

# Scientific Program

## 4<sup>th</sup> International Conference on Biopolymers and Bioplastics

**Monday**  
**November 14, 2022**

### Meeting Hall: Torlonia

Day 1 - November 14, 2022

09:00 - 09:40 Registrations

09:40 - 10:00 Introduction

#### Keynote Presentations

10:00 - 10:40 **Decentral Hydrogen**  
**Paul Grunow**, Trinity Solarbeteiligungen GmbH, Germany

#### Group Photo (10:40-11:00)

11:00 - 11:40 **Paving the Way Towards Sustainable Energy Storage Systems**  
**Christina Toigo**, Christina Toigo Consulting, Germany

#### Oral Presentations

Sessions Energy Storage and Conservation | Nano Polymers | Biocomposite Materials | Sustainable Engineering and Energy Technologies | Geothermal Energy | Renewable Energy & Resources | Biopolymers | Biodegradable Polymers | Biopolymers : Sources, Production, Properties and Applications | Bioplastics applications | Bioplastics

Session Chair- **Jingxin Wang**, West Virginia University, USA

Co Chair - **Rubens Maciel Filho**, UNICAMP- Campinas, Brazil

11:40 - 12:10 **Power-to-Methane: The Technology for Sector Coupling**  
**Robert Bauer**, University of Luxembourg, Luxembourg

#### Refreshment Break (12:10-12:35) @ Foyer

12:35 - 13:05 **Optimal Management of Renewable Generation and Uncertain Demand with Reverse Fuel Cells by Stochastic Model Predictive Control**  
**Francesco Conte**, University of Genova, Italy.

13:05 - 13:35 **Aviation PEM Fuel Cells, and their Reliability Enhancement**  
**Xin Gao**, Technical University of Braunschweig, Germany

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### Lunch (13:35-14:35) @ .IT Italian Restaurant

- 14:35 - 15:05 Influence of Silver Nanoparticles on Polymer Matrix  
**Velgosová Oksana**, Technical University of Košice, Slovakia
- 15:05 - 15:35 Examining the Miscibility and Processability of PLA with Waste Paper Particles  
**Maja Rujnic Havstad**, University of Zagreb, Croatia
- 15:35 - 16:05 Unravelling the Potential and Development of Sustainable Biobased Plastics  
**Rakesh Nair**, Bio Base Europe Pilot Plant, Belgium
- 16:05 - 16:35 An Assessment of Geothermal Energy Potential in Gandhar Area of Cambay Basin, India: 3D Basin Modeling Study  
**Dhanesh Kumar Phaye**, ONGC Ltd., India

### Refreshments (16:35 - 17:00) @ Foyer

- 17:00 - 17:30 Bio-FDCA™  
**Ken Barrett**, ARZEDA Corp, USA
- 17:30 - 18:00 Mechanical, Thermal, Morphological and Flammability Properties of Rigid Lignin-based Bio-Sourced Foams  
**Taiwo K. Fagbemigun**, Georg-August University, Germany
- 18:00 - 18:30 Bioinspired Electrospun Fibrous Materials based on Poly-3-Hydroxybutyrate and Modifying Additives for Biomedical Application.  
**Polina M. Tyubaeva**, Plekhanov Russian University of Economics, Russia
- 18:30 - 19:00 Development of Bioplastic-Based Materials in the Automotive Industry and Investigation of the Effect on Mechanical Properties  
**Ali Ulaş Malcıoğlu**, Assan Hanil Otomotiv Sanayi Ve Ticaret A.Ş., Turkey

End of Day 1

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**Tuesday**  
**November 15, 2022**

Meeting Hall: Torlonia

Day 2 - November 15, 2022

### Keynote Presentations

10:00 - 10:40 Bioinspired 3D Constructs of Fiber-Reinforced Polysaccharide-based Anisotropic Hydrogels  
**Anayancy Osorio-Madrado**, University of Freiburg, Germany

10:40 - 11:20 Study the Connection Impacts of Solar PV Through the Load Flow Analysis at Muscat Electricity Distribution Company (MEDC) Network, Sultanate of Oman  
**Mohammed Al Rashdi**, Muscat Electricity Distribution Company, Oman

