

Registration 8:00–9:00

Storage - ILOHC 9:00–11:05

CHAIR	Prof. Dr.-Ing. Wolfgang Arlt, Conference president Prof. Dr.-Ing. Harald Bolt, Forschungszentrum Jülich GmbH, Mitglied des Vorstands
9:00–9:25	Large-scale hydrogen supply for refueling stations and industry via Liquid Organic Hydrogen Carriers (LOHC) (A) <i>Daniel Teichmann, Hydrogenious Technologies GmbH</i>
9:25–9:50	Storage and Delivery to Hydrogen Refueling Stations: Aspects for Releasing Hydrogen at High Pressure from Liquid Carriers (S) <i>Tom Autrey, Pacific Northwest National Laboratory, PCSD</i>
9:50–10:15	The effect of water impurities on the catalytic hydrogenation and dehydrogenation of LOHC systems <i>M.Sc. Alexander Bulgarin, Helmholtz-Institut Erlangen-Nürnberg für Erneuerbare Energie</i>
10:15–10:40	i-LOHC: Reliability and Dynamics of LOHC based energy storage (A) <i>Dr. Karsten Müller, FAU Erlangen-Nürnberg, Lehrstuhl für Thermische Verfahrenstechnik</i>
10:40–11:05	Dehydrogenation of perhydro-benzyltoluene as LOHC in a microstructured membrane reactor with fixed bed – an experimental demonstration (S) <i>Alexander Wunsch, KIT-IMVT</i>

Markets - Electricity Markets 9:00–11:05

CHAIR	Dr. Jonas Egerer, FAU Erlangen-Nürnberg, Lehrstuhl für Volkswirtschaftslehre
9:00–9:25	Transmission and generation investment for a core market region within a larger electricity market (S) <i>Dr. Jonas Egerer, FAU Erlangen-Nürnberg, Lehrstuhl für Volkswirtschaftslehre</i>
9:25–9:50	Uniqueness and multiplicity of market equilibria on DC power flow networks (S) <i>Vanessa Krebs, FAU Erlangen-Nürnberg</i>
9:50–10:15	Price Zones and Investment Incentives in Electricity Markets: An Application of Multi-Level Optimization with Graph Partitioning <i>Mirjam Ambrosius, FAU Erlangen-Nürnberg, Lehrstuhl für VWL (insbesondere Wirtschaftstheorie)</i>
10:15–10:40	On the Effects of Storage Facilities on Optimal Zonal Pricing in Electricity Markets (S) <i>Dr. Martin Weibelzahl, Universität Bayreuth</i>
10:40–11:05	How bad is ignoring risk aversion when planning electricity transmission or generation? <i>Dr. Harry van der Weijde, Institute for Energy Systems, Faraday Building</i>

Smart Grid 9:00–11:05

CHAIR	Karlheinz Ronge, Fraunhofer-Institut für Integrierte Schaltungen (IIS), Vernetzte Systeme und Anwendungen Dr. Stefan Nießen, Siemens AG, Field Energy Systems - CT REE ENS
9:00–9:25	Blockchain based transactive energy systems as catalyst for an accelerated energy transition (A) <i>Stefan Jessenberger, Siemens AG, EM DG MG</i>
9:25–9:50	Evaluation of ancillary services to be provided by a hybrid compensation system <i>Dipl.-Wirtsch.-Ing. Ralf Böhm, FAU Erlangen-Nürnberg, Lehrstuhl FAPS</i>
9:50–10:15	Techno-economic analysis of voltage dependent reactive power control with photovoltaic inverters (A) <i>Raphael Knecht, ZHAW School of Engineering, IEFÉ</i>
10:15–10:40	Communication security by certified products using the example of Smart Meter Gateway communication (A) <i>Lutz Josef Schmid, Schmid Datensicherheit GmbH</i>
10:40–11:05	Demands of Small and Medium Sized Enterprises on Future Smart Meter Related Business Cases in Germany <i>Karlheinz Ronge, Fraunhofer-Institut für Integrierte Schaltungen (IIS), Vernetzte Systeme und Anwendungen</i>

