



8th INTERNATIONAL WORKSHOP OF MATERIALS PHYSICS

Magurele, Romania

National Institute of Materials Physics



Otetelesanu Mansion

17th - 19th May 2023
www.infim.ro

Advanced Materials and Methods for Heterogeneous Catalysis

PROGRAM

Wednesday, 17th of May 2023

08:15	Registration – Otetelesanu Mansion
08:45	Official opening – Mihaela Florea; Lucian Pintilie
Session 1: Chairman – Mihaela Florea	
09:00	Javier Garcia Martinez University of Alicante, Alicante, Spain <i>Materials at order-discorder boundary: defect engineering for superior catalytic performance</i>
09:35	Bao-Lian Su University of Namur, Namur, Belgium <i>Natural laws for design of high performance hiererachically porous nanomaterials for energy storage and conversion</i>
10:10	Radu Crăciun BASF Corp., New Jersey, USA <i>Novelty and challenges in industrial catalysis</i>
10:45	Coffee Break
11.15	Andrew Rappe University of Pennsylvania, Philadelphia, PA, USA <i>New first-principles methods and insights into surface catalysis: reconstructions, pathways, and mechanochemistry</i>
11:50	Leonarda Liotta Institute for the Study of Nanostructured Materials, Palermo, Italy <i>Design of Ni based catalysts with tailored properties: investigation of the CO₂ reforming of CH₄</i>
12:25	Carmen Ciotonea Université du Littoral Côte d'Opale, Dunkerque, France <i>Playing on the activity and selectivity of supported transition metal catalysts through metal dispersion: example in energy-related reactions</i>
13:00	Lunch

Session 2: Chairman – Florentina Neațu	
14:00	<p>Michel Barsoum Drexel University, Philadelphia, PA, USA <i>Hydroxide derived nanomaterials and their properties</i></p>
14:35	<p>Marius Andruh Institute of Organic and Supramolecular Chemistry of the Romanian Academy, Bucharest, Romania <i>Metal-radical complexes in molecular magnetism</i></p>
15:10	<p>Hui Luo University of Surrey, Guildford, Surrey, UK <i>Waste valorization with electrochemistry and mechanochemistry: towards sustainable Co-production of Hydrogen and value-added chemicals</i></p>
15:45	<p>Aurelia Vișa "Coriolan Dragulescu" Institute of Chemistry, Timisoara, Romania <i>Metal(II) coordination polymers based on bisphosphonates or mixed imidazole ligands and bisphosphonates: green syntheses and applications</i></p>
16:05	<p>Coffee Break</p>
16:35	<p>Alina Tomoiaga European Innovation Council, Brussel, Belgium <i>The European Innovation Council: Funding opportunities for innovators to pursue their dreams</i></p>
17:10	<p>Trends and new equipment Liana Socaciu-Siebert SPECS Surface Nano Analysis GmbH, Berlin, Germany <i>NAP-XPS Instrumentation and Applications</i> Ahmed DHIFAoui JEOL (Europe) SAS France <i>The new generation of JEOL NMR: ECZ Luminous Series</i></p>
18:00	<p>Posters Session</p>
20:00	<p>Dinner</p>

Thursday, 18th of May 2023

Session 3: Chairman – Cristian M. Teodorescu	
09:00	Paolo Fornasiero University of Trieste, Trieste, Italy <i>The metal/non-metal trajectory in sustainable chemistry</i>
09:35	Jeroen van Bokhoven ETH Zürich and Paul Scherrer Institute, Zürich, Switzerland <i>About the complexity of characterizing heterogeneous catalysts</i>
10:10	Eric Altman Yale University, New Haven, Connecticut, USA <i>Non-contact atomic force microscopy as a tool for catalysis research</i>
10:45	Coffee Break
11.15	Luca Artiglia Paul Scherrer Institute, Villigen, Switzerland <i>In situ photoelectron spectroscopy studies of the structure-activity relationship</i>
11:50	Ruxandra Costescu National Institute of Materials Physics, Magurele, Romania <i>Surface reactions and intercalation of carbon monoxide between graphene and Pt(001)</i>
12:10	Claudiu Colbea ETH Zürich, Zürich, Switzerland <i>Surface chemistry by operando SEM and XPS</i>
12:30	Lunch
Session 4: Chairman – Ionuț Enculescu	
13:30	Andras Tompos Institute of Materials and Environmental Chemistry, Budapest, Hungary <i>Materials science in the development proton exchange membrane fuel cell components: recent trends and new results</i>
14:05	Antonio Chaparro CIEMAT, Department of Energy, Madrid, Spain <i>Optimization of transport in gas-diffusion electrodes for proton-exchange membrane fuel cells</i>
14:40	Dario Dekel Technion – Israel Institute of Technology, Haifa, Israel <i>Stability challenges of anion-exchange membranes</i>
15:15	Nicoleta Cioatera University of Craiova, Craiova, Romania <i>Electrocatalysts for a sustainable future</i>
15:35	Ariana Șerban École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland <i>Enhancing water electrolysis efficiency through synergetic function of membrane electrode assembly</i>
15:55	Coffee Break/Visit to NIMP facilities
17:15	Sightseeing tour and Conference dinner

