



National  
Technical  
University  
of Athens



GLOBAL  
W&ERT  
COUNCIL



MUNICIPALITY  
OF CENTRAL CORFU  
AND  
DIAPONTIAN ISLANDS

# CORFU2022

15-18 JUNE

[corfu2022.uest.gr](http://corfu2022.uest.gr)



**9<sup>th</sup> International Conference**

on

**Sustainable Solid Waste**

**Management**

# 9th International Conference on Sustainable Solid Waste Management

## WELCOME

On behalf of the Scientific and Organising Committee, I am pleased to welcome you to the **CORFU 2022 9<sup>th</sup> International Conference on Sustainable Solid Waste Management**.

As in the cases of the previous international conferences, the **CORFU 9<sup>th</sup> International Conference** aims to make a step forward in the field of solid waste management through the promotion of innovative technologies and effective practices.

We are happy to announce that the series of our conferences keeps attracting the attention of the academia, private and public sector local authorities and businesses. This is proven by the gradual increase in the numbers of participants, the participating countries, the abstracts received and papers presented during the conference. This year we have over 600 participants from 80 countries and 9 collaborating international scientific journals.

Every year significant effort is made to improve the quality of the papers and keep high standards, as proven by the increase of the papers finally published in the collaborating journals with high reputation and high impact factors.

Quality is always our first and main criterion and that is why we are also establishing collaboration with new journals, e.g. this year we have for the first time: **ENERGY (ELSEVIER, Impact Factor: 7.147)**.

At the same time, efforts are continuous in order to achieve high quality services for the conference participants. It is also important to mention the introduction for the 4th time of the summer school prior to the conference. More than 50 participants will attend the summer school this year and our aim is also to continue and keep it in all our future conferences giving emphasis to different research fields every year.

The **CORFU 2022 Conference** aims to stimulate the interest of scientific community, competent authorities of public and private sector including local authorities, businesses, financial institutions, policy makers and society and present the latest developments and achievements in the field of solid waste management with special emphasis on municipal solid waste. Waste prevention, source separation, recycling and production of secondary materials, biological Treatment (aerobic & anaerobic), the treatment at central facilities constitute priority subjects of the conference agenda. Attention is drawn to bioprocesses, biorefineries in waste management to close the loops, circular economy and bioeconomy and of course WASTEtoENERGY with the contribution of the Waste-to-Energy Research and Technology Council, that is a co-organiser of this conference, with the active involvement of Prof. Nickolas Themelis, the father of the Council.

Emphasis is placed on circular economy in all key action areas (production, consumption, waste management, secondary raw materials, innovation, investment & monitoring) and all priority sectors (food waste, plastics, biomass and bio-based-products, construction & demolition waste, critical raw materials, textiles, etc).

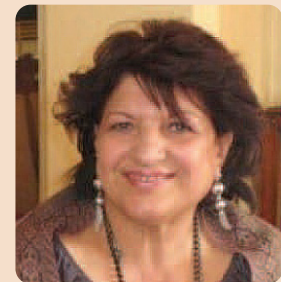
The Conference will provide an opportunity to bring together scientists & professionals from government departments, industries, Municipalities, private institutions, research & education institutions, being a forum for the exchange of the most recent ideas, techniques & experiences in a broad area of waste management.

A special Session will focus on solid waste management and the role of Local Authorities & Municipalities for taking advantage of both recyclable materials and biowaste and minimize residues for landfilling. The Conference agenda is rich and dense, offering a considerable variety of topics presented through almost 500 presentations within the twenty-six different oral sessions and an extensive poster session with more than 150 posters.

I would like to thank you all very much for joining us this year. Many of you are repeaters and we certainly appreciate that very much and we will continue our attempts to do our best at all levels in order to enlarge this warm conference family and meet every year. Also, I would like to thank the co-organisers, the Waste-to-Energy Research & Technology Council, the Region of Ionian Islands, the Municipality of Central Corfu & Diapontian Islands and the sponsors for the support to the conference.

We hope you will find the CORFU 2022 Conference interesting, useful and up to your expectations. After the virtual conference last year in Thessaloniki, we are happy that we meet in person this year and I welcome you all, but also welcome the participants that join us virtually.

Maria Loizidou, Professor NTUA  
*Chair of the Scientific Committee*





## 4th PhD Summer School and Executive Training on Solid Waste Management



*conference venue for the summer school*

## 4<sup>th</sup> PhD Summer School and Executive Training on Solid Waste Management, 13 & 14 June 2022

The summer school will include **16 teaching hours** in total on **13th & 14th June 2022**.

On **June 15th, 2022**, the participants will attend the **Poster Session of the "CORFU 2022 9th International Conference on Sustainable Solid Waste Management"** and a final session roundtable with the main topic being the **"State-of-the-art and future directions of Sustainable Solid Waste treatment: the pathway to Circular Economy"**.

Individual projects will be given to the participants and the grading of the course will be done on a Pass/Fail basis. All the attendees will be given a certificate of attendance after the completion of the PhD and Executive Training Summer School on Solid Waste Management.

The PhD and Executive Training Summer School final project **should be submitted until July 10th, 2022: 10 hours**

The results will be communicated individually to every attendee by July 20th, 2022.



Monday 13th June, 2021

All times are in Greek Time

9.15-9.30	Prof. Maria Loizidou, National Technical University of Athens <i>Welcome by Prof. Maria Loizidou</i>
9.30-10.45	Dr. Konstantinos Moustakas, Dr. Dimitris Malamis, National Technical University of Athens <i>Sustainable Solid Waste Management: the pathway to Circular Economy</i>
10.45-12.30	Prof. David Bolzonella, University of Verona <i>Anaerobic processes for organic waste management, bio-energy and bio-based molecules production</i>
12.30-12.45	Break
12.45-13.45	Prof. Maria Loizidou, National Technical University of Athens <i>Anaerobic Digestion: a strategic process unit in integrated biorefineries</i>
13.45-14.15	Lunch Break
14.15-16.00	Prof. Nickolas Themelis, Prof. Thanos Bourtsalas, Columbia University <i>WASTE-to-ENERGY: Thermal Treatment for waste management</i>
16.00-16.15	Break
16.15-17.30	Prof. Stergios Vakalis, University of Aegean <i>Waste-to-energy analysis tools: Decision-making methods, energy modeling and policy tools</i>



## 4th PhD Summer School and Executive Training on Solid Waste Management

Tuesday 14th June, 2022

All times are in Greek Time

- 9.00-13.00 Pierantonios Papazoglou, Research & Strategy Manager at the Centre-of-Excellence in Risk & Decision Sciences (CERIDES) of the European University Cyprus  
*Marie Skłodowska-Curie Actions Postdoctoral Fellowships: Proposal Writing Hints-&-Tips*
- 13.00-13.30 Lunch Break
- 13.30-14.15 Dr. Jakub Raček, Technical University Brno, Faculty of Civil Engineering, Institute of Municipal Water Management  
*Characteristics of Solid Carbonaceous Product/Biochar after Pyrolysis of Biosolids/Biomass (Theory, description of technology of pyrolysis/torrefaction, characteristic of biochar from sewage sludge and food waste etc.*
- 14.15-15.00 Prof. Petr Hlavínek, Technical University Brno, Faculty of Civil Engineering, Institute of Municipal Water Management  
*The use of Biochar in Blue-Green Infrastructure (Use of biochar to green roofs, green parking lots, green walls for microclimate of building etc.)*
- 15.00-15.15 Lunch Break
- 15.15-17.00 Prof. Rafael Luque, University of Cordova & Francesco Mauriello, Università Mediterranea di Reggio Calabria  
*Waste-to-Wealth: the valorization concept*
- 17.00-17.30 Prof. Maria Loizidou, Dr. Konstantinos Moustakas, Dr. Dimitris Malamis, National Technical University of Athens  
*Closing Remarks*





Wednesday 15th June, 2021

All times are in Greek Time

Poster session

**Final session:**

*State-of-the-art and future directions of Sustainable Solid Waste treatment:  
the pathway to Circular Economy*

**PhD and Executive Training Summer School final assignment -  
until July 10<sup>th</sup>, 2022: 10 hours**

The certificate of attendance will be given immediately after the completion of the 4<sup>th</sup> PhD and Executive Training Summer School on Solid Waste Management. The final assignment should be implemented by 10<sup>th</sup> of July, 2022 and the results will be communicated individually to every attendee by July 20<sup>th</sup>, 2022.





# 9th International Conference on Sustainable Solid Waste Management

## SCIENTIFIC COMMITTEE

### **Maria Loizidou, National Technical University of Athens, Chair**

Abdul-Sattar Nizami, King Abdulaziz University  
Adam Smoliński, Central Mining Institute  
Adela Galvin, University of Cordoba  
Agapios Agapiou, University of Cyprus  
Ahmed El-Gendy, American University in Cairo  
Aleksandra Djukic-Vukovic, University of Belgrade  
Alexandra Ribeiro, Universidade Nova de Lisboa  
Amane Jada, IS2M-CNRS  
Anastasia Zabaniotou, Aristotle University of Thessaloniki  
Anastasios Zouboulis, Aristotle University of Thessaloniki  
Andrea Capodaglio, University of Pavia  
Ange Nzihou, Ecole des Mines d'Albi  
Antonis Zorpas, Open University of Cyprus  
Apostolos Koutinas, Agricultural University of Athens  
Apostolos Vlyssides, Jaypee University of Information Technology  
Barbara Ruffino, Politecnico di Torino  
Carlos Ariel Cardona Alzate, Universidad Nacional de Colombia sede Manizales  
Carol S.K. Lin, City University of Hong Kong  
Celia Dias-Ferreira, Universidade Aberta & CERNAS - Research Center on Natural Resources, Environment and Society  
Chew-Tin Lee, University Technology of Malaysia  
Christopher Cheeseman, Imperial College  
Claudio Dilaconi, Consiglio Nazionale delle Ricerche (CNR)  
Costas Velis, University of Leeds  
Costas Costa, Cyprus University of Technology  
Costas Velis, University of Leeds  
Cristobal Noe Aguilar Gonzalez, Universidad Autónoma de Coahuila  
Daniel Tsang, The Hong Kong Polytechnic University  
David Bolzonella, University of Verona  
David Newman, World Biogas Association  
Dimitrios Kaliampakos, National Technical University of Athens  
Dimitrios Komilis, Democritus University of Thrace  
Dimitrios Malamis, National Technical University of Athens  
Dimosthenis Sarigiannis, Aristotle University of Thessaloniki  
Di Wang Technische, Universität Braunschweig  
Dolores Hidalgo Barrio, CARTIF Technology Centre

Evina Katsou, Brunel  
Ezio Ranieri, University of Bari  
Filiz Dilek, Middle East Technical University  
Francesco Fatone, Marche Polytechnic University  
Georgia Labuto, Universidade Federal de Sao Paulo  
Gerasimos Lyberatos, National Technical University of Athens  
Giuseppe Mancini, University of Catania  
Heribert Insam, University of Innsbruck  
H.J.H. (Jos) Brouwer, Eindhoven University of Technology  
Ioannis Anastopoulos, University of Ioannina  
Ioannis Skiadas, Technical University of Denmark  
Irimi Angelidaki, Technical University of Denmark  
Isam Janajreh, Masdar Institute  
Jale Yanik, Ege University  
Jian Li Hao, Xi'an Jiaotong-Liverpool University  
Joan Dosta, University of Barcelona  
Joseph Patrick Hettiaratchi, University of Calgary  
Juan Antonio Baeza Labat, Universitat Autònoma de Barcelona  
Jun Wang, Jiangsu University of Science and Technology  
Katarzyna Chojnacka, Wrocław University of Technology  
Katherine-Joanne Haralambous, National Technical University of Athens  
Katia Lasaridi, Harokopio University  
Konstantinos Aravosis, National Technical University of Athens  
Konstantinos Moustakas, National Technical University of Athens  
Lidia Lombardi, Università degli Studi Niccolò Cusano - Telematica Roma  
Lionel Limousy, Université de Haute-Alsace  
Luis Pérez Villarejo, Universidad de Jaén  
Luciano Matos Queiroz, University of Bahia  
Marco Baratieri, Free University of Bolzano  
Maria Teresa L. Santos, Instituto Superior de Engenharia de Lisboa  
Maria Zachariou-Dodou, Institute of Environment & Sustainable Development  
Mauro Majone, Sapienza University of Rome  
Meisam Tabatabaei, Universiti Malaysia Terengganu  
Mejdi Jeguirim, Université de Haute-Alsace  
Michalis Kornaros, University of Patras  
Mohammad Rehan, King Abdulaziz University  
Mukesh Kumar Awasthi, Northwest A&F University  
Nathalie Gontard, French National Institute for Agricultural Research  
Nick Voulvoulis, Imperial College  
Nickolas Themelis, Columbia University  
Nikolaos Mousiopoulos, Aristotle University of Thessaloniki  
Nikolaos Tzortzakis, Cyprus University of Technology



Panagiotis Kougias, Hellenic Agricultural Organisation- DEMETER  
Pascale Champagne, National Research Council of Canada  
Paul Christakopoulos, Lulea University of Technology  
Petros Gikas, Technical University of Crete  
Rafael Luque, University of Cordoba  
Rémy Bayard, DEEP - INSA Lyon - Université de Lyon  
Ronghou Liu, Shanghai Jiao Tong University  
Simos Malamis, National Technical University of Athens  
Simona Bennici, Institut de Science des Matériaux de Mulhouse – IS2M  
Stephen Smith, Imperial College  
Stergios Vakalis, University of the Aegean  
Stijn Van Hulle, Ghent University  
Su Shiung Lam, Universiti Malaysia Terengganu  
Sunil Kumar, CSIR-NEERI  
Sunita Varjani, Gujarat Pollution Control Board, Gandhinagar  
Ta Yeong Wu, Monash University  
Thrassyvoulos Manios, Technological Educational Institute of Crete  
Ulku Yetis, Middle East Technical University  
Vassilis Inglezakis, University of Strathclyde  
Zorana Naunovic, University of Belgrade



