Energy Fuels Environment EFE 2026

Conference Programme

Tuesday

= 17th November 2026 =

16:30 –	**Badge Pick-Up and Registration** (Hall D4)
18:30 – 21:00	**Welcome reception** (Room 12 D4)

Wednesday

= 18th November 2026 =

8:30 – 18:00	**Badge Pick-Up and Registration** (Hall, 3rd floor C6)
8:30 – 9:30	**Poster setup** (Hall, 3rd floor C6)
9:00 – 9:20	**Opening Ceremony** (Room 307-308 C6)
9:20 – 10:20	**Plenary Lecture:** **Prof. Massimo Santarelli: Electrochemical and Thermochemical pathways to e-chemicals and solar-chemicals** **Prof. Patrick Da Costa: Novel Single atom strategies synthesis for CO_2 methanation catalysts** (Room 307-308 C6)

10:20 – 11:50 **Presentation Sessions: Energy Transition: System Modelling, Policy and Economics**

Chairman: **prof. Artur Wyrwa**

(Room 307 C6)

10:20 - 10:35 **César Valderrama:** Beyond Decarbonization: Reframing the energy transition through systems modelling, material constraints and economic futures

10:35 - 10:50 **Duarte Mesquita Sousa:** Inclusion of Nuclear Energy in a Renewable Energy-Based Mix

10:50 - 11:05 **Arnoud Higler:** Comparative Methodologies for Structural and Hybrid Power-Market Price Modelling

11:05 – 11:20 **Keynote lecture - Roberto Ricciu:** Robust Regional Energy Planning under Data Uncertainty: A TIMES-Based Analysis of Sardinia to 2050

11:20 – 11:35 **Pablo Benalcazar:** An Energy Management Framework for Peer-to-Peer Energy Trading under Preference Uncertainty

11:35 – 11:50 **Kacper Mańkowski:** Declining energy intensity without energy savings? Hotspots and rebound effects across the EU agribusiness production chain

10:20 – 11:50 **Presentation Sessions: Catalysis in Industry and the Energy Sector**

Chairman: **prof. Marek Inger**

(Room 308 C6)

10:20 - 10:35 **Kinga Góra-Marek:** Commercial Fluid Catalytic Cracking Catalysts for Polymer Chemical Recycling

10:35 - 10:50 **Agata Kordek:** Insights into the MTH reaction over SSZ-13 by operando spectroscopy and MCR-ALS analysis

10:50 - 11:05 **Andrzej Wójtowicz:** Formation of Potassium Ferrites during Reduction of K/Fe2O3 Systems: A Study of Fischer-Tropsch Synthesis Catalysts

11:05 – 11:20 **Tomasz Kondratowicz:** Hollow-SiO_2@CuZnMgAl-LDH-derived catalyst for direct CO_2 hydrogenation to methanol

11:20– 11:35 **Agnieszka Szymaszek-Wawryca:** Natural aluminosilicate-supported Ni and NiCe catalysts for CO_2 methanation

11:35 – 11:50 **Ivan Martinez Lopez:** Mechanistic Insights into COx Methanation of CO2/CO Mixtures over Nanostructured NiO–CeO_2

11:50 – 12:10 **Coffee Break**

(Hall, 3rd floor C6)

12:10 – 14.10 **Presentation Sessions: Advanced Materials for Energy Conversion, Storage, and Utilization**

Chairman: **prof. Kun Zheng, dr Anna Niemczyk**

(Room 307 C6)

12:10 -12:30 **Keynote lecture - Yihan Ling:** A Microporous Channel Anode Support Structure for the Efficient and Safe Conversion of Low-Concentration Coal Mine Methane in High-Temperature Fuel Cells

12:30 - 12:45 **Invited lecture - Youmin Guo:** Surface Reconstruction Enables High-Performance and Fluctuation-Resistant Cathodes for Proton Ceramic Fuel Cells

12:45 - 13:00 **Ewelina Ksepko**: Creating and adjusting iron-based perovskites for potential use in waste biomass combustion through chemical looping processes

13:00 - 13:15 **Anna Niemczyk-Sobieszek:** Optimization of infiltration strategies for enhanced stability of solid oxide electrolysis cells under SOE and co-SOE operation

