

### Registration

Participation in the workshop is free, but registration is required via e-mail to Verena Streibel ([verena.streibel@wsi.tum.de](mailto: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).

[e-conversion.de/workshop-advanced-spectroscopy-for-energy-storage-conversion](https://e-conversion.de/workshop-advanced-spectroscopy-for-energy-storage-conversion)

### 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.

[badw.de/en/young-academy](https://badw.de/en/young-academy)

### Supported by



**SPECSGROUP**

### BAVARIAN ACADEMY OF SCIENCES AND HUMANITIES

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## 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.

# BAdW

## Advanced Spectroscopy for Energy Storage & Conversion

WORKSHOP

**18/1/24–  
19/1/24**

**Junges  
Kolleg**

BAYERISCHE  
AKADEMIE  
DER  
WISSENSCHAFTEN

# 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 CO<sub>2</sub> in Nano-materials 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**