

4th International Conference on **Advanced Functional Materials**

Day-1 : November 16, 2023

Meeting Hall: RIPA/TRASTEVERE

08:00 - 08:45 Registrations

08:45 - 09:00 Introduction

Keynote Presentations

09:00 - 09:40 First-Principles Molecular Dynamics and its Application to Amorphous Materials
Carlo Massobrio, Université de Strasbourg, France

09:40 - 10:20 Bio-Based Biodegradable Polymers as a Tool to Connect Advanced Applications with Sustainable Development
Paola Fabbri, University of Bologna, Italy

Oral Presentations

Session Chair: **Walter Raniero**, LNL-INFN Legnaro, Italy

Session Chair: **Kadem Al-Lamee**, Arterius Limited, United Kingdom

Sessions:

Fundamental materials science | Advanced Functional Materials | Polymeric materials | Functional Nanomaterials and Nanotechnology | Functional Materials for Energy | Harvesting, storage, Solar Fuels and Renewable Energy | Functional Nanomaterials and Nanotechnology | Micro or Nano Materials | Advanced materials and Applications | Functional Materials | Synthesis and Characterizations | Biopolymers and Polymers | Biomaterials | Applications of Biomaterials | Wearable and Mobile Devices

10.20 - 10.45 Contact/Junction on HPGe Gamma Ray Detector
Walter Raniero, LNL-INFN Legnaro, Italy

Network & Refreshments (10.45 - 11.15) @ LOBBY BAR

Group Photo (11.15 - 11.45)

11.45 - 12.10 Who Degraded Polypropylene ?
Justin Bulten MSC, University of Groningen, Netherlands

12.10 - 12.35 Multifunctionality of Novel Glycerin Compounds and Their Application as Biomaterials
Gotaro Shiota, Mediplus Pharma Inc, Japan

12.35 - 13.00 Retained Surgical Item (Gossypiboma): A Case Report and Literature Review
Hallah S. Alghamdi, Ministry of Health, Saudi Arabia

Lunch (13.00 - 14.00) @ RISTORANTE

14.00 - 14.25 Maple-Synthesized Antimicrobial Thin Films from Bioglasses Combined with Antibiotics
Irina Ungureanu (Negut), National Institute for Lasers, Plasma and Radiation Physics Magurele, Romania

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14.25 - 14.50	Electrohydrodynamic Fabrication of Core-Shell Microparticles for Controlled-Release in Biomedical and Food Science Applications Richard Mu , Tennessee State University, USA
14.50 - 15.15	The Impact and Therapeutic Potential of Antimicrobial Textiles Cláudia S. Oliveira , Catholic University of Portugal, Portugal
15.15 - 15.40	Synthesis of Multi-Metallic Nanoparticles using a Dendrimer Reactor Kimihisa Yamamoto , Tokyo Institute of Technology, Japan
15.40 - 16.05	Coating of HMX Particles by NTO to Formulate Nano-Core-Shell Particles by Spray Flash Evaporation (SFE). Maxime Blanchon , Commissariat à l'Energie Atomique et aux Energies Alternatives, France
Network & Refreshments (16.05 - 16.30) @ LOBBY BAR	
16.30 - 16.55	Efficiency of PV Modules as a Driving Force of Innovation in Photovoltaics Vítězslav Benda , Czech Technical University in Prague, Czech Republic
16.55 - 17.20	Engineered Extracellular Vesicles (EVs) as Functional Nanotechnological Platform for Biomedical Applications Francesca Susa , Politecnico di Torino, Italy
17.20 - 17.45	Incorporation of Methylene Blue into Mesoporous Silica Nanoparticles for Singlet Oxygen Generation Belen Albela , Ecole Normale Supérieure de Lyon, France
17.45 - 18.10	Super-Hydrophobic Micro-Nano Patterned Materials for Multiple Imaging and Light Enhanced Spectroscopy of Lipidic Membrane and Ions Channels Tania Limongi , Politecnico di Torino, Italy
18.10 - 18.35	Development of a Thermosensitive Polyoxometalate Hybrid for Temperature Imaging in Hyperthermia Treatment José Silveiras , University of Aveiro, Portugal
18.35 - 19.00	Impact of Lactic Acid Concentration on the Corrosion Behavior of 316L Stainless Steel in Salivary Environments Iulian Bounegru , "The Lower Danube" University, Romania
19.00 - 19.25	Some properties of the Markov Chains of the Markov Models of Molecular Processes Orchidea Maria Lecian , Sapienza University of Rome, Italy
Day-1 Concludes followed by Awards Ceremony	

