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CONFERENCE AGENDA

International Conference on
Bioactive, Organic and Inorganic Advanced
Materials and Clean Technologies

24-28 March 2025, Sofia



BiOrgaMCT



Day 1 | [24 March 2025] Grand Hotel Sofia

8:30 - 9:00	Conference Registration		
9:00 - 10:15	Opening and Keynote [Grand Hotel Sofia, Sofia Hall]		
Speaker	Olivier Siri , Director of Research (CNRS) Aix-Marseille University <i>Modified Indulines: From Dyestuffs to Theranostic Agents</i>		
10:15 - 10:30	Coffee break		
10:30 - 12:00	First Session		
Topic	Light-Responsive Materials [Serdika hall]	New generation materials [Sofia hall]	Biologically active molecules [Triaditsa 1 hall]
Chairperson	Anton Georgiev	Plamen Petkov	Dancho Danalev
Speakers	<p>Stefano Crespi <i>Mechanistic Investigation of the Isomerization of New (and Old) Photoswitches</i></p> <p>Jake Greenfield <i>Photoswitchable Imines: Figuring out the rules</i></p> <p>Stefano Oscurato <i>Holographic vectorial morphing of azomaterial surfaces</i></p> <p>Lian Nedelchev <i>Azo dyes for polarization recording: Comparative analysis of the photoinduced anisotropy in thin films containing various azo dyes and polymer matrices</i></p>	<p>Cyril Popov <i>Fluorescent Detection of Protein Immobilization on Ultrananocrystalline Diamond Surfaces</i></p> <p>Luís Cadillon Costa <i>Microwave radiation: applications in metrology and materials synthesis</i></p> <p>Manuel Graça <i>Modification of 45S5 Bioglass: Tailoring Antioxidant and Pro-Oxidant Properties through Ion Incorporation</i></p> <p>Ruzha Harizanova <i>Barium Titanate-Based Glass-Ceramics Crystallized from Multicomponent Oxide Glasses: Phase Composition and Microstructure</i></p>	<p>Yoana Stoyanova <i>Influence on the concentration of the bioactive compounds of waste lavender extract through membrane separation and crystallization</i></p> <p>Denitsa Yancheva <i>Cu and Pt complexes of 1H-benzimidazole-2-yl hydrazones: synthesis, structural insight and cytotoxicity</i></p> <p>Margarita Apostolova <i>Bioactive Stent for Atherosclerosis Therapy and Enhanced Vascular Healing</i></p> <p>Alberto López Grande <i>Structural insights into polyphosphate glasses in the K₂O-Na₂O-CaO-MgO-P₂O₅ system: spectroscopic analysis and thermodynamic modelling</i></p>
12:00 - 13:00	Lunch break		



13:00 - 14:30	Second session		
Topic	Light-Responsive Materials [Serdika hall]	New generation materials [Sofia hall]	Biologically active molecules [Triaditsa 1 hall]
Chairperson	Stefano Crespi	Martin Bozhinov	Jana Tchekalarova
Speakers	<p>Sylvain Achelle <i>The effect of proton on the photophysical properties of pyrimidine chromophores</i></p> <p>Julien Massue <i>Excited-State Intramolecular Proton Transfer (ESIPT): A Versatile and Modular Process</i></p> <p>Biagio Audia <i>Vectorial holography by multiwavelength optical patterns: an unconventional approach for complex structuring of light-responsive materials</i></p> <p>Owen Kearney <i>Water-resistant optical structures with controlled physical and chemical surface properties, for bacteria detection.</i></p>	<p>Bárbara Costa <i>Multifunctional Fe₃O₄ MNPs: A comparison between co-precipitation and hydrothermal synthesis</i></p> <p>Francisco Muñoz <i>Processing and structure influence on the properties of Nd-doped phosphate laser glasses</i></p> <p>Doris Möncke <i>Effect of Chemical Composition and Modifier ions on Dissolution Rates of Silicate, Phosphate and Borate glasses</i></p> <p>Neda Neykova <i>The Role of the Hole Transport Layer in Perovskite Solar Cells: Simulation and Experimentation Perspectives</i></p>	<p>Kameliya Anichina <i>Benzimidazole derivatives as multifunctional agents: synthesis and evaluation of antioxidant and photoprotective activity</i></p> <p>Dancho Danalev <i>Synthesis and biological studies on bioactive peptides with opioide and anti-inflammatory activity</i></p> <p>Chavdar Chilev <i>Kinetic process modeling for extraction of biologically active substances from plant raw materials</i></p> <p>Ljubica Mihailova <i>Exploring the Anticonvulsant Potential of CBD oil and CBDA-rich extract: A Path Toward the Brain</i></p>
14:30 - 15:00	Coffee break and Poster Presentations		



