



**10th International Conference on Engineering
for Waste and Biomass Valorisation**

August 20-23, 2024 IN-PERSON PARTICIPATION ONLY
Sendai, Japan

**Online programme
Updated on July 24, 2024**

Organising Committee Board

Prof Ange Nzihou

***WasteEng Conference Series Founder and
WasteEng2024 Conference Chair***

Dr Francisco Javier Escudero Sanz

Dr Elsa Weiss-Hortala

Local Organising Committee

Prof Junya Kano

Prof Toshiaki Yoshioka

WasteEng2024 Conference co-Chairs

Prof Takaaki Tomai

Conference themes

- Theme A:** Resources and Feedstock
Chairs: I. Skiadas, T. Schulzke, Y. Zhao
- Theme B:** Waste Plastics to Fundamental and Functional Chemicals
Chairs: S. Kumagai, M. Tamura, T. Yoshioka
- Theme C:** Biomass and Waste to Energy, Fuels and Chemicals using Biochemical and Chemical routes
Chairs: H. Carrère, H. Gavala, G. Lyberatos
- Theme D:** Biomass and Waste to Energy, Fuels and Chemicals using Thermochemical route
Chairs: Y. Chi, J.M. Lavoie, A. Nzihou
- Theme E:** CO₂ to Fuels and Chemicals
Chairs: J.M. Abelleira-Pereira, A. Dutta, F. Zeman
- Theme F:** Sustainable Materials for Civil Engineering from Waste, Industrial and Agricultural by-products
Chairs: A. Iizuka, M. Watanabe, E. Weiss
- Theme G:** Emissions, Residues Mitigation and Prevention
Chairs: M. Baratieri, T. Kameda, L. Le Coq
- Theme H:** Energy Storage and Zero-emission Energy Systems
Chairs: F. J. Escudero-Sanz, J. Kano, T. Tomai
- Theme I:** Circular Economy - Connecting Economic, Environmental and Social Gains
Chairs: L. Fiori, P. He, J. Kulczycka

WasteEng2024 specific symposia

- Symposium 1:** Circular Electronics and Batteries: from E-waste Recycling to Emerging Carbon-Based Biodegradable Technologies *in collaboration with the UNESCO Chair in Green and Sustainable Electronics*
Chairs: C. Santato, M. Irimia-Vladu, Y. Sivalingam
- Symposium 2:** Circular Economy and Decarbonisation in Construction
Chairs: A. Hajimohammadi, J.G. Dai
- Workshop:** Springer Nature Author Workshop – Tips and tricks for successful article submission and publication
Chair: Fritz Schmuhl

Programme at-a-glance

Monday August 19, 2024

Hour

10:30

Visit of Synchrotron facility

Meeting at 10:30 (Aobayama subway station)

Synchrotron visit 11:00 for about 1 hour

Visit limited to 50 persons - Registration requested (see the registration link in the newsletter)

15:30

Registration opening

Kawauchi Campus

Including refreshments from 16:30 to 18:00

Visit of Tohoku Laboratories

Possible on demand - Contact the chairs on site

Programme at-a-glance

Tuesday August 20, 2024				
Hour	Room A	Room B	Room C	Room D
09:00	Opening Ceremony			
09:55	D1 - Reforming, water gas shift and methanation	C1 - Original valorisations	D2 - Biomass, biocarbon densification and combustion (I)	I1 - Resources recovery from waste
10:40	Coffee break			
11:10	D3 - HTL* of agriculture and food waste	C2 - Biomethanation/gas fermentation	D4 - Biomass, biocarbon densification and combustion (II)	G1 - Mitigation of incineration emission
12:10	Lunch			
13:10	PL1 - Plenary lecture by Carol Sze Ki Lin			
13:55	D5 - Supercritical processes for hydrogen and chemicals production	C3 - Polylactic acid and polyhydroxyalkanoates	G2 - Emission in combustion and catalysis	A1 - Resources recovery
14:45	OF5-1 Plastics and packaging pyrolysis	OF5-2 Anaerobic digestion and fermentation	OF4-1 Circular economy and industrial symbiosis	OF4-2 Chemicals synthesis from waste
15:20	Poster session & Coffee break			
16:20	D6 - Carbonization and graphitization	D7 - Pyrolysis (I)	F1 - Ash stabilization in sustainable civil engineering materials	E1 - Power-to-X (PtX)
17:10	KN01 - G. Flamant	KN02 - A. Trémier		KN03 - J.M Lavoie
17:35	End of the sessions			

* HTL - Hydrothermal liquefaction

Programme at-a-glance

Wednesday August 21, 2024				
Hour	Room A	Room B	Room C	Room D
09:00	PL2 - Plenary lecture by Gaurav Sant			
09:45	D8 - HTC* (I)	C4 - Phenolic compounds and organic acids valorisation	B1 - Plastics pyrolysis and gasification	I2 - Recycling and carbon cycle
10:30	Coffee break			
11:00	E2 - Catalysts for CO ₂ to fuels & chemicals	C5 - Biogas	B2 - Plastics valorisation (I)	D9 - Pyrolysis and combustion
12:15	Lunch			
13:15	PL3 - Plenary lecture by Magnus Berggren			
14:00	D10 - Gasification of biomass and waste	E3 - Bioprocesses for CO ₂ to fuels & chemicals	B3 - Plastics valorisation (II)	H1 - Energy storage and energy vectors
15:05	KN04 - J. Kozinski	KN05 - T. Tomai	KN06 - L. Chatellard	KN07 - C. Santato (S1)
15:30	Poster session & Coffee break			
16:00	D11 - Sustainable catalysts	A2 - Waste to biopolymers	C6 - Packaging materials and plastics from biowaste	S1 1 - Natural organic materials and sustainable recovery processes
16:50	KN08 - T. Adschiri	KN09 - T. Bandosz	KN10 - Y. Saito	KN11 - A. Ribeiro (S1)
17:15	End of the sessions			
19:00	Gala dinner at Kokusai hotel			

* HTC - Hydrothermal carbonisation

S1: Symposium 1

Programme at-a-glance

Thursday August 22, 2024					
Hour	Room A	Room B	Room C	Room D	Room E
09:00		KN12 - G. Lyberatos	KN13 - J. Kano	KN14 - A. Moores (S1)	KN15 - A. Hajimohammadi (S2)
09:30	A3 - Biowaste to value (I)	C7 - Biorefineries	B4 - Pyrolysis of plastics	S1 2 - Valorisation of waste from electronics and photovoltaics	S2 1 - Recycling in civil engineering (I)
10:30	Coffee break				
11:00	C8 - Biowaste to value (II)	C9 - Hydrogen production	B5 - Plastics to fuels and chemicals	S1 3 - Sustainable electronics and metal recovery	S2 2 - Recycling in civil engineering (II)
12:15	Lunch				
13:15	PL4 - Plenary lecture by Maria Magdalena Titirici				
14:00	G3 - Environmental sustainability of bioprocesses and biowastes valorisation	D12 - HTC* (II)	A4 - Materials recycling technologies and approaches	KN16 - C. Luscombe (S1)	KN17 - H. Nonaka (S2)
14:30				KN18 - I. Honma (S1)	KN19 - L. Petrik (S2)
15:05	OF3-1 Combustion and carbonization	OF3-2 HTL** and gasification	OF3-3 Waste to materials		
15:25	Poster session & Coffee break				WAVE Journal Board meeting for members
16:25	D13 - Pyrolysis (II)	D14 - HTC* agriculture and food waste and production of chemicals	D15 - Biochar applications	A5 - Value from the ashes	Symposium 3 - Springer Nature author workshop on papers writing
17:30	KN20 - T. Schulzke	KN21 - Q. He	KN22 - A. Yamaguchi		
17:55	End of the sessions				

* HTC - Hydrothermal carbonisation

** HTL - Hydrothermal liquefaction

S1: Symposium 1

S2: Symposium 2

Programme at-a-glance

Friday August 23, 2024				
Hour	Room A	Room B	Room C	Room D
08:30	PL5 - Plenary lecture by Toshiaki Yoshioka			
09:15	D16 - Gasification - Modelling and techno- economic approaches	C10 - Volatile fatty acids production	A6 - Valuable chemicals from waste	A7 - Bioremediation
10:15	Coffee break			
10:45	I3 - Pollutants removal	F2 - Sustainable civil engineering materials	A8 - Characteristics of recycled materials	I4 - LCA approaches
11:50	PL6 - Plenary lecture by Chiharu Tokoro			
12:30	Closing Ceremony			
13:00	Lunch			

Tuesday August 20, 2024 09:00

Main amphitheater

Opening Ceremony

Session Chair(s): Ange NZIHOU, Junya KANO & Toshiaki YOSHIOKA

Tuesday August 20, 2024 09:55

Room A

D1 - Reforming, water gas shift and methanation

Session Chair(s): Fei WANG

Steam reforming of biomass fast pyrolysis volatiles with carbon dioxide sorption: thermodynamic analysis

222 Pablo COMENDADOR, Jon ALVAREZ, Irati GARCIA, Leire OLAZAR, Gartzten LOPEZ, Martin OLAZAR

Presented by ALVAREZ Jon

Nickel and iron-doped biocarbon catalysts for reverse water-gas shift (RWGS)

108 Théodore GRAUL, María GONZALEZ MARTINEZ, Ange NZIHOU

Presented by GRAUL Theodore

Aspen Plus simulation of sorption-enhanced methanation with CaO in a dual interconnected fluidized bed system for biogas upgrading

251 Fiorella MASSA, Antonio COPPOLA, Fabrizio SCALA

Presented by SCALA Fabrizio

Room B

C1 - Original valorisations

Session Chair(s): Claire DUMAS

Mixed phototrophic cultures can produce microbial protein from N₂ and organic acids at high yields and rates

213 Gabriel CAPSON-TOJO, María Del Rosario RODERO-RAYA, Nicolas BERNET, Renaud ESCUDIÉ, Jean-Philippe STEYER

Presented by CAPSON TOJO Gabriel

Valorization of silk biomass for the development of amphiphilic lipopeptides

233 Lara WEHBE, Rémi BASCOU, Erwann GUENIN, Alla NESTERENKO

Presented by WEHBE Lara

Nondestructive techniques for identifying solid waste characteristics combined with machine learning

364 Hua ZHANG, Dongying LAN, Yaping QI, Wei PENG, Fan LÜ, Pinjing HE

Presented by ZHANG Hua

Room C

D2 - Biomass, biocarbon densification and combustion (I)

Session Chair(s): Marco BARATIERI

136

Impact of process parameters on the mechanical performance of biochar briquettes
Gloria NGENE, Maria GONZÁLEZ MARTÍNEZ, Ange NZIHOU
Presented by NGENE Gloria

112

Solid refuse fuel-derived biocarbons for coal replacement in an industrial process:
combustion performances and environmental assessment
Benit BOUESSO, Maria GONZÁLEZ MARTÍNEZ, Ange NZIHOU
Presented by BOUESSO Benit

228

Energy densification of biomass particles through torrefaction under acoustic fields
Diego KALATALO, Carlos VERAS
Presented by KALATALO Diego

Room D

I1 - Resources recovery from waste

Session Chair(s): Tim SCHULZKE

312

Sustainable development of rural communities: a strategy based on technology,
alternative energies, circular economy, and social entrepreneurship
Marco A. SANCHEZ-CASTILLO, Sergio A. GOMEZ-TORRES, Claudia ESCUDERO-
LOURDES, Luisiana Fabiola PALOMO-GONZALEZ, Clara María MARTINEZ-JASSO,
Miriam RICAÑO-PEREZ
Presented by SANCHEZ-CASTILLO Marco A.

