Semiconductor Physics Division
Fachverband Halbleiterphysik (HL)

Alexander Holleitner
Technical University of Munich
Walter Schottky Institut and Physics Department
Am Coulombwall 4a
85748 Garching
holleitner@wsi.tum.de

Overview of Invited Talks and Sessions

(Lecture halls H13, H14, H15, and H17; Poster P1 and P3)

Invited and Prize Talks

HL 3.1	Mon	9:30–10:00	H17	**Alexandria Database - Improving machine-learning models in materials science through large datasets** — •Jonathan Schmidt, Tiago Cerqueira, Aldo Romero, Silvana Botti, Miguel Marques
HL 3.2	Mon	10:00–10:30	H17	**Generative Models on the Rise - Which one shall I pick for my Inverse Design Problem?** — •Hanna Türk, Elisabetta Landini, Christian Kunkel, Patricia König, Christoph Scheurer, Karsten Reuter, Johannes Margraf
HL 3.3	Mon	10:30–11:00	H17	**Machine-learning accelerated prediction of two-dimensional conventional superconductors** — Thalis H. B. da Silva, Théo Cavignac, Tiago F. T. Cerqueira, •Haichen Wang, Miguel A. L. Marques
HL 3.4	Mon	11:15–11:45	H17	**Machine Learning for Design, Understanding, and Discovery of (Semiconducting) Materials** — •Pascal Friederich
HL 3.5	Mon	11:45–12:15	H17	**OptiMate: Artificial intelligence for optical spectra** — •Malte Grunert, Max Grossmann
HL 18.1	Tue	9:30–10:00	H17	**Ultrafast Nano-Spectroscopy of Photo-Induced Dynamics in Low-Dimensional Materials** — •Takashi Kumagai
HL 18.2	Tue	10:00–10:30	H17	**Landau level Nanoscopy of charge and heat transport in low-dimensional heterostructures** — •Mengkun Liu
HL 18.3	Tue	10:30–11:00	H17	**Real space mapping of electrically tunable anisotropic THz plasmon polaritons in hBN encapsulated black phosphorus** — •Eva Pogna
HL 18.4	Tue	11:15–11:45	H17	**Ultra-confined THz hyperbolic phonon polaritons in a transition metal dichalcogenide** — Ryan A. Kowalski, Niclas S. Mueller, Gonzalo Alvarez-Perez, Maximilian Obst, Katja D. Granados, Giulia Carini, Aditha Senarath, Saurabh Dixit, Richarda Niemann, Ragu B. Iyer, Felix Kaps, Jakob Wetzel, J. Michael Klopf, Ivan I. Kravchenko, Deliang Bao, Sokrates T. Pantelides, Martin Wolf, Lukas Eng, Pablo Alonso-Gonzalez, Susanne Kehr, Thomas G. Folland, •Alexander Paarmann, Joshua D. Caldwell
HL 18.5	Tue	11:45–12:15	H17	**Programmable polariton nanophotonics using phase-change materials** — •Thomas Taubner
HL 30.1	Wed	9:30–10:00	H13	**Exploring semiconducting epigraphene grown by polymer-assisted sublimation growth** — •Teresa Tschirner, Julia Guse, Stefan Wundrack, Frank Hohls, Klaus Pierz, Hans Werner Schumacher
HL 30.2	Wed	10:00–10:30	H13	**Huge Enhancement of the Giant Negative Magnetoresistance with Decreasing Electron Density** — •Lina Bockhorn, Christian Reichl, Werner Wegscheider, Rolf J. Haug
HL 30.3	Wed	10:30–11:00	H13	**Ultrafast quantum optics with single-photon emitters in 2D materials** — •Steffen Michaelis de Vasconcellos
HL 30.4	Wed	11:15–11:45	H13	**Realistic simulation of quantum emitter dynamics made easy** — •Moritz Cygorek
HL 30.5	Wed	11:45–12:15	H13	**Data-driven Design of Next Generation 2D Materials and Their Heterostructures** — •Rico Friedrich

