

Programme | Wednesday, May 20th

	Weinbrenner-Saal S.1: Electrochemical energy storage Session Chair: Horst Hahn/Kristina Edström
13:00 – 13:30	Session Keynote Speaker: Facile Synthesis of Carbon-Metal Fluoride Nanocomposites for Lithium Batteries Anji Reddy Munnangi, Helmholtz Institute Ulm, Ulm, Germany
13:30 – 13:50	Graphene oxide based synthesis of a high energy FeF₃·0.33H₂O/rGO cathode for Li-ion batteries Alexander Pohl, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
13:50 – 14:10	Modeling Thermal Runaway Of Li-Ion Batteries - A Mathematical Ansatz Andreas Melcher, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
14:10 – 14:30	Table-driven Li-Ion Battery Cell Model for a BMS Development Platform Matthias Gulbins, Fraunhofer-Institute Integrated Circuits IIS/EAS, Dresden, Germany
14:30 – 14:50	In situ investigation of gases evolving in LiNi_{0.5}Mn_{1.5}O₄/graphite full-cells Barbara Michalak, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
14:50 – 15:10	Electrochemical characteristics of LaY₂Ni₉ alloy at different discharge rates Yassine Ben Belgacem, University of Tunis, Tunis, Tunisia
15:10 – 15:30	Primary frequency control by using a 1 MW battery: study at grid scale on the Concept Grid EDF platform Benoît Puluhen, EDF, Moret-sur-Loing Cedex, France

15:30 – 16:00	Coffee Break
	Weinbrenner-Saal S.2: Electrochemical energy storage Session Chair: Horst Hahn/Kristina Edström
16:00 – 16:30	High Capacity Si-Carbon Composite for Li-Ion Battery Anode Synthesized by Self-Regulated Microwave Heating Process Nai-Hsuan Yang, National Taiwan University, Taipei, Taiwan
16:30 – 16:50	Thermal material properties of Li-ion batteries André Loges, Karlsruhe Institute of Technology, Karlsruhe, Germany
16:50 – 17:10	New advances in room-temperature fluoride ion batteries Fabienne Gschwind, Helmholtz Institute Ulm, Ulm, Germany
17:10 – 17:30	Effect of modified graphene oxide on high-voltage cathode materials for high energy lithium-ion batteries Francesca De Giorgio, University of Bologna, Bologna, Italy
17:30 – 17:50	Electrochemical Investigation of VOCl for the Rechargeable Chloride Ion Batteries Ping Gao, Helmholtz Institute Ulm, Ulm, Germany
17:50 – 18:10	Local structure and Transport in Ionic Liquid-based Electrolytes for Magnesium Batteries Guinevere Giffin, Helmholtz Institute Ulm, Ulm, Germany
18:10 – 18:30	Efficiency Evaluation of Electrochemical Storage Systems Johannes Kathan, AIT Austrian Institute of Technology GmbH, Vienna, Austria

	Poster Session including Best Poster Award
18:30	Foyer (with snacks & drinks)

8:00 – 8:30	Welcome Coffee
	Weinbrenner-Saal
8:30 – 9:00	<p>Plenary Lecture</p> <p>Decarbonizing the global energy system: insights from the new IPCC Report Prof. Dr. Thomas Bruckner, Chair for Energy Management and Sustainability, Director of the Institute for Infrastructure and Resources Management (IIRM), Faculty of Economics and Management, University of Leipzig, Leipzig, Germany; Head of the Department for Sustainability Management and Infrastructure Economy, Fraunhofer MOEZ, Leipzig, Member of the Intergovernmental Panel on Climate Change</p>

