5th International Meeting on Materials Science for Energy Related Applications
Preliminary program

DAY 1	**VENUE: SERBIAN ACADEMY OF SCIENCES AND ARTS** Kneza Mihaila 35, Belgrade
09.00-10.00	**REGISTRATION & POSTER MOUNTING**
10.00-10.15	**CONFERENCE OPENING**
SESSION 1	**HYDROGEN ENERGY & HYDROGEN STORAGE MATERIALS** **Chairperson: Slavko Mentus**
10.15-10.50	**PLENARY LECTURE: Milutin Smiljanic** Advanced Electrocatalyst Design for Efficient Hydrogen Production via Water Electrolysis
10.50-11.05	**Uroš Lačnjevac** Formation of Pt/Ru Bimetallic Deposits on TiO2 Nanotube Arrays via Galvanic Displacement: Synergistic Interactions Enhancing Hydrogen Evolution Electrocatalysis
11.05-11.20	**Mila Krstajić Pajić** The NOVATRODES project: where theory meets application
11.20-11.35	**Igor Pašti** Electrolyte-Dependent Trends in Hydrogen Evolution Reaction: From Volcano Landscapes to Kinetic Insights
11.35-12.00	**COFFEE BREAK**
SESSION 2	**(ELECTRO)CATALYSIS IN ENERGY CONVERSION AND STORAGE - part 1** **Chairperson: Igor Pašti**
12.00-12.15	**Sanjin Gutić** Localized Electrochemical Techniques – Innovation Driver or Routine Workhorse?
12.15-12.30	**Dalibor Karačić** Prolonged Operation-Induced Compositional and Morphological Changes in NiFe@SS Catalysts for Alkaline OER
12.30-12.45	**Muhammad Usama** A Theoretical Exploration of Oxygen Evolution Reaction on IrO2(110) - The Role of Walden-Type Pathways
12.45-13.00	**Shohreh Faridi** Trends in Competing Oxygen and Chlorine Evolution Reactions over Electrochemically Formed Single-Atom Centers of MXenes
13.00-13.15	**Diwakar Singh** **Electrochemically formed Single-Atom Centers of MXenes for the Selective Electrochemical Reduction of Nitrogen to Ammonia**
13.15-13.30	**Dušan Mladenović** Cost-Effective Carbonized MOFs for ORR Catalysis and Supercapacitor Applications
13.30-15.00	**LUNCH BREAK**

SESSION 3	**(ELECTRO)CATALYSIS IN ENERGY CONVERSION AND STORAGE - part 2** **Chairperson: Ana Dobrota**
15.00-15.15	**Miloš Baljozović** Surface synthesis of monolayer graphitic carbon-nitride
15.15-15.30	**Pablo Lozano-Reis** The Key Role of Less-Stable intermediate States: Unveiling Selectivity Trends for CO2 Reduction Reaction on Ti3C2TX from First Principles:
15.30-15.45	**Federico Dattila** Automatizing data storage, analysis, and sharing for the electrochemical CO2 reduction – the FAIR case of SuPERCO2
15.45-16.00	**Edvin Fako** Bayesian Optimization of Surface Reaction Dynamics via Surrogate Molecular Representations
16.00-17.00	**POSTER SESSION**
19.00-22.30	**DINNER**

