

Full Program

Time: July 21-25, 2022

Place: Hotel Ambassador, Opatija, Croatia

Day 1: July 22, 2022 (Friday), Morning

Plenary Forum (I)

Moderator:	Dr. Vera Gradisnik, University of Rijeka, Croatia
9:10-9:40	Title: Fluoride Materials for Advanced Electronic, Optical & Magnetic Applications Dr. Alain Tressaud, Emeritus Research Director, ICMCB, University of Bordeaux, France; Vice President, European Academy of Sciences, Brussels, Belgium; Fellow EASA (Austria), WSSET (UK), Disting. Fellow SCF (France), Founder CNRS French Fluorine Network
9:40-10:10	Title: Ultra-Wide-Bandgap Materials for High Temperature Applications Dr. Michael Shur, Professor, Rensselaer Polytechnic Institute, USA; Fellow of National Academy of Inventors, Optical Society of America, MRS, IET, IEEE, American Physical Society, Electrochemical Society, SPIE, World Innovation Foundation, AAAS, Electron Device Society; Member of Luthianian Academy of Sciences, Microwave Theory and Technique Society
10:10-10:40	Title: Advanced Materials for High Temperature Fuel Cells Dr. Subhash C. Singhal, Battelle Fellow and Director, Pacific Northwest National Laboratory; Member of the U.S. National Academy of Engineering and the Washington State Academy of Sciences; Fellow of four professional societies (American Ceramic Society, The Electrochemical Society, ASM International, and American Association for the Advancement of Science), USA (Online)
10:40-11:10	Title: Morphological Engineering of Bio-Minerals Using Near-IR Mode-locked Lasers – A New Approach for Integrative Manufacturing of Hard-soft Tissues for In-Theatre Use Dr. Animesh Jha, Professor, University of Leeds; Fellow of The Institute of Physics; Royal Society of Chemistry, and Optical Society of America (Optica) (Online)
11:10-11:40	Title: Green Technology and Corporate Social Responsibility in Digital Electronics Engineering Prof. Ezendu Ariwa, Professor, Chair, IEEE Consumer Electronic and Broadcast Technology Chapter, UK & Ireland; Chair, IEEE Technology and Engineering Management Society Chapter, UK & Ireland; University of Wales Trinity Saint David, UK
11:40-12:10	Title: Liquid Crystalline Chiral Photonic Crystals for Ultrafast and Advanced Photonics Dr. Iam-Choon Khoo, William E. Leonhard Chair Professor of Electrical Engineering; Director of Liquid Crystals and Nonlinear Optics Laboratory, The Pennsylvania State University; Fellow of IEEE; Fellow of The Optical Society -OSA, Fellow of UK Institute of Physics and The Electromagnetic Academy, USA
12:10-12:40	Dr. Goran Pichler, Research Professor, Institute of Physics Zagreb; Emeriti- Full member of Croatian Academy of Sciences and Arts, Croatia

Day 1: July 22, 2022 (Friday), Afternoon

Session 3-3: Electronic Materials, Dielectric Materials and Technology

Chair	Dr. Sasa Sladic, University of Rijeka, Croatia
13:30-13:50	Title: Decentralized, Distributed and Cloud-Based Control Systems Dr. Magdi S. Mahmoud, King Fahd University of Petroleum and Minerals, Saudi Arabia
13:50-14:10	Title: Spintronics with Hybrid Structures of Single Molecule Magnets and 2D Materials Dr. Jacek A. Majewski, University of Warsaw, Poland
14:10-14:30	Title: Paradigm Changes in Power Electronics Caused by Emerging Materials Dr. Sasa Sladic, University of Rijeka, Croatia
14:30-14:50	Title: Manipulating Work-functions with Alkali Atoms Dr. Martin Stockli, Oak Ridge National Laboratory, USA (Online)
14:50-15:10	Coffee Break
15:10-15:30	Title: Top Electrode Engineering for High-performance Ferroelectric Tunnel Junctions Dr. Mattias Borg, Lund University, Sweden (Online)
15:30-15:50	Title: Visual Perception Guided Robotics and Automation Systems Dr. Arindam B. Chowdhury, KLA Tencor, USA (Online)
15:50-16:10	Title: Homogeneous Versus Non-homogeneous Switching in Ferroelectrics: Novel Insights Dr. Lucian Pintilie, National Institute Of Materials Physics, Romania (Online)
16:10-16:30	Title: Our New Colleagues: Chrome-Collar Workers Ms. Bilge Koroglu, Yapi Kredi Teknoloji, Turkey (Online)

