

Program

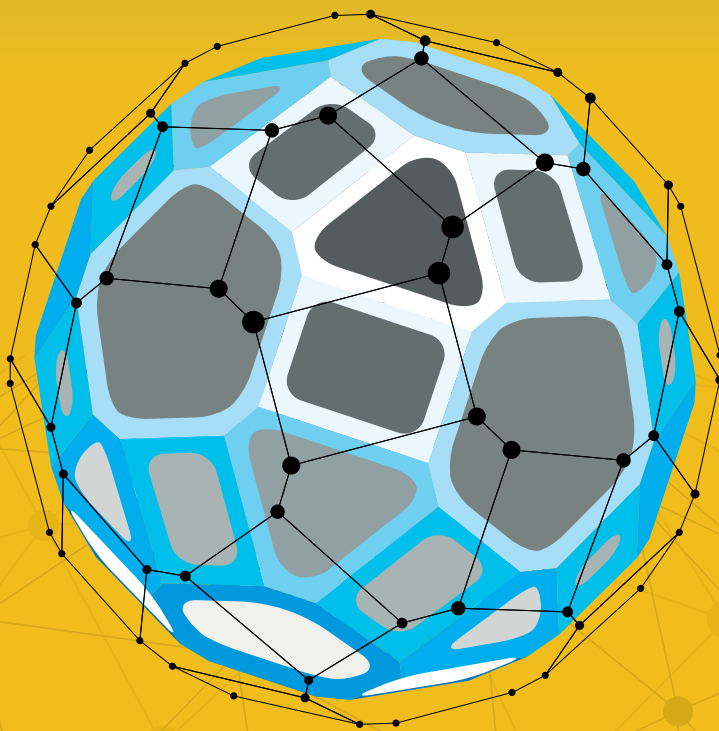
5th International Conference on

CARBON CHEMISTRY AND MATERIALS

 **October 13-15, 2025 | Rome, Italy**



NH Roma Villa Carpegna
Via Pio IV, 6, 00165, Rome, Italy



Join Zoom Meeting:

<https://us06web.zoom.us/j/81496257296?pwd=TuAxMCsQQPpWZKjmSErQZmN8x500MI.1>

Meeting ID: 814 9625 7296

Passcode: 395993

08.00-09.15 **Registration and Badge Pickup**

09.15-09.20 **Introduction**

Keynotes

Chair: **Ramiz Zulkharnay**, *University of Bristol, UK*



09.20-09.55

Indium Tin Oxide Thin Films as Protective Coatings for Space Applications

Mukti M Rana, *Delaware State University, USA*



09.55-10.30

Laser Engineering Nanocarbon Phases Within Diamond for Science, Sensors and Electronics

Jackman Richard, *University College London, UK*

10.30-10.50 Coffee Break @Foyer



10.50-11.25

Drug-Loaded Emissive and Photothermal-Cyclodextrin-Carbondots: Antimicrobial, Antioxidant and Anti-Inflammatory Properties

Salvatore Petralia, *University of Catania, Italy*

Featured Presentations

11.25-11.50 **Quasiperiodic Metamaterials**

Kenneth M. Golden, *University of Utah, USA*

11.50-12.15 **Metal-Terminated Diamond Nea Surfaces for Thermionic Emission Applications: A Competitor for PV Solar Cells?**

Ramiz Zulkharnay, *University of Bristol, UK*

12.15-12.40 **Advanced Carbon Materials by Catalytic Carbonization**

Paul O'Connor, *YERRAWA, Poland*

12.40-13.05 **Assessment of the Feasibility of Fractionation of Natural Biomass as a Circular Source for Biocarbon and Minerals**

Preciosa Pires, *CISAS - Polytechnic Institute of Viana do Castelo, Portugal*

13.05-14.10 Group Photo session & Lunch Break @RISTORANTE

Chair: **Srinivas Katam**, *International Iberian Nanotechnology Laboratory, Portugal*