13:15 - 13:30 **Xu Xu:** High-Entropy B-Site Engineering Coupled with In Situ Exsolution for High-Performance Sr-Free $LaCrO_3$-Based Fuel Electrodes in Reversible Solid Oxide Cells

13:30 - 13:45 **Piotr Winiarz:** Negative thermal expansion materials: an innovative tool for TEC adjustment in solid oxide fuel cells

13:45 - 14:00 **Tomasz Polczyk:** Aminal- and Imine-Linked Covalent Organic Framework Thin Films for Solar Energy Conversion

14:00 - 14:10 **Zilin Ma:** Efficient Nitrous Oxide Electrochemical Hydrogenation via Defect-Engineered Protonic Ceramic Electrolysis Cells

12:10 – 13:40 Presentation Sessions: Advanced Thermal Technologies for High-Efficiency Cooling and Heating Systems

Chairman: prof. **Karol Sztekler**

(Room 308 C6)

12:10 - 12:25 **Mieszko Tokarski**: Development of a one-dimensional transient coking model for top-charged and stamp-charged systems

12:25 - 12:40 **Jan Taler:** Analysis of the transient temperature and stress fields in the wall of a component during a thermal shock, considering the finite heat capacity of the coolant

12:40 - 12:55 **Patryk Marczak:** Identification of gas phase parameters in water-air flow in a horizontal pipeline

12:55 - 13:10 **Patrycja Bukowiec:** Numerical investigation of vortex shedding and heat transfer from a heated circular cylinder

13:10 -13:25 **Patryk Marczak**: Numerical analysis of multiphase flow using Multifluid VOF model and gamma-ray absorption

13:25 -13:40 **Mateusz Płatek:** Techno-economic and environmental assessment of a hybrid cogeneration and heat pump system for district heating modernization

13:40 – 15:00 Lunch Break

(Restaurant C5)

15:00 – 16:10 Presentation Sessions: Advanced Materials for Energy Conversion, Storage, and Utilization

Chairman: **prof. Kun Zheng, dr Anna Niemczyk**

(Room 307 C6)

15:00 – 15:20 **Keynote lecture - Ming Chen:** Advanced Materials and System Integration for Thermal and Electrochemical Energy Conversion

15:20 – 15:35 **Invited lecture - Zhihong Du:** Advanced Solid Oxide Electrochemical Technologies for Future Energy Systems: From Green Hydrogen Production to Carbon-Neutral Fuels

15:35 - 15:50 **Invited lecture - Haibo Hu:** Design and Fabrication of MXene-Based Micro-Supercapacitors

15:50 - 16:05 **Kun Zheng:** Dynamic Interface and Lattice Defect Engineering of Perovskite Electrodes for Intermediate-Temperature Solid Oxide Cells

14:40 – 16:10 Presentation Sessions: Next-Generation Renewable Energy and Storage Technologies for the Energy Transition

Chairman: **prof. Krzysztof Sornek**

(Room 308 C6)

14:40 - 14:55 **Flaviu Mihai Frigura-Iliasa:** Voltage Assessment during Faults Occurring in the Vicinity of Photovoltaic Power Plants

14:55 - 15:10 **Aleksandra Bałys:** Assessment of the third-party access potential in the decarbonisation of the Polish district heating market: Lessons from Lithuania

15:10 - 15:25 **Erkin Jafarov:** Spatio-Temporal Complementarity of Photovoltaic Systems Across Poland

15:25 - 15:40 **Natalia Gałaś, Maciej Piofczyk:** From photovoltaic generation to battery storage: The power system of a solar racing boat

15:40 - 15:55 **Izabella Rosikoń:** In-Mold Embedding of Photovoltaic Cells in the Wings of an Unmanned Solar-Powered Aircraft

16:10 – 16:30 Coffee Break

(Hall, 3rd floor C6)

16:30 – 18.00 Presentation Sessions: Advanced Materials for Energy Conversion, Storage, and Utilization

Chairman: **prof. Kun Zheng, dr Anna Niemczyk**

(Room 307 C6)

16:30 - 16:40 **Meng'en Shao:** Cation-driven charge modulation and in-situ exsolved nanoparticles enable a self-assembled cathode for proton ceramic solid oxide cells

