

Room 2.08 R.7: Low grade energy utilisation Session Chair: Cheng-Liang Chen	
9:00 – 9:30	Session Keynote Speaker Organic Rankine Cycle for Waste Heat Recovery in Refinery Industry Cheng-Liang Chen, National Taiwan University, Taipei, Taiwan
9:30 – 9:50	Sulphur removal from waste tyre-derived oil and enhanced ethylbenzene formation over Ni catalyst supported on MCM-41 Witsarut Namchot, Center of Excellence on Petrochemical and Materials Technology, Bangkok, Thailand
9:50 – 10:10	Identification of nitrogen compounds in tyre-derived oil using powerful GCxGC-TOF/MS for better analysis Supattra Seng-eiad, Chulalongkorn University, Bangkok, Thailand
10:10 – 10:30	Thermal Energy Harvesting Based on Metamagnetic Shape Memory Alloys Marcel Gueltig, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
10:30 – 11:00	Coffee Break
Room 2.08 R.8: Wind energy Session Chair: Stefan Emeis	
11:00 – 11:30	Session Keynote Speaker Meteorological aspects of wind energy conversion Stefan Emeis, Karlsruhe Institute of Technology, Garmisch-Partenkirchen, Germany
11:30 – 11:50	Redesign of wind turbines based on LiDAR technology, is it worth it? – A discussion based on a simple model for the tower's initial costs Thorsten Beuth, Karlsruhe Institute of Technology, Karlsruhe, Germany
11:50 – 12:10	Overview of Advanced Control Design for Optimal Wind Turbine Operation Bastian Ritter, Industrial Science GmbH, Darmstadt, Germany
12:10 – 12:30	Fault-Tolerant and Reliable Design of a Pumping Kite Power System Felix Friedl, Delft University of Technology, Delft, The Netherlands

	Clubraum E.7a: Fossil fuel power plants Session Chair: Hans-Jörg Bauer	Hebel-Saal E.7b: Energy efficient magnetic materials Session Chair: Elisabetta Agostinelli
9:00 – 9:30	Session Keynote Speaker AG Turbo – Joint Turbo Machinery Research to support the German Energiewende Dirk Goldschmidt, Siemens AG, Mülheim an der Ruhr, Germany	Session Keynote Speaker Re-thinking rare earths: Demand, sustainability and the reality of alternatives in magnetic materials Oliver Gutfleisch, TU Darmstadt, Darmstadt, Germany
9:30 – 9:50	Co-Combustion of Biomass in Pulverized Fuel Boilers Hans-Joachim Gehrman, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	Exploring the magnetic properties of ferrite nanoparticles for the development of rare-earth-free permanent magnet Claudio Sangregorio, CNR-ICCOM Firenze, Florence, Italy

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9:50 – 10:10	Materials for Advanced Ultra-Supercritical Fossil Power Plants: Materials Properties, Microstructure and Component Behaviour Magdalena Speicher, University of Stuttgart, Stuttgart, Germany	Magnetocaloric effect in Ni-Fe-Ga-Nd Heusler alloys Felicia Tolea, National Institute of Materials Physics, Bucharest, Romania
10:10 – 10:30	Heat Transfer during Depressurization of Supercritical Steam Thomas Schulenberg, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	Magnetic shape memory materials for energy applications Franca Albertini, CNR-IMEM, Parma, Italy
Thoma-Saal E.7c: Efficiency in transport & mobility Session Chair: Thomas Koch		
9:00 – 9:30	Session Keynote Speaker Pathway to Sustainable Energy Supply in Mobility Kurt Kirsten, APL Automobil-Prüftechnik Landau GmbH, Landau, Germany	
9:30 – 9:50	Alternative Fuels in Euro VI Heavy Duty Applications Olaf Röhl, Daimler AG, Stuttgart, Germany	
9:50 – 10:10	Energy consumption of BEVs in intensive use – Expanding theoretical models based on empirical data Maximilian Schücking, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	
10:10 – 10:30	Solid-State Microengines for Unmanned Aerial Vehicles Ankita Ghoshal, Reebeez Inc., Austin, USA	
10:30 – 11:00	Coffee Break	
Clubraum E.8a: Fusion power Session Chair: Friedrich Wagner		
Hebel-Saal E.8b: Thermoelectrics Session Chair: Anke Weidenkaff		
11:00 – 11:30	Session Keynote Speaker The JET programme in support of ITER and the plans for DT operation Lorne Horton, EUROfusion, Oxfordshire, United Kingdom	Session Keynote Speaker State of the art, opportunities and challenges for thermoelectricity as competitive renewable energy source Gilles Dennler, IMRA Europe, Sophia Antipolis, France
11:30 – 11:50	Improved energy confinement in tokamaks Yves Martin, EPFL, Lausanne, Switzerland	Characterisation Method for Thermoelectric Power Modules Ernst Höftberger, BIOENERGY 2020+ GmbH, Graz, Austria
11:50 – 12:10	Thermal Energy Storage System Proposal for DEMO Fusion Power Plant Evaldas Bubelis, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	Direct energy conversion for concentrating solar power using AMTEC clusters Alexandru Onea, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
12:10 – 12:30	Relativistic Fluid Dynamics for Modelling Inertial Confinement Fusion Laszlo Csernai, University of Bergen, Bergen, Norway	Toward Improved Chalcogenides Based Thermoelectric Modules for Renewable Energy Applications Hazan Eden, Ben-Gurion University of the Negev, Beer-Sheva, Israel