Refreshment Break (11:20-11:40) @ Foyer

### Oral Presentations

Sessions Renewable Energy & Resources | Biocomposite Materials | Green Chemicals  
Biopolymers and Bioplastics | New-to-the-world Biopolyesters | Biomass and Biofuels  
| Renewable Energy & Resources | Solar Energy | Solid and Waste Management |  
Recycling | Green Energy and Economy | Ocean Plastics

Session Chair- **Francesco Conte**, University of Genova, Italy  
Co Chair - **Ioannis Giavasis**, University of Thessaly, Greece

11:40 - 12:10 Biodegradable Polylactate Films Produced with Nanoprinting and Addition of Antimicrobials for use in Active Packaging  
**Ioannis Giavasis**, University of Thessaly, Greece

12:10 - 12:40 Process for Production of PLLA: Biomaterial for Medical and Cosmetic Applications  
**Rubens Maciel Filho**, UNICAMP-Campinas, Brazil

12:40 - 13:10 Environmental and Economic Assessments of Multiple Biomass Utilization for Bioenergy  
**Jingxin Wang**, West Virginia University, USA

Panel Discussion



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### Lunch (13:10-14:10) @ .IT Italian Restaurant

- |               |                                                                                                                                                                                                                            |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:10 - 14:40 | Green Synthesis of Silver Nanoparticles and their Incorporation into Polymer Matrix<br><b>Lívia Mačák</b> , Technical University of Košice, Slovakia                                                                       |
| 14:40 - 15:10 | The Growing Reality: Plastic Pollution, Affected Ecosystems and the Role of Education in Mitigation Applications<br><b>Deniz Vural</b> , TÜBİTAK Polar Research Institute, Turkey                                          |
| 15:10 - 15:40 | Carbon Allotropes for Nanocomposites with Lower Environmental Impact<br><b>Silvia Guerra</b> , Pirelli tyre, Italy                                                                                                         |
| 15:40 - 16:10 | Study of CaCl <sub>2</sub> Charge Cycle Investigating the Interaction Between the Particles Size and the Flow Rate for Thermochemical Heat Battery Applications<br><b>Bahaa Abbas</b> , Swansea University, United Kingdom |

### Refreshments (16:10 - 16:40) @ Foyer

- |             |                                                                                                                                                                                                 |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16:40-17:10 | Hot Water Resistant Thermoplastic Starch<br><b>Regina Jeziorska</b> , Łukasiewicz - Industrial Chemistry Institute, Poland                                                                      |
| 17:10-17:40 | Local Growth of Cu(In, Ga)Se <sub>2</sub> Micro Absorbers for Micro-Concentrator Solar Cells<br><b>Setareh Zahedi Azad</b> , Leibniz Institut für Kristallzüchtung, Germany                     |
| 17:40-18:10 | Transition to Renewable Energy Production in the State of Qatar; Case Study of Al-Kharsaa Solar IPP<br><b>Maha Al-Matwi</b> , Qatar General Electricity and Water Corporation "Kahramaa", Qatar |

### Panel Discussion

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**Tuesday**  
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### Poster Presentations

- |             |                                                                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ENERBIO-001 | Bio-LNG as a Driving Force for Development and use of Green Energy Technology<br><b>Grazyna Pazikowska-Sapota</b> , Gdynia Maritime University, Poland                                                                                   |
| ENERBIO-002 | Development of Alkali-Activated Porous Lightweight Concrete based on Municipal Waste Incineration Ash and Metallurgical Slag<br><b>Gintautas Tamošaitis</b> , Kaunas University of Technology, Lithuania                                 |
| ENERBIO-003 | Bio-Based Expanded Cork Polymer Composites (eCPC) with Poly(Lactic Acid) (PLA) for Injection Moulding<br><b>Lisete Garrido Moutinho</b> , University of Aveiro, Portugal                                                                 |
| ENERBIO-004 | Corn Thermoplastic Starch and PLA Toughened Blends<br><b>Maciej Studzinski</b> , Łukasiewicz - Industrial Chemistry Institute, Poland                                                                                                    |
| ENERBIO-005 | Disposable Goods from Modified Thermoplastic Starch Blends<br><b>Agnieszka Szadkowska</b> , Łukasiewicz - Industrial Chemistry Institute, Poland                                                                                         |
| ENERBIO-006 | A Study on a Diagnostic Module for a Telemetry Circuit of the Passive Components by a Loosely Coupled Coil as Wireless Power Transmission Under Saecs In Npps<br><b>Kil-Mo Koo</b> , Universal Monitoring & Inspection Inc., South Korea |
| ENERBIO-007 | Utilization of Marine Repair Production Waste Based on Iron Compounds in Greener Engineered Cementitious Composites<br><b>Algirdas Augonis</b> , Kaunas University of Technology, Lithuania                                              |
| ENERBIO-008 | Development of Energy Saving System in Reverse Osmosis and Sequencing Batch Reactor for using Hydro Energy<br><b>Hyeonwoo Nam</b> , K-water, South Korea                                                                                 |