HL 34.1	Wed	9:30–10:00	H17	**From complex internal dynamics to emission characteristics control in quantum billiards** — •Martina Hentschel
HL 34.2	Wed	10:00–10:30	H17	**Positioning of microcavities around single emitters** — •Tobias Huber-Loyola
HL 34.3	Wed	10:30–11:00	H17	**Exploring Wave Chaos and Non-Hermitian Physics: Future Prospects for Quantum Emission from Chaotic Microcavities** — •Jan Wiersig
HL 34.4	Wed	11:15–11:45	H17	**Correlations and statistics in cavity embedded quantum dot sources of quantum light** — •Ana Predojevic
HL 34.5	Wed	11:45–12:15	H17	**Nonlinear Phenomena in Exciton-Polaritons from Bound States in the Continuum** — •Dario Ballarini
HL 42.1	Wed	16:45–17:15	H17	**Quantum key distribution with single photons from quantum dots** — Joscha Hanel, •Jingzhong Yang, Jipeng Wang, Vincent Rehlinger, Zenghui Jiang, Frederik Benthin, Tom Fandrich, Jialiang Wang, Fabian Klingmann, Raphael Joos, Stephanie Bauer, Sascha Kolatschek, Ali Hreibi, Eddy. Patrick Rugeramigabo, Michael Jetter, Simone. Luca Portalupi, Michael Zopf, Peter Michler, Stefan Kueck, Fei Ding
HL 46.1	Thu	9:30–10:00	H15	**Exploring Auto-Oscillations in Semiconductor Electron-Nuclear Spin System** — •Alex Greilich, Nataliia E. Kopteva, Vladimir L. Korenev, Manfred Bayer
HL 46.6	Thu	11:15–11:45	H15	**Development and Application of Computational Simulations to Optimize Organic Photovoltaic Modules** — •Annika Janssen
HL 47.1	Thu	9:30–10:00	H17	**Quantum-Dot Quantum Light Sources in Deployed Systems** — •Peter Michler
HL 47.2	Thu	10:00–10:30	H17	**Field test of semiconductor quantum light sources** — •Fei Ding
HL 47.3	Thu	10:30–11:00	H17	**Quantum dot based quantum communication in urban networks** — •Rinaldo Trotta
HL 47.4	Thu	11:15–11:45	H17	**Quantum communication protocols over a 14-km urban fiber link** — •Jürgen Eschner
HL 60.1	Fri	9:30–10:00	H17	**Constructing Artificial Matter in the Electron Microscope - Atomic Fabrication at Scale in CrSBr** — •Julian Klein
HL 60.2	Fri	10:00–10:30	H17	**Tuning the structure and magnetism in CrSBr via external pressure** — •Ece Uykur
HL 60.3	Fri	10:30–11:00	H17	**A theoretical perspective on exciton-magnon coupling and its implications** — •Akashdeep Kamra
HL 60.4	Fri	11:15–11:45	H17	**Exciton and valley properties of monolayer transition metal dichalcogenides on the van der Waals magnetic semiconductor CrSBr** — •Yara Galvao Gobato
HL 60.8	Fri	12:30–13:00	H17	**Electric field control of intra- and interlayer excitons in CrSBr** — •Nathan Wilson, Amine Ben Mhenni, Ferdinand Menzel, Alain Dijkstra, Zdenek Sofer, Jonathan Finley

Invited Talks of the joint SKM Dissertationspreis 2025 (SYSD)