Session 1-1: Design, Modeling, Fabrication, Processing and Synthesis of Materials

Chair	Dr. Rafal Abdank-Kozubski, Jagiellonian University in Krakow, Poland Dr. Nak-Sam Choi, Hanyang University, South Korea
Co-Chair	Dr. David Riassetto, Laboratory of Physical Engineering and Material Science (LMGP), France
13:30-13:50	Title: Vacancy-Mediated Diffusion and Diffusion-Controlled Processes in Ordered Binary Intermetallics by Kinetic Monte Carlo and Molecular Dynamics Simulations Dr. Rafal Abdank-Kozubski, Jagiellonian University in Krakow, Poland
13:50-14:10	Title: Lubricant Depletion Resistant Slippery Liquid-Infused Porous Surfaces (SLIPS) Dr. David Riassetto, Laboratory of Physical Engineering and Material Science (LMGP), France
14:10-14:30	Title: In-situ Shrinkage Analysis of Dental Composites under Light Irradiation Using DIC Method Dr. Nak-Sam Choi, Hanyang University, South Korea
14:30-14:50	Title: Ca ²⁺ Leaching-Resistant CaO/MgO Nanocatalyst for Transesterification of

	Used Cooking Oil Dr. Kandis Sudsakorn, Kasetsart University, Thailand
14:50-15:10	Coffee Break
15:10-15:30	Title: Zinc Oxide Nanotetrapods for Room Temperature UV Sensors by Spray-coating Dr. Simas Račkauskas, Kaunas University of Technology, Lithuania
15:30-15:50	Title: Heat Transfer at Early Stages of Nucleation in Glasses Dr. Alexander Minakov, Prokhorov General Physics Institute of the Russian Academy of Sciences, Russia (Online)
15:50-16:10	Title: Direct Dimethyl Carbonate Synthesis from Carbon Dioxide and Methanol Using Cu-Ni-Ga Catalyst Supported on Reduced Graphene Oxide Aerogel Dr. Paisan Kongkachuichay, Faculty of Engineering, Kasetsart University, Thailand
16:10-16:55	Title: Predicting the Gas Sensing Performance of 2D Materials Dr. Udo Schwingenschloegl, King Abdullah University of Science and Technology, Saudi Arabia

Session 1-4: Physical Behavior of Materials and Surface Science

Chair	Dr. Haim Taitelbaum, Bar Ilan University, Israel
Co-Chair	Dr. Danjela Kuščer, Jožef Stefan International Postgraduate School, Slovenia
13:30-13:50	Title: Exotic Behavior of Reactive Wetting of Metal on Metal-on-Glass in Room Temperature Dr. Haim Taitelbaum, Bar Ilan University, Israel
13:50-14:10	Title: Pulsed Characterization of a-Si:H Photodiode Dr. Vera Gradisnik, Faculty of Engineering, University of Rijeka , Croatia
14:10-14:30	Title: Indium-modified ZnO Thin Films from Solutions for Invisible Electronics Dr. Danjela Kuščer, Jožef Stefan International Postgraduate School, Slovenia
14:30-14:50	Title: Robust Coloured Alloy Coatings Dr. Chris Goode, Cirrus Materials Science, New Zealand
14:50-15:10	Coffee Break
15:10-15:30	Title: Preparation and Characterization of Nanostructured Titanium Dioxide for Industrial Wastewater Treatment Dr. M. Ibrahim Abd Elwahab, Abu Qir fertilizers and chemical industries Co., Egypt
15:30-15:50	Title: Fabrication of Micro-/Nanostructured Si Wires by Introducing Dislocations Dr. Mitsuya Motohashi, Tokyo Denki University, Japan (Online)
15:50-16:10	Title: Antibacterial Effect on Microscale Dimple Surface Formed by Fine Particle Bombarding Tomoko Nishitani, Surf Technology Co.,Ltd., Japan (Online)
16:10-16:30	Title: Optical Measurement of the Shape and Dimensions of Nanoscale Structures Using for Future Transistors Dr. Alain Diebold, SUNY Polytechnic Institute, USA (Online)
16:30-16:50	Title: Research and Practice of Improving Gear Fatigue Contact Strength Dr. Yong Chen, Guangxi University, China (Online)
16:50-17:10	Title: Electron Emission from Surfaces and Nanostructured Materials Under Ion and

