

## Semiconductor Physics Division Fachverband Halbleiterphysik (HL)

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Vice Chairs: Michael Jetter, University of Stuttgart, and Christoph Lienau, University of Oldenburg

### Overview of Invited Talks and Sessions

(lecture rooms ER 164, ER 270, EW 015, EW 201, EW 202, and EW 203; Poster D)

#### Invited Talks

HL 3.1	Mon	9:30–10:00	ER 164	<b>Recent advances in ultrafast VECSELs and MIXSELs</b> — •THOMAS SÜDMEYER, VALENTIN J. WITTEW, OLIVER D. SIEBER, MARIO MANGOLD, MARTIN HOFFMANN, YOHAN BARBARIN, MATTHIAS CHRISTOPH GOLLING, URSULA KELLER
HL 3.4	Mon	11:15–11:45	ER 164	<b>Novel wavelength VECSELs via intracavity Raman conversion and InP quantum dots</b> — •JENNIFER E. HASTIE, PETER J. SCHLOSSER, DANIELE C. PARROTTA, ALAN J. KEMP, MARTIN D. DAWSON
HL 14.1	Mon	15:00–15:30	ER 164	<b>Growth and Device Integration of Site-Controlled Quantum Dots</b> — •SVEN HÖFLING, CHRISTIAN SCHNEIDER, ALEXANDER HUGGENBERGER, VASILIJ BAUMANN, MICHA STRAUSS, THOMAS SÜNNER, TOBIAS HEINDEL, LUKAS WORSCHER, STEPHAN REITZENSTEIN, MARTIN KAMP, ALFRED FORCHEL
HL 14.4	Mon	16:45–17:15	ER 164	<b>Spatial and spectral control of self-assembled quantum dots.</b> — •OLIVER G. SCHMIDT
HL 31.1	Tue	9:30–10:00	EW 203	<b>Quantum structures on ultra clean electron gases</b> — •CLEMENS RÖSSLER, STEPHAN BAER, THOMAS IHN, KLAUS ENSSLIN, CHRISTIAN REICHL, WERNER WEGSCHEIDER
HL 42.1	Tue	14:45–15:15	EW 201	<b>Excitons in organic semiconductors and organic/inorganic hybrid systems: Insight from many-body perturbation theory</b> — •CLAUDIA DRAXL
HL 46.1	Wed	9:30–10:00	ER 164	<b>AlN-based technology for electronics and optoelectronics</b> — •ZLATKO SITAR, RAMON COLLAZO, RAOUL SCHLESSER, SPALDING CRAFT, BAXTER MOODY, SELJI MITA, JINQIAO XIE, ANTHONY RICE, JAMES TWEEDY
HL 67.1	Wed	17:15–17:45	ER 270	<b>Excitons in Artificial Light-Harvesting Antenna Systems</b> — •DORTHE M. EISELE, DYLAN H. ARIAS, COLBY P. STEINER, ROBERT J. SILBEY, XI-AOFENG FU, DANIELA NICASTRO, KEITH A. NELSON, MOUNGI G. BAWENDI
HL 74.1	Thu	9:30–10:00	ER 164	<b>A highly efficient single photon - single quantum dot interface</b> — •P. SENELLART, O. GAZZANO, S. MICHAELIS DE VASCONCELLOS, C. ARNOLD, V. LOO, A. NOWAK, A. DOUSSE, A. LEMAITRE, I. SAGNES, J. BLOCH, P. VOISIN, L. LANCO
HL 74.4	Thu	11:30–12:00	ER 164	<b>Semiconductor photonics for quantum information applications</b> — •ANDREW SHIELDS
HL 75.1	Thu	9:30–10:00	EW 201	<b>Weak and strong coupling in wide-gap semiconductor based monolithic microcavities</b> — •KATHRIN SEBALD
HL 82.1	Thu	15:00–15:30	ER 164	<b>Quantum dot - nanocavity QED for quantum information processing</b> — •JELENA VUCKOVIC
HL 83.1	Thu	15:00–15:30	EW 201	<b>Compositional instability in InGaN and InAlN thick films with high indium content</b> — •FERNANDO PONCE
HL 83.4	Thu	16:45–17:15	EW 201	<b>Low Temperature Growth Methods for Overcoming Perceived Limitations in III-Nitride Epitaxy</b> — •W. ALAN DOOLITTLE, MICHAEL MOSELEY, BRENDAN GUNNING

