UNITED Scientific Group
A non-profit organization

CCM-2023
Oct 23-27, 2023 | Paris, France (Hybrid)

3rd International Conference on

Carbon Chemistry and Materials

October 23-25, 2023 | Paris, France

Mercure Paris Charles De Gaulle & Convention

October 26-27, 2023 | Virtual (CEST Time, Paris)

secretary@carbon-conferences.com

+1-469-854-2280/81

https://carbon.unitedscientificgroup.org/

MEETING JOINING LINKS (LIVE STREAMING ON ZOOM PLATFORM)

CEST, Paris Time zone

As the conference is hybrid, the virtual attendees can access the in-person presentations and queries can be asked through zoom chat box.

Meeting links shared will be for the complete meeting to join at any point of time.

October 23-25, 2023 | In-Person | Meeting Room-London

October 26-27, 2023 – Virtual

Topic: 3rd International Conference on **Carbon Chemistry and Materials**
October 23-27, 2023 | Paris, France | Hybrid

Join Zoom Meeting

https://us06web.zoom.us/j/82157846599?pwd=0aEbwJdN3QHKQ9bF4Ygqhug7aCEjHu.1

Meeting ID: **821 5784 6599**
Passcode: **233819**

Join Zoom Meeting:
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Meeting ID: 821 5784 6599
Passcode: 233819

Meeting Room-London

08:00-08:20 Registrations & Badge Pickup @Foyer

08:20-08:30 Opening Remarks @London

Keynote Presentations

Moderator: Sylvie Bonnamy, CNRS, University of Orleans, ICMN, France

08:30-09:00

Fullertubes: Long Predicted, Missing Families of New Molecules are Finally Experimentally Verified and Isolated

Steven Stevenson, Purdue University, Fort Wayne, IN, USA

Steven Stevenson is currently a Professor of Chemistry at Purdue University (Fort Wayne), Stevenson is a career "new molecule chaser." For three decades, Stevenson has published newly discovered carbon-based molecules multiple times in Nature, JACS, and Angewandte Chemie. Stevenson's career is multi-faceted, as he has worked at all three major types of employment sectors: academic, government, and industry. Having lived in France, Guatemala, and the US, Stevenson has a love of international languages and appreciates multicultural diversity. The Stevenson team is interdisciplinary and amenable to a diversity of skill sets and researchers (from high school to post-docs). In 2020, they have just experimentally verified and isolated a family of new carbon allotropes. Those new molecule "fullertubes" possess a single layer of rolled graphene (nanotube belt) but have on each end a closed hemispherical endcap of a 1/2 fullerene.

09:00-09:30

2D Materials for Application in High Performance Devices

Martin Kalbac, UFCH JH, Czech Republic

Martin Kalbac currently working at J. Heyrovsky Institute of Physical Chemistry of the Academy of Sciences of the Czech Republic as a research scientist since 2001. From 2010 he is a vice-director of the institute. He is member of expert commission of the scientific council of the Czech Republic and, member of the scientific board of the Regional Centre of Advanced Technologies and Materials. From 2010 he is holding a teaching appointment at the Palacky University in Olomouc. His research interest mainly includes areas such as carbon nanotubes, graphene, Raman spectroscopy and spectro electrochemistry and low-dimensional systems. He is an author of more than 80 publications in scientific journals. In 2004 he received a Humboldt research fellowship. His research work was also honored with Otto Wichterle award (2007) and the award of the ASCR for excellent results of great scientific impact (2008).

09:30-10:00 **Nanocarbons as the Basis for Hybrid Energy-storage Electrodes**
Pedro Gomez-Romero, Catalan Institute of Nanoscience and Nanotechnology, Spain

Pedro GOMEZ-ROMERO (FRSC) is Full Professor of the National Research Council (CSIC, Spain) and Group Leader of the NEO-Energy Lab at ICN2, Barcelona, Spain. Leading projects on materials and devices for energy storage and conversion, with emphasis on batteries, supercapacitors and hybrid devices, pioneering the use of polyoxometalates as energy storing materials. Fellow of the Royal Society of Chemistry since 2014, CIDETEC award to research on electrochemistry in 2017. Cofounder of the spin-off Napptilus Battery Labs. Author of four award-wining popular science books, as well as two technical books (Functional Hybrid Materials, Wiley-VCH, 2004) (Metal Oxides in Supercapacitors, Elsevier, 2017).

Plenary Presentation

10:00-10:40 **Milestones and Recent Advances in the Science and Technology of Corroles**
Zeev Gross, Technion - Israel Institute of Technology, Israel

Zeev Gross is the Professor of Chemistry in the Technion - the Israel Institute of Technology. During the latest years, he served two terms as the dean of the division of Continuing & External Studies, and he continues to chair multiple youth outreach activities in Chemistry for the last 13 years. His earlier scientific contributions were the elucidation of factors that affect electronic structures and reactivity profiles of complexes that play a key role in heme-enzyme like catalysis. His pioneering contributions that served for transforming corrole chemistry into a vibrant research field are outlined in the 2023 perspective article in JACS entitled "Milestones in Corroles' Science and Technology". Prof. Gross is the recipient of the highest recognitions granted by the Porphyrin and Phthalocyanines Society (the Hans Fischer Lifetime Achievements award) and the Israel Chemistry Society (the Gold Medal), Cooper Award for Excellence in Research, 2023. Elected as Foreign Member of the European Academy of Sciences.