Wind		9:00–11:05
CHAIR	Sebastian Schäfer, NATURSTROM AG, Büro Thüringen - Bereich Energieerzeugung Johannes Schnabel, ENERCON GmbH, Sales Manager, Vertrieb Hof Dr. Ralf Köpke, Energie & Management Verlagsgesellschaft mbH	
9:00–9:40	What is necessary to integrate increasing shares of renewables? <i>Dr. Stephanie Ropenus, Agora Energiewende</i>	
9:40–10:00	Regional Differentiation of Renewable Energy Subsidies: A Long Term Assessment (S) <i>Prof. Dr. Veronika Grimm, FAU Erlangen-Nürnberg</i>	
10:00–10:20	Direct marketing of wind energy - a success story <i>Dr. Thomas Krings, QUADRA Energy GmbH</i>	
10:20–10:40	Wind energy in a framework of fading <i>Sebastian Schäfer, NATURSTROM AG, Büro Thüringen - Bereich Energieerzeugung</i>	
10:40–11:05	Questions / Discussion <i>Dr. Stephanie Ropenus, Agora Energiewende // Dr. Thomas Krings, QUADRA Energy GmbH // Sebastian Schäfer, NATURSTROM AG, Büro Thüringen - Bereich Energieerzeugung // Prof. Dr. Veronika Grimm, FAU Erlangen-Nürnberg</i>	
Integration – Energy Systems / Sector Coupling		9:00–11:05
CHAIR	Prof. Dr. Armin Dietz, Technische Hochschule Nürnberg, Institute for Power Electronic Systems (ELSYS)	
9:00–9:25	Sector-coupling by PowerToFuels – A way to make energy transformation happen in mobility (A) <i>Dr.-Ing. Ireneusz Pyc, Siemens AG, Power and Gas Division Technology and Innovation</i>	
9:25–9:50	The Energy Lab 2.0 – Real-life laboratory and simulation platform contributing to the successful implementation of the energy transition (A) <i>Michael Klumpp, Karlsruhe Institut of Technology (IKFT)</i>	
9:50–10:15	Research Platform: Decentralized Energy System for Sector Coupling (A) <i>Dr. Richard Öchsner, Fraunhofer-Institut, Leiter Bereich Energietechnik (IISB)</i>	
10:15–11:05	Bionergy as a grid balancing leading actor (A) <i>Leonardo Nibbi, University of Florence - Dept. of Industrial Engineering</i>	
Simulation & Modelling – Markets and Business Cases		9:00–11:05
CHAIR	PD Dr. Lars Schewe, Energie Campus Nürnberg, EMD	
9:00–9:25	The Blockchain Technology: energy use cases beyond Peer2Peer trading (S) <i>M.Sc. Alexander Bogensperger, Forschungsstelle für Energiewirtschaft e.V.</i>	
9:25–10:15	Integrated modeling of multi-modal decision systems for municipal energy utilities: conceptual approach, mathematical programming and application examples (S) <i>Fabian Scheller, Universität Leipzig, Institut für Infrastruktur & Ressourcenmanagement (IIRM)</i>	
10:15–10:40	Mathematical Optimization for Energy Market Design – Challenges and Solution Approaches (S) <i>Thomas Kleinert, FAU Erlangen-Nürnberg, Lehrstuhl für Wirtschaftsmathematik</i>	
10:40–11:05	Model based decision making on flexibility adaptations in the energy sector (A) <i>Dr. Moritz Hübel, University of Rostock, Technical Thermodynamics</i>	
Green Factory Bavaria – Increasing the efficiency of production facilities		9:00–11:05
CHAIR	Prof. Dr. Michael Steber, Hochschule Coburg	
9:00–09:25	Advanced Reactor Systems in Practice – Focusing on the SILP-catalyzed Water-Gas Shift Reaction (A) <i>Patrick Wolf, FAU Erlangen-Nürnberg, Lehrstuhl für chemische Reaktionstechnik</i>	
9:25–09:50	Investigation of Carbon Dioxide based Blasting Technologies as Cryogenic Deburring Method for Titanium Alloy and Stainless Steel <i>Daniel Gross, FAU Erlangen-Nürnberg, Lehrstuhl für Ressourcen- und Energieeffiziente Produktionsmaschinen (REP)</i>	
9:50–10:15	Optimization of the process reliability of the ultrasonic crimping process by evaluating the mounting conditions for tubular cable lugs (S) <i>M.Sc. Johannes Seefried, FAU Erlangen-Nürnberg, Lehrstuhl FAPS - E Drive-Center</i>	
10:15–10:40	Measurement analysis for increasing resource efficiency during curing processes of carbon fiber reinforced plastics (S) <i>Leonhard Finsterwald, Universität Bayreuth, Lehrstuhl für Umweltgerechte Produktionstechnik</i>	
10:40–11:05	Qualification of direct diode lasers for laser beam welding with the aim of reducing process costs (A) <i>Kerstin Schaumberger, Bayerisches Laserzentrum GmbH (blz)</i>	