	<p>Thoma-Saal</p> <p>R.3: Biomass and biomass conversion technologies Session Chair: Daniela Thrän</p>
9:00 – 9:30	<p>Session Keynote Speaker Syngas as Platform from Sustainable Feedstocks to Fuels Jörg Sauer, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany</p>
9:30 – 9:50	<p>Materials development against hot corrosion in biomass gasification facilities Uwe Gaitzsch, Fraunhofer IFAM, Dresden, Germany</p>
9:50 – 10:10	<p>Processing and Atomization of Complex Fluids for Entrained Flow Gasification Application Alexander Sänger, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany</p>
10:10 – 10:30	<p>HTHP Syngas Cleaning at bioliq® BTL Process Commissioning and First Results Robert Mai, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany</p>
10:30 – 10:50	<p>Doubling of synthetic biofuel production via hydrogen from renewable electricity Ilkka Hannula, Technical Research Centre of Finland, Espoo, Finland</p>
10:50 – 11:20	Coffee Break
	<p>Thoma-Saal</p> <p>R.4: Biomass and biomass conversion technologies Session Chair: Daniela Thrän</p>
11:20 – 11:50	<p>Session Keynote Speaker: EU wide overview of biomass potentials Berien Elbersen, Alterra Wageningen UR, Wageningen, Netherlands</p>
11:50 – 12:10	<p>Projecting environmental benefits and drawbacks of short rotation coppice-based energy production strategies Benedetto Rugani, Luxembourg Institute of Science and Technology, Esch-sur-Alzette, Luxembourg</p>
12:10 – 12:30	<p>Ultra-low emission wood combustion by seamless adaptation of an electrostatic precipitator to a modern grate boiler Hanns-R. Paur, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany</p>
12:30 – 12:50	<p>Efficient measures of bioenergy powered CHP Diana Pfeiffer, DBFZ Deutsches Biomasseforschungszentrum gGmbH, Leipzig, Germany</p>
12:50 – 13:10	<p>Economic and ecological evaluation of biogas plant configurations for flexible power generation Henning Hahn, Fraunhofer IWES, Kassel, Germany</p>
13:10 – 14:30	Lunch

	Thoma-Saal R.5: Biomass and biomass conversion technologies Session Chair: Daniela Thrän
14:30 – 15:00	Final results of the SECTOR project: Production of Solid Sustainable Energy Carriers from Biomass by Means of Torrefaction Kay Schaubach, DBFZ Deutsches Biomasseforschungszentrum gGmbH, Leipzig, Germany
15:00 – 15:20	BIO-GO: Conversion of Bio Gas and Pyrolysis Oil to Synthetic Fuels Gunther Kolb, Fraunhofer ICT-IMM, Mainz, Germany
15:20 – 15:40	Green Production of High Cost Solvents from Bio-Ethanol Using Alumina and Metallic Co-doped Al₂O₃ catalyst Bandith Chokcharoenchai, Chulalongkorn University, Bangkok, Thailand
15:40 – 16:00	Production of hydrogen from biomass via gasification in supercritical water Nikolaos Boukis, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
16:00 – 16:20	N.N.
16:20 – 16:50	Coffee Break
	Thoma-Saal R.6: Water Session Chair: Klaus Krüger
16:50 – 17:20	Session Keynote Speaker Hydropower – renewable and sustainable electricity generation with fast response times Stefan Riedelbauch, University of Stuttgart, Stuttgart, Germany
17:20 – 17:40	A Study of Ocean Kinetic Energy Harvester using Graphene-Based Ionic Polymer Metal Composite Hyung-Man Kim, Jungkoo Lee, Kyungcheol Kim, INJE University, Gimhae-si, Republic of Korea
17:40 – 18:00	Hollow-Hub Turbine for Run-of-the-river Small Hydropower David Volk, TU Darmstadt, Darmstadt, Germany
18:00 – 18:20	Energy Storage through Synchronous Hydropeaking Function for Cascaded Run-of-River Power Plants Arnaud Koehl, EDF Hydro Engineering Center, Le Bourget-du-Lac, France
18:20 – 18:40	Experimental Validation of an Analytic Approach to Optimization of a Tidal Turbine Fence Manuel Metzler, TU Darmstadt, Darmstadt, Germany



