



**9th International Conference on Engineering  
for Waste and Biomass Valorisation**

June 27-30, 2022 in HYBRID MODE  
Copenhagen, Denmark

**Online programme  
Updated on June 10, 2022**



# Programme at-a-Glance

| June 27, 2022 |  |  |  |                                       |
|---------------|--|--|--|---------------------------------------|
| Hour          | Room A                                 | Room B   | Room C                                 | Room D                                |
| 10:00         | Registration opening                   |  |  |                                       |
| 12:00         | Lunch supported by NNF                 |  |  |                                       |
| 13:00         | Opening Ceremony                       |  |  |                                       |
| 13:50         | PL1 - Plenary Lecture by William MITCH |  |  |                                       |
| 14:35         | C1 - Anaerobic digestion (I)           | A1 - Coupling pretreatments and bioprocesses for biorefinery | E1 - Intracellular polymers and lipids | G1 - Cement, mortar and other binders |
| 15:50         | Coffee break & poster session          |  |  |                                       |
| 16:35         | KN01 - Keynote Lecture                 | KN02 - Keynote Lecture                                       | KN03 - Keynote Lecture                 | KN04 - Keynote Lecture                |
| 17:05         | OF4-1 Biological treatment (I)         | OF4-2 Thermochemical processes (I)                           | OF4-3 LCA & social acceptance          | OF4-4 Added-value materials           |
| 17:40         | B1 - Pollutants removal and sanitation | A2 - Case studies of integrative approaches                  | E2 - Electrochemical separations       | H1 - Energy storage (I)               |
| 18:25         | End of sessions                        |  |  |                                       |
| 18:30         | Welcome reception                      |  |  |                                       |

## Programme at-a-Glance

| June 28, 2022 |  |  |   |   |
|---------------|--|--|---|---|
| Hour          | Room A   | Room B   | Room C  | Room D  |
| 09:00         | KN05 - Keynote Lecture                                 | KN06 - Keynote Lecture                                       | KN07 - Keynote Lecture  | KN08 - Keynote Lecture  |
| 09:30         | I1 - Abatement of pollutants from combustion processes | C2 - Anaerobic digestion (II)                                | G2 - Secondary raw materials                                      | E3 - Chemical transformations   |
| 10:30         | Coffee break   |  |   |   |
| 10:45         | D1 - Thermochemical conversions (I)                    | F1 - Extraction of molecules and plastic recycling           | F2 - Metal elements recovery                                      | E4 - Chemical processing of lignocellulosic fractions                                   |
| 12:00         | Lunch  |  |   |   |
| 13:00         | PL2 - Plenary Lecture by Yong Sik OK                   |  |   |   |
| 13:45         | D2 - Thermochemical conversions (II)                   | E5 - Microbial communities                                   | J1 - Sustainable waste management                                 | A3 - Innovative tools and approaches for resource valorization, inventory and recycling |
| 14:35         | KN09 - Keynote Lecture                                 | KN10 - Keynote Lecture                                       | KN11 - Keynote Lecture  | KN12 - Keynote Lecture  |
| 15:05         | OF5-5 Hydrogen & biogas production                     | OF4-6 Hydrothermal processes                                 | OF5-7 MSW   | OF4-8 Fractionation & solvolysis  |
| 15:40         | Coffee break supported by Prayon & poster session      |  |   |   |
| 16:25         | E6 - Biological / Biochemical processing (I)           | C3 - Anaerobic digestion (III)                               | J2 - Life Cycle Assessment for waste material and energy recovery | A4 - Resources recovery   |
| 17:30         | D3 - Sludge and waste gasification                     | F3 - Pilot, full scale operation, technico-economic analysis | H2 - Energy storage (II)  | A5 - Physicochemical and energy yield evaluation of various feedstocks                  |
| 18:20         | End of sessions  |  |   |   |

## Programme at-a-Glance

| June 29, 2022 |   |   |  |   |   |
|---------------|---|---|--|---|---|
| Hour          | Room A  | Room B  | Room C   | Room D  | Room E  |
| 09:00         | F4 - Advanced carbon materials                                      | A6 - Waste valorization and byproducts treatment and evaluation | E7 - Biorefinery approaches                    | J3 - Waste valorization                               |   |
| 10:05         | OF4-9 Thermochemical processes (II)                                 |   | OF4-10 Activated carbons                       | OF4-11 Biological treatment (II)                      |   |
| 10:35         | Coffee break  |   |  |   |   |
| 10:50         | F5 - Pyrolysis  | C4 - Anaerobic digestion (IV)                                   | E8 - Biological / Biochemical processing (II)  | G3 - Waste management and assessment                  |   |
| 12:05         | Lunch   |   |  |   |   |
| 13:05         | PL3 - Plenary Lecture by Tadafumi ADSCHIRI                          |   |  |   |   |
| 13:50         | KN13 - Keynote Lecture  | KN14 - Keynote Lecture  | KN15 - Keynote Lecture                         | KN16 - Keynote Lecture                                |   |
| 14:20         | D4 - Energy vectors: H <sub>2</sub> , CH <sub>4</sub> , syngas (I)  | C5 - Hydrolysis and process water saving                        | E9 - Technoeconomic and environmental analyses | I2 - Waste management and circular economy approaches | A7 - New useful materials for original applications |
| 15:20         | Coffee break supported by Springer Nature & poster session          |   |  |   |   |
| 16:05         | D5 - H <sub>2</sub> , CH <sub>4</sub> , syngas and power generation | J4 - Biowaste management  | E10 - Enzymes in esterification processes      | I3 - Bioprocessing gaseous compounds and wastes       |   |
| 17:10         | End of sessions   |   |  |   |   |
| 19:30         | Gala Dinner   |   |  |   |   |

## Programme at-a-Glance

June 30, 2022

| Hour  | Room A   | Room B                       | Room C   | Room D                                      |
|---|--|------------------------------|--|---|
| 09:00   | D6 - Energy vectors: H <sub>2</sub> , CH <sub>4</sub> , syngas (II)  | F6 - Pyrolysis of plastics   | A8 - Metal removal and recovery                          | G4 - Waste valorization in construction     |
| 09:50   | B2 - Physical and chemical aided pretreatment  | F7 - Hydrothermal conversion | A9 - Recycling and valorization of lithium ion batteries | G5 - Ash, Geopolymers and slag valorization |
| 10:35   | Coffee break & poster session  |                              |  |   |
| 11:15   | PL4 - Plenary Lecture by Gregory STEPHANOPOULOS  |                              |  |   |
| 12:00   | Closing Ceremony   |                              |  |   |
| 13:30   | Lunch supported by Rockwool  |                              |  |   |
| 14:30   | End of the conference  |                              |  |   |
| <b>Free technical visits of DTU Chemical Engineering Pilot Plant facilities</b> |  |                              |  |   |
| 14:30   | Tour 1: Thermochemical/Catalytic processing (30 min) - up to 45 participants                                 |                              |  |   |
| 16:00   | Tour 2: Biological processing and unit operations for downstream processing (30 min) - up to 45 participants |                              |  |   |

July 1, 2022

### Free industrial plants visits

**Tour 1:** HALOSEP Waste-to-Energy and recycling plant in Copenhagen (producing district heat and electricity through waste incineration). Up to 30 participants. **8:30 - 12:00**

**Tour 2:** CP Celco at Lille Skensved: visit the largest pectin manufacturer and experience how citrus peels and seaweed are converted to valuable products. Up to 10 participants. **8:30 - 11:30**

**Tour 3:** Visit to Industrial Symbiosis at Kalundborg: visit the world's first and most advanced example of Industrial Symbiosis. Up to 30 participants. **8:30 - 14:30**

## Day 1

June 27, 2022 10:00

Open area

Registration opening

June 27, 2022 12:00

Restaurant

Lunch supported by NNF

June 27, 2022 13:00

Main amphitheater

Opening Ceremony

*Chairs: Hariklia GAVALA and Ange NZIHOU*

June 27, 2022 13:50

Main amphitheater

**PL1 - Plenary Lecture**

*Chair: Ange NZIHOU*

411 Challenges and opportunities for moving from the linear to the circular water cycle  
William MITCH  
*Presented by MITCH William*

# Day 1

June 27, 2022 14:35

Room A

## C1 - Anaerobic digestion (I)

*Chair: Ioannis SKIADAS*

- 
- 359 Biogas production from lignocellulose-rich agro-industrial wastes  
Anastasia MAKRI, Spyridon NTOUGIAS, Paraschos MELIDIS  
*Presented by* MAKRI Anastasia
- 70 Predicting the efficiency of pretreatment of lignocellulosic biomasses based on their composition  
Anna LYMPERATOU, Thor K. ENGELSEN, Ioannis V. SKIADAS, Hariklia N. GAVALA  
*Presented by* LYMPERATOU Anna
- 281 Improved hydrogen production from food waste through CO<sub>2</sub> capture and lowered pressure  
Marie NOGUER, Lucie PERAT, Eric LATRILLE, Nicolas BERNET, Renaud ESCUDIE, Eric TRABLY  
*Presented by* NOGUER Marie
- 150 Biomethanation of various syngas from lignocellulosic waste  
Charles-David DUBÉ, Ruxandra CIMPOIA, Frédérique MATTEAU-LEBRUN  
*Presented by* DUBÉ Charles-David
- 48 Insights into the organic matter quality during anaerobic digestion by coupling biochemical fractionation with 3D fluorescence and FTIR-PAS  
David FERNÁNDEZ DOMÍNGUEZ, Dominique PATUREAU, Julie JIMENEZ  
*Presented by* FERNÁNDEZ DOMÍNGUEZ David



### A1 - Coupling pretreatments and bioprocesses for biorefinery

*Chair: Narendra KUMAR*

---

335

Effect of partial drying and shredding of food waste for co-composting with green waste  
Konstantina PAPADOPOULOU, Georgia Alexadra KOLAZA, Achilleas ZARKALIOU, Gerasimos LYBERATOS  
*Presented by* LYBERATOS Gerasimos

355

Towards a successful recycling of the hydrothermal liquefaction aqueous phase for  
microalgae cultivation

Adriana RAMIREZ ROMERO, Marion MARTIN, Jean-François SASSI, Florian DELRUE, Jean-Philippe  
STEYER

*Presented by* RAMIREZ Adriana

2

Development of efficient technique for long-term storage of fermentable sugars

Julia Maria DE MEDEIROS DANTAS, Jean-Baptiste BEIGBEDER, Jean-Michel LAVOIE

*Presented by* DE MEDEIROS DANTAS Julia Maria

22

Effect of pre-treatment on the saccharification of residual biomass of *chromocloris*  
*zofingiensis*

Wilson MORAIS JUNIOR, Priscila CORREA, André PEDROSA, Nídia CAETANO

*Presented by* CAETANO Nídia S.

