, Italy	510	214	POSTER-B
Poppi	Laura	University of Bologna, Italia	1374, 707	31, 132	POSTER-A, FAR-1B
Porcaro	Natale	Università di Torino, Italia	1178	160	FIS-1B
Porcheddu	Andrea	Università degli Studi di Cagliari, Italy	1469, 1544	31, 264	POSTER-A, ORG-1B
Porchetta	Alessandro	Department of Sciences and Chemical Technologies, University of Rome, Tor Vergata, Via della Ricerca Scientifica 1, 00133, Rome, Italy.	673, 1722, 1723, 1411	31, 31, 31, 146	POSTER-A, POSTER-A, POSTER-A, ANA-2B
Porcu	Daniela	Departement of Chemistry "Ugo Schiff" and CSGI Consortium, University of Florence, Via della Lastruccia 3-13, 50019, Sesto Fiorentino, FI, Italy; National Research Council - National Institute of Optics (CNR-INO), Largo E. Fermi 6, 50125 Florence, FI, Italy	1286	214	POSTER-B
Porcu	Stefania	Università degli Studi di Cagliari (Dipartimento di Fisica), Italia	990	47	ParallelTopic07
Poręba	Tomasz	ESRF, European Synchrotron Radiation Facility, 71 Avenue des Martyrs, CS40220, 38043 Grenoble Cedex 9, France	1873	198	ParallelTopic15 - ID: 198
Porfido	Carlo	Dipartimento di Scienze del Suolo, delle Piante e degli Alimenti, Università degli Studi di Bari "Aldo Moro"	1874, 1555	214, 247	POSTER-B, ORG-3D
Porpora	F.	Department of Chemistry "Ugo Schiff" & CSGI, University of Florence, Via della Lastruccia, 3-13, 50019 Sesto Fiorentino (FI), Italy	400	31	POSTER-A
Porpora	Francesca	University of Florence, Via della Lastruccia 3, Sesto Fiorentino	806, 833	73, 238	ABC-A, ABC-B
Porporato	Silvia	GAME Lab, Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy; National Reference Center for Electrochemical Energy Storage (GISEL) - INSTM, Via G. Giusti 9, Firenze 50121, Italy	1419	72	ELE-1
Porru	Emanuele	Dipartimento di Scienze mediche e chirurgiche, Alma Mater Studiorum-University of Bologna, Italia	1350, 1894	31, 214	POSTER-A, POSTER-B
Porta	Alessandro	Dipartimento di Energia, Politecnico di Milano, Italia	1647, 1526, 1571	214, 157, 157	POSTER-B, IND-1B, IND-1B
Postorino	Paolo	Dip. Fisica, Sapienza Università di Roma, Italia	1590	214	POSTER-B
Pozza	Camilla	Università degli Studi di Milano, Italia	1727	214	POSTER-B
Pozzati	Micaela	Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italia	381	153	TEC-B
Pozzi	Cecilia	Dipartimento di Biotecnologie Chimica e Farmacia, Università di Siena, Siena, Italia	1577	31	POSTER-A
Pozzi	Cecilia	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	755	154	CSB-1B
Pozzi	Daniela	Dipartimento di Medicina Molecolare, Sapienza Università di Roma, Viale Regina Margherita 291, 00185, Roma , Italia	232	195	ParallelTopic12 - ID: 195
Pozzi	Federica	Centro per la Conservazione ed il Restauro dei Beni Culturali "La Venaria Reale", Italia	2014	176	ParallelTopic05 - ID: 176
Pozzi	Luca	Università degli Studi di Milano, Italia	1167	214	POSTER-B
Prampolini	Giacomo	CNR-ICCOM, Pisa, Italy	767	75	TEO-A
Prandi	Barbara	Department of Food and Drug, University of Parma, Italy	481, 224	261, 151	ALI-2B, ORG-2D
Prandi	Cristina	Dipartimento di Chimica, Università degli Studi di Torino, via P. Giuria 7, 10125 Torino, Italia	1393, 1402, 1630, 473, 695, 1331, 1394	31, 31, 31, 214, 214, 214, 143	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, ORG-1C
Pratelli	Annamaria	Department of Veterinary Medicine, University of Bari, Valenzano (Bari)	1293	31	POSTER-A
Pratesi	Debora	Università di Firenze, Italia	1814	214	POSTER-B
Prati	Laura	UNIVERSITA DEGLI STUDI DI MILANO, Italia	766, 787, 158	31, 214, 240	POSTER-A, POSTER-B, INO-2A
Prati	Silvia	Università di Bologna, Italia	1758, 1558, 1905, 1459, 1790	31, 214, 214, 238, 156	POSTER-A, POSTER-B, POSTER-B, ABC-B, ABC-C
Prato	Maurizio	Università di Trieste, Italia	2032	58	ParallelTopic13
Prato	Maurizio	CIC biomaGUNE, Spain	1056	201	ParallelTopic03 - ID: 201
Prato	Maurizio	CIC biomaGUNE, Spain	1766	214	POSTER-B
Prato	Maurizio	Department of Chemical and Pharmaceutical Sciences, University of Trieste, via Licio Giorgieri 1, 34127 Trieste, Italy; Centre for Cooperative Research in Biomaterials (CIC BiomaGUNE), Basque Research and Technology Alliance, Paseo de Miramón 194, 20014 Donostia San Sebastián, Spain; Basque Fdn Sci, Ikerbasque, 48013 Bilbao, Spain	1827	246	ORG-3C
Pratt	Edwin	Memorial Sloan Kettering Cancer Center	1807	132	FAR-1B

Prejanò	Mario	Laboratory of PROgettazione MOlecolare e Chimica dei Sistemi complessi (PROMOCS) Department of Chemistry and Chemical Technologies, University of Calabria, Via P. Bucci, 14/C, 87036, Arcavacata di Rende (CS), Italy	856	214	POSTER-B
Prejanò	Mario	Dipartimento di Chimica E Tecnologie Chimiche, Laboratorio PROMOCS Cubo 14C, Università della Calabria, Rende (CS)	1615	266	CSB-2
Premoli	Guido	LabAnalysis S.r.l., Italia	562	31	POSTER-A
Presentato	Alessandro	Università degli Studi di Palermo, Italia	1452	244	ORG-3A
Presini	Francesco	University of Ferrara, Italia	975	214	POSTER-B
Pressi	Samuel	Università degli studi di Padova, Italia	681	31	POSTER-A
Prestopino	Giuseppe	Department of Industrial Engineering, University of Rome "Tor Vergata", 00133 Rome, Italy	916	248	ANA-3A
Prete	Prisco	Dipartimento di Chimica e Biologia 'Adolfo Zambelli', Università di Salerno, Via Giovanni Paolo II,132 - 84084 Fisciano SA, Italy	165	73	ABC-A
Preti	Lorenzo	Università degli studi di Ferrara, Italia	1163	141	ORG-1A
Prevedello	Chiara	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence	1602	214	POSTER-B
Previati	Eleonora	Department of Applied Science and Technology, Politecnico di Torino, Italia; Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italia	302	166	INO-1C
Previdi	Fabio	University of Bergamo, Department of Management, Information and Production Engineering, Bergamo	633	214	POSTER-B
Previtali	Viola	Computational & Chemical Biology, Istituto Italiano di Tecnologia, 16163 Genova, Italy	707	132	FAR-1B
Previti	Emanuele	Università degli Studi di Messina, Italia	396	237	TEC-C
Priamo	Tommaso	Department of Translational and Precision Medicine, Sapienza University of Rome, P. le A. Moro 5 00185 Rome (Italy)	855	214	POSTER-B
Primavera	Erika	Department of Pharmaceutical Sciences, University of Perugia, Italy	1672	31	POSTER-A
Primieri	Agnese	Department of Chemistry, Università degli Studi di Torino, Via Pietro Giuria 7, 10125, Torino	128	214	POSTER-B
Princiotto	Salvatore	Department of Food, Environmental and Nutritional Sciences, University of Milan, via Celoria, 2, 20133, Milan	962, 1020, 1601, 1540	31, 31, 31, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B
Princiotto	Salvatore	Università degli Studi di Milano, Italia	1906	214	POSTER-B
Princiotto	Salvatore	Universita degli Studi di Milano, Italy	795	139	ORG-2A
Principato	Fabio	Università degli Studi di Palermo, Italia	1362	234	FIS-1C
Principato	Laura	Innovhub Stazioni Sperimentali per l'Industria, Milano, Italy.	730	31	POSTER-A
Procacci	M.	Università di Bologna, Italia	618	31	POSTER-A
Prodi	Luca	Università di Bologna, Italia	2013	58	ParallelTopic13
Profumo	Antonella	Università di Pavia, Italia	562, 614, 317, 606, 581	31, 31, 214, 214, 249	POSTER-A, POSTER-A, POSTER-B, POSTER-B, ANA-3B
Proietti Zaccaria	Remo	Istituto Italiano di Tecnologia, Italia	1429	214	POSTER-B
Proietti	Noemi	Istituto di Scienze del Patrimonio Culturale, CNR, Italia	279	172	ParallelTopic01 - ID: 172
Proietto Salanitri	Giuseppe	Instituto per i polimeri compositi e biomateriali (IPCB-CNR), Catania, Italia	1035	214	POSTER-B
Prota	Andrea	Paul Scherrer Institut, Villigen PSI, Switzerland	295	214	POSTER-B
Proto	Antonio	Department of Chemistry and Biology "Adolfo Zambelli", University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano, SA, Italy	293, 292	31, 73	POSTER-A, ABC-A
Protti	Michele	Research group of Pharmaco-Toxicological Analysis (PTA Lab), Department of Pharmacy and Biotechnology (FaBiT), Alma Mater Studiorum – University of Bologna, Via Belmeloro 6, 40126 Bologna, Italy	1811, 523	31, 66	POSTER-A, ANA-1A
Protti	Nicoletta	Department of Physics, University of Pavia	870	189	ParallelTopic04 - ID: 189
Protti	Stefano	Università degli Studi di Pavia, Italia	877, 1006, 1580, 317, 1542, 1694, 804	31, 31, 31, 214, 214, 214, 264	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, ORG-1B
Provenzani	Alessandro	CIBIO Department, University of Trento, Via Sommarive 9, 38123 Trento, Italy	703	31	POSTER-A
Proverbio	Edoardo	Università degli Studi di Messina, Italia	397	236	TEC-D
Prpic	Helena	Dipartimento di Scienza ed Alta Tecnologia, Università degli Studi dell'Insubria, Como, Italy	497	139	ORG-2A
Pryshchepa	Hanna	Dipartimento di Chimica e Chimica Industriale, Università di Pisa	394	214	POSTER-B
Pucci	Andrea	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Via G. Moruzzi 13, 56124, Pisa, Italia; CISUP, Centro per l'Integrazione della Strumentazione dell'Università di Pisa, Lungarno Pacinotti 43, 56126, Pisa, Italy	522, 1477, 394, 1650, 302, 407	31, 31, 214, 214, 166, 159	POSTER-A, POSTER-A, POSTER-B, POSTER-B, INO-1C, IND-1D
Pucciarelli	Rosa Anna	Accademia di Belle Arti, Bari	1887	192	ParallelTopic08 - ID: 192
Puccinelli	Maria Paola	A.O.U. Città della Salute e della Scienza, Laboratorio di Biochimica Clinica "Baldi e Riberi", Torino, Italia	1468	214	POSTER-B
Puglia	Debora	Università di Perugia, Italia	487	255	FAR-2A
Puglia	Giuseppe	Institute for Agriculture and Forestry Systems in the Mediterranean, National Research Council of Italy, Via Empedocle, Catania.	311	31	POSTER-A
Pugliese	Anna	Università degli Studi di Bari Aldo Moro, Italia	860	214	POSTER-B
Pugliese	Anna Maria	Università di Firenze, Dipartimento Neuroscienze, Area del Farmaco e Salute del Bambino, Italia	968	31	POSTER-A
Pugliese	Nicola Riccardo	Department of Clinical and Experimental Medicine, University of Pisa, Via Roma 67, Pisa, Italy	1747, 1438	31, 258	POSTER-A, ANA-4A
Puglisi	Alessandra	Università degli studi di Milano, Italia	229, 372, 455, 465, 545, 272, 495	31, 31, 31, 31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B
Puglisi	Roberta	Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95100 Catania, Italy	527, 626, 1678	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Puglisi	Rossella	Center for Gender-specific Medicine, Istituto Superiore di Sanità, Rome, Italy	1476	31	POSTER-A
Puliatti	Giulia	Università Cattolica del Sacro Cuore, 00168 Rome, Italy	1633	165	INO-1B
Pulpito	Mara	Università degli Studi di Bari Aldo Moro, Italia	1622, 1638	214, 214	POSTER-B, POSTER-B
Pulvirenti	Luana	CNR-ICB	1275, 1303	151, 151	ORG-2D, ORG-2D
Punta	Carlo	Politecnico di Milano, Italia	269, 405, 604, 730, 264, 1053, 1447, 315, 385	31, 31, 31, 31, 214, 214, 214, 153, 153	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, TEC-B, TEC-B
Puntoriero	Fausto	Dipartimento di Chimica, Biologia, Farmacia e Ambiente, Università di Messina, Italia	1086	214	POSTER-B
Punzi	Angela	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, Via Edoardo Orabona 4, 70126 Bari, Italy	130, 1425, 829	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Puoci	Francesco	Department of Pharmacy, Health and Nutritional Sciences, University of Calabria, Rende (CS), Italy	1676	31	POSTER-A
Pupillo	Davide	Dipartimento di Scienza Applicata e Tecnologia, Politecnico di Torino, Torino, Italia	1203	74	TEC-A
Purcaro	Giorgia	Gembloux AgroBio-Tech, Université de Liège, Passage des déportés 2, Gembloux (Belgium)	188	214	POSTER-B
Purgatorio	Agnese	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Via Elce di Sotto 8, 06123, Perugia, Italia	1432	214	POSTER-B
Purgatorio	Rosa	università degli Studi di Bari, Italia	1309	31	POSTER-A
Putero	Davide	CNR-ISAC, Torino, Italia	494	238	ABC-B
Puzzarini	Cristina	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna	1900, 121	214, 161	POSTER-B, TEO-B
Qi	Chun	Department of Chemical Sciences, University of Padova, Via Francesco Marzolo 1, 35131, Padova (Italy)	227	143	ORG-1C
Qiu	Yi	Politecnico di Milano, Italy	1215	214	POSTER-B
Quadrelli	Paolo	Università di Pavia	1504	214	POSTER-B
Quadrini	Lorenzo	Università degli Studi di Firenze, Italia	780	214	POSTER-B
Quadrio	Nicolò	Università degli Studi di Milano, Italia; Karlsruhe Institute of Technology, Germania	205, 234	214, 246	POSTER-B, ORG-3C
Quaglia	Giulia	University of Perugia	1889, 335	214, 243	POSTER-B, FIS-2B
Quaglia	Wilma	Università degli Studi di Camerino, Camerino, Italia	1366	136	FAR-1D
Quagliano	Oscar	Department of Pharmaceutical Sciences, Università degli Studi di Milano, Via Mangiagalli 25, Milan, Italy	1752	255	FAR-2A
Quaglio	Deborah	Department of Chemistry and Technologies of Drug, Sapienza University of Rome, Italy	1801	139	ORG-2A
Quagliotto	Pierluigi	Dipartimento di Chimica - Università di Torino, Italia	669, 1656	31, 31	POSTER-A, POSTER-A
Quaia	Riccardo	Università degli studi di Genova, Italia; D3-PharmaChemistry, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genoa, Italy	964	214	POSTER-B
Quaranta	Alberto	Università di Trento, Italia	1227	214	POSTER-B
Quartarone	Eliana	Università di Pavia	748, 1997, 1520	31, 39, 148	POSTER-A, ParallelTopic03, ANA-2C
Quattrin	Daniele	Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, via Licio Giorgieri 1, Italia	364	31	POSTER-A
Quattrocchi	Giuseppe	Università Degli Studi di Milano, Italy	272	214	POSTER-B
Quattrone	Alessandro	Università degli studi di Trento, Italia	1443	214	POSTER-B
Queiroz	Salete Linhares	University of Sao Paulo, Brazil	369	214	POSTER-B
Quinn	Mark T.	Department of Microbiology and Cell Biology, Montana State University	1660	31	POSTER-A

Quintanilla Casas	Beatriz	Department of Food Science, University of Copenhagen, Rolighedsvej 30, Frederiksberg C, DK-1958, Denmark	544	214	POSTER-B
Quintavalle	Cristina	Department of Molecular Medicine and Medical Biotechnology, University of Napoli Federico II, Via Pansini 5, 80131 Napoli, Italy	1717	161	TEO-B
Quintiero	Claudio Marzio	Aboca S.p.A., Italia	774, 781, 773	31, 214, 71	POSTER-A, POSTER-B, MAS
Quinto	Maurizio	University of Foggia, DAFNE, via Napoli 25 - 71122 Foggia - Italy	339	140	ANA-1B
Rabattoni	Valentina	Department of Biotechnology and Life Sciences, University of Insubria, Via J.H. Dunant 3, 21100 Varese, Italy	1201	147	ORG-2B
Rabuffetti	Marco	Università degli Studi di Milano, Italia	133	31	POSTER-A
Racaniello	Giuseppe Francesco	Department of Pharmacy – Pharmaceutical Sciences, University of Bari Aldo Moro, Via E. Orabona 4, Bari (Italy)	651	267	TEF-1
Raccuia	Salvatore Giovanni Michele	Università degli Studi di Messina, Italia	1249, 1451, 572, 969	31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B
Raccuia	Salvatore Giovanni Michele	Università degli Studi di Messina, Italia	1248	214	POSTER-B
Raccuia	Salvatore Giovanni Michele	Università degli Studi di Messina, Italia	1247	248	ANA-3A
Radeghieri	Annalisa	Department of Molecular and Translational Medicine, University of Brescia, Brescia, Italy	1950	175	ParallelTopic04 - ID: 175
Rader	Chris	Institut Català d'Investigació Química (ICIQ), Avinguda dels Països Catalans 16, 43007, Tarragona (ES)	571	214	POSTER-B
Radi	Marco	Università di Parma, Italia	1080, 1091, 1945	31, 214, 134	POSTER-A, POSTER-B, FAR-1C
Radicchi	Eros	Nanomaterials Reisearch Group, Department of Botechnology, University of Verona	841, 1198, 1605, 840, 417	214, 214, 214, 254, 142	POSTER-B, POSTER-B, POSTER-B, INO-3, ANA-1C
Radice	Stefano Vincenzo	Syensqo	142	251	ANA-3D
Radice	Veronica	Università degli Studi di Milano-Bicocca, Italia	441	214	POSTER-B
Radosevic	Ela	Department of Pharmacy and Biotechnology, Alma Mater Studiorum - University of Bologna, 40126, Bologna, Italy	1553	214	POSTER-B
Raffa	Alessandro	Università di Catania, Italia	788	136	FAR-1D
Raffaelli	Nadia	Università Politecnica delle Marche, Ancona, Italia	1366	136	FAR-1D
Raffaini	Giuseppina	Politecnico di Milano, Italia	197	74	TEC-A
Raffellini	Lorenzo	Department of Pharmacy, University of Pisa	1663	214	POSTER-B
Ragaini	Fabio	Università degli studi di Milano, Italia	557, 1344	31, 31	POSTER-A, POSTER-A
Raglione	Venanzio	Istituto di Struttura del la Materia (ISM), National Research Council (CNR), Italia	849	214	POSTER-B
Raglione	Venanzio	Istituto di Struttura della Materia (ISM), Consiglio Nazionale delle Ricerche, Italia	500	247	ORG-3D
Ragni	Roberta	Università di Bari "Aldo Moro", Italia, Dipartimento di Chimica	775, 828, 1725, 1010, 1168, 1838, 1824	31, 31, 31, 214, 214, 214, 256	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, ORG-4A
Ragone	Rosa	Politecnico di Bari, Italia	1098, 831	31, 214	POSTER-A, POSTER-B
Raia	Tiziana	Department of Experimental Medicine, Sapienza University of Rome, Viale Regina Elena 324, 00161 Rome, Italy	1743	138	ANA-2A
Raimondi	Laura	Università degli Studi di Milano, Italia	133, 390	31, 264	POSTER-A, ORG-1B
Raimondo	Luisa	Dipartimento di Scienza dei Materiali, Università degli Studi di Milano - Bicocca, Via Cozzi 55, 20125 Milano, Italy	1186	214	POSTER-B
Raimondo	Mattia	Department of Chemistry, University of Turin, via Pietro Giuria 7, 10125, Torino TO, Italy	289, 260, 136	51, 214, 75	ParallelTopic09, POSTER-B, TEO-A
Rakhshan	Sahar	Università di Torino, Italia	1353, 870	31, 189	POSTER-A, ParallelTopic04 - ID: 189
Ramal-Sanchez	Marina	Faculty of Bioscience and Technology for Food, Agriculture and Environment, University of Teramo, Italy	1701	214	POSTER-B
Ramis	Gianguido	Dip. Ing. Chimica, Civile ed Ambientale, Università degli Studi di Genova and INSTM Unit Genova, via all'Opera Pia 15A, 16145 Genoa, Italy	307, 120	31, 157	POSTER-A, IND-1B
Rampacci	Elisa	Dept. of Veterinary Medicine, University of Perugia, Via San Costanzo 4, 06126 Perugia, Italy	402	31	POSTER-A
Ranaldi	Francesco	Department of Experimental and Clinical Medicine, University of Florence	1485	214	POSTER-B
Ranaldi	Marco	Sciences Dept. Roma Tre University, Via della Vasca navale 79, 446, Rome; University of Roma Tre and INFN Sezione Roma Tre, Rome	1296, 1488	214, 214	POSTER-B, POSTER-B
Ranallo	Simona	Università degli Studi di Roma Tor Vergata, Italia	439, 699	214, 142	POSTER-B, ANA-1C
Ranaudo	Anna	Università degli Studi di Milano-Bicocca, Dipartimento di Scienze dell'Ambiente e della Terra, Piazza della Scienza 1, Milano	1377	214	POSTER-B
Rancan	Marzio	Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia (ICMATE), Consiglio Nazionale delle Ricerche (CNR), c/o Dipartimento di Scienze Chimiche, Università di Padova, via Marzolo 1, I-35131 Padova	1610	214	POSTER-B
Rancan	Marzio	ICMATE-CNR, via Marzolo 1, Padova	1763	241	INO-2B
Randazzo	A.	Università di Napoli, Italia	618	31	POSTER-A
Rando	Giulia	Institute for the Study of Nanostructured Materials, ISMN–CNR, URT Messina, c/o Department of ChiBioFarAm, University of Messina, Viale F. Stagno d'Alcontres 31, Vill. S. Agata, 98166 Messina, Italy	1288	214	POSTER-B
Rando	Maria	Dipartimento di Scienze Chimiche, Università di Padova, via Marzolo 1, I-35131 Padova	1610, 1763	214, 241	POSTER-B, INO-2B
Rando	Rossana	Dipartimento BIOMORF, Università di Messina, Italia	1746	31	POSTER-A
Ranđelović	Ivan	Department of Experimental Pharmacology, National Institute of Oncology, Hungary	1373	214	POSTER-B
Ranieri	Pasquale	Università degli Studi di Napoli Federico II, Italia	180	214	POSTER-B
Ranieri	Simone	Università Politecnica delle Marche, Italia	1724	214	POSTER-B
Rapacciuolo	Pasquale	Università di Napoli Federico II, Italia	655, 658, 657	214, 214, 147	POSTER-B, POSTER-B, ORG-2B
Rapone	Rossella	Università degli Studi di Milano - Bicocca, Italia	1315	31	POSTER-A
Rapposelli	Simona	Department of Pharmacy, University of Pisa, Via Bonanno 6, 56126 Pisa, Italy	1854, 1663	31, 214	POSTER-A, POSTER-B
Raspolli Galletti	Anna Maria	Università di Pisa, Pisa, Italia	939, 756, 1021	31, 47, 214	POSTER-A, ParallelTopic07, POSTER-B
Rassu	Giovanna	Università degli studi di Sassari, Italia	1667	214	POSTER-B
Rastelli	Giulio	University of Modena and Reggio Emilia (UNIMORE), Via Giuseppe Campi, 103, Modena	743, 744, 785, 956	31, 31, 214, 134	POSTER-A, POSTER-A, POSTER-B, FAR-1C
Ratnikov	D	Moscow State University	1759	214	POSTER-B
Raucci	Ada	Department of Pharmacy, University of Naples "Federico II", Via Domenico Montesano 49, 80131 Naples, Italy.	1743	138	ANA-2A
Raucci	Alessia	Department of Drug Chemistry and Technologies, Sapienza University of Rome, P. le A. Moro 5 00185 Rome (Italy)	855	214	POSTER-B
Raucci	Umberto	Italian Institute of Technology, Italia	1785	204	ParallelTopic07 - ID: 204
Raulin	Melvin Alexandre	Università degli studi di Padova, Italia	1545	31	POSTER-A
Rauscher	Hubert	European Commission, Joint Research Centre (JRC), Ispra, Italy	764	31	POSTER-A
Ravaglia	Valerio	LabService Analytica S.r.l., Via Emilia, 51 Anzola dell'Emilia (BO)	639	246	ORG-3C
Ravazzolo	Laura	Department of Agronomy, Food, Natural resources, Animals and Environment (DAFNAE), University of Padova, Viale dell'Università, 16, 35020 Legnaro (PD)	310	31	POSTER-A
Ravelli	Davide	Department of chemistry, University of Pavia	811, 1569	31, 214	POSTER-A, POSTER-B
Ravera	Enrico	Magnetic Imaging Center (CERM) and Department of Chemistry "Ugo Shiff", University of Florence, Via Luigi Sacconi 6, Florence	434	165	INO-1B
Ravera	Mauro	Dipartimento di Scienze e Innovazione Tecnologica, Università del Piemonte Orientale, Viale Teresa Michel 11, 15121 Alessandria, Italy	431	214	POSTER-B
Ravicini	Andrea	Politecnico di Milano, Italia	998	31	POSTER-A
Raviolo	Sofia	Politecnico di Torino, Corso Duca degli Abruzzi, 24, 10129 Turin, Italy	214	31	POSTER-A
Razzetti	Gabriele	Dipharma francis srl, Italia	1958	256	ORG-4A
Re	Francesca	Università degli Studi di Milano-Bicocca, Piazza dell'Ateneo Nuovo, 1, 20126 Milano, Italy	284	266	CSB-2
Rea	Mariangela	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Via Selmi 2, 40126, Italia	1850	31	POSTER-A
Reale	Andrea	CHOSE, Department of Electronic Engineering, University of Rome Tor Vergata, via del Politecnico 1, 00133 Rome, Italy	1092, 1677	31, 159	POSTER-A, IND-1D
Reale	Cristian	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1280	214	POSTER-B
Reale	Serena	University of Pisa, Italy	1525	214	POSTER-B
Reali	Veronica	Procos s.p.a., Italia	616	214	POSTER-B
Reato	Mattia	Department of Chemistry, University of Padova, Via Francesco Marzolo 1, 35131, Padova, Italy	1849	214	POSTER-B