Green Factory Bavaria - Reduction of scrap in production and increase of efficiency of the final product in assembly		09:00–11:05
CHAIR	Prof. Dr. rer. Pol. Peter Schuderer, Technische Hochschule Ingolstadt	
09:00–09:25	Estimating the Energy Saving by Yield Improvement in Wafer Fabrication (A) <i>Tin-Chih Toly Chen, National Chiao Tung University, Department of IEM</i>	
09:25–09:50	Defining batches under consideration of quality-related factors for improved failure and scrap analysis (S) <i>Lukas Baier, Technische Hochschule, Ingolstadt</i>	
09:50–10:15	Towards an Energy Efficient Series Production of High Performance Permanent Magnet Synchronous Motors by Selective Magnet Assembly <i>Dipl.-Ing. Alexander Meyer, FAU Erlangen-Nürnberg, Lehrstuhl FAPS</i>	
10:15–10:40	Sustainability Aspects of Current Market Developments, Different Product Types and Innovative Manufacturing Processes of Electric Motors <i>Andreas Mayr, M.Sc., M.Sc., FAU Erlangen-Nürnberg, Lehrstuhl FAPS</i>	
10:40–11:05	Improving of stacking technologies for higher energy efficiency and better product quality <i>M.Sc. Marco Ziegler, FAU Erlangen-Nürnberg, Lehrstuhl FAPS</i>	
Workshop on materials for reliable energy supply		09:00–11:05
Dr. Marcus Rauch, Bayern Innovativ – Bayerische Gesellschaft für Innovation und Wissenstransfer mbH Simon Reichenwallner, ENERGIEregion Nürnberg e.V.		
Coffee break & Campfire		11:05–11:30
Plenary Lecture 1		11:50–12:50
11:50–12:20	Von der Stromwende zur ökologischen Transformation. Die Rolle des Staates bei Klimaschutz und Innovation <i>Dr. Toni Hofreiter, Fraktionsvorsitzender Bündnis 90 / DIE GRÜNEN im Dt. Bundestag</i>	
12:20–12:50	Energy Sector Coupling in Research: An Integrated Approach <i>Prof. Dr. Robert Schlögl, Fritz Haber Institute of the Max Planck Society, Department of Inorganic Chemistry</i>	
Lunch		12:30–14:00
Electrolyzer / Fuel Cell (HiERN)		14:00–16:05
CHAIR	Prof. Dr. Karl J. J. Mayrhofer, Forschungszentrum Jülich GmbH / Gründungsdirektor des HI ERN, Lehrstuhl für Chemische Reaktionstechnik	
14:00–14:25	Current state of power-to-gas applications in Germany (A) <i>Dr.-Ing. Geert Tjarks, NOW GmbH, MKS</i>	
14:25–14:50	From microstructure analysis to novel manufacturing approaches – What questions to answer to achieve the perfect structure in electrochemical devices such as fuel cells or water electrolyzers (S) <i>Dr.-Ing. Simon Thiele, Helmholtz-Institut, Erlangen-Nürnberg</i>	
14:50–15:15	Hydrogen storage/release plants for efficient hydrogen distribution – operational data and use cases (A) <i>Dr. Caspar Paetz, Hydrogenious Technologies GmbH, Forschung und Entwicklung</i>	
15:15–15:40	Toward a direct 2-propanol fuel cell for mobile applications (A) <i>M.Sc. Gabriel Sievi, Helmholtz-Institut Erlangen-Nürnberg, Wasserstoffspeicherung</i>	
15:40–16:05	Innovative back-up System for a 50 kW off-grid electrolyser directly linked to PV (A) <i>Dr. Pedro Casero, Aragon Hydrogen Foundation</i>	
Start-ups Workshop		14:00–16:05
14:00–14:15	Introduction and presentation of the speakers <i>Daniel Teichmann, Hydrogenious Technologies GmbH // Dr. Sebastian Engel, Zollhof Betreiber GmbH // Prof. Dr. Alexander Brem, FAU Erlangen-Nürnberg, Lehrstuhl für Technologiemanagement NCT</i>	
14:15–14:45	Technology Entrepreneurship: what do we know about success factors? <i>Giones Ferran, University of Southern Denmark (SDU), Technology Entrepreneurship and Innovation</i>	
14:45–15:45	Interview round	
15:45–16:05	Time for questions - Specific networking for Start-ups <i>Daniel Teichmann, Hydrogenious Technologies GmbH // Dr. Sebastian Engel, Zollhof Betreiber GmbH // Prof. Dr. Alexander Brem, FAU Erlangen-Nürnberg, Lehrstuhl für Technologiemanagement NCT</i>	

