

# POLYCHEM<sup>MEET</sup>

3<sup>rd</sup> International Multidisciplinary Conference on

# POLYMERS & CHEMISTRY

JUNE 17-19, 2024

SANA METROPOLITAN HOTEL,  
LISBON, PORTUGAL



In association with



**POLITÉCNICO  
DE LEIRIA**

CDRSP CENTRE FOR  
RAPID AND SUSTAINABLE  
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### Welcome to PolyChemeet 2024

The PolyChemeet organizing committee and the Board of Elanva are blissful to extend the welcome note to all participants across the globe for its third International Multidisciplinary Conference on Polymers & Chemistry.

With the fabulous and outstanding upshot of Chemeet 2022 and Chemeet 2023, Team Elanva with its associated board members and organizing committee members of PolyChemeet has geared up for the third edition of PolyChemeet. The organizing team of PolyChemeet is proud to report that 99.99% of the event audience and participants rated the conference with 5 stars and praised the quality of scientific information they gained through this forum.

With this cheering and motivation, the planning team with deep discussion with the conference members and examining the current conditions, challenges, and possibilities, has scheduled the third edition of PolyChemeet for June 17-19, 2024 with Sana Metropolitan Hotel, Lisbon, Portugal as the conference Venue.

### About PolyChemeet 2024

PolyChemeet is a strong bond that holds participants and opportunities by bringing together the community of researchers, academicians, industrialists, societies, associations, and emerging students onto a unique platform.

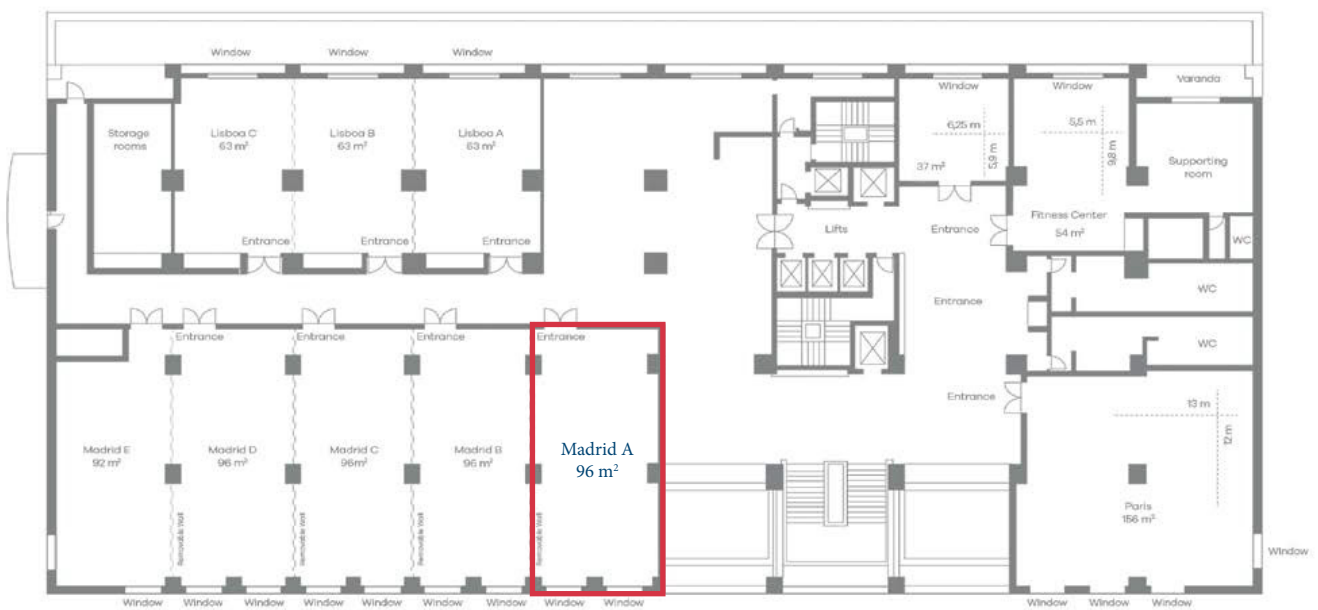
With the feedback from attendees, Knowledge gained through suggestions, and the policy and practice of learning from mistakes with the previous edition, the committee has taken care to improve the agenda and sessions of the conference to make sure that attendees enjoy and learn from the finest.