Recupido	Federica	Institute for Polymers, Composites and Biomaterials (IPCB-CNR), CNR, Portici, Italy	177	31	POSTER-A
Redaelli	Marta	University of Milan, Italy	882	214	POSTER-B
Redolfi-Bristol	Davide	Università Ca' Foscari Venezia, Italia; Kyoto Institute of Technology, Giappone	463	243	FIS-2B
Redovnikovic	Ivana	Faculty of food technology and biotechnology, University of Zagreb, Croatia	648	78	ALI-1A
Rees	Matthew G	Broad Institute of Harvard and MIT, 415 Main St., 02142 Cambridge, MA, USA	1643	56	ParallelTopic12
Rega	Nadia	Scuola Superiore Meridionale, Largo S. Marcellino 10, Napoli; Università degli Studi di Napoli Federico II, Complesso Universitario di Monte Sant'Angelo, Via Vicinale Cupa Cintia 26, Napoli	1608, 1609, 1509, 1600, 1318	31, 31, 185, 214, 75	POSTER-A, POSTER-A, ParallelTopic15 - ID: 185, POSTER-B, TEO-A
Reggioni	Vincenzo	Hangar Lab Srl, via Mirandola 37a, 37026 Settimo (VR), Italy	1010	214	POSTER-B
Regina	Serena	Istituto per la Tecnologia delle Membrane (CNR-ITM), Italia	1749	214	POSTER-B
Reginato	Gianna	Istituto di Chimica dei Composti Organometallici - CNR, Sesto Fiorentino, Italia	576, 1477, 1890, 667	31, 31, 31, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B
Regis	Alberto	Università di Torino, Italia	864	76	DID-A
Regonesi	Maria Elena	Department of Biotechnology and Biosciences, University of Milano-Bicocca, 20126 Milano, Italy; NeuroMI, Milan Center for Neuroscience, University of Milano-Bicocca, 20126 Milano, Italy	1829	214	POSTER-B
Rehman	Sami ur	Department of Biological and Environmental Sciences and Technologies, University of Salento, Lecce, Italy	1023	214	POSTER-B
Reichenbach	Stephen E	Computer Science and Engineering Department, University of Nebraska – Lincoln 104E Avery Hall, Lincoln, NE 68588-0115, USA; GC Image, PO Box 57403, Lincoln, NE 68505-7403, USA	238	186	ParallelTopic01 - ID: 186
Reina	Simona	Università di Catania, Italia	837	256	ORG-4A
Reis	Joana	Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, Via Ferrata 5, 27100 Pavia, Italy; Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School (HMS), Building C, 240 Longwood Ave, 02115 Boston, MA, USA; Department of Cancer Biology, Dana-Farber Cancer Institute (DFCI), 450 Brookline Ave, 02215 Boston, MA, USA	1643, 985	56, 214	ParallelTopic12, POSTER-B
Reishal	Tatsiana	MM SpA, Italy	315	153	TEC-B
Remelli	Maurizio	Università degli Studi di Ferrara, Italia	329, 399	214, 148	POSTER-B, ANA-2C
Ren	Chloe Zhi-Jun	Centre for Biomedical and Chemical Sciences, Auckland University of Technology, New Zealand	1578	31	POSTER-A
Renai	Lapo	Università degli Studi di Firenze, Italia	435, 248	31, 248	POSTER-A, ANA-3A
Renn	Christian	PharmaCenter Bonn, Pharmaceutical Institute, Pharmaceutical & Medicinal Chemistry, University of Bonn, An der Immenburg 4, 53121 Bonn, Germany	674	65	FAR-1A
Renna	Massimiliano	Dipartimento di Scienze del Suolo e della Pianta - Università degli studi di Bari "Aldo Moro"	1101	31	POSTER-A
Renna	Massimiliano	Dipartimento di Scienze del Suolo della Pianta e degli Alimenti, Università degli Studi di Bari Aldo Moro, Via Giovanni Amendola, 165/a, 70126 Bari BA 70126 Bari, Italy	1042	71	MAS
Renno	Giacomo	University of Torino, Italy	1828, 794	31, 214	POSTER-A, POSTER-B
Renzi	Polyssena	Department of Chemistry, University of Turin	870, 1434	189, 256	ParallelTopic04 - ID: 189, ORG-4A
Resano	Martin	University of Zaragoza, Spain	1028	214	POSTER-B
Reschiglian	Pierluigi	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, via Piero Gobetti 83 40129, Bologna, Italia	1413, 1096, 1383, 1097, 1624, 1691	31, 214, 214, 146, 146, 150	POSTER-A, POSTER-B, POSTER-B, ANA-2B, ANA-2B, ANA-2D
Rescifina	Antonio	Università deli studi di Catania, Italia	792, 1597, 492, 493	31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B
Resetic	Andraz	Department of Condensed Matter Physics, Jožef Stefan Institute, Slovenia.	1105	242	FIS-2A
Resta	Simonetta	università degli studi di milano, Italia	455, 1143, 495, 392	31, 31, 214, 145	POSTER-A, POSTER-A, POSTER-B, ORG-1D
Restani	Patrizia	Università degli Studi di Milano, Italia	585	197	ParallelTopic14 - ID: 197
Reviglio	Chiara	Department of Chemistry, University of Turin	791, 742	214, 253	POSTER-B, INO-2C
Rezadoost	Hassan	Department of Phytochemistry, Medicinal Plants and Drugs Research Institute, Shahid Beheshti University, G.C., Evin, Tehran, Iran; Center for International Scientific Studies & collaboration (CISSC), Ministry of Science Research and Technology, Islamic Republic of Iran	498	140	ANA-1B
Rezzi	Sarah Jane	Department of Pharmaceutical Sciences, University of Piemonte Orientale, Largo Donegani 2, 28100, Novara, Italy	1057, 859, 697	31, 214, 65	POSTER-A, POSTER-B, FAR-1A
Ribaldone	Chiara	Dipartimento di Chimica, Università di Torino, via Giuria 5, 10125 Torino, Italy	1208	31	POSTER-A
Ribaudo	Giovanni	Università degli Studi di Brescia, Italia	620	255	FAR-2A
Riboni	Nicolò	Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma	1369, 954	31, 140	POSTER-A, ANA-1B
Riboni	Nicolo'	Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma	1368	251	ANA-3D
Ribul Moro	Emma	Università degli Studi di Milano, Italia	868	266	CSB-2
Ricardo Garcia	Jose Alejandro	Università di Udine, Dipartimento Politecnico di Ingegneria e Architettura	1166	214	POSTER-B
Ricca	Michela	Department of Biology, Ecology and Earth Sciences, University of Calabria	632	214	POSTER-B
Riccaboni	Angelo	Santa Chiara Lab, University of Siena, Via Valdimontone 1, 53100 Siena, Italy Italy	1214, 1379	150, 235	ANA-2D, FIS-1D
Riccardi	Carmela	DIT, Italian Workers' Compensation Authority (INAIL), P.le Pastore 6 00144, Rome	332	214	POSTER-B
Riccardi	Claudia	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II	512	243	FIS-2B
Riccardi	Laura	Molecular Modeling and Drug Discovery Lab, Istituto Italiano di Tecnologia	989	214	POSTER-B
Riccardi	Mariano	Dipartimento di Chimica "Ugo Schiff", Università degli Studi di Firenze, via della Lastruccia 3, 50019 Sesto F. No (FI), Italy	691	31	POSTER-A
Riccardo	Muzzioli	Solve Therapeutics,Durham, NC, USA.	501	31	POSTER-A
Ricchebuono	Alberto	Università di Torino, Italia	1178, 1205	160, 160	FIS-1B, FIS-1B
Ricchiardi	Gabriele	Department of Chemistry, University of Turin, Turin, Italy	1055	214	POSTER-B
Ricci	Antonio	Fresenius Kabi iPSUM, via San Leonardo 23, Villadose, Rovigo, Italy	574	140	ANA-1B
Ricci	Caterina	Università degli Studi di Milano, Milano, Italia	931, 1476	31, 31	POSTER-A, POSTER-A
Ricci	Cosimo	Startnetics, Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata	1241, 1242, 1385, 1239, 1233	31, 31, 214, 241, 254	POSTER-A, POSTER-A, POSTER-B, INO-2B, INO-3
Ricci	Emanuela	UVR,Spin-off sector, National Research Council of Italy (CNR), Roma, Italy	1777	45	ParallelTopic06
Ricci	Federico	Università degli studi di Urbino, Italia	1606	214	POSTER-B
Ricci	Francesco	Università degli studi di Roma Tor Vergata, Italia	821, 438, 439, 699, 1718	31, 214, 214, 142, 144	POSTER-A, POSTER-B, POSTER-B, ANA-1C, ANA-1D
Ricci	Lucia	Department of Pharmaceutical Sciences, University of Perugia, Perugia, Italy.	287	214	POSTER-B
Ricci	Marco	Dipartimento di Scienze e Innovazione Tecnologica, Università del Piemonte Orientale "A. Avogadro", Viale T. Michel 11, 15121 Alessandria, Italy.	433, 434	214, 165	POSTER-B, INO-1B
Ricci	Pier Carlo	Università degli Studi di Cagliari (Dipartimento di Fisica), Italia	990	47	ParallelTopic07
Ricciadi	Maria	Department of Chemistry and Biology "Adolfo Zambelli", University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano, SA, Italy	293	31	POSTER-A
Ricciardelli	Carola	Dipartimento di Chimica Università degli Studi di Bari, Via Orabona 4, 70126 Bari, Italia	830	145	ORG-1D
Ricciardi	Beatrice	Dipartimento di Scienze e Tecnologie Chimiche, Università degli Studi di Roma Tor Vergata, Roma, Italy.	1283	214	POSTER-B
Ricciardi	Maria	Department of Chemistry and Biology "Adolfo Zambelli", University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano, SA, Italy	292	73	ABC-A
Riccio	Angelo	Dipartimento di Scienze e Tecnologie, Università degli Studi di Napoli Parthenope, Centro Direzionale di Napoli, 80143, Napoli, Italia.	1823		
Riccioni	Andrea	Politecnico di Torino, Italia	782	31	POSTER-A
Ricciutelli	Massimo	Chemistry Interdisciplinary Project (ChIP), School of Pharmacy, University of Camerino, Italy	714	214	POSTER-B
Riccò	Mauro	Università di Parma, Italia	1207	234	FIS-1C
Riccucci	Cristina	Institute for the Study of Nanostructured Materials (ISMN), National Research Council (CNR)	1268, 1486	31, 235	POSTER-A, FIS-1D
Richardson	Clare	Department of Conservation, Courtauld Institute of Art, London, UK	1905	214	POSTER-B
Richichi	Barbara	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019, Sesto Fiorentino (FI), Italy	880, 661, 769, 375	31, 214, 245, 247	POSTER-A, POSTER-B, ORG-3B, ORG-3D
Richter	Katrin	Department of General and Thoracic Surgery, Justus-Liebig-University, Giessen, Germany	758	136	FAR-1D
Ridi	Francesca	Department of Chemistry, University of Florence and C.S.G.I., Florence	1662, 1051, 1207	214, 243, 234	POSTER-B, FIS-2B, FIS-1C
Ridinò	Martina	Università degli studi di Napoli Federico II, Italia	658	214	POSTER-B
Riela	Serena	Dipartimento di Scienze Chimiche (DSC), Università di Catania, V.le A.Doria 6, Catania, 95125, Italy	1594, 1604, 1573, 1595, 1678	31, 31, 214, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B

Riello	Pietro	Università Ca' Foscari Venezia, Italia	463	243	FIS-2B
Rigamonti	Luca	Università degli Studi Milano Bicocca, Milan, Italy	542	31	POSTER-A
Rigamonti	Luca	Dipartimento di Scienze Chimiche e Geologiche, Università degli Studi di Modena e Reggio Emilia, Italia	204, 166	214, 240	POSTER-B, INO-2A
Rigano	Francesca	Messina Institute of Technology c/o Deparment of Chemical, Biological, Pharmaceutical and Environmental Science, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 - Messina, Italy	1407	31	POSTER-A
Rigano	Francesca	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1944, 267, 1250	193, 197, 214	ParallelTopic09 - ID: 193, ParallelTopic14 - ID: 197, POSTER-B
Rigano	Francesca	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1280	214	POSTER-B
Rigano	Francesca	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1289, 1311	214, 214	POSTER-B, POSTER-B
Rigano	Francesca	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1418, 1306	214, 140	POSTER-B, ANA-1B
Rigano	Francesca	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1259	261	ALI-2B
Rigano	Francesca	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1559	258	ANA-4A
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Rigante	Elena Carolina Lucia	University of Bari Aldo Moro, Department of Chemistry, via E. Orabona 4, 70125, Bari (Italy)	1637	214	POSTER-B
Riganti	Chiara	Dipartimento di Oncologia, Università di Torino, Torino, Italia	137, 159, 1219	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Riganti	Marilisa Pia	Department of Pharmacy – Drug Sciences, University of Bari "A. Moro" Via E. Orabona 4, 70125 – Italy FLAME-Lab –Flow Chemistry and Microreactor Technology Laboratory	150, 1813	31, 31	POSTER-A, POSTER-A
Riganti	Simona Anna	University of Bari Aldo Moro, Department of Chemistry, via E. Orabona 4, 70125, Bari (Italy)	1637	214	POSTER-B
Righetti	Grazia Isa Carla	Politecnico di Milano, Italia	712	236	TEC-D
Righi	Lara	SynCat Lab, Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italia	1812	31	POSTER-A
Righi	Valeria	Università di Bologna	808	214	POSTER-B
Rigodanza	Francesco	Università degli studi di Padova, Italia	1549, 1056, 1766	31, 201, 214	POSTER-A, ParallelTopic03 - ID: 201, POSTER-B
Rigoletto	Monica	Università degli Studi di Torino, Italia	1762	165	INO-1B
Riminucci	Alberto	CNR-ISMN Bologna, Via P. Gobetti 101, Bologna	1291	166	INO-1C
Rimola	Albert	Universitat Autònoma de Barcelona, Departament de Química, SPAIN	599, 184, 443	214, 68, 68	POSTER-B, FIS-1A, FIS-1A
Rimoldi	Isabella	Department of Pharmaceutical Science, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy	191	31	POSTER-A
Rimoldi	Isabella	Univeristy of Milan, Italia	157	214	POSTER-B
Rimoldi	Isabella	Department of Pharmaceutical Science, Università degli Studi di Milano, Milan 20133, Italy	234	246	ORG-3C
Rinaldi	Alessia	Università di Parma, Italia	1207	234	FIS-1C
Rinaldi	Federica	Department of Drug Chemistry and Technology, Sapienza University of Rome, Italy	1476, 1841	31, 267	POSTER-A, TEF-1
Rinaldi	Francesco	Computational & Chemical Biology, Istituto Italiano di Tecnologia, 16163 Genova, Italy	707	132	FAR-1B
Rinaldi	Matteo	Scuola Normale Superiore, Italia	1551, 1756	214, 214	POSTER-B, POSTER-B
Rinaldi	Silvia	CNR - Istituto di Chimica dei Composti Organometallici (CNR-ICCOM), Via Madonna del Piano 10, Sesto Fiorentino I-50019, Italy	335	243	FIS-2B
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Ripa	Silvia	Sapienza Università di Roma, Italia	1841	267	TEF-1
Ripszam	Matyas	University of Pisa, Italy	1525	214	POSTER-B
Risolo	Lorenzo	Dipartimento di Scienze ed Innovazione Tecnologica, Università degli Studi del Piemonte Orientale "A. Avogadro", Viale T. Michel 11, 15121 Alessandria, Italy.	432	214	POSTER-B
Rispoli	Francesco	Università di Parma, Italia	664	214	POSTER-B
Riss	Patrick	Department Chemie, Johannes Gutenberg-Universität Mainz, Standort TRIGA, Fritz-Strassmann-Weg 2, 55128, Mainz, Germany	213	214	POSTER-B
Rissanen	Kari	University of Jyväskylä, Finlandia	2037	268	SATELLITE: IUPAC CrystEng 2024
Risueño Fernández	Cristina	Sibylla Biotech S.p.A., Via Lillo del Duca 10, 20091, Bresso (MI), Italy	1557	31	POSTER-A
Ritter	Tobias	Max-Planck-Institut für Kohlenforschung, Germany	1938	198	ParallelTopic15 - ID: 198
Riva	Laura	Politecnico di Milano, Italia	269, 1053, 1447, 385	31, 214, 214, 153	POSTER-A, POSTER-B, POSTER-B, TEC-B
Rivera-Pérez	Araceli	Universidad de Almería, Spagna	1796	31	POSTER-A
Rivi	Nicola	Università di Parma, Italia	1172, 734	31, 151	POSTER-A, ORG-2D
Rivilla	Victor Manuel	Centro de Astrobiología, INTA-CSIC, Carretera de Ajalvir km 4, Torrejón de Ardoz, 28850, Madrid, Spain.	1900	214	POSTER-B
Rivoira	Luca	Department of Chemistry, University of Turin, Via Pietro Giuria 7, Turin, 10125, Italy	248, 415	248, 248	ANA-3A, ANA-3A
Rizza	Fabio	University of Milano – Bicocca, Department of Earth and Environmental Sciences	378, 1740	214, 214	POSTER-B, POSTER-B
Rizzello	Loris	Department of Pharmaceutical Sciences, University of Milan, Via L. Mangiagalli 25, 20133 Milano, Italy; National Institute of Molecular Genetic (INGM), Via F. Sforza 35, 20122 Milano, Italy	693	214	POSTER-B
Rizzi	Federica	Institute for Chemical and Physical Processes, Italian National Research Council, Bari, c/o Department of Chemistry, University of Bari, Via Orabona 4, 70126 (Bari) Italy	938, 678, 740	214, 243, 252	POSTER-B, FIS-2B, FIS-3
Rizzi	Paola	Department of Chemistry, University of Torino, Via Pietro Giuria 7, Torino, Italy	1187	214	POSTER-B
Rizzi	Vito	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, 70126 Bari, Italy	670, 1420	31, 214	POSTER-A, POSTER-B
Rizzo	Aurora	CNR NANOTEC – Istituto di Nanotecnologia, c/o Campus Ecotekne, Via Monteroni, 73100 Lecce, Italy sara.covella@uniba.it	1414	253	INO-2C
Rizzo	Carla	Università degli studi di Palermo, Italia	514	160	FIS-1B
Rizzo	Fabio	Consiglio Nazionale delle Ricerche (CNR), Italia; Universität Münster, Germany	294	256	ORG-4A
Rizzo	Giorgio	Dipartimento di Chimica Università degli Studi di Bari, Via Orabona 4, 70126 Bari, Italia	830	145	ORG-1D
Rizzo	Rebecca	Dipartimento di Biotecnologie Molecolari e Scienze per la Salute, Torino, Italia	867	214	POSTER-B
Rizzo	Silvia	Department of Chemistry "G. Ciamician", University of Bologna, Via P. Gobetti 85, Bologna	914	147	ORG-2B
Rizzo	Simona	CNR, Istituto di Scienze e Tecnologie Chimiche "Giulio Natta"	1298	138	ANA-2A
Rizzolio	Flavio	Università Ca' Foscari Venezia	496, 1550	67, 243	INO-1A, FIS-2B
Rizzuti	Antonino	Politecnico di Bari, Italia	1098, 1446	31, 31	POSTER-A, POSTER-A
Rizzuti	Antonino	DICATECh, Politecnico di Bari, Italia	831	214	POSTER-B
Rizzuti	Antonino	DICATECh - Politecnico di Bari, Bari, Italia	1203	74	TEC-A
Roà	Eugenio	SpiroChem AG, Mattenstrasse 22, 4058 Basel, Switzerland	1907	214	POSTER-B
Roberti	M.	Università di Bologna, Italia	1324	214	POSTER-B
Roberti	Marinella	University of Bologna, Italia	1374, 707	31, 132	POSTER-A, FAR-1B
Roberto Piacentini	Roberto Piacentini	Università Cattolica del Sacro Cuore, 00168 Rome, Italy	1633	165	INO-1B
Roberto	Dominique	Università degli Studi di Milano, Italia	290	253	INO-2C
Robertson	Alex W.	Department of Physics, University of Warwick, Coventry, CV4 7AL, United Kingdom	586	31	POSTER-A
Robotti	Elisa	Università del Piemonte Orientale, Italia	1645, 1661, 1731, 1368, 1755	31, 31, 150, 251, 251	POSTER-A, POSTER-A, ANA-2D, ANA-3D, ANA-3D
Rocca	Roberta	Dipartimento di Scienze della Salute, Università degli Studi "Magna Graecia" di Catanzaro, Italia; Net4Science Srl, Università degli Studi "Magna Græcia" di Catanzaro, Italia	797	31	POSTER-A

Rocchigiani	Luca	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Via Elce di Sotto 8, 06123, Perugia, Italia	1432	214	POSTER-B
Roda	Aldo	Università di Bologna, Italia	2024	25	MD-B
Roda	Barbara	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, via Piero Gobetti 83 40129, Bologna, Italia	1413, 1096, 1383, 1097, 1624, 1691	31, 214, 214, 146, 146, 150	POSTER-A, POSTER-B, POSTER-B, ANA-2B, ANA-2B, ANA-2D
Rodà	Francesca	Department of Life Sciences, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO, 41125; Clinical and Experimental Medicine PhD Program, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO 41125	630, 875	267, 70	TEF-1, TEF-2
Roda	Gabriella	Department of Pharmaceutical Sciences, Università degli Studi di Milano, Via Mangiagalli 25, Milan, Italy	1752	255	FAR-2A
Rodighiero	Anna	Università di Padova, Italia	1160	31	POSTER-A
Rodriguez-Castellon	Enrique	Department of Inorganic Chemistry, Crystallography and Mineralogy. Faculty of Sciences, University of Malaga, Campus de Teatinos, 29071, Malaga, Spain	1498	155	ELE-2
Roeffaers	Maarten	cMACS, Katholieke Universiteit of Leuven, Belgium	551	160	FIS-1B
Roggero	Simona	Fidelio Medical srl, Corso Re Umberto 8, Torin, Italy	168	138	ANA-2A
Roggia	Michele	Università degli Studi della Campania "Luigi Vanvitelli", Italia	275, 276	214, 214	POSTER-B, POSTER-B
Roggio	Marianna	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, 70126 Bari, Italy	1416	214	POSTER-B
Rogolino	Dominga	Università di Parma, Italia	546	214	POSTER-B
Rolandi	Beda	Politecnico di Milano, Italia	1526	157	IND-1B
Rolando	Barbara	Universita di Torino, Italia	1219, 1422	31, 134	POSTER-A, FAR-1C
Roldan-Pinero	Carlos	Universidad Autónoma de Madrid	1363	31	POSTER-A
Roletto	Jacopo	Procos s.p.a., Italia	616	214	POSTER-B
Romagnoli	Elena	Università Politecnica delle Marche, Italia	1706, 1679	214, 151	POSTER-B, ORG-2D
Romagnoli	Lorenza	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia	838	68	FIS-1A
Romagnoli	Monica	Department of Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, via L. Borsari 46, 44121 Ferrara, Italy	578	214	POSTER-B
Romanazzi	Giuseppe	DICATECh, Politecnico di Bari, Via E. Orabona 4, Bari 70125, Italy	150, 1813	31, 31	POSTER-A, POSTER-A
Romanelli	Maria Novella	Università degli Studi di Firenze, Italia	850, 1342	31, 214	POSTER-A, POSTER-B
Romani	Carola	Department of Chemistry, Materials, and Chemical Engineering "G. Natta", Politecnico di Milano, Italia	1447	214	POSTER-B
Romano	Alessandro	Institute of Experimental Neurology, San Raffaele Scientific Institute, 20132 Milan, Italy	1691	150	ANA-2D
Romano	Andrea	Campus di ematologia con malattie rare, AOOR Villa Sofia Cervello, Palermo, Italy	1681	74	TEC-A
Romano	Diego	Department of Food, Environmental and Nutritional Sciences (DeFENS), University of Milan, Via L. Mangiagalli 25, Milan, 20133, Italy	955, 868	31, 266	POSTER-A, CSB-2
Romano	Giuseppe	Massachusetts Institute of Technology, 314 Main St, Cambridge, MA, USA	1105	242	FIS-2A
Romano	Maria Preziosa	Department of Science and Technology, University of Sannio, Benevento, Italy; Advanced Medical Pharma (AMP-Biotec), Healthcare Research and Innovation Center, Benevento, Italy	1445	151	ORG-2D
Romano	Maria Rosaria	GSK, Siena, Italia	1646	147	ORG-2B
Romano	Matteo Carmelo	Politecnico di Milano, Italia	1704	31	POSTER-A
Romano	Miriam	Department of Molecular and Translational Medicine, University of Brescia, Brescia, Italy	1950	175	ParallelTopic04 - ID: 175
Romanò	Sabrina	Università di Napoli Federico II, Italia	460	31	POSTER-A
Romano	Susanna	Department of Industrial, Electronic and Mechanical Engineering, University of Roma Tre, Rome (Italy)	725	237	TEC-C
Romanucci	Valeria	Department of Chemical Sciences, University of Naples Federico II, Via Cintia, 6, 80126 Napoli, (NA), Italy	824, 565, 826	214, 154, 266	POSTER-B, CSB-1B, CSB-2
Rombi	Elisabetta	Università degli Studi di Cagliari (Dipartimento di Chimica), Italia	990, 1674	47, 160	ParallelTopic07, FIS-1B
Romeo	Alessandro	Department of Computer Science, University of Verona, Strada le Grazie, 15, 37134, Verona (Italy)	1093	78	ALI-1A
Romeo	Isabella	Dipartimento di Scienze della Salute, Università degli Studi "Magna Græcia" di Catanzaro, Campus "S. Venuta", Viale Europa, 88100 Catanzaro; Net4Science Academic Spin-Off, Università degli Studi "Magna Græcia" di Catanzaro, Campus "S. Venuta", Viale Europa, 88100 Catanzaro	869, 1631, 755	214, 214, 154	POSTER-B, POSTER-B, CSB-1B
Romeo	Sergio	Università degli Studi di Milano, Italia	1277	31	POSTER-A
Romerio	Alessio	University of Milan-Bicocca, Milano Italia	698, 741, 192, 284	214, 214, 77, 266	POSTER-B, POSTER-B, CSB-1A, CSB-2
Romero	Antonio A.	Departamento de Quimica Organica, Campus de Rabanales, Edificio Marie Curie (C–3), Ctra Nnal IV-A, Km 396, E14014 Cordoba, Spain	123	214	POSTER-B
Romoli	Riccardo	Mass spectrometry service centre (CISM), University of Florence, V.le G. Pieraccini 6, 50139, Firenze, Italy	1572	259	ALI-1B
Romolo	Francesco Saverio	University of Bergamo, Department of Law, Via Moroni 255, 24127 Bergamo, Italy	334, 928	31, 214	POSTER-A, POSTER-B
Ronca	Enrico	Università degli Studi di Perugia, Italia	891	257	TEO-C
Roncaglia	Fabrizio	Università di Modena e Reggio Emilia, Italia	212	31	POSTER-A
Ronchi	Paolo	Chemistry Research and Drug Design Chiesi Farmaceutici S.p.A Largo Belloli 11/a, 43126 Parma (Italy)	1046, 1047, 1848	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Ronco	Paolo	VIACQUA s.p.a.	1016	31	POSTER-A
Roncoli	Maddalena	University of Eastern Piedmont, Italia	1343	31	POSTER-A
Roncoli	Maddalena	Department of Sviluppo Sostenibile e La Transizione Ecologica, University of Piemonte Orientale, Piazza S. Eusebio 5, 13100 Vercelli	1665, 1111	214, 249	POSTER-B, ANA-3B
Ronda-Lea	Marina	Departamento de Quimica Organica, Campus de Rabanales, Edificio Marie Curie (C–3), Ctra Nnal IV-A, Km 396, E14014 Cordoba, Spain	123	214	POSTER-B
Ronda	Luca	Department of Medicine and Surgery, University of Parma, Via Volturno, 39, 43125, Parma, Italy	1103, 1422	31, 134	POSTER-A, FAR-1C
Rosa-Gastaldo	Daniele	Università degli studi di Padova, Italia	1549, 1766	31, 214	POSTER-A, POSTER-B
Rosa	Purgatorio	Università degli Studi di Bari "Aldo Moro", Italia	1224	136	FAR-1D
Rosada	Fabio	Green Decision S.r.l.	1016	31	POSTER-A
Rosadoni	Elisabetta	Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Pisa, Italia	1380	31	POSTER-A
Rosaia	Marta	Chemistry Department, Università degli Studi di Milano	568	214	POSTER-B
Rosati	Giulio	Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Bellaterra, 08193 Barcelona, Spain	1781	31	POSTER-A
Rosati	Marta	Politecnico di Milano	258, 299, 480, 197	31, 31, 214, 74	POSTER-A, POSTER-A, POSTER-B, TEC-A
Rosati	Sergio	Università degli Studi di Torino, Dipartimento di Scienze Veterinarie, Grugliasco (TO), Italia	160	146	ANA-2B
Roscilli	Giuseppe	Takis S.r.l., Via Castel Romano 100, 00128, Rome, Italy	497	139	ORG-2A
Rosi	Luca	Università degli Studi di Firenze, Sesto Fiorentino, Italia	939, 946	31, 31	POSTER-A, POSTER-A
Rosi	Marzio	DICA - Università degli Studi di Perugia, Italia	1769	68	FIS-1A
Rositano	Vincenzo	Indena, Italia	749	214	POSTER-B
Rossetti	Arianna	Politecnico di Milano, Italia; Consorzio INSTM, Italia	405, 1871, 712	31, 74, 236	POSTER-A, TEC-A, TEC-D
Rossetti	Ilenia	INSTM Unit Milano-Università, Dip. Chimica, Università degli Studi di Milano, via C. Golgi 19, 20133 Milan, Italy; Chemical Plants and Industrial Chemistry Group, Dip. Chimica, Università degli Studi di Milano and CNR-SCITEC	307, 1599, 120, 308	31, 188, 157, 262	POSTER-A, ParallelTopic03 - ID: 188, IND-1B, IND-2A
Rossetti	Marianna	Università degli Studi di Roma Tor Vergata, Italia	1723, 1781	31, 31	POSTER-A, POSTER-A
Rossi	Andrea	Department of Chemistry, Università degli Studi di Torino, Via Pietro Giuria 7, 10125, Torino	128	214	POSTER-B
Rossi	Antonella	Dipartimento di Scienze Chimiche e Geologiche, Universita di Cagliari,Cittadella Universitaria,09042, Monserrato, Cagliari, Italy	1810, 953, 1554, 1593	31, 214, 250, 236	POSTER-A, POSTER-B, ANA-3C, TEC-D
Rossi	Claudio	Università di Siena, Italia; CSGI - Center for Colloid and Surface Science	1815	31	POSTER-A
Rossi	Claudio	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	1214	150	ANA-2D
Rossi	Claudio	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Italy; Santa Chiara Lab, University of Siena, Italy	1379	235	FIS-1D
Rossi	Damiano	DICI, University of Pisa, Largo Lucio Lazzarino, 56122 Pisa (Italy)	103	153	TEC-B
Rossi	Daniela	University of Pavia, Department of Drug Sciences, Via Taramelli 12, 27100 Pavia, Italy.	959	136	FAR-1D