Buildings		14:00–16:05
CHAIR	Thomas Kirmayr, Fraunhofer-Institut für Bauphysik IBP	
14:00–14:25	Enhancing energy efficiency through architecture and urban planning (A) <i>Christoph Riekert, E.ON</i>	
14:25–14:50	Reasoning on Human Experiences of Indoor Environments using Semantic Web Technologies (A) <i>Haonan Qiu, Technische Hochschule Nürnberg, MB/VS</i>	
15:15–15:40	Data-driven approach for robust supervisory control in buildings (S) <i>Georgios Kontes, Technische Hochschule Nürnberg</i>	
15:40–16:05	Energy Efficient Buildings: the challenge of digitalisation for the building sector <i>Thomas Kirmayr, Fraunhofer-Institut für Bauphysik IBP</i>	
Solar		14:00–16:05
CHAIR	Dr. Jens Hauch, ZAE Bayern	
14:00–14:25	New PV System Concept - Inductive Power Transfer for Photovoltaic Modules (S) <i>Fabian Carigiet, ZHAW School of Engineering, IEFÉ</i>	
14:25–14:50	The Right Choice? Site-dependent Performance Analysis of PV Technologies (S) <i>Dr. Christian Camus, ZAE Bayern, RE - PV-Systeme</i>	
14:50–15:15	Ongrid PV Energy Storage Systems in practical application (A) <i>Manuel Fleck, IBC Solar AG</i>	
15:15–15:40	Data-driven approaches to understand material failures <i>Prof. Dr. Dawei Zhang, University of Science and Technology</i>	
15:40–16:05	In situ probing of the structural properties and electrical response of polythiophene:fullerene bulk heterojunctions (S) <i>Souren Grigorian, University of Siegen</i>	
Green Factory Bavaria - Increased efficiency in primary forming and coating processes		14:00–16:05
CHAIR	Prof. Dr. Wolfgang Schlüter, Hochschule Ansbach	
14:00–14:25	E Melt: Simulation-driven examination of energy efficiency measures inside non-ferrous melting and die-casting plants (S) <i>Andreas Buswell, Hochschule Ansbach</i>	
14:25–14:50	Smart Melting: Increasing efficiency in melting and die casting plants with failure management (S) <i>Stefan Müller, Hochschule Ansbach</i>	
14:50–15:15	Properties and significant impact factors for printed rare earth magnets (S) <i>Dipl.-Ing. Alexander Meyer, FAU Erlangen-Nürnberg, Lehrstuhl FAPS</i>	
15:15–15:40	Additive manufacturing of interconnect devices by means of digital printing (S) <i>Julian Schirmer, Technische Hochschule Nürnberg, efi</i>	
15:40–16:05	GreMet – Green Metallisation <i>Johannes Gädigk, Hochschule Hof, Institut für Materialwissenschaften - ifm</i>	
Integration – Hydrogen Technology / LOHC		14:00–16:05
CHAIR	Prof. Dr. Armin Dietz, Technische Hochschule Nürnberg, Institute for Power Electronic Systems (ELSYS)	
14:00–14:25	Integrating hydrogen technologies into energetics and mobility in the Czech Republic (A) <i>Dr.-Ing. Karin Stehlik, Research Center Rez, Hydrogen Technologies</i>	
14:25–14:50	Integrated Hydrogen Separation and Storage from hydrogen-rich gas mixtures via LOHC hydrogenation (S) <i>Holger Jorschick, Helmholtz-Institut, IEK-11</i>	
14:50–15:15	Closing the renewable energy gap through imports of green hydrogen (A) <i>Dr. Martin Schneider, Hydrogenious Technologies GmbH</i>	
15:15–15:40	Role of renewable energies for realizing cross industrial cooperation such as in the project Carbon2Chem <i>Prof. Dr.-Ing. Görgo Deerberg, Fraunhofer UMSICHT, Stellvertretender Institutsleiter</i>	
15:40–16:05	Evaluation of the Effect of Various Pretreatment Methods on PRO Power Plant Efficiency (S) <i>Elham Abbasi-Garravand, Concordia University Building, Civil and Environmental Engineering</i>	

Simulation & Modelling – Electrical Grid and Simulation 14:00–16:05

CHAIR Prof. Dr.-Ing. habil. Reinhard German, FAU Erlangen-Nürnberg, Lehrstuhl für Informatik 7

14:00–14:25 **Comparative studies of numerical field calculation methods for the optimization of high voltage equipment (S)**
*Dr.-Ing. Frank Messerer, Technische Universität München, Lehrstuhl für Hochspannungs- und Anlagentechnik*14:25–15:15 **Combined Optimization, Simulation and Grid Analysis of the German Electric Energy System in an European Context (KOSiNeK) - Presentation of the project and first results (S)**
*Wirt.-Ing. M.Sc. David Steber, FAU Erlangen-Nürnberg, Lehrstuhl für Informatik 7*15:15–15:40 **Development of realistic energy demand profiles for estimation of load flexibility of households for the integration of PV generation (S)**
*M.Sc. Britta Kleinertz, Forschungsstelle für Energiewirtschaft e.V.*15:40–16:05 **Simultaneous Storage and Transmission Expansion Planning in Smart Grids**
*Bastian Rückel, FAU Erlangen-Nürnberg***Green Factory Bavaria – Model-based optimization of production processes** 14:00–15:40CHAIR Sven Kreitlein, RUAG Holding AG
Johannes Böhner, Brose Fahrzeugteile GmbH & Co.14:00–14:25 **Combining Use Case Approach and Architecture Models: A Standardized Description Method for Complex Systems (A)**
*Franziska Schäfer, FAU Erlangen-Nürnberg, Professur Qualitätswissenschaft*14:25–14:50 **Model-based computation of critical operation points in biogas producing plants (S)**
*David Wagner, Hochschule Ansbach, Biomasse-Institut*14:50–15:15 **E|Flow – Implementation of an Intralogistics Routing-Service Basing on Decentralized Workspace Digitization (S)**
*Michael Scholz, FAU Erlangen-Nürnberg, Lehrstuhl FAPS*15:15–15:40 **A Contribution to the Reduction of Annealing Processes in the Manufacturing of Valve Solenoids by Using Inline Measuring Technology in the Caulking Process (A)**
*Johannes von Lindenfels, FAU Erlangen-Nürnberg, Lehrstuhl FAPS***Green Factory Bavaria - Process optimization through knowledge-based and self-learning methods** 14:00–16:05