316

Mining waste as a resource in the green transition: legal conditions for secondary
extraction
Maria PETTERSSON, Oskar JOHANSSON
Presented by PETTERSSON Maria

326

Hazardous components in textile wastes
Anastasia SHTUKATUROVA, Michal ŠYC
Presented by SHTUKATUROVA Anastasia

Tuesday August 20, 2024 10:40

Coffee break

Tuesday August 20, 2024 11:10

Room A

D3 - HTL of agriculture and food waste

Session Chair(s): Takaaki TOMAI & Kazuyuki IWASE

48 Hydrothermal liquefaction of mixed agricultural wastes for complete resource utilisation

Patrick BILLER, Juliano DOS PASSOS, Giulia ZOPPI

Presented by BILLER Patrick

51 Impact of heating rate on the hydrothermal liquefaction of food waste
Edoardo TITO, Carlo Alberto MARCOLONGO, Giuseppe PIPITONE, Alessandro H.A. MONTEVERDE VIDELA, Samir BENSALID, Raffaele PIRONE

Presented by TITO Edoardo

60 Food waste valorization: hydrothermal liquefaction modelling and pilot scale validation

Giulia ZOPPI, Konstantinos ANASTASAKIS, Patrick BILLER

Presented by ZOPPI Giulia

129 Waste to drop in fuels via hydrothermal liquefaction: achievements and challenges
Swanand BHATWADEKAR, Daniele CASTELLO, Thomas Helmer PEDERSEN

Presented by BHATWADEKAR Swanand

Room B

C2 - Biomethanation/gas fermentation

Session Chair(s): Gerasimos LYBERATOS & Fabrizio SCALA

179 Hydrogen enhances organic substrate biodegradation during in situ biomethanation
Lucia BRAGA NAN, Margot MAHIEUX, Charlotte RICHARD, Quentin AEMIG, Jean-Philippe DELGENES, Eric TRABLY, Renaud ESCUDIE

Presented by MAHIEUX Margot

211 Syngas biomethanation integrated with anaerobic digestion: experimental analysis and modeling

Pietro POSTACCHINI, Antonio GRIMALT-ALEMANY, Parisa GHOFRANI-ISFAHANI, Lorenzo MENIN, Irini ANGELIDAKI, Francesco PATUZZI, Marco BARATIERI

Presented by POSTACCHINI Pietro

81 Conversion of syngas and CO to acetic acid in Trickle Bed Reactors
Anastasia ROVITHI, Sambit DUTTA, Cesar QUINTELA, Ioannis V. SKIADAS, Hariklia N. GAVALA

Presented by TUNCA Berivan

82 Dynamic modeling of variable mass transfer in trickle bed reactor for biological water-gas shift reaction and comparison with CSTR

Sambit DUTTA, Marianna KRIKELI, Hariklia GAVALA, Ioannis SKIADAS

Presented by DUTTA Sambit

Room C

D4 - Biomass, biocarbon densification and combustion (II)

Session Chair(s): Francesco PARRILLO & Yong CHI

Development of water hyacinth-potato starch biomass briquettes with improved energy value and combustion properties

151 Oluwagbenga ADESINA, Samuel IWARERE , Lutendo RAMATHAVHA, Michael DARAMOLA

Presented by DARAMOLA Michael

Development of an integrated and mobile solution for low-cost cooking and power generation for African rural areas

50 Morgane POSER, Maria GONZALEZ-MARTINEZ, Andrés ANCA-COUCÉ, Antonio SORIA-VERDUGOA, Robert SCHARLER

Presented by POSER Morgane

Release of inorganic compounds in biomass combustion systems

41 Hendrik MÖRTENKÖTTTER, Sebastian FENDT, Hartmut SPLIETHOFF

Presented by MÖRTENKÖTTTER Hendrik

Production and characterization of densified briquettes from nanocomposite biochar-cellulose nanocrystal (biochar-CNC) reinforced with polyvinyl alcohol (PVA)

224 Fildah AYAA, Kabir OYEDOTUN , Michael LUBWAMA, Samuel IWARERE, Michael DARAMOLA, John KIRABIRA

Presented by DARAMOLA Michael

Room D

G1 - Mitigation of incineration emission

Session Chair(s): Roger GADIOU & Kuo ZENG

- 23 Improving the design and performance of a wet scrubber from a waste incineration plant using CFD analysis of flow patterns
 Angela HOYOS, Ala BOUHANGUEL, Aurélie JOUBERT, Marc HENRY, Sylvain DURÉCU, Laurence LE COQ
 Presented by HOYOS Angela
- 24 Design of a downscaled wet scrubber - in-situ study of flue gas particle collection in a waste incineration plant
 Angela HOYOS, Aurélie JOUBERT, Ala BOUHANGUEL, Marc HENRY, Sylvain DURÉCU, Laurence LE COQ
 Presented by HOYOS Angela
- 37 On-site monitoring of N₂O emission from municipal sewage sludge incineration in bubbling beds
 Dong YUHANG, Wang FEI
 Presented by YUHANG Dong
- 400 Techno-economic comparative analysis of three post-combustion CO₂ capture technologies for energy-from-waste plants
 Letizia CRETAROLA, Riccardo CREMONA, Manuele GATTI, Federico VIGANÒ
 Presented by VIGANÒ Federico

Tuesday August 20, 2024 12:10

Lunch

Tuesday August 20, 2024 13:10

Main amphitheater

PL1 - Plenary lecture by Carol Sze Ki Lin

Session Chair(s): Ange NZIHOU

- 119 Development of waste biorefineries towards a circular bioeconomy
 Jinhua MOU, Wang XIANG, Zihao QIN, Ziyao LIU, Jiale ZHU, Zheng SUN, Yahui MIAO, Carol Sze Ki LIN
 Presented by LIN Carol Sze Ki

Tuesday August 20, 2024 13:55

Room A

D5 - Supercritical processes for hydrogen and chemicals production

Session Chair(s): Luca FIORI

238 High methane and hydrogen production by catalytic supercritical water gasification of PET as a model molecule of plastics
 Larissa SEPINI, Robin MOCHEL, Irineu PETRI, Alban CHAPPAZ, Hary DEMEY
 Presented by DEMEY Hary

328 Continuous hydrogen production by catalytic supercritical water gasification of epoxy resin effluents obtained from the liquefaction of aeronautical composite wastes
 Emmanuel TAVIRA-ZAMBRANO, Jose M. VÁZQUEZ-FERNÁNDEZ, Jose M. ABELLEIRA-PEREIRA, Belén GARCÍA-JARANA, Lucio CARDOZO-FILHO, Juan R. PORTELA, Enrique MARTÍNEZ-DE LA OSSA
 Presented by ABELLEIRA-PEREIRA Jose M.

62 Comparison of hydrochar fractionation and composition in batch and continuous hydrothermal liquefaction of cattle manure
 Maria Jose RIVAS ARRIETA, Patrick BILLER
 Presented by RIVAS ARRIETA Maria Jose

Room B

C3 - Polylactic acid and polyhydroxyalkanoates

Session Chair(s): Aritomo YAMAGUCHI

8 Valorization of date fruit pomace to polylactic acid, a biodegradable plastic and bioadsorbent material
 Sabeera HARIS, Ali H. AL-MARZOUQI
 Presented by HARIS Sabeera

276 Sustainable pretreatment of brewers' spent grains using non-thermal plasma for the production of polyhydroxyalkanoates
 Evanthia GEORGIADOU, Aikaterini FILIPPI, Eleni STYLIANOY, Nikolaos GIANNAKIS, Chrysanthi ARGEITI, Apostolos KOUTINAS
 Presented by GEORGIADOU Evanthia

76 Electrospaying of polyhydroxyalkanoates-silicon dioxide microsphere composites for production of superhydrophobic membrane
 Sik Chun Johnny LO, Walid A. DAOUD, Irum FIRDOUS, Bhaskar Jyoti DEKA, Chi Yan TSO, Carol Sze Ki LIN
 Presented by LO Sik Chun Johnny

Room C

G2 - Emission in combustion and catalysis

Session Chair(s): Laurence LE COQ

374

Carbon footprint reduction from clean cooking and nexus of basic needs of man. An evaluation of Osu night market

Michael COMMEH, Zanetor AGYEMAN-RAWLINGS

Presented by COMMEH Michael

115

Preparation of MnO₂/Mg-Al layered double hydroxide and its application to removal and recovery of NO

Tomohito KAMEDA, Yuriko TAKAHASHI, Tanya KURUTACH, Shogo KUMAGAI, Yuko SAITO, Ichirou ITOU, Satoshi FUJITA, Toshiaki YOSHIOKA

Presented by KAMEDA Tomohito

95

Utilization of ash from waste combustion in catalytic applications

Kaitlyn LAWRENCE, Marco CASTALDI

Presented by LAWRENCE Kaitlyn

Room D

A1 - Resources recovery

Session Chair(s): Baiming REN

2

Analyses, comparisons, and resources circulation of desalination brine

Cheng-Han LEE, Wei-Sheng CHEN

Presented by LEE Cheng-Han

39

Ammonia removal and recovery from anaerobically digested liquid dairy manure using vacuum thermal stripping-acid absorption process

Lide CHEN, Arif REZA

Presented by CHEN Lide

154

Water- and citric-acid-solubilization of potassium components in biomass combustion ash by kaolin addition

Fandi Angga PRASETYA, Sawa ISHIZUKA, Tomonori FUKASAWA, Toru ISHIGAMI, Kunihiro FUKUI

Presented by PRASETYA Fandi Angga

Tuesday August 20, 2024 14:45

Room A

OF5-1 Plastics and packaging pyrolysis

Session Chair(s): Shogo KUMAGAI

286	<p>Thermochemical recycling of post-consumer bioplastics for poly(3-hydroxybutyrate) production via fermentation</p> <p>Chrysanthi ARGEITI, Olga PSAKI, Eleni STYLIANOY, Dimitrios LADAKIS, Apostolis KOUTINAS</p> <p>Presented by ARGEITI Chrysanthi</p>
371	<p>Thermal treatment of fiber-free multilayer packaging solid residue: synergism and effects on volatiles yield</p> <p>Abdul Rehman KHURRAM, F. Javier ESCUDERO SANZ, Maria GONZALEZ MARTINEZ, Marion CARRIER</p> <p>Presented by KHURRAM Abdul Rehman</p>
43	<p>Catalytic pyrolysis of plastic wastes from landfill for the production of liquid fuels</p> <p>Prangtip Rittichote KAEWPENGGKROW, Viboon SRICHAROENCHAIKUL, Mettaya KITTIWAN, Niphon CHUMCHERY, Maneerat KHEMKHAO</p> <p>Presented by KAEWPENGGKROW Prangtip Rittichote</p>
54	<p>Towards polyurethane circularity – an assessment of polyurethane pyrolysis: degradation mechanisms, products and recycling potential</p> <p>Michael ZELLER, Daniela MERZ, Salar TAVAKKOL, Dieter STAPF</p> <p>Presented by ZELLER Michael</p>
150	<p>Developing graphene oxide/cellulose nanocrystal films from lignocellulosic biomass for food packaging materials in South Africa</p> <p>Nolundi NDWANDWA, Fildah AYAA, Michael DARAMOLA</p> <p>Presented by DARAMOLA Michael</p>