HL 96.5	Fri	11:45–12:15	ER 164	<b>Atomistic insights and controls for compound semiconductor growth by STMBE: STM obseration during MBE growth</b> — ●SHIRO TSUKAMOTO
HL 96.6	Fri	12:15–12:45	ER 164	<b>In situ synchrotron x-ray studies during metal-organic chemical vapor deposition of semiconductors</b> — ●CAROL THOMPSON, MATTHEW J. HIGHLAND, EDITH PERRET, MARIE-INGRID RICHARD, PAUL H. FUOSS, STEPHEN K. STREIFFER, G. BRIAN STEPHENSON

### Invited talks of the joint symposium SYTI

See SYTI for the full program of the symposium.

SYTI 1.1	Tue	9:30–10:00	H 0105	<b>Search for Majorana fermions in topological insulators</b> — ●CARLO BEENAKKER
SYTI 1.2	Tue	10:00–10:30	H 0105	<b>Cooper Pairs in Topological Insulator Bi<sub>2</sub>Se<sub>3</sub> Thin Films Induced by Proximity Effect</b> — ●JINFENG JIA
SYTI 1.3	Tue	10:30–11:00	H 0105	<b>Gate tunable normal and superconducting transport through a 3D topological insulator</b> — ●ALBERTO MORPURGO
SYTI 1.4	Tue	11:00–11:30	H 0105	<b>Weyl Metal States and Surface Fermi Arcs in Iridates</b> — ●SERGEY SAVRASOV
SYTI 1.5	Tue	11:30–12:00	H 0105	<b>Engineering a Room-Temperature Quantum Spin Hall State in Graphene via Adatom Deposition</b> — ●MARCEL FRANZ

### Invited talks of the joint symposium SYNM

See SYNM for the full program of the symposium.

SYNM 1.1	Wed	15:00–15:30	H 0105	<b>Mechanical resonators in the quantum regime</b> — ●ANDREW N. CLELAND
SYNM 1.2	Wed	15:30–16:00	H 0105	<b>Quantum optomechanics: exploring the interface between quantum physics and gravity</b> — ●MARKUS ASPELMEYER
SYNM 1.3	Wed	16:00–16:30	H 0105	<b>Integrated transduction and coherent control of high Q nanomechanical systems using dielectric gradient forces</b> — ●EVA M. WEIG
SYNM 1.4	Wed	16:30–17:00	H 0105	<b>Cavity optomechanics with microwave photons</b> — ●JOHN TEUFEL
SYNM 1.5	Wed	17:00–17:30	H 0105	<b>Optomechanical crystals</b> — ●OSKAR PAINTER

### Invited talks of the joint symposium SYRS

See SYRS for the full program of the symposium.

SYRS 1.1	Thu	15:00–15:30	H 0105	<b>Redox-based resistive memories - recent progress</b> — ●RAINER WASER
SYRS 1.2	Thu	15:30–16:00	H 0105	<b>Electric Formation of Metal/SrTiO<sub>3</sub> Junctions and its Correlation to Multi-Dimensional Defects</b> — ●DIRK C. MEYER, HARTMUT STÖCKER, JULIANE HANZIG, FLORIAN HANZIG, MATTHIAS ZSCHORNAK, BARBARA ABENDROTH, SIBYLLE GEMMING
SYRS 1.3	Thu	16:00–16:30	H 0105	<b>The Connecting between the Properties of Memristive Material Systems and Application Requirements</b> — ●THOMAS MIKOLAJICK, STEFAN SLESAZECK, HANNES MEHNE
SYRS 1.4	Thu	16:30–17:00	H 0105	<b>Mechanism of resistive switching in bipolar transition metal oxides</b> — ●MARCELO ROZENBERG
SYRS 1.5	Thu	17:00–17:30	H 0105	<b>Resistive switching memories: Mechanisms, modeling and scaling</b> — ●DANIELE IELMINI

