

5<sup>th</sup> International Conference on

# Renewable Energy, Resources and Sustainable Technologies

Day 1 – November 13th, 2023

Meeting Hall: Rome

08:00 -08:40 Registrations

08:40 - 09:00 Introduction

## Keynote Presentations

09:00 - 09:40 An Acrostic Approach to Zero Exergy Buildings

**Arif Hepbasli**, Yasar University, Turkey

09:40 - 10:20 A Framework for Establishing a Resource Circulation Society

**Dai-Yeun Jeong**, Asia Climate Change Education Center, South Korea

## Exhibitor Presentation

10:20 - 10:45 SEWAT - Sustainable Energy by Waves Trap

**Giulio Teodoro MAELLARO**, GECO -Global Engineering Constructions s.r.l., Italy

Networking and Refreshments 10:45 -11:05 @ Rome

## Oral Presentations

Session Chair **Dai-Yeun Jeong**, Asia Climate Change Education Center, South Korea

Session Chair **Arif Hepbasli**, Yasar University, Turkey

**Sessions:** Hydrogen Energy & Fuel Cells | Smart Grid | Hydro Energy | Energy in Buildings | Renewable Energy & Resources | Bioremediation and Biodegradation | Biopolymers & Bioplastics | Sustainable Engineering and Energy Technologies

11:05 - 11:30 The Hydrogen Flagship Project TransHyDE: Transport and Storage Infrastructure for Green Hydrogen

**Dorothea Müschenborn**, Max Planck Institute for Chemical Energy Conversion, Germany

11:30 - 11:55 Interpreting Public Security Requirements into Engineering Characteristics on Smart Grid Deployment

**Amy Poh Ai Ling**, The University of Tokyo, Japan

11:55 - 12:20 Preparation of New Bio-based Epoxide-Amine Coatings with Their Nanocomposite Derivatives as Replacements for BPA

**Ilknur Babahan-Bircan**, Aydin Adnan Menderes University, Turkey

12:20 - 12:45 Design and Development of an Autonomous Intelligent Robot for Distribution Center Operations: A Case Study

**Barış Çetinkaya**, ADM Electricity Distribution Inc. ,Turkey

Group Photo (12:45 - 13 :00)

Lunch 13:00 - 14:00 @ Escale

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14:00 - 14:25	Analysis of the Production Process of Sand-Lime Bricks with Shortened Autoclaving Time <b>Anna Stepien</b> , Kielce University of Technology, Poland
14:25 - 14:50	Barriers to the Adoption of Energy-Efficient Technologies in the Brazilian Building Sector <b>Talita Mariane Cristino</b> , São Paulo State University (UNESP), Brazil
14:50 - 15:15	Novel Method for Manufacturing an Alcohol Chemically Resistant Cosmetic Packaging Made from Industrial Coffee Waste and Vegetable Binder <b>Franciele Saorin</b> , Cencoderma Instituição de Pesquisa e Desenvolvimento de Cosméticos Ltda, Brazil
15:15 - 15:40	Evaluation of Hydroelectric Energy Generation in Turkey via Polynomial and Logarithmic Regression Analysis <b>Ezgi GÜLER</b> , Bilecik Şeyh Edebali University, Turkey
15:40 - 16:05	Spectrophotometric-Based Assay to Quantify Relative Enzyme-Mediated Degradation of Commercially Available Bioplastics <b>Matthew Hoekstra</b> , Food Cycle Science, Canada
<b>Networking and Refreshments 16:05-16:30 @ Rome</b>	
16:30 - 16:55	Synthesis of Trans-Limonene Dioxide Par Dioxirane using Chiral Catalyst <b>Y. Mahmat Ahmat</b> , Université Laval, Canada
16:55 - 17:20	Smart Cities: Recent Advancement and Challenges <b>Gaydaa AlZohbi</b> , Prince Mohammad Bin Fahd University, Saudi Arabia
17:20 - 17:45	Modulating the Properties of Saccharina-Based Fibres using Natural Cross-Linkers <b>Ishrat Jahan Badruddin</b> , Cranfield University, United Kingdom
17:45 - 18:10	Analysis of the Efficiency and Temperature Profiles of A Solar Thermal Energy Storage System Operating in A High Mountain Climate <b>Victor Lizcano-González</b> , Universidad Industrial de Santander, Colombia
<b>End of Day 1 Presentations, Certificate Felicitation and Closing Ceremony</b>	

