



Conference Program

Sunday, September 24, 2023

17:00 – 19:00 Registration & Welcome Reception, Loft nhow Hotel

Monday, September 25, 2023

08:30 – 16:30 Registration, Posters & Exhibition, Loft nhow Hotel

09:00 – 10:10 **Opening Ceremony | Room: nhow 2+3+4**

09:00 – 09:30 High-temperature conversion processes – enabling the path to a net-zero circular carbon economy
(Martin Gräbner, Chairman of the 11th International Freiberg Conference, TU Bergakademie Freiberg – Germany)

09:30 – 09:50 Building a sustainable circular economy with complementary recycling technologies: why an enabling policy framework is key?
(Annick Meerschman, Cefic – Belgium)

09:50 – 10:10 Port of Rotterdam: the transition towards a carbon neutral circular economy
(Nico van Dooren, Port of Rotterdam – Netherlands)

10:10 – 10:30 Group Picture

10:30 – 11:00 Coffee Break

11:00 – 12:20	Session 1: Industrial gasification technologies Chair: <i>Martin Gräbner</i> Room: nhow 2+3+4	Session 2: Assessment and certification Chair: <i>Roh Pin Lee</i> Room: nhow 5	Session 3: Carbon capture and sequestration Chair: <i>Aleksander Sobolewski</i> Room: nhow 6
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11:00 – 11:20	01-1	Development and application of OMB coal-water slurry gasification technology (Guangshuo Yu, East China University of Science and Technology – China)
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02-1	Environmental and economic assessment of plastic waste recycling (Pelayo Garcia-Gutierrez, JRC - European Commission – Spain)
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03-1	Geologic carbon storage as the only robust way of CO ₂ removal: physical and numerical modeling for certification (Saeed Golmohammadi, Wintershall Dea AG – Netherlands)
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11:20 – 11:40	01-2	CHOREN entrained flow gasification – update of technology and projects (Albert Fink, CHOREN Industrietechnik GmbH – Germany)
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02-2	LCA of chemical recycling – methodological aspects and practical application (Fabian Loske, Sphera Solutions GmbH – Germany)
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03-2	Innovative CCS for gas turbine combined cycles (Marcus Scholz, General Electric International Inc. – Spain)
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11:40 – 12:00	01-3	Restart of gasification in Vřesova (Zdeněk Jonát, Sokolovská uhelná, právní nástupce, a.s. – Czech Republic)
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02-3	Economic and environmental assessment of chemical recycling via pyrolysis: A case study for engineering plastics (Malte Hennig, Karlsruhe Institute of Technology – Germany)
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03-3	Carbon capture on ships – an energy flow-based analysis using system simulation (Bernhard Thaler, Large Engines Competence Centre Graz – Austria)
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12:00 – 12:20	01-4	Feedstock flexible routes for biomass-to-chemicals and fuels (Robin Post van der Burg, Torrgas / Torrgreen – Netherlands)
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02-4	Benefits & limits of mass balance approach and LCA for the evaluation of chemical recycling technologies (Florian Keller, TU Bergakademie Freiberg – Germany)
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03-4	Carbon capture on ships (Vanessa Kaub, Ruhr-University Bochum – Germany)
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12:20 – 13:20 Lunch