# Day 1

## Room C

### E1 - Intracellular polymers and lipids

Chair: Patrick DABERT

- 256 Valorisation of olive mill effluent by using oleaginous yeast *Yarrowia lipolytica*  
Gamze CEYLAN PERVER, Mahmut ALTINBAS  
Presented by CEYLAN PERVER Gamze
- 224 Production of a copolymer of p(3HB-co-3HV) with a mixed microbial culture from fermented organic wastes  
Matteo CASTIELLO  
Presented by CASTIELLO Matteo
- 279 Valorization of brewers spent grains via biorefinery development for the production of poly(3-hydroxybutyrate)  
Chrysanthi ARGEITI, Chrysanthi PATERAKI, Dimitrios LADAKIS, Katiana FILIPPI, Eleni STYLIANOU, Apostolis KOUTINAS  
Presented by ARGEITI Chrysanthi
- 308 Valorization of *Cyanobacterium c. fritschii* for biopolymers production via digestate bioremediation  
Savvas Giannis MASTROPETROS, Konstantinos PISPAS, Michael KORNAROS  
Presented by MASTROPETROS Savvas Giannis
- 304 Lipid accumulation by *Yarrowia lipolytica* growing on food waste under nitrogen deficiency  
Soodeh SALIMI KHALIGH, Mahmut ALTINBAS  
Presented by SALIMI KHALIGH Soodeh

# Day 1

## Room D

### G1 - Cement, mortar and other binders

*Chair: Lisbeth M. OTTOSEN*

- 92 Influence of ash type and mixing methods on workability and compressive strength when using greenlandic MSWI fly ash as cement replacement in mortar  
Gunvor M. KIRKELUND, Benjamin A.R. EBERT  
*Presented by* KIRKELUND Gunvor M.
- 274 Chemical and mechanical activation of coal fly ash for valorisation in hybrid cements  
Grizelda DU TOIT, Liezel VAN DER MERWE, Elsabe KEARSLEY, Richard KRUGER, Mike MCDONALD  
*Presented by* VAN DER MERWE Liezel
- 280 Heat of hydration vs. strength development of shale-limestone blended binders  
Frederik E. SERRITZLEW, Lasse N. DØSSING, Wolfgang KUNTHER  
*Presented by* KUNTHER Wolfgang
- 158 Incorporation of the fine fraction of waste-to-energy bottom ash in aerated mortars  
Manon BROSSAT, Maria LUSPEA-TOADER, Denise BLANC, Elodie PRUD'HOMME, Christine DE BRAUER  
*Presented by* BROSSAT Manon
- 268 Use of ternary binder based on clayey calcined sediments for the stabilization of mineral waste  
Selma BELLARA, Walid MAHERZI, Vincent THIERY, Salim MEZAZIGH, Mustapha HIDJEB  
*Presented by* MAHERZI Walid

June 27, 2022 15:50

Open area

Coffee break & poster session

June 27, 2022 16:35

## Room A

### KN01 - Keynote Lecture

*Chair: H el ene CARRERE*

- 337 Development of a novel concept for integrated management of municipal wastewater and biowaste  
Achilleas ZARKALIOU, Konstantina PAPADOPOULOU, Anna MOKOU, Ioanna Eleni KIOUKI, Gerasimos LYBERATOS  
*Presented by* LYBERATOS Gerasimos

## Room B

### KN02 - Keynote Lecture

*Chair: Tadafumi ADSCHIRI*

- 260 How can hydrothermal carbonization trigger the upgrading of actual plants to biorefineries?  
Luca FIORI  
*Presented by* FIORI Luca

# Day 1

## Room C

### KN03 - Keynote Lecture

*Chair: Narendra KUMAR*

- 320 Development and application of alum sludge-based lightweight adsorbent: achieving two-prong goals of waste management and novel material for wastewater treatment  
Yaqian ZHAO, Jia GUO, Wenshan ZHANG  
*Presented by ZHAO Yaqian*

## Room D

### KN04 - Keynote Lecture

*Chair: Laurence LE COQ*

- 392 Cleaner steelmaking using biomass: a novel ironmaking process  
Tao WANG, Olivier MIRGAUX, Fabrice PATISSON  
*Presented by PATISSON Fabrice*

June 27, 2022 17:05

## Room A

### OF4-1 Biological treatment (I)

*Chair: F. Javier ESCUDERO SANZ*

- 186 A two-stage process for enhanced chain elongation during syngas fermentation  
Cesar QUINTELA, Evi PESHKEPIA, Antonio GRIMALT-ALEMANY, Yvonne NYGÅRD, Lisbeth OLSSON, Ioannis V. SKIADAS, Hariklia N. GAVALA  
*Presented by QUINTELA GARCIA Cesar*
- 189 Effect of hydrogen as a co-electron donor for n-caproate production in *caproiciproducens galactitolivorans*  
Pranav SASIDHARAN NAIR, Hyunjin KIM, Okkyoung CHOI, Byoung-In SANG  
*Presented by SASIDHARAN NAIR Pranav*
- 266 Optimization of bioethanol production from corn stover used in phytoremediation of heavy metals contaminated soil  
Francisco ALMEIDA, Nídia CAETANO, Wilson MORAIS JÚNIOR  
*Presented by CAETANO Nídia S.*
- 439 Sustainability potentials of novel laccase tinctures from *Stenotrophomonas maltophilia* BIJ16 and *Bordetella bronchiseptica* HSO16: from dye decolorization to denim bioscouring  
John O. UNUOFIN, Samuel IWARERE, Michael DARAMOLA  
*Presented by UNUOFIN John O.*

## Day 1

### Room B

#### OF4-2 Thermochemical processes (I)

*Chair: Francesco PARRILLO*

- 102 Production and characterization of biochar from press-cake residues of a demo green biorefinery  
Giulia RAVENNI, Morten AMBYE JENSEN, Adam Mark SMITH  
*Presented by SAROSSY Zsuzsa*
- 270 Feedstock type and production method are crucial in reengineering waste to high value products  
Christopher NZEDIEGWU, M. Anne NAETH, Scott CHANG  
*Presented by NZEDIEGWU Christopher*
- 384 Investigating the use of char for absorbing chlorides pyrolysis oil derived from plastics  
Snehesh Shivananda AIL, Marco CASTALDI  
*Presented by AIL Snehesh Shivananda*
- 71 Thermal behavior and kinetic study on the pyrolysis of wasteengine oil  
Karim KHIARI, Youcef ZOUAD, Lyes TARABET  
*Presented by KHIARI Karim*

### Room C

#### OF4-3 LCA & social acceptance

*Chair: Silvia DE PEREZ*

- 218 Towards a local, seasonal and circular economy through the valorization of fish waste in a small coastal region  
Israel RUIZ-SALMÓN, Ana FERNÁNDEZ-RÍOS, Cristina CAMPOS, Jara LASO, María MARGALLO, Rubén ALDACO  
*Presented by MARGALLO Maria*
- 318 Co-valorisation of dredged sediments with industrial by-products incorporating neolix geopolymer  
Ali HUSSAN, Daniel LEVACHER  
*Presented by HUSSAN Ali*
- 36 Social acceptability in waste management projects: a questionnaire survey in Reunion Island  
Ludovic FONTAINE, Dominique MORAU, Jean-Philippe PRAENE  
*Presented by FONTAINE Ludovic*
- 409 Best available techniques (BAT) inventory for BECCS system  
Shoeib FARAJI ABDOLMALEKI, Weiyu. FENG, Edelina Rosa TORRES LOPEZ, Pastora María BELLO BUGALLO  
*Presented by BELLO BUGALLO Pastora María*

# Day 1

## Room D

### OF4-4 Added-value materials

*Chair: George KYZAS*

- 173 Hyaluronic acid obtainment from eggshell membranes for potential use in personal-care products  
Candy GUADALAJARA-RIVERA, Alicia ROMÁN-MARTÍNEZ, Patricia AGUIRRE-BAÑUELOS, Liliana CORPUS-BADILLO  
*Presented by* GUADALAJARA-RIVERA Candy
- 275 Growth of *yarrowia lipolytica* on thermo-chemical hydrolysates of food waste  
Hulya UNVER, Gizem YORUCU, Ece POLAT, Ata Ege OZKAN, Sude SALIMI, Mahmut ALTINBAS  
*Presented by* SALIMI KHALIGH Soodeh
- 104 Exploring the feasibility of bio-oil catalytic cracking for concurrent production of hydrocarbon fuels and chemicals-enriched liquid  
Beatriz VALLE, Javier BILBAO, Ana GAYUBO  
*Presented by* VALLE Beatriz
- 434 Theoretical insight into the selectivity of gold, palladium and platinum for HMF oxidation over degradation in FCDA production  
Toyese OYEGOKE, Baba El-Yakubu JIBRIL, Carine MICHEL  
*Presented by* OYEGOKE Toyese

June 27, 2022 17:40

## Room A

### B1 - Pollutants removal and sanitation

*Chair: Liezel VAN DER MERWE*

- 130 Alumina-based sorbent for phosphorus removal in small scale waste water treatment plants  
Nafissatou IDRISSE, Nathalie LYCZKO, Ange NZIHOU, François CORNET, Raphaël CORNET  
*Presented by* IDRISSE Nafissatou
- 276 Successful elimination of substrate sterilization during solid-state fungal pretreatment of poplar wood  
Nikolett WITTNER, Siegfried VLAEMINCK, Iris CORNET  
*Presented by* WITTNER Nikolett
- 299 Feasibility study, development and testing of solar thermal drying technologies for sludge treatment regarding on-site sanitation  
Santiago SEPTIEN, Pareshin NAIDOO, Akhil RAMLUCKEN, Iyer BALAKANTHAN, Thandeka MASANGO, Freddie INAMBAO, Craig MCGREGOR  
*Presented by* SEPTIEN STRINGEL Santiago

# Day 1

## Room B

### A2 - Case studies of integrative approaches

*Chair: Thierry GHISLAIN*

- 129 Current status and perspectives of exploring hemp and hemp biomass in agriculture, remediation of polluted lands, industry, medicine and other areas  
Ryszard KOZLOWSKI  
*Presented by* KOZLOWSKI Ryszard
- 287 Valorisation and safe disposal of aqueous phase of hydrothermal liquefaction (HTL) for its efficient integration with wastewater treatment plant (WWTP)  
Swanand BHATWADEKAR  
*Presented by* BHATWADEKAR Swanand
- 376 A study of greenhouse gas emissions and performance of an internal combustion engine operating on landfill gas blends as fuel  
Lauren CREADORE, Marco CASTALDI  
*Presented by* CREADORE Lauren

## Room C

### E2 - Electrochemical separations

*Chair: Eva CIFRIAN*

- 379 High performance fermentation by integration with membrane technologies  
Alina Anamaria MALANCA  
*Presented by* MALANCA Alina Anamaria
- 126 Direct electrochemical extraction of succinic acid with a two-stage pH regulation using OFMSW hydrolysate as carbon source  
Eleni STYLIANOU, Chrysanthi PATERAKI, Rabaey KORNEEL, Carol Sze Ki LIN, Apostolis KOUTINAS  
*Presented by* STYLIANOU Eleni
- 306 An electrochemical process for the recovery of silicon wafers and valuable metals from end-of-life photovoltaics  
Christian MODRZYNSKI, Claudia WEIDLICH  
*Presented by* MODRZYNSKI Christian

# Day 1

## Room D

### H1 - Energy storage (I)

*Chair: Audrey VILLOT*

14 Binary salts impregnation into activated carbon for thermochemical heat storage: fast kinetic and enhanced released energy

