

Semiconductor Physics Division Fachverband Halbleiterphysik (HL)

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Overview of Invited Talks and Sessions (Lecture halls H31, H32, H33, H34, and H36; Poster P2 and P2)

Invited Talks

HL 2.1	Mon	9:30–10:00	H31	Observation of quantum Zeno effects for localized spins — ●ALEX GREILICH, NIKITA V. LEPPENEN, VITALIE NEDELEA, EIKO EVERS, DMITRY S. SMIRNOV, MANFRED BAYER
HL 3.1	Mon	9:30–10:00	H32	Pushing the limits in real-time measurements of quantum dynamics — ●ERIC KLEINHERBERS, PHILIPP STEGMANN, ANNIKA KURZMANN, MARTIN GELLER, AXEL LORKE, JÜRGEN KÖNIG
HL 6.1	Mon	9:30–10:00	H36	g-factors in van der Waals heterostructures: revealing signatures of interlayer coupling — ●PAULO E. FARIA JUNIOR
HL 8.1	Mon	15:00–15:30	H32	Crux of Using the Cascaded Emission of a Three-Level Quantum Ladder System to Generate Indistinguishable Photons — ●EVA SCHÖLL, LUCAS SCHWEICKERT, LUKAS HANSCHKE, KATHARINA D. ZEUNER, FRIEDRICH SBRESNY, THOMAS LETTNER, RAHUL TRIVEDI, MARCUS REINDL, SAIMON FILIPE COVRE DA SILVA, RINALDO TROTTA, JONATHAN FINLEY, JELENA VUČKOVIĆ, KAI MÜLLER, ARMANDO RASTELLI, VAL ZWILLER, KLAUS D. JÖNS
HL 9.1	Mon	15:00–15:30	H33	Exceptional points in optics: From bulk materials to one-dimensional confined systems — ●CHRIS STURM
HL 9.2	Mon	15:30–16:00	H33	Complex Skin Modes in Non-Hermitian Coupled Laser Arrays — ●MERCEDEH KHAJAVIKHAN, YUZHOU LIU
HL 9.3	Mon	16:15–16:45	H33	Non-Hermitian effects in exciton polaritons — ●ELIEZER ESTRECHO
HL 9.4	Mon	16:45–17:15	H33	Nonlinear dynamics and exceptional points in exciton-polariton condensates — ●STEFAN SCHUMACHER
HL 12.1	Tue	9:30–10:00	H32	Wafer-Scale Epitaxial Modulation of Quantum Dot Density — ●NIKOLAI BART, CHRISTIAN DANGEL, PETER ZAJAC, NIKOLAI SPITZER, MARCEL SCHMIDT, KAI MÜLLER, ANDREAS D. WIECK, JONATHAN FINLEY, ARNE LUDWIG
HL 14.1	Tue	9:30–10:00	H34	Materials and Device Engineering for Gallium Oxide-based Electronics — NIDHIN KURIAN KALARICKAL, SUSHOVAN DHARA, ASHOK DHEENAN, ●SIDDHARTH RAJAN
HL 14.2	Tue	10:00–10:30	H34	Ferroelectric two-dimensional electron gases for oxide spin-orbitronics — ●JULIEN BRÉHIN
HL 14.8	Tue	12:15–12:45	H34	Strain-driven dissociation of water on (incipient) ferroelectrics — JOSHUA L. BATES, ●CHIARA GATTINONI
HL 15.1	Tue	9:30–10:00	H36	Ultrafast all-optical modulation and frequency conversion in 2D materials — ●SEBASTIAN KLIMMER, ARTEM SINELNIK, ISABELLE STAUDE, GIANCARLO SOAVI
HL 19.1	Wed	9:30–10:00	H34	Quantum Interference of Identical Photons from Remote GaAs Quantum Dots — ●GIANG NAM NGUYEN, LIANG ZHAI, CLEMENS SPINNLER, JULIAN RITZMANN, MATTIAS C. LÖBL, ANDREAS D. WIECK, ARNE LUDWIG, ALISA JAVADI, RICHARD J. WARBURTON
HL 27.1	Thu	9:30–10:00	H33	What limits state-of-the-art chalcopyrite solar cells? — ●SUSANNE SIEBENTRITT
HL 27.2	Thu	10:00–10:30	H33	Approaches to improve CIGS absorber quality and the CIGS/buffer interface to reach 24% efficiency and beyond — ●WOLFRAM WITTE