13:20 – 14:40	Session 4: Fluidized bed gasification Chair: Jens Hannes Room: nhow 2+3+4		Session 5: Concepts for waste utilization Chair: Andrew Minchener Room: nhow 5		Session 6: Syntheses and related aspects Chair: Dominik Unruh Room: nhow 6	
13:20 – 13:40	04-1	Optimizing fluidized bed gasification solutions for sustainable biofuels (David Longden, Sumitomo Forster Wheeler – United Kingdom)	05-1	Municipal waste management in Poland – state of the art (Aleksander Sobolewski, Institute of Energy and Fuel Processing Technology – Poland)	06-1	Advanced equation of state method for modeling phase equilibria in the Fischer-Tropsch Synthesis (Ke Zheng, Institute of Coal Chemistry, Chinese Academy of Sciences – China)
13:40 – 14:00	04-2	Experimental investigation on HTW gasification of residual biomass at pilot scale (Fabiola Panitz, TU Darmstadt – Germany)	05-2	Renewable and recycled carbon DME from non-recyclable municipal waste (Lizzie German, Dimeta B.V. – Netherlands)	06-2	Study on closed-loop utilization of FTS water through gasification (Liping Zhou, Synfuels China Technology Co., Ltd. – China)
14:00 – 14:20	04-3	Gasification of plastics waste in a pilot-scale bubbling fluidized bed reactor (Gabriele Cali, Sotacarbo s.p.a. – Italy)	05-3	Waste-to-methanol: simulation-based comparison of potential thermochemical recycling processes for municipal solid waste (Sebastian Bastek, TU Munich – Germany)	06-3	High-capacity multi-feedstock methanation – from model to 20 kW pilot plant (Andreas Krammer, Montanuniversität Leoben – Austria)
14:20 – 14:40	04-4	Enabling second-generation biofuels and chemicals for hard-to-abate sectors (Louis Dénonmé, Enerkem – Canada)	05-4	Current status of the project of poly-generation system using various fuel (coal, wastes) with CO ₂ capture (Satoshi Umemoto, Central Institute of Electric Power Industry – Japan)	06-4	Direct conversion of syngas to olefins over bifunctional catalysts: catalyst design for increased olefin yield and stability (Glenn Pollefeyt, Dow Benelux BV – Netherlands)
14:40 – 15:10	Coffee Break					
15:10 – 16:30	Session 7: Component development Chair: Guangsuo Yu Room: nhow 2+3+4		Session 8: Feedstock preparation Chair: Jörg Kleeberg Room: nhow 5		Session 9: Methanol value chain Chair: Alexander Rösch Room: nhow 6	
15:10 – 15:30	07-1	Model-based development of new multi-burner entrained-flow gasifier concepts (Fengbo An, TU Bergakademie Freiberg – Germany)	08-1	Corn stover pre-processing and ultra-dense phase feeding into the R-GAS entrained flow gasifier (Zach El Zahab, GTI Energy – United States)	09-1	Innovative methanol synthesis for the valorization of solid waste (Henrik Schlösser, Air Liquide R&D GmbH – Germany)
15:30 – 15:50	07-2	Burner development and optimization for high pressure entrained flow gasifiers (Tobias Jakobs, Karlsruhe Institute of Technology – Germany)	08-2	Supercritical methanol depolymerization and hydrodeoxygenation of biomass over reduced copper porous metal oxides (Jian Li, Xinjiang University – China)	09-2	Production of methanol from steel-mill gases – from laboratory to pilot plant (Tim Schulzke, Fraunhofer UMSICHT – Germany)
15:50 – 16:10	07-3	Experimental study on the atomization of coal water-slurry in an impinging entrained-flow gasifier (Yan Gong, East China University of Science and Technology – China)	08-3	Coal fines briquetting with low-density polyethylene: towards a sustainable gasifier feed (Hein Neomagus, North-West University – South Africa)	09-3	Synthetic fuels from C3-Mobility to DeCarTrans to MtJet (Malena Peuker, TU Bergakademie Freiberg – Germany)
16:10 – 16:30	07-4	Effect of wall slagging on turbulent falling film flow characteristics in scrubbing-cooling tube (Jie Zeng, East China University of Science and Technology – China)	08-4	Thermochemical phosphorus recovery from sewage sludge (Eric Franke, TU Bergakademie Freiberg – Germany)	09-4	ExxonMobil methanol-to-X low emissions fuel (Tracy Loughran, ExxonMobil Engineering Europe Ltd. – United Kingdom)
18:30 – 21:30	Conference Dinner* (Stadshaven Brouwerij) Meeting Point Departure 17:30 Entrance nhow Hotel					

* The Conference Dinner will take place at the Stadshaven Brouwerij (Galileistraat 24, 3029 AM Rotterdam). Bus transfer is arranged. For participants who would like to take the bus transfer to the Stadshaven Brouwerij, please meet at the entrance of the nhow Hotel at 17:30. Our evening will begin at 18:30 with a short presentation of Rotterdam's most sustainable brewery followed by contemporary Dutch brewery dinner in the beautiful waterfront gastropub. At 21:30 the bus will return to the nhow Hotel.