Mohamed ZBAIR, Minh Hoang NGUYEN , Patrick DUTOURNIE, Simona BENNICI

*Presented by* ZBAIR Mohamed

201 Enhanced CO<sub>2</sub> carbon sequestration by stepped depressurization on CH<sub>4</sub>/CO<sub>2</sub> mixed hydrates combined with CH<sub>4</sub> energy recovery

Qian OUYANG, Jyoti PANDEY, Nicolas VON SOLMS

*Presented by* OUYANG Qian

13 Hydration behavior of MgSO<sub>4</sub> impregnated in different porous support as potential long-term heat storage materials

Minh Hoang NGUYEN, Mohamed ZBAIR, Patrick DUTOURNIE, Simona BENNICI

*Presented by* NGUYEN Minh Hoang

**June 27, 2022 18:25**

**End of sessions**

**June 27, 2022 18:30**

**Open area**

**Welcome reception**



## Day 2

June 28, 2022 09:00

### Room A

#### KN05 - Keynote Lecture

*Chair: Frédéric MARIAS*

- 203 Sulfur recirculation for decreased deposit formation in waste-to-energy plants  
Wenhan CAO, Sven ANDERSSON, Peter JENSEN, Peter GLARBORG, Niels HANSEN, Thomas NORMAN, Hao WU  
*Presented by* CAO Wenhan

### Room B

#### KN06 - Keynote Lecture

*Chair: Lisbeth OLSSON*

- 156 Anaerobic digestion modelling: from energetic value of wastes to agronomic fate of digestates  
Margaud PÉRÉMÉ, Antoine HADDON, Jean-Philippe STEYER, Julie JIMENEZ  
*Presented by* PÉRÉMÉ Margaud

### Room C

#### KN07 - Keynote Lecture

*Chair: Ioannis SKIADAS*

- 110 Abiotic desulfurization using cellular concrete waste: a new efficient treatment for biogas purification  
Morgane POSER, Luis Rodolfo DUARTE E SILVA, Pascal PEU, Eric DUMONT, Annabelle COUVERT  
*Presented by* POSER Morgane

### Room D

#### KN08 - Keynote Lecture

*Chair: Pieter BILLEN*

- 180 Performance evaluation of geopolymers cement mortars against microbiologically induced concrete corrosion  
Marjorie VALIX, Matthew FISHER, Cherdphong SEEDAO  
*Presented by* VALIX Marjorie

## Day 2

June 28, 2022 09:30

### Room A

#### I1 - Abatement of pollutants from combustion processes

*Chair: Laurence LE COQ*

77 Influence of operating parameters on removal efficiency of nanoparticles from incineration fumes by a pilot-scale spray scrubber - numerical and experimental investigations

Emmanuel ADAH, Aurélie JOUBERT, Marc HENRY, Sylvain DURECU, Laurence LE COQ

*Presented by* ADAH Emmanuel

140 Heavy metals removal during combustion

Brenda VOUNKI, Nathalie LYCZKO, Ange NZIHOU, Claudia TOUSSAINT, Alain GERMEAU

*Presented by* VOUNKI Brenda

378 Parameters affecting membrane-based post-combustion carbon capture

Boleslav ZACH, Michal ŠYC, Radovan ŠOMPLÁK, Jaroslav PLUSKAL

*Presented by* ZACH Boleslav

55 Inhibition of dioxins from hazardous waste rotary kiln incineration system

FengYu HE

*Presented by* HE FengYu

### Room B

#### C2 - Anaerobic digestion (II)

*Chair: Gerasimos LYBERATOS*

272 Increasing the resilience and cost-effectiveness of food waste anaerobic digestion using biochar and industrial trace element solutions

Malo SANGLIER, Alexandre LEURENT, Roman MOSCOVIZ, Maxime ROUEZ, Audrey BATTIMELLI, Felipe GUILAYN, Renaud ESCUDIE

*Presented by* SANGLIER Malo

328 In-situ formation and characterization of magnetite embedded granular sludge in upflow anaerobic sludge blanket reactor

Jinsu KIM, Hyungmin CHOI, Changsoo LEE

*Presented by* KIM Jinsu

182 Ambient-temperature anaerobic treatment of low-strength sewage in EGSB reactor with magnetite-embedded granular sludge

Jihun PARK, Jinsu KIM, Changsoo LEE

*Presented by* PARK Jihun

134 Application of polymeric media coated by polyaniline as fluidized agent in anaerobic fluidized bed membrane bioreactor to improve methane production rate and fouling control in low-strength wastewater treatment

Daeun KWON, Joohye YUN, Jeonghwan KIM

*Presented by* KIM Jeonghwan

## Day 2

### Room C

#### G2 - Secondary raw materials

*Chair: Cigdem ESKICIOGLU*

- 191 Extrudable slurries from bio-based recycled materials optimized for processing  
Arianna RECH, Claudia COLMO, Ruxandra Stefania CHIUJDEA, Gabriella ROSSI, Martin TAMKE, Mette RAMSGAARD THOMSEN, Paul NICHOLAS, Anders Egede DAUGAARD  
*Presented by* RECH Arianna
- 367 Reuse of structural concrete elements – documentation of quality  
Lisbeth M. OTTOSEN, Thomas INGEMAN-NIELSEN  
*Presented by* OTTOSEN Lisbeth M.
- 56 Upcycling wastes into high-valued engineering aerogel materials  
Hai DUONG  
*Presented by* DUONG Hai
- 389 Analysis of biomass waste-based materials in the construction sector: evaluation of thermal behaviour and life cycle assessment  
Andrés VILABOA DÍAZ, Ahinara FRANCISCO LÓPEZ, Pastora María BELLO BUGALLO  
*Presented by* FRANCISCO LÓPEZ Ahinara

### Room D

#### E3 - Chemical transformations

*Chair: Gunvor M. KIRKELUND*

- 23 Biowaste clam shells valorisation for sustainable Hg remediation  
Emanuele TOCCI , Laura MEDEGHINI, Silvano MIGNARDI  
*Presented by* MIGNARDI Silvano
- 245 Gamma-valerolactone: promising intermediate for bio jet fuel  
Wenel Naudy VASQUEZ SALCEDO, Jose DELGADO, Henrik GRENNAN, Mohammad KEMAL AGUSTA, Bruno RENO, Sebastien LEVENEUR  
*Presented by* LEVENEUR Sébastien
- 353 Slag catalytic materials for application in carboxymethylation of cinnamylalcohol with dimethyl carbonate: effect of physico-chemical properties and reaction mechanism  
Narendra KUMAR, Ekaterina KHOLKINA  
*Presented by* KUMAR Narendra
- 319 Valorization of spent batteries as a catalyst for biodiesel production: a circular economy approach  
Diogo MOREIRA, Wilson JÚNIOR, Nídia CAETANO  
*Presented by* CAETANO Nídia S.

June 28, 2022 10:30

Open area

Coffee break

## Day 2

June 28, 2022 10:45

### Room A

#### D1 - Thermochemical conversions (I)

*Chair: Florent LEMONT*

- 138 Preparation, characterisation and utilisation of nickel and iron biosourced catalysts for energy applications  
Théodore GRAUL, María GONZÁLEZ-MARTÍNEZ, Ange NZIHOU  
*Presented by* GRAUL Théodore
- 258 Performance of a small-scale CHP generation system using low-cost biomass gasification  
Rohit BOROOAH, Eleonora CORDIOLI, Daniele ANTOLINI, Matteo PECCHI, Stefano PIAZZI, Francesco PATUZZI, Marco BARATIERI  
*Presented by* BOROOAH Rohit
- 232 Single atom catalysts and their potential in the valorization of biosourced molecules  
Doan PHAM MINH, Philippe SERP  
*Presented by* PHAM MINH Doan
- 396 Hydrothermal processing of isopropanol-water solutions at moderate conditions in a batch reactor: experimental & preliminary simulation  
Jose M. ABELLEIRA-PEREIRA, Germán ESCUDERO-BURGOS, Hafsa ELAYOUBI, Juan J. MASCARELL, Jean-Paul SERIN, Jezabel SÁNCHEZ-ONETO, Juan R. PORTELA, Enrique MARTÍNEZ DE LA OSSA  
*Presented by* ABELLEIRA-PEREIRA Jose M.

### Room B

#### F1 - Extraction of molecules and plastic recycling

*Chair: Michael KORNAROS*

- 332 Exploring the full potential of introducing lignin in the coatings manufacturing value chain  
Antonios MELAS, Harald SILAU, Lisa KUNSCHERT, Hao WU, Anders Egede DAUGAARD, Martin HØJ, Markus SCHACKMANN, John WOODLEY, Kim DAM-JOHANSEN  
*Presented by* MELAS Antonios
- 84 One-pot catalytic conversion of argan nutshells in n-butanol/water over Pd/C  
Zainab AFAILAL, Noemí GIL-LALAGUNA, Jesús ARAUZO, Martin HØJ, José Luis SÁNCHEZ, Anker Degn JENSEN  
*Presented by* AFAILAL Zainab
- 137 Glycolysis of advanced polyurethanes composites containing styrene- acrylonitrile and calcium carbonate as fillers  
Del Amo JESUS, Borreguero ANA MARIA, Rodriguez JUAN FRANCISCO  
*Presented by* JUAN FRANCISCO Rodriguez
- 228 Extraction of pentoses from palm tree frond as a first step of saccharification for the production of ethanol  
Hasbi PRIADI, Sary AWAD, Audrey VILLOT, Widodo Wahyu PURWANTO, Yves ANDRES  
*Presented by* PRIADI Hasbi
- 242 Chemical recycling of PET waste by solvent-free alkaline hydrolysis  
Inês MATOS  
*Presented by* MATOS Inês

## Day 2

### Room C

#### F2 - Metal elements recovery

*Chair: Alain GERMEAU*

282 Ferrosilicon alloys from silicon wafer breakage and red mud

Luisa BLAESING, Sebastian HIPPMANN, Martin BERTAU

*Presented by* BLAESING Luisa

288

Separation and valorisation of Mg, Fe and Al from diamond mine slimes

Barbara CASTLEMAN, Liezel VAN DER MERWE, Frederic DOUCET, Liza ROOS, Matlakala SEDIBELWANA

*Presented by* CASTLEMAN Barbara

400

Lutetium and lithium recovery from wastewaters with biochars from various thermochemical conversion processes

Benit BOUESSO, Hary DEMEY, Muriel MARCHAND, Sandrine BARTHELEMY, Sonia DESOUSANOBRE, Emmanuel BILLY

*Presented by* MARCHAND Muriel

78

The cool process – a holistic approach towards lithium recycling

Robert MENDE, Sandra PAVON, Doreen KAISER, Martin BERTAU

*Presented by* MENDE Robert

213

An innovative biochemical route to recover cobalt from lateritic mining waste

Anne-Gwénaëlle GUEZENNEC, Agathe HUBAU, Douglas PINO HERRERA

*Presented by* GUEZENNEC Anne-Gwénaëlle

## Day 2

### Room D

#### E4 - Chemical processing of lignocellulosic fractions

*Chair: Sébastien LEVENEUR*

64 Using phosphoric acid for the solubilization and hydrolysis of lignocellulose from forestry waste residue, for ethanol production