Parallely, the PolyChemeet conference committee strongly supports emerging researchers and young minds with innovative ideas and provides them numerous opportunities to market their innovations on this global platform.

The portions of the conference focus on bridging the gap and cheering along between the academy and the industry. We sincerely hope that you find the content informative and engaging and inspire you to contribute to shaping this exciting, important industry.



## Conference Hall Blue Print



## Speaker Guidelines

- The official language of the Conference and presentations is English. Regrettably there are no translator facilities available.
- All the presenters are requested to stick to the time allotted for presentations and discussions. The session chair will intimate when you are left with 2 minutes. The time frames are discussed in the next points.
- For Plenary Presentations the time allotted is 30 minutes. 25 Minutes are for presentations and 5 minutes are for Discussion.
- For Invited and session speaker Presentations, the time allotted is 20 minutes. 17 Minutes are for presentations and 3 minutes are for Discussion.
- For Student Presentations the time allotted is 15 minutes. 13 Minutes are for presentations and 2 minutes are for Discussion.
- All the presentations are recommended to be in PPT format and landscape orientation with a screen ratio of 16:9 is preferable.
- It is recommended to send your presentations before the conference so that we can use them in case if you face any difficulty in using them during the conference.
- It is also recommended to copy your presentation on a flash drive and provide that to the organizer so that we can copy that before your presentation.
- It is recommended to compress the videos and HD images so that it won't take more time to load while presenting.

## Poster Guidelines

- All the poster presenters should bring their posters printed for the conference. There are no printing services available at the conference venue. It is preferred to have the poster printed in colour.
- The maximum poster size allowed is A0: 84.1 cm x 118.9 cm (33.1 inches x 46.8 inches).
- The poster should be in a single page. The poster should have the title, small description, results, and conclusions.
- You are allotted a specific number for your poster in the program, and you are advised to stick your poster at allotted place.
- Hotel and conference management are not responsible for the posters.