Electron Irradiation

Dr. Pierfrancesco Riccardi, University of Calabria, Italy (Online)

Nano Forum 1

Chair	Dr. Evelyne Martin, CNRS Research Director, Institute ICube, France
13:30-13:50	Title: Paper Substrates for Biosensors Dr. Sushanta Mitra, Executive Director, Waterloo Institute for Nanotechnology, Mechanical and Mechatronics Engineering, University of Waterloo, Canada
13:50-14:10	Title: Thermal Conduction in Amorphous Nanomaterials by Atomic Scale Modelin Dr. Evelyne Martin, CNRS Research Director, Institute ICube, France
14:10-14:30	Title: New Developments Improving the Characterization of Nanomaterials Dr. Alex Dommann, Head, Department "Materials meet Life", Swiss Federal Laboratories for Materials Science and Technology, Switzerland
14:30-14:50	Title: Nanomechanical Properties of Native Human Ligamentum Flavum Dr. Josef Sepitka, Researcher, Laboratory of nanoindentation, Department of Mechanics, Biomechanics and Mechatronics, Czech Technical University, Czech Republic
14:50-15:10	Coffee Break
15:10-15:30	Title: 3D Nanoprinting of Photonic Devices on Optical Fibers Tip Dr. Dan Marom, Professor, The Hebrew University of Jerusalem, Israel
15:30-15:50	Title: Integrated Quantum Frequency Combs Dr. Roberto Morandotti, Professor and Head, Ultrahigh Speed Light Manipulation Laboratory, Energy Materials Telecommunications Research Center, Canada
15:50-16:10	Title: Modelling Statistical Variability in Nanoscale InGaAs MOSFETs for End-of-the-roadmap CMOS Logic Circuits Dr. Giovanni Verzellesi, Professor, Dipartimento di Scienze e Metodi dell'Ingegneria (DISMI), University of Modena and Reggio Emilia, Italy (Online)
16:10-16:30	Title: 3D Nano-Printing via Focused Electron Beams -A Perspective Dr. Harald Plank, Associate Professor, Graz University of Technology, Austria (Online)
16:30-16:50	Title: The Concept of 2D Solid Solvent – the Prospective for Nanotechnology and Molecular Engineering Dr. Lukasz Laskowski, Institute of Nuclear Physics Polish Academy of Sciences, Poland

Day 2: July 23, 2022 (Saturday), Morning

Session 1-2: Advanced Materials Application in Architecture and Civil Engineering

Chair	Dr. Lukasz Skowronski, UTP University of Science and Technology, Poland
Co-Chai	Dr. Kimberly Kramer, Kansas State University, USA
9:00-9:20	Title: A Study of Chitosan Derived from Mushrooms in the Cementitious Material Purpose

	Dr. Duangkanok Tanangteerapong, Khon Kaen University, Thailand
9:20-9:40	Title: Heated Rebar Effects on Corrosion Performance of Reinforced Concrete Dr. Ray K. L. SU, The University of Hong Kong, Hong Kong, China (Online)
9:40-10:00	Title: Deflection of Prestressed Concrete Girders with Harped Strands and Externally Bonded FRP Dr. Kimberly Kramer, Kansas State University, USA
10:00-10:20	Title: Design of Materials for Solid Oxide Fuel Cells and Oxygen Separation Membranes Based on Fundamental Studies of Their Oxygen Mobility and Surface Reactivity by Oxygen Isotope Heteroexchange Dr. V. A. Sadykov, Siberian Branch of the Russian Academy of Sciences, Russia
10:20-10:40	Coffee Break
10:40-11:00	Title: How Nanotechnology Can Be Used to Mitigate Energy Consumption in the Built Environment Dr. Ioannis Papakonstantinou, University College London, UK
11:00-11:45	Title: TiO ₂ - Based Decorative Coatings - Fundamentals and Manufacturing Dr. Lukasz Skowronski, UTP University of Science and Technology, Poland