## ORGANIZING COMMITTEE

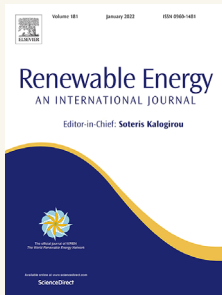
**Konstantinos Moustakas, National Technical University of Athens, Head**

A.C. (Thanos) Boursalas, Columbia University  
Dimitrios Malamis, National Technical University of Athens  
Elli-Maria Barampouti, National Technical University of Athens  
Konstantinos Passadis, National Technical University of Athens  
Maria Kyriazi, National Technical University of Athens  
Nikoleta Kontogianni, National Technical University of Athens  
Sophia Mai, National Technical University of Athens  
Stergios Vakalis, University of the Aegean  
Victor Dimoulis, Municipality of Central Corfu & Diapontian Islands

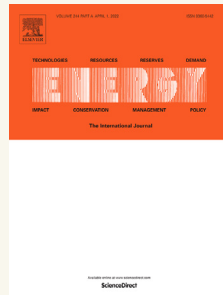


# Publications

## in International Scientific Journals



**Renewable  
Energy**



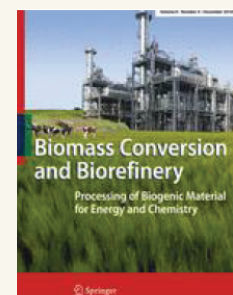
**Energy**



**Waste and Biomass  
Valorization**



**Environmental Science  
and Pollution Research**



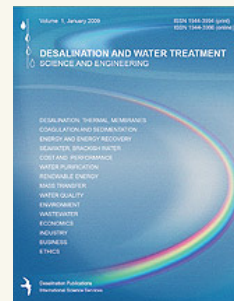
**Biomass Conversion and  
Biorefinery**



**Sustainable Chemistry  
and Pharmacy**



**Biofuel Research Journal**



**Desalination and  
water treatment**



**Biochemical Engineering  
Journal**



# Venue & Social Events



The **CORFU 2022 conference** will take place both with **physical presence** at the **Corfu Municipal Theater** (<https://dipethek.gr/en/theater-in-corfu>) at the **center of CORFU City** and **online (virtually)**.

The **welcome cocktail** will take place on 15<sup>th</sup> June 2022 at the **Garden of the People** after the end of the conference sessions, while the **Gala Dinner** will take place on Thursday 16<sup>th</sup> June 2022 at **Kanoni Harbour (Panagia of Vlacherna)**. A one-day excursion (by bus) will take place on Saturday 18<sup>th</sup> June 2022 starting from the **Corfu Municipal Theater** at 8.30 a.m.



The participants will have the chance to see the **CAPODISTRIAS MUSEUM**, the **MONASTERY OF PANAGIAS PALEOKAS-TRITSA**, the **LAZARIS Distillery & Artisan Sweets**, **ACHILLION GARDENS**, the **Governor's Olive Mill & KORISSION Lake** (sandy beach for swimming / Natura 2000 area / a cedar forest). The return time at the Corfu Municipal Theater is estimated at about 18.30.

Municipal Theater  
of Corfu

Capodistrias  
Museum

Monastery of  
Panagias Paleokastritsa

Lazaris Distillery & Artisan Sweets –  
Kumquat taste  
(cocktail tasting - local product)

Achillion  
Gardens

The Governor's Olive Mill  
Corfu Olive Tour  
(Olive Oil Taste)

Korissia Lake  
(Sandy beach for swimming +  
natura area + cedar forest + food)

8.00-9.15

Registration

**ROOM 1**

**Welcome Speeches**

9.15-9.45

**Welcome Speeches**

9.45-11.15

**Keynote Speakers**

**Chair: M. Loizidou**

Arnoldas Milukas, European Research Executive Agency - European Commission  
EU Research and Innovation: New Funding Opportunities for the Circular Economy

Jirí Jaromír KLEMEŠ, Brno University of Technology, Czech Republic  
Sustainable Solid Waste Management – Lessons from COVID-19 Pandemics

Carol S. K. Lin, City University of Hong Kong  
Reducing Transmission of Novel Coronavirus and Other Infectious Diseases Using  
Food Waste-derived Medical Textiles via Electrospinning for Healthcare Apparel and Personal  
Protective Equipment

Nicolas Abatzoglou, Université de Sherbrooke, Canada  
The Nano-F-PoRes Project for the production of nanocarbons and energy carriers from waste  
plastic streams

Stephen Smith, Imperial College London, UK  
Reprioritising Resource Recovery for Sustainability

11.15-11.45



Coffee Break

**ROOM 1****SESSION I****MSW management I****Experience of local authorities in waste management****Chair: M. Loizidou, G. Kremlis**

11.45-12.00	M. Loizidou Municipal biowaste: The way forward and the role of local authorities
12.00-12.15	M. Geranis, President FODSA of Central Macedonia, President of the Municipality of Pylaia Chortiatis Circular economy: From theory to practice
12.15-12.30	V. Analytis, General Director of the FODSA of Ionian Islands Vision and strategy for waste management in the Ionian Islands Region
12.30-12.45	I. Segkos, President of Voreia Pediada FODSA & Mayor of Hersonisos The era after MBT
12.45-13.00	D. Malamis The use of green kiosks for improving recycling at local level
13.00-13.15	A. Mavraganis The PAYT experience in Vrillissia Municipality
13.15-13.30	V. Dimoulis Marine litter management in the city of Corfu
13.30-13.45	S. Theodoridou, E.D. Polytides Integration of the Transformational Leadership Model into a school organization through the utilization of recycling and reuse of materials. Case study "The sustainable development ... is going to school"
13.45-14.00	V. Liogkas, M. Vitoraki Circular Economy and Textiles: Challenges and Opportunities
14.00-14.15	J. Barbir, A. Lingos, E. Foschi, Z. Stasiskiene, C. Skanavis, W. Leal Filho Assessing Readiness of Greek municipalities to introduce bio-based materials in waste management streams
14.15-14.30	L. Temmerman, C. Veeckman Which factors impact households' selective biowaste sorting? An agenda for future behaviour change campaigns in Athens
14.30-14.45	D. Grammatas Integrated waste management: The case of Thiva
14.15-15.00	Lunch Break



**ROOM 2**  
**SESSION II**
**Circular Economy & Symbiosis Networks**  
**Chair: D. Hidalgo, D. San Martin, A. Luciano**

11.45-12.00	I. L. de Paoli The Use of Synthetic Soil for The Vegetables Cultivation in Conditions of Limited Water Consumption
12.00-12.15	M. Gutiérrez, I. Olabarrieta, B. Iñarra, C. Bald, G. Foti, J. Zufía Changing perspectives: From waste and wastewater management to side-stream valorisation in fish cannery
12.15-12.30	M. Rizzari, E. Agosti, G. Grazieschi, C. Hoffmann, J. Bastos Supporting a regional strategy for circular economy in South Tyrol, Italy
12.30-12.45	K.M. Karakasné Steps towards circularity in hotel operation
12.45-13.00	V. Benedetti, F. Patuzzi, M. Baratieri FRONTSH1P CSS1: a Circular Systemic Solution for the valorisation of wood packaging waste
13.00-13.15	H. Pérez-Aguilar, M. Lacruz-Asaro F. Arán-Ais Industrial symbiosis to valorise wastewater derived from rendering plants for different industrial applications
13.15-13.30	T. Manios, F. Galliou, G. Daskalakis, I. Grammatikakis, I. Rombogiannakis, I. Vlachakis Innovative Feed Production from Food Waste and Poultry Slaughterhouse by-products: A Techno-economic Evaluation
13.30-13.45	V. Proskynitopoulou, S. Lorentzou, K. Plakas, R. Yaman, B. Herbert, Z.L. Ye, F.J. Rubio, A. Zouboulis, P. Kougias, K.D. Panopoulos Sustainable exploitation of biogas plant digestate within circular economy: high quality organic fertilizer production
13.45-14.00	E. Valiasil, M.H Sarrafzadeh, S.B. Ghaffari Industrial waste quantity, composition and characterization in Iran: circular economy approach
14.00-14.15	A. Reboa, G. Besio, L. Cutroneo, I. Geneselli, S. Gorbi, A. Nardi, M.E. Piccione, F. Regoli, M. Capello The EU Interreg Project "GEREMIA" on waste management for the improvement of port waters: results on monitoring the health status of fish as bioindicator

- 14.15-14.30 S. Werle, S. Sobek, M. Sajdak, H. Mumtaz, R. Muzyka  
Hydrothermal treatment of plastic waste within a circular economy perspective
- 14.30-14.45 Hongtao Zhang, Khadije Elkadi, Isam Janajreh  
Assessment of Multistage Freeze Desalination Process for Brine Management and Maximizing Water Recovery
- 14.45-15.00 C.I. Camacho, S. Estévez, G. Feijoo, M.T. Moreira  
Dark fermentation as an environmental-sustainable win-win solution for bioenergy production

**ROOM 3****SESSION III****Waste Valorization I****Chair: K. Chojnacka, B. Ruffino, A. Djukić-Vuković**

- 11.45-12.00 F. Rizzioli, D. Bolzonella, F. Battista  
Nutrient Recovery from agricultural digestate at high TRL: A European State of Art
- 12.00-12.15 M. Prasad, M. Gaffney, N. Tzortzakis, A. Jennings  
A rapid food waste valorisation into organic fertilizer using a so called disruptive technology
- 12.15-12.30 M. Samoraj, K. Chojnacka  
Innovative micronutrient fertilizers by biosorption for organic farming
- 12.30-12.45 S. Staikos, A. Karnaouri, S. D. Stefanidis, K.G. Kalogiannis, A.A. Lappas, E. Topakas  
Valorization of agricultural biomass residues towards the production of docosahexaenoic acid (DHA) by the heterotrophic dinoflagellate *Cryptothecodinium cohnii*
- 12.45-13.00 A. Witek-Krowiak, D. Szopa, K. Chojnacka  
Encapsulation of hydrolyzates from waste high-protein materials in a hydrogel matrix - a solution for sustainable agriculture
- 13.00-13.15 A. Djukić-Vuković, J. Grbić, D. Mladenović, S. Lazović, L. Mojović  
Advanced oxidation processes in treatment of agricultural biomass residues

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| 13.15-13.30 | G. Pesante, C. Bastianelli, A. Zuliani, R. Lo Coco, S. Ambrosini, A. Zamboni, N. Frison<br>Valorization of agricultural residues into microbial proteins and protein hydrolysates by PHA-producing bacteria                      |
| 13.30-13.45 | L. Daza-Serna, A. Masi, S. Serna-Loaiza, J. Pfnier, G. Stark, R. L. Mach, A.R Mach-Aigner, A. Friedl<br>Detoxification strategy of wheat straw hemicellulosic hydrolysate: an approach for cultivating <i>Trichoderma reesei</i> |
| 13.45-14.00 | M. Mironiuk, K. Chojnacka<br>Utilization of anaerobic digestate for fertilization purposes - a new technology proposal   |
| 14.00-14.15 | M. Parchami, J. A. Ferreira, M. J. Taherzadeh<br>Valorization of brewers' spent grain (BSG) by submerged edible filamentous fungi cultivation  |
| 14.15-14.30 | A. Tzani, D.-A. Bagaki, A. Detsi<br>Natural Deep Eutectic Solvents as plasticizers and mechanical properties modifiers of edible films from dairy by-products  |
| 14.30-14.45 | E. Suárez, M. Tobajas, A. Diaz, M. Reguera, A.F. Mohedano, M.A. de la Rubia<br>Evaluation of green waste hydrochar application as soil amendment   |
| 14.45-15.00 | S. Shukla, A. Shukla, A. W. Hodges<br>Valorization of farm pond biomass as fertilizer for economically recycling phosphorus  |



**ROOM 4**  
**VIRTUAL**  
**SESSION IV**

**Aerobic Treatment & Anaerobic Digestion I**  
**Chair: M. Tabatabaei, S. Varjani, M. Kumar Awasthi**

11.15-11.30	C. F. Portela, M. T. Santos, T. Trindade Study of composting in a Portuguese urban area
11.30-11.45	E. Charilaou, A. Christou, P. Dalias, A. Zorpas, A. Agapiou, M. Stylianou Improving the fertility of mine tailings with the use of compost materials
11.45-12.00	S. Fouguira, A. Ben Amara, M. El Haji, J. Benhra, E. Ammar Automatic And Smart Composting Unit Achievement
12.00-12.15	G.M. Fabian, V.F. Nicolas, G.P. Miguel Evaluation of the C/N ratio obtained in the composting of sugar cane residues
12.15-12.30	N. Gharsallah, D. Triki, F. Feki, S. Loukil, S. Sayadi, S. Khoufi Anaerobic co-digestion of fruit and vegetable wastes for biogas production and digestate valorization
12.30-12.45	G. Ozyildiz, D. Okutman-Tas, D. Guven, G. Emel Zengin, E. Cokgor, G. Insel A model based evaluation of anaerobic conversion kinetics on full-scale municipal sludge digesters
12.45-13.00	Arma Yulisa, Sang Hyeok Park, Seokhwan Hwang Effect of feeding strategies on anaerobic digestion of fish waste
13.00-13.15	S. De Gisi, G. Gadaleta, A. Giuliano, MK. Kuchta, G. Santomasi, F. Todaro, M. Notarnicola Anaerobic digestion of bio-plastic waste: the issue of biodegradation and weight loss
13.15-13.30	M. Dewiandratika, S.M. Grimes, S.R Smith Alkali pretreatment and high solids anaerobic digestion of lignocellulosic agricultural residues with coal fly ash and fermented food waste neutralisation
13.30-13.45	Wonseob Lee, Md Abu Hanifa Jannat, Chayanee Chairattanawat, Eunji Kim, Seokhwan Hwang Influence of initial methanogenic diversities on the process performance of anaerobic methanation of acetate
13.45-14.00	S. Pentassuglia, M. De Sanctis, V.G. Altieri, C. Di Iaconi Effect of thermal and thermo-chemical pre-treatments on OFMSW anaerobic digestion