10:40-11:00 **Break** **@Foyer**

Oral Presentations

Carbon Allotropes

Chair: Richard B. Jackman, University College London, UK

11:00-11:20 **Plasma Synthesis of 3D-graphene Network**
Mineo Hiramatsu, Meijo University, Japan

11:20-11:40 **Chiral Helicenes and Nanographenes as Important Carbon Materials**
Marc Gingras, Aix-Marseille University, CNRS, France

11:40-12:00 **A Calcium-deficient Hydroxyapatite Coated Carbon Fiber Cloth as a Promising Patch for Bone Reconstruction**
Sylvie Bonnamy, CNRS, University of Orleans, ICMN, France

12:00-12:20 **Adsorption Behavior of Polar and Non-polar Organic Solvent on Carbon Nanotube Films**
Shuhei Inoue, Kindai University, Japan

12:20-12:40 **Application of Diamond-like Carbon Thin Films to Control of Cell Behavior**
Masahito Ban, Nippon Institute of Technology, Japan

12:40-13:00 **Overcoming the Physical and Chemical Limitations of Lipid Nanoparticles for the Stabilisation and Delivery of RNA**
Suzanne Saffie-Siebert, SiSaf Ltd, United Kingdom

13:00-13:05 Group Photo

13:05-14:00 Lunch Break **@Foyer**

Chair: Mihaela C. Stefan, University of Texas at Dallas, Richardson, TX, USA

14:00-14:20 **Formation of Defect-free Monolayer Graphene on Si Interfacial Film *via* SiSn Cointercalation and Sn Deintercalation**
Hidong Kim, Pusan National University, Republic of Korea

14:20-14:40 **Carbon Nanozyme with Elevated Phosphatase Activity Induces Cell Cytoskeleton Collapse and Membrane Bursting**
Tri Pham, Nazarbayev University, Kazakhstan

14:40-15:00 **Biodegradable Amphiphilic Copolymers with Enhanced Drug Loading Capacity and Their Toxicity Evaluation Through Microfluidics**
Mihaela C. Stefan, University of Texas at Dallas, Richardson, TX, USA

15:00-15:20 **Nano-structured Diamond Sensors for Extreme Environments: Taking SERS from the Laboratory to the Ocean**
Richard B. Jackman, University College London, UK

15:20-15:40 **Flash Chemistry Makes Impossible Organolithium Chemistry Possible**
Aiichiro Nagaki, Hokkaido University, Japan

15:40-16:00 **Carbon-based Nanomaterials in Photothermal and Photocatalytic Applications**
Dongling Ma, INRS, Canada

16:00-16:20 **Synthesis of Vertically Aligned Carbon Nanotubes on Conductive Substrates with Catalytic Chemical Vapor Deposition Technique**
Lilla Nanai, University of Miskolc, Hungary

16:20-16:40 Break **@Foyer**

16:40-17:00 **Twistronics, Quasicrystals, and Exotic Composite Materials**
Kenneth Golden, University of Utah, Salt Lake City, UT, USA

17:00-17:20 **Path Integral Molecular Dynamics Simulation for H/D Isotope Effect in Protonated/ deuterated Aqueous Solution**
Masanori Tachikawa, Yokohama University, Japan

17:20-17:40 **A Thermodynamic Study on Swelling Stress of Bentonite as a Buffer Material Composing Engineered Barrier in Radioactive Waste Disposal**
Haruo Sato, Okayama University, Japan

17:40-18:00 **Development of Organic Materials Towards Sustainable Energy Applications**
Kouki Oka, Osaka University, Japan

18:00-18:20 **Synthesis of Thermal Heat Storage Material Using Various Phosphate Composites Like Polythene Waste, Wall Care Putty, etc.**
Trilochan Swain, Fakir Mohan University, India

18:20-19:00	Poster Presentations & Drinks

CCMP-01 **Sorbents Prepared by Microwave Pyrolysis of Waste**
Zuzana Jankovska, VSB - Technical University of Ostrava, Czech Republic

CCMP-02 **Engineering Carbons Produced by Microwave Pyrolysis of Agricultural Biomass for Xylene Adsorption**
Lenka Matejova, VSB - Technical University of Ostrava, Czech Republic

CCMP-03 **Conversion of RDF-Fuel to Solid Carbon, Liquid and Gaseous Combustible Products with Various Potential Applications**
Ivanka Stoycheva, Bulgarian Academy of Sciences, Bulgaria

CCMP-04 **Low Temperature Adsorption of N_2 of Carbon Materials**
Bilyana Petrova, Bulgarian Academy of Sciences, Bulgaria

CCMP-05 **Thermal Properties of Polybenzoxazine Modified by Acetylene Functionalization**
Kwang Soo Cho, Dankook University, South Korea

CCMP-06 **Surface Reactions on 3D Printed MnO_x-based Monoliths During the Oxidation of Volatile Compounds Through Heterogeneous Catalysis**
Santiago Suarez Vazquez, Universidad Autonoma de Nuevo Leon, Mexico

CCMP-07 **Electrochemical Performance of Lithium-ion Battery Based on Petroleum Pitch/Polymer Composite Binder**
Hyeon Taek Jeong, Daejin University, South Korea

CCMP-08 **Lignin-protein Interaction and Adhesion Performance of Lignin-protein Adhesives**
Donghai Wang, Kansas State University, Manhattan, KS, USA

