

16th ECerS Conference for Young Sciences in Ceramics

Novi Sad, Serbia, October 15-18, 2025

15.10.2025. Wednesday

09.00-18.00 h Registration - Conference Desk

PLENARY LECTURE, PL-1 – **Richard Todd**, *United Kingdom*, Ultra-fast firing of ceramics: background, evidence and potential explanation

PLENARY LECTURE, PL-2 – **Paula Vilarinho**, *Portugal*, Electroceramics under challenge: Processing pathways for next-generation materials

INVITED LECTURE, IL-1– **Přemysl Šťastný**, *Czech Republic*, Debinding of large ceramic samples produced using vat photopolymerization

| | Amphitheater Faculty of Technology | Blue Hall Faculty of Technology | White Hall Faculty of Technology |
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| 12.00-12.30 h | Opening ceremony | | |
| 12.30-13.15 h | PL-1 Richard Todd, <i>United Kingdom</i> Chair: Zbigniew Pedzich | | |
| 13.15-14.00 h | PL-2 Paula Vilarinho, <i>Portugal</i> Chair: Richard Todd | | |
| 14.00-15.00 h | Welcome party | | |
| 15.00-16.15 h | | Ceramic processing - 1 Chair: Branko Matović OP-1 - Nicolas Albar, <i>France</i> Study of the kinetics of sintering by cold sintering process of zinc oxide O-2 - J.P. Martins Mansano Rosa, <i>Spain</i> A study of microwave radiation interaction with LaMnO₃ perovskites OP-3 - Danica Piper, <i>Serbia</i> Epitaxial bilayer thin films based on La_xSr_{1-x}MnO₃/Ba_ySr_{1-y}TiO₃ deposited from solution OP-4 - Tobias Prötsch, <i>Austria</i> Damage tolerant alumina-based layered ceramics through rapid sintering OP-5 - Diogo Sousa, <i>Portugal</i> Recycling and regeneration of Ni-based | Synthesis of ceramic powders - 1 Chair: Dawid Kozieln OP-6 - Jovana Paskaš, <i>Serbia</i> Ultrafast and low-cost synthesis route of Ti-based Mxenes O-7 - Martyna M. Czudec, <i>Poland</i> Investigating the role of Ag and Ni phases in the thermoelectric properties of multicomponent oxides composites OP-8 - Tijana B. Vlašković, <i>Serbia</i> Hydrazine synthesis of Ca_{0.9}Er_{0.1}MnO₃ nanopowders OP-9 - Roman Shishkin, <i>Russia</i> High-entropy oxides as a prospective thermal barrier material OP-10 - S. Stanojević-Nikolić, <i>Serbia</i> |

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| | | electrodes from Spent MCFC Cells | Development of green polyurethane composites reinforced with renewable fillers |
| 16.15-16.45 h | | IL-1 Přemysl Šťastný, <i>Czech Republic</i> Chair: Branko Matović | |
| 16.45-17.00h | | Coffee break | Coffee break |
| 17.00-18.30 h | | <p>Engineering and refractory ceramics - 1 Chair: Branko Škorić</p> <p>OP-11 - Maximilian Munz, <i>Austria</i> Failure in Hertzian contact and conventional strength tests: A comparison using silicon nitride balls</p> <p>OP-12 - Vladimir Terek, <i>Serbia</i> Tribological testing of thin ceramic TiAlSiN hard coating using high temperature tribometer</p> <p>OP-13 - Jeevankumar Pallagani, <i>Italy</i> Textured alumina/zirconia composites fabricated via Digital Light Processing (DLP)</p> <p>OP-14 - Noushin Keshtkar, <i>Spain</i> Boron-rich boron carbide ceramics with B₁₀C stoichiometry by a hybrid high energy ball milling and reactive SPS methodology</p> <p>OP-15 - Emilija Nidžović, <i>Serbia</i> Nanoemulsification synthesis and spark plasma sintering of ternary-substituted hydroxyapatite</p> <p>OP-16 - Olga Jurecka, <i>Poland</i> The influence of ZrO₂ nanopowders characteristics on the heterocoagulation phenomenon and microstructural homogeneity of Al₂O₃–ZrO₂ composites</p> | <p>Electroceramics (Energy storage) - 1 Chair: Sanja Kojić</p> <p>OP-17 - Lucjan Kozielski, <i>Poland</i> Recent advances in lead-free ceramics materials for energy storage</p> <p>OP-18 - Catalin Ianasi, <i>Romania</i> Carbon-enhanced structured materials with designed functionality based on metal oxides</p> <p>OP-19 - Ammar Eqbal, <i>Italy</i> Synthesis and characterization of bixbyite HEO as potential anode in Li-ion batteries</p> <p>OP-20 - Katarzyna Walczak, <i>Poland</i> Tailoring the structural and electrochemical properties of NASICON-type Na_{3+y}V_{2-y}Mny(PO₄)₃ as cathode materials for Na-ion batteries</p> <p>OP-21 - Paula Svera, <i>Romania</i> Preliminary studies of ZnO effect on bacterial cellulose obtained from Kombucha</p> <p>OP-22 - Huda F. Khalil, <i>Egypt</i> Nickel-substituted CdSnO₃ perovskite nanoparticles: A new frontier in energy storage</p> |