08:30 – 18:30	Registration, Posters & Exhibition, Loft nhow Hotel					
09:00 – 10:50	Industry Panel Session: Strategies towards a Net-Zero Carbon Economy <i>(Anastasios Perimenis – CO₂-Value Europe Stephen Johnson – Illinois Clean Fuels Andreas Neumann – LyondellBasell Guss van Rossum – Shell Irina Yarulina – Sulzer Chemtech Ltd)</i> Chair: Martin Gräbner Room: nhow 2+3+4					
10:50 – 11:20	Coffee Break					
11:20 – 13:00	Session 10: Plasma-enhanced conversion Chair: Markus Reinmüller Room: nhow 2+3+4		Session 11: Pyrolysis technologies Chair: Stefanie Eiden Room: nhow 5		Session 12: Gasification kinetics Chair: David Harris Room: nhow 6	
11:20 – 11:40	10-1	Overview and data evaluation of experimental plasma-driven gasifiers (Vadim Kuznetsov, TU Bergakademie Freiberg – Germany)	11-1	Advanced recycling of PVC waste (Eric Romers, INOVYN Manufacturing Belgium – Belgium)	12-1	A lumped chemical kinetics approach for thermochemical recycling of solid plastic waste components and mixtures through pyrolysis and gasification (Matteo Pelucchi, Politecnico di Milano – Italy)
11:40 – 12:00	10-2	Conversion of pulverized biomass upon the contact with thermal plasma (Kentaro Umeki, TU Munich – Germany)	11-2	Advancements in chemical recycling: a comprehensive overview of carboliq's Journey from pilot to commercial scale and classification of the current development (Stephan Aschauer, Carboliq GmbH – Germany)	12-2	Kinetic investigation on the thermochemical conversion of nuclear graphite (Sergei Shalnev, TU Bergakademie Freiberg – Germany)
12:00 – 12:20	10-3	Plasma-based CO ₂ -utilization for a circular carbon economy: advanced power electronics promotes CO yield increase through ultra-fast microwave pulsation (Carsten Winnewisser, TRUMPF Hüttinger – Germany)	11-3	Managing waste variability in a pyrolysis process (Geoff Smith, Itero Technologies – United Kingdom)	12-3	An operando analysis for gasification of carbonaceous material (Lu Ding, East China University of Science and Technology – China)
12:20 – 12:40	10-4	Industrial plasma-supported gasifier systems – status quo and perspective (Ronny Schimpke, TU Bergakademie Freiberg – Germany)	11-4	Demonstration of biomass conversion with integrated pyrolysis and reforming – the thermo catalytic reforming (TCR) in ToSynFuel project (Robert Daschner, Fraunhofer UMSICHT – Germany)	12-4	Co-gasification of PET waste plastics and Aduunchuluun lignite (Enkhsaruu Byambajav, National University of Mongolia – Mongolia)
12:40 – 13:00	10-5	tbc	11-5	Moving towards a circular waste economy through the usage of pyrolysis technology (Chris Genzel, AmoCarbon – Germany)	12-5	High pressure steam-gasification kinetics up to 80 bar by drop tube reactor KIVAN (Stefan Guhl, TU Bergakademie Freiberg – Germany)
13:00 – 14:00	Lunch					