CCMP-09 **An Efficient Electrocatalyst for Hydrogen Evolution Reaction Using Ru Nanoparticles Load on TiC-support**
Chanyong Yu, Pusan National University, South Korea

CCMP-10 **Cage-like Sodalite-type Porous Organic Salts Enabling Luminescent Molecules Incorporation and Room-temperature Phosphorescence Induction in Air**
Hiroi Sei, Osaka University, Japan

CCMP-11 **Precise Control of the Molecular Arrangement of Organic Semiconductors for High Charge Carrier Mobility**
Ryota Akai, Osaka University, Japan

CCMP-12 **Hydrogenation of CO_2 to Dimethyl Ether over WOx-ZrO_2Cu-ZnO-ZrO_2 Nanocatalysts**
Kuen-Song Lin, Yuan Ze University, Taiwan

CCMP-13 **Photothermally Tunable Photoluminescence from Graphene Oxide Quantum Dots *via* Intense Pulsed Light**
Imjeong Yang, Pusan National University, South Korea

CCMP-14 **Assessing the Adverse Impacts of Biodegradable Plastic Bags: Heavy Metals and Radionuclides Considerations**
Ahmed Mindil, University of Jeddah, Saudi Arabia

End Of Day-1

DAY 2 TUESDAY, OCTOBER 24, 2023
IN-PERSON

Time zone: CEST, Paris

Join Zoom Meeting:
https://us06web.zoom.us/j/82157846599?pwd=0aEbwJdN3QHKQ9bF4Ygqhug7aCEjHu.1

Meeting ID: 821 5784 6599
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Meeting Room-London

Oral Presentations

Carbon Materials Properties & Applications

Chair: Andre Galembeck, Universidade Federal de Pernambuco, Brazil

08:00-08:20 **Two-stage Conversion of CO_2 to Methanol and Dimethyl Ether Using CuO–ZnO–Al_2O_3/ Protonated Y-type Zeolite Catalysts**
Kuen-Song Lin, Yuan Ze University, Taiwan

08:20-08:40 **The Simultaneous Production of Electricity and Hydrogen on Electrified Interfaces**
Andre Galembeck, Universidade Federal de Pernambuco, Brazil

08:40-09:00 **Tailoring the Properties of Carbon Microfiber-based Electrodes Through Covalent Chemical Modification**
Miriam Barrejon, Castilla La-Mancha University, Spain

09:00-09:20 **A New, Facile Synthesis of High-quality CMK-type Carbon Replicas**
Rafal Janus, AGH University of Science and Technology, Poland

09:20-09:40 **Liquid Phase NMR for Characterization Solid Porous Carbon Materials**
Istvan Banyai, University of Debrecen, Hungary

09:40-10:00 **Hierarchical Porosity of Hybrid Carbon Nanomaterials Based on a Covalent Triazine Framework for Electrochemical and Electrocatalytic Application**
Marta Plonska-Brzezinska, Medical University of Bialystok, Poland

10:00-10:20 Break **@Foyer**

Chair: Ralph-Uwe Dietrich, German Aerospace Center, Germany

10:20-10:40 **Organic Radicals and Proton Coupled Redox Reactions**
Prasanta Ghosh, Rama Krishna Mission Residential College, India

10:40-11:00 **New Nanoporous Carbon Materials and Composites Applied for CO_2 Uptake and Hydrogen Fuel**
Boyko Tsyntsarski, Institute of Organic Chemistry with Center for Phytochemistry, Bulgarian Academy of Sciences, Bulgaria

11:00-11:20 **Carbon Dioxide Reduction Catalyzed by Silicon-based 2D Material**
Wilmer Esteban Vallejo Narvaez, Universidad Nacional Autonoma de Mexico, Mexico

11:20-11:40 **Electrical Energy Harvester from Carbon Nanotube Yarns**
Seon Jeong Kim, Hanyang University, South Korea

11:40-12:00 **Hot Electron Injection into Aqueous Electrolyte Solutions from Carbon Particle-doped Polymer Electrodes**
Sakari Kulmala, Aalto University, Finland

12:00-12:20 **Development of an Online Monitor for Ambient Total and Water-soluble Organic Carbon (TOC and WSOC) Measurements**
Constantinos Sioutas, University of Southern California, Los Angeles, CA, USA

12:20-12:40 **Modulation of Opto-electronic Properties of Transition Metal Dichalcogenides (TMDCs) by Substrate Engineering**
Mukti Rana, Delaware State University, Dover, DE, USA

12:40-13:00 **Biochar as a Multifunctional Amendment to Agriculture and Climate Change**
Sara de Jesus Duarte, The Next 150, Mexico

13:00-13:40 **Lunch Break** **@Foyer**

Chair: Mukti Rana, Delaware State University, Dover, DE, USA

13:40-14:00 **Trends in Carbon Nanotube Research: Development of Synthesis and New Applications Over 30 Years**
Gilles Georges, CAS, Columbus, OH, USA

14:00-14:20 **Laser-induced Graphene Electrode: Advances in Foodborne Illness Detection and Point-of-care Ion Analysis**
Nipapan Ruecha, Chulalongkorn University, Thailand

14:20-14:40 **Techno-economic and Ecological Assessment of Synthetic Fuels Production Using Sustainable Carbon and Hydrogen**
Dietrich Ralph-Uwe, German Aerospace Center, Germany

14:40-15:00 **Synthesis of SGLT$_2$ Inhibitors by Means of Metal Mediated Coupling Reaction with Grignard Reagent**
Masahiko Seki, Tokuyama Corporation, Japan