Conference Chair:	<b>Geoffrey Robert Mitchell</b> , CDRSP, Portugal
Co-Chair:	<b>Paula Marques</b> , University of Aveiro, Portugal
08:55-09:00	Welcome & Introductory Comments by Team Elanva
09:00-09:10	Welcome & Introductory Comments by Polychemeet Conference Chair
<b>Session-1</b>	<b>Plenary Presentations @ Madrid A</b>
Session Chair	<b>Geoffrey Robert Mitchell</b> , CDRSP, Portugal
09:10-09:40	<b>Title:</b> Carbon Monoxide as a Potential Therapeutic Molecule: A Molecular Analysis of Its Safety Profile <b>Binghe Wang</b> , Georgia State University, USA
09:40-10:10	<b>Title:</b> From Villain to Superhero: The Biology and Medical Relevance of Carbon Monoxide <b>Leo E. Otterbein</b> , Harvard Medical School, USA
10:10-10:40	<b>Title:</b> Multifunctional Materials and Additive Manufacturing Towards a Sustainable Digitalization <b>Senentxu Lanceros-Mendez</b> , BC Materials, Spain
<b>10:40-11:05</b>	<b>Coffee Break @ Foyer</b>
11:10-11:40	<b>Title:</b> Towards Dynamic Multiscale Feedback During Injection Moulding of Plastics <b>Geoffrey Robert Mitchell</b> , CDRSP, Portugal
11:40-12:10	<b>Title:</b> $\beta$ -cyclodextrin-based Nanosponges for Drug Delivery: Unveiling the Synergy of Experiments and Multiscale Simulations <b>Marta Corno</b> , University of Turin, Italy
12:10-12:40	<b>Title:</b> Photocatalytic Water Splitting to Produce Green Hydrogen and Fuels on a Large scale <b>Kazunari Domen</b> , The University of Tokyo, Japan
<b>12:40-13:35</b>	<b>Lunch @ Astrolabio Restaurant</b>
<b>Session-2</b>	<b>Gaseous State Molecules Workshop @ Madrid A</b>
Session Chair-1	<b>Michael Tift</b> , University of North Carolina, USA
Session Chair-2	<b>Chalet Tan</b> , University of Tennessee Health Science Center, USA
13:40-14:00	<b>Title:</b> Engineering Macromolecular Nanocarriers for Controlled Delivery of Gasotransmitters for Biomedical Applications <b>Jinming Hu</b> , University of Science and Technology of China, China
14:00-14:20	<b>Title:</b> Carbon Monoxide Promotes Mitochondrial Homeostasis in Astrocytes and Microglia: Mitophagy, Mitochondrial Biogenesis and Mitochondrial Metabolism. <b>Helena L. A. Vieira</b> , Universidade Nova de Lisboa, Portugal
14:20-14:40	<b>Title:</b> Heme Oxygenase-1 Expressing Perivascular Macrophages as Gatekeepers of the Immune Landscape in Cancer <b>James Arnold</b> , King's College London, UK
14:40-15:00	<b>Title:</b> Towards "CO in a Pill": Pharmacokinetic Considerations <b>Chalet Tan</b> , University of Tennessee Health Science Center, USA
15:00-15:20	<b>Title:</b> Acyloxydiene-Fe(CO) <sub>3</sub> Complexes: A Unique Platform for the Development of Enzyme-triggered CO-releasing Molecules <b>Hans-Günther Schmalz</b> , University of Cologne, Germany
15:20-15:40	<b>Title:</b> CO Therapeutics in Acute Kidney Injury <b>Mark De Caestecker</b> , Vanderbilt University Medical School, USA

15:40-16:05	<b>Coffee Break @ Foyer</b>
16:10-16:30	<b>Title:</b> Carbon Monoxide Prodrugs Based on A Proximity-enhanced Chemiexcitation Strategy for Cancer Treatment <b>Xingyue Ji</b> , Soochow University, China
16:30-16:50	<b>Title:</b> Role of the Heme Oxygenase/Carbon Monoxide Pathway in Wildlife <b>Michael Tift</b> , University of North Carolina, USA
16:50-17:10	<b>Title:</b> Implementation of Gaseous Mediators Releasing Compounds in Experimental Gastroenterology <b>Marcin Magierowski</b> , Jagiellonian University Medical College, Poland
17:10-17:30	<b>Title:</b> H <sub>2</sub> S-specific Thiolytic of NBD Amines for Detection and Elimination of Biological H <sub>2</sub> S <b>Long Yi</b> , Beijing University of Chemical Technology, China
17:30-17:50	<b>Title:</b> On the Question of CO's Ability to Induce HO-1 Expression in Cell Culture: A Comparative Study Using Different CO Sources <b>Xiaoxiao Yang</b> , Georgia State University, USA
17:50-18:05	<b>Title:</b> Sensing a CO-releasing Molecule (CORM) Does Not Equate to Sensing CO <b>Dongning Liu</b> , Georgia State University, USA
18:05-18:20	<b>Title:</b> Carbon Monoxide as a Therapeutic: A New Generation <b>Nicola Bauer</b> , Georgia State University, USA



### Keynote Presentations @ Madrid A

Session Chair	<b>Frederico Ferreira</b> , University of Lisbon, Portugal
09:00-09:25	<b>Title:</b> Electrochemical Graphene Biosensors <b>Pedro Alpuim</b> , INL, Portugal
09:25-09:50	<b>Title:</b> The Plastics Metamorphoses - A Project on the Multiple Approaches to a Plastic <b>Maria Elvira Callapez</b> , University of Lisbon, Portugal