CHAIR Prof. Dr. Jörg Krumeich, Hochschule Hof

14:00–14:25 **Towards a Software System Providing Knowledge about Energy and Resource Efficiency Potentials within the Product and Process Development of Electric Drives**
*Dipl.-Ing. Andreas Mayr, M.Sc., M.Sc., FAU Erlangen-Nürnberg, Lehrstuhl FAPS*14:25–14:50 **Self-learning energy management algorithms on the process control level (A)**
*Eisabeth Zizler, OTH Amberg-Weiden*14:50–15:15 **Transparent acquisition and processing of energy data in the field of industrial production – Requirements and applications (S)**
*Markus Brandmeier, FAU Erlangen-Nürnberg, Lehrstuhl FAPS*15:40–16:05 **An Artificial Intelligence Approach for Online Energy Optimization of Flexible Manufacturing Systems**
Schirin Tolksdorf, Siemens AG, Digital Factory Division

Coffee break & Campfire 16:05–16:30

Matchmaking, Discussion, Postersession 16:30–17:30

Evening reception up from 18:00

Registration 8:00–9:00

Plenary Lecture 2 9:00–10:00

9:00–9:30 The shift to renewable energies from a legal perspective - contractual risk sharing in a dynamic legal and regulatory environment
Dr. Yves Bock, Siemens AG, General Counsel Energy Management / Legal and Compliance - LC EM

9:30–10:00 A Train to Nowhere-Land? Ethical Glosses on the 'Energiewende'
Prof. Dr. Peter Dabrock, Vorsitzender des Deutschen Ethikrats, Lehrstuhlinhaber für Systematische Theologie II, FAU Erlangen-Nürnberg

Coffee break & Campfire 10:00–10:30

Storage 10:30–12:35

CHAIR Prof. Dr.-Ing. Wolfgang Art, Conference president
 Prof. Dr.-Ing. Harald Bolt, Forschungszentrum Jülich GmbH, Mitglied des Vorstands

10:30–10:55 Coupling of hydrosilanes and alcohols as a potential liquid organic hydrogen carrier (LOHC) (S)
Dr. Jose A. Mata, University Jaume I, Institute of Advanced Materials

10:55–11:20 Hydrogen Storage via Pressure Swing Reaction – Development and Advantages of Continuous Reactor Design
Stefan Dürr, FAU Erlangen-Nürnberg, Lehrstuhl Chemische Reaktionstechnik

11:20–11:45 Flexible Sector Coupling by Energy Storage Implementation (A)
Amadeus Teuffel, ZAE Bayern, Energiespeicherung

11:45–12:10 Development, evaluation & characterization of composite materials for thermochemical sulfur storage cycle in CSP plants (A)
George Karagiannakis, APTL/CERTH

12:10–12:35 A hybrid storage system consisting of a RedOx-Flow Battery and a High Speed Flywheel
Dipl.-Wirtsch.-Ing. Ralf Böhm, FAU Erlangen-Nürnberg, Lehrstuhl FAPS

Markets – Smart Grids 10:30–12:35

CHAIR Prof. Dr. Veronika Grimm, FAU Erlangen-Nürnberg

10:30–10:55 Drivers for the Adoption of Domestic Electricity Storage: A Case Study from Southern Germany (S)
Sandra Kretschmer, FAU Erlangen-Nürnberg, Lehrstuhl Wirtschaftstheorie

10:55–11:20 Existing and Future PV Prosumer Concepts in Europe (S)
Dipl.-Ing. Andreas Fleischhacker, Technische Universität Wien

11:20–11:45 Possible regulatory frameworks for enabling multiple use of storage devices by regulated and private market participants in Smart Grids (S)
Christian Sölch, FAU Erlangen-Nürnberg, Wirtschaftswissenschaften

11:45–12:10 Designing an operational market for grid supporting use of electric flexibilities in distribution networks (A)
Erik Heilmann, Universität Kassel, Institut für VWL

12:10–12:35 Flexible Electricity Supply Tariffs for Smart Grids (S)
Galina Orlinskaya, FAU Erlangen-Nürnberg, Wirtschaftsmathematik

Cities 10:30–12:35

CHAIR Dr. Peter Pluschke, Stadt Nürnberg, Geschäftsbereich Umwelt und Gesundheit - Berufsmäßiger Stadtrat
 Prof. Dr. Gunnar Grün, Fraunhofer-Institut für Bauphysik IBP

10:30–10:55 Energy Cadastres as Planning Tools for Sector Coupling (S)
Marius Madsen, Hochschule Niederrhein, SWK E² - Institut für Energietechnik und -management

10:55–11:20 Integration of Solar Heat in a District Heating System (Cooperation with R. M. Schaidhauf, hwst Triesdorf)
Dr.-Ing. Harald Drück, Institut für Thermodynamik und Wärmetechnik (ITW), Universität Stuttgart

11:20–11:45 Final Energy balance for the Metropolitan Region Nürnberg (EMN) Supported by Forum Climate Protection and Sustainable Development (EMN)
Erich Maurer, ENERGIEAGENTUR nordbayern GmbH

11:45–12:10 Business model development for car parks with high shares of electro mobility in smart cities (A)
Dr.-Ing. Christian Haag, Forschungscampus FEN

12:10–12:35 Mode Choice Analysis in Urban Areas
Georg Kern, PB-Consult Planungs- und Betriebsberatungsgesellschaft mbH