15:00-15:20 **Reaction Mechanisms of Acid-catalyzed Cracking and Alkylation in the Upcycling of Polyethylene: AIMD Study**
Mal-Soon Lee, Pacific Northwest National Laboratory, Richland, WA, USA

15:20-15:40 **Optical Modulation of Linear π-conjugated Systems with Molecular Actuators**
Giuseppe Sforazzini, Cagliari University, Italy

15:40-16:00 **Advanced Synthetic Hydrogels for Life Science Research and Applications**
Xiuzhi Susan Sun, Kansas State University, Manhattan, KS, USA

16:00-16:20 **Break** **@Foyer**

Chair: Thiago C. Canevari, Universidade Presbiteriana Mackenzie, Brazil

16:20-16:40 **Carbon Dots Hybrid Nanostructures: Applications in the Electrochemical Sensors and Nano Filter Development**
Thiago C Canevari, Universidade Presbiteriana Mackenzie, Brazil

16:40-17:00 **Nanomechanical Performance of Ultrathin Carbon Nanomembranes for Water Separation**
Konstantinos Dassios, University of Patras, Greece

17:00-17:20 **Amphiphilic Carbon Dots**
Elena Ushakova, ITMO University, Russian Federation

17:20-17:40 **Enhancing Peroxidase-like Activity Through Heteroatom-doped Carbon Materials**
Sadaf Saeedi Garakani, Stockholm University, Sweden

17:40-18:00 **Magneto-spectroscopy of Excitons in Atomically Thin Semiconductors**
Dmitry Smirnov, National High Magnetic Field Laboratory, Tallahassee, FL, USA

18:00-18:20 **Impact of the Surface Area of Simulated Graphite Surfaces on the Adsorption of Carbon Dioxide**
Octavio Andres Castano Plaza, Charles Darwin University, Australia

18:20-18:40 **Carbon Nanorod Arrays (CNAs) as Promising Electrode Materials: Synthesis and Characterization**
Brijmohan Paramanik, Indian Association for the Cultivation of Science, India

18:40-19:00 **Graphyne-based Membrane as a Promising Candidate for Li-battery Electrodes Protection: Insight from Atomistic Simulations**
Philippe Carbonniere, University of Pau and Adour, France

End Of Day-2

Join Zoom Meeting:
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Meeting ID: 821 5784 6599
Passcode: 233819

Meeting Room-London

Session-3 : Chemistry and Material Areas

Chair: Hajime Kawanami, National Institute of Advanced Industrial Science and Technology, Japan

08:00-08:20 **Catalytic Conversion of CO_2 Selective for C_4 on Ir-Ru/MCM-41 Catalyst**
Hajime Kawanami, National Institute of Advanced Industrial Science and Technology, Japan

08:20-08:40 **Carbon-based Materials Obtained from Biomass for Li-ion, Na-ion, and Al-ion Batteries**
Nonglak Meethong, Khon Kaen University, Thailand

08:40-09:00 **Integration of Organic Photodetector with Spin-valve: Development of Novel Spin-controlled Organic Optoelectronic Eco-friendly and Energy Efficient Devices**
Puja Dey, Kazi Nazrul University Asansol, India

09:00-09:20 **A Comprehensive Chemical Kinetics Framework for Carbon Materials and Hydrogen Production from Hydrocarbons Pyrolysis**
Matteo Pelucchi, Politecnico di Milano, Italy

09:20-09:40 **Solid Oxide Fuel Cell: Effect of Dimensionality, Interface, and Strain**
Chandrani Nath, Jawaharlal Nehru University, India

09:40-10:00 **Recent Progress in Computational Studies of True Amorphous Carbon**
Oleksiy Khavryuchenko, Shupyk National Healthcare University of Ukraine, Ukraine

10:00-10:20 Break @Foyer

Chair: Roberta Pinalli, University of Parma, Italy

10:20-10:40 **Self-diagnostic Vitrimers**
Roberta Pinalli, University of Parma, Italy

10:40-11:00 **Observation of Franz-Keldysh Modulation in a $CH_3NH_3PbBr_3$ Crystal as Revealed by Femtosecond Transient Absorption Microscopy**
Tetsuro Katayama, Tokushima University, Japan

11:00-11:20 **Selective Methane Oxidation to Acetic Acid Using Molecular Oxygen Over a Metal-organic Framework Supported Mono-copper Hydroxyl Catalyst**
Kuntal Manna, Indian Institute of Technology Delhi, India

11:20-11:40 **Smart pH-responsive Nanocontainers Dual Loaded with Oxaliplatin and Ylang Ylang Oil Showed Boosted Cytotoxic and Apoptotic Effects Against Triple-negative Breast Cancer**
Sherif Ashraf Fahmy, University of Hertfordshire-Egypt Campus, Egypt

11:40-12:00 **Plasma Modification of GO Nanosheets for Hole Transport Layer-based Perovskite Solar Cells**
Mohamed Abdelhamid Mohamed Shahat, National Research Institute of Astronomy and Geophysics (NRIAG), Egypt

12:00-12:20 **Z-scheme Heterojunction of Chemically Integrated COF-366-Co/UiO-66-NH_2 MOFs Nanocomposites for Selective Production of CO *via* CO_2 Solar-drive Photoreduction**
Toan Anh Quach, Laval University, Canada

