Registration
Participation in the workshop is free, but registration is required via e-mail to Verena Streibel (verena.streibel@wsi.tum.de). Please indicate in your registration e-mail if you would like to join our optional workshop events and if you have any dietary requirements:

1. Conference dinner
   Thursday, 6 pm, Schneider Bräuhaus, Tal 7, 80331 München
2. NAP-XPS lab tour
   Friday, 2 – 4 pm, TUM campus Garching
3. Dietary requirements
   Deadline for registration: 12 January 2024 (or until all available spots are filled).

Lab tour
A lab tour of the new lab-based NAP-XPS system of e-conversion located at the TUM campus in Garching will be offered on Friday afternoon, 2 - 4 pm. The group will travel from the city center to Garching via public transport.

Organization
Barbara Lechner is a Rudolf Mößbauer Tenure Track Professor at the Technical University of Munich and a member of the Young Academy of the Bavarian Academy of Sciences and Humanities since 2017.
Verena Streibel is a junior group leader at the Walter Schottky Institute of the Technical University of Munich and a member of the Young Academy of the Bavarian Academy of Sciences and Humanities since 2023.

Advanced Spectroscopy for Energy Storage & Conversion

Thanks to technological advances, in situ and operando spectroscopy approaches are nowadays widely applied to energy-relevant materials and processes. In particular for energy storage and conversion, ever more in-depth information can be gained for a fundamental understanding of batteries, fuel cells, or electrolyzers, as well as (photo)electrocatalytic applications. While many in situ spectroscopy methods were traditionally only available at (synchrotron) user facilities, lab-based systems are becoming more widespread. These systems offer easier access to synthesis-supporting experiments on site and allow for optimized geometries for liquid-phase experiments. The aim of this workshop is to discuss new and exciting possibilities in energy conversion and storage research and to serve as a kick-off meeting for the new lab-based NAP-XPS system that is about to become available within the Cluster of Excellence e-conversion at the Technical University of Munich.
Program

THURSDAY, 18 JANUARY 2024

9.00   Registration & Coffee

9.20   Opening remark
       BARBARA LECHNER, VERENA STREIBEL
       (Technical University of Munich, Germany)

Session 1

9.30   Cooperative Interaction of Ions and Surfactants at Liquid-Vapor Interfaces
       HENDRIK BLUHM
       (Fritz-Haber-Institut der Max-Planck-Gesellschaft, Germany)

10.10  Operando X-ray Methods Probing Dynamic Processes in Batteries
       MONIEK TROMP
       (Rijksuniversiteit Groningen, The Netherlands)

10.50  Coffee

11.10  Mass-Selected Nanoparticles for Energy Conversion Reactions
       JAKOB KIBSGAARD
       (Technical University of Denmark, Denmark)

11.50  Mimicking the Electrolyte-Electrode Interface: A Surface Science Approach
       SARA BARJA
       (University of the Basque Country, Spain)

12.30  Lunch

Lightning Session

13.30  Short presentations by postdocs and PhD students

15.00  Coffee

Session 2

15.30  Operando Spectroscopic Studies of Electrodes and Electrolytes
       EDVIN LUNDGREN
       (Lund University, Sweden)

16.10  In Situ Spectroscopy Perspectives on the Molecular-Level Interactions of CO₂ in Nanomaterials for Capture and Conversion
       ROSA ARRIGO
       (University of Salford, United Kingdom)

16.50  Operando XAS at Ni-Fe LDH and Related Materials as OER Catalysts for Alkaline Green Hydrogen
       CHRISTINA ROTH
       (University of Bayreuth, Germany)

18.00  Workshop dinner at Schneider Bräuhaus

FRIDAY, 19 JANUARY 2024

9.00   Coffee

Session 3

9.15   NAP-XPS Technology: A Birdseye View on the History and the Future
       STEFAN BÖTTCHER
       (SPECS, Germany)

9.55   Operando NAP-XPS During Electrochemical Methane Formation on Ni(Cu)/YSZ: A Model Approach
       BERNHARD KLÖTZER
       (University of Innsbruck, Austria)

10.35  Coffee

10.50  Lab-Based Electrochemical X-ray Photoelectron Spectroscopy
       JULIA KUNZE-LIEBHÄUSER
       (University of Innsbruck, Austria)

11.30  Characterizing the Electronic Structure of Dye-Sensitized Photoelectrochemical Cells
       ASHLEY HEAD
       (Brookhaven National Laboratory, USA)

12.10  Closing remark
       BARBARA LECHNER, VERENA STREIBEL
       (Technical University of Munich, Germany)

12.20  Lunch

13.20  Transfer to Garching by public transport

14.00  Lab tour

16.00  End of workshop