Frederik WOLFAARDT, Jean-Michel LAVOIE, Johann GORGENS

*Presented by* WOLFAARDT Frederik

85 Bio-based epoxy binders from epoxidized rapeseed fatty acid lignin derivatives in bimodal coating networks

Harald SILAU, Alicia GARCIA, John WOODLEY, Kim DAM-JOHANSEN, Anders DAUGAARD

*Presented by* SILAU Harald

374 The effect of aspect ratio on rheological properties of hybrid cellulose nanocrystals to develop biodegradable plastics

Bishnu ACHARYA, Amin BABAEI-GHAZVINI

*Presented by* ACHARYA Bishnu

226

Study of the continuous catalytic valorization of hemicelluloses in sugar alcohols in an innovative fixed-bed reactor

Victoria DIAS DA SILVA FREITAS, Maxime PICHOU, Léa VILCOCQ, Régis PHILIPPE, Pascal FONGARLAND

*Presented by* VILCOCQ Léa

225 Aqueous phase reforming of birch and pine hemicellulose hydrolysates - from model compounds to real feeds

Atte AHO, Matias ALVEAR, Jani KANGAS, Juha TANSKANEN, Irina SIMAKOVA, Jose Luis SANTOS, Kari ERÄNEN, Tapio SALMI, Dmitry Yu. MURZIN, Henrik GRENMAN

*Presented by*

June 28, 2022 12:00

Restaurant

Lunch

June 28, 2022 13:00

Main amphitheater

#### PL2 - Plenary Lecture

*Chair: Animesh DUTTA*

404

Plastic management for circular economy: environmental, social, and governance (ESG) and sustainable packaging

Yong Sik OK, Amasha WITHANA, Xiangzhou YUAN, Jay Hyuk RHEE, Sung Yeon HWANG, Sangwoo PARK

*Presented by* OK Yong Sik

## Day 2

June 28, 2022 13:45

### Room A

#### D2 - Thermochemical conversions (II)

*Chair: Elsa WEISS-HORTALA*

- 152 Supercritical water gasification of wastewater generated from hydrothermal liquefaction of food waste  
Hary DEMEY, Geert HAARLEMMER, Bruno LACAZE, Julien ROUSSELY, Maria MAROTTA, Gilles RATEL, Anne ROUBAUD  
*Presented by DEMEY Hary*
- 196 Valorization of biomass into syngas through the hybrid catalytic reforming of pyrolysis volatiles  
Mira ABOU RJEILY, Muriel CHAGHOURI, Cédric GENNEQUIN, Hervé PRON, Jaona RANDRIANALISOA  
*Presented by ABOU RJEILY Mira*
- 229 Pyrolysis and steam gasification of biomass-based insulation materials  
Christelle RABBAT, Audrey VILLOT, Sary AWAD, Yves ANDRES  
*Presented by RABBAT Christelle*

### Room B

#### E5 - Microbial communities

*Chair: Georgia ANTONOPOULOU*

- 72 Mixed microbial culture enrichment for H<sub>2</sub>/CO<sub>2</sub> conversion to acetate  
Léa LAGUILLAUMIE, Antonio GRIMALT-ALEMANY, Ioannis V. SKIADAS, Hariklia N. GAVALA, Etienne PAUL, Claire DUMAS  
*Presented by LAGUILLAUMIE Léa*
- 330 Link between feedstock composition and microbial dynamics during acidogenic fermentation for polyhydroxyalkanoates production  
Borja LAGOA-COSTA, Nuria OTERO-LOGILDE, Christian KENNES, Maria C. VEIGA  
*Presented by VEIGA Maria C.*
- 163 Impact of indigenous bacteria inactivation on dark fermentation performances  
Kévin DAUPTAIN, Hélène CARRERE, Eric TRABLY  
*Presented by CARRÈRE Hélène*

## Day 2

### Room C

#### J1 - Sustainable waste management

*Chair: Silvio MIGNARDI*

105

E-cargo bikes in waste management: a case study on alternative food waste collection

Steffen WALK, Stephanie HERNANDEZ OSTOS, Ina KÖRNER

*Presented by* WALK Steffen

286

Plastic waste handling on a nordic island: state, challenges and solutions

Ólafur ÖGMUNDARSON, Laura KALWEIT, Venkateshwaran VENKATACHALAM, RakeI KRISTJÁNSDÓTTIR, Hans-Josef ENDRES, Sebastian SPIERLING

*Presented by* ÖGMUNDARSON Ólafur

413

Implementation of green deal policies in hotel tourism industry: the case of a luxury hotel in Greece

Eleni PSOMOU, Eleftheria KLONTZA, Dimitrios- Fragiskos LEKKAS

*Presented by* KLONTZA Eleftheria

### Room D

#### A3 - Innovative tools and approaches for resource valorization, inventory and recycling

*Chair: Claire GERENTE*

90

Characterisation of recovered carbon black and dispersibility evaluation for eventual valorisation in rubber formulations

Petros Kasaira MUBARI, Pascal PUECH, Elsa WEISS-HORTALA

*Presented by* MUBARI Petros Kasaira

283

Bioresource information tool (BRIT) - an open source tool for methodical GIS-based bioresource inventories

Phillipp LÜSSENHOP, Ina KÖRNER

*Presented by* LÜSSENHOP Phillip

427

GIS supported sampling for municipal solid waste valorisation

Martin PAVLAS, Ondrej PUTNA, Jirí KROPÁC, Peter PETRIK

*Presented by* PAVLAS Martin



## Day 2

June 28, 2022 14:35

### Room A

#### KN09 - Keynote Lecture

*Chair: Marco BARATIERI*

- 183 Thermal twin 4.0: next generation hazardous waste incineration  
Martin HAMMERSCHMID, Michaela KILIAN, Friedrich KIRNBAUER, Cesar AGUIARI, Roland EISL, Jakob NEMETH, Georg OGRIS, Raphael BEYWEISS, Verena DITTMER, Hermann HOFBAUER  
*Presented by* HAMMERSCHMID Martin

### Room B

#### KN10 - Keynote Lecture

*Chair: Hariklia GAVALA*

- 295 Lignocellulose valorization – on the importance of microbial robustness  
Lisbeth OLSSON  
*Presented by* OLSSON Lisbeth

### Room C

#### KN11 - Keynote Lecture

*Chair: Ana Paula PAIVA*

- 428 Green electronics: emerging trends, current challenges and the case of biodegradable electronics  
Clara SANTATO, Manuel REALI, Anthony CAMUS, Ramon HERRERA GARZA, Tian LAN, Dieudonne NIYONKURU, Federico POLI, Francesca SOAVI  
*Presented by* SANTATO Clara

### Room D

#### KN12 - Keynote Lecture

*Chair: Etienne PAUL*

- 247 Valorisation of sugar beet pulp through biorefinery development: pectin extraction and sugars hydrolysate production  
Eleni STYLIANOU, Maria-Varvara SARAFIDOU, Chrysanthi PATERAKI, Apostolis KOUTINAS  
*Presented by* SARAFIDOU Maria-Varvara

## Day 2

June 28, 2022 15:05

### Room A

#### OF5-5 Hydrogen & biogas production

*Chair: Yves ANDRES*

- 59 Microbial ecosystem engineering for hydrogen production from industrial wastewater  
Mayumi METE, Romain IRAGUE, Cyrille GRANDJEAN, Yves ANDRES  
*Presented by* METE Mayumi
- 294 Unveiling the optimal interfacial synergy of plasma modulated trimetallic Mn-Ni-Co phosphides: tailoring deposition ratio for complementary water splitting  
Kholoud ABOUSALEM  
*Presented by* ABOUSALEM Kholoud
- 285 Evaluation of biohydrogen and methane production potential from enzymatic hydrolysates of ozonated lignocellulosic biomass  
Jacobo PÉREZ-BARRAGÁN, Hasbleidy PALACIOS-HINESTROZA, Octavio GARCÍA-DEPRAECT, Ramiro VALLEJO-RODRÍGUEZ, Jorge DEL REAL-OLVERA, Elizabeth LEÓN-BECERRIL  
*Presented by* PÉREZ BARRAGÁN Jacobo
- 414 Effect of extrusion treatment on biogas production of wheat straw  
Guangyin CHEN  
*Presented by* CHEN Guangyin
- 377 Influence of adsorption and absorption: removal of trace substances in a modular syngas cleaning facility  
Philipp LEUTER  
*Presented by* LEUTER Philipp

### Room B

#### OF4-6 Hydrothermal processes

*Chair: Elsa WEISS-HORTALA*

- 187 A fungal biorefinery concept based on brewer's spent grain (BSG) starch and protein fractionation through hydrothermal pretreatment  
Mohsen PARCHAMI, Jorge A. FERREIRA, Mohammad J. TAHERZADEH  
*Presented by* PARCHAMI Mohsen
- 255 Legitimation of differential scanning calorimetry for the study of hydrothermal carbonization and liquefaction  
Matteo PECCHI, Alessandro CASCIOLI, Alex R. MAAG, Jillian L. GOLDFARB, Marco BARATIERI  
*Presented by* CASCIOLI Alessandro
- 346 Lab-grown plant tissues as new generation of bioenergy  
Omid NOROUZI, Animesh DUTTA  
*Presented by* DUTTA Animesh
- 394 Effect of ZnCl<sub>2</sub> on the hydrothermal valorization of composite off-cuts from the aeronautical industry  
Jose M. ABELLEIRA-PEREIRA, Germán ESCUDERO-BURGOS, Francisco J. CAAMAÑO-ANDRADES, Juan J. MASCARELL, Jezabel SÁNCHEZ-ONETO, Juan R. PORTELA, Enrique MARTÍNEZ DE LA OSSA  
*Presented by* ABELLEIRA-PEREIRA Jose M.

