
S E M I N A R
on
Semiconductor Physics and Nanotechnology

Mo, 13.01.2025, 11:15 Uhr,

**Seminar in
person in the Physics lecture hall or via Zoom**

**“INTEGRATION OF TERA-WATT-SCALE RENEWABLE ENERGIES:
INNOVATION NEEDS AND RESEARCH AT AIT”**

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The integration of terawatt-scale renewable energy sources, such as solar PV and wind, into global energy systems is crucial to achieving decarbonization goals. However, this transition requires significant innovations in technology development, at the system- but also the infrastructure-dimension. Key challenges include grid flexibility, energy storage, and efficient transmission systems, but also socio-economic factors such as land usage and integration into the built environment. Advanced digital tools are needed to optimize grid operations and enable real-time energy management. Innovations in long-duration storage technologies, hydrogen production, and power-to-X systems are critical for ensuring reliability and dispatchability. Research at AIT (Austrian Institute of Technology) focuses on cutting-edge solutions and dedicated technology development to support the global transition to terawatt-scale renewables, amongst others, the integration of PV technologies as well as sector coupling via hydrogen production.

Zoom – Link:

<https://zoom.us/j/96375934537?pwd=RTIKTWWhSdzRHU211YTY1bGFxTUtpZz09>

[Meeting-ID: 963 7593 4537](#)

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