16:40 - 16:50 **Jakub Lach:** Designing Atmosphere-Adaptive Perovskite Nanofiber Electrodes for Symmetrical SOFCs

16:50 - 17:00 **Michał Gogacz:** Tailoring SFM-based electrodes for solid oxide cells: effects of A-site deficiency, morphology, and nickel substitution

17:00 - 17:10 **Anna Bała:** Development of numerical models for Sodium-Cooled Fast Reactors for thermal-hydraulics, neutronics, and nuclear data library preparation

17:10 - 17:20 **Panpan Zhu:** Design and Construction of Safe High-Energy-Density Zinc-Halogen Batteries

17:20 - 17:30 **Laiba Amir:** Tailoring the Structural and Electrochemical Properties of Fe-based $La_{1-x}Sr_xFe_{0.7}Co_{0.2}Ni_{0.1}O_{3-\delta}$ Perovskite Oxides as Cathode Materials for IT-SOFCs

17:30 - 17:40 **Rameez Zafar:** Morphological Enhancement of A-Site Deficient and B-Site Substituted NdBa-Based Cobalites for High Performance IT-SOC Electrodes

17:40 - 17:50 **Zihao Chen:** Redox-Induced Exsolution in Multicomponent Perovskite Electrodes for Solid Oxide Cells

16:30 – 18:00 Presentation Sessions: Next-Generation Renewable Energy and Storage Technologies for the Energy Transition

Chairman: **prof. Krzysztof Sornek**

(Room 308 C6)

16:30 - 16:45 **Mikolaj Oettingen:** Monte Carlo Simulation of Spallation Neutron Production in an Accelerator-Driven System

16:45 - 17:00 **Maksymilian Homa:** Numerical Investigation of Aluminum Metal Foam Integration in a Sand-Based Thermal Energy Storage System

17:00 - 17:15 **Kanak Kumar:** Enhanced Sustainable Production of Drop-in Fuel Precursors and High-Calorific Gas from Coal-Plastic Hybrids via Iron-dolomite Catalysed Microwave Thermochemical Conversion

17:15 - 17:30 **Stefan Ptak:** Research on the effect of solvent processing on changing the low-temperature properties of jojoba oil

8:30 – 18:00 Posters

Adam Mroziński: Physics-Informed Digital Twins for Identifying Thermodynamic Flexibility in Heat Pump and Thermal Storage Systems

Agnieszka Buczkowska-Fertała: Effect of Aluminum Content on the Phase Stability, Microstructure and Hardness of $(TiZrHfNbV)_{100-x}Al_x$ Reduced-Activation Complex Concentrated Alloys

Aleksandra Komorowska: Co-creation between Local Authorities and Grassroots Initiatives in Sustainable Transitions: Evidence from Three Polish Case Studie

Atif Khan: Critical Mineral Security and Macroeconomic Resilience after the EU Critical Raw Materials Act: A Multiple-Outcome Synthetic-Control Assessment

Barbara Tora: Identification of the parameters of a two-zone energy balance model of a solar domestic hot water storage tank subject to physical constraints, based on field operation data

Boya Fu: Nb-Modified $Li_{1.02}Ni_{0.905}Co_{0.043}Al_{0.052}O_2$ Cathode for High-Energy-Density Li-ion Cells: Development, Optimization, and Degradation Studies with Transformer Based Model

Ewelina Ksepko: Application of CO_2 and manganite mineral as oxidants in municipal solid waste gasification

Ewelina Ksepko: The influence of coal ash on the durability of titanium-containing perovskite oxygen carriers

Gabriela Grzybek: Reduction-Induced Changes in the Chemical State and Surface Dispersion of Potassium on Fe_2O_3

Helin Niu: A general metal acetate-assisted alcohol thermal strategy to fabricate flexible carbon nanofiber films for supercapacitors

Jacek Winiarski: Rare-Earth Engineering of Oxygen-Electrode Materials for Solid Oxide Cells

Jakub Grela: Enhancing Metaheuristic Energy Management Systems with Large Language Models for Smart Grid Optimization