Session 1-3: Materials, Mechanical, and Manufacturing Engineering

Chair	Dr. Lubomír Šooš, Slovak University of Technology in Bratislava, Slovak Republic
Co-Chair	Dr. Jinyang Xu, Shanghai Jiao Tong University, China
9:00-9:20	Title: Microstructure Characterization of Binary Ni 10 wt.% Cr Alloy upon Gaseous Nitriding Treatment Dr. Matej Fonović, University of Rijeka, Croatia
9:20-9:40	Title: Fabrication of a Density-near-zero Acoustic Metamaterial Dr. Choon Mahn Park, Dong-A University, South Korea
9:40-10:00	Title: Mechanical Machining of Multilayer Composite-Titanium Stacks Dr. Jinyang Xu, Shanghai Jiao Tong University, China
10:00-10:20	Title : 3D-Printed Stacked Ionic Assemblies for Iontronic Touch Sensors Dr. Jérémy Odent, University of Mons, Belgium
10:20-10:40	Coffee Break
10:40-11:00	Title: A New Principle of Briquetting Machine Kinematics Dr. Lubomír Šooš, Faculty of Mechanical Engineering, Slovak University of Technology in Bratislava, Slovak Republic
11:00-11:20	Title: Multimaterial 3D Printing through Deep Stereolithography and Metallization Dr. Jose Marques-Hueso, Heriot Watt University, UK (Online)

Session 3-2: Laser Technology and Application

Chair	Dr. Dirk Lewke, 3D-Micromac AG, Germany
Co-Chair	Dr. Marcin Motyka, Wroclaw University of Science and Technology, Poland
9:00-9:20	Title: New Opportunities in Ultrafast Lasers with High Power Blue and Red Laser Diodes Dr. Bojan Resan, University of Applied Sciences and Arts Northwestern Switzerland,

	Switzerland
9:20-9:40	Title: Laser Based Magnetic Field Sensor Formation for GMR / TMR Sensor Arrays Dr. Dirk Lewke, 3D-Micromac AG, Germany
9:40-10:00	Title: Laser Additive Manufacturing for Metallic Biomedical Components Dr. Aline C. Oliveira, Federal University of Sao Paulo, Brazil (Online)
10:00-10:20	Title: Quantum Cascade Vertical Cavity Surface Emitting Lasers Dr. Marcin Motyka, Wroclaw University of Science and Technology, Poland
10:20-10:40	Coffee Break
10:40-11:00	Title: Role of Interface at Phase Transitions in Ferroelectric Nanocomposites on Base of Porous Matrices Dr. Aleksandr A. Naberezhnov, Ioffe Institute, Russian Academy of Sciences, Russia
11:00-11:20	Title: Photobiomodulation at 660 nm Activates the Ras/MAPK Signalling Pathway in a Wounded Diabetic Cell Model Dr. Nicolette Nadene Houreld, University of Johannesburg, South Africa (Online)
11:20-11:40	Title: Optical Feedback Interferometry with Terahertz Quantum-Cascade Lasers: Progress in Terahertz Sensing and Imaging Dr. Dragan Indjin, University of Leeds, UK

Nano Forum 2

Chair	Dr. Davide Prospero, Head of NanoBioLab, Department of Biotechnology and Bioscience, University of Milano-Bicocca, Italy
09:00-09:20	Title: H-Ferritin: A Theranostic Drug Delivery Nanosystem for Advanced Therapy and Imaging of Solid Tumors Dr. Davide Prospero, Head of NanoBioLab, Department of Biotechnology and Bioscience, University of Milano-Bicocca, Italy
09:20-09:40	Title: Therapeutic Applications of Cutting-edge Biofunctionalized Nanoparticles Dr. Miriam Colombo, Professor, NanoBioLab, Department of Biotechnology and Bioscience, University of Milano-Bicocca, Italy
09:40-10:00	Title: Arsenic Adsorption Using Iron Oxide Nanoparticles Inside Poly (Vinyl Alcohol) Nanofibers Dr. Silvina Cerveny, Researcher, CFM - Materials Physics Center, Spain
10:00-10:20	Title: First-principles Molecular Dynamics in Materials Science Dr. Carlo Massobrio, CNRS Research Director, IPCMS and University of Strasbourg, France
10:20-10:40	Coffee Break
10:40-11:00	Title: Colloidal Metal Nanoparticles as a Source for the Growth of Thin Films Dr. Saim Emin, Assistant Professor, University of Nova Gorica, Slovenia
11:00-11:20	Title: Soft Matter Nanomaterials: Nanostructured Liquid Crystals Dr. Alexander G. Petrov, Academician, Bulgarian Academy of Sciences; Emeritus Professor, Inst. Solid State Physics, Bulgaria (Online)
11:20-11:40	Title: Antimicrobial Properties of Nano and Micro Textures Dr. Takeshi Ito, Professor, Faculty of Engineering Science Department of Mechanical Engineering, Kansai University, Japan (Online)