Day 2 | [25 March 2025] Grand Hotel Sofia

9:30 - 10:10	Keynote [Grand Hotel Sofia, Sofia hall]		
Speaker	Stéphane Gérard , Université de Reims Champagne-Ardenne <i>Hybrid molecules as strategy for the design of new anti-inflammatory agents</i>		
10:10 - 10:30	Coffee break		
10:30 - 12:00	Third Session		
Topic	Light-Responsive Materials [Serdika hall]	New generation materials [Sofia hall]	Biologically active molecules [Triaditsa 1 hall]
Chairperson	Luciano de Sio	Andriana Surleva	Stela Georgieva
Speakers	<p>Luciano De Sio <i>Polarization-insensitive Chiral Liquid Crystal Reflectors via Thermo-responsive Optical Metastructures</i></p> <p>Francesca Petronella <i>Gold Nanorods based platforms for precise detection of pathogens and biomolecules</i></p> <p>Kosuke Nakashima <i>The synthesis and photoluminescence properties of spiro oxindole</i></p> <p>Anton Georgiev <i>Visible Light Switching of ortho-Functionalized Azo Phthalimides with Tunable Z-Isomer Stability</i></p>	<p>Dimitar Nedanovski <i>Nonlinear optimization and sensitivity analysis for continuous approximation of true boiling point data for crude oils</i></p> <p>Nina Penkova <i>Multiphysics simulation for efficient and reliable systems for low temperature plasma treatment of metals</i></p> <p>Svetoslav Nenov <i>A refinement of the crossover selection in the differential evolution method</i></p> <p>Leandro Gonzalez Rovira <i>Electrochemical impedance spectroscopy (EIS) to study the corrosion resistance of anodized aluminium alloys</i></p>	<p>Blagovesta Popova <i>Design of innovative peptide therapeutics for targeting α-synuclein aggregation</i></p> <p>Elliott J. Price <i>EIRENE-CZ mass spectrometry resources supporting human exposome research</i></p> <p>Ognen Pop-Georgievski <i>Bioactive non-fouling polymer brushes: From design parameters to medical applications</i></p>
12:00 - 13:00	Lunch break		



13:00 - 14:30	Fourth Session		
Topic	Light-Responsive Materials [Serdika hall]	New generation materials [Sofia hall]	Biologically active molecules [Triaditsa 1 hall]
Chairperson	Sylvain Achelle	Ruzha Harizanova	Petar Todorov
Speakers	<p>Atanas Kurutos <i>Emerging colorimetric and fluorimetric smart materials</i></p> <p>Lucia Ivanová <i>Light-harvesting Flavin Derivatives for Hydrogen Evolution Reaction</i></p> <p>Marcella Salvatore <i>Programmable Microtexturing of Surfaces through Polarization-Controlled Azopolymer Structuring</i></p> <p>Francesco Reda <i>Azopolymer surface reliefs gratings: fabrication & diffraction properties</i></p>	<p>Andriana Surleva <i>Chemical analysis of new materials - problems and some solutions</i></p> <p>Petrica Vizureanu <i>Characterization of Novel Ti-Mo-Nb-Sn Alloys in Biomedical Engineering</i></p> <p>Andrei Victor Sandu <i>Properties and Applications of New Ti-Mo-Zr-Ta Alloys for Orthopedic implants</i></p> <p>Dimka Fachikova <i>Preparation and characterization of calcium-containing phosphate conversion coatings for biomedical applications</i></p>	<p>Jana Tchekalarova <i>Anticonvulsant profile of three hemorphin-4 analogues with rhodamine B in mice</i></p> <p>Stela Georgieva <i>Chemical behavior and Bioactive Properties of Hemorphin-4 Conjugating to N-[4-(2-phenyldiazenyl)phenyl]glycine and its sensor activity towards metal ions</i></p> <p>Boryana Borisova <i>Design and synthesis of novel FELL analogs containing Tyr in the first position instead of Phe</i></p> <p>Dilyana Dimitrova <i>Effect Of Modification of Temporin A With Fluorinated Phenylalanine on Antibacterial Activity</i></p>
14:30 - 15:00	Coffee Break and Poster Presentations		