Room B

OF5-2 Anaerobic digestion and fermentation

Session Chair(s): Hariklia GAVALA

123	Potential of combined nitrous acid and alkaline fermentation in volatile fatty acid production using sludge from wastewater treatment plants Subham MEHER, Ligy PHILIP Presented by MEHER Subham
89	Biogas production from solid tuna waste: thermal pretreatment and co-digestion Noela BERMÚDEZ-PENABAD, Andrea RODRÍGUEZ-MONTES, Christian KENNES, María C. VEIGA Presented by VEIGA María C.
317	Lignin: friend or foe to biogas production? Ogemdi ANIKA, Yadira BAJÓN-FERNÁNDEZ, Anna STRZELECKA, Raffaella VILLA Presented by VILLA Raffaella
153	Impact of biogas composition on type II methanotroph growth and PHB synthesis Sunho PARK, Jaewook MYUNG Presented by PARK Sunho
236	Estimation of landfill gas generation using first order modelling approaches Mohammad Samim GHAFoori, Khaled LOUBAR, Mylène MARIN-GALLEGO Presented by LOUBAR Khaled

Room C

OF4-1 Circular economy and industrial symbiosis

Session Chair(s): Ioannis SKIADAS

	Evaluating the potential for industrial-urban symbiosis for biofuels and bioplastics production
360	Konstantina PAPADOPOULOU, Ioanna NTAIKOU, Elianta KORA, Charalabos PAVLOPOULOS, Georgia ANTONOPOULOU, Gerasimos LYBERATOS Presented by LYBERATOS Gerasimos
	Towards valorisation of mineral waste in the era of just transition and circular economy
335	Joanna KULCZYCKA, Dariusz KASPEREK Presented by KULCZYCKA Joanna
	Sustainable biomass and bioproduct engineering. An Erasmus mundus master focused on circular economy education
188	Juan Francisco RODRIGUEZ, Ana Maria BORREGUERO, Jolanta WARCHOL Presented by RODRIGUEZ Juan Francisco
	Unlocking potential: a bright future for residual biomass from agroindustrial processes in construction materials. A case study on plantain, sugarcane bagasse, and oil palm rachis fibers
284	Ricardo TOLOSA CORREA, Melissa LOPEZ, Reynell Jr PEREZ BLANCO Presented by PÉREZ BLANCO Reynell Junior

Room D

OF4-2 Chemicals synthesis from waste

Session Chair(s): Elsa WEISS-HORTALA

- 35 Tuning the selectivity of glycerol oxidation with single atom catalysts
Silvia FAVERO, Hanzhi YE, Magda TITIRICI
Presented by YE Hanzhi
- 74 Molecular and structural characterization of micronized date-pits by alcoholic fractionation
Nasser AL-HABSI, Khalid ALHARRASI, Mohammad Shafiur RAHMAN, Myo Tay Zar MYINT
Presented by ALHARRASI Khalid
- 56 Demonstration of food waste to ethanol
Eugene VAN RESNBURG, Johann GORGENS
Presented by GORGENS Johann

Tuesday August 20, 2024 15:20

Poster session & Coffee break

Tuesday August 20, 2024 16:20

Room A

D6 - Carbonization and graphitization

Session Chair(s): Masaru WATANABE

- 49 Biomass upgrading through catalytic graphitization: catalyst impregnation via hydrothermal carbonization and preparation of graphitic materials
Rubén CORRECHER, Andrés FULLANA
Presented by CORRECHER Rubén
- 350 Fe-Ca based catalytic graphitisation of biocarbon: influence of the single- and hetero-metal catalysts
Shamala Gowri KRISHNAN, Ange NZIHOU, Claire E WHITE
Presented by KRISHNAN Shamala Gowri
- 127 Graphene-like materials produced from lignin using combination of thermal treatments
Salomé RIGOLLET, Elsa WEISS-HORTALA, Gilles FLAMANT, Ange NZIHOU
Presented by RIGOLLET Salomé

Room B

D7 - Pyrolysis (I)

Session Chair(s): Jose M. ABELLEIRA-PEREIRA

96 Decentralized pyrolytic conversion of agriculture and forestry wastes towards local circular value chains and sustainability

Catarina NOBRE, Bruna RIJO, Paulo BRITO

Presented by NOBRE Catarina

70 Promotion of PP pyrolysis and adsorption of hydrocarbons by biochar

Koyo KASATAKA, Satoshi UMEMOTO, Atsushi IKEDA

Presented by KASATAKA Koyo

226 Waste valorisation through thermal cracking: one size fits all technology

Carlos MOURAO VILELA, Surika VAN WYK, Berend VREUGDENHIL, Pieter IMHOF

Presented by IMHOF Pieter

Room C

F1 - Ash stabilization in sustainable civil engineering materials

Session Chair(s): Martin CYR

1 Solidification and stabilization of heavy metals in municipal solid waste incineration fly ash by geopolymers technology

Dehua LIANG, Fei WANG

Presented by LIANG Dehua

22 Molybdenum-contaminated soil stabilization/solidification by magnesium oxide and hydraulic binder mixtures

Amandine DUMAS, Nouffou TAPSOBA, Laurent DE WINDT, Florence SANCHEZ, Bruno HUET, Ivan SERCLERAT, David KOSSON

Presented by DUMAS Amandine

33 Assessing chloride resistance in binary blended alkali-activated concrete (AAC) through rapid tests

Md. Ibrahim MOSTAZID, Ailar HAJIMOHAMMADI, Taehwan KIM, Stephen FOSTER

Presented by MOSTAZID Md. Ibrahim

Room D

E1 - Power-to-X (PtX)

Session Chair(s): Florent LEMONT

116

Integrated high-temperature direct air capture and Fischer-Tropsch synthesis with hydrogen-based calcination for renewable jet fuel production: a techno-economic study

Maria PAULSEN, Sebastian PETERSEN, Eliana LOZANO, Thomas PEDERSEN

Presented by PAULSEN Maria

278

Preliminary thermodynamic study of a recycle loop in a Power-to-X process for the valorization of flue gas into syngas

Véronique DUCHARME, Fabio GONÇALVES MACÊDO DE MEDEIROS, Samira LOFTI, Bruna REGO DE VASCONCELOS

Presented by DUCHARME Véronique

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Genesis-X: showcase of a new Power-to-X technology for low-carbon diesel production

Bruna REGO DE VASCONCELOS, Jean-Michel LAVOIE

Tuesday August 20, 2024 17:10

Room A

KN01 - G. Flamant

Session Chair(s): Yong CHI

120

Wastes valorization and recycling by concentrating solar technology

Gilles FLAMANT, Françoise BATAILLE

Presented by FLAMANT Gilles

Room B

KN02 - A. Trémier

Session Chair(s): Hariklia GAVALA

165

Optimisation of a solid-state micro-anaerobic digestion process or the local recovery of food waste

Anne TREMIER, Bénédicte SAULIER-LE DREAN, Axelle DEGUEURCE, Martine SRRAZIN, Guillaume NUNES, Laurent BLONDEL, Anne LE BIHAN

Presented by TREMIER Anne

Room D

KN03 - J.M Lavoie

Session Chair(s): Pinjing HE

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The Genesis project

Jean-Michel LAVOIE, Bruna REGO DE VASCONCELOS

Presented by LAVOIE Jean-Michel

Wednesday August 21, 2024 09:00

Main amphitheater

PL2 - Plenary lecture by Gaurav Sant

Session Chair(s): Takaaki TOMAI

292

Equatic: the development of a seawater-based atmospheric carbon removal and hydrogen co-production platform

Gaurav SANT

Presented by SANT Gaurav

Wednesday August 21, 2024 09:45

Room A

D8 - HTC (I)

Session Chair(s): Animesh DUTTA

390

Hydrothermal carbonization enhancement by using inorganic salts: olive mill wastewater case

Budyk YURIY, Fullana ANDRES

Presented by YURIY Budyk

208

From hydrothermal carbonization to liquefaction: chemistry and kinetics along the reaction spectrum in batch systems

Giulia ISCHIA, Hanifrahmawan SUDIBYO, Antonio MIOTELLO, Jefferson William TESTER, Jillian GOLDFARB, Luca FIORI

Presented by FIORI Luca

99

Influence of hydrothermal carbonization pretreatment on olive pomace fast pyrolysis products

Alba VILLARDON PEREZ, Ángel ALCÁZAR RUIZ, Fernando DORADO FERNANDEZ, Luz SANCHEZ SILVA, Roberto CAMPANA

Presented by SANCHEZ SILVA Maria Luz

Room B

C4 - Phenolic compounds and organic acids valorisation

Session Chair(s): Anne TREMIER

- 322 Olive milling wastewater valorisation through phenolic compounds adsorption process and anaerobic digestion
Chaimaa HAKIM, Mounsef NEFFA, Abdessadek ESSADEK, Audrey BATTIMELLI, Escudie RENAUD, Diana GARCIA-BERNET, Jerome HARMAND, Helene CAARRERE
Presented by HAKIM Chaimaa
- 133 Physicochemical characteristics of Arabic bread fortified with date-pits powder at selected ratio
Aida ASLEM, Maha AL-KHALILI, Intisar AL-ZAKAWANI, Zahir AL ATTABI, Shafiur RAHMAN, Nasser AL-HABSI
Presented by AL-HABSI Nasser
- 132 Muconic acid production from oxidatively depolymerized lignosulfonates using *Pseudomonas putida*
Selda BEKIROVSKA, Fredrik LUND, Lucy JENSEN, Christian HULTEBERG, Marie GORWA-GRAUSLUND, Omar ABDELAZIZ
Presented by ABDELAZIZ Omar