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	9:30–10:00	H2	**Nanoscale Chemical Analysis of Ferroic Materials and Phenomena** — •Kasper Aas Hunnestad
SYSD 1.2	Mon	10:00–10:30	H2	**Advanced Excitation Schemes for Semiconductor Quantum Dots** — •Yusuf Karli
SYSD 1.3	Mon	10:30–11:00	H2	**Aspects and Probes of Strongly Correlated Electrons in Two-Dimensional Semiconductors** — •Clemens Kuhlenkamp
SYSD 1.4	Mon	11:00–11:30	H2	**Mean back relaxation and mechanical fingerprints: simplifying the study of active intracellular mechanics** — •Till Münker
SYSD 1.5	Mon	11:30–12:00	H2	**Coherent Dynamics of Atomic Spins on a Surface** — •Lukas Veldman

Invited Talks of the joint Symposium AI-driven Materials Design: Recent Developments, Challenges and Perspectives (SYMD)

See SYMD for the full program of the symposium.

SYMD 1.1	Mon	15:00–15:30	H1	**Learning physically constrained microscopic interaction models of functional materials** — •Boris Kozinsky
SYMD 1.2	Mon	15:30–16:00	H1	**GRACE universal interatomic potential for materials discovery and design** — •Ralf Drautz
SYMD 1.3	Mon	16:00–16:30	H1	**Multiscale Modelling & Machine Learning Algorithms for Catalyst Materials: Insights from the Oxygen Evolution Reaction** — •Nong Artrith
SYMD 1.4	Mon	16:45–17:15	H1	**Inverse Design of Materials** — •Hongbin Zhang
SYMD 1.5	Mon	17:15–17:45	H1	**Data-Driven Materials Science** — •Miguel Marques

Invited Talks of the joint Symposium Progress and Challenges in Modelling Electron-Phonon Interaction in Solids (SYIS)

See SYIS for the full program of the symposium.

SYIS 1.1	Tue	9:30–10:00	H1	**Electron-phonon and exciton-phonon coupling in advanced materials** — •Claudia Draxl
SYIS 1.2	Tue	10:00–10:30	H1	**Exciton-phonon dynamics from first principles** — •Enrico Perfetto
SYIS 1.3	Tue	10:30–11:00	H1	**Polarons and exciton polarons from first principles** — •Feliciano Giustino
SYIS 1.4	Tue	11:15–11:45	H1	**Wannier-Function-Based First-principle Approach to Coupled Exciton-Phonon-Photon Dynamics in Two-Dimensional Semiconductors** — •Alexander Steinhoff, Matthias Florian, Frank Jahnke
SYIS 1.5	Tue	11:45–12:15	H1	**Phonon influence on (cooperative) photon emission from quantum dots** — •Erik Gauger, Julian Wiercinski, Moritz Cygorek

Invited Talks of the joint Symposium Electronic Structure Theory for Quantum Technology: From Complex Magnetism to Topological Superconductors and Spintronics (SYES)

See SYES for the full program of the symposium.

SYES 1.1	Fri	9:30–10:00	H1	**Ab-initio Design of superconductors** — •Lilia Boeri
SYES 1.2	Fri	10:00–10:30	H1	**Topological superconductivity from first principles** — Bendegúz Nyári, András Lászlóffy, Levente Rózsa, Gábor Csire, Balázs Újfalussy, •László Szunyogh
SYES 1.3	Fri	10:30–11:00	H1	**First-principles study and mesoscopic modeling of two-dimensional spin and orbital fluctuations in FeSe** — •Myrta Grüning, Abyay Ghosh, Piotr Chudzinski
SYES 1.4	Fri	11:15–11:45	H1	**Non-collinear magnetism in 2D materials from first principles: Multiferroic order and magnetoelectric effects.** — •Thomas Olsen
SYES 1.5	Fri	11:45–12:15	H1	**Spin-phonon and magnon-phonon interactions from first principles** — •Marco Bernardi

