



Waste biorefinery technologies for accelerating sustainable energy processes

WIRE's 3rd MC Meeting and 5th Working Groups Workshop

18-19 April 2024, Istanbul, Turkey

Day 1: 18th April 2024

https://teams.microsoft.com/l/meetup-join/19%3ameeting_OGEzYzQxODMtMWE0Ny00NTNmLThiNzgtNGE0ZDZjNGIxZGUx%40thread.v2/0?context=%7b%22Tid%22%3a%22fda4d358-3750-4b5b-9588-c0294ccf291e%22%2c%22Oid%22%3a%2204841f18-0a70-4b49-8ae8-154240c0f5ec%22%7d

08:30 - 09:00 h: Registration, signing of the attendance list and poster placement.

09:00 - 09:15 h: Opening Ceremony (*Organizing Committee, Paulo Brito - Action Chair and George Skevis - Vice-Chair*)

09:15 - 10:15 h: MC Meeting (*Core Group*)

10:15 - 11:45 h: "The journey of biorefineries" (*Moderator: Diogo Santos*)

- Ayşen Erdinçler, "Bioenergy Management in Mega City İstanbul"
- Assist. Prof. Dr. Berat Haznedaroğlu, "Europe's First Carbon Negative Biorefinery"
- Charikleia Poravou, "Closing the loop for the synthesis of zero emission next generation fuels; validation of renewable sources, biomass and CO₂"

11:45 - 12:15 h: Poster session & Coffee break

12:15 - 13:15 h: WG1 Meeting (*WG1 Leader - Eduardo Robles*)

13:15 - 14:15 h: Lunch & Group picture

14:15 - 15:15 h: WG2 Meeting (*WG 2 Leader - Marta Trninic*)



Waste biorefinery technologies for accelerating sustainable energy processes

15:15 - 15:45 h: Poster session & Coffee break

15:45 - 16:45 h: WG3 Meeting (*WG 3 Leader - Corinna Maria Grottola*)

16:45 – 17:15 h: Poster session & Coffee break

17:15 - 18:15 h: WG4 Meeting (*WG 4 Leader – Diogo Santos*)

20:00 h: Dinner with Bosphorus view

Day 2: 19th April 2024

08:00 - 08:30 h: Meeting at ITU Campus and departure to TÜBİTAK-MAM (is organized via a shuttle that will take off from ITU at 08.30 AM) (*Registration & Laboratory Tour List will be completed in the bus*)

09:45 - 10:15 h: MAM Welcome Session (*Isil Isik Gulsac and MAM Director*)

10:15 - 11:30 h: Lab tour

- Hydrogen and Fuel Cells
- Clean Energy Technologies
- Chemical Process Technologies

11:30 - 12:00 h: Coffee break (*Old Cafeteria*)

12:00 - 13:00 h: “Developments in biorefinery based industry” (*Moderator: Corinna Grottola*)

- Klaudia Karkeszova (ENVIEN GROUP), “Biofuels Production with Circularity and Sustainability”
- Murat Kuzulcan (Energom), “From Waste to Energy: An evaluation for biogas industry in Türkiye”
- Ersan Olcay Işın (UNDP), “The Transformation Journey of Biomass in Türkiye”

13:00 - 14:30 h: Lunch & Group picture

14.30 – 16:00 h: WIRE Roundtable – “Bio-based zero carbon fuels to meet EU emission targets, efficiency and quality of life” (*Moderator: George Skevis*)



Waste biorefinery technologies for accelerating sustainable energy processes

- Participants: Paulo Brito, Corinna Grottola, Marta Trininic, Diogo Santos, Fabian Mauss, Nikolaos Tsongidis, Georgia Kastrinaki, Isil Isik Gulsac and Selim Sanin

16:00 - 16:30 h: Closing Ceremony & Departure



Waste biorefinery technologies for accelerating sustainable energy processes

Poster presentations

- From Waste to Energy: N-Doped Graphene from Waste Bottles as a Sustainable Electrocatalyst Support for Borohydride Fuel Cells
Aldona Balčiūnaitė
- Potential assessment of biomass residues in Portugal
Ana Carolina Assis
- Sustainable Energy Generation from Organic Waste in Circular Economy Models
Ana Momčilović
- Artificial Intelligence Approach in Anaerobic Digestion for Sludge Treatment in Wastewater Treatment Plants
Atif Emre Demet
- Garden waste anaerobic co-digestion with sugarcane bagasse to attain high biogas production
Beni Lew
- Harnessing Agricultural Biomass: Production, Utilization, and Sustainable Practices
Bogdan-Marian Tofanica
- Model of Integrated First- and Second-Generation Bioethanol Production From by-Products of Sugar Beet Processing
Bojana Bajić
- Bioethanol Production From Starch-Based Food Waste From Student Restaurants
Bojana Bajić
- HYFUELUP project- Hybrid biomethane production through thermochemical technologies combined with renewable hydrogen
Bruna Rijo
- Biochar as Methane Booster in Anaerobic Digestion of Food Waste
Corinna Grottola
- Harnessing Waste Biorefinery Technologies for Sustainable Energy Acceleration in Albania
Eglantina Hysa