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14.00-14.15	P. Photiou, I. Vyrides Phosphorous adsorption by treated biowaste: challenges and prospects
14.15-14.30	Sujin Choi, Chayanee Chairattanawat, Yulisa Arma, Sanghyeok Park, Seokhwan Hwang Effects of Fish Waste Addition on Anaerobic Co-digestion of Sludge with Food Waste
14.30-14.45	A. Mohammad Rahmani, B. Ahmed, A. A. Kazmi, C. Shekhar P. Ojha, V. Kumar Tyagi Anaerobic co-digestion of wheat straw with food waste and cattle manure: Optimization of processing parameters (ISR, C/N, TS %) for enhanced biogas yield
14.45-15.00	L. D. Allegue, M. Ventura, J. A. Melero, D. Puyol Organic load affects carbon and electron allocation in OFMSW photobiorefinery of purple phototrophic bacteria for PHA accumulation

**ROOM 1**  
**SESSION V**
**MSW management II**  
**Experience of local authorities in waste management**  
**Chair: M. Loizidou, G. Kremlis**

15.00-15.15	T. Prastitou Merdi 2021 Proposal for a Regulation on shipments of waste: A significant step forward in updating the EU legislative framework?
15.15-15.30	L. Streff Transition of Georgia to a new waste management in the sense of circular economy using the examples of Tbilisi and Batumi
15.30-15.45	K. Tsiptsias Management of household hazardous waste
15.45-16.00	I. Spanos, A. Sotiropoulos, Ch. Fotakis, K. Tsimpliaris, G. Rigopoulos, S. Mani Hazardous Household Waste in the Municipality of Athens: qualitative and quantitative characteristics
16.00-16.15	A. Anthouli, K. Valta, C. Tsouti, E. Vogiatzidaki, E. Skourtanioti, B. Matuška, V. Melčová, V. Matušková, B. Miranda, J. Franco, P. Griffiths, S. Rojo Assessment of the policy and legislative framework, on urban biowaste valorisation and bio-based products, at the EU, and at national, regional and local level for Greece, Czech Republic, Italy, Spain, and UK
16.15-16.30	E. Chioatto, M.C. Liscio, P. Sospiro State of the art of circular materials accounts
16.30-16.45	I. Petrovic, N. Kaniski, N. Hrcic, D. Bosilj Short and long-term settlement properties of MBT waste
16.45-17.00	P. Nowakowski, M. Wala Investigating electric garbage trucks use for waste collection for urban and rural communities
17.00-17.15	M. Struk, P. Wercholáková Incentive systems in municipal solid waste management – a 10-year case study of Mikulov district
17.15-17.30	Á. Fernández Braña, C. Dias Ferreira Practical comparison of alternatives for unit-based pricing of municipal waste. The experience of the LIFE PAYT project

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17.30-17.45	I. Voukkali, P. Loizia, A.A. Zorpas Urbanization and Solid Waste Production: prospects and challenges
17.45-18.00	H. Hinrichsen, O. Dahn, K.E.S. Klint, C. Aggelopolus, F. Dondero A holistic solution for PFAS pollution. Aims, solutions and remediation technologies developed under the H2020 project SCENARIOS
18.00-18.15	M. Romenska How to harmonise separate collection - Best practices, local realities and EU wide needs
18.15-18.30	S. Oluwadipe, D. Purchase, H. Garelick, S. McCarthy, H. Jones Investigating Household Recycling Barriers in Westminster City
18.30-18.45	Yu. Matiuk, G. Liobikiene The impact of informational, convenience, social, and financial tools on waste sorting behavior in Lithuania
18.45-19.00	V. Dimoulis Intelligent Cities Challenge (ICC): A green and digital transition opportunity for the Municipality of Central Corfu and Diapontia Islands
19.00-19.15	P. Loizia, A.A. Zorpas, I. Voukkali The impact of Covid-19 Pandemic in municipal solid waste production. The case study of Ayia Napa Municipality



**ROOM 2**  
**SESSION VI**
**Tools in the field of waste management**  
**Chair: K. Abeliotis, D. Malamis, F. Patuzzi**

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| 15.00-15.15 | E. Maniati Anagnostopoulou, V. Terzis, C. Chroni, K. Abeliotis, K. Lasaridi<br>Social Life Cycle Assessment of the Transformation of Food Waste to Animal Feed via a Solar Drying Unit in Greece   |
| 15.15-15.30 | C. García-Velásqueza, Y. van der Meera<br>Ex-ante Life Cycle Assessment of the energy production in a paper and pulp mill  |
| 15.30-15.45 | D. San Martin, G. Foti, M. Gutierrez, C. Bald, J. Ibaruri, S. Espersen, J. Zufía, E. Sáez de Cámara, B. Iñarra<br>Analytic Hierarchy Process (AHP) for the analysis of the viability of fish side streams valorisation                                   |
| 15.45-16.00 | M. Benzerzour, A. Zeraoui, W. Maherzi, N.E. Abriak<br>Management of waste in Civil engineering: a new decision support software for the reuse of dredged sediments   |
| 16.00-16.15 | L. Menin, S. Piazzini, D. Antolini, M. Baratieri<br>Embedding commodity price variation in the economic evaluation of biofuels projects: the example of a Power-to-Gas biomass-to-biomethane process under the Italian biomethane subsidy scheme         |
| 16.15-16.30 | M. Quintern<br>1.3 million tonnes industrial and municipal organic waste vermicomposted in New Zealand - Industrial vermicomposting integrated in farm management for cost efficient, regional organic waste management and sequestering carbon in soils |
| 16.30-16.45 | D. Tangilis, E. Dellaporta, T. Paschali<br>e-Governance in Solid Waste Management of Central Macedonia   |
| 16.45-17.00 | T. Soleymani Angili, K. Grzesik, E. Salimi, M. Loizidou<br>Life Cycle Analysis of Food Waste Valorization in Laboratory-Scale  |
| 17.00-17.15 | M. Tsangas, A.A. Zorpas<br>Meta-analyses of the recent energy strategic planning in the framework of sustainability assessment. A review   |
| 17.15-17.30 | I. Papamichael, G. Chatziparaskeva, I. Voukkali, P. Loizia, G. Pappas, A. A. Zorpas<br>Existing tools used in the framework of environmental performance   |

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17.30-17.45	J. Bacenetti, C. Conti, M. Costantini, M. Guarino Life cycle assessment of pig rearing with wet acid scrubber for ammonia emissions reduction
17.45-18.00	T. Daddi, L. Marrucci, N. Maria Todaro, F. Iraldo Life Cycle Assessment (LCA) of a professional football match and the relevance of food & beverage impacts
18.00-18.15	M. Tsakona, E. Karapidakis, T. Manios, N. Vidakis Roadmap to zero waste athletic facilities: The case of Athens Olympic Sports Center
18.15-18.30	P. Sospiro, M.C. Liscio, C. De Ponte State of the art on Life Cycle Assessment on fashion industry
18.30-18.45	N. Salahi, M. A. Jafari, A. Abulibdeh A Network Modelling Approach to Energy Efficiency Optimization in Industrial Facilities
18.45-19.00	É. Erdélyi Sensitivity analyses of carbon footprint measurement, comparative case studies

## ROOM 3

## SESSION VII

## Bioprocesses, Biorefineries in waste management I

Chair: M. T. Moreira, N. Abatzoglou, A. Koutinas

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|-------------|---|
| 15.00-15.15 | A. Zuliani, R. Lo Coco, G. Pesante, F. Battista, D. Bolzonella, N. Frison<br>Anaerobic bioprocesses towards the conversion of carbon dioxide into bio-based products: as short review |
| 15.15-15.30 | C. A. Cardona Alzate, M. Ortiz-Sanchez, J.C. Solarte-Toro<br>Food residues biorefineries: Design strategy based on multifeedstocks analysis   |
| 15.30-15.45 | R. Rebolledo-Leiva, M. T. Moreira, S. González-García<br>Isobutene production from wheat straw in a biorefinery perspective: A life cycle analysis                                    |
| 15.45-16.00 | V. Felekis, C. Stavraki, D. Malamis, S. Mai, E.M. Barampouti<br>Improving sustainability of potato processing industries  |
| 16.00-16.15 | F. Regis, A. Monteverde Videla, D. Fino<br>Fermentation of CO <sub>2</sub> and H <sub>2</sub> for formic acid production by Thermoanaerobacter kivui                                  |
| 16.15-16.30 | N. Perez-Esteban, C. Vidal-Antich, M. Peces, J. Dosta, S. Astals<br>Towards understanding the role of product concentration on acidogenic fermentation yield and profile              |
| 16.30-16.45 | D. Ladakis, K. Filippi, C. Pateraki, O. Psaki, A. Koutinas<br>Evaluation of cold plasma treatment for enhanced enzymatic hydrolysis of waste stream                                   |
| 16.45-17.00 | U. C. Roy, J. L. Wagner, T. Radu<br>Production of metabolites in microalgae under alkali halophilic growth medium using dissolved inorganic carbon source                             |
| 17.00-17.15 | S. Serna-Loaiza, W. Wukovits, A. Friedl<br>Integral valorization of grapevine shoots from the variety Grüner Veltliner: A techno-economic assessment                                  |
| 17.15-17.30 | M. Ortiz-Sanchez, C.A. Cardona Alzate, J.C. Solarte-Toro<br>Organic kitchen food waste valorization applying the biorefinery concept in the Colombian context                         |

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17.30-17.45	F. Hernández-Ramos, A. Morales, R. Fernández-Marín, L. Sillero, I. Dávila, X. Erdocia, M. Gonzalez, R. Llano-Ponte, J. Labidi Integrated Multiproducts Biorefinery
17.45-18.00	N. Giannakis, E. Titiri, E. Stylianou, K. Filippi, C. Pateraki, A. Koutinas Integrated biorefinery development for the extraction of value-added components from orange peel waste streams
18.00-18.15	T. Sar, M. Y. Akbas, M.J. Taherzadeh Integration of bioactive compounds rich pomegranate wastes into biorefinery
18.15-18.30	P. Nachtergaele, S. De Meester, J. W. Thybaut, J. Dewulf Increasing flexibility of feedstock use in biorefineries via modelling: producing a targeted set of oleochemicals from different quality grades tallow
18.30-18.45	O. Psaki, D. Ladakis, A. Koutinas Optimisation of fermentation parameters for enhanced poly(3-hydroxybutyrate) production
18.45-19.00	Ch. Samanides, I. Vyrides Valorization of solid metal waste for the production of platform chemicals (VFAs) through the fixation of CO <sub>2</sub> using anaerobic granular sludge and homoacetogen bacteria strains



**ROOM 4****VIRTUAL  
SESSION VIII****Management of specific waste streams, Recycling & Resources Recovery**  
**Chair: A. Ribeiro, D. Juchelková, V. Kumar Vijay**

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| 15.00-15.15 | F. Burgoa, R. H.E.M. Koppelaar, D. Hidalgo<br>Enhancing WEEE management using the Circular Digital Thread  |
| 15.15-15.30 | K.C. Syrmakizis, K.G. Tsakalakis, I.C. Sammas<br>Valorisation of Base Metals contained in fine particles of End-of-Life Printed Circuit Boards with the use of Column Flotation Process                    |
| 15.30-15.45 | S. Gupta, K.K. Pant, G. Corder<br>A greener approach for valuable metal recovery from the waste lithium-ion batteries  |
| 15.45-16.00 | W.T. Ma, J.L. Hao, C. Zhang, F.Y. Guo, L.D. Sarno<br>Critical Success Factors for circular economy building refurbishment construction and demolition waste management                                     |
| 16.00-16.15 | M. Stefanidou, V. Pachta<br>Exploitation of secondary products coming from the perlite process in building materials   |
| 16.15-16.30 | S.W. Yu, J.L. Hao<br>Mediating effect of corporate environmental responsibility on the relationship between external supervision and pro-environmental behaviour: evidence from renovation sector          |
| 16.30-16.45 | W. Hua, Y. Xiao<br>Characterizing and modeling single particle crushing behavior of construction and demolition waste (CDW) by accurate shape quantification and peridynamics                              |
| 16.45-17.00 | Jianli Hao, Yao Sun, Jingfeng Yuan, Yi Yang, Hua Zhang<br>Innovative application of digital platform in construction waste supply chain management under circular economy                                  |
| 17.00-17.15 | Changjiang Kou, Mengyun Zhang, Aihong Kang, Peng Xiao, Haotian Hu<br>Research on Microscopic Characteristics of Interfacial Transition Zone of Recycled Coarse Aggregate Asphalt Mixture                   |
| 17.15-17.30 | K. Kiskira, I. Lourentzatos, Th. Lymperopoulou, L.A. Tsakanika, Ch. Pavlopoulos, K. Papadopoulou, K.M. Ochsenkühn, G. Lyberatos, M. Ochsenkühn-Petropoulou<br>Biorecovery of scandium from bauxite residue |