## Day 2

### Room C

#### OF5-7 MSW

*Chair: Snehesh Shivananda ALL*

- 107 Thermochemical recycling of municipal solid waste through pyrolysis: an industrial approach  
Alejandro MÁRQUEZ, Isabel ORTIZ, Jose Maria SANCHEZ  
*Presented by* MÁRQUEZ Alejandro
- 100 Pulsed stirred electro-dialytic extraction of heavy metals from municipal solid waste incineration air pollution control residue and fly ash-possible way for energy efficiency improvements  
Huilin LI, Gunvor Marie KIRKELUND  
*Presented by* LI Huilin
- 361 Activity of municipal solid waste incineration ash and char in the reduction of nox  
Kaitlyn LAWRENCE, Marco CASTALDI  
*Presented by* LAWRENCE Kaitlyn
- 351 Dynamic simulation and optimization of a waste incineration plant  
Moritz WESTERMEIER  
*Presented by* WESTERMEIER Moritz
- 388 Mussel as food –tendencies throughout the life cycle towards a circular economy  
Vaisakh YESODHARAN, Adriana GARCÍA RELLÁN, Edalina Rosa TORRES LÓPEZ, Pastora María BELLO BUGALLO  
*Presented by* BELLO BUGALLO Pastora María

### Room D

#### OF4-8 Fractionation & solvolysis

*Chair: Sary AWAD*

- 217 Composition, molecular characteristics of date-pits powder fractions as treated by alcohol-water soaked followed by pressure cooking  
Maha AL KHALILI, Nasser AL HABSI, Al-Kindi MOHAMMED, Rahman SHAFIUR  
*Presented by* AL-HABSI Nasser
- 49 Organosolv pretreatment of oat husk to produce fungal biomass production  
Taner SAR, Mohammad J. TAHERZADEH  
*Presented by* SAR Taner
- 219 Fractionation of biocrude by means of chemical separation for improved upgrading to high value fuel  
Roelf VENTER, Sanette MARX, Jaybe VAN ROOYEN  
*Presented by* VENTER Roelf
- 214 Optimization of total soluble carbohydrate production from acid hydrolysis of lignocellulosic biomass including macroalgae  
Chidiebere Millicent IGWEBUIKE, Sary AWAD, Yves ANDRÈS  
*Presented by* IGWEBUIKE Chidiebere Millicent

## Day 2

June 28, 2022 15:40

Open area

Coffee break supported by Prayon & poster session

June 28, 2022 16:25

Room A

### E6 - Biological / Biochemical processing (I)

*Chair: Roelf VENTER*

- 
- 312 Study of xylose transporters from candida tropicalis as potential technology for intensifying the use of the hemicellulosic fraction of plant biomass as feedstock in bioprocesses  
Sarah Souza QUEIROZ, Bianca OLIVA, Fanny Machado JOFRE, Tatiane Da Franca SILVA, Fernando SEGATO, Maria Das Graças FELIPE  
*Presented by* QUEIROZ Sarah De Souza
- 155 Composting of tannery limed fleshing: sustainable waste management  
Dr. Md. Abul HASHEM, Mehedi HASAN, Md. Anik HASAN, Md. Sahariar SAHEN, Sofia PAYEL, Al MIZAN, Md. Shark NUR-A-TOMAL  
*Presented by* HASHEM DR. MD. ABUL
- 172 Effect of composting on the structural characteristics of sisal residue  
Flávia SILVA CUNHA, Carlos Augusto DE MORAES PIRES  
*Presented by* SILVA CUNHA Flavia
- 127 Treatment of fuel synthesis wastewater in micro-aerobic condition using purple non-sulfur bacteria  
Naim RASHID, Sultan SHAIKH, Udeogu ONWUSOGH, Hamish MACKEY  
*Presented by* RASHID Naim

## Day 2

### Room B

#### C3 - Anaerobic digestion (III)

*Chair: Anne TREMIER*

50 Improvement of the anaerobic digestion of piggery wastewater using membrane filtration

Fanny RIVERA, Pedro PRÁDANOS, Antonio HERNÁNDEZ, Laura PALACIO, Raúl MUÑOZ

*Presented by* RIVERA Fanny

300

Modeling of the synergistic effects of olive mill wastewater, cheese whey, and liquid cow manure co-digestion

Georgios MANTHOS, Margarita DAREIOTI, Dimitris ZAGKLIS, Constantina ZAFIRI, Michael KORNAROS

*Presented by* MANTHOS Georgios

352

Anaerobic co-digestion of tannery effluents: process optimisation for resource recovery, recycling and reuse in a biocircular economy

Ashton MPOFU, Walusungu KAIRA, Oluwaseun OYEKOLA, Pamela WELZ

*Presented by* OYEKOLA Oluwaseun

66

Valorisation of deinking sludge through anaerobic codigestion: impact on methane production and nitrogen mineralization

Younès BAREHA, Céline VANEECKHAUTE

*Presented by* BAREHA Younès

### Room C

#### J2 - Life Cycle Assessment for waste material and energy recovery

*Chair: Frank ZEMAN*

123

Techno-economic evaluation and life cycle assessment of a biorefinery using winery waste streams for the production of succinic acid and value-added co-products

Sofia Maria IOANNIDOU, Katiana FILIPPI, Ioannis KOOKOS, Apostolis KOUTINAS, Dimitrios LADAKIS

*Presented by* IOANNIDOU Sofia Maria

293

Techno-economic evaluation and life cycle assessment of poly (3- hydroxybutyrate) production using wheat milling by-products

Dimitrios LADAKIS, Sofia Maria IOANNIDOU, Ioannis KOUKOS, Apostolis KOUTINAS

*Presented by* LADAKIS Dimitrios

67

Waste energy recovery as a solution to mitigate forest land-use change emissions: a life cycle assessment

Maria Helena SOUSA, Rômulo MENEZES, Emmanuel DUTRA, Thiago RODRIGUES

*Presented by* SOUSA Maria Helena

133

An integrated life cycle assessment framework for assessing environmental sustainability of agricultural products

Konstantinos KOMNITSAS, Georgios BARTZAS

*Presented by* BARTZAS Georgios

## Day 2

### Room D

#### A4 - Resources recovery

*Chair: José Maria SANCHEZ-HERVAS*

244 Recovery of glass fibers from reinforced thermosets by pyrolysis processing and their reuse in PP composites

Kyriaki GKALIOU, Claus Dalsgaard JENSEN, Anders Egede DAUGAARD

*Presented by* GKALIOU Kyriaki

193 Hydrochar from hydrothermal liquefaction of municipal sludge: its characterization for phosphorus recovery

Huan LIU, Ibrahim Alper BASAR, Nathalie LYCZKO, Ange NZIHOU, Cigdem ESKICIOGLU

*Presented by* LIU Huan

372 Resource recovery from calcium-based MSWI APCr stabilized by water washing

Ekaterina KOROTENKO, Michal ŠYC, Lukáš GRIC, Tomáš BALOCH, Pavel DRÁPELA

*Presented by* KOROTENKO Ekaterina

166 Solvent extraction of platinum and palladium from a leaching solution of a spent catalytic converter

Ana Paula PAIVA

*Presented by* PAIVA Ana Paula

June 28, 2022 17:30

### Room A

#### D3 - Sludge and waste gasification

*Chair: Fabrice PATISSON*

205 Gasification of wastewater primary sieved solids for the production of electric and thermal energy

Anthoula MANALI, Konstantinos TSAMOUTSOGLU, Petros GIKAS

*Presented by* GIKAS Petros

168 Process simulation of plasma-assisted entrained flow gasification for thermochemical recycling

Sebastian BASTEK, Marcel DOSSOW, Sebastian FENDT, Hartmut SPLIETHOFF

*Presented by* BASTEK Sebastian

181 A circular systemic solution for the valorisation of wood packaging waste

Vittoria BENEDETTI, Francesco PATUZZI, Marco BARATIERI

*Presented by* BENEDETTI Vittoria

## Day 2

### Room B

#### F3 - Pilot, full scale operation, technico-economic analysis

*Chair: Maria GONZALEZ MARTINEZ*

188 Tar steam reforming using biomass gasification char in a pilot-scale gasifier  
Ali ABDELAAL, Daniele ANTOLINI, Stefano PIAZZI , Francesco PATUZZI, Audrey VILLOT, Claire GERENTE, Marco BARATIERI  
*Presented by* ABDELAAL Ali Hassan Ali

284 Results of successful first 30 days of methanol synthesis demonstration plant operation  
Tim SCHULZKE  
*Presented by* SCHULZKE Tim

398 Technoeconomic analysis of briquette production from carbonised corn stover  
Felicia NGUBANE, Oluwaseun OYEKOLA  
*Presented by* OYEKOLA Oluwaseun

### Room C

#### H2 - Energy storage (II)

*Chair: Lenka SVECOVA*

24 Green processes for what?  
Patrick SHARROCK  
*Presented by* SHARROCK Patrick

290 Tannins for sustainable electrochemical energy storage  
Molood Alsadt HOSEINIZADEH, Kholod SALEM, Abdelaziz GOUDA, Alexandre MASSON, Clara SANTATO  
*Presented by* HOSEINIZADEH Molood Alsadat

101 Biosourced, biodegradable quinone-macromolecules grafted on O, N, S, P co-doped carbon paper for high-energy density electrochemical capacitors  
Abdelaziz GOUDA, Clara SANTATO  
*Presented by* GOUDA Abdelaziz

## Day 2

### Room D

#### **A5 - Physicochemical and energy yield evaluation of various feedstocks**

*Chair: Gary LEEKE*

- 29 Physical, chemical, and thermal evaluation of spent carrot seeds waste (SCSW) for thermochemical conversion  
Sourodipto MODAK, Priyanka KATIYAR  
*Presented by* MODAK Sourodipto
- 79 An analysis of the energy contribution from individual waste components in solid recovered fuel (SRF)  
Jarudej ASINGSAMANUNT, Geoffrey David FOWLER, Susan Mary GRIMES, Claudia MAYNE CUSELL  
*Presented by* ASINGSAMANUNT Jarudej
- 80 Analysis of the pyrolysis and combustion of wet russian feedstock and of the subsequent gaseous emissions, and kinetic modelling  
Alexei KANGASH, Damaris KEHRLI, Pavel MARYANDYSHEV, Alain BRILLARD, Viktor LYUBOV, Jean-François BRILHAC  
*Presented by* BRILLARD Alain

June 28, 2022 18:20

**End of sessions**



## Day 3

June 29, 2022 09:00

### Room A

#### F4 - Advanced carbon materials

*Chair: Luca FIORI*

- 148 Graphitization of cellulose and lignin using non-conventionnal catalysts: towards graphene-like materials  
Théotime BEGUERIE, Elsa WEISS-HORTALA, Ange NZIHOU  
*Presented by* BEGUERIE Théotime
- 190 High-crystalline graphitic carbon synthesized from waste-woody sawdust  
Yuta NAKAYASU, Yasuto GOTO, Takashi ITOH, Masaru WATANABE  
*Presented by* NAKAYASU Yuta
- 417 Hydrothermal carbonization of dairy waste for nutrient recovery and waste management  
Nidal KHALAF  
*Presented by* KHALAF Nidal
- 345 Activated carbon from graphene oxide assisted hydrothermal carbonization of corn fiber and KOH activation  
Animesh DUTTA, Tirtha DHAR  
*Presented by* DUTTA Animesh

### Room B

#### A6 - Waste valorization and byproducts treatment and evaluation

*Chair: Florent LEMONT*

- 215 Catalytic oxidation of kraft black liquor in continuous reactor  
Antonio HERNANDEZ MANAS, Nicolas CHAUSSARD, Frédérique BERTAUD, Olivier BOYRON, Léa VILCOCQ, Pascal FONGARLAND, Laurent DJAKOVITCH  
*Presented by* VILCOCQ Léa
- 334 New approach in assessing the structure of catalyst-enhanced graphitic renewable carbons  
Lina María ROMERO MILLÁN, Amel GHOGIA, Claire E. WHITE, Ange NZIHOU  
*Presented by* GHOGIA Amel
- 387 Which sorption parameter for the modelling of organic micropollutants in NBS deposits?  
Maria LUPSEA-TOADER, Maximilien GRASSART-MASCLET, Mathieu GAUTIER, Denise BLANC, Wen DAI, Camille BANC, Rémy GOURDON  
*Presented by* LUPSEA-TOADER Maria
- 109 Developing circular concrete: acid treatment of waste fines  
Tiejun DING, Hong WONG, Xiuchen QIAO, Chris CHEESEMAN  
*Presented by* DING Tiejun

