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Waste biorefinery technologies for accelerating sustainable energy processes

CA20127

**WIRE's 4th Working Groups Workshop
Cottbus, 4-5 October 2023**

Program

Day 1: 4th October 2023

08:30 - 09:00 h: Registration and signing of the attendance list

09:00 - 9:30 h: Opening ceremony (*Mr. Hübner, Paulo Brito, Diogo Santos*)

09:30 - 10:00 h: Keynote speaker: Pino Sabia "MILD Oxidation Processes for bioenergy: applications and perspectives" (*Moderator: George Skevis*)

10:00 - 10:30 h: Coffee break and Poster session

10:30 - 12:30 h: Working Group 1 presentations (*Moderator: Eduardo Robles*)

Author	Presentation title
Selim L. Sanin	Diverse Definitions and the Quest for Unity: Exploring Biomass Terminology
Ana Carolina Assis	Production of residues: Portugal case study
Jaime Moreno-García	Microbial biocapsules as a proposed immobilization cell technology for 2nd generation bioethanol production
Margarida Santos	Refuse Derived Fuel Char - A promising energy resource.
Paulo Mourão	Olive pomace waste raw material as biochar precursor for arsenic adsorption
Lucian Staicu	Microbial biominerals: the challenges to resource recovery

12:30 - 14:00 h: Lunch

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14:00 - 16:00 h: Working Group 2 presentations (*Moderator: Marta Trninić*)

Author	Presentation title
Charalambos Chasos	Bioenergy production and net-zero carbon dioxide emissions investigation for the upgrade of a small-scale biomass production unit with a biorefinery system
Erika Sinisgalli	Valorization of agri-based feedstock for organic acids production: biological treatment through two-phase anaerobic digestion
Joachim Venus	Production of optically pure lactic acid from waste wood via continuous fermentation with cell-recycle
Maria Virginia Manna	Oxidation of a Sustainable Aviation Fuel in vitiated air condition
Iliyana Naydenova	PM emissions from biomass conversion
Ana Momčilović	Development of the integrated organic waste management model using the circular economy's guiding principles

16:00 h: Group picture

16:00 - 17:00 h: Coffee break and Poster session

17:30 h: Excursion to EURO-K GmbH Hangar

From 19:00 h: Barbecue Dinner

Day 2: 5th October 2023

08:30 - 09:00 h: Signing of the attendance list

09:00 - 9:30 h: Keynote speaker: Hagen Hilse "Sustainable technologies from scientific research to market maturity-Examples from GICON®-Group"
(Moderator: Paulo Brito)

09:30 - 11:30 h: Working Group 3 presentations (*Moderator: Corinna Maria Grottola*)

Author	Presentation title
A. Balčiūnaitė	Enhancing Oxygen Reduction via N-Doped Graphene Derived from PET Bottle Waste as an Efficient Carbon Support for PdNi Nanoparticles
Edward Someus	Biorefinery upcycling of agri/food byproducts into compound biofertilizers and bioenergy in a scale of circular economy viability and applications with market competitive reproducibility
Elina Dace	Prospective Life Cycle Assessment of Microbial Sophorolipid Fermentation
Sven Eckart	Utilizing Renewable Hydrogen in Industrial Heating: A Sustainable Solution

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Valentina Gargiulo	Can oil and char from waste pyrolysis be used as eco-binders to improve asphalt durability? A challenge from a circular economy perspective
Leonarda Francesca Liotta	Valorization of CO ₂ through dry reforming of CH ₄ : Design of Ni/La ₂ O ₃ catalysts as a function of the preparation method

11:30 - 12:00 h: Coffee break and Poster session

12:00 h - 13:30 h: Presentations from BTU members (*Moderator: Fabian Mauss*)

Author	Presentation title
Christian Abendroth	Circular Microbiomes
Dirk Freese	Development of Agroforestry in Europe
Steffen Sebastian Kießling	ClinX-System

13:30 - 14:30 h: Lunch

14:30 - 16:30 h: Presentations from STSM grantees (*Moderator: Mara de Joannon*)