	Mombert-Saal S.7a: Carbon Capture and Storage/Carbon Sequestration Session Chair: Frank Schilling	Weinbrenner-Saal S.7b: Chemical energy storage and synthetic fuels Session Chair: Georg Schaub
9:00 – 9:30	Session Keynote Speaker Development of Carbon Capture Technologies with highest energy efficiency Bernd Epple, TU Darmstadt, Darmstadt, Germany	Session Keynote Speaker: Improvement of Fischer-Tropsch Synthesis through Structuring on Different Scales Thomas Turek, Clausthal University of Technology, Clausthal-Zellerfeld, Germany
9:30 – 9:50	The Indirectly Heated Carbonate Looping Process for CO₂ Capture Daniel Hoefftberger, University of Erlangen-Nuremberg, Nuremberg, Germany	Analysis of Fixed Bed Reactors for Flexible Fuel Synthesis Operation María Iglesias Gonzalez, Karlsruhe Institute of Technology, Karlsruhe, Germany
9:50 – 10:10	Ionic Liquids as Purification Media for Biogas Thomas Schubert, IOLITEC Ionic Liquids Technologies GmbH, Heilbronn, Germany	Concepts to utilize renewable power in chemical production Julia Riese, Ruhr-University Bochum, Bochum, Germany
10:10 – 10:30	N.N.	Conceptual Design of Ammonia-Based Energy Storage and its Dynamic Considerations Ganzhou Wang, RWTH Aachen University, Aachen, Germany
10:30 – 11:00	Coffee Break	
	Mombert-Saal S.8a: Mechanical storage of electric power Session Chair: Ulrich Platt	Weinbrenner-Saal S.8b: Chemical energy storage and synthetic fuels Session Chair: Georg Schaub
11:00 – 11:30	Session Keynote Speaker Thermodynamics and technical feasibility of CAES-TES systems Adriano Milazzo, University of Florence, Florence, Italy	Session Keynote Speaker Storage of Electrical Energy by Liquid Hydrocarbons Andreas Jess, University Bayreuth, Bayreuth, Germany
11:30 – 11:50	A flywheel energy storage system using reluctance clutch and standard drive Iason Vittorias, Siemens AG, Munich, Germany	Container plants for generation of sustainable liquid fuels made by ineraTec Peter Pfeifer, ineraTec, Eggenstein-Leopoldshafen, Germany
11:50 – 12:10	Successful energy transition in Germany by pumped storage expansion Klaus Krüger, Voith Hydro Holding, Heidenheim, Germany	Nitrogen-Based Alternative Fuel Alon Grinberg Dana, Technion – Israel Institute of Technology, Haifa, Israel
12:10 – 12:30	Modelling of mechanical storage systems Ulrich Platt, University of Heidelberg, Heidelberg, Germany	CO₂ Activation and Conversion into CO via Chemical Looping Marcus Wenzel, Max-Planck-Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany

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Thoma-Saal S.8c: ICT for controlling infrastructures Session Chair: Veit Hagenmeyer	
11:00 – 11:30	Session Keynote Speaker Information and Communication Technology in Energy Lab 2.0 Veit Hagenmeyer, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
11:30 – 11:50	The Challenges of Securing the Smart Grid Lucie Langer, AIT Austrian Institute of Technology GmbH, Vienna, Austria
11:50 – 12:10	Evaluation of the Interoperability Score in the Smart Grid domain Marie van Amelsvoort, OFFIS – Institute for Information Technology, Oldenburg, Germany
12:10 – 12:30	Cyber-Physical Systems in Energy Simulation Francisco Marzabal, European Institute For Energy Research, Karlsruhe, Germany

12:30 – 13:15	Panel Discussion (Weinbrenner-Saal)
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13:15 – 14:00	Lunch
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14:00 – 16:00	Excursions
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Excursion 1.1.	Renewable Energy I – Biomass and Solar thermal technology High-quality fuels from Residual Biomass – The bioliq® pilot plant at Karlsruhe Institute of Technology (KIT) bioliq® Liquid metals as heat transfer fluids for next generation CSP plants SOMMER
Excursion 1.2.	Renewable Energy II – Hydrothermal Carbonisation Hydrothermal Carbonisation AVA-CO2
Excursion 2.1.	Energy Efficiency I – Processing in Industry Energy efficient production of profile systems aluplast GmbH
Excursion 2.2.	Energy Efficiency II – Buildings The most recent passive house in Karlsruhe Kreativpark
Excursion 3.1.	Systems, Storage & Grids I – Smart Buildings The living and working environment of the 21st century FZI Living Lab smartEnergy/Energy Smart Home Lab
Excursion 3.2.	Systems, Storage & Grids II – Electrochemical storages Fraunhofer Institute for Chemical Technology – Electrochemistry Department Fraunhofer ICT