### Session-1

### Medicinal Chemistry @ Madrid A

09:50-10:10	<b>Title:</b> Neutron Scattering Techniques in the Fight Against Cancer <b>Maria Paula Marques</b> , University of Coimbra, Portugal
10:10-10:30	<b>Title:</b> Carbon Monoxide Releasing Activity of Plant Flavonoids <b>Libor Vitek</b> , Charles University, Czech Republic
10:30-10:55	<b>Coffee Break @ Foyer</b>
11:00-11:20	<b>Title:</b> Mannosylated Polymeric Nanoparticles to Target Delivery an Innovative DNA Vaccine Against Cervical Cancer <b>Angela Sousa</b> , University of Beira Interior, Portugal
11:20-11:40	<b>Title:</b> Peroxide Nanoparticles Coated with Sodium Alginate: Synthesis, Characterisation and Biological Properties <b>Adrian Fifere</b> , ICMPP, Romania
11:40-12:00	<b>Title:</b> From Expression to Inhibition: Investigating HPV E6 and E7 Proteins as Targets for Cervical Cancer Therapy <b>Diana Gomes</b> , University of Beira Interior, Portugal

### 12:00-13:00

### Poster Presentations

PC-01	<b>Title:</b> Development of Piezoelectric and Osteoinductive Nanofibers for Bone Tissue Engineering <b>Frederico Barbosa</b> , University of Lisbon, Portugal
PC-02	<b>Title:</b> Operando X-ray Studies of Polymer Processing <b>Anabela P. Massano</b> , CDRSP, Portugal
PC-03	<b>Title:</b> Advancements in Membrane Technology: Enhancing Performance and Functionality for Bio-medical Applications <b>Fahimeh Zare</b> , University of Lisbon, Portugal
PC-04	<b>Title:</b> Tautomerization Initiated CO Release of Quinone-derived CO Prodrugs with Multiple Outputs and in-Vivo Cardioprotective Activity <b>Xiaoxiao Yang</b> , Georgia State University, USA
PC-05	<b>Title:</b> CO Release Characteristics of Non-ruthenium Based CORMs, CORM-A1 and CORM-401 <b>Nicola Bauer</b> , Georgia State University, USA
PC-06	<b>Title:</b> Development and Validation of A RP-HPLC Method for the Simultaneous Analysis of Six Contaminants of Emerging Concern During Microalgae Bioremediation <b>Bruna Santos</b> , Universidade de Coimbra, Portugal
PC-07	<b>Title:</b> Extrusion Based Scaffold Production Combined with Numerically Driven Multiphysical Stimulation Processes Applied to Osteochondral Tissue Engineering <b>Pedro Marcelino</b> , IPLeiria, Portugal
PC-08	<b>Title:</b> Biocomposites Printed Circuit Board Optimization Using Finite Element Method and 3D Micro and Nano Cellulose Fibre Optimization <b>Joao Velosa Pereira</b> , University of Beira Interior, Portugal