11:40-12:00	Title: Decorated TiO ₂ Nanotube Array Films: Preparation and Photocatalytic Activities Dr. Lianjie Zhu, Tianjin University of Technology, China (Online)
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Day 2: July 23, 2022 (Saturday), Afternoon

Session 3-1: Breaking Research on Optoelectronic Materials and Application Technology

Chair	Dr. Michael W. Tausch, University of Wuppertal, Germany
Co-chair	Dr. Paul Hartmann, JOANNEUM RESEARCH and Graz University of Technology, Austria
13:30-13:50	Title: Photoactive Molecular Switches for Logics Dr. Michael W. Tausch, University of Wuppertal, Germany
13:50-14:10	Title: Structural and Electronic Properties of Graphene on Vicinal Iridium Surface Dr. Vesna Miksic Tront, Institute of Physics, Croatia
14:10-14:30	Title: Theoretical Study on Catalysis and Sensing of Carbon-based Materials Dr. Jyh-Chiang Jiang, National Taiwan University of Science and Technology, Taiwan
14:30-14:50	Title: Let's Shift the Paradigm of Materials Research from Traditional Hard Work to Smart Game of Nano, Combinatorial, and Informatics Technology Hybrid Dr. Hideomi Koinuma, Tokyo Institute of Technology; National Institute for Materials Science, Japan
14:50-15:10	Coffee Break
15:10-15:30	Title: Challenges for Freeform Microoptics and the European Pilot Line "Phabulous" Dr. Paul Hartmann, JOANNEUM RESEARCH and Graz University of Technology, Austria
15:30-15:50	Title: 3D Printing of Optics Dr. Andreas Heinrich, Aalen University, Germany (Online)
15:50-16:10	Title: The BIM standardization for Lightings and Solar concentrators Dr. Meeryoung Cho, Korea Photonics Research Institute, Republic of Korea
16:10-16:30	Title: Photophysical Study of New Heterocyclic Molecular Materials Presenting TADF and Solid-state Luminescence for OLEDs Devices Applications Dr. Antonio Maggiore, CNR-NANOTEC-Institute of Nanotechnology, Italy

Session 6-3: Polymer Materials

Chair	Dr. Miroslav Raudenský, Brno University of Technology, Czech Republic
Co-Chair	Dr. Daniel Grande, CNRS-UPEC, France
13:30-13:50	Title: Optimizing Chain Topology of Bottle Brush Copolymer for Promoting the Order-Disorder Transition Dr. June Huh, Korea University, Korea
13:50-14:10	Title: Coupling Functionality and Porosity in Macromolecular Materials Dr. Daniel Grande, CNRS-UPEC, France
14:10-14:30	Title: Limits and Use of Polymeric Hollow Fibers as Material for Heat Transfer

	Surfaces Dr. Miroslav Raudenský, Brno University of Technology, Czech Republic
14:30-14:50	Title: Estimating Glass Transition Temperature and Related Dynamics of Molecular Glass Formers Combining Artificial Neural Networks and Disordered Systems Theory Dr. Gustavo A. Schwartz, Materials Physics Center, Spain
14:50-15:10	Coffee Break
15:10-15:30	Title: The Copoly (Urethane-imide) Heat Resistant Thermoplastic Elastomers Dr. A. L. Didenko, Russian Academy of Sciences, Russia
15:30-15:50	Title: Polymetallaynes: Multifunctional Materials with Emerging Applications Dr. Wai-yeung Wong, Hong Kong Polytechnic University, Hong Kong, China
15:50-16:10	Title: Photoinduced Generation of Highly Reflective Metallic Layers and Metal/Polymer Nanocomposites Dr. Lavinia Balan, University of Orleans, France
16:10-16:30	Title: Dynamics in Poly (Methyl Methacrylate) Thin Film Elucidated by Neutron and Optical Techniques Dr. Hiroyuki Aoki, Japan Atomic Energy Agency; High Energy Accelerator Research Organization, Japan (Online)