12:20- Lunch & In-Person Departures

End Of Day-3

Notes

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Meeting ID: 821 5784 6599
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06:45-07:00 Opening Remarks & Introduction

Moderator: Toshihiro Shimada, Hokkaido University, Japan

Keynote Session-I

07:00-07:30

From Graphene Oxide Liquid Crystal to Artificial Muscle

Sang Ouk Kim, KAIST Institute for NanoCentury, Republic of Korea

Sang Ouk Kim is the Chair Professor in the Department of Materials Science & Engineering at KAIST, Daejeon, Korea. His main research interest focuses on the Ô-Directed Molecular Assembly of Soft Nanomaterials, which includes: i) Block copolymer self-assembly, ii) Carbon nanotube and graphene synthesis and assembly, and iii) Soft electronics and optoelectronics and iv) Nanoscale energy materials and devices. He was mainly focussed on Nanotechnology, Graphene, Carbon nanotube, Optoelectronics and Chemical engineering. His research on Nanotechnology often connects related areas such as Nanolithography. Sang Ouk Kim has researched Carbon nanotube in several fields, including Organic solar cell, Carbon, Doping and Catalysis. He has included themes like Field electron emission and Resistive random-access memory in his Optoelectronics study. His studies deal with areas such as small-angle X-ray scattering, Polymer and Intercalation as well as Chemical engineering.

07:30-08:00

Novel 2D Nanomaterials for Energy Harvesting and Storage

Weiwei Lei, Deakin University, Australia

Weiwei Lei is an Associate Professor and ARC Future Fellow at the Institute for Frontier Materials, Deakin University. He was awarded an Alfred Deakin Postdoctoral Research Fellowship, Deakin University in mid of 2011. He was then granted a prestigious Australian Research Council Discovery Early Career Researcher Award (DECRA) in 2014. His research focuses on the development of new nanomaterials and nanotechnologies for sustainable water and renewable energy generation and storage including water cleaning, solar steam generation, photocatalysts for hydrogen generation, osmotic energy generation, and rechargeable batteries and supercapacitors. He has won some prestigious awards including the 2014 Finalist of the Australian Innovation Challenge, 2015 TechConnect Innovation Award from the TechConnect Corporate & Investment Partner Committee, Washington DC, USA, 2016 Selected Global Young Scientists Summit, Awardee, Singapore., 2013 and 2019 Deakin's Vice-Chancellor's Early- and Mid-Career Researcher Awards for Research Excellence.

Oral Session-I

Carbon Allotropes

Chair: Kunasundari Balakrishnan, Universiti Malaysia Perlis, Malaysia

08:00-08:20 **Quantum Nature and Confinement Control of Endohedral Lithium in $[Li^{+}@C_{60}]PF_{6}^{-}$**
Hideo Ando, Yamagata University, Japan

08:20-08:40 **Synthesis of Novel Carbon Materials from Designed Organic Precursors Using High Temperature High Pressure Processing**
Toshihiro Shimada, Hokkaido University, Japan

08:40-09:00 **Na-catalyzed Rapid Synthesis of Graphite Intercalation Compounds**
Akira Iyo, National Institute of Advanced Industrial Science and Technology (AIST), Japan

09:00-09:20 **The Pressure and Time Effect in Hydrothermal Carbonization for Activated Carbon Production**
Ratna Frida Susanti, Parahyangan Catholic University, Indonesia

09:20-09:40 **Immobilization of Laccase on Magnetized Multiwall Carbon Nanotubes**
Kunasundari Balakrishnan, Universiti Malaysia Perlis, Malaysia

09:40-10:00 **Carbon Fibers Grown from a Copper Nanoparticle Encapsulated within Hollow Carbon Spheres**
Manoko S. Maubane-Nkadimeng, University of the Witwatersrand, South Africa

10:00-10:20 **Topological Phonons and Superconductivity Based on T-carbon**
Jingyang You, National University of Singapore, Singapore

10:20-10:25 **Poster:**
CoMnxNy Supported on Carbon Nanotube with Atomically Dispersed Co-active Sites for Efficient Hydrogen Generation from Hydrolysis of Ammonia Borane
Chi Wing Tsang, Technological and Higher Education Institute of Hong Kong, Hong Kong

10:25-10:45 **Break**

Chair: Cristina Diaz Blanco, Universidad Complutense de Madrid, Spain

10:45-11:05 **Role of Carbon Traces and Interfaces in Metal Oxide Nanocomposite Catalysis for Pollutant Estimation and Degradation in Water**
Chaitanya Lekshmi Indira, Plaksha University, India

11:05-11:25 **C-based Materials for Solid State Hydrogen Storage: A New Perspective**
Chiara Milanese, University of Pavia, Italy

11:25-11:45 **Engineering Bismuth Electrodes for Green Formate Synthesis from Carbon Dioxide Electroreduction**
Juqin Zeng, POLITECNICO DI TORINO, Italy

11:45-12:05 **Carbon Nanotube Aerogel: An Exciting Material for Flexible Supercapacitor**
Divya Nechiyil, Bhabha Atomic Research Centre Mumbai, India

12:05-12:25 **GO Scaffolds for Tissue Regeneration**
Giorgio Speranza, Fondazione Bruno Kessler, Italy

12:25-12:45 **Biomass-derived Carbon Dots as Photocatalysts to Decompose Pollutants in Wastewater**
Le Thi Thu Huong, Vietnam National University of Agriculture, Vietnam