Waste biorefinery technologies for accelerating sustainable energy processes

- Directing Türkiye's Bioenergy Potential: The Need for Tailored Modeling Towards Sustainable Energy Transition
Elif Ayhan
- From High-Rate Algal Ponds to Biofilm Systems: Evolution and Prospects in Microalgae-Based Wastewater Treatment Technologies
Eoin Syron
- Molar mass fractionation of wheat straw organosolv extracts: Structural characterization of lignin fractions and identification of potential value-added components
Florian Zikeli
- The role of phenylalanine in lignin production and wood formation
Francisco M. Cánovas
- Wood waste valorization by steam explosion
Gabriel Paës
- Carbon dioxide Catalytic reduction and synthesis of next generation fuels
Georgia Kastrinaki
- Switched Activation Functions-Based ML Algorithms: Boosting Bioeconomic Efficiency
Hacı Mehmet Güzey
- Kinetic metabolic model covering amino acid dynamics for sustainable production from renewable resources
Hilal Taymaz-Nikerel
- Assessment of Türkiye's Biomass Potential: A Comprehensive Review
İlker Özata
- Biohydrogen and Biomass Production from Spent Coffee Grounds and Coffee Silverskin: A Sustainable Biorefinery Approach
Karen Trchounian
- Eco-Friendly Synthesis of Lignin/Silica Bionanocomposites via Gas-Phase Modification Method
Liudmyla Nosach
- Using MSW-derived biochar for real-world environmental applications – A review
Santa Margarida Santos



Waste biorefinery technologies for accelerating sustainable energy processes

- A review: The effect of vermicompost on plant growth, yield, quality and plant health
Margit Olle
- Bark valorization through biorefinery technologies
Mariem Zouari
- Biomass waste thermochemical treatment to achieve safe utilization and valorisation aims
Maris Klavins
- Industrial Waste Valorization into Functional Polymers
Marta Goliszek
- Sustainable adsorbents from agricultural wastes: rice husk-based composite materials for heavy metals removal from wastewater
Michela Alfe
- Properties of Hybrid Composites Filled with Lignin and Cellulose Fibers
Mykola Melnychuk
- Enhancing Anaerobic Digestion Efficiency and Digestate Safety Through Sludge Pre Ozonation
Nedal Massalha
- Hydrogen-rich gas production from single-use waste plastics
N. Striūgas
- Solar Hydrothermal Liquefaction Technology Developmental Path
Nikolaos I. Tsongidis
- Is energy from biomass environmentally friendly?
Nurinisa Esenbuga
- Unlocking the value of lignin: transforming pulp industry by-product into advanced nanomaterials for sustainable applications
Olena Sevastyanova
- Kraft Lignin Valorization for Carbon in Energy Storage Systems
Omid Hosseinaei



Waste biorefinery technologies for accelerating sustainable energy processes

- Chemical recycling of plastic waste fractions for closing the material loop and increasing resource efficiency
Panagiotis Evangelopoulos
- LIFE BIOAs project in Portugal: the opportunity of olive pomace biochar for arsenic adsorption
Paulo Mourão
- Updated status of the project Refineries as Green Hydrogen
Pedro Haro
- Energy Efficiency and Sustainability of Hydrogen Electric Vehicles: A Promising Path to Sustainable Mobility
Roberta Mota-Panizio
- Concept for a net-zero wheat straw product-driven biorefinery
Sebastian Serna-Loaiza
- Lignin-Bonded Composites from Sawmill-Byproducts
Sebastian Serna-Loaiza
- Harvesting the natural bounty: N-rich carbonaceous adsorbents from agricultural and marine biomass residues
Valentina Gargiulo
- Struvite crystallization from dairy wastewater after hydrothermal carbonization
Witold Kwapinski
- Direct production of synthetic natural gas over a Nickel catalyst based on a detailed kinetic reaction mechanism
Fabian Mauss