DAY 2	**VENUE: FACULTY OF PHYSICAL CHEMISTRY** Studentski trg 12-16, Belgrade
SESSION 4	**MATERIALS FOR BATTERIES & SUPERCAPACITORS** **Chairperson: Nemanja Gavrilov**
09.00-09.35	**PLENARY LECTURE: Christoph Unterweger** Biobased carbons in energy storage
09.35-09.50	**Neda Nazari** Sulfur and Phosphorus-doped Cellulose-Based Activated Carbon Fibers for High-Performance Supercapacitors
09.50-10.05	**Konstantin Milakin** Double-porous polyaniline-based composite materials with carbon nanofibers for electrochemical energy storage
10.05-10.20	**Željko Mravik** Tuning the Supercapacitive Properties in Graphene Oxide/Cobalt Ferrite Nanocomposites by Synthesis Routes
10.20-10.35	**Katarina Batalović** Multimodal Machine Learning Design of MXene/PANI Composites for Water-Based Supercapacitors
10.35-11.00	**COFFEE BREAK**
SESSION 5	**PHOTOCATALYSIS & SOLAR ENERGY MATERIALS – part 1** **Chairperson: Uroš Lačnjevac**
11.00-11.15	**Vuk Radmilović** The secret life of silver nanowires: Unraveling atomic scale mechanisms behind transparent electrodes
11.15-11.30	**Marko Jelić** Unraveling the Role of Ni and Co Deposition on BiVO4 Thin Films: Surface Chemistry Insights into Enhanced Photoelectrochemical Water Splitting
11.30-11.45	**Nikola Ilić** Synthesis and characterization of Sb2S3 nanoparticles for application as absorber in solar cells
11.45-12.00	**Mirjana Radanović** Structural characterization of the first complex with the Schiff base of aminoguanidine and 2,6-diacetylpyridine
12.00-12.15	**Violeta Nikolić** The Origin and Influence of Stochastic Forces (Particularly, Stochastic Lorentz Force) In the Problems of Energy and Charge Transport in Molecular Chains of Bio-sourced Materials
12.15-13.30	**LUNCH BREAK**

SESSION 6	**PHOTOCATALYSIS & SOLAR ENERGY MATERIALS - part 2**
13.30-13.45	**Dušica Jovanović** New Hybrid Organic-inorganic Perovskites: Substitutional Effects on the Energy Landscape of Guanidinium-BX3, B = (Be2+, Ba2+, Zn2+, Ge2+, Sn2+) and X = (I−, F−)-BX3, B = (Be2+, Ba2+, Zn2+, Ge2+, Sn2+) and X = (I−, F−)
13.45-14.00	**Barbara Ramadani** Poly(Ionic Liquid) Engineering for Improved Environmental Stability of $FAPbI_3$ Perovskite Thin Films
14.00	**CONFERENCE CLOSING**

POSTER SESSION for ALL POSTERS: DAY 1, 16 -17 h

HYDROGEN ENERGY & HYDROGEN STORAGE MATERIALS		
P.H1	Milica Prvulović	Catalytic Effects of Ni and Co Additives on Hydrogen Desorption Properties of MgH2 under Short Milling Times
P.H2	Aleksandra Popović	Boosting Electrochemical Performance of Carbon Felt via Green Activation for Hybrid Energy Systems
P.H3	Bojana Kuzmanović	Surface and Electrochemical Insights into Polyaniline Based Nanocomposites for Advanced Supercapacitors
P.H4	Jelena Gojgić	Galvanostatically deposited Co–Sn alloys on Ni mesh substrates for alkaline water splitting
P.H5	Darija Petković	Pulsed laser deposition of STO thin films on rGO-protected silicon photocathodes for enhanced photoelectrochemical water splitting
P.H6	Lazar Rakočević	Hydrogen Evolution Reaction on Low Loading Iridium/Graphene Catalysts: Structure–Activity Relationship
(ELECTRO)CATALYSIS IN ENERGY CONVERSION AND STORAGE		
P.EC1	Nikola Tričković	Alkaline electrolyzer with asymmetric electrolytes and nickel electrodes modified by spontaneous galvanic replacement
P.EC2	Suzana Jovanović-Šanta	Photocontrolled reduction of heme iron of human sterol 7α-hydroxylase immobilized on the surface of nanosized TiO2
P.EC3	Marija Janković	Significance of Electrolytic Enrichment in the Determination of Tritium
P.EC4	Mirjana Ševaljević	Catalytic Effect of IR Quanta - Phonon Interaction on Equilibrium and Steady Oxygen dissolution in Deep Aeration Treatments of Refinery Wastewater
P.EC5	Dijana Mašojević	GREEN SYNTHESIS OF Ag/Polypyrrole NANOCOMPOSITES FOR ELECTROCHEMICAL OXYGEN REDUCTION TO HYDROGEN PEROXIDE
P.EC6	David Tomić	Cu70-Fe30/CA for oxygen reduction reaction in alkaline media
P.EC7	Katarina Aleksić	Influence of Oxygen Vacancies on the (Photo)Electrocatalytic Performance of ZnO/RuO2 Composites for HER and OER
P.EC8	Jelena Lović	Some features of methanol electrooxidation on electrodeposited Pd coatings
P.EC9	Ana Nastasić	CeO2/CA for oxygen reduction reaction in alkaline media
P.EC10	Vasko Jovanovski	Electrochemical dissolution of gold in ionic liquids monitored by in situ Raman spectroelectrochemistry
P.EC11	Milica Ritopečki	Machine Learning and DFT Insights into the Reducibility and Structural Complexity of In_2O_3
P.EC12	David Hernández Castillo	First-Principles Insights into Active Sites of NiFe Layered Double Hydroxides for Water Oxidation
P.EC13	Bojana Nedić Vasiljević	DFT investigation of metal-doped and pure rutile slabs: Electronic properties and PFAS adsorption