Day 3 | [26 March 2025] Grand Hotel Sofia

9:30 - 10:10	Keynote [Grand Hotel Sofia, Sofia hall]	
Speaker	Christian Rüssel , Jena University <i>New Aluminosilicate Glasses for High Power Lasers: Luminescence and Thermomechanical Properties</i>	
10:10 - 10:30	Coffee break	
10:30 - 12:00	Fifth Session (Flash Poster session)	
Topic	Light-Responsive Materials [Serdika hall]	New generation materials [Sofia hall]
Chairperson	Atanas Kurutos	Christian Girginov
Speakers	<p>Martin Vala <i>Investigating Ion Exchange in Organic Bioelectronic Devices Using Selective Fluorescence Detection</i></p> <p>Rayna Bryaskova <i>Fluorescent Benzimidazole-Hydrazone-Loaded Micelles: A New Tool for Detection and Cancer Treatment</i></p> <p>Jan Truksa <i>The influence of water on flavin-derivative spectroscopy</i></p> <p>Nikolay Georgiev <i>Aminotriazole containing 1,8-naphthalimides as a platform for AND molecular logic gate and cancer diagnostic tool</i></p> <p>Rastislav Smolka <i>Tuning Fluorescence in Stilbene-Based Materials: Host-Guest Systems and Energy Transfer for Enhanced Solid-State and Bioimaging Applications</i></p>	<p>Hristo Georgiev <i>Bioactive glass-ceramics in the CaO-SiO₂-P₂O₅ system containing high-temperature polymorphs of dicalcium silicate</i></p> <p>Daniela Angelova <i>Application of biosorbent for treatment of reactive dye wastewater</i></p> <p>Tina Tasheva <i>Study on preparation of glass-ceramic and dense ceramic biomaterials on the base of hydroxyapatite</i></p> <p>Nadezhda Kazakova <i>Construction of inorganic and hybrid biosorbents for water purification</i></p> <p>Nona Shivacheva <i>Surface treatment of steel surfaces in a three-component phosphating solution before organic coatings applying</i></p> <p>Tina Tasheva <i>Synthesis, Structure and Dielectric Properties of Glasses in the TeO₂-V₂O₅- Bi₂O₃ System</i></p> <p>Dimitar Dimitrov <i>Preparation of coatings by dispersing graphene oxide, reduced graphene oxide and zinc titanate in bisphenol-a</i></p> <p>Zdravka Djumalieva <i>Formation and characterization of non-chromate conversion coatings on aluminum alloy EN AW 5754</i></p> <p>Sergei Kusturov <i>Corrosion Behavior of a High Nitrogen Austenitic Stainless Steel in Aqueous Solutions of Citric and Oxalic Acids</i></p>



12:00 - 13:00	Lunch break
13:00 - 14:00	Sixth Session (Flash Poster Session)
Topic	Light-Responsive Materials [Serdika hall]
Chairperson	Rastislav Smolka
Speakers	Jiarong Wu <i>Photoswitchable Imines Drive Dynamic Covalent Systems to Nonequilibrium Steady States</i> Polya Miladinova <i>Synthesis and application of some bis(dichlorotriazine) reactive dyes</i> Ventsislav Bakov <i>Synthesis and study of 1,8-naphthalimide AIEgens designed for the detection of acids and bases in the vapor phase</i> Vladislava Ivanova <i>Study of optical anisotropy in composite structures based on azo polymer PAZO and GeTe₄-In chalcogenide system, prepared by different methods</i> Silvia Angelova <i>Molecular insights into molecular level interactions and aggregation behavior of an azobenzene-functionalized polymer</i> Jordanka Trifonova <i>Synthesis, analysis and some optical application of new chalcogenides from the Ge-Te-Cu system</i> Desislava Marinova <i>Photochromic Properties of Novel Spiroindolines</i> Anton Georgiev <i>Closing remarks and conclusions</i>



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Bioactive Organic and inorganic
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Poster Sessions 24 and 25 March (On screen during coffee breaks, 14:30 – 15:00)