Room C

B1 - Plastics pyrolysis and gasification

Session Chair(s): Audrey VILLOT

- 53 Chemical recycling of thermoplastic mixtures: superposition modeling and experimental validation
Niklas NETSCH, Lucas SCHRÖDER, Daniela MERZ, Bernd ZIMMERLIN, Salar TAVAKKOL, Dieter STAPF
Presented by NETSCH Niklas
- 71 Modification and application of DRCM (distributed reaction rate constant model) to plastic pyrolysis kinetics
Satoshi UMEMOTO, Niklas NETSCH, Lukas SCHRÖDER, Michael ZELLER, Salar TAVAKKOL, Kouichi MIURA, Dieter STAPF
Presented by UMEMOTO Satoshi
- 332 Plastic waste gasification using oxygen-enriched air and steam: pilot plant performance and model results
Francesco PARRILLO, Gabriele CALÌ, Umberto ARENA, Massimiliano MATERAZZI, Alberto PETTINAU, Filomena ARDOLINO, Alex SEBASTIANI
Presented by PARRILLO Francesco

Room D

I2 - Recycling and carbon cycle

Session Chair(s): Chihiro FUSHIMI

29 Recycling landfill leachate treated by sugar lime sludge for watering green spaces

Khalid FARES, Tilila BAGANNA, Omar SAADANI HASSANI

Presented by FARES Khalid

160 The upcycling of coffee silverskin

Valeria PAPPALARDO, Nicoletta RAVASIO, Federica ZACCHERIA, Claudio PIROVANO,

Patrizia VALSESIA, Achille MONEGATO, Simon PEZZUTO

Presented by RAVASIO Nicoletta

357 Closing biocycles with urban biowaste management technologies

Kadi KENK, Mait KRIIPSALU

Presented by KENK Kadi

Wednesday August 21, 2024 10:30

Coffee break

Wednesday August 21, 2024 11:00

Room A

E2 - Catalysts for CO₂ to fuels & chemicals

Session Chair(s): Florent LEMONT & Joan J. MANYA

Engineering biochar-supported catalysts for efficient CO₂ methanation

174 Alexandra FRAINETTI, Naomi KLINGHOFFER

Presented by FRAINETTI Alexandra

CO₂ capture and catalytic methanation over dual function materials in lab-scale interconnected fluidized beds

247 Stefano CIMINO, Antonio COPPOLA, Fiorella MASSA, Fabrizio SCALA

Presented by SCALA Fabrizio

Biochar-based catalysts for dry and steam methane reforming

304 Ksenia PARKHOMENKO, Alienor BEUCHAT, Claire COURSON, Marine GUILLMONT,

Murad MALIKZADE, Benedicte RETY, Zakaria NADIF, Dominique BEGIN, Roger GADIOU, Nicolas THEVENIN, Lionel RUIDAVETS, Zakaria NADIF

Presented by PARKHOMENKO Ksenia

Impact of combustion impurities on the efficiency of the Cu/ZnO/Al₂O₃ catalyst applied in methanol synthesis

279 Fernanda LIMA REI RAMOS E SILVA, Bruna REGO DE VASCONCELOS, Ricardo MOREIRA DOS SANTOS, Samira LOTFI

Presented by LIMA REI RAMOS E SILVA Fernanda

Copper aluminum layered double hydroxides as CO₂ reduction electrocatalysts

197 Kazuyuki IWASE, Tomo HIRANO, Itaru HONMA

Presented by IWASE Kazuyuki

Room B

C5 - Biogas

Session Chair(s): Raffaella VILLA & Nils TIPPKÖTTER

146	Effects of chemical and mechanical pre-treatment of brown seaweed on biomethane yields Ashleen MARSHALL, Oluwaseun OYEKOLA Presented by OYEKOLA Oluwaseun
199	Integrated electrochemical anaerobic systems with attached growth on conductive substrates for enhanced methane production from greywater Smruti Ranjan DASH, Dayoung KO, Changsoo LEE, Jeonghwan KIM Presented by DASH Smrutiranjana
369	Feasibility of biomethane production from agricultural biomass Bashu GAUTAM, Bishnu ACHARYA, Ajay DALAI Presented by ACHARYA Bishnu
100	Biogas yield optimization from Sorghum stover and winery solid wastes co-digestion through application of iron oxide nanoparticles Carrelle OSSINGA, Vincent OKUDOH, Mahabubur CHOWDHURY Presented by OKUDOH Vincent
149	Assessing the implementation of low hydraulic retention time and the inoculum source on anaerobic fermentation of organic wastes Marta VICENTE, Elia TOMAS PEJO, Cristina GONZALEZ FERNANDEZ Presented by DE VICENTE Marta

Room C

B2 - Plastics valorisation (I)

Session Chair(s): Elsa WEISS-HORTALA & Hary DEMEY

45	<p>Chemical recycling of industrial plastic via hydrothermal liquefaction at subcritical conditions William LOCATEL, Csongor SZÓRÁTH, Juliano S. PASSOS, Patrick BILLER Presented by BILLER Patrick</p>
46	<p>Multilayer plastic films chemical recycling via sequential hydrothermal liquefaction Juliano DOS PASSOS, Edoardo TITO, Sofie SKIBSTED, Patrick BILLER Presented by BILLER Patrick</p>
162	<p>Boosting PET circularity through continuous hydrothermal processing of PET waste Antonio JAIME-AZUARA, Reinhard WIMMER, Thomas Helmer PEDERSEN Presented by JAIME AZUARA Antonio</p>
205	<p>Hydrothermal treatments for residual bioplastics valorisation Filippo MARCHELLI, Giulia ISCHIA, Roberta FERRENTINO, Gianni ANDREOTTOLA, Luca FIORI Presented by FIORI Luca</p>
334	<p>Catalytic hydrothermal treatment to recycle and valorize carbon fiber reinforced composites off-cuts from the aeronautical industry Jose M. VÁZQUEZ-FERNÁNDEZ , Jose M. ABELLEIRA-PEREIRA, B. GARCÍA-JARANA, J. SÁNCHEZ-ONETO, J.R. PORTELA Presented by ABELLEIRA-PEREIRA Jose M.</p>

Room D

D9 - Pyrolysis and combustion

Session Chair(s): Francesco PATUZZI & Khaled LOUBAR

- 250
 Biomass combustion kinetics in CLC batch reactor
 Paul HAZEMANN, Hamza AMEUR, William PELLETANT, Julien RAVET, Pascal FOUCAULT, Nicolas VIN, Sebastien BARALE, Arnold LAMBERT, Patrice FONT
 Presented by HAZEMANN Paul
- 185
 Applied smouldering for waste and biomass valorisation
 Tarek RASHWAN, Fatemeh KHODAPARASTAN, Marco ZANONI, Joshua BROWN, Taryn FOURNIE, Seyed Ziaedin MIRY, Jiahao WANG, Christine SWITZER, José TORERO, Gavin GRANT, James BOWEN, Carl BOARDMAN
 Presented by RASHWAN Tarek
- 401
 Amine-based post-combustion CO₂ capture in energy-from-waste plants: what effect on combined heat and power performances?
 Riccardo CREMONA, Letizia CRETAROLA, Edoardo DE LENA, Federico VIGANÒ
 Presented by VIGANÒ Federico
- 358
 Pyrolysis of waste to synthetic fuels on cement plants
 Begüm BASER, Moritz S. BÖHME, Brian B. HANSEN, Morten N. PEDERSEN, Anker D. JENSEN, Peter A. JENSEN
 Presented by BASER Begüm
- 327
 Improvement of power generation from manure
 Yukihiro MATSUMURA, Mengli ZHANG, Takayuki ICHIKAWA, Wookyung KIM, Yutaka NAKASHIMADA, Keiya NISHIDA
 Presented by MATSUMURA Yukihiro

Wednesday August 21, 2024 12:15

Lunch

Wednesday August 21, 2024 13:15

Main amphitheater

PL3 - Plenary lecture by Magnus Berggren

Session Chair(s): Junya KANO

- 346
 Sustainable energy technologies based on materials and by-products from the forest industry
 Magnus BERGGREN
 Presented by BERGGREN Magnus

Wednesday August 21, 2024 14:00

Room A

D10 - Gasification of biomass and waste

Session Chair(s): Federico VIGANÒ & F. Javier ESCUDERO SANZ

- 97 Potential of "Montado" wastes as feedstock for thermal gasification
Nadezhda SILVA KROP, Catarina NOBRE, Bruna RIJO, Paulo BRITO
Presented by BRITO Paulo
- 87 Comparative analysis of entrained flow gasification-based Biomass-to-X routes: a techno-economic evaluation
Vincent DIETERICH, Andreas HANEL, Sebastian BASTEK, Hartmut SPLIETHOFF, Sebastian FENDT
Presented by DIETERICH Vincent
- 294 Gasification of pellets from wood packaging waste and valorization of char in polymer composites
Vittoria BENEDETTI, Francesco PATUZZI, Stefano PIAZZI, Markus KOLLMER, Marco SCATTO, Grigorios ITSKOS, Kostis ATSONIOS, Marco BARATIERI
Presented by BARATIERI Marco
- 187 Incorporation of nitrogen functionalities in the structure of a carbonaceous material obtained from palm waste to improve the electrochemical behavior of Li-S cells
Jennifer LAVERDE, Mariana ÁLVAREZ, Diana LÓPEZ
Presented by LÓPEZ Diana

Room B

E3 - Bioprocesses for CO₂ to fuels & chemicals

Session Chair(s): Janusz KOZINSKI

- 349 Carbon dioxide capture by biologically induced carbonate precipitation
Morgane CARRIER, Matthieu PEYRE-LAVIGNE, Claire DUMAS, Mathieu SPERANDIO
Presented by DUMAS Claire
- 86 Carbon dioxide and syngas valorisation and bioconversion to biofuels and bioproducts
Christian KENNES, María C. VEIGA
Presented by KENNES Christian
- 347 How to produce acetate from H₂/CO₂ in continuous reactors with microbial consortia? An experimental and modeling study
Léa LAGUILLAUMIE, Simon DUBOS, Mansour BOUNOUBA, Matthieu PEYRE-LAVIGNE, Etienne PAUL, Claire DUMAS
Presented by DUMAS Claire

Room C

B3 - Plastics valorisation (II)

Session Chair(s): Catarina NOBRE & Manabu INUTSUKA

- | | |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 285 | Carbon neutral production of microbial oil via chemical recycling of post-consumer bioplastics
Eleni STYLIANOY, Apostolis PETROPOULOS, Nikos GIANNAKIS, Apostolis KOUTINAS
Presented by STYLIANOY Eleni |
| 61 | Electrochemical upcycling of PET plastic to high value chemicals and hydrogen
Helen TYRRELL, Hui LUO, Maria-Magdalena TITIRICI, King Kuok (Mimi) HII, Klaus HELLGARDT
Presented by TYRRELL Helen |
| 106 | Value recovery from plastic wastes: obtaining industrial chemicals from low-density polyethylene via exploitation of biodegradative potentials of <i>Aspergillus</i> , <i>Proteus</i> and <i>Serratia</i> species
Tobias I. Ndubuisi EZEJIOFOR , Felicia E. UWAKWE, Toochukwu E OGBULIE, Ernest A.A. ANYALOGU
Presented by EZEJIOFOR Tobias I. Ndubuisi |