## Day 3

### Room C

#### E7 - Biorefinery approaches

*Chair: Christian KENNES*

- 45 Alternative route for organic fraction municipal solid waste valorisation  
Esther MOLINA PEÑATE, Antoni SANCHEZ, Adriana ARTOLA  
*Presented by* MOLINA PEÑATE Esther
- 65 Marijuana residues as a gateway biomass for a green economy  
Jm DANTAS, M LUGO-PIMENTEL, Sja RUEDA, Camille FILIATRAULT-CHASTEL, Frederik WOLFAARDT, Olivier LALONDE, Thierry GHISLAIN, Jean-Michel LAVOIE  
*Presented by* GHISLAIN Thierry
- 83 Environmental analysis of different “green” extraction techniques to obtain flavonol rutin: a biorefinery approach  
Beatriz SANTIAGO, Ricardo REBOLLEDO, Gumersindo FEIJOO, Maria Teresa MOREIRA, Sara GONZALEZ-GARCIA  
*Presented by* REBOLLEDO-LEIVA Ricardo
- 298 A biorefinery approach to fruit and vegetable waste management: integrated dark fermentation and hydrothermal carbonization  
Primrose MAGAMA, Idan CHIYANZU, Jean MULOPO  
*Presented by* MAGAMA Primrose

### Room D

#### J3 - Waste valorization

*Chair: Nathalie LYCZKO*

- 391 Leaching and selective recovery of rare earth elements found in NdFeB magnets using organic acids and TODGA  
Sahar BELFQUEH, Nourredine MENAD, Alain SERON, Simon CHAPRON, Guilhem ARRACHART  
*Presented by* MENAD Nour-Eddine
- 144 Porous red-mud based alkali-activated materials for wastewater treatment  
João CARVALHEIRAS, Rui NOVAIS, João LABRINCHA  
*Presented by* CARVALHEIRAS João
- 212 Recyclable materials do not always make recyclable objects: a multilevel statistical entropy take on composite deli packaging  
Cristina MOYAERT, Yanou FISHEL, Lorenz VAN NUETEN, Philippe NIMMEGEERS, Pieter BILLEN  
*Presented by* BILLEN Pieter
- 41 Experimental study of the use dredged sediments in a hydrocarbon matrix  
Fouad BELAYALI, Walid MAHERZI, Nor-Edine ABRIAK, Mahfoud BENZERZOUR  
*Presented by* MAHERZI Walid

## Day 3

June 29, 2022 10:05

### Room A

#### OF4-9 Thermochemical processes (II)

*Chair: Amel GHOGIA*

- 204 Pyrolysis of hdpe over spent FCC catalyst in a fountain confined conical spouted bed reactor  
Santiago OROZCO HERNANDEZ, Mayra SUAREZ, Maria CORTAZAR, Laura SANTAMARIA, Irati GARCIA, Enara FERNANDEZ, Maider AMUTIO, Martin OLAZAR  
*Presented by* SANTAMARIA Laura
- 62 Thermochemical recovery of end-of-waste wood in a domestic wood stove: influence of the wood arrangement in the fireplace on pollutant emissions  
Axel MEYER, Gontrand LEYSSENS, Cornélius SCHÖNNENBECK  
*Presented by* MEYER Axel
- 170 Experimental and modelling study of volatile species released in biomass torrefaction based on extracted cellulose, hemicelluloses and lignin  
María GONZALEZ MARTINEZ, Jean-Louis DIRION, Manon BEAUFORT, Andrés ANCA-COUCÉ, Mylène MARIN GALLEGO, Xuan MEYER  
*Presented by* GONZALEZ MARTINEZ Maria
- 344 MDF recycling by steam explosion  
Sarah TROILO, Arnaud BESSERER, Lucas SOUFFLET, Safwan SAKER, Nicolas BROSSE  
*Presented by* TROILO Sarah

### Room B

#### OF4-10 Activated carbons

*Chair: Francesco PATUZZI*

- 192 Reusing spent fluid catalytic cracking catalyst as adsorbent in wastewater treatment applications  
Tania GAMEIRO, Carla COSTA, João LABRINCHA, Rui NOVAIS  
*Presented by* GAMEIRO Tania
- 95 Hierarchical porous biomass carbon from agricultural crops waste as an highly efficiency adsorbent for VOCs  
Xinlei HUANG, Minghui TANG, Shengyong LU, Ling WANG, Hongxian LI  
*Presented by* HUANG Xinlei
- 87 Enhanced adsorptive capacity for the removal of Rhodamine B (RhB) using positively-charged extractive-free sugarcane bagasse  
Roxanne Kathlyn ALIVIO, Alchris GO, Yi Hsu JU, Artik Elisa ANGKAWIJAYA  
*Presented by* ALIVIO Roxanne Kathlyn
- 106 Development of activated carbons from pine sawdust and their application for wood dye adsorption  
Catarina PIMENTEL, M. Sonia FREIRE, Diego GÓMEZ-DÍAZ, Julia GONZÁLEZ-ÁLVAREZ  
*Presented by* PIMENTEL Catarina

## Day 3

### Room C

#### OF4-11 Biological treatment (II)

Chair: *Konstantina PAPADOPOULOU*

- 75 New steps in rapid characterization of organic waste by near infrared spectroscopy  
Lorraine AWHANGBO, Morand SEVERAC, Cyrille CHARNIER, Eric LATRILLE, Jean-Philippe STEYER  
*Presented by* AWHANGBO Lorraine
- 125 Effects of biochar on nitrogen losses during digestate composting  
Matheus FIRMINO, Anne TREMIER  
*Presented by* FIRMINO Matheus
- 333 N-acyl-homoserine lactones and autoinductor-2 mediated quorum sensing in anaerobic membrane bioreactors  
Syed S.A. SHAH, Kwang-Ho CHOO  
*Presented by* SHAH Syed Salman Ali
- 440 Fractionation of yellow thatching grass (*Hyparrhenia filipendula*) with deep eutectic solvent (DES) for enzymatic hydrolysis  
F. MASUKU F, Fildah AYAA, C.M. ONYELUCHEYA, Samuel IWARERE, Michael DARAMOLA, J.B. KIRABIRA  
*Presented by* AYAA Fildah

### Room D

#### OF4-12 Minerals

Chair: *Ivana BARIŠIĆ*

- 426 Waste valorisation: a key enabler for long-distance human space missions  
Sandra ORTEGA, Chloe AUDAS, Brigitte LAMAZE, Christel PAILLE, Christophe LASSEUR  
*Presented by* ORTEGA Sandra
- 336 Management of end of life photovoltaic panels: a focus on recycling technologies  
Charalampos PAVLOPOULOS, Konstantina PAPADOPOULOU, Gerasimos LYBERATOS  
*Presented by* PAPADOPOULOU Konstantina
- 103 Electric field assisted mining: an environmentally friendly technique for rare earth extraction from soils  
Carolina PIRES, Alexandra RIBEIRO, Haroldo PONTE, Maria José PONTE  
*Presented by* PIRES Carolina
- 179 Hydrometallurgical recovery of copper from electronic wastes using alkaline lixiviant  
Marjorie VALIX  
*Presented by* VALIX Marjorie

June 29, 2022 10:35

Open area

Coffee break

## Day 3

June 29, 2022 10:50

Room A

### F5 - Pyrolysis

*Chair: Joan MANYA*

- 
- 227 IDROSMART – integration of slow pyrolysis and chemicals leaching for civil sludge conversion into biocoal, biochemicals and inorganic fertilisers  
Andrea SALIMBENI, Giacomo LOMBARDI, Andrea Maria RIZZO, David CHIARAMONTI  
*Presented by* LOMBARDI Giacomo
- 46 Catalytic co-fast pyrolysis hydrocarbon selectivity: agroindustrial waste biomass and PVC blends  
Ángel ALCÁZAR RUIZ, Luz SÁNCHEZ SILVA, Fernando DORADO FERNÁNDEZ  
*Presented by* ALCÁZAR RUIZ Ángel
- 207 Pyrolysis-plasma/catalysis of municipal solid waste to produce upgraded bio-oils  
Maryam KHATIBI, Idris AMINU, Mohamad NAHIL, Paul WILLIAMS  
*Presented by* KHATIBI Maryam
- 223 Pyrolysis of end-of-life tyres coupled with catalytic vapour upgrading  
Stylios STEFANIDIS, Eleni PACHATOURIDOU, Eleni HERACLEOUS, Angelos LAPPAS  
*Presented by* STEFANIDIS Stylios
- 277 Co-pyrolysis of wood and chicken manure for the production of engineered biochar-based slow-release fertilizers  
Amine LATAF, Ava YAMAGUCHI, Ingeborg PECQUEUR, Marijke JOZEFZAK, Ann CUYPERS, Bart VANDECASTEELE, Dries VANDAMME  
*Presented by* LATAF Amine

## Day 3

### Room B

#### C4 - Anaerobic digestion (IV)

*Chair: H  l  ne CARRERE*

86 Rapid convergence of microbial communities from different inoculum sources  
Antonio GRIMALT-ALEMANY, Anna LYMPERATOUE, Carlos GONZ  LEZ L  PEZ DE LERMA, C  sar QUINTELA-GARC  A, Ioannis SKIADAS, Hariklia GAVALA  
*Presented by GRIMALT-ALEMANY Antonio*

418 Methane yield optimization of microbial consortium in anaerobic digestion dealing with saline biomass  
Korantin PIPEREAU, St  phanie SAINT-LAURENT, Ludivine ALLAIS, Pierre SOUQUET, C  cilia SAMBUSITI  
*Presented by PIPEREAU Korantin*

154 Population dynamics in anaerobic digesters upon sequential changes of feedstock with and without pretreatment  
Anna LYMPERATOUE, Mateusz LEZYK, Antonio GRIMALT-ALEMANY, Ioannis V. SKIADAS, Hariklia N. GAVALA  
*Presented by LYMPERATOUE Anna*

307 Development of a new method using 3D printing solid tracers for the determination of residence time distribution in dry anaerobic digestion in a 0.5 m<sup>3</sup> reactor  
Manuel HERNANDEZ-SHEK, Arnaud COUTU, Joseph FAYOLLE, Philippe PEULTIER, Andr   PAUSS, Thierry RIBEIRO  
*Presented by RIBEIRO Thierry*

261 Inhibitory mechanisms and mitigation strategies in semi-continuous dry anaerobic digestion of OFMSW  
Ildefonso ROCAMORA, Yadira BAJON-FERNANDEZ  
*Presented by BAJON FERNANDEZ Yadira*

