

Programme | Wednesday, May 20th

10:00 – 10:30	Registration / Coffee
Welcome (Weinbrenner-Saal)	
10:30	<p>Opening</p> <p>Britta Wirtz, Managing Director, Karlsruher Messe- und Kongress-GmbH, Germany Prof. Dr. Detlef Löhe, Vice President for Research and Information, Karlsruhe Institute of Technology, Karlsruhe, Germany Dr. Frank Mentrup, Lord Mayor, Karlsruhe, Germany Dr. Georg Menzen, Head of department for Energy Research and Innovation, Federal Ministry for Economic Affairs and Energy, Berlin, Germany</p>
11:00	<p>Plenary Lecture</p> <p>Technological drivers of the energy mix transformation Dr. Jean-François Minster, Senior Vice-President Scientific Development, TOTAL S.A., Paris, France</p> <p>EDF R&D contribution to the energy transition: focus on key innovative enabling technologies Bernard Salha, Senior Executive Vice President of EDF Group, President of EDF Research and Development (EDF R&D), Paris, France</p>

	Mombert-Saal R.1a: Geothermal energy systems Session Chair: Ladislaus Rybach	Thoma-Saal R.1b: Photovoltaics Session Chair: Nicola Armaroli
13:00 – 13:30	<p>Session Keynote Speaker</p> <p>Geothermal Energy Systems: Prosperous or Marginal? Ingo Sass, TU Darmstadt, Darmstadt, Germany</p>	<p>Session Keynote Speaker</p> <p>Photovoltaic solar energy: prepare(d) for impact Wim C. Sinke, ECN Solar Energy, Petten, The Netherlands</p>
13:30 – 13:50	<p>Experiences from geothermal projects and necessity for a geoscientific underground laboratory Thomas Kohl, Karlsruhe Institute of Technology, Karlsruhe, Germany</p>	<p>Properties of organic-inorganic APbI₃ perovskites as solar cells materials Lucangelo Dimesso, TU Darmstadt, Darmstadt, Germany</p>
13:50 – 14:10	<p>Quality Management and Improvement for Geothermal Energy Projects using the Platform Based Tool Development Technology – ZWERG Benedict Holbein, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany</p>	<p>Organic Nanoparticles for an Eco-Friendly Fabrication of Organic Solar Cells from Alcoholic Dispersion Stefan Gärtner, Karlsruhe Institute of Technology, Karlsruhe, Germany</p>
14:10 – 14:30	<p>Migration based detection and location of the microseismicity induced at Rittershoffen geothermal field (Alsace, France) Emmanuel Gaucher, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany</p>	<p>Testing the Overall Performance of Offshore PV System Malte Schöfer, Active Innovation Management, Palaiseau Cedex, France</p>
14:30 – 14:50	<p>Synthetic clay logs to assess the mechanical behavior of a geothermal reservoir Carola Meller, Karlsruhe Institute of Technology, Karlsruhe, Germany</p>	<p>Analysis of performance of photovoltaic systems: comparison of panel and inverter brand Odysseas Tsafarakis, Utrecht University, Utrecht, The Netherlands</p>

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14:50 – 15:10	Simulation and Optimization of Deep Borehole Heat Exchanger Arrays Daniel Schulte, TU Darmstadt, Darmstadt, Germany	Comparison of DC- and AC-coupled photovoltaic energy storage systems with Lithium-ion batteries James Barry, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
15:10 – 15:30	Geothermal power generation – a comparison of development trends with other renewable sources Ladislaus Rybach, ETH Zurich, Zurich, Switzerland	DESERTEC and beyond Michael Düren, Justus Liebig University Gießen, Gießen, Germany
15:30 – 16:00	Coffee Break	

	Mombert-Saal R.2a: Chemical and solar fuels Session Chair: Jordi Llorca	Thoma-Saal R.2b: Solar thermal technology Session Chair: Thomas Wetzel
16:00 – 16:30	Session Keynote Speaker Fuels from solar energy and water – an overview of the solar fuel field Stenbjörn Styring, Uppsala University, Uppsala, Sweden	Session Keynote Speaker Concentrating Solar Thermal Technologies – Status and Perspectives Kai Wieghardt, German Aerospace Center (DLR), Jülich, Germany
16:30 – 16:50	Production of Oxygenate Fuels from Renewable Resources Ulrich Arnold, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	Potential for deserts to supply reliable renewable electric power Mercé Labordena, ETH Zurich, Zurich, Switzerland
16:50 – 17:10	Photoelectrochemical Routes for the Generation of Solar Hydrogen Peter Bogdanoff, Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany	A new concept for hybrid sensible/thermochemical storage of solar heat in cascaded redox-oxide-based thermochemical reactors/heat exchangers Christos Agrafiotis, German Aerospace Center (DLR), Cologne, Germany
17:10 – 17:30	Scalable Particle-Based Photoelectrodes for Solar Hydrogen Generation Simone Pokrant, EMPA Academy, Dübendorf, Switzerland	Numerical analysis of the thermocline thermal energy storage system of CSP power plants Ismael A.S. Ehtiwesh, University of Aveiro, Aveiro, Portugal
17:30 – 17:50	Proposed Liquid Fuel Production on Artificial Islands Bruce Patterson, Paul Scherrer Institute, Villigen, Switzerland	Liquid metals as efficient heat transfer fluids for next generation CSP systems Luca Marocco, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
17:50 – 18:10	Methanol for Renewable Energy storage and utilisation Ludolf Plass, TUBA Freiberg, Freiberg, Germany	N.N.
18:10 – 18:30	N.N.	N.N.