Session 3-5: Magnetic and Multiferroic Materials

Chair	Dr. Jon Gutiérrez, University of the Basque Country, Spain
13:30-13:50	Title: Advances in Magnetoelastic Resonance Based Sensors for Chemical and Biological Detection Purposes Dr. Jon Gutiérrez, University of the Basque Country, Spain
13:50-14:10	Title: 2D Layer-by-layer Growth of Ultra-thin Magnetic and High Spin-orbit Coupled Film Dr. Shwetha G. Bhat, Indian Institute of Science, India (Online)
14:10-14:30	Title: Magnetorheological and Inductive Elastomers Mr. Dino Šimić, German Institute of Rubber Technology, Germany
14:30-14:50	Title: Tuning Isolated Zero-Field Skyrmions and Spin Spirals at Room-Temperature in Synthetic Ferrimagnetic Multilayers Dr. Fanny Béron, University of Campinas, Brazil
14:50-15:10	Coffee Break
Chair	Dr. Jon Gutiérrez, University of the Basque Country, Spain

Session 6-4: Composites Materials

Chair	Dr. Emmanuel Beyou, University of Lyon, France
15:10-15:30	Title: Novel Nanocomposite Coatings Based on Ordered Mesoporous Silica Structures Dr. Magdalena Laskowska, Institute of Nuclear Physics Polish Academy of Sciences, Poland
15:30-15:50	Title: Highly Durable Antiviral/Antibacterial Nanocomposite Inorganic Coatings and

	Their Industrial Applications on Various Substrates Dr. Gulsen Celiker, Innovcoat Nanocoatings and Surface Technologies Inc., Turkey
15:50-16:10	Title: Graphene Oxide Based Hybrid Materials: Synthesis and Properties Dr. Emmanuel Beyou, University of Lyon, France
16:10-16:30	Title: The Importance of Plastics Ageing in Determining Product Life Span Dr. Nazli Gulsine Ozdemir, Sartorius Stedim Biotech, UK

Nano Forum 3

Chair	Dr. David Lishan, Principal Scientist, Plasma-Therm LLC, USA
13:30-13:50	Title: Geometric Tuning of Stress in Micromechanical Strings Dr. Menno Poot, Professor, Technical University of Munich, Germany
13:50-14:10	Title: Fast Atomic Sequential Technology: Bridging ALD and PECVD for Higher Deposition Rates and Conformality Dr. David Lishan, Principal Scientist, Plasma-Therm LLC, USA
14:10-14:30	Title: Janus Emulsions: Preparation, Characterization, Stimulation and Application Dr. Joachim Koetz, Professor, University of Potsdam, Germany
14:30-14:50	Title: Characterization of Epitaxial Nanostructures Using High-resolution X-ray Diffraction Edge Scans Dr. Jarosław Serafińczuk, Professor, Department of Nanometrology, Wrocław University of Science and Technology, Poland; Senior Scientist, Lukasiewicz Research Network – PORT, Poland
14:50-15:10	Coffee Break
15:10-15:30	Title: Nanoscale Characterization of Advanced Gate Dielectric Materials for Reliability and Failure Analysis Dr. Shubhakar Kalya, Lecturer, Science and Math Cluster, Engineering Product Development (EPD) Pillar, Singapore University of Technology and design (SUTD), Singapore (Online)
15:30-15:50	Title: Trends in Testing and Process Control of Nanotubes, Nanowires and Nanofilms Mr. Marcus Klein, Managing Director, SURAGUS GmbH, Germany (Online)

Day 3: July 24, 2022 (Sunday), Morning

Session 3-4: Thin Films and Devices

Chair	Dr. Alicja K. Krella, Institute of Fluid-Flow Machinery Polish Academy of Science, Poland
9:00-9:20	Title: Development of an AM Process for the Production of a Functionally Graded Structure Using the in-situ Alloying Process Dr. Siegfried Arneitz, Graz University of Technology, Austria
9:20-9:40	Title: Fluorescence Modulation in Solutions and Polymeric Films by Photochromic Switching Dr. Evgeni M. Glebov, V.V. Voevodsky Institute of Chemical Kinetics and Combustion, Russia (Online)