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Wherever we live, and whatever activities we undertake, energy plays a fundamental role in today's world. Lot of research work still needs to be done to develop energy sectors which best meet the needs of citizens and European economy, whilst minimising damage to our environment. Chemistry plays an important role in this. “

Nineta H. Majcen

General Secretary, European Association for Chemical and Molecular Sciences, EuCheMS, Brussels, Belgium

	Clubraum E.3: Efficiency in cooling and heating Session Chair: Ursula Eicker
9:00 – 9:30	Session Keynote Speaker Renewable energy systems in urban areas Ursula Eicker, University of Applied Sciences Stuttgart, Stuttgart, Germany
9:30 – 9:50	Refrigeration Plants with Trapezoid Cycles Michael Löffler, European Institute for Energy Research, Karlsruhe, Germany
9:50 – 10:10	Investigations of thermal parameters addressed to a building simulation model Christian Brembilla, Umeå University, Umeå, Sweden
10:10 – 10:30	Heat Exchanger Design Analysis for the Energy Reduction of a Household Air-Conditioning System Alex Magdanz, ITI GmbH, Dresden, Germany
10:30 – 10:50	Energy and Efficiency Breakthrough Innovations Bruno Michel, IBM Research, Rüschlikon, Switzerland
10:50 – 11:20	Coffee Break
	Clubraum E.4: Efficiency in cooling and heating Session Chair: Ursula Eicker
11:20 – 11:50	Plus-Energy School Campus: Comparison of Supply Concepts Peter Engelmann, Fraunhofer Institute for Solar Energy Systems, Freiburg, Germany
11:50 – 12:10	Numerical and experimental analysis on thermal behaviour of refrigerated chamber's envelope incorporated with Phase Change Materials (PCMs) Benedetta Copertaro, Università Politecnica delle Marche, Ancona, Italy
12:10 – 12:30	TOR – Towards the Energetically Optimal Ventilation System Christian Schänzle, TU Darmstadt, Darmstadt, Germany
12:30 – 12:50	Adsorption air-conditioning of an electric bus – challenges in tailoring the ideal adsorbent material Swantje Maaz, RWTH Aachen University, Aachen, Germany
12:50 – 13:10	Energy Efficiency in Buildings – Results and Experiences from the German Research Programme „Energy Optimized Buildings (EnOB)“ Andreas Wagner, Karlsruhe Institute of Technology, Karlsruhe, Germany
13:10 – 14:30	Lunch