Jakub Mokrzycki: Effect of the Si/Al ratio of zeolite ZSM-5 on the performance of Cu-based NH_3-SCR of NO catalysts derived from HKUST-1

Jakub Szczurowski: Synthesis and characterisation of carbon nanodots for CO_2 capture applications

Janusz Zyśk: PROZA: A Sectoral Econometric Model for Long-Term Energy Demand Forecasting in Poland

Kamil Misiurek: Energy data analytics for improving industrial energy efficiency

Kamil Zawadziński: Zn-modified zeolites with different topologies for catalytic cracking of polypropylene

Katarzyna Kapusta: Nanomaterials as Additives Supporting Biogas Production: Effects on Microorganisms Involved in Anaerobic Digestion

Krzysztof Sornek: Experimental Assessment of Micro-Wind Turbine Performance under Urban Operating Conditions

Majid Rafi: Beyond Typical Weather: Assessing Residential HVAC Capacity Adequacy During Historical and Future Heatwaves Across Climate Zones

Marcin Pluta: Long-Term Transformation of Energy Demand in Poland's Service Sector to 2050

Marek Inger: Application of Design of Experiments (DoE) to methanation process design

Mariia Bordulenko: Influence of Alkali Species on the Work Function of Cobalt Materials: Combined Experimental and Theoretical Insights

Michał Rybiński: Forecasting prices for balancing services in the Balancing Market in Poland

Oluwapelumi John Oluwalana: Cradle-to-Gate Life Cycle Assessment of a Multi-Fibre Composite Battery Housing System for a Solar Electric Vehicle: Environmental Hotspot Analysis and Eco-Design Implications

Oskar Antonik: Benchmarking Local Energy Market Mechanisms in a Virtual Power Plant

Piotr Dzierwa: Improving the Energy Efficiency of Natural Gas-Fired Cogeneration Systems: Energy and Economic Assessment

Piotr Legutko: Mn-Co-Cu-doped potassium silicate glass as a catalyst for simultaneous combustion of soot and ethylene

Przemysław Grzelczyk: Socioeconomic Factors Affecting the Absorption of Grants from the "My Electricity" Program in Polish Municipalities

Tomasz Polczyk: Utilisation of cenospheres as support for CuO- and ZnO-based catalysts for redox processes of environmental importance

Yanxin Wang: Entropy- and Thermal-Driven Control of Local Structure in Disordered Rock Salt Cathodes

19:00 – 23:00 **Conference Networking Bowling Evening**

(Hala Centralna, Forum, Krakow)

Thursday

= 19th November 2026 =

8:30 – 18.00 **Badge Pick-Up and Registration**

(Hall, 3rd floor C6)

8:30 – 9:30 **Poster setup**

(Hall, 3rd floor C6)

9:00 – 10:00 **Plenary Lecture**

Prof. Barbara Kasprzyk-Hordern: From Wastewater to Public Health: Harnessing Water-Based Epidemiology for Community and Environmental Health Surveillance

Prof. Andre Prevot: Contribution of Combustion to Ambient Particles in Different Parts of the World

(Room 307-308 C6)

10:00 – 11:30 **Sponsors**

(307-308 C6)

10:00 – 10:15 **Marek Berliński:** Development and Demonstration of an Intelligent Cooling System for Blast Furnace Co ling Circuit Integration and Increased Operational Reliability

10:15 – 10:30 **Michał Kocot:** Innovative two-stage blast furnace gas cleaning technology implemented at Blast Furnace no 2 in ArcelorMittal Poland Dąbrowa Górnicza plant.

10:30 – 10:45 **Kozanecki Michał:** Doskonalenie kompetencji ORLEN S.A. w obszarze paliw syntetycznych poprzez rozwój modeli symulacyjnych i współpracę nauki z biznesem

10:45 – 11:00 **Łukasz Pawlik:** From Storage to Energy Management. Integrated Greencell energy ecosystem

11:00 – 11:00 **Andrzej Żero** (PSG)

11:30 – 11:50 **Coffee Break**

(Hall, 3rd floor C6)

11:50 – 13:20 **Presentation Sessions: Hydrogen Energy Session**

Chairman: **prof. Magdalena Dudek**

(Room 308 C6)