Friday, 19th of May 2023

Session 5: Chairman – Ștefan Neațu	
09:00	Gregory Rohrer Carnegie Mellon University, Pittsburg, PA, US <i>The influence of molten salts on SrTiO₃ photocatalyst surfaces: surface restructuring and ion exchange</i>
09:35	Gabriela Cârjă Technical University Gheorghe Asachi of Iasi, Iasi, Romania <i>Engineering heterostructures of Zn-Based layered double hydroxides and gold nanoparticles for plasmon enhanced catalysis</i>
10:10	Maria Miheț National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania <i>Ni-based catalysts with controlled porosity for gas phase CO₂ conversion</i>
10:45	Coffee Break
11.15	Cezar Comănescu National Institute of Materials Physics, Magurele, Romania <i>Development of novel catalysts for enhanced hydrogen storage properties of complex hydrides</i>
11:35	Crina Socaci National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania <i>TiO₂/graphene-based nanomaterials to address the emerging contaminants pollution</i>
11:55	Ștefan Năstase King Abdullah University of Science and Technology, Saudi Arabia <i>Computational study analyzing the effect of acid site proximity on the methanol to hydrocarbons process</i>
12:15	Anca Păun University of Bucharest, Bucharest, Romania <i>Thioorganic azoles in transition metal catalysed alkynylation reactions</i>
12:35	Florentina Neațu National Institute of Materials Physics, Magurele, Romania <i>Modified 2D materials for plastic (PET) waste management</i>
12:55	Concluding Remarks – Mihaela Florea; Ionuț Enculescu
13:05	Lunch and departure

Poster presentations

P1	<p>Selective oxidation of p-cymene using MAX phase catalysts Iuliana M. Chirică, Mihaela M. Trandafir, Florentina Neațu, Ștefan Neațu, Michel W. Barsoum, Mihaela Florea</p>
P2	<p>Synthesis of N-acylhydrazone-based arylazopyrazoles and evaluation as multistate photoswitches George Costache, Bogdan C. Enache, Anamaria Hanganu, Codruța Popescu, Anca Păun, Mihaela Matache</p>
P3	<p>Novel perspectives of azo photoswitches: synthesis of oxa / thiadiazole decorated compounds and evaluation as switches Adela F. Dobre, Nicoleta Sandu, Anamaria Hanganu, Ioana Nicolau, Codruța C. Popescu, Anca Păun, Augustin M. Mădălan, Mihaela Matache</p>
P4	<p>Optimizing MXene-MoS₂ semiconductor photocatalyst for water splitting Alexandra C. Iacoban, Mahesh M. Nair, Florentina Neațu, Mihaela Florea, Ștefan Neațu</p>
P5	<p>Heterogeneous catalyst based on vinyl phosphonate in sustainable syntheses Bianca Maranescu, Aurelia Vișa</p>
P6	<p>NMR spectroscopy - a useful tool for monitoring formation of benfotiamine from thiamine Daniel P. Funeriu, Mihaela Matache, Maximov V. Maxim, Maximov Oana Cristina, Anamaria Hanganu, Codruța Popescu, Nicoleta Sandu, Adela Dobre, Mihaela Florea</p>
P7	<p>Slot-die coated perovskite solar cells: Effects of annealing temperature on performance of perovskite MAPbI_{2.6}Cl_{0.4} solar cells Anca G. Mirea, F. Neațu, A. G. Tomulescu, L. Bălescu, M. Botea, M. Florea, I. Pintilie</p>
P8	<p>Synthesis of metal-based catalyst for the selective reduction of cinnamaldehyde Anca Gabriela Mirea, Maria-Iuliana Chirică, Ștefan Neațu, Florentina Neațu, Mihaela Florea, Mihaela-Mirela Trandafir</p>
P9	<p>Surfactant assisted method for iron doped cobalt oxides preparation and their behavior in the oxidative transformation of malic acid Gheorghiuța Mitran, Mihaela Florea, Ștefan Neațu, Florentina Neațu</p>
P10	<p>Influence of i-MXenes on the photocatalytic H₂ evolution performance of TiO₂ Mahesh M. Nair, Alexandra C. Iacoban, Florentina Neațu, Mihaela Florea, Ștefan Neațu</p>
P11	<p>Polyurea coatings for military textiles Oana Hoza, Raluca Ginghină, Ciprian Său, Adriana Bratu, Gabriela Toader, Aurel Diacon, Iulian Vasile Antoniac, Nicoleta Petrea</p>
P12	<p>Synthesis of novel benzimidazole-2-ones mediated by hypervalent iodine agent Maria Popescu, Anamaria Hanganu, Anca Păun, Ioana Nicolau, Mihaela Matache, Codruța Popescu</p>
P13	<p>Synthesis of novel tricarboxylic units for hybrid organic-inorganic materials Nicoleta Sandu, Anca G. Mirea, Anamaria Hanganu, Mihaela Florea, Ioana Nicolau, Anca Păun, Codruța C. Popescu, Mihaela Matache</p>
P14	<p>The effect of Ni deposition methods on SnO₂ on the bioethanol electrooxidation performance Izabella Dascălu, Tanta Spătaru, Daniela C. Culita, Ștefan Neațu, Florentina Neațu, Mihaela Florea, Nicoleta Petrea, Vasile Somoghi, Simona Somăcescu</p>
P15	<p>Oxide electrocatalysts based on non noble metals used as anodes for pemfcs working with bioethanol Mihaela Florea, Florentina Neațu, Ștefan Neațu, Simona Somăcescu, Nicoleta Petrea, Doru-Gabriel Iosub, Vasile Somoghi</p>