Renewable Resources		10:30–12:35
CHAIR	Dr. Hans Hartmann, Technologie- und Förderzentrum (TFZ) Prof. Dr. Jürgen Karl, FAU Erlangen-Nürnberg, Lehrstuhl für Energieverfahrenstechnik	
10:30–11:20	Keynote: Small-scale decentralized Biorefinery Concepts – conversion of existing biogas plants into advanced Biorefineries <i>Prof. Dr.-Ing. Martin Kaltschmitt, Technische Universität Hamburg, Umwelttechnik und Energiewirtschaft</i>	
11:20–11:45	The new EU Renewable Energy Directive – challenging prospects for bioenergy <i>Thomas Siegmund, Bundesverband Bioenergie e.V., Stellv. Geschäftsführer BBE</i>	
11:45–12:10	Flexibilization and alternative Substrates – perspectives for existing and upcoming biogas plants <i>Uwe Welteke-Fabircius, Fl(ex)pern - meta-i.d. Ökologische Innovation GmbH</i>	
12:10–12:35	Biomass for Sector Coupling – biogenous Gases for emerging markets <i>Dr.-Ing. Marius Dillig, FAU Erlangen-Nürnberg, Department Chemie- und Bioingenieurwesen (CBI)</i>	
Combined heat and power 1		10:30–12:35
CHAIR	Prof. Dr.-Ing. Dieter Brüggemann, Universität Bayreuth, Zentrum für Energietechnik (ZET)	
10:30–10:55	Promoting Combined Generation (Heat and Cold) in urban areas (TriMa) <i>Prof. Dr. rer. pol. Birgit Eitel, Technische Hochschule Nürnberg, Verbundprojekt "TriMa"</i>	
10:55–11:20	Promoting Combined Power and Heat in the Metropolitan Area of Nuremberg through stakeholder dialogue <i>Detlef Langhammer, ENERGIEregion Nürnberg e.V.</i>	
11:20–11:45	Use of hydrogen in cogeneration units - New potentials with established technology <i>Frank Grewe, 2G Energietechnik GmbH</i>	
11:45–12:10	Low-NOx Micro-Mix hydrogen cogeneration unit with improved flexibility <i>Shahrad Adjili, KAWASKI Gas Turbines Europe GmbH</i>	
12:10–12:35	Innovative energy supply concepts on district level - a blueprint for future energy infrastructure <i>Holger Wiacker, Bayernwerk AG - Vertrieb Objektlösungen</i>	
Integration – Electrical Energy / Electrical Storage		10:30–12:35
CHAIR	Prof. Dr. Armin Dietz, Technische Hochschule Nürnberg, Institute for Power Electronic Systems (ELSYS)	
10:30–10:55	New Control of Power Systems with Renewable Sources, Storage and Converters: From Frequency to Angle Control (S) <i>Prof. Dr. Harald Weber, Elektrische Energietechnik, Elektrische Energieversorgung</i>	
10:55–11:20	Multi-purpose Use Cases for Distributed Grid-size Battery Storage Systems – Experiences with SchwarmSpeicher Allgäu (A) <i>Dr. Gernot Graefe, egrid applications&consulting</i>	
11:20–11:45	Stability of Photovoltaic Inverters Reactive Power control by the distribution GRID voltage (A) <i>Franz Baumgartner, IEF, ZHAW SoE</i>	
11:45–12:10	Comparing residential power demand with standard load profiles (S) <i>Christoph Stegner, ZAE Bayern</i>	
12:10–12:35	Battery Storage Systems for Multiple Use and Fast Vehicle Charging <i>Sebastian Hörlin, Technische Hochschule Nürnberg, Institute for Power Electronic Systems (ELSYS)</i>	
Simulation & Modelling – Cross-Sector Aspects and Simulation		10:30–12:35
CHAIR	Prof. Dr.-Ing. Marco Pruckner, FAU Erlangen Nürnberg, Technische Fakultät - Juniorprofessur f. Energieinf.	
10:30–10:55	Sustainability-Index to assess the environmental impact of heat supply systems, based on renewable energy, longterm storages and heat network <i>Julia Straub, Technologiezentrum Energie</i>	
10:55–11:20	Calculation tool for the identification and evaluation of factors influencing energy consumption (S) <i>Dipl.-Ing. Rainer Mutschler-Burghard, TÜV Rheinland Industrie Service GmbH, Energie & Umwelt</i>	
11:20–12:10	Combining Energy Saving Techniques in Data Centres using Model-Based Analysis (S) <i>Boudewijn Haverkort, University of Twente, Computer Science</i>	
12:10–12:35	Robust Optimization with Application in Utility Network Design (S) <i>Johannes Thürauf, Energie Campus Nürnberg, EMD</i>	

Green Factory Bavaria - Increased energy efficiency of production processes 10:30–12:35