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# Renewable Energy, Resources and Sustainable Technologies

Day 2 – November 14th, 2023

Meeting Hall: **Rome**

Keynote Presentations

9:00 - 9:40	Renewable Ammonia for the Global Energy Transition <b>Angela Kruth</b> , CAMPFIRE, Germany
9:40 - 10:20	Sustainable Microbial Production, Properties and Biodegradation of Lactate-Based Polymers from Various Carbon Sources <b>Seiichi TAGUCHI</b> , Kobe University Integrated Research Center, Japan
10:20 - 11:00	Fatty Acid Cellulose Esters (Faces) – from Synthesis and Characterization to Applications <b>Nicolas Joly</b> , Unité Transformations & Agroressources, France

Networking and Refreshments 11:00 -11:15 @ Rome

Oral Presentations

Session Chair	<b>Angela Kruth</b> , CAMPFIRE, Germany
Session Chair	<b>Nicolas Joly</b> , Unité Transformations & Agroressources, France
<b>Sessions:</b>	<b>Renewable Energy &amp; Resources   Solar Energy   Global Industrial Processes and Sustainable Development  </b>
11:15 -11:40	Life Cycle Assessment of Bio-Fermentation Ethanol Production and Its Influence in China's Steeling Industry <b>Lingyun Zhang</b> , University of Nottingham, United Kingdom
11:40 - 12:05	Comparison between MPPT P&O and MPPT Fuzzy controllers for Photovoltaic Maximum Power Point Tracking <b>Youb Lamia</b> , University of Batna-2, Algeria
12:05 - 12:30	PLA synthesis using Response Surface Methodology (RSM) <b>Cristian Valdés</b> , Universidad Católica del Maule, Chile
12:30 - 12:55	Effects of Nanocellulose Addition on Natural Rubbers Compounds <b>Jordão Gheller Junior</b> , Instituto SENAI de Inovação em Engenharia de Polímeros, Brazil

Lunch 12:55 - 14:00 @ Escale

14:00 - 14:25	The Impact of Using High Impact Polystyrene in the Production of Aerated Concrete (ACC) <b>Ryszard Dachowski</b> , Kielce University of Technology, Poland
14:25 - 14:50	Accelerating New Business Models In Malaysia's Electricity Sector: Key Drivers & Strategies <b>Thiagalethumi V Maniam</b> , University of Nottingham Malaysia, Malaysia
14:50 - 15:15	Self-Immolative Polymers for Nanoparticles with Unique Degradation Profiles in Biomedical Applications <b>Kedafi Belkhir</b> , Centrale Lille Institut, France

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15:15 - 15:40 How the Leading PV Module Manufacturers Address Topcon-Module Degradation Sensitivities

**Goetz Fischbeck**, Smart Solar Consulting, Germany

15:40 - 16:05 Soil Microorganisms in Mixed Forest and Pure Forests of Ulmuspumila - Robinia Pseudoacacia Based on Metagenomics

**Fengyun Ma**, Shandong Agricultural University, China

## Networking and Refreshments 16:05 - 16:30 @ Rome

16:30 - 16:55 Smart Biopolymers: From 3D to 4D printing

**Daining Fang and Zeang Zhao**, Institute of Advanced Structure Technology, Beijing Institute of Technology, China

## Poster Presentations

PP - 001 Development of A Hydrothermal Energy Utilization System using Wastewater in Reverse Osmosis Membrane

**Inhong Min**, Korea Water Resources Corporation, South Korea

PP - 002 Influence of the Addition of Acetyl Tributyl Citrate and Reprocessing on The Biodegradability of Polyhydroxybutyrate

**Karen V. Enríquez-López**, Universidad de Guadalajara, Mexico

PP - 003 Biodegradation of Biodegradable Biobased Plastics: Domestic Composting and Sector Development

**Jules BELLON**, Institut Polytechnique UniLaSalle, France

PP - 004 The Potential of Lignin-Based Foams as Sustainable Alternatives to Conventional Insulation Materials

**Taiwo Kayode Fagbemigun**, Universität Göttingen, Germany

PP - 005 Empowering Malaysia's Solar Energy Landscape: Exploring the Prospect of Peer-to-Peer Energy Trading

**Thiagalethumi V Maniam**, University of Nottingham Malaysia, Malaysia

PP - 006 Simulation of Methylammonium Lead Iodide Perovskite Solar Cell with Different EtI Using Scaps 1d Simulator