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Day-2 : November 17, 2023

Meeting Hall: RIPA/TRASTEVEVE

Keynote Presentation

09:00 - 09:40	Buckling Structures, A Relevant Signature of the Mechanical Properties of Film/ Substrate Systems Christophe Coupeau , University of Poitiers, France
09:40 - 10:20	The Constructional Role of EPS Geofoam against Statical and Dynamic Loads Walid El Kamash , Suez Canal University, Egypt
10:20 - 11:00	Electrochemical Insights into the Corrosion Behavior of Pure Titanium Implants under Inflammatory Conditions Lidia Benea , "The Lower Danube" University, Romania

Network & Refreshments (11.00 - 11.30) @ LOBBY BAR

Oral Presentations

Session Chair: **Irina Ungureanu (Negut)**, National Institute for Lasers, Plasma and Radiation
Physics Magurele, Romania

Session Chair: **Kadem Al-Lamee**, Arterius Limited, United Kingdom

Sessions: Thin Films | Functional Materials| Advanced Functional Materials | Carbon
Based Materials | Functional Biomaterials| Functional Materials | Synthesis and
Characterizations | Functional Materials|Smart Materials | Advanced materials
and Applications | Functional materials for Energy Harvesting | Storage, Solar
Fuels and Renewable Energy| Advanced Functional Materials | Nanomedicine
& Nanobiotechnology | 3D Bio Printing Technology|Biomaterials in Drug
Delivery Systems| Biodegradable Biomaterials | Biofabrication | Biomaterials &
Nano technology | Bioprinting

11:30 - 11:55 Mechanochemistry in Johnson Matthey
Maria Elena Rivas, Johnson Matthey Technology Centre, United Kingdom

11:55 - 12:20 Performance of Potassium Bromate Active Electrolyte for Laser-Induced KBr-Graphene
Supercapacitor Electrodes
Nagih Mohammed Shaalan, King Faisal University, Saudi Arabia

12:20 - 12:45 Natural Deep Eutectic Solvent as Anti-Biofilm and Debriding Formulation in Wounds
Maria Belén Olivares, Universidad del Desarrollo, Chile

12:45 - 13:10 Heterostructured Liquid Metal-Semiconductor Oxide 3D Networks as New Approach to
Artificial Neural System
Serge Zhuikov, Ghent University Global Campus, South Korea

Lunch (13.10 - 14.00) @ RISTORANTE

14:00 - 14:25 Investigation of Thermodynamic Characteristics and Phase Transformations of Slurry in
Molding Of Beryllium Ceramics
Zamira Sattinova, L.N. Gumilyev Eurasian National University, Kazakhstan

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14:25 - 14:50	Phytochemicals Reducing/Capping Agent in Silver Nanoparticles Synthesis for Antibacterial Activity Improvement Were I.I. Munyendo , United States International University Africa, Kenya
14:50 - 15:15	Natural-Based Microsphere Formulations as Controlled Release Carriers in Biomedical Applications Isabel Sousa , University of Aveiro, Portugal
15:15 - 15:40	Assembly of Two Novels Microfibers-Hydrogel Composite Bio Platforms as a Lactate Delivery for Immediate and Sustained Release Samuele Colombi , Polytechnic University of Catalonia, Spain
15:40 - 16:05	A Review of Sarcopenia: Pathophysiology, Diagnosis, Treatment and Future Direction Suk-kyoon Song , Daegu Catholic University Medical Center, South Korea
16:05 - 16:30	The Potential of CO ₂ Saturated Chitosan Hydrogel as a Raw Material for Additive Manufacturing Technology Szymon Mania , Gdansk University of Technology, Poland
Network & Refreshments (16.30 - 17.00) @ LOBBY BAR	
17:00 - 17:25	Polyaniline Functionalized ZnO and ZnO-SiO ₂ Nanoparticles as Corrosion Protection Films on Carbon Steel in Acidic Sodium Chloride Solutions: Computational, and Electrochemical Studies Hany Mohamed Abd El-lateef Ahmed , King Faisal University, Saudi Arabia
17:25 - 17:50	A Novel Dual Drug- Coated Balloon Device for Vascular and Cardiovascular Applications Kadem Al-Lamee , Arterius Limited, United Kingdom
17:50 - 18:15	Synthesis and Characterisation of Lignin Modified Phenol Formaldehyde Resins Fatma Pinar Senkon , Selcuk University, Turkey
18:15 - 18:40	Enhanced Photoluminescence of InP@ZnS Quantum Dots Induced by the Increase (In(MA) _x)/(P(TMS) ₃) Ratio of Molecular Precursors Joel Díaz-Reyes , National Polytechnic Institute, México
Poster Presentations	
POSTER-01	Inhibition of Tumor Growth Using Mesenchymal Stem Cell-Derived Exosomes Loaded with KRAS siRNA and Surface-Modified with Tumor-Targeted Proapoptotic Peptide Byunghoon Lee , Kyungpook National University, South Korea
POSTER-02	Unconventional Agri-Glasses as Environmentally Friendly Fertilizers Magdalena Szumera , Agh University of Science and Technology, Poland
POSTER-03	Numerical Model of Micro-Galvanic Corrosion of Az31 Magnesium Alloy in a Physiological Environment Carmine Borgia , University of Calabria, Italy