### E8 - Biological / Biochemical processing (II)

*Chair: William MITCH*

- 
- 343 Waste-based bio-ethanol production: a circular economy model  
Styliani KALANTZI, George Marios LYTRAS, Christos LYTRAS, Dimitrios MATHIOUDAKIS, Konstantina PAPADOPOULOU, Diomi MAMMA, Dimitrios KEKOS, Gerasimos LYBERATOS  
*Presented by* PAPADOPOULOU Konstantina
- 162 Two-stage anaerobic digestion of food waste: improving bioenergy recovery rate by steering acidogenesis  
Octavio GARCIA, Leonardo MARTÍNEZ-MENDOZA, Israel DIAZ, Raúl MUÑOZ  
*Presented by* GARCIA Octavio
- 265 Treatment of soapstock wastewater anaerobically and recover of sulphuric acid from biogas  
Simge SERTGUMEC, Mahmut ALTINBAS  
*Presented by* SERTGUMEC Simge
- 135 Bioleaching to reprocess sulfidic polymetallic mining residues: two case studies from the H2020 NEMO project  
Agathe HUBAU, Douglas PINO-HERRERA, Anne-Gwenaëlle GUEZENNEC  
*Presented by* HUBAU Agathe
- 131 Lactic acid fermentation at high NaCl concentrations  
Eleftheria PAPADOPOULOU, Panagiotis TSAPEKOS, Irini ANGELIDAKI  
*Presented by* PAPADOPOULOU Eleftheria

## Day 3

### Room D

#### G3 - Waste management and assessment

*Chair: Katia LASARIDI*

- 323 Evaluation of the impact of EAF slag-based asphalt mixtures on the environment using leaching tests  
Iván SALAS, Eva CIFRIÁN, Pedro LASTRA-GONZÁLEZ, Daniel CASTRO-FRESNO, Ana ANDRÉS  
*Presented by SALAS Iván*
- 357 A protocol to prepare fresh municipal solid waste for stabilisation and solidification  
Léo SAOUTI, Daniel LEVACHER, Nathalie LEBLANC, Hafida ZMAMOU, Louis JARDIN  
*Presented by SAOUTI Léo*
- 314 Environmental risk assessment of sustainable materials based on biomass ashes on marine environment using eco-toxicity criteria  
Jorge SANTOS TERÁN, Araceli RODRIGUEZ-ROMERO, Eva CRIFRIAN, Ana ANDRES  
*Presented by SANTOS TERÁN Jorge*
- 325 Development of technology roadmap for valorisation of plastic waste related to covid-19, based on technology surveillance, life cycle assessment and estimation of economic viability. Case study Bucaramanga, Colombia  
Viatcheslav KAFAROV, Lynda CARREÑO-VILLARREAL, Andrés LEÓN-ESTEBAN, Sandra PEÑA-RUIZ, Juan Pablo AFANADOR-REYES, Ivon BONILLA-TRIANA  
*Presented by KAFAROV Viatcheslav*

June 29, 2022 12:05

Restaurant

Lunch

June 29, 2022 13:05

Main amphitheater

#### PL3 - Plenary Lecture

*Chair: Ange NZIHOU*

- 424 Waste and biomass valorization by supercritical hydrothermal processing  
Tadafumi ADSCHIRI, Akira YOKO, Takaaki TOMAI, Gimyeong SEONG  
*Presented by ADSCHIRI Tadafumi*



## Day 3

June 29, 2022 13:50

### Room A

#### KN13 - Keynote Lecture

*Chair: Muriel MARCHAND*

- 114 Vine shoot-derived hard carbon as anode for sodium-ion batteries  
Dario ALVIRA, Daniel ANTORAN, Joan MANYA  
*Presented by* ALVIRA Dario

### Room B

#### KN14 - Keynote Lecture

*Chair: Gerasimos LYBERATOS*

- 108 Progress report on the degradation of biodegradable plastics in anaerobic digestion systems  
Paul DERKENNE, Lucile CHATELLARD, Patrick DABERT  
*Presented by* DABERT Patrick

### Room C

#### KN15 - Keynote Lecture

*Chair: Tim SCHULZKE*

- 316 Modelling the resource circularity gap with preparation for reuseflows using a generic material flow analysis framework  
Vitor MIRANDA DE SOUZA, Magnus FRÖHLING, Daniela PIGOSSO  
*Presented by* MIRANDA DE SOUZA Vitor

### Room D

#### KN16 - Keynote Lecture

*Chair: Matteo PELUCCHI*

- 436 ISCOWA: promoting and coordinating information exchange for alternative materials in construction, moving towards Circular Economy  
Annika SORMUNEN  
*Presented by* SORMUNEN Annika

## Day 3

June 29, 2022 14:20

### Room A

#### D4 - Energy vectors: H<sub>2</sub>, CH<sub>4</sub>, syngas (I)

*Chair: Yves ANDRES*

- 317 Bimetallic hydroxyapatite-supported catalysts for methane production via CO<sub>2</sub> hydrogenation  
Fábio GONÇALVES MACÊDO DE MEDEIROS, Farbod FARZI, Ines Esma ACHOURI, Bruna REGO DE VASCONCELOS  
*Presented by* GONÇALVES MACÊDO DE MEDEIROS Fábio
- 393 Renewable hydrogen from bioresources: evaluation of separation, purification and analytical techniques for monitoring and quantification  
Majd ELSADDIK, Maria GONZALEZ MARTINEZ, Ange NZIHOU  
*Presented by* GONZALEZ MARTINEZ Maria
- 397 Hot syngas cleaning by means of different catalysts  
Francesco PARRILLO, Mario COMMODO, Giovanna RUOPPOLO, Carmine BOCCIA, Franco BERRUTI, Umberto ARENA  
*Presented by* PARRILLO Francesco
- 6 Conversion of biomass to green hydrogen in supercritical water  
Janusz KOZINSKI  
*Presented by* KOZINSKI Janusz

### Room B

#### C5 - Hydrolysis and process water saving

*Chair: Ioanna NTAIKOU*

- 73 Process water minimization in biomass washing  
Frank ZEMAN  
*Presented by* ZEMAN Frank
- 386 Biodiesel production from waste-derived maggot oil over fusion-assisted hydrothermally and ion-exchanged produced hydroxy sodalite catalyst  
Juvet Malonda SHABANI, Oluwaseun OYEKOLA, Omotola BABAJIDE, Leslie PETRIK  
*Presented by* OYEKOLA Oluwaseun
- 302 Acid hydrolysis of lignocellulosic waste for the production of oleaginous yeast  
Hülya ÜNVER, Mahmut ALTINBAS  
*Presented by* CEYLAN PERVER Gamze
- 142 Alcoholysis of fructose to n-butyl levulinate in gamma-valerolactone solvent: kinetic and calorimetry investigation  
Daniele DI MENNO DI BUCCHIANICO, Jean-Christophe BUVAT, Valeria CASSON MORENO, Sebastien LEVENEUR  
*Presented by* DI MENNO DI BUCCHIANICO Daniele

## Day 3

### Room C

#### E9 - Technoeconomic and environmental analyses

*Chair: Muriel MARCHAND*

- 167 Techno-economic assessment of a consolidated process: bioconversion of organosolv pretreated oat husk into fungal biomass, ethanol and lignin  
Gulru BULKAN, Jorge A. FERREIRA, Mohammad J. TAHERZADEH  
*Presented by* BULKAN Gulru
- 341 Techno-economic analysis of enzymatic plastic recycling  
Tommaso DE SANTIS, Gerald STRIEDNER  
*Presented by* DE SANTIS Tommaso
- 82 The production of itaconic acid based on wheat straw: a life cycle approach  
Ricardo REBOLLEDO-LEIVA, Maria Teresa MOREIRA, Sara GONZALEZ-GARCIA  
*Presented by* REBOLLEDO-LEIVA Ricardo

### Room D

#### I2 - Waste management and circular economy approaches

*Chair: Tim SCHULZKE*

- 278 Comparative environmental analysis of different municipal solid waste management scenarios using life cycle analysis (LCA) methodology  
Ana Carolina JIMENEZ, Reynaldo PALACIOS-BERECHE, Silvia Azucena NEBRA  
*Presented by* DE PEREZ Silvia Azucena
- 26 Influence of the chemical association form of alkali compounds on the release behavior from solid biomass  
Hendrik MÖRTENKÖTTER, Dominik GRÜNWALD, Sebastian FENDT, Hartmut SPLIETHOFF  
*Presented by* MÖRTENKÖTTER Hendrik
- 437 Hydroxy sodalite catalyst from coal fly ash and industrial waste brine for transesterification of animal fat oil to biodiesel  
Michael DARAMOLA, Thomas ANIOKETE, E.C. LINGANISO  
*Presented by* DARAMOLA Michael

## Day 3

### Room E

#### A7 - New useful materials for original applications

*Chair: Frank ZEMAN*

- 149 Bio-based sustainable nanocomposites for water purification  
Sherin PETER, Nathalie LYCZKO, Ange NZIHOU, Sabu THOMAS, Alain GERMEAU  
*Presented by* PETER Sherin
- 253 Pyrolysis of brewer's spent grain biomass to form functional adsorbers  
Dries BLEUS, Wouter MARCHAL, Dries VANDAMME  
*Presented by* BLEUS Dries
- 289 Use of pistachio shells for lignocellulosic nanopapers  
Eduardo ROBLES, Nagore IZAGUIRRE, Ander MARTIN, Jalel LABIDI  
*Presented by* ROBLES Eduardo
- 89 Cascade valorization of coffee grounds  
Maxime BEAUDOR  
*Presented by* BEAUDOR Maxime

June 29, 2022 15:20

Open area

Coffee break supported by Springer Nature & poster session

June 29, 2022 16:05

### Room A

#### D5 - H<sub>2</sub>, CH<sub>4</sub>, syngas and power generation

*Chair: F. Javier ESCUDERO SANZ*

- 230 High purity syngas production from steam gasification of cellulose  
Majd ELSADDIK, Ange NZIHOU, Guo-Hua DELMAS, Michel DELMAS  
*Presented by* ELSADDIK Majd
- 233 Techno-economic performance of biomass-to-hydrogen processes via gasification: a review focusing on key cost factors  
Pietro POSTACCHINI, Lorenzo MENIN, Francesco PATUZZI, Marco BARATIERI  
*Presented by* POSTACCHINI Pietro
- 202 Modelling and simulation of pilot-scale stratified downdraft gasifier (p-SDG) system using residual household waste (RHW) as feedstock for power generation  
Jordy Charly Isidore RABETANETIARIMANANA, Dominique MORAU, Hery Tiana RAKOTONDRIAMARANA, Quentin CARDON, Mamy Harimisa RADANIELINA  
*Presented by* RABETANETIARIMANANA Jordy Charly Isidore
- 30 Hydrogen rich syngas production from mixed food waste via an integrated two-stage process of in-situ steam gasification after fast pyrolysis  
Sanjeev YADAV, Aayush RAIZADA  
*Presented by*

### J4 - Biowaste management

*Chair: Ina KÖRNER*

- 
- 423 Assessment of food waste generation in the retail sector  
Katia LASARIDI, Konstantinos ABELIOTIS, Christina CHRONI, Evangelia SIGALA, Sotiris PIPERIS  
*Presented by LASARIDI Katia*
- 238 Feasibility of decentralised biowaste management through micro anaerobic digestion:  
demonstration in the H2020 decisive project  
Anne TRÉMIER, Axelle DEGUEURCE, Claudio FONTANA  
*Presented by TRÉMIER Anne*
- 422 African agro-residue side streams valorisation for bio-based packaging materials  
reducing food waste  
Amélie TRIBOT  
*Presented by LUOMA Enni*
- 438 Extraction and characterization of cellulose nanofibres from yellow thatching grass  
(*Hyparrhenia filipendula*) straws  
N. NDWANDWA, Fildah AYAA, Samuel IWARERE, Michael DARAMOLA, J.B. KIRABIRA  
*Presented by AYAA Fildah*