Room D

H1 - Energy storage and energy vectors

Session Chair(s): Gilles FLAMANT & Pinjing HE

- | | |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 367 | Green hydrogen mobility: advances in biomass-based fuel cell vehicles and applicability in Vietnam
Hungtruyen LUONG, Xuan Mai PHAM
Presented by LUONG Hungtruyen |
| 68 | Experimental investigation on horizontal PCM regenerator enhanced with non-uniform fins and nanoparticles
Maryam EL FITI, Mustapha SALIHI, Yasser HARMEN, Younes CHHITI, Ahmed CHEBAK, Charafeddine JAMA
Presented by EL FITI Maryam |
| 220 | Evaluation of two novel solar thermal drying systems for sludge treatment: a greenhouse and a screw conveyor solar drier
Santiago SEPTIEN STRINGEL, Pareshin NAIDOO, Akhil RAMLUCKEN, Kaverajen PILLAY, Trishandra NADESAN, Karlin NAIDOO, Yashlen PATHER, Jonathan POCOCK, Anusha SINGH, Freddie Liswaniso INAMBAO, Craig MCGREGOR
Presented by PATHER Yashlen |
| 298 | Waste valorization by the development of sustainable carbon nanomaterials & supercapacitors
Chérif DRIDI
Presented by |

Wednesday August 21, 2024 15:05

Room A

KN04 - J. Kozinski

Session Chair(s): Jean-Michel LAVOIE

Optimizing the Biomass-to-Hydrogen pathway in supercritical water

12 Janusz KOZINSKI

Presented by KOZINSKI Janusz

Room B

KN05 - T. Tomai

Session Chair(s): Luca FIORI

Energy-efficient CO₂ reduction system based on hydrothermal electrochemical reaction

158

Takaaki TOMAI, Alexander GUZMAN, Takafumi SATO, Kazuyuki IWASE

Presented by TOMAI Takaaki

Room C

KN06 - L. Chatellard

Session Chair(s): Ioannis SKIADAS

Ensuring the environmental benefit of biodegradable alternative to plastic food packaging by integrating all life cycle stages, focusing on the closing biodegradation stages

383

Lucile CHATELLARD

Presented by CHATELLARD Lucile

Room D

KN07 - C. Santato (Symposium S1)

Session Chair(s): Magnus BERGGREN

Bio-based compostable electronics and their powering elements

389

Clara SANTATO, Ramin KARIMI AZARI, Denis RHO

Presented by SANTATO Clara

Wednesday August 21, 2024 15:30

Poster session & Coffee break

Wednesday August 21, 2024 16:00

Room A

D11 - Sustainable catalysts

Session Chair(s): Daniele CASTELLO

- High activity Fe-N-C-Si oxygen reduction reaction catalyst synthesised from rice husk and mining waste
- 193 Edwin Osebe NYANGAU, Yuta NAKAYASU, Hiroya ABE, Chie OOKA, Kazutoshi HAGA, Masaru WATANABE
Presented by NYANGAU Edwin Osebe
- NOx decomposition using nickel- and iron-loaded biocarbon catalysts
- 109 Théodore GRAUL, María GONZALEZ MARTINEZ, Ange NZIHOU
Presented by GRAUL Theodore
- Phenolics monomer production by the reductive catalytic fractionation of argan nutshells
- 215 Zainab AFAILAL, Noemí GIL-LALAGUNA, Jesús ARAUZO, Martin HØJ, Alfonso CORNEJO, Jose Luis SANCHEZ, Anker JENSEN
Presented by SANCHEZ Jose Luis

Room B

A2 - Waste to biopolymers

Session Chair(s): Lide CHEN

- 4 *Sargassum obovatum* seaweed as a potential and renewable source of biopolymer
Swabiiha BUXOO, Hareenanden RAMASAWMY, Pratima JEETAH
Presented by BUXOO Swabiiha
- Recovery and valorisation of gelatin from leather solid wastes for green and innovative approaches to leather processing
- 340 Alvin Asava SASIA, Lawrence OCHOO, Daniel BEM, Nathalie LYCZKO, Martial SAUCEAU, Ange NZIHOU, Arthur ONYUKA
Presented by SASIA Alvin Asava
- Characterisation of the different moisture fractions in faecal sludge from onsite sanitation facilities
- 229 Santiago SEPTIEN STRINGEL, Arun Kumar RAYAVELLORE SURYAKUMAR, Larona MALOPE, Ratidzaishe Tracey MUPINGA, Edwina MERCER, Tanaka CHATEMA, Jana DARMOVZALOVA, Jonathan POCOCK, Anusha SINGH
Presented by PATHER Yashlen

Room C

C6 - Packaging materials and plastics from biowaste

Session Chair(s): Jean-Michel LAVOIE

Characterization of renewable proteins derived from lathyrus species and their applicability in biofilms with food packaging potential

255 Antiopi VARDAXI, Aristeidis PAPAGIANNPOULOS, Stergios PISPAS, Georgios MOUSDIS, Erminta TSOUKO

Presented by TSOUKO Erminta

Agricultural waste to plastic: fabrication of biodegradable polymeric film from mandarin peel waste and poly(vinyl alcohol)

157 Yongjun CHO, Shinhyeong CHOE, Youngju KIM, Jaewook MYUNG

Presented by CHO Yongjun

Restructuring of the conventional sugar beet industry into a sustainable biorefinery via integration of biodegradable plastic production

283 Sofia Maria IOANNIDOU, Elpida KOULOUNTZOU, Ioannis KOOKOS, Dimitrios LADAKIS, Apostolis KOUTINAS

Presented by IOANNIDOU Sofia Maria

Room D

S1 1 - Natural organic materials and sustainable recovery processes

Session Chair(s): Clara SANTATO & Teresa CECCHI

Printability and electrical response of natural sepia officinalis ink on paper

314 Camille BOUR-CARDINAL, Anthony CAMUS, Clara SANTATO

Presented by BOUR-CARDINAL Camille

Sustainable recovery of rare earth elements from permanent magnets using organic acids

253 Eneko ALKAIN, Estel RUEDA, José Manuel MARTÍN, Enrique AYMERICH

Presented by ALKAIN Eneko

Direct recycling of cathode materials from lithium-ion battery

375 Satoshi SHIMANO, Sergio MOLLA ROMANO, Junich KAGEURA, Marie TAKEMOTO, Naoki INUI

Presented by SHIMANO Satoshi

Wednesday August 21, 2024 16:50

Room A

KN08 - T. Adschiri

Session Chair(s): Apostolis KOUTINAS

387

Controllable production of bio-oils and nano carbons by hydrothermal reaction of biomass -combining pulp&paper industry, waste treatment industry and chemical industry toward carbon neutral society-

Tadafumi ADSCHIRI, Wahyudiono WAHYUDIONO, Akira YOKO, Takaaki TOMAI, Gimyeong SEONG, Luca FIORI, Giulia ISCHIA, H el ene BOUCARD, Elsa WEISS-HORTALA
Presented by ADSCHIRI Tadafumi

Room B

KN09 - T. Bandosz

Session Chair(s): Marco BARATIERI

25

Highly efficient oxygen reduction reaction on pyrolyzed biosolids

Marc FLORENT, Giacomo DE FALCO, Teresa BANDOSZ
Presented by BANDOSZ Teresa

Room C

KN10 - Y. Saito

Session Chair(s): Joanna KULCZYCKA

194

Impact of EU mandatory recycled content for plastic circulation

Yuko SAITO, Toru NISHIYAMA, Shogo KUMAGAI, Toshikazu SHIRATORI, Toshiaki YOSHIOKA
Presented by SAITO Yuko

Room D

KN11 - A. Ribeiro (Symposium S1)

Session Chair(s): Christine LUSCOMBE

15

Application of electro-based technologies to recover lithium from battery recycling wastewater

Joana ALMEIDA, Eduardo MATEUS, Alexandra RIBEIRO
Presented by RIBEIRO Alexandra

Wednesday August 21, 2024 19:00

Gala Dinner

Thursday August 22, 2024 09:00

Room B

KN12 - G. Lyberatos

Session Chair(s): Anne TREMIER

Food waste prevention and valorization

339 Gerasimos LYBERATOS

Presented by LYBERATOS Gerasimos

Room C

KN13 - J. Kano

Session Chair(s): Laurence LE COQ

Development of novel hydrogen production technology from waste plastics

201 Junya KANO

Presented by KANO Junya

Room D

KN14 - A. Moores (Symposium S1)

Session Chair(s): Clara SANTATO

Unlocking the potential of crustacean waste: solvent-free pathways to added-value materials

368 Audrey MOORES

Presented by MOORES Audrey

Room E

KN15 - A. Hajimohammadi (Symposium S2)

Session Chair(s): Frank ZEMAN

Lightweight foam composites: sustainable solutions for low carbon construction

386 Ailar HAJIMOHAMMADI

Presented by HAJIMOHAMMADI Ailar

Thursday August 22, 2024 09:30

Room A

A3 - Biowaste to value (I)

Session Chair(s): Paulo BRITO & Jeonghwan KIM

- 88 Polyphenols extraction from peach pomace waste using green extraction technologies
 André RIBEIRO, Cândida VILARINHO, Ana FERNANDO, Jorge ARAÚJO, Joana CARVALHO
 Presented by RIBEIRO André
- 230 Kinetics study of tropical agro-residues: effect of biomass characteristics on activation energies
 Faith Mawia MUEMA, Marie SAWADOGO, Yohan RICHARDSON, Amadou KEITA, Elsa WEISS, Ange NZIHOU
 Presented by MUEMA Faith Mawia
- 260 Extraction of humic substances from digestate using sequential filtration
 Jimmy ROUSSEL, Gilles ADAM
 Presented by ROUSSEL Jimmy
- 333 Use of agricultural and agro-industrial residues as alternative growing substrates for microorganisms for the production of biopesticides
 Echua Elisabeth BILE, Alahou Andre Gabaze GADJI, Kouabenan ABO
 Presented by BILE Echua Elisabeth

Room B

C7 - Biorefineries

Session Chair(s): Carol Sze Ki LIN & Gerasimos LYBERATOS

- 69 Development of one-step food waste biorefinery via novel bioreactor design, functional strain adaptive laboratory evolution and genetic engineering
 Yahui MIAO, Ming Ho TO, Muhammad Ahmar SIDDIQUI, Huaimin WANG, Sofie LODENS, Shauhrat Singh CHOPRA, Guneet KAUR, Sophie L.K.W. ROELANTS, Carol Sze Ki LIN
 Presented by MIAO Yahui
- 289 Integrated biorefinery development of grape stalks for lignin extraction and succinic acid production via fermentation
 Katiana FILIPPI, Mirva SARAFIDOU, Jenny SJÖSTRÖM, Huisi LI, Olga PSAKI, Dimitrios LADAKIS, Olena SEVASTYANOVA, Apostolis KOUTINAS
 Presented by SARAFIDOU Mirva
- 296 Biorefinery development of renewable resources for value-added products extraction and biopolymers production
 Mirva SARAFIDOU, Eleni STYLIANOY, Katiana FILIPPI, Apostolis KOUTINAS, Erminta TSOUKO
 Presented by SARAFIDOU Mirva