20.00-23.00 h KC Lab – social event

16.10.2025. Thursday

08.00-18.00 h Registration - Conference Desk

PLENARY LECTURE, PL-3 – Subramshu S. Bhattacharya, India, Multicomponent high entropy oxides: Synthesis and structure-property correlations

PLENARY LECTURE, PL-4 – Jacob L. Jones, USA, Advancing ceramic science using X-ray and neutron scattering: Student success stories in method development and scientific achievements

PLENARY LECTURE, PL-5 – Markus Winterer, Germany, Chemical vapor synthesis of nanocrystalline oxides

INVITED LECTURE, IL-2 - Leontin Padurau, Romania, Finite Element Method for describing functional properties of ceramics

INVITED LECTURE, IL-3 – Antonia Ressler, Finland, Smart biomimetic scaffolds for bone repair and disease control

INVITED LECTURE, IL-4 – Hassanen Jaber, Hungary, Comprehensive investigation of the thermal stability of AB-type bio-carbonate hydroxyapatite

| | Amphitheater Faculty of Technology | Blue Hall Faculty of Technology | White Hall Faculty of Technology |
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| 09.00-10.15 h | | <p>Electroceramics (SOFC) - 2 Chair: Igor Djerdj</p> <p>OP-23 - Zofia Skowrońska, <i>Poland</i> Shaping of $\text{ZrO}_2\text{-ZrSiO}_4$ composites via UV-assisted DIW</p> <p>OP-24 - Jacek Winiarski, <i>Poland</i> $\text{Gd}_x\text{Sm}_{1-x}\text{Ba}_{0.5}\text{Sr}_{0.5}\text{CoCuO}_{5+\delta}$ air electrodes for solid oxide fuel cells</p> <p>OP-25 - Arijit Jana, <i>Austria</i> A multi-material design strategy for optimizing mechanical strength and ionic conductivity in 8YSZ solid oxide electrolytes</p> <p>OP-26 - Y. Sai Swaroop Sarma, <i>India</i> Non-noble transition metal based spinel high entropy oxide as anode for seawater electrolysis</p> <p>OP-27 - Piotr Winiarz, <i>Poland</i> Synthesis, structural, and thermal properties of $\text{RE}_{(1-x)}\text{M}_x\text{MnO}_{3-\delta}$ advanced ceramics exhibiting negative expansion coefficient for solid oxide fuel cells cathodes</p> | <p>Engineering and refractory ceramics - 2 Chair: Přemysl Šťastný</p> <p>OP-28 - Yaroslav A. Nikiforov, <i>Russia</i> Kinetics of joint layer formation between zirconium carbide and iridium</p> <p>OP-29 - Zoran Bobić, <i>Serbia</i> Corrosion testing of TiO-TiN (ALD-PVD) ceramic coating</p> <p>OP-30 - Wojciech Banaś, <i>Poland</i> Composites incorporating covalent phases were synthesized using boron carbide (B_4C) and MAX phases</p> <p>OP-31 - Naser Hosseini, <i>Slovakia</i> Joining of (MoNbTaVW)C high-entropy carbides using a designed NiTa interlayer: Wettability, interfacial reactions, and brazing</p> <p>OP-32 - Jan Słomiński, <i>Poland</i> Role of precursor size in reactive spark plasma sintering of TaB_2</p> |
| 10.15-10.45 h | | <p>IL-2 Leontin Padurau, <i>Romania</i> Chair: Igor Djerdj</p> | |
| 10.45-11.00 h | | Coffee break | Coffee break |