14.10-14.35 **Synthesis and Functionalization of 3-Dimensional Graphene-Based Materials**

Mineo Hiramatsu, *Meijo University, Japan*

- 14.35-15.00 **Integrated Pyrolysis of Vineyard Residues for Dual Production of Bio-Pesticides and Functionalized Biochar Fertilizers**
Gregor Tondl, *University of Natural Resources and Life Sciences, Austria*
- 15.00-15.25 **Activated Porous Carbon Fiber: New Adsorbent for Sampling and Analysis of Siloxanes**
Enrico Paris, *CREA-IT Council for Research in Agriculture and Analysis of Agricultural Economics - Engineering and Agro-Food Processing, Italy*
- 15.25-15.50 **Catalytic Processing of Bio-Based Materials for Graphitizing Functional Carbon**
Mehdi Mennani, *University Mohammed VI Polytechnic, Morocco*
- 15.50-16.15 **Theory of Friction for Periodic Water Structures and for Ions Moving Through a Sub-nanometer Carbon Nanotube**
Jeffrey Sokoloff, *Northeastern University and Florida Atlantic University, USA*

16.15-17.00 Coffee Break @Foyer

16.15-17.00 Poster Presentations @ Foyer/Galleria

- P-01 **Determination of Essential and Potentially Toxic Elements in Coffee and Tea Consumed in Saudi Arabia and Assessing Their Human Health Impact**
Ahmed Mindil, *University of Jeddah, Saudi Arabia*
- P-02 **Microwave-Assisted Reduction of Graphene Oxide to Reduced Graphene Oxide**
Ella Cebisa Linganiso, *University of the Witwatersrand, South Africa*
- P-03 **TBA**
Antonino Consoli, *University of Messina, Italy*
- P-04 **Versatility of Diamond Electrodes – Opportunities by Electrode and Cell Design**
Carolin Messerschmidt, *University of Erlangen-Nuremberg, Germany*
- P-05 **Exploring The Surface Properties of Carbon Materials Derived from Waste Biomass**
Bilyana Petrova, *Institute of Organic Chemistry with Centre of Phytochemistry, Bulgaria*
- P-06 **Nanoporous Carbons Obtained from Different Raw Materials for Adsorption of Chlorhexidine Gluconate from Aqueous Solution**
Ivanka Stoycheva, *Institute of Organic Chemistry with Centre of Phytochemistry, Bulgaria*

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Featured Presentations

Chair: **Lenka Matejova**, VSB-TUO, CEET, IET, Czech Republic

09.30-10.00 **Scalable Continuous-Flow Synthesis of PtNiRu@Graphene Nanoalloys for Enhanced HER Performance in Acidic Media**

Srinivas Katam, International Iberian Nanotechnology Laboratory, Portugal

10.00-10.25 **Microwave-Assisted Pyrolysis of Waste for Xylene Adsorbent Preparation**

Zuzana Jankovska, VSB-TUO, CEET, IET, Czech Republic

10.25-10.55 **Coffee Break @Foyer**

10.55-11.20 **Engineering Carbons Prepared from Corn Cobs and Red Mombin Seeds by Using Microwave Pyrolysis for Xylene Adsorption**

Lenka Matejova, VSB-TUO, CEET, IET, Czech Republic

11.20-11.45 **Porous Carbon Materials Derived from Renewable Biomass and Waste Feedstocks**

Nataliya Korol, Perechin Timber, Ukraine

11.45-12.10 **Path Integral Molecular Dynamics Simulation for H/D Isotope Effect in Protonated/Deuterated Aqueous Solution**

Masanori Tachikawa, Yokohama City University, Japan

12.10-12.35 **Photochemical Synthesis of Hybrid Carbon-Gold Nanostructures: Optical and Photothermal Properties**

Maugeri Ludovica, University of Catania, Italy

12.35-13.00 **Nanostructured Hybrid Materials for Sensing of Cardiac Disease Biomarkers**