HL 33.6	Thu	16:30–17:00	H32	Ultrastrong light-matter coupling in materials — ●NICLAS S. MUELLER, EDUARDO B. BARROS, FLORIAN SCHULZ, HOLGER LANGE, STEPHANIE REICH
HL 34.1	Thu	15:00–15:30	H33	Super-high efficiency CIGS devices: current status and pathways forward — ●ROMAIN CARRON
HL 34.2	Thu	15:30–16:00	H33	Highlights from the development of the world record Cd-free CIGS_{Se} 30x30cm² solar module — ●ANASTASIA ZELENINA
HL 34.5	Thu	17:00–17:30	H33	Digital Twins - a simulation model for Cu(In,Ga)Se₂ solar cells of high and moderate efficiency — ●MATTHIAS MAIBERG, CHANG-YUN SONG, MARCIN MORAWSKI, FELIX NEDUCK, JOSHUA DAMM, HEIKO KEMPA, DIMITRIOS HARISKO, WOLFRAM WITTE, ROLAND SCHEER
HL 40.5	Fri	10:45–11:15	H33	Ultrafast subcycle dynamics of deep-strong light-matter coupling — ●JOSHUA MORNHINWEG, MAIKE HALBHUBER, LAURA DIEBEL, VIOLA ZELLER, JOSEF RIEPL, CRISTIANO CIUTI, DOMINIQUE BOUGEARD, RUPERT HUBER, CHRISTOPH LANGE

Invited Talks of the joint Symposium Frontiers of Orbital Physics: Statics, Dynamics, and Transport of Orbital Angular Momentum (SYOP)

See SYOP for the full program of the symposium.

SYOP 1.1	Mon	9:30–10:00	H1	Orbital degeneracy in transition metal compounds: Jahn-Teller effect, spin-orbit coupling and quantum effects — ●DANIEL KHOMSKII
SYOP 1.2	Mon	10:00–10:30	H1	Orbital magnetism out of equilibrium: driving orbital motion with fluctuations, fields and currents — ●YURIY MOKROUSOV
SYOP 1.3	Mon	10:30–11:00	H1	Orbitronics: new torques and magnetoresistance effects — ●MATHIAS KLÄUI
SYOP 1.4	Mon	11:15–11:45	H1	Orbital and total angular momenta dichroism of the THz vortex beams at the antiferromagnetic resonances — ●ANDREI SIRENKO
SYOP 1.5	Mon	11:45–12:15	H1	Observation of the orbital Hall effect in a light metal Ti — ●GYUNG-MIN CHOI

Invited Talks of the joint Symposium SKM Dissertation Prize 2022 (SYSD)

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	10:15–10:45	H2	Charge localisation in halide perovskites from bulk to nano for efficient optoelectronic applications — ●SASCHA FELDMANN
SYSD 1.2	Mon	10:45–11:15	H2	Nonequilibrium Transport and Dynamics in Conventional and Topological Superconducting Junctions — ●RAFFAEL L. KLEES
SYSD 1.3	Mon	11:15–11:45	H2	Probing magnetostatic and magnetotransport properties of the antiferromagnetic iron oxide hematite — ●ANDREW ROSS
SYSD 1.4	Mon	11:45–12:15	H2	Quantum dot optomechanics with surface acoustic waves — ●MATTHIAS WEISS

Invited Talks of the joint Symposium From Physics and Big Data to the Design of Novel Materials (SYNM)

See SYNM for the full program of the symposium.

SYNM 1.1	Mon	15:00–15:30	H1	How to tackle the "I" in FAIR? — ●CLAUDIA DRAXL
SYNM 1.2	Mon	15:30–16:00	H1	Beyond the average error: machine learning for the discovery of novel materials — ●MARIO BOLEY, SIMON TESHUVA, FELIX LUONG, LUCAS FOPPA, MATTHIAS SCHEFFLER
SYNM 1.3	Mon	16:00–16:30	H1	The Phase Diagram of All Inorganic Materials — ●CHRIS WOLVERTON
SYNM 1.4	Mon	16:45–17:15	H1	Automated data-driven upscaling of transport properties in materials — ●DANNY PEREZ, THOMAS SWINBURNE
SYNM 1.5	Mon	17:15–17:45	H1	Data-driven understanding of concentrated electrolytes — ●ALPHA LEE

Invited Talks of the joint Symposium High Yield Devices for Photonic Quantum Implementations (SYPQ)

See SYPQ for the full program of the symposium.

SYPQ 1.1	Tue	9:30–10:00	H1	Designing driving protocols for high-fidelity quantum devices using numerically exact predictions — ●MORITZ CYGOREK, ERIK M. GAUGER
SYPQ 1.2	Tue	10:00–10:30	H1	Challenges towards high efficiency quantum dot single photon sources — ●ARNE LUDWIG
SYPQ 1.3	Tue	10:30–11:00	H1	Organic Molecules in photonic quantum technologies — ●COSTANZA TONINELLI
SYPQ 1.4	Tue	11:15–11:45	H1	Quantum-dot single-photon sources for quantum photonic networks — ●PETER MICHLER
SYPQ 1.5	Tue	11:45–12:15	H1	Quantum light sources: entanglement generation in semiconductor nanostructures — ●ANA PREDOJEVIC

Invited Talks of the joint Symposium Entanglement Distribution in Quantum Networks (SYED)

See SYED for the full program of the symposium.