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17.30-17.45	R. Kol, D.S. Achilias, S. De Meester Solvent-based techniques for recycling of plastics
17.45-18.00	A. Pereira, C. Dias Ferreira Generation, sorting and discarding of waste from clinical analysis laboratories in São Tomé and Príncipe
18.00-18.15	L. Tayou Nguemna, F. Marzulli, L. Lorini, R. Lauri, M. Majone, M. Villano Continuous process for Polyhydroxyalkanoates production with mixed microbial cultures
18.15-18.30	J. Růžičková, H. Raclavská, S. Koval, D. Juchelková, M. Kucbel, B. Švédová, K. Slamová Fate of microplastics during composting and their leachability
18.30-18.45	K. Hammami, A. Souii, H. Chouchane, A. Cherif, M. Neifar Production of polyhydroxyalkanoates on waste cooking oil employing <i>Pseudomonas rhizophila</i> S211
18.45-19.00	C. Pedrosa, J. Asperilla, P. Campayo, F.R. Beltrán, M.U. de la Orden, J. Martínez Urreaga Incorporation of degraded fractions of PLA waste into PLA to produce biobased and biodegradable materials with improved properties
19.00-19.15	I.S. Lase, K. Kleinhans, J. Dewulf, K. Ragaert, S. De Meester The potential net value creation of recycling non-household end-use plastics waste: A case study from the City of Ghent
19.15-19.30	I.-E. Parigoridi, E. Tsoumani, K. Akrida Demertzi, P. G. Demertzis Development of a reliable extraction method for the identification and quantification of 7 phthalate esters in recycled paperboard materials intended for food contact applications
19.30-19.45	A. Hejna, P. Kosmela, W. Żukowska, A. Olszewski, Ł. Zedler, K. Formela, K. Skórczewska, M. Barczewski, R. Barczewski Thermomechanically modified ground tire rubber/zinc borate compositions as fillers for fM30:M47 lexible polyurethane foams
19.45-20.00	G. Z. Beretta, G. Labuto, E. N. V. M. Carrilho Adsorption of paracetamol and caffeine in water by a magnetic bionanocomposite
20.00-20.15	A. S. ElGendy, A. T. Mohamed Effect of pH on the removal efficiency of phenol in oil refinery wastewater using Cobalt Ferrite Nano-composites
20.15-20.30	N. Ardeleanu Applying Circular economy principles in biodiversity protection in Natura 2000 sites

8.00-9.30

Registration

9.15-10.45

**ROOM 1**

## **Keynote Speakers,**

**Chair: K. Moustakas, D. Malamis**

Daniel Tsang, Hong Kong Polytechnic University

Yard waste biochar for carbon-negative construction towards carbon neutrality

Jae K. (Jim) Park, Department at the University of Wisconsin-Madison, USA

Sustainable Upcycling of Scrap Tires for Environmental Cleanup and Construction

Su Shiung Lam, International Centre of Universiti Malaysia Terengganu

Microwave Processing of Waste for Circular Waste Management

Rafael Luque, University of Cordova, Spain

Benign-by-design nanocomposites for energy, environmental and catalytic applications

Marco Baratieri, Free University of Bolzano, Italy

Integration of hydrothermal processes for fuel and hydrogen production from digestates

Hussam Jouhara, Brunel University London, UK

Waste Heat and Water Recovery from Industrial Flue Gases

10.45-11.15



Coffee Break



**ROOM 1**  
**SESSION IX****SESSION IX: Anaerobic Digestion I**  
**Chair: D. Bolzonella, M. Loizidou, S. Smith**

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|-------------|---|
| 11.15-11.30 | D. Bertasini, F. Battista, N. Frison, D. Bolzonella<br>BioHydrogen and BioMethane production through two stages AD: A European State-of-Art   |
| 11.30-11.45 | M. Zeppilli, L. Cristiani, G. Fazi, M. Majone, M. Villano<br>Biogas upgrading through the hydrogen production and CO <sub>2</sub> removal in a microbial electrolysis cell (MEC)  |
| 11.45-12.00 | P. Tsapekos, B. Khoshnevisan, X. Zhu, L. Treu, P.G. Kougias, I. Angelidaki<br>Anaerobic digestion of urban bio-waste and utilization of digestate as a nutrients source for biogas upgrading  |
| 12.00-12.15 | H.J. Laavi, M. Nasrullah, E. Sapei, T.T. Piira, H. Pastinen-Kurula, P. Laulumaa<br>Biogas calculation tool for theoretical biomethane production  |
| 12.15-12.30 | K. Filippou, P.M. Bourcha, A. Zarchaliou, K. Papadopoulou, G. Lyberatos<br>Co-digestion of condensate produced from drying of Household Fermentable Waste and Landfill Leachate for Biogas production through Anaerobic Digestion                       |
| 12.30-12.45 | M. Gaspari, M. Alvarado-Morales, P. Tsapekos, L. Treu, S. Campanaro, I. Angelidaki, P. G. Kougias<br>Inhibitory effect of long chain fatty acid on biogas production via a single pulse: changes in microbial community dynamics and simulation aspects |
| 12.45-13.00 | L. Cristiani, L. Leobello, M. Zeppilli, M. Majone<br>Role of the gaseous inlet flow rate in a tubular pilot scale MEC for biogas upgrading  |
| 13.00-13.15 | D. Hidalgo, J. Castro, D. Díez, J.M. Martín-Marroquín<br>Torrefaction as a pretreatment of lignocellulosic biomass in anaerobic digestion   |
| 13.15-13.30 | A.B. Yazid, S. Grimes, S. R. Smith<br>Pretreatment of Lignocellulosic Biomass with Tannery Wastewater for Solid-State Anaerobic Digestion   |
| 13.30-13.45 | J. Walczak, M. Zubrowska-Sudol<br>Effect of hydrodynamic disintegration on the methane potential of the organic fraction of municipal solid waste   |

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13.35-14.00	Y. Odabaş, Y. D. Yilmazel Enhancement of biomethane production from cattle manure by addition of conductive materials
14.00-14.15	To-Hung Tsui, Kai-Chee Loh, Jingxin Zhang, Yanjun Dai, Yen Wah Tong Techno-economic tradeoffs of bioenergy recovery and system retrofitting in anaerobic digestion infrastructure for expanded treatment service
14.15-14.30	A. Isha, V. Kumar Vijay, P. M. V. Subbarao, R. Chandra A comparative study based on anaerobic digestion of kitchen waste with waste water and fresh water
14.30-14.45	M. Jraou, F. Feki, S. Loukil, S. Sayadi, S. Khoufi Effect of organic loading rate on anaerobic digestion of fruit and vegetable wastes: Process performance and biogas potential
14.15-15.00	Lunch Break

**ROOM 2**  
**SESSION X**
**Agricultural Waste Management, Aerobic Treatment**
**Chair: N. Tzortzakis, A. Witek-Krowiak, S. Mai**

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|-------------|---|
| 11.15-11.30 | S. Papageorgiou, A. Skordilis<br>Food losses and environmental impacts from the Greek agricultural sector and measures to reduce them   |
| 11.30-11.45 | A. Chrysargyris, G. Toumazou, N. Tzortzakis<br>Application of wine and olive oil production wastes as substrates for the successful cultivation of <i>Chrysanthemum indicum</i> potted flowers      |
| 11.45-12.00 | M. Christou, Th. Terzopoulos, E. Zafeiris, C. Zafiris<br>Renewable Gas Injection in the DEDA Natural Gas Network in the region of Eastern Macedonia & Thrace  |
| 12.00-12.15 | A. Scialletti, A. Muscolo, G. Calamarà, L. Lisciandra<br>Sustainability in Agriculture Waste for new organic-mineral fertilizers  |
| 12.15-12.30 | M. Wzorek, R. Junga, E. Yilmaz<br>Co-pyrolysis of animal manure and waste plastic via TG-FTIR analysis  |
| 12.30-12.45 | A. Chrysargyris, P. Xylia, N. Tzortzakis<br>Olive-mill and grape-mill waste as a substitute growing medium component for unexploded vegetables production in nurseries                              |
| 12.45-13.00 | E.R. Oviedo-Ocaña, J. Soto-Paz, V. Sanchez-Torres<br>Incorporation of substrates and inoculums as operational strategies to promote lignocellulose degradation in co-composting of green waste      |
| 13.00-13.15 | D. Kouvousi, D. Lekkas, G. Daskaloudis<br>Biowaste management in small communities using the home composting method: The case of the Reception and Identification Centre (RIC), Kara Tepe in Lesvos |
| 13.15-13.30 | C. Omara-Ojungu, J. Bouček, K. Berchová Bímová, L. Trakal, M. Lukac<br>Microchar an organic biowaste used to remediate agricultural drought soil and increase biomass growth                        |
| 13.30-13.45 | D. Kotsia, A.S. Stasinakis, M.S. Fountoulakis<br>Dairy wastewater treatment in vertical flow constructed wetlands using a mixture of perlite and sponge carriers as substrate material              |



- 13.45-14.00 A. Hanc, T. Hrebeckova  
Compostability and vermicompostability of greaseproof wrapping paper
- 14.00-14.15 T. Manios, I. Daliakopoulos, A. Maragkaki, N. Markakis, G. Daskalakis, I. Sabathianakis  
On Site Treatment of Food Waste through Mechanical Composting Units:  
A Techno-economic Evaluation

**ROOM 3**  
**SESSION XI**

**Waste Valorisation II**  
**Chair: J. J. Klemes, R. Luque, J. L. Hao**

- 11.15-11.30 J.M. Jorge, V. Sousa, R. Nogueira  
Managing carbon waste in a decarbonized industry: Assessing the potential of concrete mixing storage
- 11.30-11.45 D. Cvijić, S. Sukur, B. Đurić, D. Dragojlović, P. Ilić, S. Gotovac Atlagić  
Transformation of the Hematite Ultramicroparticles from Red Mud into Other Forms of Iron Oxides
- 11.45-12.00 U. Basse, E. Antwi, K. Sarquah, M. Hartmann, H. Satyanarayana, M. Nelles  
A review of thermal treatment options for single-use, multilayered and composite waste plastics in Africa
- 12.00-12.15 A. Alcazar-Ruiz, L. Sanchez-Silva, F. Dorado  
Hydrocarbon selectivity enhancement through catalytic fast co-pyrolysis of almond shell and plastic wastes blends
- 12.15-12.30 H. Eltohamy, G. Cecere, H. Yiannoulakis, Duong H. Hoang, L. Rigamonti  
Minerals recovery from beneficiation waste in mining industry:  
prospective LCA of Grecian Magnesite case study
- 12.30-12.45 E. Eslami, E. Abdurrahman, G. Ferrari, G. Pataro  
A case study of Italian tomato processing industry: a comprehensive evaluation from production, water, and energy consumption to waste valorization and LCA point of view
- 12.45-13.00 A.J Bowles, G.D Fowler  
Consecutive recovery of three high-value products from waste tyres via pyrolysis in a batch rotary kiln

13.00-13.15	S. Elia, M. Stylianou, A. Agapiou Cheese whey wastewater treatment by combined Electrocoagulation-Electrooxidation
13.15-13.30	S. Mariyam, T. Al-Ansari, G. McKay Date waste management via pyrolysis: The effect of particle size on thermokinetics and thermodynamics
13.30-13.45	A. Veses, A. Sanchís, J. Daniel Martínez, J. Manuel López, T. García, R. Murillo Scaling-up of waste tyre pyrolysis process from TRL-5 up to TRL-7 using an auger reactor technology
13.45-14.00	M. Kyriakou, S. Parmaki, M. Kallis, M. Christodoulou, A. Ioannou, V. Fotopoulos, M. Koutinas Metabolic responses of <i>Saccharomyces cerevisiae</i> to environmental stresses during bioethanol production using biochar-based biocatalysts
14.00-14.15	V. Gorodko, H. Auer, K. Nikolowski, S. Hippmann, M. Partsch, A. Michaelis Development of a robust resynthesis process for cathode active material (NCM-type) from the leachate of the COOL-process
14.15-14.30	M. E. Silva, S. Maia, L. Simões, I. Brás Circular Bioeconomy - Potential Recovery by the Municipalities of the Compost Produced from Biowaste
14.30-14.45	F. Zilia, J. Bacenetti, M. Sugni, L. Orsi Setting up a circular and sustainable business model for sea urchin

**ROOM 4****VIRTUAL  
SESSION XII****LIFE 30-year Anniversary – HORIZON EUROPE****Master-class on Horizon Europe: How to win funds for your project?****Innovation - Startups****The experience of LIFE projects****Chair: G. Protopapas, P. Papazoglou**

11.15-11.30	G. Protopapas LIFE Programme - Call 2022
11.30-12.00	M. Papastavrou Hints & Tips for Competitive LIFE-Proposals
12.00-12.45	P. Papazoglou Horizon Europe: General Introduction & Structure, Funding Mechanisms & Partner Search, Proposal Preparation Tips

12.45-13.00	J. Bell Creating startups to solve societal challenges
13.00-13.15	M. Loizidou Research & Innovation through LIFE & HORIZON projects
13.15-13.30	X. Gamisans LIFE BIOGASNET: Bioprocess for simultaneous biogas landfill desulfurization and nitrogen removal from leachate in a pilot plant: Results & Prospects
13.30-13.45	E. Stylianopoulou Presentation of the LIFE-IP CYzero WASTE: Intelligent monitoring and efficient waste reduction in Cyprus Island
13.45-14.00	D. Malamis Biomass and CO <sub>2</sub> valorisation in an integrated biorefinery approach (LIFE CIRCforBIO & HORIZON CRONUS)

**ROOM 1****SESSION XIII****Anaerobic Digestion II****Chair: A. Zouboulis, P. G. Kougias, C. Eskicioglu**

15.00-15.15	G.C. Mitraka, K.N. Kontogiannopoulos, A.I. Zouboulis, P.G. Kougias Pre-treatment of sewage sludge to enhance methane production: optimal technology's evaluation through continuous reactor operation
15.15-15.30	A. Garlicka, P. Kupidura, P. Krawczyk, K. Umiejewska, M. Zubrowska-Sudol, A. Muszyński Can image analysis prove the re-flocculation of disintegrated sewage sludge subjected to anaerobic digestion?
15.30-15.45	A. Lanfranchi, B. Chouaia, G. Tassinato, C. Cavinato Microbial community of the anaerobic fermentation of urban waste: effect of the hydrodynamic cavitation pre-treatment
15.45-16.00	N. Papastefanakis, A. Maragkaki, M. Fountoulakis, C. Tsompanidis, T. Manios Improving Anaerobic Co-digestion of Sewage Sludge with Solar Dried Food Waste

