

Day 2 (October 9)

| Auditorium 1 | | |
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| Energy Revolution | | |
| 8:15 Welcome in the foyer of building V.27 | | |
| 08:30 | Key1 | A. Shibli , ETD Consulting, Leatherhead, UK Power Plant Cost and Performance Analysis When Operating in Base Load and Flexible Operation Modes With Increasing Renewables |
| 09:00 | | A. Klenk , M. Friedrich, MPA University of Stuttgart, K. Metzger, Grosskraftwerk Mannheim AG, Germany Power Plant Test Loop to Determine Behavior of Components Under Cyclic Operation Modes |
| 09:30 | | P. Auerkari , Kiwa Inspecta Oy, Vantaa/Tampere, R. Pohja, Aalto University, Espoo, S. Tuurna, S. Toikka, Kiwa Inspecta Oy, Vantaa/Tampere, P. Vilaça, Aalto University, Espoo, Finland In-service Creep Damage Evaluation of Ageing Plants |
| 10:00 | | Communication Break |
| 10:20 | | L. Feng , Shanghai Electric Power Generation Co. Ltd. Turbine Plant, PR of China Application of Preheating System of Combined Cycle Steam Turbine in Cold Start |
| 10:45 | | M. Friedrich , A. Klenk, S. Weihe, MPA University of Stuttgart, Germany Creep-Resistant Fiber-Jacketed Pipes for High-Temperature Applications |
| 11:10 | | P. Auerkari , S. Tuurna, Kiwa Inspecta Oy, Vantaa/Tampere, R. Rintamaa, Clenercon Oy, Finland Hydrogen for Energy Solutions - Addressing Gaps |
| 11:35 | | A. Shibli , ETD Consulting, Leatherhead, UK Use of Hydrogen as the Fuel Mix with Natural Gas in CCGTs - Technical and Cost Issues |
| 12:00 | | Communication Break |
| 13:30 | | P. K. Dasari , B. Kagay, MPA University of Stuttgart, L. Frank, Robert Bosch GmbH, Reutlingen, A. Luthle, Siemens Energy Global GmbH & Co. KG, Mülheim, S. Stolz, Ruhr University Bochum, Germany Influence of Hydrogen and Hydrogen Containing Gas Mixtures on the Mechanical Properties of Austenitic Stainless Steel and Nickel-Base Alloys |
| 13:55 | | J. Shingledecker , Electric Power Research Institute (EPRI), Charlotte, tbd USA (inquired) |
| 14:20 | | J. Kimmich , Institute for Bildung Energetics, Thermo Technology and Energy Storage (IGTE), University of Stuttgart Germany From Design to Reality: Creating High-Performance Heat Exchangers with Additive Manufacturing |
| 14:45 | | W. Rheinheimer , Institute for Manufacturing Technologies of Ceramic Components and Composites (IMTCCC), University of Stuttgart, Germany Blacklight Sintering of Ceramics for Hydrogen Applications |
| 15:10 | | Communication Break |
| 15:30 | | Departure for the bus - S21-tour and Get-together at Wirtshaus Lautenschlager |

| Auditorium 2 | | |
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| Big Data and AI Methods | | |
| 08:30 | Key1 | K. Schütz , StableFlame GmbH, Karlsruhe, M. El-Haji , T. Freudenmann, T. Quentel, A. Bähr, EDI GMBH, Pfinztal, Germany AI-Based Bunker Management for Thermal Waste Treatment |
| 09:00 | | T. Pychynski , Robert Bosch GmbH, Stuttgart, Germany Causal Graph Models to Link Domain Knowledge and Artificial Intelligence in Manufacturing |
| 09:30 | | L. Griem , A. Koepe, M. Selzer, Karlsruhe Institute of Technology (KIT), B. Nestler, KIT, University of Applied Sciences, Karlsruhe, Germany Kadi4Mat: AI Driven Extraction of Structure-Property Linkages from Material Databases |
| 10:00 | | Communication Break |
| 10:20 | | J. A. Zak , Mercedes-Benz AG, Germany Physics-informed Neural Networks for Aluminium Resistance Spot Welding |
| 10:45 | | T. Freudenmann , M. El-Haji, T. Quentel, A. Bähr, EDI GmbH, Pfinztal, Germany LLM-Based Knowledge Management for Joining Connections |
| 11:10 | | V. Rominger , TRUMPF Laser- und Systemtechnik AG, Ditzingen, M. Stambke, A. Jahn, TRUMPF Laser AG, Schramberg et al., Germany AI Applications in Laser Material Processing: Breakthroughs and Perspectives |
| 11:35 | | D. Weber , Fraunhofer Institute for Nondestructive Testing (IZFP), Saarbrücken, Germany Simulation- and AI-Based Support in NDT with Ultrasound |
| 12:00 | | Communication Break |
| 13:30 | | K. Jacob , Fraunhofer IZFP Saarbrücken, Germany NDE Sensors for Traceability by Material Fingerprints |
| 13:55 | | P. Liepold , Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany Crack Segmentation via Convolutional Neural Networks (CNNs) for Vastrestaint Type Tests |
| 14:20 | | A. Biber , Welding and Joining Institute (ISF), RWTH Aachen, Germany Methods for Automated Crack Detection of Welded Sheets |
| 14:45 | | H. Cheng , A. Fezer, MPA University of Stuttgart tbd |
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