Author	Presentation title
Abdullah Bilal Ozturk	Utilization of lignocellulosic waste for sustainable biofuel production: A comparative process simulation and techno-economic evaluation
Charikleia A. Poravou	Upgrading of hydrothermal liquefaction bio-oils by catalytic hydrotreatment
Elsa Duret	Characterization of residues from tannins extraction for a future valorization
Gul Ebru Orhun	Biorefinery approach to the valorization of hazelnut shells as a source of antioxidant extracts and biochars
Mine Güngörmüşler	Exploring Integrated Systems for Biorefinery Applications: A Study of Catalytic-Chemical Processes at KIT-EBI
Morgen Mukamwi	Databases for Biomass and Waste Biorefinery - A Mini-Review and SWOT Analysis
Philipp A. Graefe	Commissioning of a 1 barrel per day Fischer-Tropsch slurry bubble column reactor

16:30 h: Closing ceremony (Paulo Brito, Fabian Mauss)

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Poster session

Days 1 and 2 on coffee breaks

Author	Poster title
Selim L. Sanin	Resource Allocation Principles for National Biorefinery Development
Selim L. Sanin	Unlocking the Potential of Wastes: Enhancing Biofinery Processes through Pretreatment and Disintegration
Eduardo Espinosa	A Straightforward Approach to Fabricate Photocatalytic Materials using Composite Nanocellulose Aerogels: Application in atmospheric environmental remediation
Rafaella Ragucci	Characteristics of ammonia/methane MILD Combustion in a cyclonic burner
Bojana Bajić	Optimization of bioethanol production from agro-industrial wastes and by-products
Cigdem Yangin-Gomec	Valorization of Kitchen Waste through Biogas Production for Sustainable Municipal Solid Waste and Sludge Management
Elena Karnišová Potocká	Tyrosol β -rutinoside prepared by transrutinosylation using Fagopyrum tataricum seed meal
Kemal Koca	Characterization and Optimization of an Additive-Enhanced Spent Tea Waste (STW) Biochar for Boosting Biogas Yield in Co-digestion Process
Kenan Dalkilic	High-rate Biogas Production from an Integrated Microbial Electrolysis Cell and Anaerobic Digestion System at Short Hydraulic Retention Times
Giovanni Battista Ariemma	Potential of biomass pyrolysis products in MILD combustion
Davide Amato	Fate of lead during pyrolysis of lignocellulosic biomass
Davide Amato	Performance of an auger reactor for bio-oil production through fast pyrolysis of contaminated biomass
Dimitris Koutsonikolas	Novel membrane pervaporation processes for separation and purification applications in modern biorefineries
Georgia Kastrinaki	Effect of catalyst acidity and reduction step on carbon dioxide valorization
Corinna Maria Grottola	Pyrolysis atmosphere effect on biochar properties and PTEs behavior
Corinna Maria Grottola	PTEs Closed-loop: from biochar production via pyrolysis of contaminated biomass to its applications in soil bio-remediation
Jean Bernard Michel	Technical and market challenges in the chemical recycling of mixed wastes
Michela Alfè	Exploring sustainable asphalt binders: insights into the effects of char chemico-physical characteristics
Roberta Panizio	Production and recovery of biochar for agricultural use, gas cleaning and wastewater treatment

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Tunc Durmaz	Fueling Change: Analyzing New Car Sales and Policy Impact in the Pursuit of Environmental Sustainability
Beni Lew	RePower- Connecting between famers and industry for a higher energy production
Bruna Rijo	The science of communicating science – Disseminating facts, not fiction
Atif Emre Demet	Unveiling Innovation Pathways in Biorefinery Technologies: A Comprehensive Patent Landscape Study
Florian Zikeli	Lignin Nanoparticles with Entrapped Thymus spp. Essential Oils for the Control of Wood-Rot Fungi
Rui Galhano dos Santos	Fueling a Sustainable Tomorrow: Harnessing Biomass for a Prosperous and Greener Future
Rene Herrera Diaz	Utilization of Fast Pyrolysis Bio-Oil for Wood Modification