SYED 1.1	Wed	9:30–10:00	H1	A multi-node quantum network of remote solid-state qubits — ●RONALD HANSON
SYED 1.2	Wed	10:00–10:30	H1	Quantum key distribution with highly entangled photons from GaAs quantum dots — ●ARMANDO RASTELLI, SANTANU MANNA, SAIMON COVRE DA SILVA, GABRIEL UNDEUTSCH, CHRISTIAN SCHIMPF
SYED 1.3	Wed	10:30–11:00	H1	Entanglement distribution with minimal memory requirements using time-bin photonic qudits — ●JOHANNES BORREGAARD
SYED 1.4	Wed	11:15–11:45	H1	Quantum photonics: interference beyond HOM and quantum networks — ●STEFANIE BARZ
SYED 1.5	Wed	11:45–12:15	H1	Photonic cluster-state generation for memory-free quantum repeaters — ●TOBIAS HUBER

Invited Talks of the joint Symposium United Kingdom as Guest of Honor (SYUK)

See SYUK for the full program of the symposium.

SYUK 1.1	Wed	9:30–10:00	H2	Structure and Dynamics of Interfacial Water — ●ANGELOS MICHAELIDES
SYUK 1.2	Wed	10:00–10:30	H2	A molecular view of the water interface — ●MISCHA BONN
SYUK 1.3	Wed	10:30–11:00	H2	Motile cilia waves: creating and responding to flow — ●PIETRO CICUTA
SYUK 1.4	Wed	11:00–11:30	H2	Cilia and flagella: Building blocks of life and a physicist's playground — ●OLIVER BÄUMCHEN
SYUK 1.5	Wed	11:45–12:15	H2	Computational modelling of the physics of rare earth - transition metal permanent magnets from SmCo_5 to $\text{Nd}_2\text{Fe}_{14}\text{B}$ — ●JULIE STAUNTON
SYUK 2.1	Wed	15:00–15:30	H2	Hysteresis Design of Magnetic Materials for Efficient Energy Conversion — ●OLIVER GUTFLEISCH
SYUK 2.2	Wed	15:30–16:00	H2	Non-equilibrium dynamics of many-body quantum systems versus quantum technologies — ●IRENE D'AMICO
SYUK 2.3	Wed	16:00–16:30	H2	Quantum computing with trapped ions — ●FERDINAND SCHMIDT-KALER
SYUK 2.4	Wed	16:45–17:15	H2	Breaking the millikelvin barrier in cooling nanoelectronic devices — ●RICHARD HALEY
SYUK 2.5	Wed	17:15–17:45	H2	Superconducting Quantum Interference Devices for applications at mK temperatures — ●SEBASTIAN KEMPF

Invited Talks of the joint Symposium Complexity and Topology in Quantum Matter (SYQM)

See SYQM for the full program of the symposium.

SYQM 1.1	Fri	9:30–10:00	H1	The role of crystalline symmetries in topological materials: the topological materials database — ●MAIA VERGNIORY
SYQM 1.2	Fri	10:00–10:30	H1	Microwave Bulk and Edge Transport in HgTe-Based 2D Topological Insulators — ●ERWANN BOCQUILLON, MATTHIEU C. DARTAILH, ALEXANDRE GOURMELON, HIROSHI KAMATA, KALLE BENDIAS, SIMON HARTINGER, JEAN-MARC BERROIR, GWENDAL FÈVE, BERNARD PLAÇAIS, LUKAS LUNCZER, RAIMUND SCHLERETH, HARTMUT BUHMANN, LAURENS MOLENKAMP
SYQM 1.3	Fri	10:30–11:00	H1	Spectral Sensitivity of Non-Hermitian Topological Systems — ●JAN CARL BUDICH
SYQM 1.4	Fri	11:15–11:45	H1	Topological photonics and topological lasers with coupled vertical resonators — ●SEBASTIAN KLEMBT
SYQM 1.5	Fri	11:45–12:15	H1	Spectroscopic Studies of the Topological Magnon Band Structure in a Skyrmion Lattice — ●MARKUS GARST