### End of Day 2

Panel Discussion - Awards & Closing Ceremony followed by Vote of Thanks

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### Virtual Presentations

November 15, GMT (10:00-15:10)

#### Oral Presentations

- 10:00 - 10:25 Fabrication and Characterization of Bioplastics from Cassava Starch and Citric Acid-Epoxidized Soybean Oils Oligomers  
**Jianlei yang**, Dezhou University, China
- 10:25 - 10:50 Diversity of Bacteria in Biofilm Developed on the Surface of the Birch Tar - Containing PLA and PLC in the Water Environment  
**Agnieszka Richert**, Nicolaus Copernicus University, Poland
- 10:50 - 11:15 Structural Evolution of Biodegradable Aliphatic Polyesters during Thermally Supported Hydrolytic Degradation  
**Michal Puchalski**, Lodz University of Technology, Poland
- 11:15 - 11:40 Laboratory Platform for Studying Turbulence  
**Dorina Ticos**, National Institute for Lasers, Plasma and Radiation, Romania
- 11:40 - 12:15 Design Hybrid Nano Carrier for Co Enzyme Q10 based on PLGA - Polysorbate 80 using Molecular Dynamics Approach  
**Maziar Bahreini**, Islamic Azad University, Iran
- 12:10 - 12:35 Surface Modification of Biopolymer-Based Foams for Potential Application in Tissue Engineering  
**Ewelina K. Pabjańczyk-Wlazło**, Lodz University of Technology, Poland
- 12:35 - 13:00 Bisphenol A Promotes Breast Cancer Development through Overexpression of GPER-1  
**Luis Molina**, Universidad San Sebastián, Chile

Lunch 13:00 - 13:30

#### Keynote Presentation

- 13:30 - 14:00 Generation of Energy Evolution for Sustainable Future: Concept for a Holistic Wellness Project  
**Jayaprada Putrevu**, Preserve Life Corporation, USA



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### Oral Presentations

- |               |                                                                                                                                                                                                                                                                             |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 - 14:25 | Assessment Thermal Water Resource of Cretaceous Aquifer in the West Georgia<br><b>George Melikadze</b> , Tbilisi State University, Georgia                                                                                                                                  |
| 14:25 - 14:50 | Thermal and Rheological Characterization of Aqueous Nanofluids Based on Reduced Graphene Oxide (rGO) with Manganese Dioxide Nanocomposites (MnO <sub>2</sub> )<br><b>María Paz Ramírez Navarro</b> , University of Santiago of Chile (USACH), Chile                         |
| 14:50 - 15:15 | A Sustainable, Digital, Innovative, Contextualised, and Integrated, Approach Towards Food Consumption and Food Production Entrepreneurship: A South African Eastern Province Vulnerable Community Case Study<br><b>Faith Samkange</b> , University of Derby, United Kingdom |
| 15:15 - 15:40 | An Extensive Experimental Investigation for the Hydrogen Potential from Water Electrolytes in the Aspects of its Production and Application in the Main Natural Gas Supply Line<br><b>Recep Bakar</b> , GAZBIR-GAZMER, Turkey                                               |
| 15:40 - 16:05 | A Comprehensive Analysis of the Biogas Potential using Urban Waste and Animal - Derived Wastes in Konya, Turkey: Its Production to the Incorporation in the Main Natural Gas Supply Line<br><b>Mehmet Serif Sarikaya</b> , GAZBIR-GAZMER, Turkey                            |

*Webinar concludes followed by Vote of Thanks*