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16.00-16.15	Pengyu Dong, Jin Li, D. P.L. Rousseau, S. W.H.Van Hulle Coagulation in combination with anaerobic digestion for enhancement of resource recovery from fecal sludge
16.15-16.30	A. Chatzis, P. Kougias, P. Gkotsis, K. Kontogiannopoulos, E. Peleka, A. Zouboulis Effect of trickling filters in biological methanation
16.30-16.45	To-Hung Tsui, Shuhan Lim, Jingxin Zhang, Yanjun Dai, Yen Wah Tong Bioenergy recovery from sewage sludge in wastewater treatment plant towards energy neutrality: Machine learning and heterogeneous datasets
16.45-17.00	V.P. Aravani, K. Tsigkou, M. Kornaros, V.G. Papadakis Anaerobic co-digestion of agricultural residues produced in Southern Greece during spring/summer season
17.00-17.15	G. Balasundaram, P. Gahlot, A.A. Kazmi, V. Kumar Tyagi Insights into the formation of inhibitory byproducts during the pretreatment of biomass and their effects on anaerobic digestion
17.15-17.30	N. Rey-Martínez, A. Lara, X. You, S. Martínez-Lozano, E. Borràs Assessment of Volatile Fatty Acids production by thermophilic partial anaerobic digestion of blackwater and kitchen waste
17.30-17.45	A. Serra-Toro, S. Vinardell, S. Astals, J. Llorens, J. Mata-Álvarez, F. Mas, J. Dosta Recovery of ammonia from acidogenic fermentation effluents using a hydrophobic membrane contactor
17.45-18.00	F. Sánchez-Soberón, M. Fernandes, G.F. Pantuzza, N. Ratola Presence and fate of volatile methylsiloxanes in anaerobic digesters from WWTPs
18.00-18.15	A. Sarrion, R.P. Ipiates, M.A. de la Rubia, A.F. Mohedano, E. Diaz Nutrient and energy recovery from chicken meat and bones meal by hydrothermal treatment and anaerobic digestion
18.15-18.30	G.D. Jojoa-Unigarro, S. González-Martínez Effects of pH and reaction time during fermentation on the subsequent methanization of OFMSW
18.30-18.45	A. Paliwal, H.N. Chanakya, S. Dasappa, B.G Namratha, R. Reddy Lignocellulose digestate from the solid-state reactor -methanogen colonization and 'end-of-life' use as inocula source
18.45-19.00	L. Mazzeo, V. Piemonte Bio-aerosol and particulate matter evaluation in presence of a LAB-scale Anaerobic Digester for Volatile Fatty Acids (VFAs) production



**ROOM 2**  
**SESSION XIV**
**Food Waste Management**
**Chair: D. Malamis, C. Chroni, A. Maragkaki**

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| 15.00-15.15 | C. Chroni, K. Abeliotis, A. Arfanakou, S. Mani, K. Koryzi, K. Lasaridi<br>Development of the Food Waste Prevention Action Plan for Greece in the framework of the LIFE -IP CEI GR project   |
| 15.15-15.30 | P. Tsafara, K. Passadis, I. Bousoulas, D. Malamis E.M. Barampouti, S. Mai<br>Stepwise verification and upscaling process for bioethanol production from source separated food waste   |
| 15.30-15.45 | D. San Martin, J. Ibarruri, N. Luengo, J. Ferrer, A. Garcia-Rodriguez, I. Goiri, R. Atxaerandio, J. Zufía, E. Sáez de Cámara, B. Iñarra<br>Valorisation strategies of Spent Coffee Ground as an ingredient for ruminants                      |
| 15.45-16.00 | C. Chroni, E. Sigala, C. Boikou, S. Piperis, G. Siakas, K. Abeliotis, K. Lasaridi<br>Food waste generation in Greek households – A quantitative and qualitative approach  |
| 16.00-16.15 | D. Fotiou, K. Argyropoulos, P. Kolompourda, N. Solomakou, A. M. Goula<br>Valorization of peach peels with an optimized drying process based on ultrasounds pretreatment with ethanol  |
| 16.15-16.30 | Hailin Tian, Miao Yan, Jieyu Zhou, Qinglian Wu, Yen Wah Tong<br>A closed loop case study of food waste management in Singapore  |
| 16.30-16.45 | E. Chezanoglou, N. Kenanidou, C. Spyropoulos, D. Xenitopoulou, E. Zlati, A.M. Goula<br>Encapsulation of pomegranate peel extract in sucrose matrix by co-crystallization  |
| 16.45-17.00 | J. Raček, T. Chorazy, M. Vršanská, M. Brtnický, L. Mravcová, J. Kučerík, P. Hlavínek<br>Pyrolysis of Food Waste – Solid Carbonaceous Product/Biochar for Material Use   |
| 17.00-17.15 | A. Papadaki, A. Lekka, M. Giannaki, I.L. Lappa, V. Kachrimanidou, N. Kopsahelis<br>Whey protein edible films grafted with bacterial nanocellulose and essential oil: Characterization and application on cheese products                      |
| 17.15-17.30 | D. San Martin, J. Ibarruri, N. Luengo, J. Ferrer, A. Garcia-Rodriguez, I. Goiri, R. Atxaerandio, J. Zufía, E. Sáez de Cámara, B. Iñarra<br>Hydrolysis strategies for the valorisation of Grape stems to improve their value in ruminant feeds |

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| 17.30-17.45 | C. Bald, B. Iñarra, J. Ibarruri, M. Gutiérrez, D. San Martin, N. Luengo, J. Zufía<br>Production of savoury compounds from different side-streams of the seafood value chain   |
| 17.45-18.00 | F. Sereti, A. Papadaki, E. Eriotou, N. Kopsahelis<br>Sustainable carotenoid synthesis from cheese whey: evaluation of key fermentation parameters and carotenoid profile using two novel <i>Rhodospiridium kratochvilovae</i> strains   |
| 18.00-18.15 | D. Āriņa, I. Teibe, R. Bendere, Z. Melnalksne<br>Food waste estimation in Latvia  |
| 18.15-18.30 | G. Chatziparaskeva, I. Papamichael, G. Pappas, A. A. Zorpas<br>The concept of Food Waste and Food Losses Prevention and Measuring Tools   |
| 18.30-18.45 | C. Nunes, C. Nunes, R. Pontes, H. Sales, S. Araújo, A. L. Santos, R. Morrão, C. Reis, F. Pavão, A. Bento, J. A. P. Paiva, F. Figueiredo, J. Nunes<br>Cascade use of olive waste towards a highly competitive olive sector: high value byproducts, advanced biobased materials and advanced biofuels integrated production |
| 18.45-19.00 | H. Moshtaghian, K. Bolton, K. Rousta<br>Consumer attitudes towards upcycled foods   |

**ROOM 3****SESSION XV****Waste Valorization III****Chair: K. Moustakas, C. Dias-Ferreira, N. Frison**

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| 15.00-15.15 | J. Eimontas, N. Striūgas, K. Zakarauskas, I. Kiminaitė<br>Marine biomass and plastic waste thermal utilization over the commercial and biochar catalyst for energy products recovery   |
| 15.15-15.30 | R.P. Ipiales, A. Sarrion, E. Diaz, A.F. Mohedano, M.A. de la Rubia<br>Improvement of the physicochemical and combustion properties of hydrochars from hydrothermal carbonization of swine manure   |
| 15.30-15.45 | M. Legan, A. Žgajnar Gotvajn, K. Zupan<br>Biochar: Conversion of waste biomass to building materials with carbon footprint reduction potential   |
| 15.45-16.00 | Y. Zeslase Belete, A. Aregawi Gebrekidan, R. Yahav Spitzer, R. Posmanik, A. Gross<br>Environmentally sustainable treatment and valorization of manure-based digestate using hydrothermal carbonization                                       |
| 16.00-16.15 | D. Cubides, X. Guimerà, I. Jubany, X. Gamisans<br>NO absorbents as transfer vectors for biological treatment   |
| 16.15-16.30 | S. Carpentieri, M. Iannuzzo, G. Ferrari, G. Pataro<br>Optimization of Pulsed Electric Fields-Assisted Extraction of phenolic compounds from white and red grape pomace using Response Surface Methodology                                    |
| 16.30-16.45 | B. Iñarra, J. Ibarruri, C. Bald, M. Gutierrez, D. San Martin, N. Luengo, J. Zufía<br>Production of bioactive peptides from salmon processing side-streams  |
| 16.45-17.00 | M. Haj-Zaroubi, N. Mattar, H. Azaizeh<br>Olive Mill Wastewater Transformation From Pollutant To Sun Protection Paste   |
| 17.00-17.15 | C. Torri, V. Stefanelli, Y. Küçükaga, B. Galaverni, A. Seritti, A. Facchin<br>Hyperthermophilic fermentation of Food Waste allows the reliable recovery of Volatile Fatty Acids (VFA) by means of stripping                                  |
| 17.15-17.30 | O.Z. Wada, U. Onwusogh, A.S. Vincent, H.R. Mackey<br>Valorisation of Purple Non-Sulfur Bacteria Biomass from Anaerobic Treatment of Fuel Synthesis Process Wastewater to Aquaculture Feed: A Means of Enhancing Food Security in Arid Climes |
| 17.30-17.45 | P. Xypolias, S. Vakalis, I. Daskaloudis, D.F. Lekkas<br>Hydrothermal Carbonization of Anaerobic Digestate from Food Waste/ Agrowaste in Lesvos Island  |

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17.45-18.00	A. Muñoz-Castillo, S. Bueno-Rodríguez, L. Pérez-Villarejo, D. Eliche-Quesada Synthesis of sodium waterglass from rice husk ash as an activator to produce slagbased alkali-activated cements
18.00-18.15	A. Castro-Fernández, S. Balboa, V. Paramá, B. Álvarez, C. Castro-Barros, J.M. Lema, A. Taboada-Santos Thermal hydrolysis pre-treatment has no positive influence on VFA production from sewage sludge
18.15-18.30	L. Miron, G. Montevicchi, A. Antonelli, M. Thomas Extraction and functional properties of proteins from black soldier fly ( <i>Hermetia illucens</i> ) reared on canteen waste
18.30-18.45	P. Morone, E. Imbert, G. Yilan The pursuit of an ethical, circular and sustainable fashion sector: the Cartiera case study
18.45-19.00	S. Zuhara, H. R Mackey, G. McKay Utilizing waste derived aluminosilicate for water treatment: Pyrolysis and adsorption modelling
19.00-19.15	J. A. Bogas, A. Carriço, A. Tenza-Abril Microstructural characterization of pastes produced with recycled cement

**ROOM 4****VIRTUAL  
SESSION XVI****Tools for waste management, Recycling & Resources Recovery****Chair: U. Yetis, L.M. Queiroz, Di Wang**

15.00-15.15	T. Pilevneli, E. Kucuk, U. Yetis Improving Waste Management by Providing Audit Capability to the Waste Declaration System
15.15-15.30	H. Monteiro, B. Moura, J. Almeida, R. Cardoso, Â. Fernandes, L. Barros Life cycle assessment of Vitamin D2-based extract from Mushroom waste
15.30-15.45	B. Moura, H. Monteiro, J. Almeida, E. Pereira, L. Barros Life cycle assessment of the production of natural colorant extracts from Curcuma longa L.
15.45-16.00	N. Ferronato, R. Paoli, F. Romagnoli, G. Tettamanti, D. Bruno, V. Torretta Life cycle assessment of organic waste treatment by the larvae of Hermetia illucens
16.00-16.15	A. Peppas, C. Politi, M. Taxiarchou Circular systemic solutions and regional innovation scheme
16.15-16.30	F. Demichelis, C. Martina, D. Fino, T. Tommasi Life cycle assessment of biological and mechanical processes of valorisation of absorbent hygiene products
16.30-16.45	C.E. Orrego, N. Salgado, T. Agudelo Environmental Life Cycle Analysis of acai powders obtained by Vacuum Drying
16.45-17.00	P. Llanquileo-Melgarejo, M. Molinos-Senante Assessing of the impact recycling. A comparison on the change in productivity and eco-productivity of electronic waste (e-waste): a case study for Chile
17.00-17.15	L.J. Valencia-Hernández, J.E. Wong-Paz, M.L. Chávez-González, J.A. Ascacio-Valdes, J.C. Contreras-Esquivel, L. Sepúlveda, R. Rodríguez-Herrera, C.N. Aguilar A comprehensive analysis of the fungal degradation of procyanidins as a tool for coffee pulp detoxification
17.15-17.30	C. Riccardi, Di Wang, A. Cannone Falchetto Effect of bio materials and polymer modifiers on the performance properties of recycled asphalt binders
17.30-17.45	F. Todaro, R. Annelio, S. De Gisi, M. Di Clemente, A. Fiorente, A. Petrella, M. Notarnicola Stabilization/solidification of hazardous powdered waste with ordinary Portland and sulfo-aluminate cements: a pilot study



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17.45-18.00	M. Canitez, S. Gulcimen, E. Karacetin, N. Uzal Water consumption Ecotoxicity and Global Warming Potential Assessment of Sugar Beet Production Using Different Irrigation Sources
18.00-18.15	A. Piemonti, A. Conforti, L. Cominoli, A. Luciano, S. Sorlini, G. Plizzari Influence of Electric Arc Furnace Slags on the mechanical properties of concrete
18.15-18.30	M. Jain, S. Aiman Khan, K. K. Pant, Z. M. Ziora, M. A. T. Blaskovich Electronic waste derived novel carbon aerogel for removal of phenol and 2,4-dichlorophenol from wastewater
18.30-18.45	T. Pilevneli, B. Ucar, G. Capar An evaluation of water footprint of bread wastes in Turkey
18.45-19.00	A.-J. Klasinc Blockchain for solid waste management and green cryptocurrencies in cities
19.00-19.15	Nurul Nazleatul Najiha Mohd Nazif, Shazwin Mat Taib, Mohd Fadhil Md Din, Nurfahain Mohammed Rusli, Norasikin Saman Refrigerant Management By Using IoT Technology And Co-Benefit In Energy Saving At Malaysia Food Base Sector
19.15-19.30	A. Idrissi, R. Benabbou, J. Benhra, M. Elhaji A smart system to improve solid waste collection and vehicle routing problem: Case of Mediouna's landfill
19.30-19.45	E. Yilmaz, E. Altiparmak, F. Dadaser-Celik, N. Ates Removal of Acetochlor and Metolachlor by Adsorption Process
19.45-20.00	M. Almokdad, R. Zentar Assessing the leachate toxicity of materials based on sediments in road sector
20.00-20.15	R. Nasr Bottom-up alternatives to persist top-down deficiencies in exceptional condition: Learning from recycling practices in the context of Lebanon