	Clubraum E.5a: Energy efficient buildings and districts Session Chair: Andreas Wagner	Room 2.08 E.5b: Fuel cells Session Chair: Robert Slade
14:30 – 15:00	Session Keynote Speaker Long term perspectives for low-carbon heating and colling technologies Hans-Martin Henning, Fraunhofer Institute for Solar Energy Systems, Freiburg, Germany	Session Keynote Speaker Material improvements enabling larger scale liquid fed fuel cells Jens Tübke, Fraunhofer Institute for Chemical Technology ICT, Pfinztal, Germany
15:00 – 15:20	Towards Energy Efficiency Solutions and Low Carbon Economy in Urban Areas: The Sustainable Urban Model (SUMO) Toolkit Nicolas Dr. Moussiopoulos, Karlsruhe Institute of Technology, Karlsruhe, Germany	Solid Oxide Cells – Development Status at Forschungszentrum Jülich Norbert Menzler, Forschungszentrum Jülich GmbH, Jülich, Germany
15:20 – 15:40	Hardware-in-the-Loop environment for design and test of energy-efficient room automation systems in buildings Alexander Adlhoch, Biberach University of Applied Sciences, Biberach, Germany	Think Different! Carbon Corrosion Mitigation Strategy in High Temperature PEFCs – A Durability Study Tom Engl, Paul Scherrer Institut, Villigen, Switzerland
15:40 – 16:00	Modelling distributed mCHP-systems in German residential applications and their potential to integrate the gas and power grids Praseeth Prabhakaran, Karlsruhe Institute of Technology, Karlsruhe, Germany	A 2D modeling study of PEM fuel cell durability in a virtual car under catalyst degradation Manik Mayur, Offenburg University of Applied Sciences, Offenburg, Germany
16:00 – 16:20	Analysis of the Thermal & Photovoltaic Performance of a Nano-Solar Skin Module Mona Azarbayjani, University of North Carolina at Charlotte, Charlotte, USA	Challenges facing the future implementation of Solid Polymer Fuel Cells and Electrolysers Robert Slade, University of Surrey, Guildford, United Kingdom
16:20 – 16:50	Coffee Break	
	Clubraum E.6: Energy efficient buildings and districts Session Chair: Andreas Wagner	
16:50 – 17:20	Session Keynote Speaker Grid interaction of buildings – analysis and operation Sebastian Herkel, Fraunhofer Institute for Solar Energy Systems, Freiburg, Germany	
17:20 – 17:40	Spatial and multi-energy modelling integrated into district urban planning at master plan phase Jean-Marie Bahu, European Institute for Energy Research, Karlsruhe, Germany	
17:40 – 18:00	A software platform to help Singapore to build a more smart and sustainable city Alberto Pasanisi, European Institute for Energy Research, Karlsruhe, Germany	
18:00 – 18:20	Energy efficiency of buildings – the aspect of embodied impacts Thomas Lützkendorf, Karlsruhe Institute of Technology, Karlsruhe, Germany	
18:20 – 18:40	Business and Technical Concepts for Deep Energy Retrofit Rüdiger Lohse, KEA Climate Protection and Energy Agency of Baden-Württemberg, Karlsruhe, Germany	

	Weinbrenner-Saal S.3a: Electrochemical energy storage Session Chair: Horst Hahn/Kristina Edström	Mombert-Saal S.3b: Hydrogen Session Chair: Jordi Llorca
9:00 – 9:30	Rutile-TiO₂ core-shell felt electrodes for all High-Performance Redox Flow Batteries Cristina Flox, Catalonia Institute for Energy Research, Barcelona, Spain	Synchronous measurement of FTIR-ATR spectra and desorbed hydrogen mass in-situ: Novel method for investigating the kinetics of hydrogen storage materials Hans-Dieter Bauer, RheinMain University of Applied Sciences, Rueselsheim, Germany
9:30 – 9:50	Vanadium and Chromium Molecular Cluster Batteries (MCB): Li- storage and kinetic studies by electrochemical analysis Julia Rinck, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	PEM water electrolysis MEAs with WO₃ supported Ir_xRu_{1-x}O₂ catalysts Nils Baumann, Fraunhofer ICT, Pfinztal, Germany
9:50 – 10:10	Ionic liquid electrolytes for Li/air batteries Lorenzo Grande, Helmholtz Institute Ulm, Ulm, Germany	9000 hours operation of a 25 solid oxide cells stack in steam electrolysis mode Gaël Corre, European Institute for Energy Research, Karlsruhe, Germany
10:10 – 10:30	Active Charge Balancing in Lithium-ion Battery Systems and its Benefits Manuel Raeber, Zurich University of Applied Sciences, Winterthur, Switzerland	Polymeric Catalysts for Catalytic H₂ production from Formic Acid Peter J.C. Hausoul, RWTH Aachen University, Aachen, Germany
10:30 – 10:50	Phase-field simulation of the interaction of mechanics and diffusion in cathode particles of lithium ion batteries Marc Kamlah, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	Geochemical modelling of hydrogen interaction with minerals and aqueous species Neda Hassanayebi, University of Leoben, Leoben, Austria
	Hebel-Saal S.3c: Energy System Analysis and Modelling Session Chair: Kai Hufendiek	Room 2.08 S.3d: Thermal Energy Storage Session Chair: Stefan Zunft
9:00 – 9:30	Novel method of heat storage integration in heat exchanger networks using a time resolved three dimensional pinch approach Michael Tielsch, Montanuniversität Leoben, Leoben, Austria	Session Keynote Speaker Thermal Energy Storage: A Key Element of Tomorrow's Energy System Stefan Zunft, German Aerospace Center (DLR), Stuttgart, Germany
9:30 – 9:50	Examination and Optimisation of a heating circuit using TOR Philipp Pöttgen, TU Darmstadt, Darmstadt, Germany	A study on characteristics of phase change materials (PCMs) for the enhancement of thermal conductivity by using additive particles Byungkwon Kim, Korea Institute of Industrial Technology (KITECH), Seoul, Republic of Korea
9:50 – 10:10	Spatial and temporal disaggregation of GB energy scenarios depicting increasing wind capacity and electrified heating to 2035 Ed Sharp, UCL Energy Institute, London, United Kingdom	Measurement and modelling of the maximum storage capacity of two salt hydrate based PCM as a function of the water/salt concentration Simon Pöllinger, ZAE Bayern, Garching, Germany
10:10 – 10:30	Storage demand in the context of Renewables from a European Perspective Stefan Weitemeyer, NEXT ENERGY - EWE Research Centre, Oldenburg, Germany	Novel Molten Alkali Chloride Salts for Thermal Energy Storage up to 700 °C Louis Maksoud, German Aerospace Center (DLR), Cologne, Germany
10:30 – 10:50	Components and Technical Feasibility Considerations for Multi Terminal HVDC Transmission Grid Structures Simon Wenig, Karlsruhe Institute of Technology, Karlsruhe, Germany	N.N.