Rossi	Eleonora	Dipartimento di Chimica Industriale "Toso Montanari", Alma Mater Studiorum Università di Bologna, Viale del Risorgimento, 4, 40136 Bologna (BO); Center for Chemical Catalysis - C3, Alma Mater Studiorum Università di Bologna, Viale del Risorgimento, 4, 40136 Bologna (BO); Centro Interdipartimentale di Ricerca Industriale (CIRI) Fonti Rinnovabili, Ambiente, Mare, Energia (FRAME), Via Angherà, 22, 47922 Rimini (RN)	165, 457	73, 238	ABC-A, ABC-B
Rossi	Federica	Dipartimento di Scienza del Farmaco - Università di Torino, Italia	669	31	POSTER-A
Rossi	Federico	Dipartimento di Scienze Fisiche della Terra e dell'Ambiente, Università degli Studi di Siena, Italia	1578	31	POSTER-A
Rossi	Federico	University of Siena, Italy	793	214	POSTER-B
Rossi	Federico	Norwegian University of Science and Technology, Norway	1077	68	FIS-1A
Rossi	Filippo	Politecnico di Milano, Italia	346, 1871	199, 74	ParallelTopic01 - ID: 199, TEC-A
Rossi	Roberto	Dipharma Francis S.r.l., Italia	1347	159	IND-1D
Rossi	S.	Università degli Studi di Milano, Italia	1260	214	POSTER-B
Rossi	Sergio	Università degli Studi di Milano, Italia	371, 373, 1143, 272, 495	31, 31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B
Rossi	Silvia	Università di Pavia, Italia	931, 1139, 1040	31, 31, 183	POSTER-A, POSTER-A, ParallelTopic13 - ID: 183
Rossi	Silvia	Tetra Pak Packaging Solutions	1976	183	ParallelTopic13 - ID: 183
Rossi	Silvia	Department of Drug Sciences, University of Pavia, Viale Taramelli 12, 27100 Pavia, Italy	942, 1079, 1127, 1128, 1130, 1179	214, 214, 214, 214, 214, 214	POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B
Rossi	Silvia Stefania	University of Pavia, Department of Drug Sciences, V.le Taramelli 12, 27100, Pavia, Italy	1129, 1161	214, 214	POSTER-B, POSTER-B
Rossignol	Arthur	École Polytechnique Polytechnic Institute of Paris	1848	31	POSTER-A
Rossin	Andrea	Istituto di Chimica dei Composti Organometallici (CNR-ICCOM)	958	214	POSTER-B
Rossini	Gabriele	Università degli Studi di Perugia, Italia	410	214	POSTER-B
Rossino	Giacomo	University of Pavia, Department of Drug Sciences, Via Taramelli 12, 27100 Pavia, Italy.	959	136	FAR-1D
Rossitto	Maria Serena	Fidia Farmaceutici, Via Ponte della Fabbrica 3A, 35031 Abano Terme (PD), Italy	803	214	POSTER-B
Rosso	Francesca	Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15, 10135 and Via P. Giuria 7, 10125, Torino, Italy	1059, 1282, 1058	214, 214, 160	POSTER-B, POSTER-B, FIS-1B
Rosso	Franco	Soremartec Italia Srl, Ferrero Group, 12051 Alba, CN, Italy	1031	78	ALI-1A
Rosso	Ginevra	Soremartec Italia Srl, Ferrero Group, 12051 Alba, CN, Italy	1031	78	ALI-1A
Rotasperti	Lorenzo	Dip. Chimica, Università degli Studi di Milano, Via C. Golgi 19, 20133 Milan, Italy	120	157	IND-1B
Rotasperti	Matteo	Dip. Chimica, Università degli Studi di Milano, Via C. Golgi 19, 20133 Milan, Italy	120	157	IND-1B
Rotondo	Archimede	Department of Biomedical, Dental, Morphological and Functional Imaging Sciences, University of Messina, Messina, Italy	1299	66	ANA-1A
Rotondo	Martina	Università degli Studi di Napoli Federico II, Dip. di Biologia, Napoli, IT	1508	77	CSB-1A
Rotondo	Natalie Paola	Dipartimento di Farmacia - Scienze del Farmaco, Italia	1634	214	POSTER-B
Roussel	Tom	CNRS, Centre Interdisciplinaire de Nanoscience de Marseille, Aix-Marseille University, UMR 7325, Equipe Labellisée Ligue Contre le Cancer, 163, avenue de Luminy, 13288, Marseille, France.	352	65	FAR-1A
Rovaletti	Anna	University of Milano – Bicocca, Department of Earth and Environmental Sciences	378, 422	214, 214	POSTER-B, POSTER-B
Rovegno	Caterina	Dipartimento di Scienze Chimiche e Farmaceutiche, Univesit` a degli Studi di Ferrara, Via Luigi Borsari, 46, 44121 Ferrara, Italy	1493	245	ORG-3B
Rovella	Natalia	Institute on Membrane Technology, CNR-ITM	632	214	POSTER-B
Roverso	Marco	università padova, Italia	425	249	ANA-3B
Rovito	Gianluca	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy	1155, 1153, 1428	31, 214, 67	POSTER-A, POSTER-B, INO-1A
Rovitti	Alessandro	Department of Pharmaceutical Sciences, University of Perugia, Perugia, Italy.	287	214	POSTER-B
Rowinska-Żyrek	Magdalena	Univeristy of Wroclaw	329	214	POSTER-B
Rowińska-Żyrek	Magdalena	Faculty of Chemistry, University of Wroclaw, ul. F. Joliot Curie 14, 50-383 Wroclaw, Poland	399	148	ANA-2C
Roz	Luca	IRCCS Istituto Nazionale dei Tumori, Milan, Italia	701	214	POSTER-B
Rozza	Riccardo	SISSA Scuola Internazionale Superiore di Studi Avanzati	1335	31	POSTER-A
Rubattu	Speranza	IRCCS Neuromed - Istituto Neurologico Mediterraneo, Via Atinense 18, 86077 - Pozzilli (IS), IT.	268	31	POSTER-A
Rubbi	Alessandro	Università degli Studi di Padova, Italia	1495	214	POSTER-B
Rubert	Josep	Food Quality and Design Group, Wageningen University & Research, P. O. Box 17, 6700 AA, Wageningen, The Netherlands	1693	259	ALI-1B
Rubini	Daniele	Università degli Studi di Parma, Italia	1091	214	POSTER-B
Ruckebusch	Cyril	Université de Lille, Laboratoire de Spectroscopie pour les Interactions, la Réactivité et l'Environnement, Cité Scientifique, 59650, Villeneuve d'Ascq, France	885, 1689	214, 214	POSTER-B, POSTER-B
Ruffo	Riccardo	Università degli studi di Milano bicocca, Italia	1818, 1599, 1267, 1808, 1867, 1112	31, 188, 214, 214, 214, 72	POSTER-A, ParallelTopic03 - ID: 188, POSTER-B, POSTER-B, POSTER-B, ELE-1
Ruffolo	Silvestro	Università della Calabria, Italia	1882	43	ParallelTopic05
Ruffolo	Silvestro Antonio	Department of Biology, Ecology and Earth Sciences, University of Calabria	632	214	POSTER-B
Ruggeri	Davide	Università Degli Studi di Parma, Italia	1580	31	POSTER-A
Ruggeri	Marco	Università di Pavia, Italia	931, 1139, 1040, 942, 1127, 1128, 1129, 1130, 1161, 1179	31, 31, 183, 214, 214, 214, 214, 214, 214, 214	POSTER-A, POSTER-A, ParallelTopic13 - ID: 183, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B
Ruggeri	Michele	Molecular Modeling & Drug Discovery Laboratory, Istituto Italiano di Tecnologia, via Morego, 30, 16163 Genoa, Italy	1002	193	ParallelTopic09 - ID: 193
Ruggieri	Giuseppe	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210	31	POSTER-A
Ruggieri	Giuseppe	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, "Sapienza" Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1626	31	POSTER-A
Ruggieri	Giuseppe	Sapienza Università di Roma, Italy	1684	31	POSTER-A
Ruggieri	Giuseppe	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, "Sapienza" Università di Roma, p.le Aldo Moro 5, 00185 Rome, Italy	1616	214	POSTER-B
Ruggieri	Giuseppe	Department of Drug Chemistry and Technologies, Pasteur Institute - Cenci Bolognetti Foundation, Sapienza University, 00185 Rome, Italy; Department of Public Health, Experimental Medicine and Forensic, University of Pavia, 27100 Pavia, Italy	1627	214	POSTER-B
Ruggieri	Giuseppe	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, "Sapienza" Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1955	134	FAR-1C
Ruggieri	Silvia	Luminescent Materials Laboratory, DB, University of Verona, Italy	1791, 528	31, 254	POSTER-A, INO-3
Ruggiero	Dafne	Department of Pharmacy, University of Salerno, Via Giovanni Paolo II 132, 84084 Fisciano, Italy	312, 259, 654	31, 214, 151	POSTER-A, POSTER-B, ORG-2D
Ruiz Delgado	Maria del Carmen	Departamento de Quimica Fisica, Universidad de Málaga	1320	210	ParallelTopic13 - ID: 210
Ruiz Munevar	Manuel Jose	Molecular Modeling & Drug Discovery Laboratory, Istituto Italiano di Tecnologia, via Morego, 30, 16163 Genoa, Italy	1002	193	ParallelTopic09 - ID: 193
Ruiz-Soriano	Albert	Universitat de Barcelona, Spain	1444	214	POSTER-B
Runciman	Mark	Imperial College London, UK	1927	35	ParallelTopic01
Ruocco	Alessandro	Sciences Dept. Roma Tre University, Via della Vasca navale 79, 446, Rome; University of Roma Tre and INFN Sezione Roma Tre, Rome	1296	214	POSTER-B
Ruoppolo	Margherita	Department of Molecular Medicine and Medical Biotechnology, University of Naples Federico II, via Domenico Montesano, 49, 80131 Napoli; CEINGE–Biotecnologie Avanzate Franco Salvatore, via Gaetano Salvatore, 486, 8013, Napoli	976	71	MAS
Ruotolo	Roberta	Università di Parma, Italia	1281	31	POSTER-A
Ruozi	Barbara	Department of Life Sciences, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO, 41125	630, 875	267, 70	TEF-1, TEF-2
Rupérez	Francisco Javier	Centro de Metabolómica y Bioanálisis (CEMBIO), San Pablo CEU University, Madrid, Spain	1846	214	POSTER-B
Rusconi	Marco	Università di Torino, Italia	1434	256	ORG-4A
Russell	Michael J.	Dipartimento di Chimica, Università degli Studi di Torino, 10125 Torino, Italy	790	214	POSTER-B
Russina	Olga	Sapienza Università di Roma, Italia	1185	160	FIS-1B

Russo Krauss	Irene	Università degli studi di Napoli Federico II, Italia; CSGI, Consorzio Interuniversitario per lo Sviluppo dei Sistemi a Grande Interfase, Italia	1404, 1029	31, 154	POSTER-A, CSB-1B
Russo	Alida	Università degli Studi di Torino, Dipartimento di Chimica, Torino, Italia; Tyndall National Institute, University College Cork, Cork, Ireland	160	146	ANA-2B
Russo	Beatrice	ITM-CNR, via P. Bucci, 17/C, Rende (CS), Italia	1490, 1466	214, 153	POSTER-B, TEC-B
Russo	Camilla	University of Naples Federico II, Italy	858, 873	214, 214	POSTER-B, POSTER-B
Russo	Debora	D3-PharmaChemistry, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genoa, Italy	964	214	POSTER-B
Russo	Francesca	istituto per la tecnologia a membrana-consiglio nazionale delle ricerche (CNR-ITM), Italia	1514, 1777, 1855	31, 45, 214	POSTER-A, ParallelTopic06, POSTER-B
Russo	Francesca	Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", Via Orabona 4, 70126 Bari, Italy; Dipartimento di Ingegneria Elettrica e dell'Informazione, Politecnico di Bari, Via Orabona 4, 70126 Bari, Italy	1414	253	INO-2C
Russo	Francesca	Institute on Membrane Technology (CNR-ITM), Via P. Bucci 17/C 87036 Rende (CS), Italy	1711	159	IND-1D
Russo	Laura	Università degli Studi Milano Bicocca, Milan, Italy; CÚRAM, SFI Research Centre for Medical Devices, National University of Ireland, Galway, Ireland; Imperial College of London, Department of Materials, London, UK	542, 754, 633, 701, 700	31, 31, 214, 214, 139	POSTER-A, POSTER-A, POSTER-B, POSTER-B, ORG-2A
Russo	Luigi	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, University of Campania Luigi Vanvitelli	1293, 547, 1737, 1742	31, 214, 266, 263	POSTER-A, POSTER-B, CSB-2, CSB-3
Russo	Marco	CNR-ISMN (Palermo, Italy)	1384	265	DID-B
Russo	Marina	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy	1276, 1304, 1341, 1279, 1503, 1333	31, 31, 31, 214, 214, 78	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, ALI-1A
Russo	Patricia A.	Humboldt-Universität zu Berlin, Germania	1674	160	FIS-1B
Russo	Patrizio	Laboratory of Industrial and Synthetic Organic Chemistry (LISOC) Department of Chemistry and Chemical Technologies, University of Calabria, Via P. Bucci, 12/C, 87036, Arcavacata di Rende (CS), Italy	682, 856	214, 214	POSTER-B, POSTER-B
Russo	Rita	IBB-CNR di Napoli	980	139	ORG-2A
Russo	Simone	University of Naples Federico II, Italia	389	237	TEC-C
Russo	Stefano	Università di Roma "Sapienza", Italia	320	214	POSTER-B
Russo	Vincenzo	Università di Napoli Federico II, Italia	177, 406, 476, 879, 982, 127	31, 31, 158, 158, 158, 159	POSTER-A, POSTER-A, IND-1C, IND-1C, IND-1C, IND-1D
Russomanno	Pasquale	Università degli studi di Firenze, Italia	1842	31	POSTER-A
Russomanno	Pasquale	University of Naples Federico II, Italy	858	214	POSTER-B
Rusta	Nicoletta	Università degli Studi di Cagliari (Dipartimento di Chimica), Italia	990	47	ParallelTopic07
Rutwoski	Bogdan	AGH University of Krakow	513	242	FIS-2A
Ruzza	Paolo	Istituto di Chimica Biomolecolare del CNR, Padova, IT	1508	77	CSB-1A
Ryde	Ulf	Department of Theoretical Chemistry, Lund University, Lund, Sweden	422	214	POSTER-B
Saavedra Moncada	Alejandra	Istituto per la Sintesi Organica e Fotoreattività (ISOF), CNR, Via Piero Gobetti, 101, 40129 Bologna, Italy	1651	31	POSTER-A
Sabatini	Francesca	Università di Milano-Bicocca, Dipartimento di Scienze della Terra e dell'ambiente, Milano, Italia; NBFC, Centro Nazionale della Biodiversità	1797	140	ANA-1B
Sabatini	Stefano	Dept. of Pharmaceutical Sciences, University of Perugia, Via del Liceo 1, 06123, Perugia	402, 135, 1043	31, 206, 214	POSTER-A, ParallelTopic09 - ID: 206, POSTER-B
Sabatini	Valentina	SAATI S.p.A., Milan, Italy	1905	214	POSTER-B
Sabo	Martin	MaSa Tech, s.r.o., Sadová 3018/10, 916 01 Stará Turá, Slovakia; Slovak University of Technology in Bratislava, Faculty of Informatics and Information Technologies, Ilkovičova 2, 842 16 Bratislava 4	334	31	POSTER-A
Sabuzi	Federica	Università di Roma Tor Vergata, Italia	753, 1255, 1008, 316	31, 31, 214, 161	POSTER-A, POSTER-A, POSTER-B, TEO-B
Sacchelli	Filippo	Università di Parma, Italia	1334, 1569	214, 214	POSTER-B, POSTER-B
Sacchetti	Alessandro	Politecnico di Milano, Italia	269, 405, 1871	31, 31, 74	POSTER-A, POSTER-A, TEC-A
Sacchi	Francesca	Università degli Studi di Milano, Italia	1540	214	POSTER-B
Sacco Botto	Camilla	Istituto per la Protezione Sostenibile delle Piante (CNR-IPSP)	710	214	POSTER-B
Sacco	Olga	Dipartimento di Chimica e Biologia, Università degli Studi di Salerno, Italia	303	31	POSTER-A
Sacco	Pasquale	Università degli Studi di Trieste, Dipartimento di Scienze della Vita	1966	154	CSB-1B
Saccullo	Erika	Dipartimento di Scienze del Farmaco e della Salute, Università di Catania, Viale A. Doria 6, 95125, Catania, Italia; Dipartimento di Scienze Biomediche e Biotecnologiche (Biometec), Università di Catania, Via S. Sofia 97, 95123, Catania, Italia	493	214	POSTER-B
Saetta	Clara	Università degli Studi Milano Bicocca, Italia	343	214	POSTER-B
Saggioro	Fabio	Department of Cultures and Civilizations, Viale dell'Università 4, University of Verona, Verona, Italy	519	251	ANA-3D
Saggiotti	Giulia	Università di Padova	496	67	INO-1A
Sagi	Irit	Weizmann Institute of Science, Israel	444	77	CSB-1A
Sagratini	Gianni	School of Pharmacy, Chemistry Interdisciplinary Project (ChIP), University of Camerino, Camerino, Italy	478, 621, 1478	31, 31, 60	POSTER-A, POSTER-A, ParallelTopic14
Saiano	Filippo	University of Palermo, Department Agricultural Food and Forestry Sciences, 90128 Palermo, Italy	1152	249	ANA-3B
Sailor	Michael J.	University of California San Diego, CA	156	31	POSTER-A
Sainas	Stefano	Department of Sciences and Drug Technology, University of Turin, Torino, Italy	1591	214	POSTER-B
Sainas	Stefano	Department of Drug Science and Technology, University of Torino, Italy	382	132	FAR-1B
Saitta	Francesca	Università degli Studi di Milano, Italia	1540	214	POSTER-B
Saitta	Lorena	Università degli studi di Catania, Italia	1182	31	POSTER-A
Sala-Luis	Agustí	Instituto Universitario de Restauración del Patrimonio, Universitat Politècnica de València, Valencia, Spain	252	73	ABC-A
Sala	Gianluca	Department of Innovative Technologies in Medicine and Dentistry, Center for Advanced Studies and Technology (CAST), University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy; Center for Advanced Studies and Technology (CAST), University of Chieti-Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy	1607	214	POSTER-B
Sala	Maurizio	Foundry Ecocer S.r.l, Milano, Italia	330	214	POSTER-B
Sala	Serenella	European Commission Joint Research Centre, Italy	2000	194	ParallelTopic10 - ID: 194
Saladino	Maria Luisa	University of Palermo, Italia	1882, 242	43, 153	ParallelTopic05, TEC-B
Saladino	Raffaele	Università degli Studi della Tuscia, Italia	874, 257	31, 141	POSTER-A, ORG-1A
Salamanca	E.	San Andrés University, Bolivia	1673	31	POSTER-A
Salassa	Luca	Donostia International Physics Center, Paseo Manuel de Lardizabal 4, Donostia, 20018, Spain	1300	257	TEO-C
saldarelli	pasquale	Institute for Sustainable Plant Protection	680	31	POSTER-A
Saldarelli	Pasquale	Institute for Sustainable Plant Protection, National Research Council (CNR)	1729	236	TEC-D
Salehi	Shadi	University of Milan, Italy	1669	214	POSTER-B
Salerno	Alessandra	Department of Pharmacy and Biotechnology, Alma Mater Studiorum - University of Bologna, Via Belmeloro 6, Bologna 40126, Italy; Centre for Targeted Protein Degradation, School of Life Sciences, University of Dundee 1 James Lindsay Place, DD1 5JJ Dundee, Scotland, U.K.	1952	65	FAR-1A
Salerno	Giorgia	Università Milano Bicocca, Italia	115, 116	214, 244	POSTER-B, ORG-3A
Salerno	Loredana	Department of Drug and Health Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	970	214	POSTER-B
Salerno	Tania Maria Grazia	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1262	31	POSTER-A
Salerno	Tania Maria Grazia	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1338	214	POSTER-B
Saletti	Mario	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	230	214	POSTER-B
Saletti	Rosaria	Laboratory of Organic Mass Spectrometry, Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	624, 588, 1472, 583, 837	31, 214, 214, 264, 256	POSTER-A, POSTER-B, POSTER-B, ORG-1B, ORG-4A
Saliu	Francesco	Universita' Milano Bicocca	1784	214	POSTER-B
Salmaso	Nico	Fondazione Edmund Mach; NBFC, National Biodiversity Future Center	1924	31	POSTER-A
Salmi	Tapio	Åbo Akademi, Laboratory of Industrial Chemistry and Reaction Engineering, Henrikinkatu 2, FI-20500 Turku/Åbo	476, 879	158, 158	IND-1C, IND-1C
Salome	Christophe	SpiroChem AG, Mattenstrasse 22, 4058 Basel, Switzerland	1907	214	POSTER-B
Salomone	Alberto	Università degli studi di Torino, Italia; Centro Regionale Antidoping, Orbassano (TO), Italy	255, 1799	258, 258	ANA-4A, ANA-4A

Salucci	Emiliano	Abo Akademi, Finlandia; Università degli studi di Napoli Federico II, Italia	406	31	POSTER-A
Salvadori	Barbara	Institute of Heritage Science, CNR, Via Madonna del Piano 10, Sesto Fiorentino, Italy;	1187	214	POSTER-B
Salvadori	Enrico	Università di Torino, Dipartimento di Chimica, Via Pietro Giuria 5, 10125 Torino, Italy	442	249	ANA-3B
Salvatico	Federica	Dipartimento di Chimica, Università degli Studi di Torino, Via P. Giuria 7, 10125 Torino (Italy)	1402	31	POSTER-A
Salvatore	Marcella	Università degli Studi di Napoli Federico II, Italia	408	242	FIS-2A
Salvatore	Maria Michela	Department of Chemical Science, University of Naples Federico II, Naples, Italy	1293	31	POSTER-A
Salvi	Anna Maria	Department of Science, Università degli Studi della Basilicata, Potenza, Italia	1203	74	TEC-A
Salvi	Clorinda	Università degli Studi di Napoli Federico II, Italia	179, 178	31, 73	POSTER-A, ABC-A
Salvi	Ester	Università del Piemonte Orientale, Italia	876	214	POSTER-B
Salvi	Manuel	Materia Firenze Lab s.r.l., Via delle Fonti 8/E, 50018 Scandicci (FI), Italy	691	31	POSTER-A
Salvini	Antonella	Dipartimento di Chimica 'Ugo Schiff', Università degli Studi di Firenze, Italia	886, 1814, 807	214, 214, 158	POSTER-B, POSTER-B, IND-1C
Salvini	Laura	Fondazione Toscana Life Sciences, Siena, Italia	1221	214	POSTER-B
Salzano de Luna	Martina	Department of Chemical, Materials and Production Engineering, University of Naples Federico II	151, 719	153, 247	TEC-B, ORG-3D
Samarelli	Francesco	università degli Studi di Bari, Italia	1309, 1224	31, 136	POSTER-A, FAR-1D
Samei	Seyedehparya	Department of Food and Drug, University of Parma, Italy	481	261	ALI-2B
Sammarco	Anna Sofia	Università degli Studi di Salerno, Italia	1629	261	ALI-2B
Samori	Paolo	ISIS, University of Strasbourg, France	1584	214	POSTER-B
Samorini	Giorgio	Indipendent Researcher, Bologna, Italia	324	73	ABC-A
Samukha	Vadym	Università del Molise, Italia	1162, 1150	31, 214	POSTER-A, POSTER-B
Sanadar	Martina	Università di Udine, Italia	1451, 786, 1166, 528	31, 214, 214, 254	POSTER-A, POSTER-B, POSTER-B, INO-3
Sánchez-Espejo	Rita	University of Granada, Department of Pharmacy and Pharmaceutical Technology, Faculty of Pharmacy, 1807, Granada	1604	31	POSTER-A
Sanchez-Espejo	Rita	Università di Granada	1573	214	POSTER-B
Sanchéz-Espejo	Rita	Department of Pharmacy and Pharmaceutical Technology, University of Granada, Faculty of Pharmacy, 18071 Granada, Spain	1595	214	POSTER-B
Sànchez-Espejo	Rita	Department of Pharmacy and Pharmaceutical Technology, Faculty of Pharmacy, University of Granada, Campus Universitario de Cartuja, 18071 Granada, Spain Address, City	1678	214	POSTER-B
Sancho Albero	Maria	Instituto de Nanociencia y Materiales de Aragon (INMA), CSIC-Universidad de Zaragoza, Campus Rio Ebro, Edificio I+D, C/Poeta Mariano Esquillor, s/n, 50018 Zaragoza, Spain.	391	214	POSTER-B
Sandri	Francesco	Åbo Akademi University, Finlandia	1352	214	POSTER-B
Sandri	Giuseppina	Università di Pavia, Italia	931, 1139, 1040	31, 31, 183	POSTER-A, POSTER-A, ParallelTopic13 - ID: 183
Sandri	Giuseppina	Department of Drug Sciences, University of Pavia, Viale Taramelli 12, 27100 Pavia, Italy	942	214	POSTER-B
Sandri	Giuseppina	Dipartimento di Scienze del farmaco, Università di Pavia, Italia	1079, 1127, 1128, 1129, 1130	214, 214, 214, 214, 214	POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B
Sandri	Giuseppina	Università di Pavia, Italia	1161	214	POSTER-B
Sandri	Giuseppina	Department of Drug Sciences, University of Pavia, Italy	1179	214	POSTER-B
Sang	Tian	Laboratory of Green Synthetic Organic Chemistry, Dipartimento di Chimica, Università di Perugia 1, Via Elce di Sotto, 8 – 06123 Perugia	477, 731	214, 214	POSTER-B, POSTER-B
Sangiorgi	Nicola	ISSMC-CNR, Italia	1332	69	IND-1A
Sangiorgio	Sara	Università degli Studi di Milano, Italia	133	31	POSTER-A
Sangiovanni	Fabrizio	ISOCLab, Italia	1720	214	POSTER-B
Sangregorio	Claudio	CNR-ICCOM, Sesto Fiorentino, Italia	931	31	POSTER-A
Sangregorio	Claudio	ICCOM – CNR; Dept. of Chemistry "U. Schiff", Univ. of Florence	1925	31	POSTER-A
Sanità	Gennaro	Institute of Applied Sciences and Intelligent Systems Unit of Naples, National Research Council, Naples, Italy	724	214	POSTER-B
Sankaranaray anan	Murugesan	Birla Institute of Technology and Science Pilani	1684	31	POSTER-A
Sanna Angotzi	Marco	Università degli Studi di Cagliari, Italia; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Italia	1674	160	FIS-1B
Sanna	Gavino	Department of Chemical, Physical, Mathematical and Natural Sciences, University of Sassari, Via Vienna 2, Sassari, I-07100, Italy	1901, 728	214, 150	POSTER-B, ANA-2D
Sannino	Filomena	Dipartimento di Agraria, Università di Napoli Federico II, Portici (Napoli), Italia	1593	236	TEC-D
Sannio	Filomena	Department of Medical Biotechnologies, University of Siena, Viale Mario Bracci, 16, I-53100, Siena, Italy	1173	136	FAR-1D
Sanson	Alessandra	ISSMC-CNR, Italia	1332	69	IND-1A
Sansone	Francesco	Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale, Università di Parma, Parco Area delle Scienze 17/A, Parma 43124, Italia	447, 915, 1281, 664, 926	31, 31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B
Sansonetti	Antonio	Institute of Heritage Science, CNR, Via Roberto Cozzi 53, Milan, Italy	1187	214	POSTER-B
Sansotera	Maurizio	Politecnico di Milano, Italia; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (UdR--PoliMi)	653, 800, 480, 805	31, 31, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B
Sant	Roberto	Politecnico di Milano, Italia	925	214	POSTER-B
Santalmasi	Clara	Università di Firenze, Dipartimento Neuroscienze, Area del Farmaco e Salute del Bambino, Italia	968	31	POSTER-A
Santalucia	Rosangela	Department of Chemistry, Università degli Studi di Torino, Via Pietro Giuria 7, 10125, Torino	128	214	POSTER-B
Santamaria	Monica	Department of Engineering, Università degli Studi di Palermo, Palermo, Italia	1203, 1969, 1970	74, 72, 72	TEC-A, ELE-1, ELE-1
Santamaria	Pietro	Centro Interdipartimentale SMART - Università degli studi di Bari "Aldo Moro"; Dipartimento di Scienze del Suolo e della Pianta - Università degli studi di Bari "Aldo Moro"	1101, 1042	31, 71	POSTER-A, MAS
Santana Rodríguez	Josè Juan	Instituto Universitario de Estudios Ambientales y Recursos Naturales (i-UNAT), Universidad de Las Palmas de Gran Canaria, 35017 Las Palmas de Gran Canaria, Spain	1071	239	ABC-D
Santanatoglia	Agnese	Chemistry Interdisciplinary Project (ChIP), School of Pharmacy, University of Camerino, Italy; Research and Innovation Coffee Hub, Via Emilio Betti 1, Belforte del Chienti, Italy	714, 1653	214, 261	POSTER-B, ALI-2B
Santandrea	Domenico	Università Ca' Foscari Venezia- Università della Campania "Luigi Vanvitelli", Italia	1099	214	POSTER-B
Santangelo	Carmen	Department of Neurosciences, Imaging and Clinical Sciences, University of Chieti--Pescara "G. d'Annunzio", Via dei Vestini 31, Chieti 66100, Italy	301	258	ANA-4A
Santangelo	Stefania	Conservatorio di Musica "Nino Rota" - Monopoli, Italia	1942	205	ParallelTopic08 - ID: 205
Santaniello	Fabio	Dipartimento di Lettere e Filosofia, Università di Trento, Italia	1644	156	ABC-C
Santarelli	Elisabetta	Università degli Studi di Salerno, Italia	1730	66	ANA-1A
Santarelli	Nicolò	Università di Bologna, Italia	912	247	ORG-3D
Santarsiere	Alessandro	Università della Basilicata, Italia	1206	31	POSTER-A
Santelli	Martina	Università Cattolica del Sacro Cuore, Italia	1122	214	POSTER-B
Santi	Luca	Department of Agriculture and Forest Sciences (DAFNE), University of Tuscia, Via S. Camillo de Lellis, Viterbo, Italy	1305, 1370	31, 214	POSTER-A, POSTER-B
Santi	Sofia	Department of Industrial Engineering and INSTM Research Unit, University of Trento, Via Sommarive 9, 38123, Trento, Italy	1408	31	POSTER-A
Santiglia	Alessia	università di milano, Italia	1257	214	POSTER-B
Santiglia	Alessia	Dipartimento di Chimica, Università degli Studi di Milano, Italia	1644	156	ABC-C
Santinello	Sandro	Distillerie Bonollo Umberto S.p.A., Divisione Nutraceutica, Mestrino (Padova)	696	31	POSTER-A
Santisteban Soto	Diana Vanessa	Università degli studi di Verona, Italia	1074	214	POSTER-B
Santoni	Elisa	Scuola di Scienze e Tecnologie, Università di Camerino, Camerino	668, 1181	31, 214	POSTER-A, POSTER-B
Santonoceta	Giuseppina Domenica Giovanna	Dipartimento di Scienze Chimiche, Università degli Studi di Catania, Viale A. Doria 6, 95125, Catania, Italy	1534	148	ANA-2C
Santonocito	Rossella	Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95100 Catania, Italy	527, 626	214, 214	POSTER-B, POSTER-B
Santorelli	Lucia	Telethon Institute of Genetics and Medicine (TIGEM), via Campi Flegrei 34, 80078 Pozzuoli	976	71	MAS
Santoro	Anna Maria	Institute of Crystallography CNR via P. Gaifami 18-95126 Catania	824	214	POSTER-B
Santoro	Carlo	Università degli Studi di Milano-Bicocca, Italia	1715, 777, 280	31, 214, 72	POSTER-A, POSTER-B, ELE-1
Santoro	Fabrizio	CNR-ICCOM, Pisa, Italy	767	75	TEO-A
Santoro	Federica	University of Naples Federico II, Italy	858, 1034	214, 255	POSTER-B, FAR-2A