Room C

B4 - Pyrolysis of plastics

Session Chair(s): Tadafumi ADSCHIRI & Dieter STAPF

10

Fast co-pyrolysis of scrap tyres and plastics to produce light, sulphur-free oil
Wahyu Narulita DEWI, Qiaoqiao ZHOU, Saman ILANKOON, Alan CHAFFEE, Lian ZHANG
Presented by DEWI Wahyu Narulita

52

The influence of brominated flame-retardants on the pyrolysis of plastics via TGA and Py-GC-MS

Razan ALSHARQAWI, Daniela MERZ, Britta BERGFELDT, Grazyna STRACZEWSKI, Salar TAVAKKOL, Dieter STAPF

Presented by ALSHARQAWI Razan

58

Integration of mixed plastic waste pyrolysis into the chemical value chain via steam cracking and gasification

Malte HENNIG, Martin PILLICH, Niklas NETSCH, Salar TAVAKKOL, André BARDOW, Dieter STAPF

Presented by HENNIG Malte

200

High-purity copper and PVC recovery from waste wire harnesses through PVC swelling and ball-milling

Shogo KUMAGAI, Harendra KUMAR, Yuko SAITO, Toshiaki YOSHIOKA

Presented by KUMAGAI Shogo

Room D

S1 2 - Valorisation of waste from electronics and photovoltaics

Session Chair(s): Clara SANTATO & Teresa CECCHI

34

Value-added upcycling of Si from waste solar panels

Sayyed Rasoul KHAYYAM NEKOUEI, Samane MAROUFI

Presented by KHAYYAM NEKOUEI Sayyed Rasoul

206

Three-step process for the recovery of metals from fine plastic waste from a WEEE treatment plant

Héctor MUÑIZ SIERRA, Michal ŠYC

Presented by MUÑIZ SIERRA Héctor

345

AppCyclers: advancing sustainable e-waste management practices in Ghana through innovative technologies and awareness creation

Kwaku Agabas AGUDOR

Presented by AGUDOR Kwaku Agabas

141

Simplified silicon recovery from photovoltaic waste enables high performance, sustainable lithium-ion batteries

Ying SIM, Yeow Boon TAY, Ankit ANKIT, Xue LIN, Nripan MATHEWS

Presented by

Room E

S2 1 - Recycling in civil engineering (I)

Session Chair(s): Ailar HAJIMOHAMMADI & Hsingjung HO

280

Recycling of construction site sludge (bentonitic) and concrete sludge in cementitious matrix

Rachida IDIR, Gwenn LE SAOUT, Azeddine OUEDRAOGO

Presented by CYR Martin

21

Novel approach to bitumen modification

Pooriya MOHSENI, Ailar HAJIMOHAMMADI

Presented by MOHSENI Pooriya

11

Acid resistance of rubberised geopolymer concrete for sewage pipes

Mohammed Fouad ALNAHHAL, Yiyang LIU, Ailar HAJIMOHAMMADI

Presented by LIU Yiyang

385

Lime mud based lightweight artificial aggregates: material design and manufacturing technology

Chufa CHEN, Biqin DONG, Jian-Guo DAI, Yanshuai WANG

Presented by

Thursday August 22, 2024 10:30

Coffee break

Thursday August 22, 2024 11:00

Room A

C8 - Biowaste to value (II)

Session Chair(s): Christian KENNES & María C. VEIGA

- | | |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 55 | <p>Prioritising sugar-based value-added products based on technical and economical feasibility</p> <p>Johann GORGENS, Jeanne LOUW, Janus LOUW, Abdul PETERSEN, Somayeh FARZAD</p> <p>Presented by GORGENS Johann</p> |
| 3 | <p>Co-composting of fecal sludge in combination tannery hair burning liming sludge: a novel approach</p> <p>Dr. Md. Abul HASHEM, Md. Enamul Hasan ZAHIN, Md. Anik HASAN, Mehedi HASAN, Tanvir AHMED</p> <p>Presented by HASHEM Dr. Md. Abul</p> |
| 214 | <p>Influence of ultrasonic-assisted enzymatic treatment on the emulsifying capacity of rice bran nanofibres as a potential pickering emulsifier</p> <p>Nurul Najihah ILIAS, Norazatul Hanim MOHD ROZALLI, Mohamad Haafiz MOHAMAD KASSIM</p> <p>Presented by ILIAS Nurul Najihah</p> |
| 398 | <p>Biomethane yield from the slaughterhouse waste codigestion: mathematical optimization</p> <p>Juana FERNÁNDEZ-RODRÍGUEZ, Leo SILLERO, Rosario SOLERA, Montserrat PÉREZ</p> <p>Presented by FERNÁNDEZ-RODRÍGUEZ Juana</p> |
| 32 | <p>Utilization of dissolved CO₂ to control methane and acetate production in a methanation reactor</p> <p>Florian PAILLET, Elise CRESTEY, Gilberte GAVAL, Mathieu HADDAD, Franck LEBARS, Océane NICOLITCH, Patricia CAMACHO</p> <p>Presented by PAILLET Florian</p> |

Room B

C9 - Hydrogen production

Session Chair(s): Oluwaseun OYEKOLA & Joan J. MANYA

28

Unlocking the power of waste: electrochemical oxidation of biomass by an organic semiconductor catalyst for sustainable chemicals and hydrogen production
Matthew BIDWELL, Zamaan MUKADAM, Ifan STEPHENS, Martin HEENEY, Magda TITIRICI

Presented by MUKADAM Zamaan

36

Green hydrogen and chemical production via glycerol electrolysis with PtNi bimetallic catalyst

Hui LUO, Victor YUKUHIRO, Pablo FERNÁNDEZ, Jingyu FENG, Paul THOMPSON, Reshma RAO, Rongsheng CAI, Silvia FAVERO, Sarah HAIGH, James DURRANT, Ifan STEPHENS, Magda TITIRICI

Presented by LUO Hui

64

Biomass waste valorisation co-production of hydrogen and value-added chemicals via glycerol electrolysis

Hanzhi YE, Magdalena TITIRICI, Hui LUO

Presented by YE Hanzhi

118

Bio-hydrogen production from co-fermentation of sewage sludge and yard waste

Akash SAHA, Ligy PHILIP

Presented by SAHA Akash

79

Biowaste and bioresidues: process concepts for the production of hydrogen and secondary products

Fabian MOLL, Julian TIX, Matthias BETSCH, Simone KRAFFT, Nils TIPPKÖTTER

Presented by TIPPKÖTTER Nils

Room C

B5 - Plastics to fuels and chemicals

Session Chair(s): Michael DARAMOLA & Michal ŠYC

103

Reductive depolymerization of LDPE polymer into drop-in transportation fuels over recyclable tandem catalytic systems

Salman SOLTANIAN, Shahin MAZHKO, Animesh DUTTA

Presented by DUTTA Animesh

117

Valorisation of the isocyanate-derived fraction from polyurethane split-phase glycolysis

Jesus DEL AMO, Mennat ALASHRY, Ana Maria BORREGUERO, Juan Francisco RODRIGUEZ

Presented by RODRIGUEZ Juan Francisco

227

Hydrolysis of PET: increasing the monomer recovery by recirculating the aqueous phase

Aiman SHABBIR, Daniele CASTELLO, Kamaldeep SHARMA, Antonio AZUARA, Reinhard WIMMER, Thomas PEDERSEN

Presented by JAIME AZUARA Antonio

63

Plastic waste valorization using NiO.Co₃O₄/Al₂O₃ catalyst-assisted pyrolysis for liquid hydrocarbon production

Aminu Bayawa MUHAMMAD, Abdullahi Muhammad SOKOTO, Nura Bala MANGA, Sirajo Abubakar ZAURO

Presented by

Room D

S1 3 - Sustainable electronics and metal recovery

Session Chair(s): Christine LUSCOMBE & Audrey MOORES

287	<p>Targeted analysis of non-degraded synthetic and biosourced eumelanin for sustainable electronics</p> <p>Teresa CECCHI, Clara SANTATO</p> <p>Presented by CECCHI Teresa</p>
190	<p>Metal recovery of LFPO cathode material using hydrothermal leaching with oxalic acid</p> <p>Zixian LI, Masaru WATANABE, Qingxin ZHENG</p> <p>Presented by LI Zixian</p>
319	<p>Fly ash from a municipal solid waste incinerator: applications in electrochemistry and electronics</p> <p>Flavia VISENTIN, Hamza HYAT, Shahid KHALEEL, Yasser MATOS-PERALTA, Clara SANTATO</p> <p>Presented by VISENTIN Flavia</p>
241	<p>A systematic methodology to assess biodegradation as End-of-Life for portable batteries</p> <p>Marina NAVARRO-SEGARRA, Sara MARAÑÓN-JIMÉNEZ, Carles TORTOSA, Irene RAYA, Vicenç CARABASSA, Xavier DOMENE, Teresa GEA, Raquel BARRENA, Juan Pablo ESQUIVEL</p> <p>Presented by NAVARRO-SEGARRA Marina</p>
138	<p>Multifunctional nanocomposites from naturally derived materials for bioelectronic applications</p> <p>Bong Sup SHIM</p> <p>Presented by SHIM Bong Sup</p>

Room E

S2 2 - Recycling in civil engineering (II)

Session Chair(s): Ailar HAJIMOHAMMADI & Ana ANDRES PAYÁN

196	<p>Characterization and leaching behaviour of blast furnace slag for application in CO₂ capture and utilization</p> <p>Babatunde OLADIPO, Koena RAMASENYA, Vinny KATAMBWE, Viswanath VADAPALLI, Coetzee HENK, Jochen PETERSEN, Leslie PETRIK, Hsing-Jung HO, Atsushi IIZUKA, Tunde OJUMU</p> <p>Presented by PETRIK Leslie</p>
203	<p>Evaluation of South African construction and demolition waste as a candidate for indirect mineral carbonation</p> <p>Koena RAMASENYA, Jochen PETERSEN, Viswanath VADAPALLI, Vinny KATAMBWE, Babatunde OLADIPO, Sisanda GCASAMBA, Henk COETZEE, Sibulele ZIDE, Hsing-Jung HO, Atsushi IIZUKA, Leslie PETRIK, Tunde OJUMU, Alen HORVAT</p> <p>Presented by HORVAT Alen</p>
303	<p>Activated waste glass – performance and carbon footprint</p> <p>Martin CYR, Rachida IDIR, Louise LEMESRE</p> <p>Presented by CYR Martin</p>
20	<p>Recycling waste glass from photovoltaic (PV) modules for geopolymer concrete production</p> <p>Ayesha SIDDIKA, Jhuin Fhung LIM, Ailar HAJIMOHAMMADI</p> <p>Presented by LIM Jhuin Fhung</p>
384	<p>Solidification of municipal solid waste incineration fly ash (MSWIFA) using geopolymer made from dravite and waste alkali</p> <p>Jian-Guo DAI</p> <p>Presented by</p>