14:00 – 15:40		Session 13: Partial oxidation Chair: Matthias Müller-Hagedorn Room: nhow 2+3+4	13	Session 14: Pyrolysis processes I Chair: Johan van Dyk Room: nhow 5	14	Session 15: Mineral matter I Chair: Stefan Guhl Room: nhow 6	15	
14:00 – 14:20	13-1	Synthesis gas from recycling of CO ₂ , a cornerstone for a CO ₂ -neutral chemical industry (Project SCOORE) (André Bader, BASF SE – Germany)		14-1	Insight into the pyrolysis behavior of waste plastics using in-situ pyrolysis time-of-flight mass spectrometry (Haoquan Hu, Dalian University of Technology – China)		15-1	Understanding the formation of agglomerates in 1 MW _{th} pilot plant during chemical looping gasification of pre-treated straw (Michael Müller, Forschungszentrum Jülich GmbH – Germany)
14:20 – 14:40	13-2	Experimental and numerical study of high-pressure partial oxidation of natural gas with CO ₂ recycling (Gabriel Gonzalez Ortiz, TU Bergakademie Freiberg – Germany)		14-2	Numerical simulation of pyrolysis of RPF using a detailed chemical kinetic model (Kenji Tanno, Central Research Institute of Electric Power Industry – Japan)		15-2	Influences of P ₂ O ₅ on the fluidity of ashes with different Al ₂ O ₃ /CaO ratios under gasification conditions (Hao Wu, East China University of Science and Technology – China)
14:40 – 15:00	13-3	Options for low carbon CO production by POX processes (Elena Marras, Air Liquide Forschung und Entwicklung GmbH – Germany)		14-3	High temperature pyrolysis of composite wastes for hydrogen and methane rich syngas production (Yusuf Tolunay Kilic, Luleå University of Technology – Sweden)		15-3	Development of a method to predict ash agglomeration in fluidized beds (Dominik Kirschenmann, TU Bergakademie Freiberg – Germany)
15:00 – 15:20	13-4	SAF from municipal solid waste: chemical process simulation and design of the second gasifier and syngas cooler for the first world commercial plant (Mohammad Haghnegahdar, SCHMIDTSCHACK, ARVOS GmbH – Germany)		14-4	High-pressure pyrolysis in a drop-tube reactor: effect of the pressure and temperature on the resulting products and kinetics (Markus Reinmöller, Technical University of Denmark – Denmark)		15-4	The key for sodium-rich Zhundong coal utilization in entrained flow gasifier: the impact of sodium on the corrosion behavior of refractory lining (Jinghong Gao, Ningxia University – China)
15:20 – 15:40	13-5	Model-based investigation of plasma integration in partial oxidation processes (Sophie Rodmacher, TU Bergakademie Freiberg – Germany)		14-5	Pyrolysis of polymethyl methacrylate (PMMA) with focus on recovery of chemically valuable products (Stefan Pielsticker, RWTH Aachen University – Germany)		15-5	Vitrification of incineration bottom ash in a municipal solid waste-fueled demonstration-scale slagging gasifier (Stephan Heberlein, Nanyang Technological University – Singapore)
15:40 – 16:10 Coffee Break								
16:10 – 17:10		Session 16: Chemical looping gasification Chair: Jason Laumb Room: nhow 2+3+4	16	Session 17: Pyrolysis Processes II Chair: Haoquan Hu Room: nhow 5	17	Session 18: Mineral matter II Chair: Michael Müller Room: nhow 6	18	
16:10 – 16:30	16-1	Syngas production with CO ₂ capture from agroforestry residues by chemical looping gasification (Alberto Abad, Instituto de Carboquímica – Spain)		17-1	Influence of temperature and Al-based catalyst on the destructuring of liquid hydrocarbons during biomass gasification (Johan van Dyk, GTI Energy – South Africa)		18-1	In-situ measurement of the mobilization of deposit formers from substitute fuels in simulated process gas atmospheres (Teres Pietschner, TU Bergakademie Freiberg – Germany)
16:30 – 16:50	16-2	Gasification of waste as key technology for closing the carbon cycle in Germany (Jens Kaltenmorgen, TU Darmstadt – Germany)		17-2	Chemical recycling of polycarbonate by pyrolysis, investigated by instrumental-analytical techniques and pilot scale experiments for the recovery of valuable compounds (Philipp Rathsack, Fraunhofer IKTS – Germany)		18-2	Catalytic effects, in-situ capture and utilization of alkali metals during the pyrolysis of biomass (Yujie Zhang, Ningxia University – China)
16:50 – 17:10	16-3	Reactor network modeling of biomass-fueled chemical-looping gasification and chemical-looping combustion (Luis Ricardez-Sandoval, University of Waterloo – Canada)		17-3	Evaluating the integration of catalytic pyrolysis for polyolefin-rich waste recycling into light olefins (Niklas Netsch, Karlsruhe Institute of Technology – Germany)		18-3	The release and migration mechanism of chromium and lead during pyrolysis process of low-rank coal (Lingmei Zhou, China University of Mining and Technology, Beijing – China)
17:10 – 18:30 Poster Reception, Loft nhow Hotel								