PC-09	<b>Title:</b> Assembly of Cellulose Based Composites for PCB Applications <b>Pedro Videira</b> , University of Beira Interior, Portugal
PC-10	<b>Title:</b> Carbon Monoxide Releasing Molecules <b>Riya Joshi</b> , University of Denver, USA
PC-11	<b>Title:</b> Edible Electrospun Plant-Based Nanofibers For Fish Cell Culture: Advancing Scaffolds for Cultured Fish <b>Diana Marques</b> , University of Lisbon, Portugal
PC-12	<b>Title:</b> 3D Printing Hybrid Approaches for the Development of Biomimetic Cardiac Patches <b>Ana Agostinho</b> , University of Lisbon, Portugal
PC-13	<b>Title:</b> Novel Functionalized PEDOT Nanoparticles for Biomedical Applications <b>Diogo Diniz</b> , University of Lisbon, Portugal
PC-14	<b>Title:</b> 3D Advanced Osteosarcoma Model Using a Decellularized Cell-derived ECM-based Bioink for in Vitro Anticancer Therapy Studies <b>Margarida Domingues</b> , University of Lisbon, Portugal
<b>13:00-13:55</b>	<b>Lunch @ Astrolabio Restaurant</b>
<b>Session-2</b>	<b>Materials Chemistry @ Madrid A</b>
Session Chair-1	<b>Maria Paula Marques</b> , University of Coimbra, Portugal
Session Chair-2	<b>Victor Neto</b> , University of Aveiro, Portugal
14:00-14:20	<b>Title:</b> Innovative Materials for Energy Efficient Solutions in Cultural Heritage Preservation. <b>Abeer Al Mohtar</b> , University of Lisbon, Portugal
14:20-14:40	<b>Title:</b> Gold that Doesn't Glitter. Immobilization, Reverse-engineering and Catalytic Activity of Pink Gold Nanoparticles in Inorganic Aerogel Matrices. <b>Istvan Lazar</b> , University of Debrecen, Hungary
14:40-15:00	<b>Title:</b> Light sources of the future. <b>Maria Vasilopoulou</b> , Institute of Nanoscience and Nanotechnology, National Center for Scientific Research Demokritos, Athens, Greece
15:00-15:20	<b>Title:</b> Adsorption Process of Lysine-based Oligopeptides on Double-stranded DNA for Gene Delivery Purposes: A Molecular Dynamic Study <b>Giuseppina Raffaini</b> , Polytechnic University of Milan, Italy
15:20-15:40	<b>Title:</b> Lithium Recovery from Seawater and Brine via Membrane Technologies: Innovations, Challenges, and Prospects <b>Sergio Santoro</b> , University of Calabria, Italy
15:40-16:00	<b>Title:</b> Ecofriendly Upcycling of Spent Coffee Grounds for the Fabrication of Special Wetting Coatings and Membranes <b>Shahrooz Zargarian</b> , Polish Academy of Sciences, Poland
<b>16:00-16:25</b>	<b>Coffee Break @ Foyer</b>
16:30-16:50	<b>Title:</b> Added-value Product Recovery from Food Industry Wastewaters with a Biobased Molecularly Imprinted Polymer <b>Teresa Esteves</b> , University of Lisbon, Portugal
16:50-17:10	<b>Title:</b> Transforming Nature into Sustainable Resources: Innovation in Biomass-Derived Products <b>Rui Galhano dos Santos</b> , University of Lisbon, Portugal
17:10-17:25	<b>Title:</b> The Effect of Metal Complexation on Self-assembly Behavior of Native Beta Cyclodextrin and its Functionalized Derivative <b>Siddanth Saxena</b> , Polytechnic University of Catalonia, Spain



17:25-17:40	<b>Title:</b> Plasmonic Enhanced OLED Efficiency upon Silver-polyoxometalate Core-shell Nanoparticle Integration into the Hole Injection/Transport Layer <b>Zoi Georgiopoulou</b> , Insitute of Nanoscience and Nanotechnology, National Center for Scientific Research Demokritos, Athens, Greece
17:40-17:55	<b>Title:</b> Electrical and Structural Investigation of 1T-TaS <sub>2</sub> Crystals Temperature-dependent Phase Transition <b>George Chatzigiannakis</b> , Insitute of Nanoscience and Nanotechnology, National Center for Scientific Research Demokritos, Athens, Greece
17:55-18:10	<b>Title:</b> Bioengineering Microalgae Nannochloropsis Sp. Culture to Enhance Cellulose Production <b>Diana Pacheco</b> , Universidade de Coimbra, Portugal