Thursday August 22, 2024 12:15

Lunch

Thursday August 22, 2024 13:15

Main amphitheater

PL4 - Plenary lecture by Maria Magdalena Titirici

Session Chair(s): Ange NZIHOU

111	<p>From waste to energy materials for batteries, fuel cells and e-chemicals production</p> <p>Maria Magdalena TITIRICI</p> <p>Presented by TITIRICI Maria Magdalena</p>
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Thursday August 22, 2024 14:00

Room A

G3 - Environmental sustainability of bioprocesses and biowastes valorisation

Session Chair(s): Fausto FREIRE

268 Respirometric tests to study the biodegradation of food-packaging materials in domestic composting

Nathalie GONTARD, Héloïse BAZART, Lucile CHATELLARD, Valérie GUILLARD

Presented by BAZART Héloïse

182 Sequestration of multidrug-resistant clinical bacterial isolates by precision engineered waste lignocellulosic biochars

Paul-Enguerrand FADY, Alexandra RICHARDSON, Meredith BARR

Presented by FADY Paul-Enguerrand

306 Sustainability assessment of poly(3-hydroxybutyrate) production for food packaging applications using by-products from the brewery industry and incorporating the biological recirculation of the bio-polymer

Dimitrios LADAKIS, Sofia Maria IOANNIDOU, Olga PSAKI, Aikaterini PHILIPPI, Apostolis KOUTINAS

Presented by KOUTINAS Apostolis

297 Mobile platform to understand anaerobic digestion and bio circular economy

Jimmy ROUSSEL, Xavier GOUX

Presented by ROUSSEL Jimmy

Room B

D12 - HTC (II)

Session Chair(s): Quan HE

223 Hydrothermal carbonisation as a pre-treatment for the facilitated gasification of solid recovered fuel

Tilia DAHOU, Lisa GRIBAL, Sylvie VALIN

Presented by DAHOU Tilia

209 Hydrothermal carbonization of biomass: from fundamentals to industrial applications

Giulia ISCHIA, Filippo MARCHELLI, Luca FIORI

Presented by FIORI Luca

Room C

A4 - Materials recycling technologies and approaches

Session Chair(s): Cheng-Han LEE & Junya KANO

6 Cascaded use of thermally modified wood waste
David A. AGAR, Paula ISRAELSSON, Gunnar KALÉN, Michael FINELL, Clemens KNILL
Presented by AGAR David A.

147 Smart debonding of adhesives with conductive particles by a pulsed discharge method
Manabu INUTSUKA, Kosei MATSUO, Keita SATO, Asako NARITA, Taketoshi KOITA, Yohei OKADA, Masaki KUBO, Hidehiro KAMIYA, Chiharu TOKORO
Presented by INUTSUKA Manabu

177 Study of an industrial oil recycling process with a low environmental impact
Eva DURAND, Mylène MARIN-GALLEGO, Severine CAMY, Hélène ROUX-DE BALMANN, Jean-Christophe REMIGY
Presented by DURAND Eva

269 Possible process routes for closing material loops from end-of-life vehicles: a case study for metals
Dominik REICHERT, Magnus FROEHLING
Presented by REICHERT Dominik

Room D

KN16 - C. Luscombe (Symposium S1)

Session Chair(s): Audrey MOORES

40 Towards the sustainable synthesis of semiconducting polymers
Christine LUSCOMBE
Presented by LUSCOMBE Christine

Room E

KN17 - H. Nonaka (Symposium S2)

Session Chair(s): Animesh DUTTA

244 All-biomass composite material made by extrusion of biomass powder using cellulose derivatives
Hiroshi NONAKA
Presented by NONAKA Hiroshi

Thursday August 22, 2024 14:30

Room D

KN18 - I. Honma (Symposium S1)

Session Chair(s): Maria Magdalena TITIRICI

Sustainable advanced batteries made from biomass and wastes

373 Itaru HONMA

Presented by HONMA Itaru

Room E

KN19 - L. Petrik (Symposium S2)

Session Chair(s): Gaurav SANT

The potential of concrete fines for CO₂ sequestration

202 Vinny Ndjate KATAMBWE, Koena RAMASENYA, Babatunde OLADIPO, Jochen PETERSEN, Viswanath VADAPALLI, Henk COETZEE, Alen HORVAT, Sibulele ZIDE, Hsing-Jung HO, Atsushi IIZUKA, Leslie PETRIK, Tunde OJUMU

Presented by PETRIK Leslie

Thursday August 22, 2024 15:05

Room A

OF3-1 Combustion and carbonization

Session Chair(s): F. Javier ESCUDERO SANZ

Fast algorithm for Waste-to-Energy grate combustion on dynamics simulation

142 Matias Alonso FIERRO RIVAS, Moritz WESTERMEIER, Christopher SCHIFFLECHNER, Hartmut SPLIETHOFF

Presented by FIERRO RIVAS Matias Alonso

321 Influence of particle size on the fate of fuel nitrogen during particleboard combustion
Thomas BERTUS, Jérôme LEMONON, F. Javier ESCUDERO SANZ, Sylvain SALVADOR

Presented by BERTUS Thomas

137 Catalytic synthesis, and utilization of graphene aerogel-metal composites from biomass and biowaste

Gloria NGENE, Ange NZIHOU

Presented by NGENE Gloria

Room B

OF3-2 HTL and gasification

Session Chair(s): Elsa WEISS-HORTALA

355

Recycling of carbon fiber reinforced composites with different configurations & sizes by catalytic hydrothermal liquefaction: first results within the RECICOM project
 J.M. VÁZQUEZ-FERNÁNDEZ, Jose M. ABELLEIRA-PEREIRA, A. DÍAZ-CÁRDENAS, M. BOTANA-GALVIN, B. GARCÍA-JARANA, J.R. PORTELA
 Presented by ABELLEIRA-PEREIRA Jose M.

295

Micro- and pilot-scale investigation of catalytic hydrothermal liquefaction of microalgae
 Vittoria BENEDETTI, Alessandro CASCIOLI, Sara FASOLI, Abdollatif AREF, Francesco PATUZZI, Marco BARATIERI
 Presented by BARATIERI Marco

266

Gasification of biomass residues for green carbon production
 Rohit BOROAH, Daniele ANTOLINI, Stefano PIAZZI, Vittoria BENEDETTI, Francesco PATUZZI, Marco BARATIERI
 Presented by PATUZZI Francesco

Room C

OF3-3 Waste to materials

Session Chair(s): Oluwaseun OYEKOLA

402

Waste Ru-plated fashion items upcycling through food waste by-products
 Teresa CECCHI, Zhaojing GAO, Clara SANTATO
 Presented by CECCHI Teresa

176

Production of highly reactive sorbents from suspensions of solid residues to remove pollutants from incineration fumes
 Yasmine BEN GHORBAL, Nathalie LYCZKO, Patricia ARLABOSSE, Ange NZIHOU, Thierry GOSSET, Xavier CHAUCHERIE, Bruno GILARDIN, Alexis CORBIN
 Presented by BEN GHORBAL Yasmine

66

Elaboration of high energy-efficient microencapsulated phase change materials with calcium carbonate shell
 Mustapha SALIHI, Mohammed EL MASTOURI, Maryam EL FITI, Yasser HARMEN, Younes CHHITI, Ahmed CHEBAK, Charaf Eddine JAMA
 Presented by SALIHI Mustapha

Thursday August 22, 2024 15:25

Poster session & Coffee break

Thursday August 22, 2024 15:25

Business room

WAVE Journal Board meeting for members

Session Chair(s): Fritz SCHMUHL, Senior Publishing Editor Springer Nature

Thursday August 22, 2024 16:25

Room A

D13 - Pyrolysis (II)

Session Chair(s): Naomi KLINGHOFFER & Bruna REGO DE VASCONCELOS

Detailed analysis on the thermochemical behavior of mango components (kernel, seed and pericarp) through pyrolysis

246 Hamado OUEDRAOGO, Maria GONZALEZ MARTINEZ, Sayon Dit Sadio SIDIBE, Yohan RICHARDSON, Ange NZIHOU

Presented by OUEDRAOGO Hamado

Characteristic and kinetic study of solar-driven biomass gasification

143 Dian ZHONG, Kuo ZENG, Jun LI, Hongyang ZUO, Xin CHEN, Ange NZIHOU, Haipin YANG, Hanpin CHEN

Presented by ZENG Kuo

Lignocellulosic and poultry litter biochars as a two-pronged approach to plant nutrient regulation

170 Ahmed ULLAH, Daya PANDEY, Meredith BARR

Presented by BARR Meredith

From MSW to methane: role of MSW pyrolysis char

308 Dezhen CHEN

Presented by GE Shaoheng

Room B

D14 - HTC agriculture and food waste and production of chemicals

Session Chair(s): Patrick BILLER & Masaru WATANABE

- 265 Sustainable biofuel production through continuous hydrothermal liquefaction of microalgae
Vittoria BENEDETTI, Alessandro CASCIOLI, Sara FASOLI, Abdollatif AREF, Francesco PATUZZI, Marco BARATIERI
Presented by PATUZZI Francesco
- 293 On-spec sustainable aviation fuel from organic waste via hydrothermal liquefaction: Solving the nitrogen challenge
Daniele CASTELLO, Abdenour ACHOUR, Muhammad Salman HAIDER
Presented by CASTELLO Daniele
- 171 Recovery of antioxidants by hydrothermal decomposition of strawberry leaves
Takafumi SATO, Carl AOYAMA, Takeru KUDO, Naotsugu ITOH
Presented by SATO Takafumi
- 361 Hydrothermal liquefaction of oakwood: the role of different oxides in red mud
Seyedmohammad MOUSAVI, Benedetta DE CAPRARIIS, Martina DAMIZIA, Roya HAMIDI, Maria Paola BRACCIALE, Paolo DE FILIPPIS
Presented by MOUSAVI Seyedmohammad

Room C

D15 - Biochar applications

Session Chair(s): Teresa BANDOSZ & Jorge ARAÚJO

- 26 Catalytic hydrothermal carbonization of vine shoots for high performance sodium ion battery anodes
Dario ALVIRA, Daniel ANTORAN, Victor SEBASTIAN, Joan J. MANYA
Presented by ALVIRA Dario
- 254 The virtuous circle of biochar: how a waste became a material of interest
Audrey VILLOT, Claire GERENTE, Yves ANDRES
Presented by VILLOT Audrey
- 27 Hydrothermal synthesis of heteroatom-doped carbons from waste hemp hurd for sodium-ion and potassium-ion batteries
Daniel ANTORAN, Dario ALVIRA, Hugo MALON, Mariano VIDAL, Joan J. MANYA
Presented by ANTORAN Daniel
- 282 Valorization of waste biomass flows for preparation of novel biosourced CO₂ sorbents
Ksenia PARKHOMENKO, Claire COURSON, Dominique BEGIN, Roger GADIOU, Marine GUILLMONT, Benedicte RETY, Nicolas THEVENIN, Lionel RUIDAVETS, Alienor BEUCHAT, Murad MALIKZADE
Presented by GADIOU Roger