10:50 – 11:20	Coffee Break	
	Weinbrenner-Saal S.4a: Electrochemical energy storage Session Chair: Horst Hahn/Kristina Edström	Mombert-Saal S.4b: Hydrogen Session Chair: Jordi Llorca
11:20 – 11:50	Battery Operation from a Neutron Point of View Martin Mühlbauer, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	A Study of Ni-Ca catal-sorbent prepared by novel-modified method to improve catalytic activity during multiple cycles in SESMR reaction Eun Ji Lim, Kyungpook National University, Daegu, Korea
11:50 – 12:10	Battery Energy Storage for Grid Support Richard Rocheleau, University of Hawaii, Honolulu, USA	Technical feasibility and design study of Methane cracking in a liquid metal Leonid Stoppel, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
12:10 – 12:30	In-Situ X-ray Radiography Analysis of Lithium Sulfur Cells Sebastian Risse, Helmholtz-Zentrum Berlin, Berlin, Germany	Hydrogen production by thermal pressure hydrolysis of lignocellulosic biomass Sonja Wiesgickl, Fraunhofer UMSICHT, Sulzbach-Rosenberg, Germany
12:30 – 12:50	Renewable energy high-efficient power supply using a direct current system Shinsuke Nii, Fuji Electric Co. Ltd., Tokyo, Japan	Energy storage using Liquid Organic Hydrogen Carriers Karsten Müller, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany
12:50 – 13:10	High Capacity Anode Materials based on mixed Conversion/Alloying Energy Storage Mechanism for Lithium-Ion Batteries Franziska Müller, Helmholtz Institute Ulm, Ulm, Germany	Pressurized alkaline electrolyser with high efficiency and wide operating range – the project RESElyser Regine Reißner, German Aerospace Research Center (DLR), Stuttgart, Germany
	Hebel-Saal S.4c: Energy System Analysis and Modelling Session Chair: Kai Sundmacher	Room 2.08 S.4d: Thermal Energy Storage Session Chair: Stefan Zunft
11:20 – 11:50	Session Keynote Speaker Multi-scale Energy Systems Engineering Efstratios Pistikopoulos, Texas A&M University, College Station, USA	Thermochemical tetramethylguanidine-based heat storage Maria Tyukavina, Fraunhofer UMSICHT, Oberhausen, Germany
11:50 – 12:10	High-Precision Modelling, Simulation and Optimisation of Cogeneration Plants Stephanie Chen, University of Bremen, Bremen, Germany	Thermochemical systems for the utilization of process waste heat: thermal storage and heat transformer Margarethe Molenda, German Aerospace Center (DLR), Stuttgart, Germany
12:10 – 12:30	Distributed multi-energy-hub systems: a review and techno-economic assessment of new integrated forms of energy production and consumption David Grosspietsch, ETH Zurich, Zurich, Switzerland	Thermo-physical Properties of Nano Coated CaO / Ca(OH)₂ Powders Sandra Afflerbach, University of Siegen, Siegen, Germany
12:30 – 12:50	Improved efficiency of combined heat and power plants using electric energy storage Axel Haupt, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany	Examination of reversible metal oxide redox reactions for high- temperature thermochemical energy storage Michael Wokon, German Aerospace Center (DLR), Cologne, Germany
12:50 – 13:10	Identification of Optimal Connection Points between Electrical and Natural Gas Transmission Networks using Power-to-Gas-Technology Steven Hotopp, Clausthal University of Technology, Clausthal-Zellerfeld, Germany	N.N.