12:45-13:05 **Tailoring Single-molecule Conductance with Structured Graphene Electrodes**
Cristina Diaz Blanco, Universidad Complutense de Madrid, Spain

13:05-13:10 **Poster:**
New Low-cost, Flow-through Carbon Electrodes Characterized in Brackish Water
Arman Molaei, Linkoping University, Sweden

13:10-13:35 Lunch Break

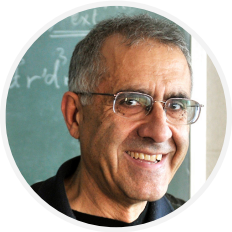
Plenary Presentation

Chair: Hamad H. Al Mamari, Sultan Qaboos University, Oman

13:35-14:15 **Carbon-based Materials for Biomedical Applications**
Luke P. Lee, Harvard Medical School, Boston, MA, USA

Luke P. Lee received his BA in Biophysics and Ph.D. in Applied Physics and Bioengineering from UC Berkeley. He became the Arnold and Barbara Silverman Distinguished Professor at Berkeley. He also served as the Chair Professor in Systems Nanobiology at ETH Zürich. He founded the Biomedical Institute for Global Health Research & Technology (BIGHEART). He served as Associate President (International Research and Innovation) and Tan Chin Tuan Centennial Professor at the National University of Singapore. Currently, he is a Professor of Medicine at Harvard Medical School. His focus is global healthcare, neurodegenerative diseases, and quantum life sciences.

14:15-14:55 **Probing the Nanoscale with a Combination of Spatially Resolved Spectroscopy and Theory**
Sokrates T. Pantelides, Vanderbilt University, Nashville, TN, USA



Sokrates T. Pantelides received a Ph.D. in Physics from the University of Illinois in Urbana-Champaign in 1973. After 20 years at the IBM Thomas J. Watson Research Center in New York, where he carried out research in semiconductors and served as manager, senior manager, and program director, he joined the faculty at Vanderbilt University as the first McMinn Professor of Physics. For 25 years he was a Distinguished Visiting Scientist at Oak Ridge National Laboratory where he maintained a group and worked jointly with microscopists. He is currently University Distinguished Professor of Physics and Engineering at Vanderbilt and Distinguished Visiting Professor of Physics at the University of the Chinese Academy of Sciences in Beijing, China. His research focuses on theory in conjunction with experimental data on structural, electronic, magnetic, optical, and chemical properties of complex nanostructures.

Keynote Session-II

14:55-15:25

Moisture Kinetics and Long-term Post Thermal Aging Response of Carbon/Epoxy Composites

Vistasp M. Karbhari, University of Texas Arlington, Arlington, TX, USA

Vistasp M. Karbhari is a Professor in the Departments of Civil Engineering, Mechanical and Aerospace Engineering at the University of Texas at Arlington. Prof. Karbhari is an expert in the processing and mechanics of composites, durability of materials, infrastructure rehabilitation and multithread mitigation. He is a fellow of the American Association for the Advancement of Science (AAAS); the National Academy of Inventors (NAI); The American Society of Civil Engineers; ASM International; the International Institute for Fiber-reinforced Polymers in Construction; the International Society for Structural Health Monitoring of Intelligent Infrastructure; ASCE's Structural Engineering Institute and is an elected member of the European Academy of Science and Arts.

15:25-15:55

Nanostructures of Carbon and Related Materials for Energy Conversion and Chemical Sensing

Oomman K. Varghese, University of Houston, Houston, TX, USA

Oomman K. Varghese received Ph.D. from Indian Institute of Technology Delhi (IITD). He is an Associate Professor and Chairman of the Graduate Program in the Department of Physics, University of Houston, USA. His group develops nanoscale materials and investigates unique properties for solar energy conversion and medical applications. In 2011, Thomson Reuters ranked him 9th among 'World's Top 100 Materials Scientists' in the previous decade. From 2014 to 2016 he received the title 'Highly Cited Researcher' and had his name listed in Thomson Reuters' World's Most Influential Scientific Minds. He is among the top 2% of the scientists in the world per the Stanford University Report, 2020.

15:55-16:25

Carbon Molecular-sieve Membranes Developed from a Troger's Base Polymer for Enhanced Carbon-capture Technologies

Richard J. Spontak, North Carolina State University, Raleigh, NC, USA

Richard J. Spontak, a Distinguished Professor at NC State University, received his Ph.D. from UC Berkeley and pursued post-doctoral research at Cambridge University before joining P&G in 1990 and NC State in 1992. He has published over 300 peer-reviewed journal papers and 40 book chapters and invited works. He has received numerous research awards including the NC State Holladay Medal for Excellence, the ACS-PMSE Tess Award, the SPSJ International Award, the IChemE Underwood Medal, the ACS-RUBB Chemistry of Thermoplastic Elastomers Award, and the IOM3 Colwyn Medal. An IOM3, ACS-PMSE, APS and RSC fellow, he is a member of the Norwegian Academy of Technological Sciences.