### Sessions

HL 1.1–1.3	Sun	16:00–17:55	EW 201	<b>Tutorial: Attosecond Electron Dynamics</b>
HL 2.1–2.11	Mon	9:30–13:15	ER 270	<b>Focus Session: Structural Ordering and Electronic Transport I (jointly with CPP)</b>
HL 3.1–3.6	Mon	9:30–12:45	ER 164	<b>Focus Session: VECSEL</b>
HL 4.1–4.9	Mon	9:30–11:45	EW 201	<b>GaN: Preparation and Characterization I (mainly Optics)</b>

HL 5.1–5.6	Mon	9:30–11:00	EW 202	<b>Quantum Dots and Wires: Preparation and Characterization I</b>
HL 6.1–6.8	Mon	9:30–11:30	EW 203	<b>Ge/Si I</b>
HL 7.1–7.8	Mon	9:30–11:30	EW 015	<b>"New" Materials and New Physics in "Old" Materials I</b>
HL 8.1–8.12	Mon	9:30–12:45	BH 243	<b>Transport: Quantum Coherence and Quantum Information Systems 1 (jointly with TT, MA)</b>
HL 9.1–9.13	Mon	9:30–13:00	H 3010	<b>Transport: Topological Insulators 1 (jointly with TT, MA)</b>
HL 10.1–10.8	Mon	11:15–13:15	EW 202	<b>Quantum Dots and Wires: Preparation and Characterization II (mainly Arsenides)</b>
HL 11.1–11.9	Mon	11:45–14:00	EW 203	<b>Carbon: Nanotubes, Diamond and Silicon Carbide</b>
HL 12.1–12.9	Mon	11:45–14:00	EW 015	<b>"New" Materials and New Physics in "Old" Materials II</b>
HL 13.1–13.8	Mon	15:00–17:30	ER 270	<b>Focus Session: Structural Ordering and Electronic Transport II (jointly with CPP)</b>
HL 14.1–14.6	Mon	15:00–18:15	ER 164	<b>Focus Session: Site-selective Growth of single Quantum Dots</b>
HL 15.1–15.8	Mon	15:00–17:00	EW 201	<b>Graphene: Structure and Theory I</b>
HL 16.1–16.5	Mon	15:00–16:15	EW 202	<b>II-VI Semiconductors I</b>
HL 17.1–17.7	Mon	15:00–16:45	EW 203	<b>Plasmonic Systems</b>
HL 18.1–18.9	Mon	15:00–17:30	BH 243	<b>Transport: Quantum Coherence and Quantum Information Systems 2 (jointly with TT, MA)</b>
HL 19.1–19.6	Mon	15:00–16:30	H 3005	<b>Transport: Topological Insulators 2 (jointly with TT, MA)</b>
HL 20.1–20.7	Mon	16:30–18:15	EW 202	<b>Focus Session: Magnetic Semiconductors (jointly with MA)</b>
HL 21.1–21.5	Mon	17:00–18:15	EW 203	<b>Photonic Crystals I</b>
HL 22.1–22.7	Mon	17:15–19:00	EW 201	<b>Graphene: Structure and Theory II</b>
HL 23.1–23.6	Mon	17:45–19:15	H 1012	<b>Topological Insulators I (jointly with MA, DS, O, TT)</b>
HL 24.1–24.25	Mon	16:00–19:00	Poster D	<b>Poster Session: Ge/Si/SiC / III - V Semiconductors</b>
HL 25.1–25.27	Mon	16:00–19:00	Poster D	<b>Poster Session: GaN - Optical Properties &amp; Preparation and Characterization &amp; Devices</b>