08:30 – 15:20	Registration, Posters & Exhibition, Loft nhow Hotel					
09:00 – 10:40	Session 19: Alternative carbon sources <i>Chair: Martin Gräbner</i> Room: nhow 2+3+4		Session 20: Circular economy <i>Chair: Andreas Neumann</i> Room: nhow 5		Session 21: Gas cleaning <i>Chair: Peter Seifert</i> Room: nhow 6	
09:00 – 09:20	19-1	Circular economy pilot plants and projects at the RWE Innovation Centre in Niederaußem: current status and initial operational results (Tobias Ginsberg, RWE Power AG – Germany)	20-1	Introduction to CIRCULAR FOAM: chemical recycling technologies and routes for rigid polyurethane foam (Catherine Lövenich, Covestro Deutschland AG – Germany)	21-1	The effect of secondary oxygen supply on pyrolysis-gasification coupling two-stage entrained bed gasification performance (Zhenghua Dai, Xinjiang University – China)
09:20 – 09:40	19-2	CCU technologies for fast and feasible climate protection (Görge Deerberg, Fraunhofer UMSICHT – Germany)	20-2	Development of selective pyrolysis of polyurethane rigid foam to amine in the frame of the CIRCULAR FOAM project (Stefanie Eiden, Covestro Deutschland AG – Germany)	21-2	Development of syngas purification in polygeneration system (Hiroyuki Akiho, Central Research Institute of Electric Power Industry – Japan)
09:40 – 10:00	19-3	Pathways to circularity / net carbon dioxide neutrality in the plastics industry (Timm Schmidt, Covestro Deutschland AG – Germany)	20-3	Development of a downstream concept for rigid PU-foam pyrolysis (Henning Gröschl, RWTH Aachen – Germany)	21-3	Rectisol™ goes green: proven solution for syngas purification from biomass or waste gasification (Alexander Rösch, Air Liquide Engineering & Construction – Germany)
10:00 – 10:20	19-4	High temperature electrolysis for syngas production (Alexander Michaelis, Fraunhofer IKTS – Germany)	20-4	What to do with PU? – Environmental potential of chemically recycling waste polyurethane (Martin Pillich, ETH Zürich – Switzerland)	21-4	Halide removal strategies for poly-generation IGCC plant (Hiroyuki Akiho, Central Research Institute of Electric Power Industry – Japan)
10:20 – 10:40	19-5	The biogeniV alliance – from biogenic residues to green fuels and valuable materials (Stefan Klebingat, Leibniz Institute for Plasma Science and Technology – Germany)	20-5	Modeling and optimization of a polyurethane waste upcycling system (Merve Özkan, TU Dortmund – Germany)	21-5	Pilot testing of amine-based solvent at low-rank coal fired power system (Jason Laumb, University of North Dakota, EERC – United States)
10:40 – 11:10	Coffee Break					

11:10 – 12:30	Session 22: Entrained flow investigations <i>Chair: Andreas Richter</i> Room: nhow 2+3+4 22		Session 23: Pyrolysis Processes III <i>Chair: Ludwig Seidl</i> Room: nhow 5 23		Session 24: Innovations in waste gasification <i>Chair: Chris Higman</i> Room: nhow 6 24	
11:10 – 11:30	22-1	In-situ study on evolution of particle group and conversion of a single particle in an impinging entrained-flow gasifier (Hantao Lu, East China University of Science and Technology – China)	23-1	Process control optimization of a EoL-tire pyrolysis reactor (Christian Maas, Pyrum Innovations AG – Germany)	24-1	Pushing the boundary of high temperature slagging gasification: demonstration-scale co-gasification of sludge and municipal solid waste and the generation of waste-derived slag as NEW Sand (Grzegorz Lisak, Nanyang Technological University – Singapore)