**Meriem Chadel**, University of Tlemcen, Algeria

## Video Presentation

VP - 001 Integrating Early Childhood Education to Reduce the Ecological Footprint

**Hen Friman**, Holon Institute of Technology, Israel

VP - 002 Polylactic Acid Biocomposites Reinforced with Starch from Mountain 'S Yam (*Dioscorea Remotiflora Kunth*)

**V.V.A. Fernández**, Universidad de Guadalajara, México

End of Day 2 Presentations, Certificate Felicitation and Closing Ceremony

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# Renewable Energy, Resources and Sustainable Technologies

Day 1 – November 13<sup>th</sup>, 2023

11:00 - 11:15 Introduction

## Oral Presentations

11:15 - 11:40 The Material Approach into Environmental Houses Around the Globe: A Mapping Review

**Shengdan Yang**, Tsinghua University, China

11:40 - 12:05 Generating Representative Pareto Solutions for Hourly Energy Storage

**Ozgu Turgut**, Uskudar University, Istanbul, Turkey

12:05 - 12:30 Phosphate Tailings Densification in view of a Better Waste Disposal and/or Valorization and Optimal water Recycling: Case of Tunisian Phosphates Mines

**Mouna Ettoumi**, Mohammed VI Polytechnic University, Morocco

12:30 - 12:55 Modelling and Simulation of Seasonal Performance of Silica-Polymethyl Pentene for Diurnal Radiative Cooling under Direct Sunlight

**Godswill Nwaji**, Federal University of Technology, Nigeria

## Lunch (12: 55 - 13: 30)

13:30 - 13:55 Glycerol Carbonate a Green Monomer

**Ana B Morales Cepeda**, Tecnologico Nacional de Mexico, Mexico

13:55 - 14:20 Potency of Azanza Garckeana Phenolic Compounds in the Enhancement of Leather Waste- Gelatin Films

**Notabo Hlabano**, National University of Science and Technology, Zimbabwe

14:20 - 14:45 Spectral Library Framework for Rock and Mineral Analysis in Geothermal Environments: A Comprehensive Approach

**Mahmut Cavour**, Colorado School of Mines, USA

14:45 - 15:10 Magnetic Energy Automaton Mechanical Oscillator for Multiple Uses (MEAMOMU): Supplement A1-2022 Valance Electrons Harvesting Modules

**Gregory Spaulding**, Magnetic Voltage Source, USA

## Poster Presentation

15:10 - 15:35 Biological Photovoltaics: Testing Algae for the Optimal Battery

**Yu Han Guo**, York School, Canada

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## Oral Presentations

11:00 - 11:25	Application of T-Shape Branches with Consideration of the Thermal and Hydraulic Performance to a Hydrothermal Energy System <b>Se-Myong Chang and Geum-Su Yeom</b> , Kunsan National University, South Korea
11:25 - 11:50	Feasibility Study of Idle Geothermal Well for Power Generation at the Ulumbu Geothermal Power Plant <b>Allen Haryanto Lukmana</b> , Universitas Pembangunan Nasional Veteran, Indonesia
11:50- 12:15	Porous Carbon Template Decorated with MOF-Driven Bimetallic Phosphide: A Suitable Heterostructure for the Production of Uninterrupted Green Hydrogen via Renewable Energy Storage Device <b>Mohd Afshan</b> , Institute of Nano Science & Technology, Punjab, India
12:15 - 12:40	Enhancing NiO based Microsupercapacitor Performance by Phosphorus doping: Unleashing the Power of Energy Storage for Miniaturized Electronic Devices <b>Shumile Ahmed Siddiqui</b> , Institute of Nano Science & Technology, Punjab, India
12:40 - 13:05	Natural Sunlight-Driven Dual Organo-Photo Redox Reaction Mediated by A Metal-Free Porous Organic Polymer: A Step Toward Sustainable Carbon Neutrality <b>Neha Saini</b> , Institute of Nano Science and Technology, India
13:05 - 13:30	Mathematical Modeling of Heat Transfer Processes in Solar Air Heaters <b>Bekzod Abdugarimov</b> , Fergana Polytechnical University, Uzbekistan
13:30 - 13:25	Key Factors Towards High-Performance All-Solid-State Batteries <b>Feipeng Zhao</b> , Western University, Canada