Sessions

HL 1.1–1.4	Sun	16:00–18:20	H2	Tutorial: 2D Quantum Materials and Heterostructures: From Fabrication to Applications (joint session HL/TUT)
HL 2.1–2.5	Mon	9:30–11:00	H31	Spin Phenomena in Semiconductors
HL 3.1–3.11	Mon	9:30–13:00	H32	Quantum Dots and Wires 1: Transport and Electronic Properties
HL 4.1–4.11	Mon	9:30–12:45	H33	Semiconductor Lasers
HL 5.1–5.11	Mon	9:30–12:45	H34	Perovskite and Photovoltaics 1 (joint session HL/ CPP/ KFM)
HL 6.1–6.10	Mon	9:30–12:45	H36	2D Materials 1 (joint session HL/ CPP/ DS)
HL 7.1–7.10	Mon	15:00–18:00	H31	(Quantum) Transport Properties
HL 8.1–8.10	Mon	15:00–18:15	H32	Quantum Dots and Wires 2: Optics 1
HL 9.1–9.5	Mon	15:00–17:30	H33	Focus Session: Exceptional Points and Non-Hermitian Physics in Semiconductor Systems
HL 10.1–10.13	Mon	15:00–18:30	H34	Nitrides
HL 11.1–11.12	Mon	15:00–18:30	H36	2D Materials 2 (joint session HL/ CPP/ DS)
HL 12.1–12.10	Tue	9:30–12:45	H32	Quantum Dots and Wires 3: Growth
HL 13.1–13.10	Tue	9:30–12:15	H33	Ultra-Fast Phenomena
HL 14.1–14.8	Tue	9:30–12:45	H34	Focus Session: Quantum Properties at Functional Oxide Interfaces (joint session HL/ DS)
HL 15.1–15.8	Tue	9:30–12:00	H36	2D Materials 3 (joint session HL/ CPP/ DS)
HL 16.1–16.4	Wed	9:30–11:00	H17	Focus Session: Quantum Properties at Functional Oxide Interfaces (joint session DS/ HL)
HL 17.1–17.10	Wed	9:30–12:30	H32	Quantum Dots and Wires 4: Devices
HL 18.1–18.11	Wed	9:30–12:30	H33	Oxide Semiconductors (joint session HL/ KFM)
HL 19.1–19.11	Wed	9:30–13:00	H34	Materials and Devices for Quantum Technology 1
HL 20.1–20.9	Wed	9:30–12:00	H36	2D Materials 4 (joint session HL/ CPP/ DS)
HL 21.1–21.12	Wed	15:00–18:30	H32	Optical Properties 1
HL 22.1–22.10	Wed	15:00–18:00	H33	Heterostructures, Interfaces and Surfaces
HL 23.1–23.11	Wed	15:00–18:15	H34	Perovskite and Photovoltaics 2 (joint session HL/ CPP/ KFM)
HL 24.1–24.12	Wed	15:00–18:30	H36	Functional Semiconductors for Renewable Energy Solutions (joint session HL/ KFM)
HL 25.1–25.98	Wed	18:00–20:00	P2	Poster 1
HL 26.1–26.11	Thu	9:30–12:45	H32	Quantum Dots and Wires 5: Optics 2
HL 27.1–27.4	Thu	9:30–11:00	H33	Focus Session: Perspectives in Cu(In,Ga)Se 1
HL 28.1–28.8	Thu	9:30–11:45	H34	Organic Semiconductors 1
HL 29.1–29.6	Thu	9:30–11:00	H36	2D Materials: Graphene
HL 30.1–30.51	Thu	11:00–13:00	P3	Poster 2
HL 31.1–31.4	Thu	11:15–12:15	H36	2D Materials 5 (joint session HL/ CPP/ DS)
HL 32.1–32.6	Thu	15:00–16:30	H31	Perovskite and Photovoltaics 3 (joint session HL/ CPP/ KFM)
HL 33.1–33.10	Thu	15:00–18:00	H32	Optical Properties 2
HL 34.1–34.7	Thu	15:00–18:00	H33	Focus Session: Perspectives in Cu(In,Ga)Se 2
HL 35.1–35.4	Thu	15:00–16:00	H34	Acoustic Waves and Nanomechanics
HL 36.1–36.10	Thu	15:00–17:45	H36	Materials and Devices for Quantum Technology 2
HL 37.1–37.3	Thu	16:30–17:15	H34	Thermal Properties

HL 38	Thu	18:00–19:00	H34	Members' Assembly
HL 39.1–39.5	Fri	9:30–10:45	H32	Quantum Dots and Wires 6: II-VI and related
HL 40.1–40.7	Fri	9:30–11:45	H33	THz and MIR Physics in Semiconductors
HL 41.1–41.5	Fri	9:30–10:45	H34	Organic Semiconductors 2
HL 42.1–42.9	Fri	9:30–12:00	H36	2D Materials 6 (joint session HL/CPP/DS)

Members' Assembly of the Semiconductor Physics Division

Donnerstag 18:00–19:00 H34

- Bericht
- Informationen zu Dresden 2023
- Verschiedenes