Sessions

HL 1.1–1.13	Mon	9:30–13:00	H13	**Perovskite and Photovoltaics I (joint session HL/KFM)**
HL 2.1–2.13	Mon	9:30–13:00	H15	**2D Semiconductors and van der Waals Heterostructures I**
HL 3.1–3.8	Mon	9:30–13:00	H17	**Focus Session: Machine Learning of semiconductor properties and spectra**
HL 4.1–4.10	Mon	15:00–17:45	H3	**2D Materials and their Heterostructures I (joint session DS/HL)**
HL 5.1–5.12	Mon	15:00–18:00	H11	**2D Materials Beyond Graphene: Growth, Structure and Substrate Interaction (joint session O/HL)**
HL 6.1–6.14	Mon	15:00–18:45	H13	**Materials and Devices for Quantum Technology I**
HL 7.1–7.3	Mon	15:00–15:45	H14	**Semiconductor Lasers**
HL 8.1–8.5	Mon	15:00–16:15	H15	**2D Semiconductors and van der Waals Heterostructures II**
HL 9.1–9.6	Mon	15:00–16:30	H17	**Oxide Semiconductors I**
HL 10.1–10.9	Mon	15:00–17:15	H19	**Spin-Dependent Phenomena in 2D (joint session MA/HL)**
HL 11.1–11.10	Mon	16:00–18:45	H14	**Ultra-fast Phenomena I**