## Day 3

### Room C

#### E10 - Enzymes in esterification processes

Chair: Antonio GRIMALT-ALEMANY

- 141 Enzymatic esterification of levulinic acid in continuous microfluidic system  
Sindi BACO, Alexandre CORDIER, Christoph HELD, Julien LEGROS, Sebastien LEVENEUR  
*Presented by* LEVENEUR Sébastien
- 210 Biofuel production from municipal waste using lipase catalysis  
Roelf VENTER, Sanette MARX, Jonedine VAN DER MERWE  
*Presented by* VENTER Roelf
- 264 Understanding biocatalysis in natural deep eutectic solvents: transesterifications with *candida antarctica lipase B* in various solvents  
Attila KOVACS, Erik NEYTS, Iris CORNET, Maksudbek YUSUSPOV, Pieter BILLEN  
*Presented by* KOVACS Attila
- 12 Functional characterization of alkaline digested date-pits: residue and supernatant fibers  
Muna AL-HASNI, Mostafa WALY, Nasser AL-HABSI, Maha AL-KHALILI, Shafiur RAHMAN  
*Presented by* AL-HABSI Nasser

### Room D

#### I3 - Bioprocessing gaseous compounds and wastes

Chair: Etienne PAUL

- 250 Syngas fermentation for the production of medium-chain fatty acids by a co-culture of *clostridium acetivum* and *clostridium kluyveri*  
Carla FERNÁNDEZ BLANCO, María C. VEIGA, Christian KENNES  
*Presented by* FERNÁNDEZ BLANCO Carla
- 259 Degradation of certified compostable plastic bags in a composting facility – determination of macro, meso and micro particle size fractions in composts  
Ina KÖRNER, Paulina Echavarría BORGES, Michelle VIRAMONTES ESPINOSA, Stefan DEEGENER  
*Presented by* KÖRNER Ina
- 119 A parsimonious model to predict and reduce GHG emissions from composting  
Eric WALLING, Younès BAREHA, Céline VANEECKHAUTE  
*Presented by* BAREHA Younès
- 369 Abiotic and anaerobic pyrolytic decomposition of municipal solid waste under elevated temperature landfill conditions  
Tasnuva MOUTUSHI, Marco CASTALDI  
*Presented by* CASTALDI Marco

June 29, 2022 17:10

End of sessions

June 29, 2022 19:30

Tivoli

Gala Dinner

## Day 4

June 30, 2022 09:00

### Room A

#### D6 - Energy vectors: H<sub>2</sub>, CH<sub>4</sub>, syngas (II)

*Chair: Bruna REGO DE VASCONCELOS*

- 81 Optimal pH condition for maximizing hydrogen production in an agricultural two-step anaerobic digester  
Gauthier GENSOLLEN, Anne-Laure DUEDAL, Pascal PEU  
*Presented by* GENSOLLEN Gauthier
- 34 Two-stage catalytic cracker and reformer for hydrogen production in supercritical water gasification of lipid biomass  
Diane GUBATANGA, Osamu SAWAI, Teppei NUNOURA  
*Presented by* GUBATANGA Diane
- 136 Dynamic pyrolysis characteristics of biomass driven by concentrated solar energy  
Dian ZHONG, Jun LI, Kuo ZENG, Haiping YANG, Hanping CHEN  
*Presented by* ZENG Kuo

### Room B

#### F6 - Pyrolysis of plastics

*Chair: Marco BARATIERI*

- 425 A lumped kinetic approach for chemical recycling of solid plastic waste: polyethylene, polypropylene, and polystyrene pyrolysis  
Andrea LOCASPI, Matteo PELUCCHI, Tiziano FARAVELLI  
*Presented by* LOCASPI Andrea
- 329 Pyrolysis of polyolefin plastic waste: flow or batch reactor?  
Guozhan JIANG, Jonathan SEVILLE, Ale SANCHEZ MONSALVE, Suchi BHATTACHARYA, Gary LEEKE  
*Presented by* LEEKE Gary
- 383 Investigations into the catalytic cracking of pyrolysis oil obtained from plastic wastes  
Snehesh Shivananda AIL, Marco CASTALDI  
*Presented by* AIL Snehesh Shivananda

### Room C

#### A8 - Metal removal and recovery

*Chair: Patrick SHARROCK*

- 32 Simple washing and magnetic separation of cork powder ash components  
Renato Filipe GUIMARÃES, Alexandra GUEDES, Bruno VALENTIM  
*Presented by* GUIMARÃES Renato
- 209 Concentration of copper from the fine fraction of incineration bottom ash by gravimetric and magnetic concentrators  
Héctor MUÑIZ SIERRA, Michal ŠYC  
*Presented by* MUÑIZ SIERRA Héctor
- 16 Iron(III) removal from sewage sludge ash derived phosphoric acid using cyanex 572  
Sandra PAVON, Nils HANEKLAUS, Peter FRÖHLICH, Martin BERTAU  
*Presented by* PAVON Sandra

## Day 4

### Room D

#### G4 - Waste valorization in construction

*Chair: Ryszard KOZLOWSKI*

- 296 Biomass ash and waste rubber - potential pavement materials  
Ivana BARIŠIĆ, Ivana NETINGER GRUBEŠA, Marija TRKMIC, Matea AMIDŽIĆ  
*Presented by BARIŠIĆ Ivana*
- 315 Production and characterization of fired bricks from river dredged sediments  
Mazhar HUSSAIN, Daniel LEVACHER, Nathalie LEBLANC, Hafida ZMAMOU, Irini DJERAN-MAIGRE, Andry RAZAKAMANANTSOA  
*Presented by HUSSAIN Mazhar*
- 57 Development of 3D printed waste-based mortar using excavated soil  
Jana DAHER, Joelle KLEIB, Mahfoud BENZERZOUR, Georges AOUAD, Nor-Edine ABRIAK  
*Presented by DAHER Jana*

June 30, 2022 09:50

### Room A

#### B2 - Physical and chemical aided pretreatment

*Chair: Anne TREMIER*

- 44 Lignin fractionation for fine-tuned properties  
Nagore IZAGUIRRE, Eduardo ROBLES, Rodrigo LLANO-PONTE, Jalel LABIDI, Xabier ERDOCIA  
*Presented by IZAGUIRRE AROSTEGUI Nagore*
- 269 Biorefinery development of winery waste streams utilising deep eutectic solvents for biomass pretreatment  
Katiana FILIPPI, Chrysanthi PATERAKI, Dimitrios LADAKIS, Harris PAPAPOSTOLOU, Olga PSAKI, Apostolis KOUTINAS  
*Presented by FILIPPI Aikaterini*
- 39 Enzymatic preparation of cellulose nanofibers from defatted rice bran: morphological, structural and thermal characterization  
Nurul Najihah ILIAS, Norazatul Hanim MOHD ROZALLI, Mohamad Haafiz MOHAMAD KASSIM  
*Presented by ILIAS Nurul Najihah*

### Room B

#### F7 - Hydrothermal conversion

*Chair: Luca FIORI*

- 120 Microalgae hydrothermal liquefaction process optimization  
Lucie MATRICON, Anne ROUBAUD, Geert HAARLEMMER, Christophe GEANTET  
*Presented by MATRICON Lucie*
- 69 Experimental studies on hydrothermal treatment of food waste for humification  
Lixian WANG, Yong CHI  
*Presented by WANG Lixian*
- 221 In-situ refinement of MSW-derived HTL biocrude  
Roelf VENTER, Sanette MARX, Steyn DROTSKY  
*Presented by MARX Sanette*



## Day 4

### Room C

#### A9 - Recycling and valorization of lithium ion batteries

*Chair: Dorina FATI*

342 Is closed-loop recycling of lithium-ion batteries feasible?

Delphine YETIM, Lenka SVECOVA, Jean-Claude LEPRETRE

*Presented by SVECOVA Lenka*

356 What is the composition of spent lithium ion batteries?

Delphine YETIM, Maguy NAHRA, Lenka SVECOVA, Guilhem GRIMAUD, Jean-Claude LEPRETRE

*Presented by SVECOVA Lenka*

147 Low/no-corrosion leaching of spent lithium-ion battery cathode materials by hydrothermal method using amino acid or mixed organic acids as the leachant

Qingxin ZHENG, Tetsufumi OGAWA, Akitoshi NAKAJIMA, Masaru WATANABE

*Presented by NAKAJIMA Akitoshi*

### Room D

#### G5 - Ash, Geopolymers and slag valorization

*Chair: Charafeddine JAMA*

184 Reactivity assessment of red mud-based slags towards geopolymers production

Tânia GAMEIRO, Elise FRANÇOIS, Lukas ARNOUT, Youen DIQUÉLOU, David TOBALDI, Catarina NOVO, Silvana ONISEI, João LABRINCHA, Rui NOVAIS

*Presented by GAMEIRO Tania*

297 Recycling of paper mill ash for alkali activated mortar manufacturing using the HPT pressing: mechanical and microstructural properties

Samira MOUKANNAA, Katja OHENOJA, Mirja ILLIKAINEN

*Presented by MOUKANNAA Samira*

185 Adhesion behaviour of geopolymer mortar overlayed on corroded concrete structures

Ye Jun IN, Marjorie VALIX, James GARDNER

*Presented by IN Ye Jun*

June 30, 2022 10:35

Open area

Coffee break & poster session

June 30, 2022 11:15

Main amphitheater

#### PL4 - Plenary Lecture

*Chair: Hariklia GAVALA*

429 Upgrading waste for food, fuel and chemicals production via metabolic engineering (and good, old bioprocess engineering)

Gregory STEPHANOPOULOS

*Presented by STEPHANOPOULOS Gregory*

## Day 4

June 30, 2022 12:00

Main amphitheater

Closing Ceremony

*Chairs: Hariklia GAVALA and Ange NZIHOU*

June 30, 2022 13:30

Restaurant

Lunch supported by Rockwool

June 30, 2022 14:30

End of the conference

June 30, 2022 14:30 - 16:00

**Free technical visits of DTU pilot plant facilities**

Tour 1: Thermochemical/Catalytic processing (30 min) - up to 45 participants

Tour 2: Biological processing and unit operations for downstream processing (30 min) - up to 45 participants

July 1, 2022

**Free industrial plants visits**

**Tour 1:** HALOSEP Waste-to-Energy and recycling plant in Copenhagen (producing district heat and electricity through waste incineration). Upper allowable number of participants 30, Duration of the visit **8:30 - 12:00**

**Tour 2:** Visit to CP Celco at Lille Skensved: visit the largest pectin manufacturer and experience how citrus peels and seaweed are converted to valuable products. Upper allowable number of participants 10, Duration of the visit **8:30 - 11:30** Lille Skensved, Denmark - CP Kelco

**Tour 3:** Visit to Industrial Symbiosis at Kalundborg: visit the world's first and most advanced example of Industrial Symbiosis, where industrial activities have come together creating a kind of ecosystem to minimizing their environmental footprint. Upper allowable number of participants 30, Duration of the visit: **8:30 - 14:30** Kalundborg Symbiosis - The world's leading industrial symbiosis