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| 11.00-11.30 h | | IL-3 Antonia Ressler, <i>Finland</i> Chair: Zbigniew Pedzich | |
| 11.30-12.45 h | | <p>Bioceramics - 1 Chair: Aleksandar Djordjević</p> <p>OP-33 - Haruish Swaminathan, <i>Finland</i> 3D-printed glass ceramic composite scaffolds based on borosilicate glass and Ag/Sr-substituted hydroxyapatite: Physicochemical and antibacterial properties</p> <p>OP-34 – M. Monika Marić, <i>Croatia/Germany</i> Borate-based bioactive glass nanoparticles doped with Ag and Co for biomedical applications</p> <p>OP-35 - Karyna Sokol, <i>Ukraine</i> Mechanisms of sintering for calcium phosphate ceramics with impurities</p> <p>OP-36 –Mia Milošević, <i>Serbia</i> Development of composite macroporous scaffolds based on alginate and bioactive glass particles for 3D osteosarcoma cell cultures</p> <p>OP-37 -Dušica Jovanović, <i>Serbia</i> Energy landscape of glutamine (I) on pristine and Au / Ag / Cu doped anatase surfaces with potential biomedical applications</p> | <p>Ceramic processing - 2 Chair: Michael Stuer</p> <p>OP-38 – Emeric Sanchez, <i>France</i> Characterization of the pressure effect during Cold Sintering Process by <i>in operando</i> impedance spectroscopy</p> <p>OP-39 - Joanna Tanska, <i>Poland</i> Enhancing fracture toughness in ceramic-matrix-composites via metallic precursor reinforcement</p> <p>OP-40 - Blanka Seredynska, <i>Poland</i> 3D printing by UV-DIW technique from aqueous-based ceramic pastes</p> <p>OP-41 - Jurij Delihowski, <i>Poland</i> Rheological behavior of clay-cement suspensions with fly ash additives for 3D printing application</p> <p>OP-42 - Aleksandra Bąk, <i>Poland</i> Enhancing thermal performance of MgAl₂O₄ refractory ceramics via high-temperature reactive sintering</p> |
| 12.45-13.30 h | PL-3 Subramshu S. Bhattacharya, <i>India</i> Chair: Claude Estournes | | |
| 13.30-14.30 h | Lunch break | | |
| 14.30-15.15 h | PL-4 Jacob L. Jones, <i>USA</i> Chair: Paula Vilarinho | | |
| 15.15-16.00 h | PL-5 Markus Winterer, <i>Germany</i> Chair: Subramshu S. Bhattacharya | | |
| 16.00-17.00 h | | <p>Electroceramics (Thermoelectrics) - 3 Chair: Subramshu S. Bhattacharya</p> <p>OP-43 - Nikola Kanas, <i>Serbia</i>, Development of thermoelectrics in TEGMATICA company</p> <p>OP-44 - Miguel A. Vieira, <i>Portugal</i></p> | <p>Catalysts - 1 Chair: Henrik Haspel</p> <p>OP-47 - Áron Klonka, <i>Hungary</i> Design and realization of a magnetic rotating disc electrode for mechanistic electrochemical investigations under</p> |