HL 26.1–26.15	Mon	16:00–19:00	Poster D	<b>Poster Session: Heterostructures - Preparation and Characterization - Impurities / Amorphous Semiconductors</b>
HL 27.1–27.6	Tue	9:30–11:00	ER 270	<b>Photovoltaics: Innovative Material Systems</b>
HL 28.1–28.4	Tue	9:30–10:30	ER 164	<b>Focus Session: Topological Insulators (jointly with MA, TT)</b>
HL 29.1–29.11	Tue	9:30–12:30	EW 201	<b>III-V Semiconductors I (mainly Nitrides)</b>
HL 30.1–30.7	Tue	9:30–11:15	EW 202	<b>ZnO and Relatives I</b>
HL 31.1–31.1	Tue	9:30–10:00	EW 203	<b>Invited Talk: Clemens Rössler</b>
HL 32.1–32.12	Tue	10:00–13:15	EW 203	<b>Transport Properties I (mainly Spin Physics and Magnetic Fields)</b>
HL 33.1–33.7	Tue	9:30–11:15	EW 015	<b>Ge/Si II</b>
HL 34.1–34.7	Tue	9:30–11:15	H 2032	<b>Organic Electronics and Photovoltaics: Simulations and Optics I (jointly with DS, CPP, O)</b>
HL 35.1–35.8	Tue	9:30–12:15	BH 243	<b>Transport: Quantum Coherence and Quantum Information Systems 3 (jointly with TT, MA)</b>
HL 36.1–36.12	Tue	9:30–12:45	H 0112	<b>Magnetic Semiconductors (jointly with MA)</b>
HL 37.1–37.10	Tue	10:45–13:15	ER 164	<b>Quantum Dots and Wires: Optical Properties I (mainly InGaAs Dots)</b>
HL 38.1–38.8	Tue	11:15–13:15	ER 270	<b>Photovoltaics: CIGS and related Materials</b>
HL 39.1–39.7	Tue	11:30–13:15	EW 202	<b>ZnO and Relatives II</b>
HL 40.1–40.7	Tue	11:30–13:15	EW 015	<b>Impurities / Amorphous Semiconductors</b>
HL 41.1–41.6	Tue	11:30–13:00	H 2032	<b>Organic Electronics and Photovoltaics: Simulations and Optics II (jointly with DS, CPP, O)</b>
HL 42.1–42.1	Tue	14:45–15:15	EW 201	<b>Invited Talk: Claudia Draxl</b>
HL 43.1–43.28	Tue	9:30–12:30	Poster D	<b>Poster Session: Quantum Dots and Wires - Preparation and Characterization / Devices (incl. Laser) / Ultrafast Phenomena</b>
HL 44.1–44.22	Tue	9:30–12:30	Poster D	<b>Poster Session: Quantum Dots and Wires - Transport &amp; Optical Properties</b>
HL 45.1–45.6	Wed	9:30–11:00	ER 270	<b>Photovoltaics: Silicon-based Systems I</b>
HL 46.1–46.6	Wed	9:30–12:45	ER 164	<b>Focus Session: AlGaN Materials for UV Emitters</b>
HL 47.1–47.1	Wed	9:30–10:00	EW 201	<b>Invited Talk: Dieter Weiss</b>
HL 48.1–48.12	Wed	10:00–13:15	EW 201	<b>Focus Session: Spintronics (jointly with MA)</b>
HL 49.1–49.9	Wed	9:30–11:45	EW 202	<b>Ultrafast Phenomena</b>
HL 50.1–50.5	Wed	9:30–10:45	EW 203	<b>III-V Semiconductors II (mainly Arsenides)</b>