HL 12.1–12.6	Mon	16:45–18:15	H15	**Quantum Transport and Quantum Hall Effects (joint session HL/TT)**
HL 13.1–13.7	Mon	16:45–18:30	H17	**Heterostructures, Interfaces and Surfaces**
HL 14.1–14.11	Tue	9:30–13:00	H3	**2D Materials and their Heterostructures II (joint session DS/HL)**
HL 15.1–15.6	Tue	9:30–11:00	H13	**Quantum Dots and Wires: Growth and Properties**
HL 16.1–16.9	Tue	9:30–12:00	H14	**Organic Semiconductors**
HL 17.1–17.13	Tue	9:30–13:00	H15	**2D Semiconductors and van der Waals Heterostructures III**
HL 18.1–18.8	Tue	9:30–13:00	H17	**Focus Session: Nanoscale Light-matter Interaction I**
HL 19.1–19.9	Tue	9:30–13:15	H36	**Focus Session: Strongly Correlated Quantum States in Moire Heterostructures (joint session TT/HL/MA)**
HL 20.1–20.25	Tue	10:00–12:30	P3	**Poster I**
HL 21.1–21.7	Tue	10:30–12:15	H6	**Graphene: Electronic Structure and Excitations (joint session O/HL)**
HL 22.1–22.10	Tue	10:30–13:00	H8	**2D Materials: Electronic Structure and Exitations I (joint session O/HL/TT)**
HL 23.1–23.7	Tue	11:15–13:00	H13	**Quantum Dots and Wires: Transport (joint session HL/TT)**
HL 24.1–24.3	Tue	12:15–13:00	H14	**Thermal Properties**
HL 25.1–25.8	Tue	13:30–15:30	P3	**Poster 2D Materials: Electronic Structure and Exitations (joint session O/HL)**
HL 26.1–26.5	Tue	13:30–15:30	P3	**Poster 2D Materials Beyond Graphene: Growth, Structure and Substrate Interaction (joint session O/HL)**
HL 27.1–27.5	Tue	13:30–15:30	P3	**Poster 2D Materials: Stacking and Heterostructures (joint session O/HL)**
HL 28.1–28.5	Tue	14:00–15:15	H16	**Topological Insulators (joint session MA/HL)**
HL 29.1–29.96	Tue	18:00–20:00	P1	**Poster II**
HL 30.1–30.5	Wed	9:30–12:15	H13	**Focus Session: Young Semiconductor Forum**
HL 31.1–31.10	Wed	12:15–13:00	H13	**Focus Session: Young Semiconductor Forum Poster**
HL 32.1–32.6	Wed	9:30–11:00	H15	**Nitrides: Preparation and Characterization I**
HL 33.1–33.7	Wed	11:15–13:00	H15	**Nitrides: Devices**
HL 34.1–34.5	Wed	9:30–12:15	H17	**Focus Session: Quantum Emission from Chaotic Microcavities (joint session HL/DY)**
HL 35.1–35.8	Wed	10:30–12:45	H11	**2D Materials: Electronic Structure and Exitations II (joint session O/HL/TT)**
HL 36.1–36.11	Wed	15:00–18:00	H13	**Materials and Devices for Quantum Technology II**
HL 37.1–37.2	Wed	15:00–15:30	H15	**Focus Session: Physics of the van der Waals Magnetic Semiconductor CrSBr I (joint session HL/MA)**
HL 38.1–38.3	Wed	15:00–15:45	H17	**Nanomechanical systems (joint session HL/TT)**
HL 39.1–39.25	Wed	15:00–18:00	P3	**Poster III**
HL 40.1–40.13	Wed	15:30–19:00	H15	**2D Semiconductors and van der Waals Heterostructures IV**
HL 41.1–41.3	Wed	15:45–16:30	H17	**Spin Phenomena in Semiconductors**
HL 42.1–42.6	Wed	16:45–18:30	H17	**Quantum Dots and Wires: Optics I**
HL 43.1–43.6	Wed	17:00–18:30	H31	**Twisted Materials / Systems (joint session TT/HL)**
HL 44.1–44.3	Wed	18:00–18:45	H13	**Focus Session: Quantum Technologies in Deployed Systems I**
HL 45.1–45.13	Thu	9:30–13:00	H13	**Perovskite and Photovoltaics II (joint session HL/KFM)**
HL 46.1–46.11	Thu	9:30–13:00	H15	**Optical Properties**
HL 47.1–47.7	Thu	9:30–12:30	H17	**Focus Session: Quantum Technologies in Deployed Systems II**
HL 48.1–48.7	Thu	9:30–12:45	H36	**Focus Session: Ising Superconductivity in Monolayer Transition Metal Dichalcogenides (joint session TT/HL/MA)**
HL 49.1–49.8	Thu	10:30–12:30	H11	**2D Materials: Electronic Structure and Exitations III (joint session O/HL/TT)**
HL 50.1–50.11	Thu	15:00–17:45	H6	**2D Materials: Stacking and Heterostructures (joint session O/HL)**
HL 51.1–51.8	Thu	15:00–17:15	H13	**Transport Properties (joint session HL/TT)**
HL 52.1–52.8	Thu	15:00–17:15	H14	**Oxide Semiconductors II**
HL 53.1–53.8	Thu	15:00–17:15	H15	**2D Semiconductors and van der Waals Heterostructures V**
HL 54.1–54.8	Thu	15:00–17:15	H17	**Ultra-fast Phenomena II**
HL 55.1–55.13	Thu	15:00–18:30	H33	**Graphene and 2D Materials (joint session TT/HL)**
HL 56	Thu	17:30–19:00	H17	**Members' Assembly**
HL 57.1–57.13	Fri	9:30–13:00	H13	**Quantum Dots and Wires: Optics II**
HL 58.1–58.4	Fri	9:30–10:30	H14	**Nitrides: Preparation and Characterization II**
HL 59.1–59.8	Fri	9:30–11:45	H15	**2D Semiconductors and van der Waals Heterostructures VI**

HL 60.1–60.8	Fri	9:30–13:00	H17	**Focus Session: Physics of the van der Waals Magnetic Semiconductor CrSBr II (joint session HL/MA)**
HL 61.1–61.4	Fri	10:45–11:45	H14	**THz and MIR physics in semiconductors**
HL 62.1–62.5	Fri	11:45–13:00	H15	**2D Semiconductors and van der Waals Heterostructures VII**
HL 63.1–63.5	Fri	12:00–13:15	H14	**Focus Session: Nanoscale Light-matter Interaction II**

Members' Assembly of the Semiconductor Physics Division

Thursday 17:30–19:00 H17

- Bericht
- Wahl der Fachverbandsleitung
- Informationen zur Frühjahrstagung 2026
- Verschiedenes