**ROOM 1**  
**SESSION XVII**
**Waste-to-Energy & Energy from Waste**  
**Chair: M. Loizidou, M. Baratieri, L. Lombardi, A. Bourtsalas**

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| 9.00-9.15   | A. Bourtsalas<br>The role of fuel and energy recovery from non-recyclable materials in circular/low carbon economy policies   |
| 9.15-9.30   | G. Mancini, L. Lombardi, A. Luciano, D. Bolzonella, D. Fino<br>WtE in South Mediterranean Regions: how to reduce the gap while increasing the sustainability through the Industrial Symbiosis |
| 9.30-9.45   | A. Márquez, I. Ortiz, J.M. Sánchez<br>Valorization of municipal solid waste through pyrolysis and applications of its products  |
| 9.45-10.00  | J. Haydary, P. Šuhaj<br>Two stage pyrolysis/split product gasification of refused-derived fuel (RDF)  |
| 10.00-10.15 | N.T. Leokaoko, J.R. Bunt, H.W.J.P. Neomagus<br>Chemical and physical modifications of coal and torrefied biomass blends during high pressure pyrolysis  |
| 10.15-10.30 | T. M. Ismail, K. Yoshikawa, Lu Ding, K. Ramzy, M. Abd El-Salam<br>Waste Magnetic Pyrolysis Energy Conversion Reactor  |
| 10.30-10.45 | M. Laghezza, S. Fiore, F. Berruti<br>Techno-economic assessment of the pyrolysis of rubber wastes   |
| 10.45-11.00 | J. Čespiva, J. Skrínský, J. Vereš, M. Wnukowski<br>Solid recovered fuel gasification in sliding bed reactor   |
| 11.00-11.15 | A. Jančauskas, N. Striūgas, K. Zakarauskas, R. Skvorčinskienė, J. Eimontas<br>Municipal solid wastes (MSW) gasification process in fixed bed updraft conditions                               |
| 11.15-11.30 | A. Tamošiūnas, M. Aikas, D. Gimžauskaitė, R. Uscila, V. Snapkauskienė<br>Biomass gasification to hydrogen-rich syngas by thermal arc discharge plasma   |
| 11.30-11.45 | S. Vakalis, K. Moustakas, P. Gikas, M. Loizidou<br>Developing the first commercial MSW gasification facility for the case of Crete - Challenges and prospects                                 |

11.45-12.00	COFFEE BREAK
12.00-12.15	J. Ryšavý, T. Kaszová, J. Horák, T. Ochodek Potential of Pt-based honeycomb catalyst usage during the pistachio shell combustion
12.15-12.30	S. Piazzzi, D. Antolini, L. Menin, M. Baratieri, F. Patuzzi Small-scale producer gas upgrading: hydrogen yield enhancement over a char bed reactor
12.30-12.45	R. Yahav-Spitzer, A. Gross Hydrothermal carbonization of raw human excreta- effect of process severity on hydrochar properties
12.45-13.00	R. Boroovah, E. Cordioli, D. Antolini, M. Pecchi, S. Piazzzi, F. Patuzzi, M. Renzi, M. Baratieri Forest residues valorisation for energy purposes through a small-scale CHP system
13.00-13.15	M.E. Silva, I. Brás Assessment of Energetic Potential from Automobile Industry Textile Wastes – Potential for RDF Production
13.15-13.30	P. Postacchini, L. Menin, S. Piazzzi, F. Patuzzi, M. Baratieri Syngas upgrading to biomethane via co-digestion with brewery wastewater
13.30-13.45	K. Tsimaras An effort to present a Hydrogen regulatory framework for Greece after 2030
13.45-14.00	I. E. Achouri, N. Abatzoglou, S. B. Karakache Fischer-Tropsch Synthesis for the production of biofuels with a low ILUC-risk
14.00-14.15	A. G. Capodaglio Circular Economy implications of microalgal-based wastewater treatment: materials and energy recovery pathways
14.15-14.30	E. Yilmaz, R. Junga, M. Wzorek, S. Bayram Effect of torrefaction on energy properties and thermal behaviour of millet stalk
14.15-15.00	Lunch Break

**ROOM 2**  
**SESSION XVIII**

**Management of Specific Waste Streams, Recycling & Resources Recovery**  
**Chair: M. C. Zanetti, F. Battista, F. Mauriello, E. Ranieri**

8.45-9.00	N. Curado Correia, S. Sousa, R. Santos Waste management options for end of life wind turbine blades
9.00-9.15	P. M.S. Sousa, L. M. Martelo, M. M.S.M. Bastos, A. T. Marques, H. M.V.M. Soares A disruptive and profitable process for recovering gold and copper from waste printed circuit boards
9.15-9.30	S. De Meester Recycling flexible packaging; headache or an opportunity for the circular economy?
9.30-9.45	R. Mende, D. Kaiser, M. Bertau Selective Recovery of Lithium from different spent Lithium-Ion Batteries
9.45-10.00	M. Bruno, S. Fiore Material flow and economic analyses of Lithium-ion batteries recycling processes in Europe
10.00-10.15	B.F. Hansel, S. Pavón, C. Pätzold, M. Bertau Recycling of LiPF <sub>6</sub> from lithium-ion batterie black mass
10.15-10.30	G. Meylan, M. Schmid Stimulating circular public procurement: The case of second-life batteries for traction applications
10.30-10.45	P. Kafasis Management of edible oils and fatys from households
10.45-11.00	G. Bonifazi, O. Trotta, G. Capobianco, S. Serranti Classification of post-earthquake building waste through Hyperspectral imaging approach
11.00-11.15	A. Silva, R. Nogueira, J. Alexandre Bogas Improving cement waste recycling by carbonation: The feasibility of a Short Carbonation Process
11.15-11.30	B. Ruffino, M. Guglielmino, F. Bonino, M.C. Zanetti Increasing the recovery of materials from automobile shredder residues through a novel recovery process
11.30-11.45	J.D. Martínez, A. Veses, A. Sanchís, J.M. López, T. García, R. Murillo Recovering value-added hydrocarbons from pyrolysis of end-of-life tires: fractioning the derived oil in a pilot scale distillation plant

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11.45-12.00	D.S. Achilias (Thermo)chemical recycling of bio-based and nanocomposite polymers in the circular economy
12.00-12.15	A. Benedetto Mas, S. Fiore, S. Fiorilli, F. Smeacetto, M. Santarelli, I. Schiavi Preliminary tests for lanthanum and cobalt recovery from waste SOC cathodes
12.15-12.30	W. Zeb, M. Roosen, P. Knockaert, J. Hogie, U. Kresovic, K. Van Geem, S. De Meester Separation of short carbon-chain precursor molecules from post-consumer plastic pyrolysis oil using fractional distillation
12.30-12.45	A. Nanni, M. Colonna, L. Crosetta, M. Parisi, D. Colombo A new system for the recovery and the recycling of thermoplastic polyurethanes (TPU) from ski boot equipment
12.45-13.00	E. J. Luna Barrios, S. De Meester, H. Sardon Challenges and opportunities in the chemical recycling processes of plastic waste
13.00-13.15	E. Carrieri, S. De Meester Solvent-based recycling towards recovery of TiO <sub>2</sub> from waste plastics
13.15-13.30	S. Carvalho, A. Lorena, C. Silva, R. Semeano, P. Ferrão Technical and Environmental Performance of Material Recovery Facility for Separately Collected Packaging Waste
13.30-13.45	L. Milios, C. Dalhammar The role of recycling companies in the circular economy: Opportunities and challenges towards a materials management transformation
13.45-14.00	L. Lorini, M. Santini, S. Alfano, F. Valentino, A. Martinelli, M. Villano, M. Majone Biodegradability evaluation of waste-derived Polyhydroxyalkanoates
14.00-14.15	A. Karamanov, P. Paunović, E. Karamanova, B. Rangelov, G. Avdeev, A. Grozdanov, D. Karashanova New glass ceramic by Fe Ni wastes with improved structure and properties
14.15-14.30	V. Sousa, J.A. Bogas, S. Real, I. Meireles Reducing the energy consumption for recycling cement: shifting from a wet method to an air-blowing method
14.30-14.45	Kim Phan, S. Ügdüler, L. Harinck, V. Van Speybroeck, K. De Clerck, S. De Meester A Combined Experimental and Theoretical Study on Textile Recycling: the Dissolution of Elastane



## ROOM 3

## SESSION XIX

**Bioprocesses, Biorefineries in waste management II****Chair: P. Champagne, C.A. Cardona Alzate, M. Majone, J. Dosta**

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| 9.00-9.15    | R. Lo Coco, A. Zuliani, F. Battista, D. Bolzonella, N. Frison<br>Extraction and purification techniques for the recovery of bio-based volatile fatty acids and polyhydroxyalkanoates from organic waste: a State-of-Art |
| 9.15-9.30    | J.C. Solarte-Toro, M. Ortiz-Sanchez, C.A. Cardona Alzate<br>Life cycle sustainability assessment of plantain-based biorefineries in emerging industrial countries: Colombia case study                                  |
| 9.30-9.45    | G. Zoppi, E. Tito, I. Bianco, G. Pipitone, S. Bensaid, R. Pirone<br>Hydrothermal liquefaction and aqueous phase reforming coupling for the production of biofuels: a life cycle assessment                              |
| 9.45-10.00   | Y. Küçükağa, A. Facchin, C. Torri, S. Kara<br>Inorganic Gasses into Organic Acids for Polyhydroxyalkanoates Production:<br>An Integrated Lab-Scale System for the Syngas Fermentation Coupled PHA Production            |
| 10.00-10.15  | E. Tito, G. Zoppi, G. Pipitone, A. H.A. Monteverde Videla, R. Pirone, S. Bensaid<br>Unraveling HTL mechanisms of carbohydrates-proteins interactions  |
| 10.15.-10.30 | A. Maragkaki, C. Tsompanidis., K. Velonia, T. Manios<br>Pilot-Scale anaerobic co-digestion of food waste and PLLA   |
| 10.30-10.45  | D. Mladenović, J. Grbić, A. Đukić-Vuković, L. Mojović<br>Improvement of enzymatic saccharification of corn cob by microwave-assisted peroxide treatment   |
| 10.45-11.00  | J.C. Solarte-Toro, C.A. Cardona Alzate<br>Sustainability analysis of biorefineries based on country socio-economic and environmental context  |
| 11.00-11.15  | A. de Espindola, A. Ponche, P. Dutournié<br>Impact of ultrafiltration process in the lysozyme antibacterial activity  |
| 11.30-11.45  | K. Chojnacka, A. Gersz, A. Witek-Krowiak<br>Multicomponent hydrogel fertilizer technology for sustainable agriculture   |
| 11.45-12.00  | COFFEE BREAK  |

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- 12.00-12.15 B. Ruffino, G. Campo, A. Cerutti, G. Scibilia, M. De Ceglia, M.C. Zanetti  
Combined production of biogas and volatile fatty acids from a pure primary sludge: preliminary results of a pilot test
- 12.15-12.30 D. Ladakis, S. M. Ioannidou, I. K. Kookos, K. Triantafyllidis, A. Koutinas  
Techno-economic analysis and life cycle assessment for the production of lignin-based adhesives from softwood kraft lignin via base-catalysed depolymerization
- 12.30-12.45 M. Menini, A. Zuliani, R. Lo Coco, F. Battista, D. Bolzonella, N. Frison  
Pure culture bio-capturing dissolved CO<sub>2</sub> at different potentials in microbial electrosynthesis cell (MES)
- 12.45-13.00 A. Ghaderikia, Y.D. Yilmazel  
The Impact of Conductive Material Amendment on the Performance of Anaerobic Digestion-Microbial Electrolysis Cell (AD-MEC) Systems
- 13.00-13.45 G. Bulkan, S. Sitaresmi, G.T. Yudhanti, R. Millati, R. Wikandari, M. J. Taherzadeh  
Enhancing and Inhibitory Effects of Fruit Waste Bioactive Compounds on Filamentous Fungi
- 13.45-14.00 E. Ranieri, F. Ranieri, A. C. Ranieri  
Chromium tolerance and phtoextraction by *Phyllostachys Pubescens*
- 14.00-14.15 H. Azaizeh, H. N. Abu Tayeh, R. Schneider, A. Klongklaew, J. Venus  
Production of lactic acid from different lignocellulose biomass for polylactic acid as a biodegradable plastic
- 14.15-14.30 A. Romero, A. Mayor, R. Barat, E. Mena, C. Biel, M. Carreras, X. Petit, J.L. Cortina, C. Valderrama, C. Castro, M. Arnaldos  
Turning wastewater treatment plants into biorefineries: global value chain from bioresources to valuable products