13:10 – 14:30	Lunch	
	Weinbrenner-Saal S.5a: Electrochemical energy storage Session Chair: Horst Hahn/Kristina Edström	Mombert-Saal S.5b: Chemical Energy Storage and SNG Session Chair: Frank Graf
14:30 – 15:00	High-Performance Li-ion Battery Anodes from Recycled Solar-Grade Kerf-Loss Silicon Tzu-Yang Huang, National Taiwan University, Taipei, Taiwan	Session Keynote Speaker P2G perspectives on- and offshore: the general picture Catrinus Jepma, University of Groningen, Groningen, Netherlands
15:00 – 15:20	Effects of Surface Coating on Performance of High-Capacity Lithium-Rich Manganese-Nickel Oxide Cathode of Lithium-ion Batteries Yun Chu, National Taiwan University, Taipei, Taiwan	Improving the conversion efficiency of a Power-to-Gas plant by coupling a dynamic SOEC system with a three-phase methanation reactor Regis Anghilante, European Institute for Energy Research, Karlsruhe, Germany
15:20 – 15:40	In-Operando Optical Microscopic Study on Polysulfide Dissolution and Dendrite Formation of Lithium-Sulfur Batteries Jing Luo, National Taiwan University, Taipei, Taiwan	Combining PtG-technology with gasification: The KIC-Project „DemoSNG“ Siegfried Bajohr, Karlsruhe Institute of Technology, Karlsruhe, Germany
15:40 – 16:00	Disordered Dilithium Oxyfluoride as New Li⁺ Intercalation Host Ruiyong Chen, Helmholtz Institute Ulm, Ulm, Germany	German Energiewende as Driving Force for New Technologies – Power Industry meets Process Industry Arthur Heberle, Mitsubishi Hitachi Power Systems Europe GmbH, Duisburg, Germany
16:00 – 16:20	Template-Free Electrochemical Synthesis of High Aspect-Ratio Tin Nanowires Rihab Al-Salman, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	Mesoporous Ni/Ce based catalyst for low temperature high throughput production of synthetic natural gas Joan Ramon Morante, Catalonia Institute for Energy Research, Barcelona, Spain
	Hebel-Saal S.5c: Electric grids and network integration at all levels Session Chair: Wolfgang Hribernik	
14:30 – 15:00	Session Keynote Speaker Intelligent energy networks for smart cities Johan Driesen, KU Leuven, Leuven, Belgium	
15:00 – 15:20	Operation and Stability of Hybrid Transmission Systems Julia Dragon, TU Darmstadt, Darmstadt, Germany	
15:20 – 15:40	Vehicle to Grid storage potential based on fleet test data of user behaviour Mathias Kammerlocher, Volkswagen Group Research, Wolfsburg, Germany	
15:40 – 16:00	MCCF-based control of active harmonic filters for power quality enhancement Peter Krasselt, Karlsruhe Institute of Technology, Karlsruhe, Germany	
16:00 – 16:20	Integration of Renewable Energy Sources with Time Constrained Optimal Power Flow Nico Meyer-Huebner, Karlsruhe Institute of Technology, Karlsruhe, Germany	
16:20 – 16:50	Coffee Break	
	Weinbrenner-Saal S.6a: Electrochemical energy storage Session Chair: Horst Hahn/Kristina Edström	Mombert-Saal S.6b: Chemical Energy Storage and SNG Session Chair: Frank Graf
16:50 – 17:20	Synthesis and Characterization of Mg-Mn-O Spinel Cathodes Johannes Schwank, University of Michigan, Ann Arbor, USA	Power to Gas industrialization solutions for hydrogen and SNG Stephan Rieke, ETOGAS GmbH, Stuttgart, Germany