11:30 – 11:50	22-2	CFD modeling approaches of plasma assisted entrained flow gasification (Sebastian Wilhelm, TU Munich – Germany)	23-2	Processing of metal-free end-of-life tires (EOLTs) to fuels and products: an experimental study with process simulation and economic analysis from an Australian perspective (Sankar Bhattacharya, Monash University – Australia)	24-2	DCI™, Direct carbon immobilization, a new thermo-chemical gasification process for mixed waste and biomass (Wiebe Pronker, DOPS Recycling Technologies – Netherlands)
11:50 – 12:10	22-3	Development of a model for the numerical evaluation of the phosphor release potential of sewage sludge in entrained flow gasification (Johannes Scherer, TU Bergakademie Freiberg – Germany)	23-3	Impact of feedstock quality on chemical recycling (Ville Nikkanen, Technical Research Centre of Finland – Finland)	24-3	Real-time feedstock analysis for gasification control (Johan van Dyk, GTI Energy – South Africa)
12:10 – 12:30	22-4	Study on multiphase flow in quench chamber of pulverized coal entrained-flow gasifier via CFD simulation (Yu Zhang, Synfuels China Technology Co., Ltd. – China)	23-4	tbc	24-4	Development of an advanced process control strategy in waste gasification processes for optimal economic operation (Ludovic Miracourt, Air Liquide R&D GmbH – Germany)
12:30 – 13:30	Lunch					
13:30 – 14:50	Session 25: Methane decomposition <i>Chair: Martin Gall</i> Room: nhow 2+3+4 25		Session 26: Carbon products <i>Chair: Qinghua Guo</i> Room: nhow 5 26		Session 27: CFD <i>Chair: Zach El Zahab</i> Room: nhow 6 27	
13:30 – 13:50	25-1	Methane cracking in a molten tin bubble's reactor for turquoise hydrogen production (Benedetta de Caprariis, Sapienza University of Rome – Italy)	26-1	Coal and coal wastes to high-quality graphite for lithium-ion battery applications (Jason Laumb, University of North Dakota, EERC – United States)	27-1	Numerical study on turbulence chemistry interaction models for scale-up of new technologies from lab-scale to industrial scale (Martin Hutter, TU Bergakademie Freiberg – Germany)
13:50 – 14:10	25-2	A comprehensive kinetic framework for turquoise hydrogen and carbon materials production from the pyrolysis of light hydrocarbons streams (Matteo Pelucchi, Politecnico di Milano – Italy)	26-2	Study on recovery of residual carbon from coal gasification fine slag and the influence of oxidation on its characteristics (Liang Ren, East China University of Science and Technology – China)	27-2	Gasification of polypropylene in supercritical water: a PR-DNS study (Abouelmagd Abdelsamie, University of Magdeburg – Germany)
14:10 – 14:30	25-3	A novel technology for the production of synthetic fuel using methane, CO ₂ , water and electricity: Power-and-Biogas-to Liquid (PBtL) (Andreas Waibel, CAPHENIA GmbH – Germany)	26-3	Characterization and processing of pyrolytic carbon from methane pyrolysis (Gerald Hartig, Montanuniversität Leoben – Austria)	27-3	Real-time flame monitoring system: a machine learning approach for flame detection and characterization (Mohsen Gharib, Fraunhofer IKTS – Germany)
14:30 – 14:50	25-4	Microwave plasma cracking for CO ₂ free hydrogen, acetylene and syngas production on site and on demand (Ralf Spitzl, iplas innovative plasma systems GmbH – Germany)	26-4		27-4	Effect of different equivalence ratios on soot formation limit and flame structure of COG impinging flame (Runmin Wu, Ningxia University – China)
14:50 – 15:20	Closing Ceremony (Martin Gräbner, TU Bergakademie Freiberg – Germany) Room: nhow 2+3+4					