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POSTER-04	Assessing the Impact of Raw Material Composition on Functional Fabrics for Heat and Flame Protective Clothing Ivana Schwarz , University of Zagreb, Croatia
POSTER-05	Shape Memory Polymers and Their Composites Fatma Pinar Senkon , Selcuk University, Turkey
POSTER-06	3D Temperature Imaging and Recording Using Polyoxometalate-Protein Hybrids Maria Carolina Lopes , University of Aveiro, Portugal
POSTER-07	Biological Properties of Chitosan-Agarose Composite as a Potential Bioink Component for 3D Printing Adrianna Banach-Kopeć , Gdansk University of Technology, Poland
POSTER-08	Preparation of Luminescent Nanofibers from Bioactive Glasses Containing Samarium Albekova Aiman , UCT Prague, Czech Republic
POSTER-09	Facile Hydrothermal Synthesis of Hierarchical NiO/ZnCo ₂ O ₄ Nanocomposite for High Energy Supercapacitor Applications Fayssal Ynineb , Research Center on Semiconductors Technology for Energetic, CRTSE, Algeria
POSTER-10	Preparation of PPA Based Composite Reinforcing with Glass Beads and Clays: Investigation of Sound Absorbing Busra Simsek , Selcuk University, Turkey
POSTER-11	Evaluating The Impact of Sustainable Mulching on Soil Temperature, Soil Moisture and Weed Control Ivana Schwarz , University of Zagreb, Croatia
POSTER-12	Post-Functionalization of Ether-Linked Polymers through the Ullmann Coupling Reaction: Synthesis and Characterization, and their Ability to Capture Carbondioxide (CO ₂) Gas Tareq Alshboul , Yarmouk University, Jordan
Video Presentation	
VP -01	A Discrete Model for the Analysis of Linear and Nonlinear Free Vibrations of Multi-Stepped Functionally Graded Beams. Nassima Ayoub , Hassan II University of Casablanca, Morocco
Day 2 Concludes followed by awards ceremony and Vote of thanks	

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Virtual Presentations

Day-1 November 16th ,2023 (GMT)

11:00-11:15 **Introduction**

Oral Presentations

11:15 -11:45 Advances and Perspectives in Nanomaterial Applications for Art Conservation

Shengdan Yang, Tsinghua University, China

11:45- 12:10 Fabrication and Characterization of Hydroxiapatite from Bio-resources

Aasma, NED University of Engineering and Technology Karachi, Pakistan

12:10- 12:35 Osteoconductivity Improvement of Apatite Cement Silica Composite- *in vivo*

Ira Artilia, Jenderal Achmad Yani University, Indonesia

12:35- 12:55 New Antiviral Metal and Ceramic Materials

Katja Molan, University of Ljubljana, Slovenia

12:55- 13:20 Decay of End loads in Biological Materials

Neta Blum, Faculty of Aerospace Engineering Technion, Israel

Lunch 13:20 - 13:50

13:50 - 14:15 Clinical Application and Interaction of a Cellular Composite Bone Adhesive in Relation with Canine Bone Healing and Immune System

Prarthana R, ICAR-Indian Veterinary Research Institute, India

14-15: 14:40 Microbiome and Colorectal Cancer Management

Saryia Javed, NHS Greater Glasgow and Clyde, UK

14:40 - 15:05 Bioenergy Experiment Proposal for Quantum Harmonic Oscillator Biosignature Power

Yang I. Pachankis, S for Science, USA

15:05 - 16:30 Chitosan-Based Hemostatic Agents Functionalized with Enhanced Antibacterial Activity

Julita Smietana, Cracow University of Technology, Poland

Poster Presentation

16:30 - 16:50 Properties and Safety of Novel Combination of Hyaluronic Acid with the Addition of liposomal lecithin

Agnieszka Jelonek, Biovico Sp. z o. o., Poland

16:50 - 17:10 3D Printed Auxetic Materials and Structures: Deformation Behavior and Energy Absorption Performance

Hytham Hassan, KU Leuven, Belgium

E-Poster Presentation

EP-01

Safety and Efficacy of Autologous Bone Marrow Clot as a Multifunctional Bio-Scaffold for Instrumental Posterior lumbar Fusion: A One-Year Follow-Up Pilot Study

Deyanira Contartese, Irccs - Istituto Ortopedico Rizzoli, Italy

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EP-02

Customized Cranial Prostheses Realized Through Incremental and Superplastic
Forming: an *in vivo* study

Maria Sartori, Irccs - Istituto Ortopedico Rizzoli, Italy

Day 1 Concludes