Saad Akeel, University of Catania, Italy

13.00-14.00 **Lunch Break @RISTORANTE**

14.00-14.25 **Influencing Chloride Oxidation by a Novel Boron-doped Electrode Design**

Manuel Zulla, University of Erlangen-Nuremberg, Germany

14.25-14.50 **Theoretical Study of Electron Transport in The Interface of MnO₂/Carbon with Potential Applications for Energy Storage Devices**

Jesus Muniz, National Autonomous University of Mexico, Mexico

14.50-15.15 **Optics with a Twist: Switching with Dirac Fermions in Graphene**

Avik Ghosh, University of Virginia, USA

15.15-15.40 **Novel Thermally Reduce Graphene Oxide Microsupercapacitor Fabricated Via Mask – Free AxiDraw Direct Writing**

Vusani Maphiri, Sefako Makgatho Health Science University, South Africa

- 15.40-16.05 **Linear Response Formalism for Optical Conductivity in Non-Hermitian Dirac Hamiltonians**
Leonardo Dos Santos Lima, *Federal Technological Education Center of Minas Gerais, Brazil*
- 16.05-16.30 **Seawater-Derived Biocarbons for Energy Storage: Sustainable Synthesis Methodology for Reducing Environmental Footprint**
Yanfeng Yue, *Delawar State University, USA*

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10.00-10.10 Introduction

Featured Presentations

10.10-10.35 **Advanced Carbon Nanocapsules for Neutron Cancer Therapy**

Gil Alberto Batista Gonçalves, *University of Aveiro, Portugal*

10.35-11.00 **Nanoporous Carbon Materials in Supercapacitors and their Hybrids with Li-ion Batteries**

Yuriy Maletin, *YUNASKO, Ukraine*

Keynote Presentations



11.00-11.35

Circular Economy: New Opportunities for Sustainable Green Bio-Nanocomposites Based on Graphene

Sabu Thomas, *Mahatma Gandhi University, India*



11.35-12.10

Carbon Materials for Gas Sensors

Michele Penza, *ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Italy*

12.10-12.20 Coffee Break

Featured Presentations

12.25-12.50 **Chiral Nematic Mesoporous Organosilica Films– Preparation, Modification and Applications**

Joanna Szymkowiak, *Adam Mickiewicz University, Poland*

12.50-13.15 **Unveiling The Origin of Ph-Dependent Catalytic Performance of Bi₂O₃ Nanostructure for Electrochemical CO₂ Reduction**

Juqin Zeng, *Polytechnic University of Turin, Italy*

13.15-13.40 **Scalable Microwave-assisted Continuous Flow Synthesis of Silver Nanowires**

Jayesh Sonawane, *University College London, UK*

13.40-14.00 Lunch Break

14.00-14.25 **[E-Poster]**

DFT Insights into CO₂ Adsorption Mechanisms on Doped Graphene Oxide Nanoribbons

Juan Enrique Ramirez Hernandez, *Universidad de Sonora, Mexico*

14.25-14.50 **Performance Investigation of Micro Tools Coated with Carbon Nanotubes and Graphene in Micro-Electro Discharge Machining Process**

Shailesh Shirguppikar, *Rajarambapu Institute of Technology Rajaramnagar, India*

- 14.50-15.15 **Synthesis of Complex Organic Molecules in Interstellar Space**
Herbst E, *University of Virginia, USA*
- 15.15-15.45 **Sequential Novel Use of Moringa Oleifera Lam, Biochar, and Sand to Remove Turbidity, E. Coli, and Heavy Metals from Drinking Water**
Maryam Batool, *University of Sahiwal, Pakistan*
- 15.45-16.10 **ANN-Based Analysis of Thin Film Maxwell Fluid Dynamics with Electro-osmotic and Nonlinear Thermal Effects**
Irfan Saif Ud Din, *University of Management and Technology, Pakistan*

We wish to see you at
CCM-2026
Valencia, Spain

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