

20th German-American Frontiers of Engineering Symposium
On the Way towards Sustainability and Resiliency

March 22-25, 2023
Dorint Hotel Düren and Forschungszentrum Jülich

Wednesday, March 22, 2023

- 18:00 – 19:00 **Session Coordination Meeting** (Organizers & Speakers only)
- 19:00 – 21:00 **Welcome Remarks & Dinner**
Enno Aufderheide, Secretary General, Alexander von Humboldt Foundation
John Anderson, President, National Academy of Engineering
Thomas Rachel, Member of the German Federal Parliament

Thursday, March 23, 2023

- Breakfast
- 8:00 – 9:00 **Bus Transfer to Forschungszentrum Jülich**
Please have your identity card/passport ready for the gate control. Personalized registration cards will be handed out during the bus transfer.
- 9:00 – 9:30 **Opening Remarks**
John Anderson, President, National Academy of Engineering
Inka Löck, Head of Berlin Office and Frontiers of Research Program, Alexander von Humboldt Foundation
Olivier Guillon, German Conference Co-Chair, Forschungszentrum Jülich
Thomas Kurfess, US Conference Co-Chair, Georgia Institute of Technology
- 9:30 – 10:30 **SUPPLY CHAIN RESILIENCY – Part I**
Organizers: Julia Arlinghaus, Otto von Guericke University of Magdeburg, and Thomas Hedberg, University of Maryland
Building Systematic Context and Physical Interoperability for Decentralized, Human-driven Supply Chain Design and Operations
Jennifer Pazour, Rensselaer Polytechnic Institute
Beyond SCRM: Supply Chain Risk and Resilience as the Fourth Pillar of Design
Timothy Sprock, University of Maryland
- 10:30 – 11:00 Group Photo & Coffee Break
- 11:00 – 12:00 **SUPPLY CHAIN RESILIENCY – Part II**
How Technology-based Insurance Solutions can Contribute to Supply Chain Resilience
Alexander Skorna, Funk Consulting GmbH
How AI and Data Science can Contribute to Supply Chain Resilience
Henning Blunck, Deutsche Post DHL Group
- 12:00 – 12:30 **AvH presentation on funding opportunities**
- 12:30 – 13:30 Lunch

- 13:30 – 14:30 **Poster Flash Talks**
- 14:30 – 15:15 **Poster Session I: Posters with odd numbers**
- 15:15 – 16:00 **Poster Session II: Posters with even numbers**
- 16:00 – 16:30 Coffee Break
- 16:30 – 17:30 **THE HYDROGEN ECONOMY – Part I**
 Organizers: Emily Grubert, University of Notre Dame, and Lars Lauterbach, RWTH Aachen University
Energy Systems Modeling including Hydrogen Deployment
 Bethany Frew, National Renewable Energy Laboratory
The Biological H₂ Conversion: Pitfalls and Potentials of Hydrogenase Enzymes
 Giorgio Caserta, Technische Universität Berlin
- 17:30 – 18:00 **Bus Transfer to Dorint Hotel Düren**
- 19:00 – 21:00 Dinner at the Dorint Hotel Düren

Friday, March 24, 2023

- Breakfast
- 8:00 – 9:00 **Bus Transfer to Forschungszentrum Jülich**
Please have your registration card and identity card/passport ready for the gate control.
- 9:00 – 10:00 **THE HYDROGEN ECONOMY – Part II**
Aerobic Gas Fermentation for the Production of Chemicals and Fuels
 Bastian Blombach TU Munich Campus Straubing for Biotechnology and Sustainability
Hydrogen for Grid Support
 Tyler Ruggles, LIFTE H2
- 10:00 – 10:30 Coffee Break
- 10:30 – 11:30 **Networking Session**
- 11:30 – 12:30 **NEUROMORPHIC COMPUTING – Part I**
 Organizers: James (Brad) Aimone, Sandia National Laboratories, and Yulia Sandamirskaya, Intel Labs
Promises and Challenges of Neuromorphic Computing
 Emre Neftci, Forschungszentrum Jülich
The Insect Brain as a Model System for Smart Neuromorphic Architectures for the Edge
 Angel Yanguas-Gil, Argonne National Laboratory
- 12:30 – 13:30 Lunch
- 13:30 – 14:30 **NEUROMORPHIC COMPUTING – Part II**
Neuromorphic Artificial Intelligence
 Jean Anne Incorvia, University of Texas at Austin
Neuromorphic Hardware: A System Perspective
 Johannes Partzsch, TU Dresden
- 14:30 – 15:00 Coffee Break

- 15:00 – 16:00 **Research at the Forschungszentrum Jülich**
Short General Overview
 Olivier Guillon, Forschungszentrum Jülich
Solid Oxide Cells for Electrolysis and Power Generation
 Christian Lenser, Forschungszentrum Jülich
Green H₂ Imports from West and South African Countries: Supply Chain Potential and Risks
 Amin Lahnaoui, Forschungszentrum Jülich
- 16:00 – 16:15 Break
- 16:15 – 17:45 **Guided Tour at the Forschungszentrum Jülich**
- 18:00 – 19:00 **Bus Transfer to Aachen**
- 19:00 – 21:00 **Dinner at Restaurant Elisenbrunnen in Aachen**
- 21:00 – 21:30 **Bus Transfer to Dorint Hotel Düren**

Saturday, March 25, 2023

- Breakfast
- 9:00 – 10:00 **SUSTAINABLE PRODUCTION & CIRCULAR ECONOMY – Part I**
 Organizers: Pramita Mitra, Ford Motor Company, and Rebekka Volk, Karlsruhe Institute of Technology
Global Cycles of Metals and Minerals
 Christoph Helbig, University of Bayreuth
Plastic Waste Management and Recycling
 Alper Kiziltas, Society for Plastic Engineers
- 10:00 – 10:30 Coffee Break
- 10:30 – 11:30 **SUSTAINABLE PRODUCTION & CIRCULAR ECONOMY – Part II**
Scalable and Sustainable Recycling of Electric Vehicle Batteries
 Zheng Chen, University of California, San Diego
Rethinking Buildings: Alternative Construction Materials
 Nazanin Saeidi, Karlsruhe Institute of Technology
- 11:30 – 11:45 Break
- 11:45 – 12:30 **Wrap-up & Final Discussion**
 Olivier Guillon, German Conference Co-Chair, Forschungszentrum Jülich and Thomas Kurfess, US Conference Co-Chair, Georgia Institute of Technology
- 12:30 – 12:40 **Closing Remarks**
 Inka Löck, Head of Berlin Office and Frontiers of Research Program, Alexander von Humboldt Foundation
- 12:40 – 13:45 **Farewell Lunch**

Information for US delegates with departure time on March 26: Please note that in Germany there will be a changeover to daylight saving time from March 25 to 26.