## ROOM 4

VIRTUAL  
SESSION XX

## Waste Valorisation IV

Chair: F. Dilek, G. Labuto, E. N. V. M. Carrilho, K.J. Dussán

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| 8.45-9.00   | V. Kumar Tyagi, A. Kapoor, P. Arora, A.A. Kazmi<br>Municipal solid waste biorefinery: Case study of 100 TPD mechanical-biological treatment plant   |
| 9.00-9.15   | M. Kumar Awasthi<br>Resource recovery and biorefinery potential of apple waste towards to circular bioeconomy   |
| 9.15-9.30   | O. Ozcan, S. Qadri, M. Ozdemir, R. Alabdullah, E. Sahinkaya, N. Uzal<br>Pre-treatment of Municipal Wastewater Using Direct Ceramic Membrane Filtration for Agricultural Reuse             |
| 9.30-9.45   | Changjiang Kou, Zikai Chen, Aihong Kang, Zhengguang Wu, Anan Liu<br>Performance evaluation of hot mix asphalt containing treated recycled concrete aggregates                             |
| 9.45-10.00  | M.A. Chartodiplomenou, E.E. Golia, O.D. Kantzou, S. Papadimou, N. Tsiropoulos, V. Antoniadis<br>Depiction of the adsorption of Copper and Cadmium with Langmuir and Freundlich isotherms  |
| 10.00-10.15 | Sheng Sheng, Yan Song, Jiao Wang, Fu-An Wu, Jun Wang<br>Fatty acid synthases gene is essential for the synthesis of fatty acids in insect parasitoids                                     |
| 10.15-10.30 | Cheng-Hai Yan, Dan Zhang, Xiao-Meng Xun, Lu-Chan Gong, Shuai You, Jun Wang<br>Preparation and digestion characteristics of silkworm pupae oil microemulsion                               |
| 10.30-10.45 | V.H. Junkes, G.G. Lenzi, P. H. Rodrigues<br>Waste valorization for the concrete block production: a sustainable solution  |
| 10.45-11.00 | N. Caetano, M. Santos, W. Júnior, A. P. Marques<br>Valorization of corn stover from phytoremediation of heavy metal contaminated soils through bioethanol production                      |
| 11.00-11.15 | Qing-Bo Tu, Tian-Qi Wang, Ping Li, Wei-Hong Zhou, Sheng Sheng, Jun Wang, Fu-An Wu<br>Extraction process of ferulic acid from wheat bran with Low eutectic solvent                         |
| 11.15-11.30 | Xiao-Meng Xun, Ji-Yao Nian, Ji-Long Wu, Cheng-Hai Yan, Jun Wang<br>Absorption characteristics of silkworm pupae peptides treated by ultrasound and irradiation based on Caco-2 cell model |

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11.30-11.45	Yan Song, Feng-Ming Gu, Jun Wang, Fu-An Wu, Sheng Sheng Phoxim acts as an environmental stress for insect parasitoid wasp
11.45-12.00	T.S. Borges, L.M. Queiroz, S.L.C. Ferreira, N.M. José Synthesis of natural coagulant from <i>Anacardium occidentale</i> and application to remove metallic pollutants from water
12.00-12.15	S. Greses, E. Tomás-Pejó, C. González-Fernández Organic waste valorisation into bioenergy and bioproducts through a cascade combination of bioprocesses
12.15-12.30	E. Kanellou, E. Dedeletaki, C. Vaitsis, P.K. Pandis, G. Sourkouni, A. Zorpas, C. Argirusis Sonochemical synthesis of metal oxides/sulfides and their composites for the sonophotocatalytic degradation of organic pollutants
12.30-12.45	Van-Bien Dao, Yuan-Wei Chen, Chu-Ching Lin Agronomic waste-derived biochar for concurrent stabilization of multiple heavy metals in agricultural soil: Effect of feedstock variety and pyrolysis temperature
12.45-13.00	Johnny Sik Chun Lo, Christopher Yu Huang Chao, Sharhrat Singh Chopra, Walid Daoud, Shao-yuan Leu, Zhi Ning, Chi Yan Tso, Chak Keung Chan, Shixing Tang, Hau Him Lee, Irum Firdous, Carol Sze Ki Lin Food Waste-derived Medical Textiles via Electrospinning for Healthcare Apparel and Personal Protective Equipment
13.00-13.15	Can-Yang Shi, Xiang-Yu Shen, Ji-Long Wu, Yu-Fan Zhan, Shuai You, Lu-Chan Gong, Jun Wang Polymer modification improves the stability of xylanase-polymer conjugates as biological interface catalysts in agricultural waste biorefinery
13.15-13.30	Dinh Ngoc Giao Ngo, Xiang-Ying Chuang, Chin-Pao Huang, Chihpin Huang Converting Agricultural Wastes to Biochar: From Good Agricultural Waste Management Practice to High-Potential Use of Biochar as Heterogeneous Catalyst
13.30-13.45	N. Solomakou, A. Drosaki, G. Zamvrakidis, A.M. Goula Adsorption of phenolic compounds from olive mill wastewaters on spent coffee grounds: Isotherms, kinetics, pure phenols adsorption
13.45-14.00	P.S.C. Aslanidis, S.G. Papadimou, O.D. Kantzou, M.A. Chartodiplomenou, E.E. Golia Impacts of heavy metals on sustainability in Volos, Greece: reality or urban myth?
14.00-14.15	M.G. dos Santos, D.D.V. Silva, K.J. Dussán Levulinic acid production from lignocellulosic biomass using lignin-catalyst

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| 14.15-14.30 | T. G.S. Guimarães, R. Santos Silva, A. A. Lira, M. Leonan, M. H. González, E. N.V.M. Carrilho, G. Labuto<br>Synthesis and characterization of biobased carbons modified with natural deep eutectic solvent (NADES) for dipyrone removal from aqueous medium             |
| 14.30-14.45 | K. C.H. Bezerra, J. R. Nascimento, T. D. Martins, S. G. Lemos, E. N.V.M. Carrilho, C. de A. Rodrigues, G. Labuto<br>Removal of reactive dyes from bichromatic textile effluent by yeast biomass decorated with magnetite nanoparticles                                  |
| 14.15-14.30 | N. Salgado-Aristizabal, J.A Poveda-Giraldo, M. Ortiz-Sanchez, S. Piedahita-Rodriguez, E. Ledezma, C.E Orrego Alzate, C.A Cardona Alzate<br>Improving small-scale value chains in tropical forests through residues valorization. The Colombian case of annatto and açai |



**ROOM 1**  
**SESSION XXI**

**Recovery of materials from wastewater, sludge -  
Sludge Management & Energy from waste**  
**S. W. H. Van Hulle, A. Capodaglio, K. Aboudi**

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|-------------|---|
| 15.00-15.15 | F. Corona, S. Sanz-Bedate, J.M. Martín-Marroquín, D. Hidalgo, J. Castro, L. Garrote<br>Closing waste water cycles for nutrient recovery   |
| 15.15-15.30 | K. Aboudi, S. Greses, E. Tomás-Pejó, C. González-Fernández<br>Hydraulic retention time as an operational tool for the production of high value-added bioproducts via anaerobic fermentation of carbohydrate-rich organic wastes |
| 15.30-15.45 | A. García-Díaz, J.S. Bueno-Rodríguez, L. Pérez-Villarejo, D. Eliche-Quesada<br>Sustainable management of oil refining sludge by means of geopolymers production   |
| 15.45-16.00 | F. Valentino, P. Pavan, A. Dell’Olivo, L. Lorini, M. Majone, D. Bolzonella, M. Gottardo<br>From sewage sludge to polyhydroxyalkanoates: a case study at pilot scale level   |
| 16.00-16.15 | H. Byliński, A.Kasinath, M. Szopińska, A. Remiszewska – Skwarek, A. Łuczkiwicz, S. Fudala – Książek<br>Cosubstrate strategy for enhancing biomass degradation during low-thermal pre-treatment                                  |
| 16.15-16.30 | A.G. Capodaglio<br>Sewage Sludge Disposal: State-of-the-Art Technologies for Sustainable Energy and Resources Recovery  |
| 16.30-16.45 | P. Gautam, D. Salunke<br>Sustainable utilization of brine sludge for making bricks: An approach towards circular economy  |
| 16.45-17.00 | S. Gyparakis, T. Manios, E. Vryllakis<br>Co-composting of sewage sludge with plant residues: The case study of Rethymno WWTP  |
| 17.00-17.15 | H. Kominko, K. Gorazda, Z. Wzorek<br>Physicochemical characterization of sewage sludge ashes in terms of phosphorus recovery  |
| 17.15-17.30 | Huan Liu, I. Alper Basar, C. Eskicioglu<br>Incorporating hydrothermal liquefaction into wastewater treatment plants: impacts on the wastewater treatment processes and management of hydrochar                                  |
| 17.30-17.45 | A. Aregawi Gebretsadkan, R. Bernstein, A. Gross<br>Adsorption of ammonium from AnMBR effluent using activated hydrochar as potential fertilizer   |

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17.45-18.00	J. F. Morales Arteaga, A. Kaurin, D. Lestan Extraction of toxic metals from sewage sludge digestate by EDTA in a closed-loop process
18.00-18.15	P. M. Binder, E. Blázquez Ribas, N. Guerra Gorostegi, I. Hidayat, L. Paredes Barro, L. Llenas Argelaguet, N. Frison, M. Ballottari, S. Cazzaniga, F. Fatone, S. Ponsá Salas Innovative multiple resource recovery pathways from EBPR wastewater treatment derived sludge
18.15-18.30	F.E. Kutlar, Y.D. Yilmazel Use of low-cost raw materials for the recovery of phosphorus and nitrogen from biogas plant effluents via struvite crystallization
18.30-18.45	I. Boševski, A. Žgajnar Gotvajn Energy recovery of antibiotic-contaminated waste sludge
18.45-19.00	D. Liakos, K. Triantafyllidis, T. Kokkalis, L. Ntoufas, S. Bezergianni 2 <sup>nd</sup> generation bio-crude oil via hydrothermal liquefaction of agricultural wastes
19.00-19.15	E. Emmanouilidou, S. Mitkidou, A. Agapiou, N. Kokkinos Solid waste biomass as a potential feedstock for sustainable aviation fuel production
19.15-19.30	D. Abdel Nasser, M. El Zayat A Review on Landfill Gas Production Treatment Techniques and its Effect on Circular Economy
19.45-20.30	<b>Closing Session with the active participation of chair persons – Poster award ceremony – Announcement of the place for the 2023 10th International Conference on Sustainable Solid Waste Management</b>

**ROOM 2**  
**SESSION XXII**

**Marine Litter, Plastics & Bioplastics**  
**Chair: S. De Meester, S. Vouyiouka, E. Barampouti**

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|-------------|---|
| 15.00-15.15 | Y.V. Fan, C.T. Lee, J.J. Klemeš, P. Ocloń<br>Plastic Waste Forecasting and Potential Application in Renewable Energy System and Building for Environmental Footprint Mitigation   |
| 15.15-15.30 | M. Tsakona, I. Rucevska, S. Heerema<br>The role of the informal recycling sector in reduction of the plastic pollution and recommended policy changes   |
| 15.30-15.45 | L. Bartolucci, S. Cordiner, G. Costa, S. Franceschin, F. Lombardi, M. Mercurio, V. Mulone<br>Analysis of potential recycling/recovery strategies for bioplastic materials at their end of life based on their chemico-physical properties |
| 15.45-16.00 | S. Ügdüler, K. M. Van Geem, K. Ragaert, J. De Wilde, S. De Meester<br>Towards closed-loop recycling of multilayer and coloured PET plastic waste  |
| 16.00-16.15 | M. Roosen, T. De Somer, R. Demets, K. M. Van Geem, A. Dumoulin, S. De Meester<br>Towards improved deodorization of post-consumer plastic waste: Identifying the industrial hurdles  |
| 16.15-16.30 | M. Lucas, O. Fauny, C. Dufau, J. Voisin<br>Help from above, satellite technology to track marine litter   |
| 16.30-16.45 | M. Van Melkebeke, C. Janssen, S. De Meester<br>Development of microplastic remediation techniques from marine sediments   |
| 16.45-17.00 | G. Kalčíkova, U. Rozman, B. Klun<br>Aquatic hazard assessment of Bakelite microplastics   |
| 17.00-17.15 | B. Ülger-Vatansever, T.T. Onay, B. Demirel<br>Evaluation of bioplastics biodegradation under simulated landfill conditions  |
| 17.15-17.30 | K. Synani, K. Abeliotis, T. Manios, K. Velonia, K. Lasaridi<br>Preliminary environmental assessment for a pilot-scale bioplastic production unit  |
| 17.30-17.45 | A. Marchetti, G. Salvatori, S. Ciacia, M. Palhas, J. Fradinho, M.A.M. Reis, M. Villano<br>Mixed culture polyhydroxyalkanoates accumulation with synthetic and real feedstocks   |

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17.45-18.00	Y.D. Hernandez-Charpak, T.A. Trabold, C.L. Lewis, C. A. Diaz Biochar as a processing additive in poly(butylene adipate-co-terephthalate) (PBAT)
18.00-18.15	T. Yılmaz Nayır, S. Konuk, H.N. Çiftci, B. Küçük, S. Kara Polyhydroxyalkanoate production from yeast industry wastewater using mixed microbial culture
18.15-18.30	L. Cesoniene, D. Sileikiene Analysis of hazardous plastic waste generated during the COVID-19 pandemic
18.30-18.45	A. M. Pedraza Torres, X. Andrade Cares, J. C. Sanchez-Hernandez Impact of biochar produced from plastic-eating insect frass on microbial hotspots created by earthworms
18.45-19.00	R.S.M. Denolf, J. Hogie, S. De Meester Distribution of organic additives such as plasticisers during dissolution-precipitation polymer recycling
19.00-19.15	K. Haarstad, J. Barlindhaug The occurrence and removal of the fluoro alkyl (PFAS) substances under boreal and arctic conditions
19.15-19.30	H. Hinrichsen Treating PFAS Contaminated Landfill Leachates Using Only Air - Evaluation and presentation of bench scale trials and Two full Scale Projects
19.30-19.45	S. Dudek, D. Kołodyńska Arsenic removal by the iron oxide sorbent with quaternary ammonium groups modified with lanthanum(III) ions