Santoro	Franco	International Centre for Advanced Mediterranean Agronomic Studies of Bari, Italia	1098, 1729	31, 236	POSTER-A, TEC-D
Santos De Oliveira	Glenda	Proteomics and Metabolomics Unit, Department of Medicine and Surgery, University of Milano Bicocca	1535, 992	31, 71	POSTER-A, MAS
Santos	Maria Amelia	Università di Lisbona	1045	148	ANA-2C
Santucci	Annalisa	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, 53100 Siena, Italy Department of Biotechnology, Chemistry and Pharmacy, University of Siena, 53100 Siena, Italy	245	31	POSTER-A
Sanz Azcona	Fatima	Università di Padova, Italia	1159	31	POSTER-A
Sanz Azcona	Fátima	Università di Padova, Italia	1160	31	POSTER-A
Sanz Azcona	Fatima	Università di Bologna, Italia	912	247	ORG-3D
Sanz Azcona	Fátima	Università di Padova, Italia	1135	247	ORG-3D
Sanzani	Simona Marianna	Università degli Studi di Bari Aldo Moro, Italia	862	214	POSTER-B
Saotta	Anna	Alma Mater Studiorum University of Bologna, Italia	569	157	IND-1B
Saponari	Maria	Institute for Sustainable Plant Protection, National Research Council (CNR)	1729	236	TEC-D
Saporetti	Roberto	NanoBio Interface Lab, Dipartimento di Chimica "Giacomo Ciamician", Alma Mater Studiorum - Università di Bologna, Italia	1357	31	POSTER-A
Saporito	Giulia	Università di Modena e Reggio Emilia, Italia	1682	214	POSTER-B
Saraceno	Piermarco	Università di Pisa, Italia	1712	31	POSTER-A
Sarakha	Mohamed	Institut de Chimie de Clermont-Ferrand, Université Clermont Auvergne, France	825, 908	156, 156	ABC-C, ABC-C
sarcina	Lucia	università di bari aldo moro, Italia	680, 683, 663, 689, 708	31, 31, 214, 142, 142	POSTER-A, POSTER-A, POSTER-B, ANA-1C, ANA-1C
Sardella	Roccaldo	Università degli Studi di Perugia, Italia	523, 487	66, 255	ANA-1A, FAR-2A
Sardelli	Alice	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	1512	214	POSTER-B
Sardelli	Francesca	Università di Pisa, Italia	739, 526, 738	214, 244, 149	POSTER-B, ORG-3A, ORG-2C
Sargent	Edward	Department of Electrical and Computer Engineering, University of Toronto, Canada	1875	31	POSTER-A
Sargentoni	Nicola	University of Camerino, Italia	1104, 1140	214, 240	POSTER-B, INO-2A
Sarlah	David	Department of Chemistry, University of Pavia, Viale Taramelli 12, 27100 Pavia, Italy; Department of Chemistry and Carl R. Woese Institute for Genomic Biology, University of Illinois at Urbana−Champaign, Urbana, Illinois 61801, United States	1907	214	POSTER-B
Sarnari	Chiara	Università degli Studi di Perugia	1456	214	POSTER-B
Sarti	Chiara	University of Florence, Italia	1532, 1602	214, 214	POSTER-B, POSTER-B
Sarti	Elena	Department of Chemical, Pharmaceutical, and Agricultural Sciences, Via L. Borsari 46, University of Ferrara, 44121 Ferrara	1068, 1223	148, 239	ANA-2C, ABC-D
Sartorel	Andrea	Department of Chemical Sciences, University of Padova, Via Francesco Marzolo 1, 35131, Padova (Italy)	227	143	ORG-1C
Sartori	Andrea	Department of Food and Drug, University of Parma, Parco Area delle Scienze 27A, 43124 Parma, Italy	637, 887, 941	31, 31, 31	POSTER-A, POSTER-A, POSTER-A
Sasitharan	Kezia	School of Natural and Environmental Science, Newcastle University, Newcastle upon Tyne,UK	1677	159	IND-1D
Sassella	Adele	Dipartimento di Scienza dei Materiali, Università degli Studi di Milano - Bicocca, Via Cozzi 55, 20125 Milano, Italy	1186	214	POSTER-B
Sassi	Mauro	Università di Milano-Bicocca, Italia	783, 367	31, 245	POSTER-A, ORG-3B
Satira	Antonella	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1311	214	POSTER-B
Satira	Antonella	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1503	214	POSTER-B
Satira	Antonella	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci Snc, Messina 98168, Italy	1559	258	ANA-4A
Sato	Ryota	Faculty of Pharmaceutical Sciences, Tokushima University, Japan	285	241	INO-2B
Sattin	Sara	University of Milan, Italy	882	214	POSTER-B
Sauvage	Frédéric	CNRS, Université Picardie Jules Verne, Laboratoire de réactivité et Chimie du Solide, UMR 7314, Amiens, Francia	892	201	ParallelTopic03 - ID: 201
Savardi	Annalisa	IAMA Therapeutics, via Filippo Turati 2, 16128 Genoa, Italy	1002	193	ParallelTopic09 - ID: 193
Savarese	Alessandra	Università di Pisa, Italia	927	214	POSTER-B
Savastano	Matteo	Università San Raffaele Roma, Italia	909	31	POSTER-A
Savelli	Giulio	Università degli Studi di Milano, Milano, Italia	330	214	POSTER-B
Saviano	Anella	University of Naples Federico II	1521	147	ORG-2B
Saviano	Gabriella	Università del Molise, Italia	1162, 1150	31, 214	POSTER-A, POSTER-B
Saviano	Michele	CNR-Institute of Crystallography	553	56	ParallelTopic12
Saviano	Michele	CNR, IC, Bari, Italia	1982, 547	209, 214	ParallelTopic12 - ID: 209, POSTER-B
Savini	Fabio	Pharmatoxicology Laboratory—Hospital “Santo Spirito”, Via Fonte Romana 8, Pescara 65124, Italy	301	258	ANA-4A
Savino	Elena	Department of Earth and Environmental Sciences (DSTA), University of Pavia, Pavia	1662	214	POSTER-B
Saviozzi	Chiara	Department of Chemistry and Industrial Chemistry, University of Pisa, Italy	750	67	INO-1A
Savoca	Dario	Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), Università degli Studi di Palermo, Palermo 90123, Italy; NBFC, National Biodiversity Future Center, 90133 Palermo, Italy	1400	214	POSTER-B
Saxén	Henrik	Abo Akademi, Finlandia	406	31	POSTER-A
Sayres	Scott G.	Arizona State University, USA	119	214	POSTER-B
Sbardella	Gianluca	Università degli Studi di Salerno, Italia	1982	209	ParallelTopic12 - ID: 209
Sbriglia	Sara	Università degli Studi di Napoli Federico II, Italia	178	73	ABC-A
Scaccaglia	Mirco	Instituto di Ricerche Farmacologiche Mario Negri, Italia	156, 2022	31, 167	POSTER-A, INO-1D
Scafato	Patrizia	Università degli studi della Basilicata, Italia	1675, 1831	31, 256	POSTER-A, ORG-4A
Scaglia	Matteo	Università degli Studi di Brescia, Italia	1397, 1587	214, 236	POSTER-B, TEC-D
Scagliarini	Carolina	University of Turin, Department of Chemistry, 10125 Turin, Italy; DataBloom s.r.l., 10125 Turin, Italy	1558, 1788	214, 214	POSTER-B, POSTER-B
Scaglioni	Davide	Nanomaterials Research Group, Department of Biotechnology, University of Verona and INSTM, RU of Verona, Strada le Grazie 15, 37134 Verona, Italy.	1605	214	POSTER-B
Scala	Stefania	Microenvironment Molecular Targets, Istituto Nazionale per lo Studio e la Cura dei Tumori, IRCCS “Fondazione G. Pascale”, Via M. Semmola 52, 80131 Napoli, Italy	354	214	POSTER-B
Scala	Stefania	Microenvironment Molecular Targets, Istituto Nazionale per lo Studio e la Cura dei Tumori, IRCCS “Fondazione G. Pascale”, Via M. Semmola 52, 80131 Napoli, Italy	352	65	FAR-1A
Scalarone	Dominique	Department of Chemistry, University of Torino, Via Pietro Giuria 7, Torino, Italy	1187, 1426	214, 214	POSTER-B, POSTER-B
Scalia	Sara	Università degli studi di Roma Tor Vergata, Italia	438	214	POSTER-B
Scalone	Elisabetta	Department of ChiBioFarAm, University of Messina, Viale F. Stagno d'Alcontres 31, 98166 Messina, Italy; Institute for the Study of Nanostructured Materials, ISMN–CNR, URT Messina, c/o Department of ChiBioFarAm, University of Messina, Viale F. Stagno d'Alcontres 31, Vill. S. Agata, 98166 Messina, Italy	1288	214	POSTER-B
Scalvini	Laura	Università di Parma, Italia	1787	132	FAR-1B
Scamarcio	Gaetano	Dipartimento Interateneo di Fisica, Università degli Studi di Bari Aldo Moro, 70125 Bari, Italy	683, 819, 689, 708	31, 214, 142, 142	POSTER-A, POSTER-B, ANA-1C, ANA-1C
Scamporrino	Andrea Antonio	Instituto per i polimeri compositi e biomateriali (IPCB-CNR), Catania, Italia	1035	214	POSTER-B
scandurra	cecilia	università di bari aldo moro, Italia	680, 683, 663, 689, 708	31, 31, 214, 142, 142	POSTER-A, POSTER-A, POSTER-B, ANA-1C, ANA-1C
Scano	Paola	Università di Cagliari, Dipartimento scienze della vita e ambiente, Cagliari, Italia	1244	78	ALI-1A
Scapozza	Leonardo	Department of Pharmaceutical Biochemistry, School of Pharmaceutical Sciences, University of Geneva, CMU- Rue Michel-Servet 1, Geneva	1464	214	POSTER-B
Scapuzzi	Chiara	Università di Genova, Dipartimento di Chimica e Chimica Industriale, Italia	541	31	POSTER-A
Scarabattoli	Letizia	Università degli Studi di Milano, Italia	1891	214	POSTER-B
Scarabottini	Tommaso	Laboratory of Green Synthetic Organic Chemistry, Dipartimento di Chimica, Università di Perugia 1, Via Elce di Sotto, 8 – 06123 Perugia	477, 731	214, 214	POSTER-B, POSTER-B
Scarano	Antonio	Food and Drug Department, University of Parma, 43124 Parma, Italy	598	31	POSTER-A
Scarano	Domenica	Università degli Studi di Torino, Italia	1037	214	POSTER-B
Scarano	Naomi	Università degli Studi di Genova, Italia, Dipartimento di Farmacia	223, 1440	31, 214	POSTER-A, POSTER-B

Scarano	Simona	Università di Firenze, Italia	1758, 1639	31, 214	POSTER-A, POSTER-B
Scarica	Gabriele	Università degli Studi di Parma, Italia	1274	31	POSTER-A
Scarica	Gabriele	Università degli Studi di Parma, Italia	1694	214	POSTER-B
Scarlatti	Arianna	Laboratorio di Biologia BIO@SNS, Scuola Normale Superiore Pisa, Italia	792	31	POSTER-A
Scarpa	Edoardo	Department of Pharmaceutical Sciences, University of Milan, Via L. Mangiagalli 25, 20133 Milano, Italy; National Institute of Molecular Genetic (INGM), Via F. Sforza 35, 20122 Milano, Italy	693	214	POSTER-B
Scarpelli	Francesca	Università della Calabria, Italia	935	240	INO-2A
Scarperi	Andrea	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	1768	214	POSTER-B
Scarpi	Dina	Dipartimento di Chimica 'Ugo Schiff' Università degli Studi di Firenze, Via della Lastruccia 13, 50019 Sesto Fiorentino (Italy)	1402	31	POSTER-A
Scarpiello	Alessia	DICATECh, Politecnico di Bari, Italia	831	214	POSTER-B
Scattarella	Francesco	Istituto di Cristallografia-CNR, Bari, Italia	1458	214	POSTER-B
Scavetta	Erika	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Via Gobetti 85, 40129,Italia	1850	31	POSTER-A
Scavetta	Erika	Department of Industrial Chemistry "Toso Montanari", University of Bologna, via Gobetti 85 40129 Bologna, Italy	141	214	POSTER-B
Scelsi	E	CNR-IRSA, Italia	1765	31	POSTER-A
Scelta	Demetrio	ICCOM-CNR, Institute of Chemistry of OrganoMetallic Compounds, National Research Council of Italy, Via Madonna del Piano 10, I-50019 Sesto Fiorentino, Firenze, Italy; LENS, European Laboratory for Non-linear Spectroscopy, Via N. Carrara 1, I-50019 Sesto Fiorentino, Firenze, Italy	1873	198	ParallelTopic15 - ID: 198
Scerri	Eric	University of California Los Angeles (UCLA), United States of America	1936	20	PL-A
Scerri	Mark	Environmental Management & Planning Division, Institute of Earth Systems, University of Malta, Msida MSD2080, Malta	924	156	ABC-C
Scesa	Federico Maria	Politecnico di Milano, Italia	653, 805	31, 214	POSTER-A, POSTER-B
Schenone	Silvia	Università degli Studi di Genova, Italia, Dipartimento di Farmacia	223, 1604, 1440	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Schepetkin	Igor A.	Department of Microbiology and Cell Biology, Montana State University	1660	31	POSTER-A
Schepmann	Dirk	Institute of Pharmaceutical and Medicinal Chemistry, University of Münster, Corrensstraße 48, 48149, Münster, Germany.	959	136	FAR-1D
Schettini	Rosaria	Università di Salerno, Italia	628	147	ORG-2B
Schettino	Anna	University of Naples Federico II	1521	147	ORG-2B
Schiavi	Serena	Università di Pavia, Italia	1649, 898	31, 254	POSTER-A, INO-3
Schiavina	Marco	Magnetic Resonance Center, University of Florence, Via L. Sacconi 6, Sesto F.no (IT); Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3, Sesto F.no (IT	1560	31	POSTER-A
Schiavina	Marco	Università degli Studi di Firenze, Italia	1367	154	CSB-1B
Schievano	Elisabetta	Department of Chemical Sciences (DiSC), University of Padua, via Marzolo 1, 35131, Padova	472	185	ParallelTopic15 - ID: 185
Schincaglia	Andrea	Università degli Studi di Ferrara, Via Luigi Borsari 46, Ferrara (Italy); Gembloux AgroBio-Tech, Université de Liège, Passage des déportés 2, Gembloux (Belgium)	188	214	POSTER-B
Schingaro	Emanuela	Dipartimento di Scienze della Terra e Geoambientali, Università degli Studi di Bari Aldo Moro, Italia	336, 1780, 1874	204, 214, 214	ParallelTopic07 - ID: 204, POSTER-B, POSTER-B
Schivardi	Simone	Universita' degli studi di Milano, Milan, Italy	1100	214	POSTER-B
Scholes	Gregory D.	Princeton University, Princeton 08544, United States	1430	161	TEO-B
Sciacca	Claudia	Università degli Studi di Catania, Italia	890, 1035, 1275	31, 214, 151	POSTER-A, POSTER-B, ORG-2D
Sciacca	Michele Francesco Maria	Institute of Crystallography, National Research Council, Catania, Italy	826	266	CSB-2
Sciandrone	Barbara	Department of Biotechnology and Biosciences, University of Milano-Bicocca, 20126 Milano, Italy	1829	214	POSTER-B
Sciandrone	Giulia	Department of Translational Research and New Technologies in Medicine and Surgery, University of Pisa	1663	214	POSTER-B
Scianò	Fabio	University of Pisa, Italy	1307	214	POSTER-B
Sciarrone	Danilo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy	1304, 1305	31, 31	POSTER-A, POSTER-A
Sciarrone	Danilo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168, Messina, Italy	1349	31	POSTER-A
Sciarrone	Danilo	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Former Veterinary School, University of Messina, Viale G. Palatucci SNC, Messina, Italy	1299	66	ANA-1A
Scidà	Alessandra	Institute for the Organic Synthesis and Photoreactivity, National Research Council, Bologna, 40129, Italy	1090	31	POSTER-A
Scio'	Pietro	Sapienza Università di Roma, Italia	1547	214	POSTER-B
Scipione	Luigi	Istituto Pasteur-Fondazione Cenci Bolognetti, Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza Università di Roma, p.le Aldo Moro 5, I-00185 Rome, Italy	1210, 1626, 1627, 1955	31, 31, 214, 134	POSTER-A, POSTER-A, POSTER-B, FAR-1C
Scirè	Salvatore	Università di Catania, Italia	482, 896	31, 157	POSTER-A, IND-1B
Scirè	Salvatore	Università degli studi Catania, Italia	516	159	IND-1D
Sciscenko	Iván Matías	Departamento de Ingeniería Textil y Papelera, Universitat Politècnica de València (UPV), Plaza Ferrándiz y Carbonell s/n, 03801 Alcoy, Spain	627	214	POSTER-B
Sciscenko	Ivan Matias	Universitat Politècnica de València, Departamento de Ingeniería Textil y Papelera, Plaza Ferrándiz y Carbonell s/n, 03801 Alcoy, Spain	442	249	ANA-3B
Scittarelli	Doriana	Dipartimento di Scienze Chimiche, Farmaceutiche e Agrarie, Università di Ferrara, Italia	923	69	IND-1A
Sciutto	Giorgia	Università di Bologna, Italia	1758, 1558, 1788, 1459, 1790	31, 214, 214, 238, 156	POSTER-A, POSTER-B, POSTER-B, ABC-B, ABC-C
Scoditti	Stefano	Department of Chemistry and Chemical Technologies, University of Calabria, Arcavacata di Rende (CS), 87036, Italy	1300	257	TEO-C
Scognamiglio	Mariarosa	University of Salerno, 84084 Fisciano (SA), Italy	1633	165	INO-1B
Scopelliti	Michelangelo	Department of Physics and Chemistry-Emilio Segrè, University of Palermo, 90128 Palermo, Italy	916, 1362	248, 234	ANA-3A, FIS-1C
Scopetani	Costanza	Department of Chemistry "Ugo Schiff" (DICUS), University of Florence	1121, 291	214, 146	POSTER-B, ANA-2B
Scorciapino	Mariano Andrea	Università degli Studi di Cagliari, Italia	625	31	POSTER-A
Scotognella	Teresa	NuclearMedicine Unit, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome 00168	1296	214	POSTER-B
Scotti	Nicola	CNR Istituto di Scienze e Tecnologie Chimiche "Giulio Natta", via Golgi 19, 20133 Milano, Italy	469	158	IND-1C
Scotti	Roberto	Università Milano Bicocca, Italia	777, 591	214, 240	POSTER-B, INO-2A
Scotti	Roberto Scotti	Department of Materials Science University of Milano-Bicocca , Building U5,Via Roberto Cozzi 55, 20125, Milano, Italy.; Institute for Photonics and Nanotechnologies-CNR, Via alla Cascata 56/C, 38123 Povo (TN), Italy.	280	72	ELE-1
Scotto d'Abusco	Anna	Department of Biomedical Sciences, Sapienza University of Rome, Italy	1460	69	IND-1A
Scrano	Laura	Università degli Studi della Basilicata, Italia	933	214	POSTER-B
Scroccarello	Annalisa	Università degli studi di Teramo, Italia	843, 844, 596, 847	31, 214, 142, 144	POSTER-A, POSTER-B, ANA-1C, ANA-1D
Scurti	Stefano	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Via Gobetti 85, 40129,Italia	1850	31	POSTER-A
Sdei	F.	Università di Bologna, Italia	1324	214	POSTER-B
Sebastiani	Federica	University of Copenhagen; Lund University	258	31	POSTER-A
Secci	Fausto	Università degli Studi di Cagliari (Dipartimento di Chimica), Italia	990, 1674	47, 160	ParallelTopic07, FIS-1B
Secci	Francesco	Università degli Studi di Cagliari, Italia	1703, 1757	214, 141	POSTER-B, ORG-1A
Sechi	Francesca	University of Milano-Bicocca, School of Medicine and Surgery, via Raoul Follereau 3, Vedano al Lambro (MB)	633, 701	214, 214	POSTER-B, POSTER-B
Secundo	Francesco	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" (SCITEC)-CNR, via M. Bianco 9, 20131 Milano, Italy	1364	214	POSTER-B
Secundo	Lorenzo	Politecnico di Milano, Italia	241	214	POSTER-B
Seeharaj	Panpailin	King Mongkut's Institute of Technology Ladkraban Bangkok, Thailandia	990	47	ParallelTopic07
Segale	Lorena	Department of Pharmaceutical Sciences, Università del Piemonte Orientale, Novara, Italy	478	31	POSTER-A
Seggiani	Maurizia	DICI, University of Pisa, Largo Lucio Lazzarino, 56122 Pisa (Italy)	103	153	TEC-B
Seggio	Mimimorena	Università di Verona, Dipartimento di Biotecnologie, Strada le grazie 15, 37134, Verona	417	142	ANA-1C

Segura Zarate	Ana Yancy	Department of Chemistry, NIS Interdepartmental and INSTM Reference Centre, University of Torino, Via Pietro Giuria 7, 10125, Torino, ItalyUniversity of Turin, Italy	1809, 892	31, 201	POSTER-A, ParallelTopic03 - ID: 201
Seidita	Federica	Dipartimento di Ingegneria, Università degli Studi di Palermo, Viale delle Scienze 6, 90128 Palermo, Italy	1126	214	POSTER-B
Seifert	Vanessa Angela	University of Athens, Greece	1879	171	ParallelTopic11
Selli	Elena	Dipartimento di Chimica, Università degli Studi di Milano, Italia	1875, 778, 635, 643	31, 160, 234, 234	POSTER-A, FIS-1B, FIS-1C, FIS-1C
Selmin	Francesca	Università degli Studi di Milano, Italia	1467	70	TEF-2
Selvaggi	Roberta	Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Italia	348	73	ABC-A
Selvolini	Giulia	Department of Chemistry "Ugo Schiff" (DICUS), University of Florence	1121, 291	214, 146	POSTER-B, ANA-2B
Sembranti	Lorenzo	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	1512, 1536	214, 214	POSTER-B, POSTER-B
Semenzin	Elena	Ca'Foscari University of Venice, Italia	1108	31	POSTER-A
Semenzin	Elena	Ca' Foscari University of Venice, Italia	806, 1358, 1517	73, 238, 239	ABC-A, ABC-B, ABC-D
Semeraro	Paola	Dep. of Biological and Environmental Sciences and Technologies, University of Salento, Via per Monteroni 73100, Lecce (Italy)	1218, 1231	214, 214	POSTER-B, POSTER-B
Senaldi	Luca	Indena, Italia	749	214	POSTER-B
Seneci	Pierfausto	Department of Chemistry, Università degli Studi di Milano, Via C. Golgi 19, 20133 Milan, Italy	703, 568	31, 214	POSTER-A, POSTER-B
Sensoy	Ozge	ISTANBUL MEDIPOL UNIVERSITY, Turkey	1102	154	CSB-1B
Sento	Marco	Dipartimento di Elettronica e Telecomunicazioni, Politecnico di Torino, Italia	1644	156	ABC-C
Sepali	Chiara	Scuola Normale Superiore, Italia	1169, 1551, 1756	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Sepe	Valentina	Università di Napoli Federico II, Italia	655, 658, 657	214, 214, 147	POSTER-B, POSTER-B, ORG-2B
Serafini	Ilaria	Dip. Biologia Ambientale, Sapienza Università di Roma, Italia	1473	31	POSTER-A
Serafini	Ilaria	Sapienza University of Rome, Department of Chemistry, P.le Aldo Moro 5, Rome (RM), Italy;	1761, 1471	214, 238	POSTER-B, ABC-B
Serafini	Marta	Department of Drug Science and Technology, University of Turin, Italy; Department of Chemistry, Chemistry Research Laboratory, University of Oxford, UK	273	214	POSTER-B
Serbetci	Defne	Universita degli Studi di Bari Aldo Moro, Italy	1491	214	POSTER-B
Şerbetçi	Defnee	Università di Bari "Aldo Moro", Italia	1700	214	POSTER-B
Sergi	Manuel	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia	951, 963, 971, 1123, 1796, 760, 1005, 1825, 1015	31, 31, 31, 31, 31, 214, 214, 214, 258	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, ANA-4A
Serra	Massimo	University of Pavia, Italy	1803	214	POSTER-B
Serra	Thea	Dipartimento di Chimica, Università di Torino, Italia	414, 415, 160	214, 248, 146	POSTER-B, ANA-3A, ANA-2B
Serrano Ruiz	Manuel	CNR - Istituto di Chimica dei Composti Organometallici (CNR-ICCOM), Via Madonna del Piano 10, Sesto Fiorentino I-50019, Italy	335	243	FIS-2B
Serrano-Lotina	Ana Maria	CSIC-ICP, Marie Curie 2, E-28049-Madrid, Spain	764	31	POSTER-A
Serrano-Ruiz	Manuel	ICCOM-CNR, Institute of Chemistry of OrganoMetallic Compounds, National Research Council of Italy, Via Madonna del Piano 10, I-50019 Sesto Fiorentino, Firenze, Italy	1873	198	ParallelTopic15 - ID: 198
Serrao	Simone	Università degli Studi di Milano-Bicocca, Italia	717, 715	31, 71	POSTER-A, MAS
Sessa	Alessandra	Dipartimento di Chimica e Biologia 'Adolfo Zambelli', Università di Salerno, Via Giovanni Paolo II,132 - 84084 Fisciano SA, Italy	165	73	ABC-A
Sessa	Francesco	Department of Chemical Sciences, Università di Napoli "Federico II", via Cintia 21, 80126, Naples, Italy; National Reference Centre for Electrochemical Energy Storage (GISEL) - INSTM, 50121 Florence, Italy	1256	214	POSTER-B
Sestaioni	Davide	Università di Firenze, Italia	1758	31	POSTER-A
Severi	Alice	ISIS Follonica - Scuola Secondaria di II grad, Follonica (Gr), Italia	905	265	DID-B
Severi	Alice	Comitato Organizzatore dei Giochi della Chimica - ISIS Follonica, Follonica (Gr)	1782	265	DID-B
Severin Sfragano	Patrick	Università di Firenze	1222	144	ANA-1D
Severino	Angela	Dipartimento di Ingegneria dell'Ambiente, Università della Calabria, via P. Bucci, Cubo 44/A, Rende (CS), Italia	1490	214	POSTER-B
seveso	Davide	Marhe Center	1784	214	POSTER-B
Sfameni	Silvia	Institute for the Study of Nanostructured Materials, ISMN–CNR, URT Messina, c/o Department of ChiBioFarAm, University of Messina, Viale F. Stagno d'Alcontres 31, Vill. S. Agata, 98166 Messina, Italy	1288	214	POSTER-B
Sforazzini	Giuseppe	Università degli Studi di Cagliari, Italia	1804	31	POSTER-A
Sforza	Stefano	Department of Food and Drug Sciences, University of Parma, Italia	224	151	ORG-2D
Sforzi	Laura	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence	1602	214	POSTER-B
Sfragano	Patrick	Università di Firenze, Dipartimento di Chimica "Ugo Schiff" (DICUS)	771, 784	214, 144	POSTER-B, ANA-1D
Sgarbossa	Paolo	Università degli studi di Padova, Italia	1642, 1659, 1284	31, 214, 74	POSTER-A, POSTER-B, TEC-A
Sgarlata	Carmelo	Dipartimento di Scienze Chimiche, Università degli Studi di Catania, Viale A. Doria 6, 95125, Catania, Italy	1534	148	ANA-2C
Sgarzi	Massimo	Ca' Foscari University of Venice, Department of Molecular Sciences and Nanosystems, Via Torino 155, Venice, 30172, Italy	436	31	POSTER-A
Squizzato	Maddalena	University of Ferrara, Italia	816	31	POSTER-A
Shahsavari	Hamidreza	Institute for Advanced Studies in Basic Sciences (IASBS), Iran	1899	31	POSTER-A
Shaik	Mohammed M.	Università degli Studi di Milano-Bicocca, Italia	192	77	CSB-1A
Shaik	Mohammed Mansur	University of Milan-Bicocca, Milano Italia	698	214	POSTER-B
Shaik	Mohammed Monsoor	Università di Milano-Bicocca, Italia	741, 284	214, 266	POSTER-B, CSB-2
Sharma	M.	Nirma University, India	1673	31	POSTER-A
Sharma	Manmohan	Department of Pharmaceutical Chemistry, Institute of Pharmacy, Nirma University, Ahmedabad, Gujarat, India; Department of Drug Science and Technology, University of Turin (UniTo), via Pietro Giuria 9, 10125 Torino (Italy)	1087	214	POSTER-B
Shehi	Haidi	Department of Biosciences, University of Milan, Via Celoria 26, 20133 Milano, Italy, Milano, Italy	1201	147	ORG-2B
Shimshoni	Elee	Weizmann Institute of Science, Israel	444	77	CSB-1A
Shitaye	Getasew	Department of Environmental, Biological and Pharmaceutical Science and Technology, University of Campania Luigi Vanvitelli, Caserta, Italy	1737	266	CSB-2
Shuck	Christopher	Università di Padova, Italia	995	199	ParallelTopic01 - ID: 199
Siani	Gabriella	Department of Pharmacy, University "G. d'Annunzio" of Chieti-Pescara, via dei Vestini 31, 66010 Chieti, Italy	1776	245	ORG-3B
Siano	Francesco	bIstituto di Scienze dell'Alimentazione – Consiglio Nazionale delle Ricerche, Avellino - Italy	1629	261	ALI-2B
Siano	Giacomo	Laboratorio di Biologia BIO@SNS, Scuola Normale Superiore Pisa, Italia; Institute of Neuroscience, Italian National Research Council (CNR), Pisa, Italia	792	31	POSTER-A
Sibella	Lorenzo	Politecnico di Torino, Italia	984	214	POSTER-B
Sibillano	Teresa	Istituto di Cristallografia-CNR, Bari, Italia	1458, 201	214, 243	POSTER-B, FIS-2B
Sica	Beatrice	Università di Torino, Italia	1732	31	POSTER-A
Sica	Filomena	Dipartimento di Scienze Chimiche, Università di Napoli Federico II, 80126 Napoli, Italia	209, 408, 1652	182, 242, 243	ParallelTopic12 - ID: 182, FIS-2A, FIS-2B
Sicilia	Emilia	Department of Chemistry and Chemical Technologies, University of Calabria, via P. Bucci 87036 Cosenza, Italy	141, 1300	214, 257	POSTER-B, TEO-C
Siciliano	Alessio	Department of Environmental Engineering (DIAm), University of Calabria, Via P. Bucci cubo 44/A, Rende (CS), Italy	1466	153	TEC-B
Siciliano	Tiziana	Dep. Matematica e Fisica, Università del Salento, Italia	1840, 924	31, 156	POSTER-A, ABC-C
Signoretto	Michela	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice and INSTM RU of Venice, via Torino 155, 30172 Venice, Italy	114, 126, 169, 586, 1908, 2017, 1971, 252, 118, 164	31, 31, 31, 31, 31, 178, 203, 73, 157, 262	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, ParallelTopic07 - ID: 178, ParallelTopic06 - ID: 203, ABC-A, IND-1B, IND-2A
Signorile	Matteo	Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15/A, I-10135, and Via P. Giuria 7, I-10125, Turin, Italy	423, 1764, 1059, 1058, 1409	31, 31, 214, 160, 235	POSTER-A, POSTER-A, POSTER-B, FIS-1B, FIS-1D
Signorini	Raffaella	Department of Chemical Sciences, University of Padova and INSTM, RU Padova, Via Loredan 2, Padova	1198, 1605	214, 214	POSTER-B, POSTER-B
Siligardi	Giuliano	Diamond Light Source, Harwell Science and Innovation Campus, Didcot, UK	1508	77	CSB-1A
Silipo	Alba	Federico II, Italia	1767, 1688	214, 147	POSTER-B, ORG-2B
Sillard	Cécile	Univ. Grenoble Alpes, CNRS, Grenoble INP, LGP2, Grenoble 38000, France	1099	214	POSTER-B
Silvani	Alessandra	Dipartimento di Chimica, Università degli studi di Milano, Milano	910, 1201	31, 147	POSTER-A, ORG-2B
Silveri	Filippo	Department of Bioscience and Technology for Food, Agriculture and Environment, University of Teramo, Campus "Aurelio Saliceti" via R. Balzarini 1, 64100 Teramo, Italy	844, 596	214, 142	POSTER-B, ANA-1C
Silvestri	Alessandro	Ca' Foscari, Italia	1089, 1090, 278	31, 31, 138	POSTER-A, POSTER-A, ANA-2A