Poster Session Program, Loft nhow Hotel

Poster 01	Current research studies on green technologies and waste to energy and chemicals at Istanbul Technical University (Hasan Can Okutan, Istanbul Technical University – Turkey)
Poster 02	From waste plastics to high performance coating – demonstration of the entire sustainable value chain (Niels Jan Schenk, BioBTX – Netherlands)
Poster 03	High power plasma torches enabling the fossil-to-electric (F2E) transition in the manufacturing of cement (Soha Salem, TRUMPF Hüttinger – Germany)
Poster 04	Demineralization study of waste plastic pyrolysis oil using red mud (Jin-ho Kim, Institute for Advanced Engineering (IAE) – South Korea)
Poster 05	Current status of recycling processes for plastic waste: 1. evaluation and classification of possible input materials for chemical recycling (Wiebke Ufermann, Carboliq GmbH – Germany)
Poster 06	Life cycle assessment for alternative use of sewage sludge through hydro-thermal liquefaction (HTL) technology (Anna Śliwińska, Główny Instytut Górnictwa – Poland)
Poster 07	Energy balance of a decentralized disposal concept for sewage sludge by torrefaction and subsequent entrained flow gasification for gas engine use (Andreas Ewald, TU Munich – Germany)
Poster 08	Modeling chemical looping gasification with agroforestry residues: optimizing operation of a 200 MW unit for high quality syngas production with CO ₂ capture (Alberto Abad, Instituto de Carboquímica – Spain)
Poster 09	Life cycle assessment of different schemes of biomass pyrolysis for biochar production (Alberto Navajas, Universidad Pública de Navarra – Spain)
Poster 10	Creating lumped models for fluidized beds using CFD (Ravi Ramesh, TU Delft – Netherlands)
Poster 11	Characterization of pyrolysis products from plastics pyrolysis via advanced analytical techniques: GCxGC-MS and FT-ICR-MS (Philipp Rathsack, Fraunhofer IKTS – Germany)
Poster 12	Valorization of swine manure for hydrogen or energy production with CO ₂ capture by chemical looping processes (Alberto Abad, Instituto de Carboquímica – Spain)
Poster 13	CLC a potential pathway to net carbon dioxide neutrality applying iron oxides (Ewelina Ksepko, Wrocław University of Science and Technology – Poland)
Poster 14	Preliminary screening of materials for CO ₂ splitting as a pathway for bio-kerosene (Alberto Abad, Instituto de Carboquímica – Spain)
Poster 15	Direct ex-situ carbonation of primary and secondary materials (Florian Schinnerl, Montanuniversität Leoben – Austria)
Poster 16	Preparation of molecularly imprinted polymer for flue gas purification from coal gangue leaching residue (Jiushuai Deng, China University of Mining and Technology, Beijing – China)
Poster 17	Methane cracking in tubular quartz reactor with capillary injection for turquoise hydrogen production (Benedetta de Caprariis, Sapienza University of Rome – Italy)
Poster 18	The effect of reaction mechanism on OH*, CH* chemiluminescence in methane inverse diffusion flame (Qinghua Guo, East China University of Science and Technology – China)
Poster 19	Research on carbon-neutral technology using the DARM process (Jin-ho Kim, Institute for Advanced Engineering – South Korea)
Poster 20	Renewable natural gas with carbon sequestration using bloom algae biomass as a substrate (Zaixing Huang, China University of Mining and Technology – China)
Poster 21	High-capacity multi-feed stock methanation – from model to 20 kW pilot plant (Karin Salbrechter, Montanuniversität Leoben – Austria)
Poster 22	Economic models for evaluating different renewable energy sources (Rajenall Siriram, North-West University – South Africa)
Poster 23	Utilization of polygeneration plants considering local feedstock potentials in Germany (Andreas Hanel, TU Munich – Germany)
Poster 24	The Danish carbon balance and its technological implications towards carbon neutrality (Markus Reinmøller, Technical University of Denmark – Denmark)
Poster 25	Robust real-time optimization for the long-term economical and sustainable operation of post-combustion carbon capture under uncertainty (Luis Ricardez Sandoval, University of Waterloo – Canada)
Poster 26	Hydrogen systems in virtual power plants: Technical possibilities and opportunities on the way to profitability (Laura Thiel, Fraunhofer IWU – Germany)

Poster 27	Development of post-mining areas in terms of the circular economy (Joanna Bigda, Institute of Energy and Fuel Processing Technology – Poland)
Poster 28	Assessment of coal relics from underground coal gasification (Lehlohonolo Mokhahlane, University of the Witwatersrand – South Africa)
Poster 29	Simulation study on single particle coal gasification reaction process (Xingjun Wang, East China University of Science and Technology – China)
Poster 30	Effect of methanol-steam reforming pretreatment on the structure and pyrolysis performance of Naomachu sub-bituminous coal (Mei Zhong, Xinjiang University – China)
Poster 31	Reaction-induced force caused by gas-particle two phase reactions (Jianliang Xu, East China University of Science and Technology – China)
Poster 32	Research of liquid film flow characteristics on sinusoidal corrugated plates (Jie Zeng, East China University of Science and Technology – China)
Poster 33	Iron evolution and environmental assessment during aqueous phase recycling process and catalytic cracking of toluene by magnetic hydrochar (Yao Xiao, East China University of Science and Technology – China)
Poster 34	Co-pyrolysis of alkali-fused fly ash with corn stover to synthesize high efficiency biochar composite for remediating a lead-contaminated soil (Yan Ma, China University of Mining and Technology – China)

Please note that the program is prepared in American English. Presentation titles in British English are therefore edited to ensure consistency in the language used in the conference abstract book.

Thursday, September 28, 2023

08:00 – 16:00	 Technical Tour ROTTERDAM (N+P, Plant One, Value Maritime) <i>(Meeting Point Departure 8:00 Entrance nhow Hotel)</i>
07:30 – 16:00	 Technical Tour AMSTERDAM (Shell 's Energy Transition Campus, Avantium) <i>(Meeting Point Departure 7:30 Entrance nhow Hotel)</i>

Friday, September 29, 2023

07:30 – 16:30	 Technical Tour BRIGHTLANDS (Chemelot Campus) <i>(Meeting Point Departure 7:30 Entrance nhow Hotel)</i>
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The technical tours will depart from nhow Hotel. Arrival time back in the nhow Hotel Rotterdam from the technical tours will be dependent on the traffic conditions. Technical tours will include lunch snack and refreshments.

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