## ROOM 3

## SESSION XXIII

## Waste Valorisation V

Chair: K. Moustakas, G. Mancini, S. Vakalis

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|-------------|---|
| 15.00-15.15 | E. Paone, M. Miceli, A. Malara, G. Ye, E. Mousa, E. Bontempi, P. Frontera, F. Mauriello<br>From Spent Lithium-Ion Batteries to an Heterogeneous Co-Ni Catalyst for the Reductive Upgrading of Biomass-derived furanics                              |
| 15.15-15.30 | D. Kostopoulos, A. Maragkaki, K. Velonia, T. Manios<br>Production of Lactic acid as a Sustainable Approach to Valorize organic waste  |
| 15.30-15.45 | H. Feijoo, A. Arias, M.T. Moreira<br>Closing the loop through the valorization of glycerol as a substrate in the production of hyperthermophilic $\beta$ -glucosidase. A Life Cycle Perspective.  |
| 15.45-16.00 | C. Pavlopoulos, K. Papadopoulou, G. Lyberatos<br>Photocatalytic Hydrogen production using recovered Silicon from End of Life (EoL) photovoltaic panels  |
| 16.00-16.15 | L. di Bitonto, E. Scelsi, C. Pastore<br>Optimization model for the extraction of lipids from urban sewage sludge  |
| 16.15-16.30 | O. Vittou, M.-V. Sarafidou, E. Stylianou, D. Ladakis, C. Pateraki, A. Koutinas<br>Valorisation of sugar beet pulp for the production of poly(3-hydroxybutyrate) and poly(3-hydroxybutyrate-co-3-hydroxyvalerate)                                    |
| 16.30-16.45 | D. Urbancl, D. Goricanec, M. Simonic<br>Heavy metals removal from wastewater by applying natural clay as adsorbent  |
| 16.45-17.00 | S. Balachandran, J. Hogie, E. Meers, S. De Meester<br>Energy optimization of the evaporation process towards upconcentration of bio-based carboxylic acids  |
| 17.00-17.15 | E. Stylianou, N. Giannakis, C. Argeiti, E. Titiri, K. Filippi, C. Pateraki, A. Koutinas<br>Alkaline pretreatment of spent coffee grounds for microbial oil production using the oleaginous yeast strain <i>Lipomyces starkeyi</i>                   |
| 17.15-17.30 | G. Montevicchi, L.I. Macavei, G. Pinotti, S. D'Arco, E. Zanelli, S. Buffagni, F. Masino, L. Maistrello, A. Antonelli<br>Seasonal variance of HO.RE.CA. leftovers as a feeding substrate for black soldier fly ( <i>Hermetia illucens</i> L.) larvae |

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17.30-17.45	M. Novotný, J. Raček, T. Chorazy, P. Hlavínek The use of Biochar made from Biomass and Biosolid as a Substrate for Green Infrastructure
17.45-18.00	Lei Lyu, Di Wang, Rui Li, Jianzhong Pei Rheological and Chemical properties of Asphalt Binder Modified by Cross-metathesized Crumb Rubber
18.00-18.15	V. D'Ambrosio, C. Pastore Hexanoic and levulinic acids esterification for ethyl and hexyl esters production by using $AlCl_3 \cdot 6H_2O$ as a catalyst
18.15-18.30	S. Shaikh, N Rashid, H.R. Mackey Influence of nitrogen on simultaneous treatment of fuel synthesis wastewater and PNSB biofilm formation for resource recovery
18.30-18.45	S. Fraterrigo Garofalo, N. Cavallini, R. Destefano, M. Micera, C. Cavagnero, A. Botto T. Tommasi, D. Fino Optimization of supercritical carbon dioxide extraction of rice bran oil and $\gamma$ -oryzanol using Multi-Factorial Design of Experiment
18.45-19.00	Muhammad Zalkifal, Gayuh Rahayu, D.H.Y.Yanto Enhancing laccase activity towards Phenanthrene degradation: a systematic analysis using <i>Phellinus noxius</i> BRB 11 laccases with three synthetic mediators
19.00-19.15	M. Pastur, C. Pastor, O. Arumí, B. Lefebvre, V. Almirall, S. Arca, E. Senol, B. Alkcan, O. Sahin, C. Castro-Barros, J. Tobella EPC-EqTech- an innovative turnkey solution to process spent caustic in the Oil&Gas industry
19.15-19.30	A. Luciano, M. Cellurale, S. Baiani, P. Altamura, L. Cutaia The building stock as an urban mine: estimation of the stock of recoverable materials in the regeneration of the built environment
19.30-19.45	P. Gautam, S. Kumar Comparative assessment of different advance technologies for treatment of landfill leachate



**ROOM 4****VIRTUAL  
SESSION XXIV****Waste-to-Energy & Energy from Waste II**  
**Chair: A.S. Nizami, M. Kwapinska, S. Kumar**

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| 15.00-15.15 | S.M. Kavoukis, C. Pappa, A. Margellou, K.S. Triantafyllidis<br>Waste particle board valorization via fast (catalytic) pyrolysis towards value-added chemicals and fuels  |
| 15.15-15.30 | M.A.A. Mohamad Dzol, V. Balasundram, K. Shameli, N. Ibrahim, R. Isha, M.K.A. Hamid<br>Catalytic Performance of NiO Modified on Refluxed Chicken Eggshell Waste for Pyrolysis of High-Density Polyethylene              |
| 15.30-15.45 | N.A. Shahdan, V. Balasundram, N. Ibrahim<br>Catalytic Pyrolysis of Empty Fruit Bunch over Metal-modified Rice Husk Ash   |
| 15.45-16.00 | E. Ekici, G. Yildiz<br>Analysis of process parameters and assessing the possibility of utilizing the tail gases as energy sources for the pyrolysis of polyolefins   |
| 16.00-16.15 | S.G.C. Almeida, M.A.M. Costa, K.J. Dussán<br>Study of combustion of bagasse/straw sugarcane and its atmospheric emissions using a pilot-burner   |
| 16.15-16.30 | M.A.M. Costa, M.P. Felizardo, E. Penteado, S.G. Coelho, A. A. Cardoso, K. J. Dussán<br>Emission control and determination of dry deposition of pollutants emitted by burning sugarcane bagasse used as industrial fuel |
| 16.30-16.45 | M. Kwapinska, J.J. Leahy<br>Pyrolysis of pig and cattle slurry solids at laboratory scale – is there a potential for gas and char utilization?   |
| 16.45-17.00 | F. Demichelis, F. A. Deorsola, T. Tommasi, G. Cravotto, D. Fino<br>Integrated anaerobic digestion and pyrolysis of organic fraction municipal solid waste  |
| 17.00-17.15 | M.A.M. Costa, M.P. Felizardo, H. Tempesta, N.C.B. Schiavon, A. J. D. Souza, A. Sarti, K. J. Dussán<br>Emission of carbon dioxide (CO <sub>2</sub> ) and other gases by burning sugarcane bagasse                       |

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17.15-17.30	Wenxin Zhang, Yan Ge, Xue Wang, Sheng Zhang, Luchan Gong, Jun Wang, Shuai You A key residue for the pH-stability and thermostability enhancement of a mesophilic $\beta$ -glucanase revealed by computational design
17.30-17.45	D. Fila, Z. Hubicki, D. Kołodyńska Alginate based composites as an alternative for recovery of critical raw materials – rare earth elements
17.45-18.00	P. Gahlot, G. Balasundaram, A. Ahmed Kazmi, V. Kumar Tyagi High Temperature Thermal Pretreatment Of Sludge To Alleviate Rate Limiting Step During Anaerobic Digestion
18.00-18.15	H. Raclavská, J. Růžičková, D. Juchelková, M. Kucbel, B. Švédová, M. Šafář, K. Slamová Leachable organic compounds from sewage sludge and their environmental risk potential
18.15-18.30	R. Nazar, A.-S. Nizami Development of a Sustainable Biomass Supply Chain in Pakistan
18.30-18.45	B.C.G. Rodrigues, B.S. Mello, K.J.D. Medina, A. Sarti Electro-oxidation of lignin from sugarcane bagasse as a pretreatment for biogas generation
18.45-19.00	N.F Nthatsi The effect of pyrolysis on the morphological changes in coal pellets
19.00-19.15	S. Rezasoltani, P. Champagne Biostabilization of gold mine tailings using cyanobacteria
19.15-19.30	F. Wendell Bezerra Lopes, C. Ardila Suarez, J. Pablo Villegas, M. Martinez Aguilar, M. Nazari, B. Rego de Vasconcelos, E. Lins de Barros Neto, T. Ghislain, O. Lalonde, J.-M. Lavoie Lighting-up marijuana residues to produce energy - the thermochemical pathway
19.30-19.45	H. Fares, M. El Zayat Review on Waste- to- Hydrogen (WtH) Approach and the SDGs

## Poster session

- 01 O.-O. Makrogianni, S. Trikalioti, I. Lazaridis, A.K. Tolkou, I.A. Katsoyiannis, G.Z. Kyzas  
Magnesium oxide modified activated carbon derived from coconut shells for fluoride adsorption
- 02 V. Adamopoulou, A. Bekatorou, V. Brinias, C. Dimopoulos, A. A. Koutinas  
Optimisation of food-grade bacterial cellulose production by *Komagataeibacter sucrofermentans* in raisin finishing side-stream extracts and synthetic media: Effect of vitamins and phenolic compounds
- 03 L. Cutroneo, G. Besio, F. Borgogno, S. Canuto, S. Consani, A. De Leo, I. Forioso, I. Geneselli, V. Lenoble, S. Mounier, M. Petrillo, A. Reboa, A. Stocchino, J.A. Tesán Onrubia, M. Capello  
Monitoring, simulation, and dissemination: the European SPLasH! project strategy to face up the microplastic problem in commercial port environment
- 04 S.A. Khan, M. Jain, K.K. Pant, Z.M. Ziora, M.A.T. Blaskovich  
Biological solid waste mediated synthesis of silver nanoparticles for removal of anthropogenic pollutant: Optimization modelling by response surface methodology (RSM), artificial neural network (ANN) and DFT studies
- 05 B. A. Karamanova, S. K. Veleva, A. E. Stoyanova, R. K. Stoyanova  
"Green" carbon for energy storage systems in non-aqueous electrolytes
- 06 E. Giráldez, G. Sanz, J. Taboada, R. Martínez-Alegría  
The Valladolid case for waste disposal landfill site selection using MCA techniques
- 07 C. Raptis, E. Kalaitzi, E. Andrioti, A. Kassimati, E. Tritopoulou  
Application of an innovative, incentive based, recycling methodology in Greece
- 08 E. Piercy, R. Johnson, M. Taylor, P. R. Ellis, M. Guo  
Maximising resource recovery from carbon- and nutrient-rich mycoprotein fermentation wastewater using anaerobic digestion
- 09 E. Adem, J. Bahrawi, M. Elhag  
Comparability of Evapotranspiration Estimation Effectiveness's Based on Remote Sensing Data, Al Jouf, Saudi Arabia
- 10 A. Abdel Reheem, S. Boteva, N. Yilmaz, M. Elhag  
Modification of the Greened House Rye Grass Macro- and Micro Nutrients Uptake using Magnetically Treated Water
- 11 Dong-Jin Kim  
Phosphates adsorption and bioavailability of metal impregnated biochar
- 12 K. Burdzy, D. Kołodzyńska  
IDHA - biodegradable complexing agent in the adsorption of rare earth elements
- 13 S. Bellini, T. Tommasi, D. Fino  
A circular economy approach for poly hydroxybutyrate biosynthesis through *R. eutropha* DSM 545
- 14 C. Celi, D. Fino, F. Savorani  
Cultivation of *Phaeodactylum tricornutum* in a laboratory scale photobioreactors system
- 15 D. Kousoulis, G. Zantis, K. Moustakas, E.M. Barampouti, S. Mai  
Alternative valorisation pathways for orange peel waste
- 16 K. Gorazda, H. Kominko, B. Tarko, Z. Worek, A.K. Nowak, K. Krupa-Żuczek  
Liquid and suspension fertilisers based on alternative raw materials
- 17 M. Stylianou, A. Agapiou  
Aerial signatures in libraries
- 18 G. Chatziparaskeva, I. Papamichael, A. A. Zorpas  
SWOT analysis concerning city challenges in secondary schools
- 19 J. Canas-Jimenez, S. Álvarez-Torrellas, B. Hermana, J. García  
Phosphorus recovery in a pretreated effluent by wet oxidation of sewage sludge
- 20 J. Liu, H.W. Kua, C.H. Wang, Y. Peng  
EEA methodology for Municipal solid waste management system design and sustainability analysis under uncertainty

## Poster session

- 21 G. Bonifazi, G. Capobianco, P. Cucuzza, S. Serranti, V. Spizzichino  
Investigation on the use of laser-induced fluorescence for the recycling of black plastics
- 22 R. Skvorčinskienė, I. Kiminaitė, K. Zakarauskas, N. Striūgas, A. Jančauskas  
Energy recovery from pyrolysis using non-recycled plastic
- 23 V. Adamopoulou, A. Bekatorou, V. Brinias, C. Dimopoulos, M. Kanellaki  
Optimisation of food-grade bacterial cellulose production in raisin finishing side-stream extracts: Effect of citric, gallic, and ascorbic acid addition
- 24 P. Rusek, K. Borowik, S. Schab, Ł. Rusek, U. Ryszko, M. Wesołowska, T. Martyniuk  
The technology of obtaining mineral fertilizers with a controlled release rate (CRF) by the coating methods
- 25 Habil. Satyanarayana Narra, Komi Agboka, Mani Kongnine Damgou, C Essosnam BEGUEDOU, EDWARD ANTWI  
Sustainable alternative Biofuels from Crop for ILC-Calciner Kiln
- 26 D. Hidalgo, J.M. Martín-Marroquín, F. Corona  
Exploring the possible effect of magnetic nanoparticles addition on biohydrogen production by dark fermentation
- 27 D.A. Calvo, N.G. Rojas, D. I. Sandoval, T. Gazca  
Cytotoxicity assessment in HT-29 cell line using cadmium sulfide quantum dots microbiologically synthesized from a sulfur residue of the petrochemistry industry
- 28 A. Dikšaitytė, J. Žaltauskaitė, I. Kniuipytė, R. Juknys  
Increased photosynthetic performance of Brassica napus contribute to enhanced Cd phytomanagement under warmer climate despite drought stress
- 29 M. Drdlová, P. Böhm, M. Šperl  
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