Silvestri	Brigida	Dept. Civil, Architectural and Environmental Engineering, Univ. Naples Federico II, Naples, Italy	724	214	POSTER-B
Silvestri	Laura	Department of Energy Technologies and Renewable Sources, ENEA, C.R. Casaccia	718	39	ParallelTopic03
Simari	Cataldo	Department of Chemistry and Chemical Technology, University of Calabria, 87036 Rende (CS), Italy;	503, 167	174, 214	ParallelTopic03 - ID: 174, POSTER-B
Simionato	Gianluca	Università di Padova, Italia	488	31	POSTER-A
Simon	Daniel	Imperial College London, UK	1927	35	ParallelTopic01
Simone	Maristella	Università degli Studi di Bari "Aldo Moro", Italia	1638	214	POSTER-B
Simonetti	Giulia	Department of Chemistry, Sapienza University of Rome, P.le Aldo Moro 5 00185, Rome	332	214	POSTER-B
Simonetti	Valentina	Department of General Psychology, University of Padova, Via Venezia 8, 35131 Padova (PD), Italy	310	31	POSTER-A
Simons	Lloyd	Dipharma Inc, US	1958	256	ORG-4A
Simonutti	Roberto	Università di Milano Bicocca, Italia	2040	69	IND-1A
Simula	Maria Domenica	Dipartimento di Scienze Chimiche, Fisiche, Matematiche e Naturali, Università degli Studi di Sassari, Italia	1666	235	FIS-1D
Singhal	Ritik	Department of Synthetic Molecules Technical Development, Process Chemistry & Catalysis, F. Hoffmann-La Roche Ltd, Basel, Switzerland	166	240	INO-2A
Sini	Valeria	Department of Bioscence, Biotechnology and Environment, University of Bari "Aldo Moro"	1725	31	POSTER-A
Sinicropi	Adalgisa	Department of Biotechnology, Chemistry and Pharmacy, R2ES Lab, University of Siena, 53100 Siena, Italy; CSGI, Center for Colloids and Surface Science, 50019 Sesto Fiorentino, ItalyCSGI, Center for Colloids and Surface Science, 50019 Sesto Fiorentino, Italy; Institute of Chemistry of Organometallic Compounds (CNR-ICCOM), 50019 Sesto Fiorentino, Italy	245, 1212, 1216, 1363, 1477, 793	31, 31, 31, 31, 31, 214	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-B
Siracusa	Laura	CNR, Italia	1303	151	ORG-2D
Siragusa	Sonia	University of Piemonte Orientale, Italy	1307	214	POSTER-B
Sirch	Deborah	Istituto Europeo di Oncologia, Milano, Italia	262	214	POSTER-B
Sirignano	Marco	Università degli Studi di Salerno, Italia	1025	241	INO-2B
Sirleto	Luigi	Istituto di Scienze Applicate e Sistemi Intelligenti - Consiglio Nazionale delle Ricerche	1918	31	POSTER-A
Sirohiwal	Abhishek	Max-Planck-Institut für Kohlenforschung, Mülheiman der Ruhr, Germany; Department of Biochemistry and Biophysics, Stockholm University, Sweden	1398	31	POSTER-A
Sissa	Cristina	Università di Parma, Italia	528	254	INO-3
Sissi	Claudia	Università di Padova, Italia	809	41	ParallelTopic04
Sisti	Edoardo	Ulisse BioMed Labs, Area Science Park, 31149 Trieste, Italy; Department of Pharmacy, University of Pisa, via Bonanno 6, 56127 Pisa, Italy	518	31	POSTER-A
Sistili	Michelangelo	Università degli Studi di Milano, Italia	779	214	POSTER-B
Skinner	Marnie	Department of Chemistry & Biochemistry, Iona University, New Rochelle, NY US	1701	214	POSTER-B
Skripka	Artiom	Centre Énergie, Matériaux et Télécommincations, Institut National de la Recherche Scientifique, Université du Québec, 1650 Boul. Lionel Boulet, Varennes, Québec J3X 1P7, Canada	199	214	POSTER-B
Slimani	Sawssen	Università degli studi di Genova, Italia; Institute of Structure of Matter, National Research Council, nM2-Lab, Via Salaria km 29.300, Monterotondo Scalo 00015, Roma,	1317	253	INO-2C
Slootweg	Chris	University of Amsterdam, Netherlands, The	386	188	ParallelTopic03 - ID: 188
Smarsly	Bernd	Justus Liebig University Giessen, Heinrich Buff-Ring 17, 35392 Giessen, Germany.	381	153	TEC-B
Smith	Andrew	Proteomics and Metabolomics Unit, Department of Medicine and Surgery, University of Milano Bicocca	1535, 992	31, 71	POSTER-A, MAS
Soato	Matteo	Fidia Farmaceutici, Via Ponte della Fabbrica 3A, 35031 Abano Terme (PD), Italy	803	214	POSTER-B
Soave	Raffaella	Consiglio Nazionale delle Ricerche, Istituto di Scienze e Tecnologie Chimiche "Giulio Natta"	183, 921	155, 241	ELE-2, INO-2B
Sobolev	Anatoly P.	Magnetic Resonance Laboratory "Segre-Capitani", Institute for Biological Systems, CNR, Via Salaria, Km 29.300, 00015 Monterotondo, Italy	1541	60	ParallelTopic14
Soccio	Alberto	ISSMC-CNR, Italia	1359	214	POSTER-B
Soccio	Alberto	Università di Bologna, Italia	912	247	ORG-3D
Soccio	Michelina	Department of Civil, Chemical, Environmental, and Materials Engineering, University of Bologna,Via Terracini 28,40131, Bologna, Italy	1408, 1881, 1423	31, 211, 214	POSTER-A, ParallelTopic14 - ID: 211, POSTER-B
Sodomaco	Sveva	Scuola Normale Superiore, Italia	888	214	POSTER-B
Soeteman-Hernandez	Lya	RIVM, Center for Safety of Substances and Products, Bilthoven, the Netherlands	764	31	POSTER-A
Soggiu	Alessio	Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, One Health Unit, Università degli Studi di Milano, Via Pascal 36, 20133 Milan	1548	214	POSTER-B
Sokolsky	Georgii	Igor Sikorsky Kyiv Polytechnic Institute,	1786	214	POSTER-B
Solarino	Giovanni	Dipartimento di Chimica, Università di Torino, Italia	987	193	ParallelTopic09 - ID: 193
Soldati	Luca	Dipartimento di Chimica e Chimica Industriale, University of Pisa, Via G. Moruzzi 13, 56124, Pisa, Italy; Chimie ParisTech, PSL University, 11 Rue Pierre et Marie Curie, F-75005, Paris, France	214	31	POSTER-A
Soldati	Luca	Institute of Chemistry for Life and Health Sciences, École Nationale Supérieure de Chimie de Paris, PSL Research University, Centre National de la Recherche Scientifique, rue Pierre et Marie Curie 11, F-75005 Paris, France; Dipartimento di Chimica e Chimica Industriale, University of Pisa, Via G. Moruzzi 13, 56124 Pisa, Italy	1650	214	POSTER-B
Solida	Andrea	Università degli Studi di Milano, Dipartimento di Chimica, Via C. Golgi, 19, 20133 Milano	124	31	POSTER-A
Soliman	Ahmed	Department of Neurobiology, Osnabrück University, Osnabrück, Germany.	956	134	FAR-1C
Solomonov	Inna	Weizmann Institute of Science, Israel	444	77	CSB-1A
Solovyev	Pavel	Research and Innovation Centre, Fondazione Edmund Mach, San Michele All'Adige, Italy	172	261	ALI-2B
Somma	Stefania	Istituto di scienze delle produzioni alimentari (ISPA), CNR, 70126 Bari, Italy.	1416	214	POSTER-B
Sommella	Eduardo	Department of Pharmacy, University of Salerno, Via Giovanni Paolo II, 132, 84084 Fisciano, Italy	1531	250	ANA-3C
Son	Cagdas	ISTANBUL MEDIPOL UNIVERSITY, Turkey	1102	154	CSB-1B
Soncini	Monica	Politecnico di Milano, Italia	351	214	POSTER-B
Sonvico	Fabio	Università di Parma, Italia	1161	214	POSTER-B
Sonzogni	Beatrice	University of Bergamo, Department of Management, Information and Production Engineering, Bergamo	633	214	POSTER-B
Sorbi	Claudia	University of Modena and Reggio Emilia (UNIMORE), Via Giuseppe Campi, 103, Modena	743	31	POSTER-A
Sorci	Leonardo	Università Politecnica delle Marche, Italia	1706, 1366, 1679	214, 136, 151	POSTER-B, FAR-1D, ORG-2D
Sordello	Fabrizio	University of Turin, Italia	1044, 128, 442, 629, 1589, 908	31, 214, 249, 249, 249, 156	POSTER-A, POSTER-B, ANA-3B, ANA-3B, ANA-3B, ABC-C
Sorgente	Donato	School of Engineering, Università degli Studi della Basilicata, Potenza, Italia	1203	74	TEC-A
Sori	Lorenzo	Politecnico di Milano, Italia	351	214	POSTER-B
Soriano-Molina	Paula	Chemical Engineering Department, University of Almería, Ctra. de Sacramento s/n, Almería 04120, Spain	292	73	ABC-A
Soriente	Annunziata	Dipartimento di Chimica e Biologia, Università degli Studi di Salerno, Italia	1716, 454	71, 245	MAS, ORG-3B
Sorio	Daniela	Centro Piattaforme Tecnologiche, Piazzale Scuro 10, University of Verona, Verona, Italy	519	251	ANA-3D
Sorrenti	Valeria	Department of Drug and Health Sciences, University of Catania, Viale A. Doria 6, 95125, Catania, Italy	970	214	POSTER-B
Sorrentino	Giusi	Ca' Foscari University of Venice, Italia	806	73	ABC-A
Sorrentino	Luca	University of Milan, Italy	882	214	POSTER-B
Sorti	Letizia	Università degli Studi di Milano	1192, 1067	214, 155	POSTER-B, ELE-2
Sosic	A.	Università di Padova, Italia	1324	214	POSTER-B
Sosic	Alice	Department of Pharmaceutical and Pharmacological Sciences, University of Padova (Italy)	539, 1864	77, 255	CSB-1A, FAR-2A
Sossich	Elena	Ca' Foscari - Università di Venezia, Italia	1502, 1222	214, 144	POSTER-B, ANA-1D

Sotelo	Eddy	Centro Singular de Investigación en Química Biolóxica e Materiais Moleculares (CiQUS), Università di Santiago de Compostela, Santiago de Compostela, 15782, Spagna	137	31	POSTER-A
Sotelo	Eddy	Centro Singular de Investigación en Química Biolóxica e Materiais Moleculares (CiQUS), Departamento de Química Orgánica, Universidade de Santiago de CompostelSpain	159	31	POSTER-A
Sotgiu	Giovanni	Department of Industrial, Electronic and Mechanical Engineering, University of Roma Tre, Rome (Italy)	725	237	TEC-C
Sotillo Nunez	David	Università degli studi di Urbino, Italia	1606	214	POSTER-B
Sottani	Andrea	Sinergeo, Italia	1986	37	ParallelTopic02
Soursou	Vasiliki	Desertification Research Centre - CIDE (CSIC-UV-GV), University of Valencia, Road CV-315 km 10.7, Valencia, Moncada, 46113, Spain	1901	214	POSTER-B
Southwick	Caitlin	Ki Culture and Sustainability in Conservation, Amsterdam, The Netherlands	1905	214	POSTER-B
Sørlie	Morten	Faculty of Chemistry, Biotechnology and Food Science, NMBU-Norwegian University of Life Sciences, Ås, Norway	510	214	POSTER-B
Spadafora	Damiana Natasha	Department of Chemical, Pharmaceutical, and Agricultural Sciences, Via Luigi Borsari 46, University of Ferrara, 44121 Ferrara, Italy	842, 1068	140, 148	ANA-1B, ANA-2C
Spadafora	Natasha D.	Department of Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, Via Luigi Borsari n. 46 -44121, Ferrara, Italy	491	31	POSTER-A
Spadafora	Natasha Damiana	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, Ferrara, Italy	456	31	POSTER-A
Spagnolli	Giovanni	Sibylla Biotech S.p.A., Via Lillo del Duca 10, 20091, Bresso (MI), Italy	1557	31	POSTER-A
Spagnuolo	Antonio	Department of Environmental, Biological and Pharmaceutical Sciences and Technologies and MAReA Centre, University of Campania, Via Vivaldi 43, 81100 Caserta, Italy	1735	31	POSTER-A
Spagnuolo	Laura	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, via Giuseppe Moruzzi 13, 56124, Pisa	419	247	ORG-3D
Spagnuolo	Matteo	Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli studi di Bari Aldo Moro, via Amendola 165/a, Bari, Italy	1555	247	ORG-3D
Spagnuolo	Rosaria	Università di Bologna, Italia	848, 967	214, 214	POSTER-B, POSTER-B
Spallarossa	Andrea	Università degli Studi di Genova, Italia	132	132	FAR-1B
Spalluto	Giampiero	Università degli Studi di Trieste, Dipartimento di Scienze Chimiche e Farmaceutiche, Via Licio Giorgieri 1, 34127 Trieste	685, 684	31, 214	POSTER-A, POSTER-B
Spanò	Gabriele	Politecnico di Milano, Italia	1356	214	POSTER-B
Spano	Nadia	Dipartimento di Scienze Chimiche, Fisiche, Matematiche e Naturali, Università degli Studi di Sassari, Via Vienna 2, 07100-Sassari, Italia	728	150	ANA-2D
Spanu	Antonino	Dipartimento di Agraria, Università degli Studi di Sassari, Viale Italia 39A, 07100-Sassari, Italia	728	150	ANA-2D
Spataro	Davide	Università Degli Studi di Parma, Italia	1580	31	POSTER-A
Spatola	Emanuele	Universität Ulm	1084	31	POSTER-A
Spatola	Emanuele	Sapienza Università di Roma, Italia	1229	243	FIS-2B
Speciale	Immacolata	Department of Chemical Sciences, University of Napoli, Via Cintia 26, 80126 Napoli	1029	154	CSB-1B
Spedicato	Matteo	Dept. of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, via L. Borsari 46, Ferrara, Italy	574	140	ANA-1B
Speghini	Adolfo	Nanomaterials Reisearch Group, Department of Botechnology, University of Verona	841, 1198, 1605, 840	214, 214, 214, 254	POSTER-B, POSTER-B, POSTER-B, INO-3
Speltini	Andrea	Università di Pavia, Italia	562, 614, 606, 581	31, 31, 214, 249	POSTER-A, POSTER-A, POSTER-B, ANA-3B
Spennacchio	Mauro	Università degli Studi di Bari, Italia	595	31	POSTER-A
Sperandeo	Paola	Università degli Studi di Milano, Italia	926	214	POSTER-B
Speranza	Giovanna	Università degli Studi di Milano, Italia	133, 645, 1891	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Speranza	Roberto	Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy; Istituto Italiano di Tecnologia, Via Livorno 60, 10144 Torino , Italy	380	31	POSTER-A
Sperati	Valeria	Politecnico di Torino, Italia; Istituto Italiano di Tecnologia, Italia	1429	214	POSTER-B
Spezzani	Elena	University of Parma, Italia	376	214	POSTER-B
Spicer	Lucy Anne Rose	University of Milan, Italy	882	214	POSTER-B
Spiga	Filippo	NVIDIA Ltd, Cambridge UK	1208	31	POSTER-A
Spiga	Ottavia	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, 53100 Siena, Italy Department of Biotechnology, Chemistry and Pharmacy, University of Siena, 53100 Siena, Italy	245	31	POSTER-A
Spina	Alfio	CREA—Consiglio per la Ricerca in Agricoltura e l'analisi dell'Economia Agraria, Centro di Ricerca Cerealicoltura e Colture Industriali, Corso Savoia 190, 95024 Acireale, Italy	624	31	POSTER-A
Spinelli	Daniele	Next Technology Tecnotessile Società Nazionale di Ricerca r.l., Italia	751	214	POSTER-B
Spinelli	Lucio	Università degli studi di Napoli Federico II, Italia	656	214	POSTER-B
Spinello	Angelo	Università di Palermo, Italia	1036, 1220	214, 154	POSTER-B, CSB-1B
Spogli	Roberto	Prolabin & Tefarm Srl, Via dell'Acciaio 9, Pontefelcino, Perugia	356	211	ParallelTopic14 - ID: 211
Sportelli	Maria Chiara	Università degli Studi di Bari Aldo Moro, Italia; CSGI (Center for Colloid and Surface Science), Italia	862, 677, 854	214, 250, 250	POSTER-B, ANA-3C, ANA-3C
Spoto	Giuseppe	Università degli Studi di Catania, Italia	256	35	ParallelTopic01
Spotti	Matteo	Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, Italy	350	214	POSTER-B
Spyrakis	Francesca	Department of Drug Science and Technology, University of Turin, Via Giuria, 9, 10125, Turin, Italy	1103, 273, 1422	31, 214, 134	POSTER-A, POSTER-B, FAR-1C
Squarcia	Laura	Ulisse BioMed Labs, Area Science Park, 31149 Trieste, Italy	518	31	POSTER-A
Squarzoni	Alessandra	Università degli Studi di Ferrara, Italia	1348	31	POSTER-A
Squeo	Benedetta Maria	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" SCITEC-CNR, Via Corti 12, 20133 Milano, Italy	1186, 1603, 1625	214, 214, 246	POSTER-B, POSTER-B, ORG-3C
Squitieri	Damiano	Department of Basic Biotechnological Sciences, Intensive and Perioperative Clinics, Università Cattolica del Sacro Cuore, Largo A. Gemelli, 00168, Rome, Italy	880	31	POSTER-A
Stacchini	Paolo	Istituto Superiore di Sanità, Italia	1946	184	ParallelTopic14 - ID: 184
Staffa	Angela	Merck Healthcare KGaA, Frankfurter Str. 250, 64293 Darmstadt	237	62	ParallelTopic15
Stagnaro	Paola	CNR SCITEC, Italia	529, 1961, 1923	31, 196, 214	POSTER-A, ParallelTopic13 - ID: 196, POSTER-B
Stagni	Stefano	Dipartimento di Chimica Industriale 'Toso Montanari', Università degli Studi di Bologna, Italy	204, 302	214, 166	POSTER-B, INO-1C
Stallone	Margherita	Università degli Studi di Bari Aldo Moro, Italia	1622	214	POSTER-B
Stamatakis	Michail	Physical and theoretical chemistry laboratory, University of Oxford, Oxford, UK	362	31	POSTER-A
Stamm	Fiona	University of Zurich, Zurich CH-8057, Switzerland	565	154	CSB-1B
Stefanachi	Angela	università degli studi di Bari Aldo Moro, 70125, Bari, Italia	137	31	POSTER-A
Stefanachi	Angela	Università degli studi di Bari Aldo Moro, Italia	159, 1149	31, 31	POSTER-A, POSTER-A
Stefania	Marzorati	Università degli Studi di Milano, Italia	589	177	ParallelTopic06 - ID: 177
Stefania	Rachele	Università degli Studi del Piemonte Orientale, Italia	1353, 1702	31, 31	POSTER-A, POSTER-A
Stefâno	Erika	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy	1155	31	POSTER-A
Stefano	Erika	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy.	1153	214	POSTER-B
Stefâno	Erika	Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Via Monteroni, I-73100 Lecce, Italy.	1428	67	INO-1A
Stefanoni	Mattia	Department of Civil and Environmental Engineering, Politecnico di Milano	1447	214	POSTER-B
Stefanucci	Azzurra	Università degli Studi "G. d'Annunzio" Chieti-Pescara, Italia	1795, 1136	31, 260	POSTER-A, ALI-2A
Steiner	Markus	Department of Synthetic Molecules Technical Development, Process Chemistry & Catalysis, F. Hoffmann-La Roche Ltd, Basel, Switzerland	166	240	INO-2A
Stelitano	Giovanni	Department of Biology and Biotechnology "Lazzaro Spallanzani", University of Pavia, via A. Ferrata 9, 27100 Pavia, Italy	693, 1082	214, 214	POSTER-B, POSTER-B
Stella	Francesca	Università di Camerino, Italia	1225	31	POSTER-A
Stellari	Fabio	Chiesi Farmaceutici SpA, Italia	941	31	POSTER-A
Stellitano	Giovanni	Università degli Studi di Pavia, Italia	1081	214	POSTER-B
Sterflinger	Katja	Institute of Natural Sciences and Technology in the Arts, Academy of Fine Arts Vienna, Austria	1000	214	POSTER-B
Stergiou	Anastasios	Politecnico di Milano, Italia	338	214	POSTER-B
Stevanin	Claudia	Department of Environmental and Prevention Sciences, University of Ferrara, Via Luigi Borsari n. 46 - 44121, Ferrara, Italy	646	66	ANA-1A
Stevanin	Claudia	Department of Environmental and Prevention Sciences, University of Ferrara, Via L. Borsari 46, 44121 Ferrara, Ital	842, 1068	140, 148	ANA-1B, ANA-2C
Stevanin	Claudia	Department of Environmental and Prevention Sciences, Via L.Borsari 46, Ferrara	1223	239	ABC-D
Stewart	Cate	Dipharma Inc, US	1958	256	ORG-4A
Stocchero	Matteo	University of Padova	781, 773	214, 71	POSTER-B, MAS