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| | | <p>Enhancing thermoelectric performance of SrTiO₃ through structural and doping engineering</p> <p>OP-45- Yevhen Brych, <i>Ireland</i> Measuring the dielectric constant of ceramics with electrostatic force microscopy</p> <p>OP-46 - Asif Ali, <i>Slovakia</i> Design and synthesis of novel high-entropy perovskite oxides for thermoelectric applications</p> | <p>magnetic field</p> <p>OP-48 - Henrique Tidei, <i>Portugal</i> Influence of microstructure on the CO₂ separation performance of ceria-carbonate-based composites</p> <p>OP-49 - Henrik Fülöp, <i>Hungary</i> Coordination polymer-derived Ag catalyst: In-situ investigation of the formation mechanism</p> <p>OP-50 - Michał Dominów, <i>Poland</i> 3D-printed polycrystalline ceramic catalysts for biogas reforming</p> |
| 17.00-17.15 h | | Coffee break | Coffee break |
| 17.15-17.45 h | | <p>IL-4 Hassanen Jaber, <i>Hungary</i> Chair: Branimir Bajac</p> | |
| 17.45-19.00 h | | <p>Electroceramics (Piezo/ferroelectrics) - 4 Chair: Branimir Bajac</p> <p>OP-51 - Dawid Kurczek, <i>Poland</i> Synthesis and ferroelectric properties of Ba_{0.9}Ca_{0.1}TiO₃ ceramics substituted by Eu³⁺ ions</p> <p>OP-52 - Nadia Bencharef, <i>France</i> Optimization of low-temperature spark plasma sintering of KNN ceramics for lead-free piezoelectric energy harvesting</p> <p>OP-53 - Ashley Bonilla Molina, <i>Spain</i> The right one is Low friction-coefficient materials: a green-route towards sustainable materials processing</p> <p>OP-54 - Lazăr Petre Cosmin, <i>Romania</i> Preparation and dielectric properties of BaTi_{1-x}Sn_xO₃ ceramics prepared by the solid-state method</p> <p>OP-55 - Piotr Czaja, <i>Poland</i> K_{0.5}Bi_{0.5}TiO₃ - technology, properties and applications</p> | <p>Bioceramics - 2 Chair: Hassanen Jaber</p> <p>OP-56 - Miljana Mirković, <i>Serbia</i> Nanocrystalline SrHAp material with good antimicrobial properties</p> <p>OP-57 - Evelina Herendija, <i>Serbia</i> Amorphous calcium phosphate bioceramic nanoparticles and their cellular biocompatibility as a basis for application in medicine and dentistry</p> <p>OP-58 - Weronika Bulejak, <i>Poland</i> Additive manufacturing of ceramic-based composites: Influence of printing parameters and feedstock composition on functional properties</p> <p>OP-59 - Marija Pavlovic, <i>Serbia</i> Two paths to bone regeneration: Engineering surface nanostructure vs. compositional mimicry</p> <p>OP-60 - Nikolai Leontiev, <i>Russia</i> Novel bioceramics for bone regeneration: High-entropy mixed-cationic silicogermanophosphates with glaserite type structure</p> |

20.00-23.00 h Restaurant "Fontana" - Meeting of Young Ceramists Network of the European Ceramic Society and Conference dinner -

17.10.2025. Friday

08.00-10.00 h Registration - Conference Desk

PLENARY LECTURE, PL-6 – Claude Estournes, France, Strategies to overcome the main challenges of Spark Plasma Sintering process and to design materials with tailored properties

PLENARY LECTURE, PL-7 – Ryoji Funahashi, Japan, Durability and application of thermoelectric modules

INVITED LECTURE, IL-5 – Nikola Knezevic, Serbia, Development and applications of photoresponsive nanostructured Si-based materials

INVITED LECTURE, IL-6 – Daniela Šojić Merkulov, Serbia, Sustainable nanotechnology for water treatment: Waste-derived and green photocatalysts in heterogeneous catalysis

INVITED LECTURE, IL-7 – Michael Stuer, Switzerland, 3D-Printing of highly transparent alumina ceramics

INVITED LECTURE, IL-8 – Martina Kocjan, Croatia, Advances in thin film engineering for solar-driven wastewater treatment: A step toward a sustainable future

INVITED LECTURE, IL-9– Dawid Kozień, Poland, Conscious synthesis of boron carbide: From medical applications to UHTCs (Ultra-High Temperature Ceramics)

| | Amphitheater BioSense Institute | | |
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| 09.00-10.15 h | <p>Sensors - 1 Chair: Nikola Knežević</p> <p>OP-61 - Nikola Markovic, <i>Serbia</i> Modified NiMn₂O₄ thick film thermistors for sensor arrays application</p> <p>OP-62 - Sara Joksovic, <i>Serbia</i> Application of new technologies and nanomaterials in processing of an infrared photodetector based on lead selenide</p> <p>OP-63 - Sana Ullah, <i>SAR China</i> Innovative approaches to electrocaloric response in high-entropy ferroelectric ceramics</p> <p>OP-64 - Jelena Đerić, <i>Serbia</i> MXene-based nanomembranes for alcohol vapor detection</p> <p>OP-65 - Miljana Piljević, <i>Serbia</i> Chitosan assisted solvothermal synthesis of NaY_{1-x}Gd_xF₄:Yb/Er nanoparticles for non-specific cell labeling and temperature sensing</p> | | |