9:40-10:00	Title: Local Phenomena Studies in Bismuth Ferrite Performed at ISOLDE-CERN Dr. Juliana Schell, Switzerland & Institute for Materials Science and Center for Nanointegration Duisburg-Essen (CENIDE), Germany
10:00-10:20	Title: Fabrication and Evaluation of Electroplated Diamond Milling Tools Strengthened with Cr-C deposit Dr. Ching-An Huang, Chang Gung University, Taiwan
10:20-10:40	Coffee Break
10:40-11:25	Title: The Degradation of PVD Coatings Dr. Alicja K. Krella, Institute of Fluid-Flow Machinery Polish Academy of Science, Poland

Session 4-1: Semiconductor Materials and Silicon Photonics

Chair	Dr. Ricardo Ron-Angevin, University of Malaga, Spain
9:00-9:20	Title: 2D SiGe Layer for Strain Engineering Dr. Luc Favre, Aix Marseille University, France
9:20-9:40	Title: One-step Fabrication of (3+1)D Integrated Waveguides for Photonic Applications Dr. Johnny Moughames, FEMTO/ST-University of Bourgogne Franche-Comte, France
9:40-10:00	Title: Brain-computer Interface for Communication and Control Purpose Dr. Ricardo Ron-Angevin, University of Malaga, Spain
10:00-10:20	Title: EMULSION-a Platform for Rapid Development of Mobile IoT Systems and Roll-Out of IoT Services Dr. Ivan Ganchev, University of Limerick, Ireland; University of Plovdiv "Paisii Hilendarski", Bulgaria (Online)
10:20-10:40	Coffee Break
10:40-11:00	Title: Integrated Photonics for Future 5G Networks Dr. Amin Malek Mohammadi, California State University, USA (Online)

Session 5-1: Materials and Technologies for Environment and Energy Conversion, Storage

Chair	Dr. Ewa Mijowska, West Pomeranian University of Technology, Poland
9:00-9:20	Title: Waste Biomass as a Source of Highly Valuable Carbon Materials for Supercapacitors Dr. Ewa Mijowska, West Pomeranian University of Technology, Poland
9:20-9:40	Title: Electrochemical Coal Hydration and Reformation Mr. Friedrich Kröner, Austria
9:40-10:00	Title: Polymer Electrolytes, the Key to High Energy Li ^o Batteries Dr. Michel Armand, CIC energiGUNE, Alava Technology Park, Spain
10:00-10:20	Title: Innovative Polymer Electrolyte Approaches Towards Next Generation Solid State Lithium Metal Batteries Dr. Maria Martinez Ibañez, CIC energiGUNE, Alava Technology Park, Spain
10:20-10:40	Coffee Break

10:40-11:00	Title: Ashes- the Golden Treasure of Fossil Fuel and Incineration Plants Residues Dr. Haim Cohen, Ariel University, Israel
11:00-11:20	Title: Sustainable Silica Sols from Geothermal Sources and Their Potential as Heat Storage Materials Dr. Ahsen Senturk, University of Chester, UK
11:20-12:05	Title: Use of Recyclable Potting Material Vermiculite for Adsorption Based Thermal Energy Storage Applications Dr. F. Handan Tezel, University of Ottawa, Canada

Day 3: July 24, 2022 (Sunday), Afternoon

Session 6-1: Advanced Metals and Alloys

Chair	Dr. Christof Sommitsch, Graz University of Technology, Austria
Co-Chair	Dr. Patrice Berthod, University of Lorraine, France
13:30-13:50	Title: Structure-properties Relationship of Lean Medium Mn Q&P Steels with Varying C-content Dr. Christof Sommitsch, Graz University of Technology, Austria
13:50-14:10	Title: Strengthening of Cast CoNiFeMnCr High Entropy Alloys for Use at High Temperature by Promoting the Formation of MC Carbides Dr. Patrice Berthod, University of Lorraine, France
14:10-14:30	Title: Minor Metals, A look at Indium and Ga Markets Ms. Donna Vereha-Walsh, Indium Corporation, USA
14:30-14:50	Title: Towards Efficient AM Production of Ceramics, Metals and Metal-ceramic Composites in Two-step AM Processes via FE-based Process Optimization Mr. Joachim Vogt, Fraunhofer ISC, Germany
14:50-15:10	<i>Coffee Break</i>