P.EC14	Ana Dobrota	DFT Study of Metal Atom Adsorption on Graphitic Carbon Nitride for Single-Atom Catalysts
MATERIALS FOR BATTERIES & SUPERCAPACITORS		
P.BSC1	Maria Čebela	Multifunctional Ho-Doped $BiFeO_3$ Nanopowders: A Potential Platform for Energy Conversion and Storage Applications
P.BSC2	Milica Pejčić	Hydrothermal treatment of GO-based nanocomposites for energy storage: New insights into the components' interaction
P.BSC3	Marija Milićević	Influence of Ligand Exchange and Heteroatom Substitution on Surface Chemistry of Cobalt Ferrite Nanoparticles
P.BSC4	Kristina Radinović	Enhancing Supercapacitor Electrode Performance by Tailoring Co-Fe Carbon Aerogel Synthesis
NOVEL MATERIALS IN FUEL CELL TECHNOLOGIES		
P.FC1	Maja Obradović	Ti-oxide/N-doped graphene oxide nanocomposites: synthesis, characterization and electrochemical properties
P.FC2	Milena Rosić	Investigation and characterization of Co0.9Gd0.1MoO4 nanopowders obtained by modified glycine nitrate procedure
PHOTOCATALYSIS & SOLAR ENERGY MATERIALS		
P.PC1	Budimir Ilić	Machine Learning-Guided Rational Design of Coumarin-Based Organic Fluorophores for Photonic and Biomedical Applications
P.PC2	Jelena Kozic	Microwave-Fabricated Carbon Quantum Dots as Advanced Adsorbents for Organic Dye Removal: A Case Study with Methylene Blue
P.PC3	Ivana Dinić	Photon up-conversion for efficient photocatalysis
P.PC4	Milica Mišić	PHOTOCATALYTIC DEGRADATION OF METHYL VIOLET DYE USING ZnO
P.PC5	Jana Petrović	Photodeposition of Noble and Non-Noble Metals on Pristine vs. Plasma-Treated g-C3N4
P.PC6	Jelena Georgijević	Surface modification of TiO2/TiN Bilayers via Nitrogen Diffusion and Gold Functionalization for Advanced Photocatalysis
P.PC7	Andrijana Pantelić	Characterization and photocatalytic performance of down-conversion Eu3+ doped $MgGd_2Zr_2O_8$ nanoparticles
P.PC8	Bojana Simović	Photodegradation mechanism of Reactive Orange 16 by recyclable green Ag/ZnO
P.PC9	Bojana Vasiljević	Enhanced photocatalytic degradation of Rhodamine B using microwave-synthesized BiVO4 nano-photocatalyst
P.PC10	Milica Stefanović	Supercritical CO2-assisted infiltration of MAPbBr3 into TiO2 nanotubes for enhanced optoelectronic performance of perovskite photodiode
P.PC11	Sofija Petković	Multiple Synthesis Approaches for Terephthalic Acid-Modified g-C3N4 Photocatalysts for Efficient Cr(VI) Reduction
P.PC12	Natalija Milojković	Photocatalytic degradation of pharmaceuticals by hydrothermally obtained α-Bi2O3