

Symposium Emerging Materials for Renewable Energy Conversion (SYEM)

jointly organized by
 the Semiconductor Physics Division (HL),
 the Surface Science Division (O),
 the Thin Films Division (DS),
 the Low Temperature Physics Division (TT), and
 the Magnetism Division (MA)

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New materials and material architectures are key for future developments of energy conversion systems, such as semiconductors in photoelectrochemical cells. In developing new material platforms, the challenge is to identify promising candidates among the huge variety of possible combinations. Material discovery based on trial-and-error approaches can only explore a fraction of the available parameter space. Putting forward a path towards improved and accelerated materials discovery, the symposium is meant to highlight new approaches and recent advances both in theory and experiment. A particular topical focus will be on the synergistic combination of simulations to identify new materials, combinatorial materials discovery to screen chemical compositions, and material characterization to understand the fundamental properties of complex material architectures.

Overview of Invited Talks and Sessions

(Lecture hall H 0105)

Invited Talks

SYEM 1.1	Wed	9:30–10:00	H 0105	Non-critical Materials Production for a Green Energy Transition — •ANKE WEIDENKAFF, WENJIE XIE, MARC WIEDENMEYER
SYEM 1.2	Wed	10:00–10:30	H 0105	Strategies for the morphological design of photoactive oxynitride particles and electrodes for solar water-splitting. — •SIMONE POKRANT
SYEM 1.3	Wed	10:30–11:00	H 0105	Computational workflows for an accelerated design of novel materials and interfaces — •IVANO ELIGIO CASTELLI
SYEM 1.4	Wed	11:30–11:45	H 0105	Autonomous composition control of emerging nitride materials for solar energy conversion — •ANDRIY ZAKUTAYEV
SYEM 1.5	Wed	11:45–12:00	H 0105	Understanding and tailoring the catalytic activity of spinel and perovskite surfaces from first principles calculations — •ROSSITZA PENTCHEVA
SYEM 1.6	Wed	12:00–12:15	H 0105	Mastering Compositional Complexity in High Entropy Materials for Energy Applications - Towards Accelerated Materials Discovery by Integration of High-throughput Experimentation, Simulation, and Materials Informatics — •ALFRED LUDWIG

Sessions

SYEM 1.1–1.6	Wed	9:30–12:15	H 0105	Emerging Materials for Renewable Energy Conversion
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