10th Energy Colloquium of the Munich School of Engineering
1st Virtual Edition

10 years of MSE: Energy Research in Bavaria

July 30, 2020 – 8:30 a.m. to 6:00 p.m.

Please register by July 23rd to get your login information: http://www.mse.tum.de

8:30 – 8:45 a.m.
Opening: Prof. Dr. Thomas Hamacher
Director, Munich School of Engineering, TUM

8:45 – 9:15 a.m.
Keynote: Hydrogen – Energy and Fuel of the Future or Great White Hope?
Dr. Tobias Brunner, Hyenergy

9:15 – 11:00 a.m.
Energy Conversion and Storage at the Nanoscale
Session Chair: Prof. Dr. Peter Müller-Buschbaum

Phase Transitions in Ni-rich Cathode Materials for Lithium-Ion Batteries: Boon or Bane?
Felix Riewald, BASF SE/Chair of Technical Electrochemistry, TUM

Molecular Insight into the CO₂ and CH₄ Conversion: C-O and C-H Bond Activation and C-C Coupling
Nikita Levin, Chair of Physical Chemistry, TUM

In-Situ Identification of Active Electrocatalytic Sites on Metal-Based Catalysts for Oxygen Reduction and Evolution Reaction
Regina Kluge, Physics of Energy Conversion and Storage, TUM

In-Operando Stability Investigation of Biotemplated Photoactive Layers for Solar Cells
Julian Heger, Chair of Functional Materials, TUM

11:00 – 11:15 a.m.
Coffee Break

11:15 – 12:00 p.m.
Energy Storage from Cradle to Roll-Out
Session Chair: Prof. Dr. Andreas Jossen

Access Economy for Storage in Energy Communities
Niklas Vespermann, Chair of Renewable and Sustainable Energy Systems, TUM

Influence of Battery Energy Storage Systems on the Carbon Footprint of Energy Systems
Anupam Parlikar, Institute for Electrical Energy Storage Technology, TUM

12:00 – 12:30 p.m.
Lunch Break

12:30 – 2:00 p.m.
Poster Presentation and Q&A-Session

2:00 – 3:15 p.m.
From Energy Efficient to Smart Buildings
Session Chair: Prof. Dr. Werner Lang

Indoor Farming – Optimize Efficiency
Sabine Wittmann, Institute of Horticulture, HSWT

BIM-Based Embedded Energy and Greenhouse Gas Emissions Analysis – A Case Study
Patricia Schneider-Marin, Institute of Energy Efficient and Sustainable Design and Building, TUM

Fast Harmonic Estimation Using Real-Time Embedded Controllers in CoSES Smart Grid
Anurag Mohapatra, Center for Combined Smart Energy Systems, TUM

3:15 – 3:30 p.m.
Coffee Break

3:30 – 4:45 p.m.
Building Blocks of a Future Energy Supply
Session Chair: Prof. Dr. Hartmut Spliethoff

Power-to-Heat with Large Scale Thermochemical Energy Storage in Industrial Combined Heat and Power Plants
Gesa Backofen, Chair of Energy Systems, TUM

A Techno-Economic Optimization for Decentralized Waste-Heat Power Generation with a Steam-Rankine-Cycle
Florian Raab, Power and Storage Technologies, THN

100% Renewables for Bavaria - Structures, Costs and Benefits of Full Supply in All Sectors
Jakob Schweiger, ZAE Bayern - Energy Storage

4:45 – 5:15 p.m.
Keynote: Network TUM.PIX – Tackling the Energy Transition through Collaborative Research
Dr. Sebastian Fendt, Munich School of Engineering, TUM

5:15 – 5:30 p.m.
Summary and Closing

5:30 – 6:00 p.m.
Virtual Social Networking