Tsvetomila Lazarova-Kyuleva

Synthesis and characterization of High-entropy spinel oxides

Daniela Atanasova

Effect of the cotton fabric modification with composite film on antimicrobial properties and release kinetics of biologically active substance

Desislava Staneva

The influence of the light and the type of 1,8-naphthalimide chromophore linked to peptide on antimicrobial properties of cotton fabric

Georgi Chernev

Low-temperature synthesis, structural properties and applications of self-healing materials

Peter Iliev

Utilization of zinc ferrite residue for the production of metals with multifunctional applications

Irena Mihailova

Bioactive glass-ceramics in the CaO-SiO₂-P₂O₅ system containing high-temperature polymorphs of dicalcium silicate

Stanislav Slavov

Bismuth-titanium-silicate-oxide glass ceramics for various dielectric applications

Janna Mateeva

Study of the influence of the partial replacement of feldspar in dental transparent glaze with hydroxyapatite on the phase composition and microstructure of the obtained material

Dimitar Dontchev

*Transmissibility of rubbers by cyclic disturbances (LINEAR CASE) part 1
Transmissibility of rubbers by cyclic disturbances (NONLINEAR CASE) part 2*

Lyubomir Tashkov

Thermal Properties of Unfired Bricks with Additives from Agricultural Materials for Energy-Efficient Construction

Nina Penkova

Electrical model of a chamber for low-temperature plasma processing of metal products

Vanya Lilova

Comparative study of the bulk and foil zinc anodic behavior kinetics in oxalic acid aqueous solutions

Vesislava Toteva

Preparation of a carbon bifunctional catalyst for biofuel synthesis

Petar Todorov

Synthesis and study of some physicochemical characteristics of new Rhodamine B-conjugated Hemorphin analogs

Stanislava Vladimirova

New pyrrole hydrazones as potential anti-cancer agents



Poster Sessions 24 and 25 March (On screen during coffee breaks, 14:30 – 15:00)

Temenuzhka Radoykova

Study of chemical behaviour of novel benzylidenemalononitriles with incorporated nitrogen-containing heterocyclic fragments using molecular absorption and fluorescence spectrometry

Meglina Kandinska-Vasileva

Mono- and Polycationic p-Substituted Benzaldehydes as Intermediates for Cyanine Dyes and Fluorogenic Biocompatible Polymer Materials Based on PVA Scaffold

Ivan Iliev

Photodynamic Inactivation of Human Herpes Virus with Ga(III) and Zn(II) Phthalocyanines

Emilia Naydenova

Design, Synthesis and Anticancer Evaluation of new Analogues of Aurein 1.2 Containing Unnatural Amino

Nikolay Lumov

Synthesis, spectroscopic and in vitro studies of triazinobenzeimidazole derivatives

Rossitsa Hristova

Novel pyrrole-based hydrazones induce apoptosis and S-phase cell cycle arrest in human SH-4 melanoma cells

Veronika Karadjova

Synthesis and characterization new complexes on Zn(II) - peptide ligand BIM25053

Maria Elena Stancheva

A high-throughput in vitro assay for preparation of atherosclerotic plaque using magnetic 3D bioprinting

Tanya Dimitrova

Quantitative-based cytoskeleton segmentation for accurate measurement of cytoskeleton density in 3D model of atherosclerotic plaque

Diana Kichukova

Synthesis and characterization of bioactive composites and their impact on cancer cells

Maya Guncheva

Modulation of Matrix Metalloproteinases-2 and -9 in Betulinic Acid Organic Salt-Treated MDA-MB-231 Cells

Boryana Yakimova

The health benefits of milk bioactive peptides and their possible involvement in treatment of hypertension

Veronika Farková

Synergy between fatty acids and photosensitive components in colostrum

Darina Zheleva

Methods of modification of wool fabrics with TiO₂ for application in shoe lining

Boris Martinov

Stabilization of AU NPS and RGO/AU NPS nanocomposites for application in biomedicine

Boris Martinov

Structural characterization, cytotoxicity and antitumor activity of one step synthesized RGO-AuNPs nanocomposites

Aleksey Vasilev

Fluorogenic Biocompatible Polymer Materials Based on PVA Scaffold for Nucleic acids Visualization



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