Oral Session-II

16:25-16:45 **Developments in Directed Metal-catalyzed C-H Bond Functionalization**
Hamad H. Al Mamari, Sultan Qaboos University, Oman

16:45-17:05 **The Role of Metal-organic Frameworks for Energy Storage Materials**
Ali A. Ensafi, Isfahan University of Technology, Iran

17:05-17:25 **Understanding the Role of GO on the Synthesis of GO-based Membranes for Membrane Distillation Desalination**
Lucy Mar Camacho, Texas A&M University, Kingsville, TX, USA

17:25-17:45 **Paraffin-Olefin Separation by Ag(I) and Cu(I)-doped Nanoporous Carbons**
Dipendu Saha, Widener University, Claymont, DE, USA

17:45-18:05 **Carbon Nanofiber Z-threaded Carbon Fiber Reinforced Polymer Composites: The Interactive Role Between the Carbon Fiber and Carbon Nanofiber and the Future**
Kuang-Ting Hsiao, University of South Alabama, Mobile, AL, USA

18:05-18:20 Break

Chair: Jorge Roberto Vargas Garcia, Instituto Politecnico Nacional, Mexico

18:20-18:40 **Fischer-Tropsch Synthesis in 3D-printed Stainless Steel Microreactors**
Debasish Kuila, North Carolina A&T State University, Greensboro, NC, USA

18:40-19:00 **From Waste Graphite Fines to Revalorized Anode Material for Li-ion Batteries**
Juan Carlos Abrego Martinez, INRS, Canada

19:00-19:20 **Microstructure and Oxidation Analysis of Cemented C/C/C Fabricated by Laser**
Jorge Ramos Grez, Pontifical Catholic University of Chile, Chile

19:20-19:40 **Transmission Electron Microscopy (TEM) Analysis of MWNT/PMMA Composite Samples Made by Three Different Methods**
Rosario Gerhardt, Georgia Institute of Technology, Atlanta, GA, USA

19:40-20:00 **Copper-based Approaches in the War Against Cancer: Taking Advantage of Inorganic Physiopathology**
Valentina Oliveri, University of Catania, Italy

20:00-20:20 **Novel Topotactic Route of Fabricating Multiwalled Cerium Oxide Nanotubes from Multiwalled Carbon Nanotubes**
Jorge Roberto Vargas Garcia, Instituto Politecnico Nacional, Mexico

20:20-20:40 **Friction and Degradation of Graphite: A Nanotribological Approach**
Arnaud Caron, Korea University of Technology and Education, South Korea

20:40-21:00 **How Disordered are Disordered sp^2-based Carbons? Insights from Pair-distribution Function Analysis**
Bernd Smarsly, Justus-Liebig-University, GermanyUSA

21:00-21:20 **Design Thick Electrodes to Improve the Comprehensive Lithium Storage Performance**
Hongtao Sun, The Pennsylvania State University, State College, PA, USA

End Of Day 4

Join Zoom Meeting:
https://us06web.zoom.us/j/82157846599?pwd=0aEbwJdN3QHKQ9bF4Ygqhug7aCEjHu.1

Meeting ID: 821 5784 6599
Passcode: 233819

Oral Session-III

Carbon Materials Properties & Applications

07:50-08:00 Introduction

Chair: Salvatore Petralia, University of Catania, Italy

08:00-08:20 **Enhancing Antimicrobial Properties of Graphene Derivatives on Metallic Substrates for Biomedical and Environmental Applications**
Sasmita Nayak, Kalinga Institute of Industrial Technology Deemed to be University, India

08:20-08:40 **Chemistry of Spiro Bifluorene-based Macrocycles**
Toru Amaya, Nagoya City University, Japan

08:40-09:00 **Ultra-fine Nano-$CaCO_3$ Based-epoxy Composites: A High-strength Nano-filler Engineered *via* Planetary Ball Milling for Advanced Structural Applications**
Neha Uppal, CSIR-AMPRI, India

09:00-09:20 **Engineering Active Sites of 2D Materials for Active Hydrogen Evolution Reaction**
Suyeon Cho, Ewha Womans University, South Korea

09:20-09:40 **Near-Infrared Responsive Carbon Nanostructures Based on CholineCalix[4]arene-gold for Photothermal Cancer Treatment**
Salvatore Petralia, University of Catania, Italy

09:40-10:00 **Carbon Nanodots and Their Nanocomposites: A Photophysical Study**
Alice Sciortino, University of Palermo, Italy

10:00-10:20 **Magnetic Activated Carbon as a Sustainable Sorbent for Removal of Antibiotic from Water**
Hasan Saygili, Batman University, Turkey

10:20-10:40 **Graphene for Interconnect Applications: Requirements and Challenges**
Inge Asselberghs, IMEC, Belgium

10:40-11:00 **Ca-doped $MgMn_2O_4$ Based Cathode Materials for Magnesium Ion Cells**
Zurina Osman, Universiti Malaya, Malaysia

11:00-11:20 Break

Chair: Teresa S. Ripolles, University of Valencia (ICMUV), Spain

11:20-11:40 **Graphene-doped PEDOT: PSS Acting as Hole Transport Material in Photovoltaic Device**
Teresa S. Ripolles, University of Valencia (ICMUV), Spain

11:40-12:00 **Computational Modelling of Carbon Nano Tube (CNT) Based Nanocomposites**
Khalid Alzebdeh, Sultan Qaboos University, Oman

12:00-12:20 **Unearthing the Hidden Territory of π-conjugated Thiocarbonyl Chemistry**
Yi-Lin Wu, Cardiff University, UK

12:20-12:40 **Polymer-metal & Polymer-ceramic Hybrids Materials in 3D-FDM Printing: Structuro-functional Versatility**
Boyer Severine A. E, MINES ParisTech | PSL, France

12:40-13:00 **Graphene Filler Influence on Thermal, EMI Shielding, and Electrical Properties of Polymer-based Nanocomposites**
Anna Lapinska, Warsaw University of Technology, Poland