11:50 - 12:05 **Arnoud Higler,** Exergy Analysis of Hydrogen Supply Chains: Methods, Applications and a Framework for Consistent Assessment

12:05 – 12:20 **Tomasz Chmielniak**, Emission intensity of hydrogen production by methane pyrolysis and steam methane reforming

12:20 - 12:35 **Natalia Dulęba,** Modeling of syngas production from biomass gasification using Aspen Plus

12:35 – 12:50 **Manal Al-Shafi:** HAZOP-Based Qualitative and Semi-Quantitative Risk Assessment for Underground Hydrogen Storage (UHS) in Depleted Oil and Gas Reservoirs

12:50 – 13:05 **Marcin Moszczak**; Electrospinning: Advanced Nanofiber Production

13:05 – 13:20 **Mateusz Ścigaj**; Research Tools for Energy Materials and Fuel Emissions

11:50 – 13:50 **Presentation Sessions: Environment, Emissions and Pollution Control in the Era of Energy Transition and Circular Economy**

Chairman: prof. **Katarzyna Styszko**

(Room 307 C6)

11:50 - 12:05 **Andrzej Adamski**: Ammonia content as one of the important parameters determining pathways for the efficient valorization of fly ashes from the energy sector

12:05 – 12:20 **Povilas Telešius**: Circular Economy in Cementitious Systems: Valorization of Phosphogypsum and Slag in Low-Carbon Alkali-Activated Binders for Winter Decarbonized Construction

12:20 - 12:35 **Aleksandra Hudek-Pietras**: From Marine Plastic Inventories to Valorisation Feedstock: Assessing the MPW Resource Base within the CUPOLA Project

12:35 – 12:50 **Malgorzata Zimowska**: Defect-Driven CO_2 Capture by Hydrotalcite-Derived Sorbents: Linking Surface Basicity with CO_2 Activation

12:50 – 13:05 **Dorota Makowska**: Pyrolysis of Wastewater Sludges: Yield and Composition Differences Between Municipal and Industrial Feedstocks

13:05 – 13:20 **Małgorzata Cierpińska**: Pyrolysis of Oxidized Bitumen Residue: Preliminary Investigation of Gas and Solid Products

13:20 – 13:35 **Michał Rejdak**: Hybrid Bio-Coke: A Route Towards Renewable Carbon Use for Blast Furnace Ironmaking

13:35 – 13:50 **Anna Jarosz-Kozyro**: Life Prediction and Degradation Diagnostics of Power System Equipment

13:20 – 14:40 **Lunch Break**

(Restaurant C5)

14:20 – 15:50 **Presentation Sessions: Hydrogen Energy Session**

Chairman: **prof. Magdalena Dudek**

(Room 308 C6)

14:20 - 14:35 **Andrzej Budziak**: Tuning Hydrogen Sorption in $La_{1-x}Tb_xNi_{5-\gamma}Sn_\gamma$ Intermetallics: Effects of Tb and Sn Substitution on Structure and Storage Properties

14:35 - 14:50 **Monika Piech:** Impact of NaCl Contamination on the Durability and Performance of Reversible PEM Fuel Cells

14:50 - 15:05 **Maciej Siekierski;** Non-Euclidean Metrics of Similarity Applicable to Semi-Automated Analysis of Multicomponent Immittance Spectra of Electroactive Materials and Processes

15:05 - 15:20 **Szymon Wieteska,** Influence of PEM Electrolyzer Sizing and Part-Load Operation on Green Hydrogen Production from Residential PV Surplus

15:20 - 15:35 **Jacek Kowalczyk,** Comparison of model-less and model-based approaches to multi-phenomena immittance data

14:40 – 16:10 **Presentation Sessions: Environment, Emissions and Pollution Control in the Era of Energy Transition and Circular Economy**

Chairman: prof. **Katarzyna Styszko**

(Room 307 C6)

14:40 - 14:55 **Anna Korzeniewska**: Real-world emissions from Polish waste-to-energy plants in the context of evolving EU regulatory requirements

14:55 - 15:10 **Rosa Rego**: Biopolymer-based hydrogel electrolytes for energy-efficient smart windows