HL 51.1–51.13	Wed	9:30–13:00	EB 301	<b>Topological Insulators II (jointly with MA, DS, O, TT)</b>
HL 52.1–52.7	Wed	9:30–11:15	H 2032	<b>Organic Electronics and Photovoltaics: Electronic Properties I (jointly with DS, CPP, O)</b>
HL 53.1–53.13	Wed	9:30–13:00	BH 334	<b>Transport: Topological Insulators 3 (jointly with TT, MA)</b>
HL 54.1–54.7	Wed	11:00–12:45	EW 203	<b>Optical Properties</b>
HL 55.1–55.6	Wed	11:15–12:45	ER 270	<b>Photovoltaics: Silicon-based Systems II</b>
HL 56.1–56.6	Wed	11:30–13:00	H 2032	<b>Organic Electronics and Photovoltaics: Electronic Properties II (jointly with DS, CPP, O)</b>
HL 57.1–57.5	Wed	12:00–13:15	EW 202	<b>Photonic Crystals II</b>
HL 58.1–58.8	Wed	15:00–17:00	ER 270	<b>Focus Session: Structure and Transport in Organic Photovoltaics III (jointly with CPP)</b>
HL 59.1–59.1	Wed	15:00–15:30	ER 164	<b>Invited Talk: Jonathan Eroms</b>
HL 60.1–60.5	Wed	15:30–16:45	ER 164	<b>Graphene: Raman Spectroscopy</b>
HL 61.1–61.5	Wed	15:00–16:15	EW 202	<b>GaN: Preparation and Characterization II (mainly structural)</b>
HL 62.1–62.8	Wed	15:00–17:00	EW 203	<b>Quantum Dots and Wires: Transport Properties I (mainly Quantum Wires)</b>
HL 63.1–63.8	Wed	15:00–17:00	EW 015	<b>Devices I</b>
HL 64.1–64.8	Wed	16:30–18:30	EW 202	<b>GaN: Preparation and Characterization III</b>
HL 65.1–65.5	Wed	17:00–18:15	ER 164	<b>Transport Properties II (Theory)</b>
HL 66.1–66.5	Wed	18:15–19:30	ER 164	<b>Transport Properties III (Experiments)</b>
HL 67.1–67.1	Wed	17:15–17:45	ER 270	<b>Invited Talk: Dörthe Eisele</b>
HL 68.1–68.7	Wed	17:45–19:30	ER 270	<b>Photovoltaics: Organic Semiconductors</b>
HL 69.1–69.8	Wed	17:15–19:15	EW 203	<b>Quantum Dots and Wires: Transport Properties II (mainly Quantum Dots)</b>
HL 70.1–70.7	Wed	17:15–19:00	EW 015	<b>Devices II</b>
HL 71.1–71.30	Wed	16:00–19:00	Poster D	<b>Poster Session: Graphene / Topological Insulators / Interfaces and Surfaces</b>
HL 72.1–72.32	Wed	16:00–19:00	Poster D	<b>Poster Session: Si-based Photovoltaics / Inorganic Photovoltaics / Structure and Transport in Organic Photovoltaics / Organic Semiconductors</b>
HL 73.1–73.6	Thu	9:30–11:00	ER 270	<b>GaN: Preparation and Characterization IV</b>
HL 74.1–74.5	Thu	9:30–12:30	ER 164	<b>Focus Session: Semiconductor-based Quantum Communication I</b>
HL 75.1–75.1	Thu	9:30–10:00	EW 201	<b>Invited Talk: Kathrin Sebald</b>
HL 76.1–76.6	Thu	9:30–11:00	EW 202	<b>Heterostructures</b>
HL 77.1–77.8	Thu	9:30–11:30	EW 203	<b>Quantum Dots and Wires: Optical Properties II (mainly Luminescence and Electronic Structure)</b>
HL 78.1–78.13	Thu	9:30–13:00	BH 334	<b>Transport: Graphene 1 (jointly with TT, MA, DY, DS, O)</b>
HL 79.1–79.6	Thu	10:30–12:00	EW 201	<b>Photovoltaics: General Aspects</b>
HL 80.1–80.9	Thu	11:15–13:30	ER 270	<b>GaN: Preparation and Characterization V (mainly Cathodoluminescence)</b>
HL 81.1–81.7	Thu	15:00–16:45	ER 270	<b>Graphene: Transport incl. Spin Physics and Magnetic Fields I</b>
HL 82.1–82.3	Thu	15:00–16:30	ER 164	<b>Focus Session: Semiconductor-based Quantum Communication II</b>
HL 83.1–83.6	Thu	15:00–18:15	EW 201	<b>Focus Session: III-Nitride Heterostructures for Optoelectronics - Polarization Reduction, Green Gap and High In-containing Alloys</b>
HL 84.1–84.5	Thu	15:00–16:15	EW 202	<b>Quantum Dots and Wires: Transport Properties III (mainly Thermal Gradients)</b>
HL 85.1–85.9	Thu	15:00–17:30	EW 203	<b>Organic Semiconductors: Transistors and OLEDs</b>
HL 86.1–86.10	Thu	15:00–17:45	EW 015	<b>Semiconductor Lasers</b>
HL 87.1–87.4	Thu	15:00–16:45	H 1012	<b>Graphene: Spin Transport (jointly with MA, DS, DY, O, TT)</b>
HL 88.1–88.7	Thu	16:30–18:15	EW 202	<b>Quantum Dots and Wires: Transport Properties IV (mainly Double Dots and Point Contacts)</b>
HL 89.1–89.6	Thu	16:45–18:15	ER 164	<b>Focus Session: Quantum Information Systems (jointly with MA, TT)</b>
HL 90.1–90.6	Thu	17:00–18:30	ER 270	<b>Graphene: Transport incl. Spin Physics and Magnetic Fields II</b>