CHAIR	Prof. Dr.-Ing. Nico Hanenkamp, FAU Erlangen-Nürnberg
10:30–10:55	Intersections and Contrasts between Energy Efficiency and Flexibility in Production Machinery – an analysis regarding energy optimization (S) <i>Martin Brugger, Fraunhofer IGCV, V20</i>
10:55–11:20	GFB EffiCool: Development of a technology toolbox for sustainable and efficient refrigeration technologies in the industry (S) <i>M.Eng. Matthias Koppmann, OTH Amberg-Weiden, Fakultät MBUT</i>
11:20–11:45	Optimized heat recovery and exhaust air systems for compressed air supply systems <i>Michael Steppert, Hochschule Coburg</i>
11:45–12:10	Partitioned stator flux switching machine: an innovative machine design having a high torque per magnet volume <i>Tobias Gerlach, Technische Hochschule Nürnberg, Institute for Power Electronic Systems (ELSYS)</i>
12:10–12:35	Model-based optimization of refrigeration systems (S) <i>Jörg Bentz, Hochschule München, Competence Center Effiziente Gebäude</i>

Green Factory Bavaria - Solution of condition monitoring 10:30–12:10

CHAIR	Sven Kreitlein, RUAG Holding AG Johannes Böhner, Brose Fahrzeugteile GmbH & Co.
10:30–10:55	Flexible pump modules for increasing the energy efficiency and economical aspects in process plants (S) <i>Prof. Dr.-Ing. Eberhard Schlücker, Lehrstuhl für Prozessmaschinen und Anlagentechnik (Chemical- und Bioengineering)</i>
10:55–11:20	Deploying a gray box model for holistic online condition monitoring of ball screw drives <i>Dominik Kisskalt, FAU Erlangen-Nürnberg, Lehrstuhl FAPS</i>
11:20–11:45	Evaluation of Energy Measurements for Error Detection in Press-Fitting Processes (S) <i>Christian Sand, FAU Erlangen-Nürnberg, Lehrstuhl FAPS</i>
11:45–12:10	A method for data type selection in condition monitoring to increase the resource efficiency of hydraulic units <i>M.Sc. Sepp Wimmer, Technische Universität München, Fakultät für Maschinenwesen (iwb)</i>

Lunch & Campfire 12:35–13:30

Mobility / iLOHC 13:30–15:35

CHAIR	Dr. Manfred Schuckert, EA/R, Automotive Regulatory Strategy Prof. Dr. Peter Wasserscheid, FAU Erlangen-Nürnberg, Lehrstuhl für Chemische Reaktionstechnik
13:30–13:55	AUDI smart energy network – smart charging at home (A) <i>Daniel Huth, ASAP Engineering GmbH</i>
13:55–14:20	Economic comparison of different electrofuels for energy scenarios in 2035 (S) <i>Philipp Runge, Energie Campus Nürnberg</i>
14:20–14:45	Opportunities and Challenges of Fuel Cell Vehicle in China (A) <i>Prof. Dr. Tiancai Ma, Tongji University</i>
14:45–15:10	Application of Liquid Organic Hydrogen Carrier in Mobility – A Feasibility Study (S) <i>Dr. Jonas Obermeier, FAU Erlangen-Nürnberg, Lehrstuhl für Thermische Verfahrenstechnik</i>
15:10–15:35	Selective low-temperature deNOx by H2 on Pt/WO3/ZrO2 catalysts in lean exhaust gases (S) <i>Enno Eßer, IEC, TU Freiberg, Doktorand in der Professur Reaktionstechnik</i>

Markets - Gas Markets & Smart Grids 13:30–15:35

CHAIR	PD Dr. Lars Schewe, Energie Campus Nürnberg, EMD
13:30–13:55	Modeling inefficiencies in booking-based gas markets (S) <i>Julia Grübel, FAU Erlangen-Nürnberg</i>
13:55–14:45	Mathematical modeling, simulation, and optimization for gas transport networks and gas markets (S) <i>PD Dr. Lars Schewe, Energie Campus Nürnberg, EMD</i>
14:45–15:10	Strategic Booking Decisions in the European Gas Market (S) <i>Prof. Dr. Gregor Zöttl, FAU Erlangen-Nürnberg, WISO</i>
15:10–15:35	Challenges in the European natural gas market: Parsing the value and costs of supply diversification (S) <i>M.Sc. Philipp Hauser, Technische Universität Dresden, Fakultät Wirtschaftswissenschaften</i>

Buildings 2		13:30–15:35
CHAIR	Thomas Kirmayr, Fraunhofer-Institut für Bauphysik IBP	
13:30–13:55	Optimized Control of Modulating Heat Pumps regarding Photovoltaics production and Efficiency (S) <i>Christina Betzold, Technische Hochschule Nürnberg</i>	
13:55–14:20	Improving the sustainability of an isolated mountain hut through energy optimization and hydrogen (A) <i>Dr. Pedro Casero, Aragon Hydrogen Foundation</i>	
14:20–14:45	Performance analysis of room integrated PCM wallboard and effect of night ventilation on the regeneration behavior. <i>Bharat Chhugani, ZAE Bayern, Energy Efficiency</i>	
14:45–15:10	A practical application of innovative technologies and operational strategies for plus energy terraced houses (A) <i>Kyriaki Koutrouveli, Technische Hochschule Nürnberg, EFI</i>	
15:10–15:35	Building Integrated Photovoltaics in modular façade constructions <i>Prof. Dr. Gunnar Grün, Fraunhofer-Institut für Bauphysik IBP</i>	