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| 10.15-10.45 h | IL-5 Nikola Knezevic, <i>Serbia</i> Chair: Jacob L. Jones | | |
| 10.45-11.00 h | Coffee break | | |
| 11.00-11.30 h | IL-6 Daniela Šojić Merkulov, <i>Serbia</i> Chair: Martina Kocijan | | |
| 11.30-12.45 h | Photocatalysts - 1 Chair: Daniela Šojić Merkulov OP-66 - Surbata Ghosh, <i>India</i> Flame Spray Pyrolysis (FSP)-made defect-rich high entropy oxides (HEOs) as electrocatalysts for overall water splitting applications OP-67 - Jyoti Jyoti,, <i>Italy</i> 3D printing of TiO₂ structures for photocatalytic degradation of rhodamine B OP-68 - Jelena P. Georgijević, <i>Serbia</i> Surface engineering of TiO₂ thin films via annealing-induced nitrogen diffusion from TiN sublayers for enhanced photocatalysis OP-69 - Sofija Petković, <i>Serbia</i> g-C₃N₄/SiO₂ composites obtained by the microemulsion-assisted sol-gel method for the photocatalytic reduction of Cr(VI) OP-70 - Cristina Vladut, <i>Romania</i> Photocatalytic performance of Mn-doped ZnO nanopowders synthesized via sol-gel and microwave-assisted sol-gel methods | | |
| 12.45-13.30 h | PL-6 Claude Estournes, <i>France</i> Chair: Jacob L. Jones | | |
| 13.30-14.30 h | Lunch break | | |
| 14.30-15.00h | IL-7 Michael Stuer, <i>Switzerland</i> Chair: Ryoji Funahashi | | |
| 15.00-15.45 h | PL-7 Ryoji Funahashi, <i>Japan</i> Chair: Nilola Kanas | | |
| 15.45-16.45 h | Electroceraamics (Piezo/ferroelectrics) - 5 Chair: Jovana Stanojev OP-71 - Waseem Ahmad Wani, <i>Ireland</i> Environmental control of ferroelectricity in | | |

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| | hafnia based thin-films OP-72 - Sanjoy Das, <i>India</i> Covalency-tuned high entropy perovskite oxides for ferroelectric and neuromorphic device applications OP-73 - Elena Mirabela Soare, <i>Romania</i> The influence of composition on structure, microstructure, and functional properties of fine-grained BaTi_{1-x}Hf_xO₃ ceramics processed via Spark Plasma Sintering OP-74 - Claudia Sosa Espada, <i>Ireland</i> Exploring the impact of electrode interfaces on ferroelectric switching in hafnia thin films under environmental control | | |
| 16.45-17.00 h | Coffee break | | |
| 17.00-17.30 h | IL-8 Martina Kocjan, <i>Croatia</i> Chair: Antonia Ressler | | |
| 17.30-18.00 h | IL-9 Dawid Kozieł, <i>Poland</i> Chair: Antonia Ressler | | |
| 18.00-19.00 h | Porous ceramics and membranes Chair: Antonia Ressler OP-75 - Amna Korbi, <i>France</i> Cold sintering process (CSP): Functional mesoporous hybrid silica monolith to a green route of micropollutants adsorption OP-76 - Sarvarjon Kurbonov, <i>Hungary</i> Ordered mesoporous silica prepared with biodegradable Gemini surfactants as templates for environmental applications OP-77 - Ayodeji Akerele, <i>Hungary</i> Investigating the effects of firing temperature on the properties of environmentally sustainable ceramic foam glass OP-78 - Vesna Miljić, <i>Serbia</i> Sustainable development of porous building materials based on bio-waste | | |

