Registration
Deadline for registration: April 1st, 2021
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Participation is free of charge, but registration is required. The workshop will be online and the number of participants is limited to 50.

Organization
Johanna Eichhorn is a junior group leader at the Walter Schottky Institute of the Technical University of Munich and member of the Young Academy of the Bavarian Academy of Sciences and Humanities since 2020.

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BAdW

Advanced Semiconductors and Nanosystems: Energy Conversion and Beyond

ONLINE WORKSHOP

6/4/21–7/4/21

Junges Kolleg | BAYERISCHE AKADEMIE DER WISSENSCHAFTEN

Program

TUESDAY, 6/4/21

15.00 **Welcome**

15.10 **TiO_2 Protective Coatings for Photoelectrodes by Atomic Layer Deposition**
OLIVER BIENEK (Technical University of Munich)

15.30 **Electrochemical Performance and Stability of Atomic Layer Deposited Co_3O_4 Protection Layers**
MATTHIAS KUHL
(Technical University of Munich and BAdW)

15.50 **E-Conversion Transient Absorption Spectroscopy: The Setup and its Capabilities**
FELIX ECKMANN (Technical University of Munich)

16.10 **Coffee Break**

16.20 **MBE Growth of GaN Nanostructures on AlN Templates for Gas Sensing Applications**
FLORIAN PANTLE
(Technical University of Munich)

16.40 **Electrical Properties of Zn_3N_2 Thin Films Grown by Molecular Beam Epitaxy**
ELISE SIROTTI (Technical University of Munich)

17.00 **MBE Growth of IGZNO**
MAX KRAUT (Technical University of Munich)

WEDNESDAY, 7/4/21

10.00 **Photoactive Sputtered Nitride Thin Films**
LAURA WAGNER
(Technical University of Munich)

10.20 **$WO_3/BiVO_4$ Heterojunction Photoanodes for Efficient Solar Water Oxidation**
GUANDA ZHOU
(Technical University of Munich)

Advanced Semiconductors and Nanosystems: Energy Conversion and Beyond

Semiconductor materials play an important role in many technological applications, most notably in integrated circuits, but also in energy conversion such as photovoltaics, thermoelectrics, or photocatalysis. In the field of solar energy conversion, the properties of semiconductors are exploited, for example, to convert solar light into electronic energy with photovoltaic devices for immediate use, or to generate storable solar fuels through photoelectrochemical conversion and artificial photosynthesis. For these technologies, current research activities focus on the development of new semiconductor materials, and novel material design concepts to optimize the functional properties for efficient solar energy conversion. In this workshop, researchers will present recent advances in the broader field of solar energy conversion ranging from synthesis of semiconductor nanosystems and heterostructures, aspects of material stability to fundamental understanding of (opto)electronic properties.

10.40 **Synthesis of Epitaxial $BiVO_4$ to Study the Interplay of Intrinsic Charge Transport and Photocatalytic Water Splitting**
VIKTORIA KUNZELMANN
(Technical University of Munich)

11.00 **Coffee Break**

11.10 **Vacuum-Generated Sulfur Vacancies in 2D MoS_2**
THERESA GRÜNLEITNER
(Technical University of Munich)

11.30 **Excitons in n=2 Perovskites**
ANNA STADLBAUER
(Technical University of Munich)

11.50 **Mn-Doping for Enhanced Magnetic Brightening and Circular Polarization of Dark Excitons in Metal-Halide Perovskites**
TIMO NEUMANN
(University of Cambridge)