Room D

A5 - Value from the ashes

Session Chair(s): Flavia VISENTIN & Martin CYR

90

Impact of reactive conditions on metal oxidation state for material recovery from WTE ash

Janhvi TRIVEDI, Marco CASTALDI

Presented by TRIVEDI Janhvi

277

Material recovery in MSWI fly ash treatment: technological aspects and environmental perspective

Ekaterina KOROTENKO, Michal ŠYC, Josef JADRNY, Tomáš BALOCH, Pavel MAŠÍN

Presented by KOROTENKO Ekaterina

370

Leaching and kinetics of poultry manure ash for phosphorous extraction

Yashwanth RAMESH, Jo VAN CANEGHEM, Giuseppe GRANATA

Presented by RAMESH Yashwanth

217

Synthesis and properties of silica and alumina nanoparticles derived from coal fly ash for catalyst supports

Liesel VAN DER MERWE, Rachel MCCONDOCHIE, André DE KOCK, Marilé LANDMAN, Frédéric DOUCET

Presented by VAN DER MERWE Liesel

Room E

Symposium 3 - Springer Nature author workshop on papers writing

Session Chair(s): Fritz SCHMUHL, Senior Publishing Editor Springer Nature

Thursday August 22, 2024 17:30

Room A

KN20 - T. Schulzke

Session Chair(s): Fei WANG

262

Operation of a methanol demonstration plant with steel mill gases

Tim SCHULZKE

Presented by SCHULZKE Tim

Room B

KN21 - Q. He

Session Chair(s): Tadafumi ADSCHIRI

124

Biomass valorization via hydrothermal liquefaction: challenges and sustainable solutions

Sophia Quan HE, Jie YNAG

Presented by HE Quan

Room C

KN22 - A. Yamaguchi

Session Chair(s): Gerasimos LYBERATOS

Simultaneous chemical and material recycling for multilayer plastic film

161 Aritomo YAMAGUCHI, Kiyoyuki YAMAZAKI, Norihito HIYOSHI, Osamu SATO

Presented by YAMAGUCHI Aritomo

Friday August 23, 2024 08:30

Main amphitheater

PL5 - Plenary lecture by Toshiaki Yoshioka

Session Chair(s): Ange NZIHOU

Carbon neutral and halogen circulation to realize circular industry

391 Toshiaki YOSHIOKA

Presented by YOSHIOKA Toshiaki

Friday August 23, 2024 09:15

Room A

D16 - Gasification - Modelling and techno-economic approaches

Session Chair(s): Jose M. ABELLEIRA-PEREIRA & Meredith BARR

Investigations on the formation of trace gases during entrained gasification in thermodynamic equilibrium

291

Philipp LEUTER, Sebastian FENDT, Hartmut SPLIETHOFF

Presented by LEUTER Philipp

Feasibility study on the production of 80 t/d methanol from organic residues from gravel recycling

288

Tim SCHULZKE, Dominik HOEHNER, Mirco CURIC

Presented by SCHULZKE Tim

Sustainable glass industry with fuel-flexible technology

93

Nerijus STRIUGAS, Raminta SKVORCINSKIENE , Andrius TAMOSIUNAS

Presented by STRIUGAS Nerijus

Plasma gasification of sewage sludge - mass and energy balance

75

Nuno PACHECO, Margarida GONÇALVES , Luis MARQUES, Cândida VILARINHO, Joana CARVALHO

Presented by PACHECO Nuno

Room B

C10 - Volatile fatty acids production

Session Chair(s): Vincent OKUDOH

348

Converting biowaste into volatile fatty acids: modelling for process optimization
Beatriz GONZALEZ VAZQUEZ , Matthieu PEYRE LAVIGNE, Sébastien POMMIER, Claire DUMAS, Ander CASTRO FERNANDEZ, Etienne PAUL
Presented by DUMAS Claire

128

Yeast-derived oleochemicals: improving microbial oils production from short-chain fatty acids
Elia TOMÁS-PEJÓ, Sergio MORALES-PALOMO, Cristina GONZÁLEZ-FERNÁNDEZ
Presented by TOMÁS-PEJÓ Elia

338

Development of sustainable formic acid/ $AlCl_3$ /choline chloride catalyzed levulinic acid production process using byproducts
Ryu UKAWA-SATO, Nanami HIRANO, Ryota KANAZAWA, Chihiro FUSHIMI
Presented by FUSHIMI Chihiro

Room C

A6 - Valuable chemicals from waste

Session Chair(s): Ioannis SKIADAS

248

Millet wastes as a potential source for production of polyhydroxybutyrate (PHB): an approach towards sustainability
Anupama SINGH, Purnima KUMARI
Presented by SINGH Anupama

175

Characterizing solid waste in New York State: 2023 sampling results
Sameena MANZUR, Hyein LEE
Presented by MANZUR Sameena

67

Identification, quantification and valorization of industrial waste in Ghana
Gabriel OSEI, Abu YAYA, Boateng ONWONA-AGYEMAN
Presented by

Room D

A7 - Bioremediation

Session Chair(s): Tomohito KAMEDA & Thierry GHISLAIN

164

Microbially-mediated transformation of nutrients from agri-food wastes via different scenarios of biofertilizer introduction into the soil system

Agnieszka SAEID, Sai Shivakrishnapras VURUKONDA , Jennifer NESTER

Presented by SAEID Agnieszka

325

Novel insight on fatbergs bioremediation

Raffaella VILLA, Caroline GURD, Bruce JEFFERSON

Presented by VILLA Raffaella

256

Activated carbon from Chontaduro seeds: a sustainable solution for ibuprofen removal in Colombian surface waters

Luis ANGEL, Audrey VILLOT, Yves ANDRES, Manuel RODRIGUEZ SUZA, Jaime PLAZAS-TUTTLE, Claire GERENTE

Presented by VILLOT Audrey

216

Dephosphatation in small scale wastewater treatment plants

Nafissatou IDRISSE, Nathalie LYCZKO, Ange NZIHOU, Francois CORNET, Raphael CORNET

Presented by LYCZKO Nathalie

Friday August 23, 2024 10:15

Coffee break

Friday August 23, 2024 10:45

Room A

I3 - Pollutants removal

Session Chair(s): Agnieszka SAEID & David A. AGAR

259 Entrained flow gasification of sewage sludge to reduce heavy metals and increase plant availability of phosphorous in the remaining ash
Andreas EWALD, Sebastian FENDT, Hartmut SPLIETHOFF
Presented by EWALD Andreas

271 Per-and polyfluoroalkyl substances (PFAS) content and leachability in residues from solid waste incineration
Michal ŠYC, Hykš JIRÍ, Hjelmar OLE, Korotenko EKATERINA, Cajthaml TOMÁŠ
Presented by ŠYC Michal

399 Constructed wetlands for emerging pollutants purification: origins, effects and mechanisms
Baiming REN, Yunjie HOU, Xiaofeng LI, Yaqian ZHAO
Presented by REN Baiming

183 Impacts of co-substrates characteristics on nitrogen emissions during sewage sludge composting
Elise CRESTEY, Florian PAILLET, Simon GUEZ, Patricia CAMACHO, Anne TREMIER
Presented by CRESTEY Elise

Room B

F2 - Sustainable civil engineering materials

Session Chair(s): Atsushi IIZUKA & Leslie PETRIK

191 Mycelium-based composite with pith of montanoa quadrangularis Shultz Bip
Gustavo JIMÉNEZ OBANDO, Sandra MONTOYA BARRETO, Juan Sebastián ARCILA HENAO, Ricardo Augusto TOLOSA CORREA
Presented by JIMÉNEZ OBANDO Gustavo

77 Application of footwear waste in civil construction
Lucas NASCIMENTO, Margarida SOARES, Cândida VILARINHO, Joana CARVALHO
Presented by NASCIMENTO Lucas

275 Recovery of aluminum metal from cement kiln dust
Lily GRIFFIN, Frank ZEMAN
Presented by ZEMAN Frank

225 Enhancing the durability properties of recycled aggregate concrete by performing surface treatment of aggregate extracted from construction and demolition waste
Paritosh Kumar SINGH, Puja RAJHANS
Presented by SINGH Paritosh Kumar

Room C

A8 - Characteristics of recycled materials

Session Chair(s): Charafeddine JAMA & Itaru HONMA

- 42 Physical and thermal characterization of sugarcane leaf-based pellets
Abdulrahman MANALUNDONG, P. ABDUL SALAM, Loc Thai NGUYEN
Presented by MANALUNDONG Abdulrahman
- 156 Properties of carbon fiber recovered from laminated CFRP by electrodynamic fragmentation and single electrical pulse method
Keita SATO, Taketoshi KOITA, Manabu INUTSUKA, Asako NARITA, Yuki TSUNAZAWA, Koji YAMAGUCHI, Chiharu TOKORO
Presented by SATO Keita
- 245 Characteristics of end-of-life fibreboard particles
Flore LEBRETON, Mark IRLE, H el ene LAGARDE, Christophe BELLONCLE, Marie KUTTER
Presented by LEBRETON Flore
- 204 Drumstick (Moringa Oleifera tree fruits) as fibrous raw material for production of food grade paper and packaging materials
Sanjay AKHOURI
Presented by

Room D

I4 - LCA approaches

Session Chair(s): Joanna KULCZYCKA & Toshiaki YOSHIOKA

- 219 Direct aqueous carbonation by utilization of demolition wastes - life cycle analysis (LCA)
Alen HORVAT, Vinny Nova KATAMBWE, Babatunde OLADIPO, Leslie PETRIK, Sibulele ZIDE, Jochen PETERSEN, Hsing-Jung HO, Atsushi IIZUKA, Viswanath VADAPALLI, Henk COETZEE, Koena RAMASENYA, Tunde OJUMU
Presented by HORVAT Alen
- 274 End-of-life of pharmaceutical packaging: a life cycle assessment
Fabiana BASSANI, Carla RODRIGUES, Fausto FREIRE
Presented by FREIRE Fausto
- 192 Fostering sustainable development with data: why and how to go further
Mathieu POMINVILLE-RACETTE, Mathieu PAYEUR, Nicolas ABATZOGLOU, In es ACHOURI
Presented by POMINVILLE-RACETTE Mathieu
- 31 Comparative life cycle assessment (LCA) of bio-fuel production from conventional and microwave pyrolysis of waste date pits
Prakash PARTHASARATHY, Furqan TAHIR, Snigdhendubala PRADHAN, Mohammad ALHERBAWI, Sami AL-GHAMDI, Tareq AL-ANSARI, Gordon MCKAY
Presented by

Friday August 23, 2024 11:50

Main amphitheater

PL6 - Plenary lecture by Chiharu Tokoro

Session Chair(s): Toshiaki YOSHIOKA

Innovative dismantling technology development to achieve a circular economy

388 Chiharu TOKORO

Presented by TOKORO Chiharu

Friday August 23, 2024 12:30

Main amphitheater

Closing Ceremony

Session Chair(s): Ange NZIHOU, Junya KANO & Toshiaki YOSHIOKA

Friday August 23, 2024 13:00

Lunch