15:10 - 15:25 **Lucyna Samek**: Sustainable Urban Air Quality Monitoring: Determination of Equivalent Black Carbon Concentrations and Mass Absorption Cross Sections (MAC) Using Multi-Wavelength Absorption Black Carbon Instrument (MABI) in Athens and Krakow

15:25 - 15:40 **Rakshit Jakhar**: Effects of Europe's Energy Transition on Temporal and Interannual Variability in Equivalent Black Carbon (eBC) in Kraków, Poland

15:40- 16:55 **Laura Węgrzyn**: Methodology of determination of hydroxyl derivatives of PAHs by LC-MS

16:55 - 16:10 **Zuzanna Prus-Frączek**: Occurrence and Phase Distribution of selected OH-PAHs in Municipal Wastewater Treatment Plants

15:50 – 16:30 **Coffee Break**

(Hall, 3rd floor C6)

16:30 – 18:00 **Presentation Sessions: Students and PhD Students Session**

Chairman: **prof. Tadeusz Dziok**

(Room 307 C5)

16:30 - 16:45 **Dominika Książek:** The promotional effect of ceria on Ni/SBA-15 catalysts prepared by the solid-state grinding for CO_2 methanation

16:45 - 17:00 **Tomasz Piechówka:** Application of bentonite as a support for hydrotalcite-derived Ni-Ce-Ca catalysts for CO_2 methanation

17:00 - 17:15 **Michał Szymaszek:** Effect of Cerium and Lanthanum Addition on Vermiculite-Supported Nickel Catalysts for CO2 Methanation

17:15 - 17:30 **Patryk Garnek, Mikołaj Rzepka:** Weather-related price patterns in the Polish electricity market

17:30 - 17:45 **Jakub Dworczyk, Mikołaj Woźny:** 1D transient heat transfer model for inverese thermal conductivity retrieval for porous materials

17:45 - 18:00 **Kamil Michalski:** Electrochemical performance and intercalation mechanism of Prussian Blue Analogues for Na-ion cells

9:00 – 18:00 Posters

Aleksander Pizoń, Development of a Modular Dual-Atmosphere High-Temperature Electrochemical Furnace Insert

Aleksander Piasecki: Temporal Spectral Analysis in Electrochemistry

Aleksandra Chwała, Modular Reactor for Direct and Indirect Electrolysis Manufactured Using 3D Printing: From Dimensional Prototyping with Cost-Effective PETG to a Leak-Tight ABS Process Reactor

Alicja Barczyk: Assessment of Selected Valuable and Critical Elements in Metallurgical Wastes

Anna Korzeniewska: Waste-to-Energy Plants under Evolving Environmental and Climate Requirements: From Emission Control to Climate Neutrality

Anna Nowak: Photo-oxidative aging of plastics in indoor environments: chemical emissions and markers of polymer degradation in airborne particulette matter

Dominika Uchmanowicz: Spatiotemporal assessment of PM_{10} oxidative potential at traffic-influenced and urban background sites in Kraków

Elżbieta Vogt: Flow properties of hydrophobized fine particulate sorbents

Grzegorz Jodłowski: Hybrid type biosorbents - formulation and preparation

Jakub Cebo: Experimental investigation of fuel-cell waste heat recovery for thermal management of a metal-hydride hydrogen storage cylinder

Jakub Mokrzycki: Synthesis of GIS and LTA zeolites from fly ash and their application as adsorbents of phosphate ions from aqueous solutions

Julia Sobalska: Zn Sites in Zeolites During CH4 and CO2 Transformation – How the Zeolite Matrix Shapes the Catalytic Activity

Justyna Pyssa: How human activity on long weekends affect air pollution with fine particulate matter (PM1 and PM2.5) in the coastal zone of the Baltic Sea (Gdynia case study)?