Session-1 Tissue Engineering and Regenerative Medicine @ Madrid A	
Session Chair-1	<b>Joana M Curto</b> , University of Beira Interior, Portugal
Session Chair-2	<b>Maria Vasilopoulou</b> , Insitute of Nanoscience and Nanotechnology, National Center for Scientific Research Demokritos, Athens, Greece
09:00-09:20	<b>Title:</b> Synergizing Graphene Oxide and Polymers: Innovations in Tissue Engineering <b>Paula Marques</b> , University of Aveiro, Portugal
09:20-09:40	<b>Title:</b> Electroconductive Materials in Regenerative Medicine <b>Frederico Ferreira</b> , University of Lisbon, Portugal
09:40-10:00	<b>Title:</b> Ibuprofen-immobilized Smart Membranes: A Novel Strategy to Improve the Clearance of Protein-bound Uremic Toxins <b>Mónica Faria</b> , University of Lisbon, Portugal
10:00-10:20	<b>Title:</b> Biopolymer Based Enzyme-mediated Fast in Situ Injectable Hydrogels Laden with Curcumin Nanocrystals for Bone Tissue Engineering <b>Syed Ahmed Shah</b> , Polish Academy of Sciences, Poland
10:20-10:40	<b>Title:</b> A Membrane-drug-dendrimer Synergic System for Protein-bound Uremic Toxin Clearance <b>Rita Pires</b> , University of Lisbon, Portugal
10:40-11:05	<b>Coffee Break @ Foyer</b>
11:10-11:30	<b>Title:</b> Enhancement of Gas Transport Properties of Polyurethane-based Membranes for Blood Oxygenation <b>Tiago Ferreira</b> , University of Lisbon, Portugal
11:30-11:45	<b>Title:</b> Design, Production and Characterization of 3D-printed lab-scale Hemodialysis Membrane Modules <b>Flávia Rodrigues</b> , University of Lisbon, Portugal
11:45-12:00	<b>Title:</b> Synthesis of BTO-PEDOT Core-shell NPs as Wireless Nanobioelectronic Devices for Cancer Therapy <b>Catarina Jones</b> , University of Lisbon, Portugal
12:00-12:15	<b>Title:</b> Solvent- and Catalyst-free Oxidative Depolymerization/Functionalization of Lignin: Generating Novel Monomers for Advanced Polymers <b>Marta Ramos</b> , University of Lisbon, Portugal
12:15-13:25	<b>Lunch @ Astrolabio Restaurant</b>
Session-2 Green Chemistry, Polymers and its Applications @ Madrid A	
Session Chair	<b>Paula Marques</b> , University of Aveiro, Portugal
13:30-13:55	<b>Title:</b> Cellulose-silica Hybrid Materials: Fundamentals and Applications <b>Dmitry Evtyugin</b> , University of Aveiro, Portugal
13:55-14:20	<b>Title:</b> Assembly of Cellulose Based Composites for PCB Applications <b>Joana M Curto</b> , University of Beira Interior, Portugal
14:20-14:40	<b>Title:</b> Challenges and Opportunities Dealing with Polymer Circular Economy <b>Victor Neto</b> , University of Aveiro, Portugal
14:40-15:00	<b>Title:</b> Strain Engineered Nanostructures for Enhanced Energy Conversion and Storage <b>Venkata Ramana Eskilla</b> , University of Aveiro, Portugal
15:00-15:20	<b>Title:</b> Thermoplastic Starch-based Composites with Improved Properties <b>Regina Jeziórska</b> , Łukasiewicz Research Network – Industrial Chemistry Institute, Poland
15:20-15:35	<b>Title:</b> Cannabis Micro and Nano Fibers for Medicinal Chemistry <b>Lucia Silva</b> , University of Beira Interior, Portugal
15:35-15:50	<b>Title:</b> The Metamorphoses of Plastics: From 19th century innovations to contemporary Portugal <b>Abraço Artur</b> , University of Lisbon, Portugal
15:50-16:30- Closing Ceremony	
16:30-17:00	<b>Coffee Break @ Foyer</b>

NOTES:

## GRACE THE OCCASION WITH YOUR PRESENCE AT CHEMEET 2025



### For Collaborations/ General Queries

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### Conference Secretariat

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