13:00-13:20 **Utilization of Carbon Derived Materials for Microextraction of Environmental Pollutants from Food and Water Samples Prior to Instrumental Analysis**
Mohamed Habila, King Saud University, Saudi Arabia

13:20-13:40 **3D Printed Electrodes for Energy Sustainability?**
Vinay Gupta, Khalifa University, United Arab Emirates

13:40-14:00 **Graphene Functionalization of Polyrotaxane Encapsulated PEG-based PCMs: Fabrication and Applications**
Guangzhong Yin, Francisco de Vitoria University, Spain

14:00-14:30 Lunch Break

Chair: Fei Yao, University at Buffalo, Buffalo, NY, USA

14:30-14:50 **Study of Thermal Decomposition of Cycloalkanes Using Flash Pyrolysis Vacuum Ultraviolet Photoionization Mass Spectrometry**
Jingsong Zhang, University of California, Riverside, CA, USA

14:50-15:10 **Comparison of GaAsSb Nanowires-based Near-Infrared Photodetectors in the Axial and Core-shell Configurations**
Shanthi Iyer, North Carolina A&T State University, Greensboro, NC, USA

15:10-15:30 **Cyclodextrin-based Liquid Crystals and Their Applications**
Chang-Chun Ling, University of Calgary, Canada

15:30-15:50 **An Inverse Electron Demand Diels-Alder Reaction for Fullerene and Metallofullerene Functionalization**
Jianyuan Zhang, Rutgers, The State University of New Jersey, Piscataway, NJ, USA

15:50-16:10 **Reactive Adsorption of Small Sulfur Compounds on Ruthenium Supported Graphene – An Ultra-high Vacuum Surface Science Study**
Uwe Burghaus, North Dakota State University, Fargo, ND, USA

16:10-16:30 **A Molecular Rationale for the Exotic Photophysical Properties of Curved Nano Graphenes**
Ines Corral, Autonomous University of Madrid, Spain

16:30-16:50 **From 2D Graphene to Functional Materials *via* Computational Design**
Zhao Qin, Syracuse University, Syracuse, NY, USA

16:50-17:10 **Evaluating Electrolyte Decomposition at Graphite and Graphite-blended Electrodes Using Symmetric-cell Techniques for Long Cycle-Life Li-ion Batteries**
Zilai Yan, Dalhousie University, Halifax, NS, USA

17:10-17:30 Break

Chair: Tereza Paronyan, Hexalayer LLC, Louisville, KY, USA

17:30-17:50 **Advanced Two-dimensional Materials for Electrochemical Energy Storage and Conversion**
Fei Yao, University at Buffalo, Buffalo, NY, USA

17:50-18:10 **Soft Matter Systems Investigated by Small-angle X-ray Scattering**
Cristiano Luis Pinto De Oliveira, University of São Paulo, Brazil

18:10-18:30 **Photochemistry By Molecular Dynamics**
Dmitri Kilin, North Dakota State University, Fargo, ND, USA

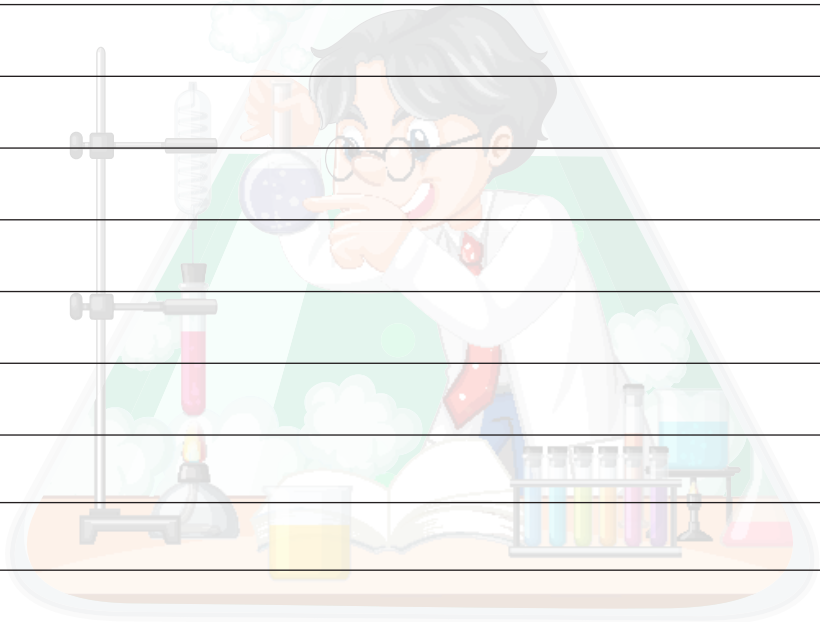
18:30-18:50 **Layered Rotated Graphene Promises Breakthrough in the Efficiency of Li-ion Batteries**
Tereza Paronyan, Hexalayer LLC, Louisville, KY, USA

18:50-19:10 **Nanomechanical Characterization of Carbon Fiber and Composites**
Dayakar Penumadu, University of Tennesse, Knoxville, TN, USA

19:10-19:30 **Multi-element Scanning Thermal Analysis of Solid Carbonaceous Samples**
Yuch-Ping Hsieh, Florida A&M University, Tallahassee, FL, USA

End Of Day 5

Notes



We wish to see you at

CCM-2024

Madrid, Spain

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