Justyna Pyssa: Variability of hydroxylated polycyclic aromatic hydrocarbons (OH-PAHs) in raw and treated municipal wastewater

Kamal Razak: Integrating Environmental Emissions and Pollution Control into Ghana's Mining Sector: Pathways to a Circular Economy and Sustainable Energy Transition

Karolina Cwynar: Analysis of concentrations and environmental mass loads of hydroxylated polycyclic aromatic hydrocarbons (OH-PAHs) in municipal wastewater

Karolina Kolarz: Assessment of Sewage-Sludge-Derived Biochars for Mercury Removal from Coal Flue Gas

Laura Węgrzyn: Influence of Oxidative Modification of Activated Carbon on the Removal of Organic Micropollutants from Water

Lyudmila Slobodkina: Chemical Valorisation of Polyamide–Elastane Textiles through Alkaline Glycol Solvolysis

Łukasz Korzeniowski: From microscale pyrolysis characterisation to Aspen Plus process modelling: Preliminary pilot-scale assessment of fuel-range hydrocarbon separation and recovery from polypropylene waste

Maciej Kulawik: Modernization of the Drivetrain for the "Zephyr AGH" Hybrid Vehicle

Magdalena Dudek, Contemporary trends of using hydrogen as an energy storage and carrier in the development of sustainable railway transport

Marcelina Bury: Fibre-dependent thermal decomposition behaviour of textile materials

Michał Wojtasik, Methane Pyrolysis as an Alternative Source of Hydrogen

Andrzej Raźniak Numerical and experimental studies on the limitations of cold starting an anion-exchange membrane electrolyser and the optimization of green hydrogen production in an off-grid system

Oliwia Rogala: Dynamic Iron Sites in Ferrierite During CO_2 and CH_4 Conversion

Olushola Olapade: Estimation of Diffuse Solar Radiation Using a Machine Learning Approach

Patrycja Rzeszut: Material Requirements of the Polish Power Sector Transition: Linking Electricity Demand and Energy System Models

Patrycja Zawiślak: Iron(III)–ligand complexes as activators of peracetic acid in advanced oxidation processes.

Piotr Soprych: Study on the steam gasification of chars from the pyrolysis of polyester, cotton and their mixtures

Piotr Plata: From Fabric to Fuel: Pyrolysis and Co-Pyrolysis-Based Valorization of Textile Waste — Energy Properties versus Ecotoxicological Risk

Radosław Wójcik: Heavy industry waste as an alternative means of supporting fire and rescue actions

Tomasz Bury; Influence of accident-tolerant fuel cladding concepts on hydrogen accumulation and mitigation in PWR containments: a reduced-order screening assessment

Wiktor Piekarski, Modeling of electrochemical processes occurring in porous materials by means of a TLM based impedance model

19:00 – 23:00 **Conference Gala Dinner**

(Czeczotka Restaurant, Main Market Square, Krakow)

Friday

= 20th November 2026 =

9:00 – 9:30	**Badge Pick-Up and Registration** (Hall, 3rd floor C6)
9:30 – 10:00	**Plenary Lecture** **Prof. Veronica Bermudez: Natural Materials Powering Tomorrow's Buildings** (Room 307-308 C6)
9:30 – 11:00	**Microsymposium [in Polish]** Chairman: prof. **Piotr Burmistrz** (Room 320 B3)

Presentation of current achievements and discussions between representatives of science and industry on development directions in the use of pyrolysis and gasification processes are key topics of the event.

10:00 – 12:30	**Presentation Sessions: 30th Anniversary of the Department of Sustainable Energy Development [in Polish]** Chairman: **prof. Tadeusz Olkuski** (Room 307-308 C6)

The history of the Department of Sustainable Energy Development began in 1995. At that time, a group of faculty members, primarily from the Institute of Mineral Resources and Energy of the Polish Academy of Sciences, established the Department of Energy Policy, headed by Professor Roman Ney. At the same time, the Department of Energy Utilization was also established, headed by Professor Adam Guła, who headed the Foundation for Efficient Energy Utilization. These departments formally began teaching at the then Faculty of Fuels and Energy in October 1996. In 2007, the Department merged to form the current Department of Sustainable Energy Development. As we celebrate the 30th anniversary of the department, it is worth recalling its origins and the outstanding scientists who contributed to its achievements.

12:30 – 13:00	**Coffee & Poster Break/ Networking** (Hall, 3rd floor C6)
13:00 – 13:30	**Closing Ceremony** (Room 307-308 C6)
13:30 – 14:30	**Lunch Break** (Restaurant C5)
18:00 – 21:00	**Conference Concert Evening*** (Klub Studio, Krakow) ** For participants who have confirmed their attendance at the concert*