Combined heat and power 2		13:30–15:35
CHAIR	Prof. Dr.-Ing. Dieter Brüggemann, Universität Bayreuth, Zentrum für Energietechnik (ZET)	
13:30–13:55	Combining small and large-scale technologies for the development of the MicroRankine bottoming steam cycle. (A) <i>Paris Chatzitakis, Technische Hochschule Nürnberg, Nuremberg Campus of Technology</i>	
13:55–14:20	Transient simulation of geothermal combined heat and power for a reliable energetic and economic valuation (S) <i>Maximiliane Novacek, Universität Bayreuth, LTTT</i>	
14:20–14:45	Evaluation of Natural Gas Technologies for Electricity and Combined Generation (S) <i>Wolf Gereon Wedel, Technische Universität München, Lehrstuhl für Energiesysteme</i>	
14:45–15:10	Hydrogen compressor with internal heat recovery (S) <i>MSc. Arian Shoshi, Lehrstuhl für Prozessmaschinen und Anlagentechnik, Department of Chemical- and Bioenergy</i>	
15:10–15:35	Operation of a hybrid absorption/compression chiller driven by low-grade heat (S) <i>Prof. Dr. Christian Schweigler, Hochschule München, FK 05 - CENERGIE</i>	

Building Materials		13:30–15:35
CHAIR	Dr. Hans-Peter Ebert, ZAE Bayern, Bereichsleiter Energieeffizienz	
13:30–13:55	Development, Optimization and Application of low-e Coatings for Energy Efficient Buildings <i>Dr. rer. nat. Jochen Manara, ZAE Bayern</i>	
13:55–14:20	The Future is Black - SITgrid® Carbon Concrete Reinforcement <i>Roy Thyroff, V. FRAAS Solutions in Textile GmbH, General Manager</i>	
14:20–14:45	Nanomaterials for Energy Efficient Building Envelopes <i>Dr. Christian Scherdel, ZAE Bayern</i>	
14:45–15:10	Thermal Characterization of Building Products with Phase Change Materials <i>Dipl.-Ing. Michael Brütting, Bayerisches Zentrum für Angewandte Energieforschung e.V.</i>	
15:10–15:35	Innovation in the brick industry <i>Dr. Valentin Heizinger, Leipfingler - Bader Ziegelwerke</i>	

Integration – Power2heat / Power2gas Thermal Processes / Bio Mass		13:30–15:35
CHAIR	Prof. Dr. Armin Dietz, Technische Hochschule Nürnberg, Institute for Power Electronic Systems (ELSYS) Prof. Dr.-Ing. Norbert Graß, Technische Hochschule Nürnberg, Institute for Power Electronic Systems (ELSYS)	
13:30–13:55	Technical and economic potential for power to heat in a regional context from an overall energy systems point of view (S) <i>Berit Müller, Reiner Lemoine Institut</i>	
13:55–14:20	Realistic long term investigation of solar ice-storage systems over one heating period (S) <i>Andreas Kätzel, Hochschule Hof, Institut für Wasser- und Energiemanagement (iwe)</i>	
14:20–14:45	Free cooling reduces energy consumption of cold water systems (A) <i>Dipl.-Ing. Philipp Puls, Fraunhofer IISB</i>	
14:45–15:10	Feasibility study of residential energy supply concepts with integration of renewable energies and energy storage systems <i>Dr. Anja Pauksztat, Siemens AG, Siemens Deutschland, Building Technology Sustainability & Energy Management</i>	
15:10–15:35	Digitization Links Energy Management and Trading in a Cellular Distribution Grid (A) <i>Dr. Gerhard Kleineidam, Kompetenznetzwerk Wasser & Energie</i>	

Simulation & Modelling – Process Engineering and Simulation**13:30–15:35****CHAIR** Wirt.-Ing., M. Sc. David Steber, FAU Erlangen-Nürnberg, Lehrstuhl für Informatik 7**13:30–13:55** Numerical modelling of downdraft gasification processes (S)*M.Eng. Andy Gradel, Hochschule Hof, Institut für Wasser- und Energiemanagement (iwe)***13:55–14:20** Model-based optimization of heat pump operation – Simple vs. detailed approach (S)*Julian Buderus, Technische Hochschule Nürnberg***14:20–14:45** Use of waste heat for excess electricity storage via a combined heat pump – ORC process (S)*Bernd Schmitt, FAU Erlangen-Nürnberg, LTT***14:45–15:10** Analysis of a High-Temperature Fuel Cell for Hydrogen Production from Ammonia (S)*Suk Woo Nam, KIST***15:10–15:35** Numerical representation of the operating behaviour of a cross-flow friction turbomachine (A)*M.Sc. Julian Praß, FAU Erlangen-Nürnberg, LS iPAT***Green Factory Bavaria Workshop: Production methods for enabling energy revolution****13:30–15:35***Annika Höft, FAU Erlangen-Nürnberg, Lehrstuhl FAPS**Dr.-Ing. Alexander Kühl, FAU Erlangen-Nürnberg, Lehrstuhl FAPS*

Coffee break & Campfire

15:30–16:00

Final remarks & Green Factory Bavaria Award