Programme | Thursday, May 21st

17:20 – 17:40	Technical and Economic Potential of Storage Systems in Distribution Grids Soeren Schrader, P3 Energy & Storage, Aachen, Germany	CO2freeSNG2.0 – Advanced Substitute Natural Gas from Coal with Internal Sequestration of CO₂ Peter Treiber, Friedrich-Alexander-University Erlangen-Nuremberg, Nuremberg, Germany
17:40 – 18:00	Flow Phenomena in Liquid Metal Batteries Tom Weier, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany	Process Technology Energy-efficient wastewater treatment in a two-stage activated sludge process Martin Kaleß, RWTH Aachen University, Aachen, Germany
18:00 – 18:20	The Role of Energy Status Data in Solar Power Plants with Li-Ion Batteries Thomas Blank, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	Green catalytic processes converting refinery naphtha cuts to strong anti-knocking ingredients of gasoline Nikolaos C. Kokkinos, Eastern Macedonia and Thrace Institute of Technology, Kavala, Greece
18:20 – 18:40	Thermo-electrochemical modeling of LiC₆/LFP and LTO/NCA lithium-ion batteries for lifetime and safety prediction Wolfgang Bessler, Offenburg University of Applied Sciences, Offenburg, Germany	N.N.
	Hebel-Saal S.6c: Electric grids and network integration at all levels Session Chair: Wolfgang Hribernik	Room 2.08 S.6d: Capacitors and supercapacitors Session Chair: Nae-Lih Wu
16:50 – 17:20	Optimal size of stationary energy storages for solar home systems Martin Uhrig, Karlsruhe Institute of Technology, Karlsruhe, Germany	Session Keynote Speaker How to boost energy density in Supercapacitors? Thierry Brousse, University of Nantes, Nantes, France
17:20 – 17:40	Conductor Materials Session Keynote Speaker Energy efficiency with superconductors – simply irresistible Michael Bäcker, Deutsche Nanoschicht GmbH, Rheinbach, Germany	Flow Capacitors: A Novel Technology for Scalable Energy Storage Volker Presser, INM – Leibniz Institute for New Materials gGmbH, Saarbrücken, Germany
17:40 – 18:00	Superconductors with improved critical currents Bernhard Holzappel, Karlsruhe Institute of Technology, Karlsruhe, Germany	Novel Electrolytes for Supercapacitors based on Ionic Liquids Thomas Schubert, IoLiTec Ionic Liquids Technologies GmbH, Heilbronn, Germany
18:00 – 18:20	N.N.	Springer Materials Database Michael Klinge, Springer-Verlag GmbH, Heidelberg, Germany
18:20 – 18:40	N.N.	N.N.
18:45	Public Lecture (Weinbrenner-Saal) Neue Energie: Die zweite Erfindung des Automobils Dr. Dieter Zetsche, Chairman of the Board of Management Daimler AG, Head of Mercedes-Benz Cars, Stuttgart, Germany (simultaneous translation German -> English)	
20:00	Conference Dinner (Schwarzwaldhalle)	