Stoeckle	Aaron	Leibniz University Hannover, Germany	735	31	POSTER-A
Stols-Witlox	Maartjie	Conservation and Restoration, University of Amsterdam, Amsterdam, The Netherlands	1905	214	POSTER-B
Stone	Vicki	Heriot-Watt University, Edinburgh, United Kingdom	764	31	POSTER-A
Storchi	Jennifer	Università degli Studi di Modena e Reggio Emilia, Dipartimento di Scienze Chimiche e Geologiche, via G. Campi 103, 41125 Modena, Italia	213, 193	214, 67	POSTER-B, INO-1A
Storici	Paola	Elettra Sincrotone Trieste S.C.p.A, SS14 – km 163,5 in AREA Science Park, Basovizza, 34149 Trieste	685, 684	31, 214	POSTER-A, POSTER-B
Storme	Kayla R.	Department of Chemistry Massachusetts Institute of Technology, Cambridge, USA	814	242	FIS-2A
Stornaiuolo	Mariano	Department of Pharmacy, School of Medicine and Surgery, University of Naples Federico II, via D. Montesano 49, 80131, Naples, Italy	1454	214	POSTER-B
Stragapede	Simona	U.O. Neurological Clinic of the University of Ferrara	688	143	ORG-1C
Strani	Lorenzo	Università di Modena e Reggio Emilia, Italia	815	214	POSTER-B
Strani	Lorenzo	Università degli studi di Modena e Reggio Emilia, Italia	839	249	ANA-3B
Strani	Lorenzo	Università degli Studi di Modena e Reggio Emilia, Italia	1417	150	ANA-2D
Strano	Tonia	CNR, Italia	1303	151	ORG-2D
Sträter	Norbert	Institute of Bioanalytical Chemistry, Center for Biotechnology and Biomedicine, Leipzig University, Deutscher Platz 5, 04103 Leipzig, Germany	674	65	FAR-1A
Stredansky	Matus	CNR - Istituto Officina dei Materiali (IOM), Strada Statale 14 – km 163.5, 34149 Trieste, Italy	1050	214	POSTER-B
Strettoi	Enrica	Italian National Research Council	1576	136	FAR-1D
Striccoli	Marinella	Dipartimento di Chimica, Università degli Studi di Bari, via Orabona 4, 70126, Italia	829, 938, 678	214, 214, 243	POSTER-B, POSTER-B, FIS-2B
Stringaro	Annarita	National Center for Drug Research and Evaluation, Istituto Superiore di Sanità, V.le Regina Elena 299 Rome 00161 (IT)	934	214	POSTER-B
Stucchi	Diego	Università degli Studi di Milano Bicocca, Italia	1146, 1537	214, 72	POSTER-B, ELE-1
Stucchi	Giulia	Università degli Studi di Milano Bicocca, Italia	1146	214	POSTER-B
Stucchi	Marta	UNIVERSITA DEGLI STUDI DI MILANO, Italia	766, 787, 158	31, 214, 240	POSTER-A, POSTER-B, INO-2A
Stufano	Paolo	CNR-NANOTEC, Consiglio Nazionale delle Ricerche	1450, 1070, 1721, 740, 1327	210, 214, 214, 252, 252	ParallelTopic13 - ID: 210, POSTER-B, POSTER-B, FIS-3, FIS-3
Sturabotti	Elisa	Sapienza Università di Roma, Italia	1107	31	POSTER-A
Sturaro	Chiara	U.O. Neurological Clinic of the University of Ferrara	688	143	ORG-1C
Suárez	Margarita	Universidad de la Habana, Cuba	1734	245	ORG-3B
Suman	Michele	Analytical Food Science, Barilla G. e R. Fratelli S.p.A., Via Mantova, 166, 43122, Parma; Department for Sustainable Food Process, Catholic University Sacred Heart, Piacenza	326	250	ANA-3C
Summa	Vincenzo	Department of Pharmacy, University of Napoli "Federico II", via D. Montesano 49, 80131, Naples Italy	1455, 1557, 1842, 1454, 1475, 1948, 1483	31, 31, 31, 214, 214, 65, 132	POSTER-A, POSTER-A, POSTER-A, POSTER-B, POSTER-B, FAR-1A, FAR-1B
Summer	Andrea	Department of Veterinary Science, University of Parma	1368	251	ANA-3D
Sun	Tao	Shenyang University of Technology, School of Petrochemical Engineering, Liaoyang, 111003, Liaoning, P. R. China	339	140	ANA-1B
Sun	Yue	School of Pharmacy, Chemistry Interdisciplinary Project (ChIP), University of Camerino, Camerino, Italy	478	31	POSTER-A
Superchi	Stefano	Università degli studi della Basilicata, Italia	1675, 1775, 1831	31, 31, 256	POSTER-A, POSTER-A, ORG-4A
Supuran	Claudiu	NEUROFARBA Department, Pharmaceutical and Nutraceutical Section, University of Florence, Via U. Schiff 6, Sesto Fiorentino, 50019 Florence, Italy	704	31	POSTER-A
Supuran	Claudiu Trandafir	Università degli Studi di Firenze, Italia	850	31	POSTER-A
Suranna	Gian Paolo	Dipartimento di Ingegneria Civile, Ambientale, del Territorio, Edile e di Chimica (DICATECh), Politecnico di Bari, Via Orabona 4, 70125 Bari, Italy; CNR NANOTEC − Istituto di Nanotecnologia, Via Monteroni, 73100 Lecce, Italy	1110, 1292	31, 236	POSTER-A, TEC-D
Sut	Stefania	Università di Padova, Padova, Italia	692	260	ALI-2A
Svitlyk	Volodymyr	ESRF, European Synchrotron Radiation Facility, 71 Avenue des Martyrs, CS40220, 38043 Grenoble Cedex 9, France	1873	198	ParallelTopic15 - ID: 198
Swager	Timothy M.	Department of Chemistry Massachusetts Institute of Technology, Cambridge, USA	814	242	FIS-2A
Symeonidi	Lydia	Laboratory of Pharmacology, Faculty of Pharmacy, National and Kapodistrian University of Athens, Greece	1226	31	POSTER-A
T.Hupp	Joseph	Northwestern University, Evanston, Illinois	958	214	POSTER-B
Tabanelli	Tommaso	Dipartimento di Chimica Industriale "Toso Montanari" and Center for Chemical Catalysis-C3, Università di Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	436, 937, 469, 558	31, 31, 158, 262	POSTER-A, POSTER-A, IND-1C, IND-2A
Tabarrini	Oriana	Università degli studi di Perugia, Dipartimento di Scienze Farmaceutiche, Italia	1043, 1456, 1631	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Tabasso	Silvia	Università degli Studi di TORINO, Italia	418	158	IND-1C
Tabatabaeizadeh	Hedieh Sadat	Department of Chemistry, NIS and INSTM Reference Centre, Università di Torino, Via G. Quarello 15, 10135 and Via P. Giuria 7, 10125, Torino, Italy	1059	214	POSTER-B
Tacca	Alessandra	ENI Novara Laboratories (NOLAB), Italia	1327	252	FIS-3
Taddei	Marco	University of Pisa, Italy	1409	235	FIS-1D
Taddei	Maurizio	Dipartimento di Biotecnologie, Chimica e Farmcia, Università degli Studi di Siena, Via Aldo Moro, 2 - 53100, Siena	869	214	POSTER-B
Taddei	Stefano	Department of Pathology, Cardiology Division, University of Pisa, Savi 10, Pisa, Italy	1438	258	ANA-4A
Taddeo	Francesco	Università di Napoli Federico II, Italia	177, 476	31, 158	POSTER-A, IND-1C
Taddeucci	Andrea	Università di Pisa, Italia	526	244	ORG-3A
Tadiello	Luciano	Pirelli Tyre S.p.A., Viale Piero e Alberto Pirelli, 25, I-20126 Milan, Italia	991	31	POSTER-A
Tae	Han-Shen	Illawarra Health and Medical Research Institute, University of Wollongong, Wollongong, New South Wales, Australia	758	136	FAR-1D
Taghavi	Somayeh	Faculty of Chemistry, University of Mazandaran, Babolsar 47416-95447, Iran	1908	31	POSTER-A
Taglialatela - Scafati	Orazio	Università degli Studi di Napoli Federico II, Italia	1686	31	POSTER-A
Taglialatela-Scafati	Orazio	Università degli Studi di Napoli Federico II	749	214	POSTER-B
Tagliaro	Irene	Università degli Studi di Milano-Bicocca, Italia	441	214	POSTER-B
Tagliatesta	Pietro	STARTNETICS, Italia	1385, 1239	214, 241	POSTER-B, INO-2B
Tagliazucchi	Lorenzo	Università di Modena e Reggio Emilia, Italia	1682, 904	214, 255	POSTER-B, FAR-2A
Taglieri	Francesco	Dipartimento di Scienze Fisiche e Chimiche, Università degli Studi dell'Aquila, Italia	947	214	POSTER-B
Taglietti	Angelo	Università di Pavia, Italia	1649	31	POSTER-A
Taglietti	Angelo Maria	Università degli studi di Pavia, Dipartimento di Chimica, Italia	898	254	INO-3
Taglietti	L.	Dipartimento di chimica "Ugo Schiff" DICUS, Università di Firenze, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Italia	732	214	POSTER-B
Taglietti	Lorenzo	Università degli Studi di Milano-Bicocca, Italia	1588	214	POSTER-B
Taglioni	Enrico	Università degli Studi di Roma "La Sapienza", Italia	449, 450, 358, 475	31, 214, 66, 146	POSTER-A, POSTER-B, ANA-1A, ANA-2B
Taini	Giulia	università degli studi di Milano, Italia	1232, 390	31, 264	POSTER-A, ORG-1B
Tajoli	Francesca	Department of Chemical Sciences, University of Padova and INSTM, RU of Padova, via Marzolo 1, I-35131, Padova, Italy	1605	214	POSTER-B
Takats	Zoltan	University of Regensburg, Germany; Imperial College London, UK	1927	35	ParallelTopic01
Talamo	Sahra	Università di Bologna, Italia	1459	238	ABC-B
Talarico	Carmine	EXSCALATE – Dompè Farmaceutici SpA, via Tommaso De Amicis 95, 80131, Napoli, Italy	1955	134	FAR-1C
Talarico	Francesco	University of Insubria, Department of Science and High Technology, Italy	1373	214	POSTER-B
Talarico	Luigi	Università di Siena, Dipartimento di Biotecnologie, Chimica e Farmacia, Italia; CSGI - Consorzio Interuniversitario per i Sistemi a Grande Interfase, Firenze, Italia; INSTM Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Firenze, Italia	1176, 1632	165, 243	INO-1B, FIS-2B
Taliani	Sabrina	Università di Pisa, Italia	994	264	ORG-1B
Talibov	Vladimir O.	Department of Chemistry – BMC and Science for Life Laboratory, Uppsala University, Uppsala, Sweden	1457	132	FAR-1B
Talotta	Carmen	Dipartimento di Chimica e Biologia, Università degli Studi di Salerno, Italia	1716, 454	71, 245	MAS, ORG-3B
Talukdar	Smritirekha	University of Trieste, Italy	1834	214	POSTER-B
Tam	Vivienne	Mining and Materials Engineering, McGill University, 3610 Rue University, Montreal, Quebec H3A 0C5, Canada	199	214	POSTER-B

Tamasi	Gabriella	Università di Siena, Italia; CSGI - Center for Colloid and Surface Science	1815, 1635, 1214, 1379	31, 248, 150, 235	POSTER-A, ANA-3A, ANA-2D, FIS-1D
Tamboia	Giulia	Department of Molecular Biochemistry and Pharmacology, Istituto di Ricerche Farmacologiche Mario Negri "IRCCS, Via Mario Negri 2, 20156 Milan, Italy; Department of Pharmaceutical Sciences, DISFARM, Università degli Studi di Milano, Via Golgi 19, 20133 Milan, Italy	199, 391	214, 214	POSTER-B, POSTER-B
Tamborini	Lucia	Dept. of Pharmaceutical Sciences, University of Milan, Via Mangiagalli 25, 20133 Milan, Italy	598, 962, 1003, 1148, 1453, 1596, 961, 1322	31, 31, 31, 31, 31, 31, 255, 259	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, FAR-2A, ALI-1B
Tamimi	Sara	Aboca S.p.A., Italia	774, 773	31, 71	POSTER-A, MAS
Tamini	Nicolò	University of Milano-Bicocca, School of Medicine and Surgery, via Raoul Follereau 3, Vedano al Lambro (MB); IRCCS San Gerardo dei Tintori, Via Pergolesi 33, Monza	633	214	POSTER-B
Tammaro	Daniele	Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università di Napoli Federico II, Napoli 80125, Italy; DPI, 5600 AX Eindhoven, the Netherlands	1822	240	INO-2A
Tammaro	Federica	Demak Polymers Srl, Torino	561	262	IND-2A
Tammaro	Olimpia	Politecnico di Torino, Italia	984	214	POSTER-B
Tanasi	Davide	University of South Florida, Tampa, US	324	73	ABC-A
Tanchoux	Nathalie	University of Montpellier	912	247	ORG-3D
Tanda	Francesca	University of Milan, Italy	882	214	POSTER-B
Tango	Valessia	Dipartimento di Chimica, Università di Torino, Via Pietro Giuria 7, 10125, Torino	1426	214	POSTER-B
Tanini	Damiano	Università di Firenze, Dipartimento di Chimica Ugo Schiff, Italia	968, 1495	31, 214	POSTER-A, POSTER-B
Tanzilli	Daniele	University of Modena and Reggio Emilia, Department of Chemical and Geological Sciences, Via Campi 103, Modena, 41125, Italy ; University of Lille, LASIRE, CNRS, LASIRE (UMR 8516), Laboratoire Avancé de Spectroscopie pour les Interactions, la Réactivité et l'Environnement, F-59000 Lille, France	1689	214	POSTER-B
Tao	Qingping	GC Image, PO Box 57403, Lincoln, NE 68505-7403, USA	238	186	ParallelTopic01 - ID: 186
Tarakeshwar	Pilarisetty	Arizona State University, USA	119	214	POSTER-B
Tarallo	Oreste	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Italia	768	265	DID-B
Tarantino	Serena Chiara	Università degli studi di Pavia, Dipertimento di Chimica, viale Taramelli 12, Pavia, Italy	1156	31	POSTER-A
Tardiolo	Nicola	Dipartimento di Biotecnologie, Chimica e Farmacia, Università di Siena, Via Aldo Moro 2, 53100, Siena, Italia	1628	214	POSTER-B
Tardugno	Roberta	Department of pharmacy - drug science, University of Bari "Aldo Moro", Italy	648	78	ALI-1A
Taresco	Vincenzo	Sapienza Università di Roma, Italia	1107, 1460	31, 69	POSTER-A, IND-1A
Tartaggia	Stefano	Istituto di Chimica Biomolecolare del CNR, Padova, IT	1508	77	CSB-1A
Tartaglione	Luciana	UNINA DF, University of Naples Federico II, School of Medicine and Surgery, Department of Pharmacy, Napoli, Italy	1566	150	ANA-2D
Tassi	Anna Laura	università di milano, Italia	1257, 1644	214, 156	POSTER-B, ABC-C
Tassinari	Francesco	Dept. of Chemical and Geological Sciences & INSTM RU, University of Modena and Reggio Emilia, I-41125, Modena	662	241	INO-2B
Tassistro	Michela	Consiglio Nazionale delle Ricerche - Istituto di Scienze e Tecnologie Chimiche, SCITEC-CNR, Genova	2025	192	ParallelTopic08 - ID: 192
Tassone	Giusy	Dipartimento di Biotecnologie Chimica e Farmacia, Università di Siena, Siena, Italia	1577, 869, 755	31, 214, 154	POSTER-A, POSTER-B, CSB-1B
Tata	Alessandra	Istituto Zooprofilattico Sperimentale Delle Venezie, Laboratorio di Chimica Sperimentale, Viale Fiume 78, 36100, Vicenza	326	250	ANA-3C
Tatini	Duccio	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Italy	1379	235	FIS-1D
Tatsi	Elisavet	Politecnico di Milano	290	253	INO-2C
Tavanti	Arianna	Department of Biology, University of Pisa, via San Zeno 37, 56127 Pisa, Italy	1781, 1536	31, 214	POSTER-A, POSTER-B
Taverniti	Maria	Institute of Informatics and Telematics, CNR-IIT	632	214	POSTER-B
Taviot-Guého	Christine	Institute of Chemistry of Clermont-Ferrand, University Clermont-Auvergne, UMR CNRS 6296, Aubière, France	1179	214	POSTER-B
Tawil	Michel	Center for Sustainable Future Technologies, Istituto Italiano di Tecnologia, Via Livorno 60, 10144 Torino, Italy; Dipartimento di Ingegneria dell'Ambiente del Territorio e delle Infrastrutture (DIATI), Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy	1564	31	POSTER-A
Taylor	Joel	Norwegian Institute for Cultural Heritage Research, Oslo, Norway	1905	214	POSTER-B
Tecilla	Paolo	Università degli Studi di Trieste, Italia	1183	214	POSTER-B
Tedeschi	Paola	Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, Ferrara, Italy	456, 1348	31, 31	POSTER-A, POSTER-A
Tedeschi	Tullia	Department of Food and Drug, University of Parma, Italy	481, 224	261, 151	ALI-2B, ORG-2D
Tedeschi	Vincenzo	Dipartimento di Chimica, Università degli studi di Bari Aldo Moro, via Orabona 4, 70126 Bari, Italy	1010	214	POSTER-B
Tedesco	Consiglia	Università di Salerno, Italia	628	147	ORG-2B
Tedesco	Costanza	Department of chemistry, University of Pavia	811, 606	31, 214	POSTER-A, POSTER-B
Tedesco	Daniele	Institute of Organic Synthesis and Photoreactivity - National Research Council, via P. Gobetti 101, Bologna, Italy	1457	132	FAR-1B
Tedesco	Filomena	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739	31	POSTER-A
Tegoni	Matteo	Università Degli Studi di Parma, Italia	1580	31	POSTER-A
Tei	Lorenzo	Dipartimento di Scienze e Innovazione Tecnologica, Università del Piemonte Orientale, Italia	1014, 431, 1017, 1018, 434	31, 214, 214, 214, 165	POSTER-A, POSTER-B, POSTER-B, POSTER-B, INO-1B
Temelkuran	Burak	Imperial College London, UK	1927	35	ParallelTopic01
Temporini	Caterina	Università di Pavia, Italia	918	146	ANA-2B
Temporiti	Marta Elisabetta Eleonora	Department of Earth and Environment Sciences, University of Pavia, Via Ferrata 1, 27100, Pavia, Italy	944	214	POSTER-B
Tenore	Gian Carlo	Department of Pharmacy, School of Medicine and Surgery, University of Naples Federico II, via D. Montesano 49, 80131, Naples, Italy	1454, 1475, 548	214, 214, 259	POSTER-B, POSTER-B, ALI-1B
Teodori	Elisabetta	Università degli Studi di Firenze, Italia	850, 1342	31, 214	POSTER-A, POSTER-B
Terenziani	Francesca	Università di Parma, Italia	511	31	POSTER-A
Termopoli	Veronica	Department of Earth and Environmental Sciences, University of Milano-Bicocca, Milan, Italy	954, 1797	140, 140	ANA-1B, ANA-1B
Terrabuio	Eleonora	Dipartimento di Medicina, Sezione di Patologia Generale, Università di Verona, Strada le Grazie 8, 37134 Verona, Italia	1069	214	POSTER-B
Terracciano	Stefania	Department of Pharmacy, University of Salerno, Via Giovanni Paolo II 132, 84084 Fisciano, Italy	312, 259, 1521, 654	31, 214, 147, 151	POSTER-A, POSTER-B, ORG-2B, ORG-2D
Terraneo	Giancarlo	Politecnico di Milano, Italia	262, 338, 357	214, 214, 237	POSTER-B, POSTER-B, TEC-C
Terreni	Marco	University of Pavia, Italy	1803	214	POSTER-B
Terreno	Enzo	Dipartimento di Biotecnologie Molecolari e Scienze per la Salute, Torino, Italia	867, 1328, 434	214, 67, 165	POSTER-B, INO-1A, INO-1B
Terrigno	Vittoria	Università Campus Bio-Medico di Roma, Italia	1062	214	POSTER-B
Tersigni	Mariaroberta	Comitato Organizzatore dei Giochi della Chimica - ITT-LSA "Ettore Molinari", Milano	1782	265	DID-B
Terzano	Roberto	Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (Di.S.S.P.A.), Università degli studi di Bari Aldo Moro, via Amendola 165/a, Bari, Italy	1555	247	ORG-3D
Terzi	Alberta	Institute of Crystallography, National Research Council (IC-CNR), v. Amendola 122/O, Bari, (Italy)	201	243	FIS-2B
Tesei	Anna	Medical Oncology Unit, IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST) "Dino Amadori", 47014 Meldola, Italy	904	255	FAR-2A
Tesoro	Carmen	Università degli Studi della Basilicata, Italia	933, 1903	214, 214	POSTER-B, POSTER-B
Tesser	Riccardo	Università degli Studi di Napoli Federico II, Dipartimento di Scienze Chimiche, via Cintia, IT-80126 Napoli	476	158	IND-1C
Tessore	Francesca	Università degli Studi di Milano, Italia	183	155	ELE-2
Testa	Caterina	Dipartimento di Scienze Chimiche, Università di Catania, Italia	1086, 1085	214, 246	POSTER-B, ORG-3C
Testa	Edoardo	Politecnico di Milano, Italia	943, 996	214, 214	POSTER-B, POSTER-B
Testa	Italo	Dipartimento di Fisica "E.Pancini", Università degli Studi di Napoli Federico II, Italia	768	265	DID-B
Testa	Maria Luisa	CNR-ISMN (Palermo, Italy)	1384	265	DID-B
Testa	Valentina	Università di Torino, Italia	415, 160	248, 146	ANA-3A, ANA-2B
Testolin	Anna	Industrie De Nora S.p.A.	486	31	POSTER-A
Tettamanti	Gianluca	Università degli Studi dell'Insubria, Italia	996	214	POSTER-B
Thepaut	Michél	Université Grenoble Alpes, CNRS, CEA, Institut de Biologie Structurale, Grenoble, France	1271	139	ORG-2A
Thiaudiere	Eric	University of Bordeaux-CNRS, France	1353	31	POSTER-A
Thickett	David	English Heritage, London, UK	1905	214	POSTER-B
Thirunavukkarasu	Thangavel	Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, India	1284	74	TEC-A

Thomas	Sam	Dipartimento di Chimica Industriale “Toso Montanari” and Center for Chemical Catalysis-C3, Università di Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	436	31	POSTER-A
Tiberi	Maria Teresa	Laboratory of Green S.O.C. – Dipartimento di Chimica, Biologia e Biotecnologie, Università degli Studi di Perugia, Via Elce di Sotto 8, 06123, Perugia, Italy	490	244	ORG-3A
Ticali	Pierfrancesco	Institute for Inorganic Chemistry, Christian-Albrechts Univerisity of Kiel, 24118 Kiel, Germany	200	160	FIS-1B
Tiecco	Matteo	Università di Camerino, Italia	296	143	ORG-1C
Tiemblo	Marta	Federico II, Italia	1767	214	POSTER-B
Tino	Angela	Università degli Studi di Firenze, Italia	1367	154	CSB-1B
Tinti	Laura	Fondazione Toscana Life Sciences, Siena, Italia	1221	214	POSTER-B
Tira	Roberto	Università di Verona, Italia	1072	154	CSB-1B
Tiranti	Valeria	IRCCS Istituto Neurologico Carlo Besta	1154	31	POSTER-A
Tirelli	Nicola	Istituto Italiano di Tecnologia, Italy	1975	175	ParallelTopic04 - ID: 175
Tiziano	Montini	University of Trieste, Italy	1834	214	POSTER-B
Tkachuk	Oleh	Department of Pharmacy, University of Naples Federico II, Via Domenico Montesano, 49, 80131 Napoli, (NA), Italy	824	214	POSTER-B
Tocchio	Alessandro	XGLab SRL – Bruker Nano Analytics, 20134 Milano, Italy	1558, 1790	214, 156	POSTER-B, ABC-C
Todaro	Massimo	Department of Agricultural, Food and Forest Sciences (SAAF), Università degli Studi di Palermo, Viale delle Scienze, 90128 Palermo, Italy	973	31	POSTER-A
Todisco	Stefano	Politecnico di Bari, Italia	1098	31	POSTER-A
Toerner	Ricarda	Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School (HMS), Building C, 240 Longwood Ave, 02115 Boston, MA, USA; Department of Cancer Biology, Dana-Farber Cancer Institute (DFCI), 450 Brookline Ave, 02215 Boston, MA, USA	1643	56	ParallelTopic12
Toffoli	Daniele	Department of Chemical and Pharmaceutical Sciences, University of Trieste, via L. Giorgieri 1, 34127, Italy; CNR - Istituto Officina dei Materiali (IOM), Strada Statale 14 – km 163.5, 34149 Trieste, Italy	1050, 1492	214, 214	POSTER-B, POSTER-B
Tofoni	Alessandro	Department of Chemistry, Sapienza University of Rome; ALISTORE European Research Institute	718	39	ParallelTopic03
Tognolini	Massimiliano	Università di Parma, Italia	1787	132	FAR-1B
Togo	Maria Vittoria	Dipartimento di Farmacia-Scienze del Farmaco, Università degli Studi di Bari 'Aldo Moro', Italia	1180	134	FAR-1C
Tolazzi	Marilena	Università di Udine, Italia	1451, 786, 1166	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Tolbatov	Iogann	Department of Physics and Astronomy, University of Padova, Via F. Marzolo 8, 35131, Padova, Italy	341	165	INO-1B
Tolomelli	Alessandra	Università di Bologna, Italia	1837, 914	31, 147	POSTER-A, ORG-2B
Toma	Andrea	Italian Institute of Technology (IIT), Genova, Italy	1679	151	ORG-2D
Toma	Lorenzo	Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Parma, Italy	1375	214	POSTER-B
Tomaino	Elisabetta	Università degli studi della Tuscia, Dipartimento di Scienze Ecologiche e Biologiche Italia	257	141	ORG-1A
Tomaiuolo	Michele	Laboratorio Nazionale di Riferimento per il trattamento degli alimenti e dei loro ingredienti con radiazioni ionizzanti – Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Via Manfredonia, 20 – 71121 Foggia	1424	31	POSTER-A
Tomarchio	Elisabetta Grazia	Dipartimento di Scienze Biomediche e Biotecnologiche, Università degli Studi di Catania, Italia; Dipartimento di Scienze del Farmaco e della Salute, Università degli Studi di Catania, Italia	492	214	POSTER-B
Tomasella	Pascal	Università di Catania, Italia; CSGI, Consorzio Interuniversitario per lo Sviluppo dei Sistemi a Grande Interfase, Italia	1404	31	POSTER-A
Tomasini	Claudia	Università di Bologna, Italia	1033	31	POSTER-A
Tomassetti	Mauro	Università La Sapienza di Roma, Italia	145	214	POSTER-B
Tomatis	Maura	Università di Torino, Italia	1732, 953, 1519	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Tombesi	Alessia	University of Camerino, Italia	958, 1546, 1619, 935	214, 214, 214, 240	POSTER-B, POSTER-B, POSTER-B, INO-2A
Tommasi	Matteo	Chemical Plants and Industrial Chemistry Group, Dip. Chimica, Università degli Studi di Milano and CNR-SCITEC	307, 120, 308	31, 157, 262	POSTER-A, IND-1B, IND-2A
Tommasini	Giuseppina	Istituto di Scienze Applicate e Sistemi Intelligenti “E.Caianiello”, CNR, Pozzuoli	157	214	POSTER-B
Tondelli	Giacomo	Università degli Studi di Milano, Dipartimento di Chimica – Milano (MI), Italy	210	214	POSTER-B
Tonelli	Monica	Università di Firenze, Italia	1814	214	POSTER-B
Tonolo	Francesca	Scuola Normale Superiore, Piazza dei Cavalieri 7, I-56126 Pisa, Italy; Dipartimento di Chimica “Giacomo Ciamician”, Università di Bologna	1900	214	POSTER-B
Tonsi	Giulia	Università degli Studi di Milano, Dipartimento di Chimica – Milano (MI), Italy	210	214	POSTER-B
Topa	Rosanna	Università degli Studi di Napoli Federico II, Italia	180, 178	214, 73	POSTER-B, ABC-A
Torkian Valashani	Niloufar	Department of Civil, Chemical, Environmental and Materials Engineering (DICAM), University of Bologna, via Terracini, 28, I-40131 Bologna, Italy	1493	245	ORG-3B
Törner	Ricarda	Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School, Boston, MA, USA.; Department of Cancer Biology, Dana-Farber Cancer Institute, Boston, MA, USA.	985	214	POSTER-B
Torre	Maria Luisa	Università del Piemonte Orientale, Dipartimento di Scienze del Farmaco, Via Bovio 6, 28100 Novara, Italia	697	65	FAR-1A
Torreggiani	Armida	Consiglio Nazionale delle Ricerche - Istituto per la Sintesi e la Fotoreattività- ISOF-CNR, Italia	2025	192	ParallelTopic08 - ID: 192
Torreggiani	Armida	CNR-ISOF (Bologna, Italy)	1384	265	DID-B
Torrent Burgas	Marc	Biochemistry and Molecular Biology Biosciences Faculty Building C, Office C2/423.2 Campus de la UAB · 08193 Bellaterra.BCN	515	31	POSTER-A
Torricelli	Fabrizio	Dipartimento Ingegneria dell'Informazione, Università degli Studi di Brescia, 25123, Brescia, Italy	683, 689, 708	31, 142, 142	POSTER-A, ANA-1C, ANA-1C
torsi	luisa	università di bari aldo moro, Italia	680, 683, 1149, 318, 663, 817, 819, 689, 708, 845	31, 31, 31, 172, 214, 214, 214, 142, 142, 144	POSTER-A, POSTER-A, POSTER-A, ParallelTopic01 - ID: 172, POSTER-B, POSTER-B, POSTER-B, ANA-1C, ANA-1C, ANA-1D
tortiglione	Claudia	Istituto di Scienze Applicate e Sistemi Intelligenti “E.Caianiello”, CNR, Pozzuoli	157	214	POSTER-B
Tortora	Luca	Sciences Dept. Roma Tre University, Via della Vasca navale 79, 446, Rome; University of Roma Tre and INFN Sezione Roma Tre, Rome	1296	214	POSTER-B
Tortora	Paolo	Department of Biotechnology and Biosciences, University of Milano-Bicocca, 20126 Milano, Italy.	393	214	POSTER-B
Tos	Alessandro	University of Milano Bicocca, Italy	1808	214	POSTER-B
Tosato	Marianna	Sezione di Chimica Radiofarmaceutica, Unità di Medicina Nucleare, Azienda USL-IRCCS Reggio Emilia, via Amendola 2, 42122 Reggio Emilia, Italia	213	214	POSTER-B
Toscanesi	Maria	Università degli Studi di Napoli Federico II, Italia	179, 180	31, 214	POSTER-A, POSTER-B
Toscanesi	Maria	Università degli Studi di Napoli Federico II, Italia	178	73	ABC-A
Toscano	Valeria	Institute for Agriculture and Forestry Systems in the Mediterranean, National Research Council of Italy, Via Empedocle, Catania.	311	31	POSTER-A
Tosello	Axel	Italian Institute of Technology, Italia	1785	204	ParallelTopic07 - ID: 204
Tosi	Davide	Department of Theoretical and Applied Sciences, Insubria University, Varese, Italy	1922	31	POSTER-A
Tosi	Eloisa	Università di Parma, Italia; University of Twente, the Netherlands	664, 1183	214, 214	POSTER-B, POSTER-B
Tosi	Francesca	Department of Life Sciences, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO, 41125	630	267	TEF-1
Tosi	Giovanni	NanotechLab, Università degli Studi di Modena e Reggio Emilia, Italia	875	70	TEF-2
Tosi	Nicole	Human Nutrition Unit, Department of Food&Drug, University of Parma, Via Volturno 39, Parma, Italy	1752	255	FAR-2A
Tosi	Solveig	Università degli studi di Pavia, Italia	1847	214	POSTER-B
Tositti	Laura	Dipartimento di Chimica "G. Ciamician", Università di Bologna, Italia	494	238	ABC-B
Tosoni	Sergio	Università di Milano-Bicocca, Italia	1272	62	ParallelTopic15
Tosto	Claudio	Università degli studi di Catania, Italia	1182	31	POSTER-A
Totaro	Mariangela	Department of Pharmacy – Pharmaceutical Sciences, University of Bari Aldo Moro, Via E. Orabona 4, Bari (Italy)	651	267	TEF-1
Tóvári	József	Department of Experimental Pharmacology, National Institute of Oncology, Hungary	1373	214	POSTER-B
Tozzi	Cristiana	Santa Chiara Lab, University of Siena, Via Valdimontone 1, 53100 Siena, Italy Italy	1214, 1379	150, 235	ANA-2D, FIS-1D