Session 6-2: Advanced Ceramic and Glass

Chair	Dr. Galina Lasko, Institute for Materials Testing, Materials Science and Strength of Materials (IMWF), Germany
15:10-15:30	Title: FEM-analysis of Fracture Behaviour of ZrO ₂ -ceramics Dr. Galina Lasko, Institute for Materials Testing, Materials Science and Strength of Materials (IMWF), Germany
15:30-15:50	Title: Ionic Conductivity across the Glass Transition in AgI-based Superionic Conducting Glasses: Nonlinear Coupling between Charge Carrier Concentration and Mobility Dr. Masahiro Ikeda, National Institute of Technology, Oita College, Japan (Online)
15:50-16:10	Title: Stereolithographic Additive Manufacturing of Practical Components with Multi-Dimensional Geometries Dr. Soshu Kirihara, Osaka University, Japan (Online)

Session 2-1: Biomaterials for Tissue Engineering, Drug Delivery and Medical Imaging

Chair	Dr. Vesna Lazic, University of Belgrade, Serbia
Co-Chair	Dr. Anca-Dana Bendrea, Petru Poni Institute of Macromolecular Chemistry, Romania
13:30-13:50	Title: Biologically Inspired Structures for Multispectral Imaging Dr. Hrvoje Skenderović, Institute of Physics, Croatia
13:50-14:10	Title: Conjugated Electroactive Polymers as Advanced Materials for Tissue Engineering: The "Hairy-Rod" Architecture as an Emerging Alternative Dr. Anca-Dana Bendrea, Petru Poni Institute of Macromolecular Chemistry, Romania
14:10-14:30	Title: Antibacterial Metal Fibers and Metal Nanoparticles Dr. Iva Rezić, University of Zagreb, Croatia
14:30-14:50	Title: Toxicity of Ag NPs Synthesized with Olive Leaf Extract or Oleuropein Dr. Vesna Lazic, University of Belgrade, Serbia
14:50-15:10	Coffee Break
15:10-15:30	Title: Precipitation of Bioactive Ingredients from Extracted Curcuma Longa Linn. via Gas Anti-Solvent Technique Using Box–Behnken Design of Experiments Dr. Manop Charoenchaitrakool, Kasetsart University, Thailand
15:30-15:50	Title: Development of Formulations Containing Ginger Extract Intended for Topical Infection Dr. Mont Kumpugdee-Vollrath, University of Applied Sciences(BeuthHS), Germany
15:50-16:10	Title: ROS Triggered Release System for Imaging and Activated Therapy Dr. Tao Yi, Donghua University, China (Online)
16:10-16:30	Title: Loading Essential Oils onto Fibrous Mats for MS2 Bacteriophage, a Surrogate of SARS-CoV-2, Elimination for Prospective Face Mask Uses Dr. Helena Felgueiras, University of Minho, Portugal (Online)
16:30-16:50	Title: Electronics for Healthcare and Neuroscience Dr. Srinjoy Mitra, University of Edinburgh, UK (Online)

Young Scientists Forum

Chair	Ms. Daria Jardas, University of Rijeka, Croatia
13:30-13:50	Title: Multichannel Polarization Optical Fiber Sensors in Wavelength-division Multiplexing Technology Mr. Zdeněk Vyležich, University of Defence, The Czech Republic
13:50-14:10	Title: Synthesis of Advanced Metal-Oxide Thin Films by Plasma Enhanced Atomic Layer Deposition for Photocatalytic Application in Environmental Science Ms. Daria Jardas, University of Rijeka, Croatia
14:10-14:30	Title: The influence of Nb on the crystallization process and magnetic properties in the Fe-Co-Cu-B system Mr. Tymon Warski, Institute of Non-Ferrous Metals, Poland
14:30-14:50	Title: Modelling and Simulation of Diffusion Driven Pore Formation in Metals During Creep Mr. Felix Meixner, Graz University of Technology, Austria
14:50-15:10	Coffee Break
15:10-15:30	Title: Strain-Detecting Properties of Strain-hardening Cement Composite (SHCC)

	Sensors Embedded at The Compressive Stress Zone of SFRC Notched Beams in Flexure Ms. Qi Wang, Chungnam National University, Korea (Online)
15:30-15:50	Title: Time Series Analysis and Human Health Effect of Air Pollution in the Most Polluted Regions in Romania Dr. Bodor Katalin, University of Pécs, Hungary (Online)
15:50-16:10	Title: BST/polymer Composites Obtained with the Use of Acrylic Polymeric Binders Ms. Weronika Bulejak, Warsaw University of Technology, Poland (Online)