19.00-21.00 h Social Program - Exhibition - Gallery

18.10.2025. Saturday

INVITED LECTURE, IL-10 – Felipe F. Morgado, Germany, High-resolution X-ray diffraction for epitaxial thin films: principles and applications

| | | Blue Hall Faculty of Technology | White Hall Faculty of Technology |
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| 09.00-10.30 h | | <p>Electroceramics - 6 Chair: Felipe F. Morgado</p> <p>OP-79 - Hanna Kavaliuk, <i>Poland</i> Structural and electrical properties of multicomponent Co-based double perovskites</p> <p>OP-80 - Aaditya Rangan Raghavan, <i>India</i> Effect of A-site cation valency on the magnetic behaviour of high entropy perovskite</p> <p>OP-81 - Małgorzata Lemańska, <i>Poland</i> Doping as an effective method to improve the properties of barium cerate</p> <p>OP-82 - Anda Oajdea, <i>Romania</i> Influence of silver content and thermal reoxidation on functional properties of BaTiO₃-based ceramic and multilayer composites</p> <p>OP-83- Miroslav Katanic, <i>Serbia</i> Space charge relaxation of barium hexaferrite in the low frequency region</p> <p>OP-84 - Nikola Cichocka, <i>Poland</i> Microwave-driven hydrothermal synthesis of Eu³⁺-doped lanthanum/aluminum oxides: Growth conditions vs. optical and structural characteristics</p> | <p>Ceramic processing - 3 Chair: Snežana Petrović</p> <p>OP-85 - Daa El-Rahman Rayan, <i>Egypt</i> Role of composition in the photocatalytic efficiency of Cu²⁺ and Al³⁺ ions co-doped Ni-Zn ferrites nanoparticles</p> <p>OP-86 - Maurad Mechouet, <i>Algeria</i> Obtaining a hybrid electrode based on imidazonium ionterminated and metallic nano-clusters and its catalytic activity toward HER</p> <p>OP-87 - Marija Kovač, <i>Serbia</i> Investigating the Middle Ages brick technology – Multi analytic approach</p> <p>OP-88 - Mahmoud Mohamed Ismail, <i>Egypt</i> Synthesis of copper (Cu) and copper oxide (CuO) nanoparticles derived from electronic waste and assessment of their antibacterial and photocatalytic activities</p> <p>OP-89 - Daniil Golubchikov, <i>Russia</i> The pathway to stretch the bioresorption rate: Magnesium phosphate ceramics composites with 0.5≤Mg/P≤1.5 for bone tissue engineering</p> <p>OP-90 –Hocine Moussouni, <i>Algeria</i> Investigating the reactivity of surface functionalization with ionterminated using scanning electrochemical microscopy (SECM)</p> |
| 10.30-11.00 h | | <p>IL-10 Felipe F. Morgado, <i>Germany</i> Chair: Markus Winterer</p> | |
| 11.00-11.15 h | | Coffee break | Coffee break |

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| 11.15-13.00h | | <p>Ceramic processing - 4 Chair: Ivan Stijepovic</p> <p>OP-91 - Ionuț Bălescu, <i>Romania</i> Lanthanum-doped silicon, iron and zinc oxides with applications in the ceramic field</p> <p>OP-92 - Duško Kostić, <i>Bosnia & Herzegovina</i> Structural modification and iron removal from tiorite via electric arc furnace treatment</p> <p>OP-93 - Albina Murashko, <i>Russia</i> Biphasic calcium phosphates bioceramics produced by DLP 3D printing for bone repair</p> <p>OP-94 - Azim Uddin, <i>China</i> Eco-friendly Fe₂O₃@activated carbon composites from biomass waste for advanced electromagnetic wave absorption</p> <p>OP-95 - Tatiana Lomakina, <i>Russia</i> Manufacturing of ZrO₂ based solid solutions with lanthanide oxides: the effect of xerogels and precursor powders properties</p> <p>OP-96 - Fatima Hina, <i>Pakistan</i> Predicting wear resistance of graphene-added Si₃N₄ using machine learning</p> <p>OP-97 – Iva Toković, <i>Serbia</i> DFT investigation of oxygen vacancy effects on the structural and electronic properties of LaMnO₃</p> | |
| 13.00-13.15 h | | Closing ceremony | |