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	Clubraum E.1a: Demand-side strategies to reduce energy needs Session Chair: Enrique Kremers	Hebel-Saal E.1b: Efficient industry and manufacturing processes Session Chair: Albert Albers
13:00 – 13:30	Session Keynote Speaker Simulating the Complexity of Demand Side Management Strategies using Agent-Based Models Enrique Kremers, European Institute for Energy Research, Karlsruhe, Germany	Session Keynote Speaker Product Generation Development – The Path to Agile and Efficient Processes in Product Development Albert Albers, Karlsruhe Institute of Technology, Karlsruhe, Germany
13:30 – 13:50	Optimization of the Energy Performance in the Hospitality Sector in UAE by Using the Integrated Control Methodology in the Guest Rooms Fadi AlFaris, The British University in Dubai, Dubai, United Arab Emirates	Characterisation of the product quality of a novel environmentally friendly cementitious material by estimation of auxiliary quantities with near-infrared-spectroscopy Carolin Lutz, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
13:50 – 14:10	Energy Efficiency Policies in the Russian Residential Sector Andrey Kazakov, University of Nordland, Bodø, Norway	Computational Fluid Dynamics for energy efficient multiphase flow processes Dirk Lucas, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany
14:10 – 14:30	Virtual Storages as Theoretically Motivated Demand Response Models for Enhanced Smart Grid Operations Simon Waczowicz, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany	Microwave technology for energy efficient processing of fibre composites Guido Link, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
14:30 – 14:50	SMARTICITY – A Feedback System for Energy Consumption and Costs Carl Heckmann, University of Mannheim, Mannheim, Germany	Efficient multiphase chemical processes – from advanced modelling, simulation and measurement to novel reactor concepts and technologies Uwe Hampel, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany
14:50 – 15:10	Extended Method to Forecast Price Elastic Consumption Behaviour Stefan Kläiber, Fraunhofer IOSB, Ilmenau, Germany	Increasing the energy efficiency of air jet weaving based on a novel method to exploit energy savings potentials in production processes of the textile industry Achim Schröter, RWTH Aachen University, Aachen, Germany
15:10 – 15:30	Assessing Industrial Consumptions' Curtailments for Demand Response Valorisation François de Sousa Lopes, EDF R&D, Moret-sur-Loing, France	Efficient low temperature N₂O decomposition from HNO₃-exhaust streams over K-Cu_xCo_{3-x}O₄ catalysts Tanja Franken, RWTH Aachen University, Aachen, Germany
15:30 – 16:00	Coffee Break	

	Clubraum E.2a: Efficiency in lighting Session Chair: Ulrich Lemmer	Hebel-Saal E.2b: Nuclear power plants Session Chair: Claude Degueldre
16:00 – 16:30	Session Keynote Speaker Energy-efficient lighting – yes, we can Martin Zachau, OSRAM GmbH, Munich, Germany	Session Keynote Speaker Sustainability of Nuclear Power: Fuel cycles Marco Streit, Paul Scherrer Institute, Villigen, Switzerland
16:30 – 16:50	Recent LED innovations Cornelius Neumann, Karlsruhe Institute of Technology, Karlsruhe, Germany	Nuclear energy for a sustainable French energy mix Françoise Touboul, CEA, Saclay, France
16:50 – 17:10	Silicon carbide for efficient power conversion in lighting Christoph Simon, Karlsruhe Institute of Technology, Karlsruhe, Germany	Uranium as a renewable for nuclear energy Claude Degueldre, Paul Scherrer Institute, Villigen, Switzerland
17:10 – 17:30	Bionic cooling systems for LEDs Chris Herbold, franzkann* Herbold und Herrmann GbR, Karlsruhe, Germany	Research for safe nuclear waste management options Concetta Fazio, ITU Joint Research Centre European Commission, Karlsruhe, Germany
17:30 – 17:50	N.N.	MiniRadMeter: a miniature detector for gamma rays Gianluca Alimonti, INFN-Milano, Milan, Italy
17:50 – 18:10	N.N.	Geochemical research for nuclear waste disposal safety Marcus Altmaier, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
18:10 – 18:30	N.N.	Challenges in the decommissioning of nuclear facilities Martin Brandauer, Karlsruhe Institute of Technology, Karlsruhe, Germany

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Meeting mankind's future energy needs is one of the major challenges for continuous peaceful development. The EST conference marks an important contribution towards a transformation of the overall energy demand and supply towards a more sustainable system.

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Dr. Florian Ausfelder

Technical Officer for Coordination of Research and Projects, German Society for Chemical Engineering and Biotechnology e.V. (DECHEMA), Frankfurt, Germany



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	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)