HL 91.1–91.19	Thu	16:00–19:00	Poster D	<b>Poster Session: Spintronics / Magnetic Semiconductors / Transport</b>
HL 92.1–92.27	Thu	16:00–19:00	Poster D	<b>Poster Session: II-VI Semiconductors &amp; ZnO and related Materials</b>
HL 93.1–93.23	Thu	16:00–19:00	Poster D	<b>Poster Session: Metal-Semiconductor Hybrid Systems, Plasmonic Systems / Photonic Crystals / Carbon: Diamond &amp; CNT / Quantum Information Systems</b>
HL 94.1–94.1	Fri	9:30–10:00	ER 270	<b>Invited Talk: Martin Eickhoff</b>
HL 95.1–95.8	Fri	9:30–11:30	EW 201	<b>Quantum Dots and Wires: Optical Properties III (mainly Cavities and Ultrafast Response)</b>
HL 96.1–96.6	Fri	9:30–12:45	ER 164	<b>Focus Session: Semiconductor Nanophotonics - Characterization on the Atomic Scale</b>
HL 97.1–97.6	Fri	10:00–11:30	ER 270	<b>Quantum Dots and Wires: Optical Properties IV (mainly Nitrides)</b>
HL 98.1–98.11	Fri	9:30–12:30	EW 202	<b>Electronic Structure Theory</b>
HL 99.1–99.11	Fri	9:30–12:30	EW 203	<b>Organic Semiconductors: Transport</b>
HL 100.1–100.5	Fri	9:30–10:45	H 0111	<b>Resistive Switching I (jointly with DS, DF, KR)</b>
HL 101.1–101.9	Fri	9:30–12:00	BH 243	<b>Transport: Nanoelectronics II - Spintronics and Magnetotransport (jointly with TT, MA)</b>
HL 102.1–102.12	Fri	9:30–12:45	BH 334	<b>Transport: Graphene 2 (jointly with TT, MA, DY, DS, O)</b>
HL 103.1–103.6	Fri	11:00–12:30	H 0111	<b>Resistive Switching II (jointly with DS, DF, KR)</b>
HL 104.1–104.9	Fri	11:45–14:00	EW 201	<b>Quantum Dots and Wires: Optical Properties V (mainly Individual Photons)</b>

## Annual General Meeting of the Semiconductor Physics Division

Thursday 18:30 in EW 202