Trabocchi	Andrea	Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3-13, 50019 Sesto Fiorentino, Florence, Italy	1739	31	POSTER-A
Trabucco	Fabio	Department of Bioscience and Technology for Food, Agriculture and Environment, University of Teramo, Campus "Aurelio Saliceti" via R. Balzarini 1, 64100 Teramo, Italy	844	214	POSTER-B
Tramontano	Enzo	Department of Life and Environmental Sciences, University of Cagliari, Monserrato, Italy	1455	31	POSTER-A
Tramontano	Enzo	Department of Life and Environmental Sciences, University of Cagliari, Cittadella Universitaria di Monserrato, SS554 -09042 Monserrato (CA) Italy	1626, 1684, 1043, 1631, 1955	31, 31, 214, 214, 134	POSTER-A, POSTER-A, POSTER-B, POSTER-B, FAR-1C
Tranchida	Peter Q.	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	249, 1252	186, 66	ParallelTopic01 - ID: 186, ANA-1A
Tranchida	Peter Quinto	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1273	214	POSTER-B
Trano	Sabrina	Politecnico di Torino, Corso Duca degli Abruzzi, 24, 10129 Turin, Italy	214, 835	31, 72	POSTER-A, ELE-1
Trapani	Fulvia	Dipartimento di Scienza e Tecnologia del Farmaco, Università di Torino, Via Pietro Giuria 9, I-10125 Torino, Italy	238	186	ParallelTopic01 - ID: 186
Trapani	Mariachiara	CNR-ISMN URT of Messina at Dept. ChiBioFarAm, University of Messina, Viale F. Stagno d'Alcontres 31, Messina	1291	166	INO-1C
Trapani	Serena	Carapelli Firenze S.p.A., Via Leonardo da Vinci 31, Tavarnelle Val di Pesa, 50028, Firenze, Italy.	226	214	POSTER-B
Trapasso	Giacomo	Università Ca' Foscari Venezia, Italia	152	207	ParallelTopic10 - ID: 207
Trapella	Claudio	Università degli studi di Ferrara, Department of Chemical, Pharmaceutical and Agricultural Sciences	688	143	ORG-1C
Trasatti	Stefano	University of Milan, Italy	1798, 1669	31, 214	POSTER-A, POSTER-B
Trasatti	Stefano Pierpaolo Marcello	Università degli Studi di Milano, Milano, Italia	330	214	POSTER-B
Trastulli Colangeli	Simone	Università degli Studi di Perugia, Italia	1538	214	POSTER-B
Travagin	Fabio	Università degli Studi del Piemonte Orientale, Italia	796	31	POSTER-A
Travaglini	Francesco Iacopo	Dipartimento di Chimica, Sapienza Università di Roma, Roma, Italia	838	68	FIS-1A
Traversi	Rita	Dipartimento di Chimica "U. Schiff", Università di Firenze, Italia	494	238	ABC-B
Traviglia	Arianna	Center for Cultural Heritage Technology, Istituto Italiano di Tecnologia, Italia	1000, 1905	214, 214	POSTER-B, POSTER-B
Treossi	Emanuele	Institute for the Organic Synthesis and Photoreactivity, National Research Council, Bologna, 40129, Italy	1090	31	POSTER-A
Tresoldi	Andrea	Università degli Studi di Milano, Italia	1277, 693, 1081, 1082	31, 214, 214, 214	POSTER-A, POSTER-B, POSTER-B, POSTER-B
Trevisan	Letizia	Università degli Studi di Trieste, Dipartimento di Scienze Chimiche e Farmaceutiche, Via Licio Giorgieri 1, 34127 Trieste	685, 684	31, 214	POSTER-A, POSTER-B
Tricase	Angelo	Dipartimento di Farmacia-Scienze del Farmaco - Università degli studi di Bari Aldo Moro, Via Orabona 4, Bari	683, 1149, 817, 819, 845	31, 31, 214, 214, 144	POSTER-A, POSTER-A, POSTER-B, POSTER-B, ANA-1D
Trifiletti	Vanira	Department of Materials Science and Solar Energy Research Center (MIB-SOLAR), University of Milano-Bicocca, Via Cozzi 55, 20125, Milan, Italy	129	160	FIS-1B
Trifoglio	Andrea	Istituto per la sintesi organica e la fotoreattività (ISOF-CNR)	1264, 1421	214, 214	POSTER-B, POSTER-B
Trifuoggi	Marco	Università degli Studi di Napoli Federico II, Italia	179	31	POSTER-A
Trifuoggi	Marco	Università degli Studi di Napoli Federico II, Italia	180, 178	214, 73	POSTER-B, ABC-A
Trifuoggi	Marco	University of Naples Federico II, Napoli	127	159	IND-1D
Triggiani	Maurizio	Politecnico di Bari, Italia; Innovative Solutions S.r.l., Italia	1098	31	POSTER-A
Trigona	Carlo	University of Catania, DIEEI, Viale Andrea Doria, 95125 Catania, Italy	1735	31	POSTER-A
Trimboli	Antonio Cosimo Pio	Università degli Studi Mediterranea di Reggio Calabria, Italia	1088	214	POSTER-B
Trinari	Marco	Scuola Normale Superiore, Italia	1169, 1551	214, 214	POSTER-B, POSTER-B
Triolo	Alessandro	Istituto Struttura della Materia, CNR, Italia	1185	160	FIS-1B
Trioni	Mario Italo	Consiglio Nazionale delle Ricerche, Istituto di Scienze e Tecnologie Chimiche "Giulio Natta"	183, 921	155, 241	ELE-2, INO-2B
Tripier	Raphael	Univ de Brest, UMR-CNRS 6521 CEMCA, 6 avenue Victor le Gorgeu, F-29200 Brest, France.	193	67	INO-1A
Trisciuzzi	Daniela	Dipartimento di Farmacia-Scienze del Farmaco, Università degli Studi di Bari 'Aldo Moro', Italia	1180	134	FAR-1C
Trisolini	Maria	Politecnico di Bari, Italia	1098	31	POSTER-A
Trohidou	Kalliopi	NCSR "Demokritos",	513	242	FIS-2A
Troisi	Romualdo	Dipartimento di Scienze Chimiche, Università di Napoli Federico II, 80126 Napoli, Italia	209, 1982	182, 209	ParallelTopic12 - ID: 182, ParallelTopic12 - ID: 209
Tron	Gian Cesare	Università del Piemonte Orientale, Italia	555, 669	31, 31	POSTER-A, POSTER-A
Tron	Gian Cesare	University of Piemonte Orientale, Italy	858	214	POSTER-B
Tronconi	Enrico	Politecnico di Milano, Italia	1704, 1897	31, 31	POSTER-A, POSTER-A
Tropea	Alessia	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1259	261	ALI-2B
Tropiano	Sofia	Laboratory of Industrial and Synthetic Organic Chemistry (LISOC) Department of Chemistry and Chemical Technologies, University of Calabria, Via P. Bucci 12/C, 87036 Arcavacata di Rende (CS), Italy	856	214	POSTER-B
Trotta	Anna Maria	Microenvironment Molecular Targets, Istituto Nazionale per lo Studio e la Cura dei Tumori, IRCCS "Fondazione G. Pascale", Via M. Semmola 52, 80131 Napoli, Italy	354	214	POSTER-B
Trotta	Annamaria	Microenvironment Molecular Targets, Istituto Nazionale per lo Studio e la Cura dei Tumori, IRCCS "Fondazione G. Pascale", Via M. Semmola 52, 80131 Napoli, Italy	352	65	FAR-1A
Trotta	Caterina	Università degli Studi di Perugia, Italia	1915	214	POSTER-B
Trotta	Francesco	Department of Chemistry, University of Torino, Via Pietro Giuria 7, Torino, Italy	1187, 1480	214, 262	POSTER-B, IND-2A
Trotta	Massimo	Istituto per i Processi chimico Fisici - Consiglio Nazionale delle Ricerche, Italia	846, 1450, 1070, 1721, 1838, 1327	49, 210, 214, 214, 214, 252	ParallelTopic08, ParallelTopic13 - ID: 210, POSTER-B, POSTER-B, POSTER-B, FIS-3
Trovarelli	Alessandro	Dipartimento Politecnico e INSTM, Università degli Studi di Udine, Italia	789	31	POSTER-A
Trovato	Emanuela	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc, 98168 – Messina, Italy	1243, 1280, 1311	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Trovato	Emanuela	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1306, 1559	140, 258	ANA-1B, ANA-4A
Trushina	Nataliya I.	Department of Neurobiology, Osnabrück University, Osnabrück, Germany.	956	134	FAR-1C
Trusso Sfrazzetto	Giuseppe	Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95100 Catania, Italy	527	214	POSTER-B
Trusso Sfrazzetto	Giuseppe	Università degli Studi di Catania, Italia	626, 1086, 1678	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Truzzi	Cristina	Università Politecnica delle Marche, Italia	907	31	POSTER-A
Truzzi	Cristina	Università Politecnica delle Marche, Italia	479	78	ALI-1A
Truzzi	Cristina	DiSVA, Università Politecnica delle Marche, Italia	416	150	ANA-2D
Truzzi	Eleonora	University of Florence, Italia	1568	214	POSTER-B
Tseberlidis	Giorgio	Department of Materials Science and Solar Energy Research Center (MIB-SOLAR), University of Milano-Bicocca, Via Cozzi 55, 20125, Milano	218, 129	31, 160	POSTER-A, FIS-1B
Tsurumaki	Akiko	Sapienza University of Rome, Italy; Hydro-Eco Research Center, Sapienza University of Rome, Italy	1479	72	ELE-1
Tubiana	Mauro	università padova, Italia	425	249	ANA-3B
Tucci	Paolo	Acetyca Srl (Saronno)	331	31	POSTER-A
Tucci	Rosalba	Alma Mater Studiorum - Università di Bologna	1401	214	POSTER-B
Tuccillo	Mariarosaria	Department of Chemistry, Sapienza University of Rome; ALISTORE European Research Institute; Department of Energy Technologies and Renewable Sources, ENEA, C.R. Casaccia	718	39	ParallelTopic03
Tuccitto	Nunzio	Department of Chemical Sciences, University of Catania, Viale A. Doria 6, 95100 Catania, Italy	527, 626, 1236	214, 214, 266	POSTER-B, POSTER-B, CSB-2
Tuci	Giulia	Istituto di Chimica dei Composti Organometallici (CNR-ICCOM)	958	214	POSTER-B
Tumiatti	Michela	Sea Marconi Technologies	415	248	ANA-3A

Tumiatti	Vander	Sea Marconi Technologies	415	248	ANA-3A
Tunioli	Francesca	Institute for Organic Synthesis and Photoreactivity (ISOF), National Research Council of Italy (CNR)	1263, 1264, 1421	214, 214, 214	POSTER-B, POSTER-B, POSTER-B
Turano	Paola	Università degli Studi di Firenze, Italia	445	31	POSTER-A
Turati	Marco	Università degli Studi Milano Bicocca, Milan, Italy	542	31	POSTER-A
Turci	Francesco	Università di Torino, Italia	1732, 953, 1519	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Turco	Elia	Department of Physics, University of Trieste, via A. Valerio 2, 34127, Trieste, Italy	1050	214	POSTER-B
Turco	Federico	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" SCITEC-CNR, Via Corti 12, 20133 Milano, Italy	1186, 1603, 1625	214, 214, 246	POSTER-B, POSTER-B, ORG-3C
Turelli	Michele	Chimie ParisTech, PSL Research University, CNRS, Institut de Recherche de Chimie Paris, Paris, France	1737	266	CSB-2
Turrini	Eleonora	Department for Life Quality Studies, University of Bologna, Corso D' Augusto 237, Rimini, Italy	1868, 1556	31, 214	POSTER-A, POSTER-B
Turrini	Federica	DIFAR, Department of Pharmacy, University of Genoa, Viale Cembrano 4, 16148 Genova, Italy	404, 1316	211, 261	ParallelTopic14 - ID: 211, ALI-2B
Turtù	Giorgio	Università di Bologna, Italia	197	74	TEC-A
Tutone	Marco	Università di Palermo, Italia	573	31	POSTER-A
Tuzi	Angela	Università degli Studi di Napoli Federico II	1699	31	POSTER-A
Ubertini	Valentina	Università degli studi della Tuscia, Dipartimento di Scienze Ecologiche e Biologiche Italia	257	141	ORG-1A
Ugel	Stefano	Università di Verona, Piazzale Ludovico Antonio Scuro 10, 37124 Verona, Italia	697	65	FAR-1A
Uggeri	Fulvio	Bracco Imaging SpA, Italia	735, 1192, 1067, 127	31, 214, 155, 159	POSTER-A, POSTER-B, ELE-2, IND-1D
Ugliengo	Piero	Università di Torino, Italia	690, 599, 184, 443	31, 214, 68, 68	POSTER-A, POSTER-B, FIS-1A, FIS-1A
Ugolini	Tommaso	DAGRI – Department of Agricultural, Food, Environmental, and Forestry Sciences and Technologies – University of Florence, via Donizetti, 6 – 50144 Firenze (Italy)	226	214	POSTER-B
Ugolotti	Martina	Università di Parma, Italia	1080	31	POSTER-A
Uhlirova	Tereza	Johannes Gutenberg-Universität Mainz, Germany	705	31	POSTER-A
Uliassi	Elisa	Dipartimento di Farmacia e Biotecnologie, Alma Mater Studiorum - Università di Bologna, Via Belmeloro 6, 40126 Bologna, Italia	1069, 1543, 1553, 1561	214, 214, 214, 214	POSTER-B, POSTER-B, POSTER-B, POSTER-B
Ullrich	Tobias	Friedrich-Alexander-University Erlangen-Nuremberg, Germania	1425	31	POSTER-A
Ulrici	Alessandro	Università di Modena e Reggio Emilia, Dipartimento di Scienze della Vita; Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Firenze	331, 211, 326	31, 214, 250	POSTER-A, POSTER-B, ANA-3C
Ungarean	Chad	Department of Chemistry, University of Pavia, Viale Taramelli 12, 27100 Pavia, Italy	1907	214	POSTER-B
Ungaro	Maddalena	Università degli studi di Napoli Federico II, Italia	1404	31	POSTER-A
Ungolo	Amedeo	Dipartimento di Scienze del Farmaco, Università di Pavia, Italia	1128	214	POSTER-B
Urban	Massimo	Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Bellaterra, 08193 Barcelona, Spain	1781	31	POSTER-A
Urbani	Daniele	Dipartimento di Scienze Chimiche e Farmaceutiche, Univesit` a degli Studi di Ferrara, Via Luigi Borsari, 46, 44121 Ferrara, Italy	1493	245	ORG-3B
Urciuoli	Gaia	Dipartimento di Scienze Chimiche, Università di Napoli Federico II, 80126 Napoli, Italy; DPI, 5600 AX Eindhoven, the Netherlands	1822, 2015	240, 158	INO-2A, IND-1C
Ursini	Fulvio	Department of Molecular Medicine, Viale G. Colombo, 3, University of Padova, Padova, Italy	1752	255	FAR-2A
Ursino	Claudia	Institute on Membrane Technology, National Research Council of Italy (CNR-ITM), Rende (CS), Italy	1676	31	POSTER-A
Usberti	Nicola	Politecnico di Milano, Italy	1215	214	POSTER-B
Usoltsev	Oleg	Alba Synchrotron, Barcelona, Spain	1794	214	POSTER-B
Utkin	R	Moscow State University	1759	214	POSTER-B
Utzeri	Roberto	CNR SCITEC, Italia	529	31	POSTER-A
Vacca	Annalisa	Università degli Studi di Cagliari, Italia	1968	173	ParallelTopic02 - ID: 173
Vacca	Paolo	Saes Getters, Italia	1204	177	ParallelTopic06 - ID: 177
Vacca	Paolo	Saes Getters Spa, Italia	325, 1728	190, 214	ParallelTopic06 - ID: 190, POSTER-B
Vaccaro	Luigi	Università degli studi di Perugia, Italia	321, 337, 409, 411, 412, 413, 427, 489, 694, 1522, 1851, 1992, 889, 410, 477, 731, 1538, 490	31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 31, 53, 198, 214, 214, 214, 214, 244	POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, POSTER-A, ParallelTopic10, ParallelTopic15 - ID: 198, POSTER-B, POSTER-B, POSTER-B, POSTER-B, ORG-3A
Vadalà	Rossella	Università di Messina, Italia	311, 1746, 333	31, 31, 261	POSTER-A, POSTER-A, ALI-2B
Vagaggini	Chiara	Università degli Studi di Siena	1456	214	POSTER-B
Vaghi	Luca	Università degli Studi di Milano-Bicocca, Italia	294	256	ORG-4A
Vago	Riccardo	Istituto San Raffaele (IRCCS), Istituto di Ricerca Urologica, Divisione di Oncologia Sperimentale, 20132, Milano.	1604	31	POSTER-A
Vaiano	Vincenzo	Dipartimento di Ingegneria Industriale, Università degli Studi di Salerno, Italia	303	31	POSTER-A
Valacchi	Giuseppe	University of Ferrara, Italia; NC State University, Kannapolis, USA	816	31	POSTER-A
Valadan	Mohammadhassan	Dipartimento di Scienze Biomediche Avanzate, Università degli Studi di Napoli Federico II, 8013, Napoli, Italia; Istituto Nazionale Di Fisica Nucleare, sezione di Napoli, Napoli, 80126, Italia	1600	214	POSTER-B
Valagussa	Paolo	Department of Materials Science University of Milano-Bicocca , Building U5,Via Roberto Cozzi 55, 20125, Milano, Italy.	280	72	ELE-1
Valbonetti	Luca	Faculty of Bioscience and Technology for Food, Agriculture and Environment, University of Teramo, Italy	1701	214	POSTER-B
Valente	Sergio	Department of Drug Chemistry and Technologies, Sapienza University of Rome, P.le A. Moro 5 00185, Rome	853, 1226, 1643, 1982, 855, 985, 851	31, 31, 56, 209, 214, 214, 132	POSTER-A, POSTER-A, ParallelTopic12, ParallelTopic12 - ID: 209, POSTER-B, POSTER-B, FAR-1B
Valenti	Giovanni	Department of Chemistry "G. Ciamician", University of Bologna, via Selmi 2, 40126, Bologna, Italy	288, 820, 173, 1411	31, 31, 214, 146	POSTER-A, POSTER-A, POSTER-B, ANA-2B
Valentina	Testa	Dipartimento di Chimica, Università di Torino, Italia	414	214	POSTER-B
Valentini	Federica	Università degli studi di Perugia, Italia	337	31	POSTER-A
Valentini	Federica	Università degli Studi di Perugia, Italia	489, 1851, 889	31, 31, 198	POSTER-A, POSTER-A, ParallelTopic15 - ID: 198
Valentini	Francesca	Università degli Studi di Roma Tor Vergata, Italia	1008	214	POSTER-B
Valentini	Matteo	Sapienza Università di Roma, Italia	1084	31	POSTER-A
Valentino	Caterina	Università degli Studi di Pavia, Italia	1139, 1079, 1129, 1161	31, 214, 214, 214	POSTER-A, POSTER-B, POSTER-B, POSTER-B
Valentino	Laura	Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF)- University of Palermo and INSTM UdR – Palermo, Viale delle Scienze, Ed.17, Palermo I-90128, Italy	711	214	POSTER-B
Valenza	Marta	Department of Biosciences, University of Milan, Via Giovanni Celoria, 26, Milano MI, 20133; Istituto Nazionale di Genetica Molecolare "Romeo ed Enrica Invernizzi", Via Francesco Sforza, 35, Milan MI, 20122	630	267	TEF-1
Valgimigli	Luca	Alma Mater Studiorum - Università di Bologna, Italia	405, 1188	31, 31	POSTER-A, POSTER-A
Vallana	Nicholas	Dipartimento di Scienza dei Materiali, Università di Milano Bicocca, Via Cozzi 55, Milano 20125, Italy	1267	214	POSTER-B
Valletti	Nadia	Dipartimento di Scienze Fisiche della Terra e dell'Ambiente, Università degli Studi di Siena, Italia	1578	31	POSTER-A
Valli	Enrico	Alma Mater Studiorum - Università di Bologna	1401	214	POSTER-B
Valloni	Filippo	Università del Piemonte Orientale, Italia	612	214	POSTER-B
Valsania	Maria Carmen	Department of Chemistry, University of Torino, Via Pietro Giuria 7, Torino, Italy	1783	214	POSTER-B
Valsasina	Barbara	Nerviano Medical Sciences, Viale Pateur 10, 20014 Nerviano (MI)	1496	175	ParallelTopic04 - ID: 175
Valsecchi	Sara	Consiglio Nazionale delle Ricerche, Italia	322	37	ParallelTopic02
Valtancoli	Barbara	Università degli Studi di Firenze, Italia	345	67	INO-1A
Valter	Maurino	Department of Chemistry, Università degli Studi di Torino, Via Pietro Giuria 7, 10125, Torino	128	214	POSTER-B
Valzano	Elisa	Dipartimento di Chimica Industriale "Toso Montanari" and Center for Chemical Catalysis-C3, Università di Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	937	31	POSTER-A
Van den Bogaert	Annelot	Center for Industrial Process Technology, Department of Chemical Engineering, KU Leuven, Agoralaan Building B, 3590 Diepenbeek, Belgium	1493	245	ORG-3B
van der Boom	Milko Erik	Weizmann Institute of Science, Department of Molecular Chemistry and Materials Science, 7610001 Rehovot, Israel	1022	242	FIS-2A
Van Etten	Jim	Plant Pathology University of Nebraska, Lincoln, NE 68683-0900, US	1029	154	CSB-1B
Van Zundert	Indra	Eindhoven University of Technology, The Netherlands	376	214	POSTER-B
Vandelli	Maria Angela	Department of Life Sciences, University of Modena and Reggio Emilia, Via Giuseppe Campi, 103, Modena MO, 41125	630	267	TEF-1
Vandelli	Maria Angela	NanotechLab, Università degli Studi di Modena e Reggio Emilia, Italia	875	70	TEF-2
Vanhaecke	Frank	Ghent University, Belgio	597	251	ANA-3D
Vanoli	Valeria	Politecnico di Milano, Italia	346	199	ParallelTopic01 - ID: 199
Vanuzzo	Gianmarco	DCBB - Università degli Studi di Perugia, Italia	1769	68	FIS-1A

Vanzella	Michael	Department of Chemical Sciences, University of Padova, Via Francesco Marzolo 1, 35131, Padova (Italy)	227	143	ORG-1C
Varacca	Giada	Dipartimento di Scienze degli Alimenti e del Farmaco, Università di Parma, Italia	1079	214	POSTER-B
Varano	Flavia	Università di Firenze, Dipartimento Neuroscienze, Area del Farmaco e Salute del Bambino, Italia	968	31	POSTER-A
Varchi	Greta	Institute of Organic Synthesis and Photoreactivity - National Research Council, via P. Gobetti 101, Bologna, Italy	1457	132	FAR-1B
varfaj	Ina	Università degli Studi di Perugia, Italia	523	66	ANA-1A
Varotto	Alessio	Energy Technologies and Renewable Sources Department, Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Casaccia Research Center, Via Anguillarese 301, 00123 Rome, Italy; Dept. Fundamental and Applied Sciences for Engineering (SBAI), Sapienza University of Rome, via Castro Laurenziano, 7, 00161 Rome, Italy	138	214	POSTER-B
Varotto	Elena	College of Humanities, Arts and Social Sciences, Flinders University, Adelaide, Australia	1473	31	POSTER-A
Varrà	Maria Olga	Department of Food and Drug, University of Parma	1369	31	POSTER-A
Varra	Michela	UNINA DF, University of Naples Federico II, School of Medicine and Surgery, Department of Pharmacy, Napoli, Italy	1566	150	ANA-2D
Varriale	Fabio	UNINA DF, University of Naples Federico II, School of Medicine and Surgery, Department of Pharmacy, Napoli, Italy	1566	150	ANA-2D
Varricchio	Carmine	Sibylla Biotech S.p.A., Via Lillo del Duca 10, 20091, Bresso (MI), Italy	1557	31	POSTER-A
Varrot	Annabelle	Univ. Grenoble Alpes, CERMAV, CNRS	144	31	POSTER-A
Varvaro	Gaspare	CNR-ISM	513	242	FIS-2A
Vasca	Ermanno	Università degli Studi di Salerno, Italia	1629	261	ALI-2B
Vaschetto	Rosanna	Department of Translational Medicine, University of Piemonte Orientale, Via Solaroli 17, 28100 Novara, Italy; Anesthesia and Intensive Care, "Maggiore della Carità" University Hospital, Corso Mazzini 18, 28100 Novara, Italy	1563	31	POSTER-A
Vasilakaki	Marianna	NCSR "Demokritos",	513	242	FIS-2A
Vasile Dan	Hodoroaba	Federal Institute for Materials Research and Testing (BAM), Unter den Eichen 44-46, 12203 Berlin, Germany	128	214	POSTER-B
Vasile	Francesca	Università di Milano, Italia	887, 1196, 882, 1102, 560	31, 31, 214, 154, 149	POSTER-A, POSTER-A, POSTER-B, CSB-1B, ORG-2C
Vasquez Sobrado	Rebeca	ANFACO-CECOPESCA, Department of Circular Economy, Colexio Universitario, 36310 Vigo, Spain	1316	261	ALI-2B
Vassura	Ivano	Dipartimento di Chimica Industriale "Toso Montanari". Università di Bologna, Italia	1326	239	ABC-D
Vasudevan	Subhash G.	Program in Emerging Infectious Diseases, Duke-NUS Medical School, Singapore	675	31	POSTER-A
Vauthey	Eric	University of Geneva	1869	31	POSTER-A
Vázquez Sobrado	Rebeca	ANFACO-CECOPESCA, Department of Circular Economy, Colexio Universitario, 36310 Vigo, Spain	404	211	ParallelTopic14 - ID: 211
Vecchini	Nicola	Versalis S.p.A., via G. Taliercio 14, 46100 Mantova, Italy	1971, 164	203, 262	ParallelTopic06 - ID: 203, IND-2A
Vecchio	Maria Alessia	Università di Genova, Italia; Ghent University, Belgio	597	251	ANA-3D
Vecciu	Benedetta	Dipartimento di Scienze Chimiche, Fisiche, Matematiche e Naturali, Università degli Studi di Sassari, Italia	1666	235	FIS-1D
Veglianese	Pietro	Department of Neuroscience, Istituto di Ricerche Farmacologiche Mario Negri IRCCS, via Mario Negri 2, 20156 Milano, Italy	1871	74	TEC-A
Veltri	Lucia	Laboratory of Industrial and Synthetic Organic Chemistry (LISOC), Department of Chemistry and Chemical Technologies, University of Calabria, Via P. Bucci, 12/C, 87036 Arcavacata di Rende (CS), Italy	884, 799	31, 214	POSTER-A, POSTER-B
Venanzi	Mariano	Università di Roma Tor Vergata, Italia	1255, 1360, 316	31, 214, 161	POSTER-A, POSTER-B, TEO-B
Venditti	Iole	Sciences Department, Roma Tre University, via della Vasca Navale 79, 00146 Rome (IT)	934, 1296, 1488, 1774	214, 214, 214, 165	POSTER-B, POSTER-B, POSTER-B, INO-1B
Venditti	Jacopo	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Via Aldo Moro 2, 53100 Siena, Italy	230	214	POSTER-B
Vendrame	Davide	Dipartimento di Scienze Chimiche (DiSC), University of Padova, Via Marzolo 1, 35131, Padova, Italy	1066	214	POSTER-B
Vendruscolo	Michele	University of Cambridge, United Kingdom	1937	20	PL-A
Venezia	Virginia	Università degli Studi di Napoli Federico II, Italia	1999	207	ParallelTopic10 - ID: 207
Ventisette	Simone	Department of Chemistry "Ugo Schiff', University of Florence, Via della Lastruccia, 3-13, 50019 Sesto Fiorentino, FI, Italy	1639	214	POSTER-B
Vento	Federica	Messina Institute of Technology c/o Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, former Veterinary School, University of Messina, Viale G. Palatucci snc 98168 – Messina, Italy	1280, 1306	214, 140	POSTER-B, ANA-1B
Ventrella	Andrea	ARPA Puglia Dep. Lecce	1840	31	POSTER-A
Ventura	Giovanni	Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro, via Orabona 4, 70126, Bari; Centro interdipartimentale SMART, Università degli Studi di Bari Aldo Moro, via Orabona 4, 70126, Bari	906, 532, 900	140, 146, 146	ANA-1B, ANA-2B, ANA-2B
Venturelli	Alberto	Università di Modena e Reggio Emilia, Italia	1682	214	POSTER-B
Venturi	Margherita	Università di Bologna, Italia	1886, 905, 1888	179, 265, 23	ParallelTopic08 - ID: 179, DID-B, PL-D
Venturi	Valentina	Università degli studi di Ferrara, Italia	1163	141	ORG-1A
Venturini	Martina	Università di Firenze, Dipartimento Neuroscienze, Area del Farmaco e Salute del Bambino, Italia	968	31	POSTER-A
Vercelli	Barbara	Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia, CNR-ICMATE	1320	210	ParallelTopic13 - ID: 210
Verdini	Federico	Università degli Studi di TORINO, Italia	418	158	IND-1C
Verdolotti	Letizia	Institute for Polymers, Composites and Biomaterials (IPCB-CNR), CNR, Portici, Italy	177, 476	31, 158	POSTER-A, IND-1C
Verga	Francesca	Center for Sustainable Future Technologies Istituto Italiano di Tecnologia, Via Livorno 60, 10144 Torino (Italy); Dipartimento di Ingegneria dell'Ambiente, del Territorio e delle Infrastrutture (DIATI) Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino (Italy)	1771	153	TEC-B
Vergara	Alessandro	Università degli Studi di Napoli Federico II, Italia	1918	31	POSTER-A
Verginelli	Fabio	Università degli Studi "G. d'Annunzio" Chieti-Pescara, Italia; Center for Advanced Studies and Technology (CAST), "G.d'Annunzio" University of Chieti-Pescara, 66100 Chieti, Italy	1795	31	POSTER-A
Verk	Giada	Department of Chemical and Pharmaceutical Sciences, University of Trieste, Via L. Giorgieri 1, 34127 Trieste	1518	214	POSTER-B
Verlato	Enrico	Università degli Studi di Padova, Italia	1860	214	POSTER-B
Verona	Marco	Department of Pharmaceutical and Pharmacological Sciences, University of Padova, via Marzolo 5, Padova	721	41	ParallelTopic04
Veronese	Eleonora	Laboratory of Supramolecular and Bio-Nanomaterials (SBNLab), Department of Chemistry, Materials, and Chemical Engineering "Giulio Natta", Politecnico di Milano, Via L. Mancinelli 7, 20131 – Milano, Italia	246, 357	31, 237	POSTER-A, TEC-C
Veronesi	Marina	Structural Biophysics Facility, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genoa, Italy	964	214	POSTER-B
Verrucchi	Margherita	Università di Firenze, Italia	575, 603, 687	31, 214, 138	POSTER-A, POSTER-B, ANA-2A
Versura	Piera	Department of Experimental, Diagnostic and Specialty Medicine, University of Bologna, Via Massarenti 9, Bologna, Italy	1423, 1894	214, 214	POSTER-B, POSTER-B
Vertova	Alberto	Università degli Studi di Milano	486, 735, 790, 1192, 1067, 146	31, 31, 214, 214, 155, 157	POSTER-A, POSTER-A, POSTER-B, POSTER-B, ELE-2, IND-1B
Verzera	Antonella	Dipartimento di Scienze Veterinarie, Università di Messina, Italia	1746	31	POSTER-A
Vesce	Luigi	Università di Roma "Tor Vergata", Italia	607	31	POSTER-A
Vespasiano	Giovanni	DiBEST-Università della Calabria, Rende (CS) Italia	1194	31	POSTER-A
Vespignani	Laura	Dipartimento di Chimica 'Ugo Schiff', Università degli Studi di Firenze, Italia	886	214	POSTER-B
Vetri	Valeria	Università degli Studi di Palermo, Italia	1362	234	FIS-1C
Vetrone	Fiorenzo	Centre Énergie, Matériaux et Télécommincations, Institut National de la Recherche Scientifique, Université du Québec, 1650 Boul. Lionel Boulet, Varennes, Québec J3X 1P7, Canada	199	214	POSTER-B
Vettorato	Elisa	Department of Pharmaceutical and Pharmacological Sciences, University of Padova, via Marzolo 5, Padova	721, 1620	41, 214	ParallelTopic04, POSTER-B
Vezzoni	Carlo Alberto	Università degli Studi di Parma, Italia	926	214	POSTER-B
Vezzù	Keti	Sezione di Chimica per le Tecnologie, Dipartimento di Ingegneria Industriale, Università degli Studi di Padova, Via F. Marzolo 9, 35131Padova, Italia	1585, 1066, 1581, 1659	31, 214, 214, 214	POSTER-A, POSTER-B, POSTER-B, POSTER-B
Viada	Gabriele	Università degli studi di Torino, Italia	561	262	IND-2A
Vicente-Garcia	Cesar	Università di Bari "Aldo Moro", Italia, Dipartimento di Chimica	775, 828, 1010	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Vicinanza	Sara	Department of Pharmaceutical Sciences, University of Milan, via Mangiagalli 25, 20133 Milan, Italy	961	255	FAR-2A

Vidossich	Pietro	Istituto Italiano di Tecnologia, Italia	798, 1002	31, 193	POSTER-A, ParallelTopic09 - ID: 193
Viennet	Thibault	Department of Biological Chemistry and Molecular Pharmacology, Blavatnik Institute, Harvard Medical School (HMS), Building C, 240 Longwood Ave, 02115 Boston, MA, USA; Department of Cancer Biology, Dana-Farber Cancer Institute (DFCI), 450 Brookline Ave, 02215 Boston, MA, USA	1643, 985	56, 214	ParallelTopic12, POSTER-B
Vigani	Barbara	Università di Pavia, Italia	931, 1139, 1040, 942, 1079, 1127, 1128, 1129, 1130, 1161, 1179	31, 31, 183, 214, 214, 214, 214, 214, 214, 214, 214	POSTER-A, POSTER-A, ParallelTopic13 - ID: 183, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B, POSTER-B
Vigarani	Giulia	Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italia	302	166	INO-1C
Vigato	Chiara	Department of Drug Science and Technology, University of Torino, Italy	382	132	FAR-1B
Viggiano	Sara	Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Italia	719	247	ORG-3D
Vigile	Maria Francesca	Institute on Membrane Technology (CNR-ITM), Rende, CS, Italy; University of Calabria,Rende, CS, Italy	1728	214	POSTER-B
Viglianisi	Caterina	Department of Chemistry "Ugo Schiff" (DICUS) & INSTM Research Unit, University of Florence, Via della Lastruccia 3-13, Sesto Fiorentino 50019, Italy.	1959	143	ORG-1C
Vigna	Jacopo	Università degli studi di Trento, Italia	1443	214	POSTER-B
Vignali	Adriano	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" SCITEC-CNR, Via Corti 12, 20133 Milano, Italy	1603	214	POSTER-B
Vigni	Laura	Università degli Studi di Milano, Italia	779, 591	214, 240	POSTER-B, INO-2A
Vignolo	Maurizio	CNR SCITEC, Italia	1923	214	POSTER-B
Vijay	Challuri	G-lyte SAS, France	424	31	POSTER-A
Vilé	Gianvito	Politecnico di Milano, Italia	2039	47	ParallelTopic07
Villa	Alberto	UNIVERSITA DEGLI STUDI DI MILANO, Italia	766, 787, 158	31, 214, 240	POSTER-A, POSTER-B, INO-2A
Villa	Federica	University of Milan, Italy	1484	31	POSTER-A
Villa	Marco	Università di Bologna, Italia	1113	214	POSTER-B
Villa	stefania	Università degli Studi di Milano, Italia	1277, 1484, 693, 1081, 1082	31, 31, 214, 214, 214	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B
Villafiorita-Monteleone	Francesca	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" (SCITEC)-CNR, via A. Corti 12, 20133 Milano, Italy	1364, 1603	214, 214	POSTER-B, POSTER-B
Villani	Claudio	Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza Università di Roma, P.le A. Moro 5, 00185 Roma. Italy	1313	214	POSTER-B
Villani	Salvatore	Università del Piemonte Orientale, Italia	859	214	POSTER-B
Villani	Vincenzo	Università della Basilicata, Italia	462	76	DID-A
Villella	N.	Università di Torino, Italia	1673	31	POSTER-A
Vincenti	Flaminia	University of Rome "La Sapienza", Dept. of Chemistry, P.le Aldo Moro 5, Rome, Italy	760	214	POSTER-B
Vincenti	Flaminia	La Sapienza Università di Roma, Italia	1825	214	POSTER-B
Vincenti	Marco	Dipartimento di Chimica, Università degli Studi di Torino, Italia	517, 987, 710, 255	31, 193, 214, 258	POSTER-A, ParallelTopic09 - ID: 193, POSTER-B, ANA-4A
Vincenzi	Fabrizio	Dipartimento di Medicina Traslazionale, Università di Ferrara, Via Borsari 46, 44121, Ferrara, Italia	1628, 1576	214, 136	POSTER-B, FAR-1D
Vincenzo	Busico	Dipartimento di Scienze Chimiche, Università di Napoli Federico II, 80126 Napoli, Italy; DPI, 5600 AX Eindhoven, the Netherlands	1822	240	INO-2A
Vinti	Francesco	Università degli studi di Perugia, Italia	1584	214	POSTER-B
Viola	Paolo Giovanni	ARPA Lombardia /OICFL, Italia	1388	171	ParallelTopic11
Viola	Roberto	Consorzio CREO, 67100 L'Aquila, Italy	928	214	POSTER-B
Violante	Francesco Saverio	Dipartimento di Scienze mediche e chirurgiche, Alma Mater Studiorum-University of Bologna, Italia	1350, 1894	31, 214	POSTER-A, POSTER-B
Vione	Davide	University of Turin, Italia	1044, 1345, 353, 908, 1733	31, 31, 214, 156, 239	POSTER-A, POSTER-A, POSTER-B, ABC-C, ABC-D
Virovets	Alexander	Institut für Anorganische Chemie, Goethe-Universität Frankfurt, Max-von-Laue-Strasse 7,60438 Frankfurt. Germany	1313	214	POSTER-B
Visca	Paolo	Department of Science, Roma Tre University, Viale G. Marconi 446, 00146, Roma, Italy	1557	31	POSTER-A
Viscardi	Guido	Dipartimento di Chimica - Università di Torino, Italia	669	31	POSTER-A
Vischio	Fabio	Institute for Chemical and Physical Processes (IPCF)-CNR SS Bari, 70126, Italy; National Interuniversity Consortium of Materials Science and Technology (INSTM), Bari, 70126, Italy	678	243	FIS-2B
Visconti	Carlo Giorgio	Politecnico di Milano, Italia	1526, 1571	157, 157	IND-1B, IND-1B
Visentin	Luca	Department of Industrial Chemistry "Toso Montanari" and Center for Chemical Catalysis-C3, University of Bologna, Viale del Risorgimento 4, 40136 Bologna, Italy	469	158	IND-1C
Visentini	Ugo	Basell poliolefine italia srl, Italia	878	191	ParallelTopic07 - ID: 191
Viseras Iborra	Cesar	University of Granada, Department of Pharmacy and Pharmaceutical Technology, Faculty of Pharmacy, 1807, Granada; Andalusian Institute of Earth Sciences, CSIC-UGR. Avenida de las Palmeras 4, 18100 Granada, Spain.	1604	31	POSTER-A
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Viseras	César	Department of Pharmacy and Pharmaceutical Technology, University of Granada, Spain	1179	214	POSTER-B
Viseras	Cesar	Università di Granada; Istituto Andaluso di Scienze della Terra	1573	214	POSTER-B
Viseras	César	Department of Pharmacy and Pharmaceutical Technology, University of Granada, Faculty of Pharmacy, 18071 Granada, Spain; Andalusian Institute of Earth Sciences, CSIC-UGR, Avenida de las Palmeras 4, Armilla, Granada, 18100, Spain	1595	214	POSTER-B
Visi	Samuele	Università di Firenze, Italia	1814	214	POSTER-B
Visibelli	Anna	Department of Biotechnology, Chemistry and Pharmacy, University of Siena, 53100 Siena, Italy Department of Biotechnology, Chemistry and Pharmacy, University of Siena, 53100 Siena, Italy	245	31	POSTER-A
Visieri	Lucia	Università di Parma, Italia	511, 571	31, 214	POSTER-A, POSTER-B
Vistoli	Giulio	Università degli Studi di Milano, Italia	1297, 1195, 1217, 1132, 1752	31, 214, 214, 255, 255	POSTER-A, POSTER-B, POSTER-B, FAR-2A, FAR-2A
Vitale	Alessandra	Politecnico di Torino, Italia	782	31	POSTER-A
Vitale	Benedetta	Department of Chemistry, University of Torino, Via Pietro Giuria 7, Torino, Italy	1783	214	POSTER-B
Vitale	Ilaria Antonia	Università degli studi di Firenze, Italia	504	214	POSTER-B
Vitale	Paola	Dipartimento di Farmacia-Scienze del Farmaco, Università di Bari Aldo Moro, Consorzio C.I.N.M.P.I.S, Via E. Orabona 4, I-70125 Bari, Italy	1007, 1030, 1622, 1638, 988	31, 214, 214, 214, 145	POSTER-A, POSTER-B, POSTER-B, POSTER-B, ORG-1D
Vitale	Raffaele	University of Lille, LASIRE, CNRS, LASIRE (UMR 8516), Laboratoire Avancé de Spectroscopie pour les Interactions, la Réactivité et l'Environnement, F-59000 Lille, France	1689	214	POSTER-B
Vitali Forconesi	Gabrielle	Molecular Modeling & Drug Discovery Laboratory, Istituto Italiano di Tecnologia, via Morego, 30, 16163 Genoa, Italy	1002	193	ParallelTopic09 - ID: 193
Vitali	Luca Agostino	University of Camerino, Italia	634	70	TEF-2
Viti	Carlo	Laboratory of Phenomics, Genomics, and Proteomics (GENEXPRESS), University of Florence; Department of Agriculture, Food, Environmental and Forestry Sciences (DAGRI), University of Florence	1121, 291	214, 146	POSTER-B, ANA-2B
Vitiello	Gluseppe	CSGI - Center for Colloid and Surface Science, 50019, Sesto Fiorentino, Italy; Department of Chemical, Materials and Production Engineering, University of Naples Federico II, 800125 Naples, Italy	1539, 408, 387, 389, 1593	31, 242, 237, 237, 236	POSTER-A, FIS-2A, TEC-C, TEC-C, TEC-D
Vitiello	Rosa	Università di Napoli "Federico II", Dipartimento di Scienze Chimiche, 80126 Napoli, Italy.; CIRCC, Consorzio Interuniversitario di Reattività Chimica e Catalisi,, 70126 Bari, Italia	982	158	IND-1C
Vitola	Giuseppe	Istituto per la Tecnologia delle Membrane (CNR-ITM), Italia	1749, 1844	214, 153	POSTER-B, TEC-B
Vittadini	Elena	School of Biosciences and Veterinary Medicine, University of Camerino, Camerino (MC), Italy.	1653	261	ALI-2B
Vittori	Sauro	Chemistry Interdisciplinary Project (ChIP), School of Pharmacy, University of Camerino, Italy; Research and Innovation Coffee Hub, Via Emilio Betti 1, Belforte del Chienti, Italy	714	214	POSTER-B
Vittoria	Antonio	Università di Napoli Federico II, Italia	1386, 1822	214, 240	POSTER-B, INO-2A
Vittorio	Serena	Università degli studi di Milano, Italia	1302, 1195, 1752	31, 214, 255	POSTER-A, POSTER-B, FAR-2A

Vitulano	Fiammetta	Università degli Studi di Milano, Italia	1067	155	ELE-2
Vivaldi	Federico	Department of Chemistry and Industrial Chemistry, University of Pisa, via Giuseppe Moruzzi 13, 56124, Pisa, Italy	1536	214	POSTER-B
Vivaldi	Federico Maria	Department of Chemistry and Industrial Chemistry, Via G. Moruzzi 13, University of Pisa, 56124-Pisa, Italy	1489, 1781, 1512	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Vivo	Paola	Hybrid Solar Cells, Faculty of Engineering and Natural Sciences, P.O. Box 541, FI-33014 Tampere University, Finland.	1110	31	POSTER-A
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Voci	Silvia	Università degli Studi "Magna Graecia", Italia	1668	214	POSTER-B
Voci	Silvia	Università Magna Graecia Catanzaro, Italia	1329	70	TEF-2
Vogg	Sebastian	YMC Chromacon, Zürich, Switzerland	458	214	POSTER-B
Volontè	Paola	Università degli Studi di Milano, Italia	920	267	TEF-1
Volonterio	Alessandro	Dip Chemistry, Materials and Chemical Engineering Politecnico di Milano, Italia	1053	214	POSTER-B
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Volpi	Giorgio	Department of Chemistry, University of Torino, Via P. Giuria 7,10125 Torino	1656	31	POSTER-A
Volpi	Stefano	Università degli Studi di Parma, Italia	915, 1183, 734	31, 214, 151	POSTER-A, POSTER-B, ORG-2D
Volpini	Rosaria	Università di Camerino, Scuola di Scienze del Farmaco e dei Prodotti per la Salute, Italia	968	31	POSTER-A
Vomiero	Alberto	Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Via Torino 155, 30172 Venice, Italy; Division of Materials Science, Department of Engineering Sciences and Mathematics, Luleå University of Technology, 97187 Luleå, Sweden	1498	155	ELE-2
Vona	Danilo	Università di Bari "Aldo Moro", Italia, Dip. di Science del Suolo, della Pianta e degli Alimenti	775, 828, 1010, 1721, 1838, 1555	31, 31, 214, 214, 214, 247	POSTER-A, POSTER-A, POSTER-B, POSTER-B, POSTER-B, ORG-3D
Vottero	Eleonora	Università di Torino, Italia	1178	160	FIS-1B
Vrhovsek	Urska	Center Research and Innovation, Edmund Mach Foundation, San Michele all'Adige (TN)	2012	71	MAS
Vurro	Maurizio	CNR, Bari	1675	31	POSTER-A
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Wallace	Joseph Bevin	Molecular Modeling and Drug Discovery Lab, Istituto Italiano di Tecnologia	989	214	POSTER-B
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Waluk	Jacek	Institute of Physical Chemistry, Polish Academy of Science, Kasprzaka 44/52, Warsaw (PL); Faculty of Mathematics and Science, Cardinal Stefan Wyszyński University, Dewajtis 5,01-815 Warsaw (PL)	1463	31	POSTER-A
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Wang	Feng	Dalian Institute of Chemical Physics, China	1481	204	ParallelTopic07 - ID: 204
Wang	Junjie	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, via Piero Gobetti 83 40129, Bologna, Italia	1413, 1096	31, 214	POSTER-A, POSTER-B
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Wang	Yan-Hong	National Center for Natural Products Research, School of Pharmacy, The University of Mississippi, Mississippi, 38677, United States.	601	31	POSTER-A
Wang	Yu	Imperial College London, UK	1927	35	ParallelTopic01
Warmoth	Regan	Department of Chemistry & Biochemistry, Iona University, New Rochelle, NY US	1701	214	POSTER-B
Warndorf	Molly C.	Department of Chemistry Massachusetts Institute of Technology, Cambridge, USA	814	242	FIS-2A
Weber	Ronja	University Children's Hospital Zurich, Switzerland	1525	214	POSTER-B
Weiner	Steve	Weizmann Institute of Science, Israel	215	20	PL-A
Weiss	R.G.	Department of Chemistry and Institute for Soft Matter Synthesis and Metrology, Georgetown University, 37th and O Streets NW, Washington, DC 20057, USA	400	31	POSTER-A
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Weththimuni	Maduka Lankani	Department of Chemistry, University of Pavia, via T. Taramelli 12, 27100 Pavia	401, 398	31, 73	POSTER-A, ABC-A
Willis	Oliver G	Università di Pisa, Italia	528	254	INO-3
Willner	Itamar	The Institute of Chemistry, The Hebrew University of Jerusalem, Jerusalem 91904, Israel	446	31	POSTER-A
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Xhafa	Sonila	Università di Camerino, Italia	935	240	INO-2A
Xiang	Yuchen	Imperial College London, UK	1927	35	ParallelTopic01
Xu	Haozheng	Imperial College London, UK	1927	35	ParallelTopic01
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Yamamoto	Kenta	Kyoto Prefectural University of Medicine, Giappone	463	243	FIS-2B
Yan	Tongan	University of Chemical Technology, Beijing	958	214	POSTER-B
Yang	Dan	University of Wollongong, Australia	1484	31	POSTER-A
Yang	Jijin	Dipartimento di Scienze Chimiche, Università di Padova, Italia	974, 823	241, 257	INO-2B, TEO-C
Yang	Manyi	Italian Institute of Technology, Italia	1785	204	ParallelTopic07 - ID: 204
Yang	Moon Hee	Broad Institute of Harvard and MIT, 415 Main St., 02142 Cambridge, MA, USA	1643	56	ParallelTopic12
Yeasmin	Lamyea	Dipartimento di Chimica Industriale "Toso Montanari", Università di Bologna, Via Gobetti 85, 40129,Italia	1850	31	POSTER-A
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Ymeraj	Matilda	Università di Urbino, Italia	1441, 1611	31, 214	POSTER-A, POSTER-B
Yousif	Dawod	Universität Münster, Germany; Università degli Studi di Milano-Bicocca, Italia	294	256	ORG-4A
Yzeiri	Xheila	University of Siena, Italy	660	247	ORG-3D
Zaccaria	Francesco	Università di Napoli Federico II, Italia	277, 1386	62, 214	ParallelTopic15, POSTER-B
Zaccaro	Laura	CNR-Institute of Biostructures and Bioimaging	553	56	ParallelTopic12
Zacchetti	Nicoletta	Rina consulting-CSM S.p.A, Roma Italy	1810	31	POSTER-A
Zacchini	Stefano	Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italy	1791, 204, 947	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Zadora	Grzegorz	Institute of Chemistry, University of Silesia in Katowice, Polonia; Institute of Forensic Research in Krakow, Polonia	517	31	POSTER-A
Zagni	Chiara	Dipartimento di Scienze del Farmaco e della Salute, Università degli Studi di Catania, Italia	492	214	POSTER-B
Zákutná	Dominika	Charles University, Czech Republic	921	241	INO-2B
Zalar	Bostjan	Department of Condensed Matter Physics, Jožef Stefan Institute, Slovenia.	1105	242	FIS-2A
Zálešák	František	University of Zurich, Zurich CH-8057, Switzerland	565	154	CSB-1B
Zambon	Alfonso	Università di Modena e Reggio Emilia, Italia	208, 193, 1762, 383, 323	31, 67, 165, 256, 167	POSTER-A, INO-1A, INO-1B, ORG-4A, INO-1D
Zamboni	Diego	Università di Padova, Italia	1655	214	POSTER-B
Zamboni	Nicola	ETH Zurich, Switzerland	1978	60	ParallelTopic14
Zambra	Marco	University of Insubria, Department of Science and High Technology, Italy	1373	214	POSTER-B
Zammuto	Vincenzo	Università di Messina, Italia	254	236	TEC-D
Zamparelli	Corrado	Sapienza University of Rome, Italy	1479	72	ELE-1

Zampella	Angela	Università di Napoli Federico II, Italia	818, 655, 656	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
Zampella	Angela	Università degli studi di Napoli Federico II, Italia	658	214	POSTER-B
Zampella	Angela	Dipartimento di Farmacia, Università di Napoli "Federico II", Italia	657	147	ORG-2B
Zampolli	Jessica	Dipartimento di Biotecnologie e Bioscienze, Università degli studi di Milano-Bicocca, Italia	1793	31	POSTER-A
Zamponi	Silvia	Scuola di Scienze e Tecnologie, Università di Camerino, Camerino	668, 1181	31, 214	POSTER-A, POSTER-B
Zanardi	Chiara	Ca' Foscari, Italia	1089, 1090, 211	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Zanardi	Emanuela	Department of Food and Drug, University of Parma	1369	31	POSTER-A
Zanardi	Franca	Department of Food and Drug, University of Parma	297, 637, 887, 941, 1933, 1982	31, 31, 31, 31, 182, 209	POSTER-A, POSTER-A, POSTER-A, POSTER-A, ParallelTopic12 - ID: 182, ParallelTopic12 - ID: 209
Zanda	Emanuele	Università di Messina, Italia	1451, 969, 1248	31, 214, 214	POSTER-A, POSTER-B, POSTER-B
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Zanella	Elisa	Università degli Studi di Milano, Dipartimento di Chimica – Milano (MI), Italy	210, 146	214, 157	POSTER-B, IND-1B
Zanelli	Alberto	Consiglio Nazionale delle Ricerche - Istituto per la Sintesi e la Fotoreattività- ISOF-CNR, Italia	2025	192	ParallelTopic08 - ID: 192
Zanetti Polzi	Laura	S3 Center, CNR Institute of Nanoscience, Modena, Italy	1398, 1142	31, 185	POSTER-A, ParallelTopic15 - ID: 185
Zanetti-Polzi	Laura	CNR Istituto Nanoscienze (Modena), Italia	1389	257	TEO-C
Zanetti	Lucia	Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia (ICMATE), Consiglio Nazionale delle Ricerche (CNR); Università degli Studi di Padova, Italia	1860	214	POSTER-B
Zanfrognini	Barbara	University of Modena and Reggio Emilia, Department of Chemical and Geological Sciences	211	214	POSTER-B
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Zangheri	Martina	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, Italia	1533	144	ANA-1D
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Zani	Lorenzo	Istituto di Chimica dei Composti Organometallici - CNR, Via Madonna del Piano 10, Sesto Fiorentino, Italia	1890, 667	31, 214	POSTER-A, POSTER-B
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Zanirato	Vinicio	Università degli studi di Ferrara, Department of Chemical, Pharmaceutical and Agricultural Sciences	688	143	ORG-1C
Zannotti	Marco	Università di Camerino, Italia	917	156	ABC-C
Zanoletti	Alessandra	Università degli Studi di Brescia, Italia	1397, 1587	214, 236	POSTER-B, TEC-D
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Zanoni	Giordano	Department of Chemical Sciences, University of Padova	989	214	POSTER-B
Zanoni	Ilaria	National Research Council of Italy, Institute of Science, Technology and Sustainability for Ceramics (CNR-ISSMC former CNR-ISTEC), Via Granarolo 64, Faenza, Italy.	1598	31	POSTER-A
Zanotti	Alessandro	Politecnico di Milano, Italia	221	237	TEC-C
Zanotti	Gloria	Istituto di Struttura del la Materia (ISM), National Research Council (CNR), Italia	849, 500	214, 247	POSTER-B, ORG-3D
Zanovello	Luigi	Istituto Italiano di Tecnologia, Italia	727	214	POSTER-B
Zanut	Alessandra	università padova, Italia	425	249	ANA-3B
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Zappaterra	Federico	University of Ferrara, Italia	975, 1163	214, 141	POSTER-B, ORG-1A
Zappelli	Chiara	Dipartimento di Chimica e Chimica Industriale, Università di Pisa, Italia	947	214	POSTER-B
Zappi	Alessandro	Alma Mater studiorum Università di Bologna	1157, 494	214, 238	POSTER-B, ABC-B
Zappia	Stefania	Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" (SCITEC)-CNR, via A. Corti 12, 20133 Milano, Italy	1364, 1603	214, 214	POSTER-B, POSTER-B
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Zarechian	Ayda	Department of Molecular Biotechnology and Health sciences, University of Turin	870	189	ParallelTopic04 - ID: 189
Zarrelli	Armando	Department of Chemical Sciences, University of Naples Federico II, Via Cintia, 6, 80126 Napoli, (NA), Italy	824, 825	214, 156	POSTER-B, ABC-C
Zarrelli	Armando	Department of Chemical Sciences, University of Naples "Federico II", Naples, Italy	826	266	CSB-2
Zatti	Giovanni	Università degli Studi Milano Bicocca, Milan, Italy	542	31	POSTER-A
Zattoni	Andrea	Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, via Piero Gobetti 83 40129, Bologna, Italia	1413, 1096, 1383, 1097, 1624, 1691	31, 214, 214, 146, 146, 150	POSTER-A, POSTER-B, POSTER-B, ANA-2B, ANA-2B, ANA-2D
Zavaroni	Alessio	Università di Parma, Italia	546	214	POSTER-B
Zaworotko	Michael J.	University of Limerick, Irlanda	2035	268	SATELLITE: IUPAC CrystEng 2024
Zaza	Antonio	Università degli Studi di Milano-Bicocca, Italia	717	31	POSTER-A
Zecchi	Riccardo	Department of NEUROFARBA, University of Florence, V.le G. Pieraccini 6, 50139, Firenze, Italy	1572	259	ALI-1B
Zema	Lucia	University of Milan, Italy	1484	31	POSTER-A
Zema	Riccardo	University of Perugia	1889	214	POSTER-B
Zendri	Elisabetta	Università Ca' Foscari di Venezia, Italia	1892	31	POSTER-A
Zendri	Elisabetta	Ca' Foscari Università di Venezia, Italia	1895	156	ABC-C
Zendrini	Andrea	Department of Molecular and Translational Medicine, University of Brescia, Brescia, Italy	1950	175	ParallelTopic04 - ID: 175
Zengin	Gokhan	Department of Biology, Science Faculty, Selcuk University, Konya 42130, Turkey	1136	260	ALI-2A
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Zerbetto	Francesco	Università di Bologna, Italia	197, 1254	74, 154	TEC-A, CSB-1B
Zerino	Antonio	Department of Chemistry and Biology "Adolfo Zambelli", University of Salerno, via Giovanni Paolo II 132, 84084 Fisciano (SA) (Italy)	1001	69	IND-1A
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Zhu	Wenliang	Kyoto Institute of Technology, Giappone	463	243	FIS-2B
Zia	Silvia	Stem Sel srl	1624	146	ANA-2B
Ziani	Zakaria	Università di Bologna, Italia	1113	214	POSTER-B
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Ziccarelli	Ida	Laboratory of Industrial and Synthetic Organic Chemistry (LISOC), Department of Chemistry and Chemical Technologies, University of Calabria, Via Pietro Bucci 12/C, 87036 Arcavacata di Rende (CS), Italy	711, 579	214, 256	POSTER-B, ORG-4A
Zimetti	Francesca	Università di Parma, Italia	1080	31	POSTER-A
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Zinna	Francesco	Università di Pisa, Italia	526, 528	244, 254	ORG-3A, INO-3
Zippilli	Claudio	Università degli Studi della Tuscia, Italia	874	31	POSTER-A
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Zizzamia	Angelica Rebecca	Università degli Studi della Basilicata, Italia	933	214	POSTER-B
Zoboli	Roberto	Università Cattolica del S. Cuore, Italia	1996	194	ParallelTopic10 - ID: 194
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Zoccatelli	Gianni	Università degli studi di Verona, Italia	1074, 1901, 1093, 1693	214, 214, 78, 259	POSTER-B, POSTER-B, ALI-1A, ALI-1B
Zoia	Luca	Università di Milano Bicocca, Italia	1876	165	INO-1B
Zoleo	Alfonso	Università di Padova, Italia	1857, 1284	31, 74	POSTER-A, TEC-A
Zollo	Alessia	Università di Torino, Italia	1061	253	INO-2C
Zonfrillo	Beatrice	Department of NEUROFARBA, University of Florence	1485, 1568, 1693	214, 214, 259	POSTER-B, POSTER-B, ALI-1B
Zonta	Cristiano	Università degli studi di Padova, Italia	1545, 1592, 1613	31, 31, 214	POSTER-A, POSTER-A, POSTER-B
Zotti	Linda Angela	Universidad Autónoma de Madrid	1363	31	POSTER-A
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Zuccaccia	Cristiano	Università degli Studi di Perugia, Italia	1915	214	POSTER-B
Zuccante	Giovanni	Università Milano Bicocca, Italia	777	214	POSTER-B
Zucchelli	Margherita	Ca' Foscari Università di Venezia, Italia	1895	156	ABC-C
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Zuffo	Michela	Dipharma francis srl, Italia	1958	256	ORG-4A
Zunarelli	Carlotta	Università di Bologna, Italia	1894	214	POSTER-B
Zupi	Marco	University of Pavia, Italy	1803	214	POSTER-B
Zwergel	Clemens	Department of Drug Chemistry and Technologies; University of Rome; Sapienza, Rome, Italy	1226, 855	31, 214	POSTER-A, POSTER-B

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