

Scientific program DGKK DEMBE 2023

Monday, November 27

8:00–10:00 Registration		
	Conference room: Hesse	Conference room: Heuss-Knapp
10:00–10:20	Welcome	
10:20–11:05	Invited 1: Katarzyna Hnida-Gut III-Vs monolithic integration on silicon with Template Assisted Selective Epitaxy	
11:05–11:50	Invited 2: Arne Ludwig Quantum dots for low noise single photon sources	
11:50–13:20 Lunch		
13:20–15:00	Session 1: 2D materials and others	Session 2: III-V on Si
13:20	Moritz N. L. Hansemann MBE of layered α -FeGe ₂ films on GaAs (001) substrates	Hamidreza Esmailpour Monolithic growth of heterostructured nanowires for advanced concept photovoltaic solar cells
13:40	Robin Günkel MOCVD Growth of two-dimensional InSe	Peter Kleinschmidt Atomic Structure of Antiphase Domains on GaP/Si(100):As
14:00	Simonas Krotkus Metal catalyst-free wafer scale growth of graphene and hexagonal boron nitride on sapphire	Gaurav Mukherjee MOVPE growth and optimisation of Ga(N,As,Sb) multi quantum wells with different gallium precursors on (001)-Si
14:20	Oliver Maßmeyer Towards Twist Angle Control in 2D Vertical Heterostructures	Christian Bruckmann Local heteroepitaxial growth of GaAs islands on Si by Laser-assisted Metal Organic Vapor Phase Epitaxy
14:40	Nils Langlotz MOCVD Growth of two-dimensional GaSe	Ponraj Vijayan Integration of Telecom C-Band Emitting InAs Quantum Dots on Si Platform Based on Direct Bonding of Membrane and Epitaxial Regrowth
15:00–15:45 Coffee break		
15:45–17:25	Session 3: Fundamentals and Production	Session 4: Aspects of growth
15:45	Sascha R. Valentin Transforming a used II-VI MBE into a III-V MBE – challenges and first results	David Ostheimer Preparation of P- and III-rich GaInP(100) with subsequent water exposure
16:05	Benjamin Ringler Detailed Study and Simulation of a MOVPE Transport Process on a Planetary Reactor™ and its Application	Thilo Hepp Interface-Dominated Heterostructures for Long-Wavelength Emission on GaAs Substrates
16:25	Oliver Bierwagen Reducing the energy consumption of an MBE lab: A case study	Hajrudin Husejini Understanding GaSb growth mechanism: A 2D simulation approach

16:45	Jan Wenisch MCT MBE Technology for IR Detector Applications at AIM	Wenshan Chen In-situ etching of elemental layers in oxide MBE by O ₂ -induced formation and evaporation of their volatile suboxide
17:05	Wolfgang Braun Thermal Laser Epitaxy: the universal epitaxy technique(?)	Tobias Henksmeier Remote epitaxy of III-As films on GaAs-(001) substrates
17:25	End of workshop day Possibility to visit the Medieval & Christmas Market in Esslingen	

Tuesday, November 28

8:00–9:00	Registration	
9:00–9:45	Invited 3: Roman Körner VCSELS – Novel Epi strategies for high volume production	
9:50–10:35	Session 5: DBR-based devices	Session 6: Characterization aspects
9:50	Michael Zimmer MOVPE grown monolithic 850 nm VCSEL array for Quantum Key Distribution via the Decoy State Protocol	Alexander Kleinkamp Wafer Temperature Measurements during Molecular Beam Epitaxy on InP
10:10	Lara Schmieder High-reflectivity $\text{Al}_2\text{O}_3/\text{Al}_{0.3}\text{Ga}_{0.7}\text{As}$ distributed Bragg reflectors and microcavities for photon Bose-Einstein-condensates in GaAs quantum wells	Mohammad Amin Zare Pour Water interaction in dependence of Al-InP(100) surface reconstruction studied by in-situ RAS and XPS
10:30–11:15	Coffee break	
11:15–12:00	Invited 4: Andreas Popp Epitaxial Growth development of (100) $\beta\text{-Ga}_2\text{O}_3$ by MOVPE	
12:00–13:30	Lunch	
13:30–14:15	Invited 5: Armando Rastelli III-V Semiconductor Quantum Dots obtained by droplet etching epitaxy for quantum science and technology	
14:20–15:20	Session 7: III-V on Si	Session 8: III-N growth and characterization
14:20	Chris Yannic Bohlemann Atomic structure of As-modified Si(100) surfaces prepared in MOCVD ambience utilizing background arsenic	Rudolfo Hötzel Alloying and demixing in AlGaIn/GaN nanowire heterostructures
14:40	Valentin Hevelke Polar textures in $(\text{BaTiO}_3/\text{SrTiO}_3)_n$ superlattice integrated on silicon by molecular beam epitaxy	Silas Jentsch Metal modulated growth of cubic InGaIn by Molecular Beam Epitaxy
15:00	Jonas Grutke AIP based III-V Nucleation on Silicon	František Hájek Luminescence properties of InGaIn/GaN quantum wells excited in UVC and VUV spectral region
15:20–16:05	Coffee break	
16:05–17:45	Session 9: Droplet etching and epitaxy	Session 10: Material for fancy devices and characterization
16:05	Christian Heyn Droplet etching during semiconductor epitaxy for tuneable quantum structures: experiments and modelling	Steffen Breuer FeAs Nanoclusters in High-Mobility Ultrafast Photoconductors on InP

16:25	Michael Sauer Growth of GaSb Quantum Dots Using Local Droplet Etching	Peter Gierss Towards novel red-emitting VECSELS with a grating-waveguide structure
16:45	Yiteng Zhang Unveiling Morphological Evolution in GaAs/AlGaAs Nanostructures: From Quantum Dots to Nanoholes	Andreas Bader Detectivity Enhancement by Double Radiation Pass in Interband Cascade Infrared Photodetectors
17:05	Dennis Deutsch Influence of droplet material, deposition amount and residual As pressure on nanohole formation by local droplet etching on $\text{In}_{0.52}\text{Al}_{0.48}\text{As}$ layers	Carmine Pellegrino Epitaxial Growth and Electrical Characterization of a 10-Junction InGaAs/InP Photonic Power Converter
17:25	Ailton Garcia InGaAs Quantum dots grown by traditional local droplet as sources of highly entangled photon pairs	Christine Falter Characterization of ZnSe-based field effect transistors grown all-in-situ using a sophisticated Shadow Wall Epitaxy technique
17:45	End of workshop day	
18:00	Conference Dinner at Uhlandsaal	

Wednesday, November 29

8:00–9:00	Registration	
9:00–10:00	Session 11: UVC LEDs	Session 12: Quantum dots: growth, properties, characterization
9:00	Sarina Graupeter UVC LEDs emitting at 265nm grown on strain engineered HTA-AlN/sapphire templates with different offcut angles	Christoph Deneke Tuning the emission and band structure by rolling up InAlGaAs/GaAs heterostructures
9:20	Sylvia Hagedorn Origin of the parasitic luminescence of 235 nm UVC LEDs grown on MOVPE-AlN and high-temperature-annealed AlN templates	Normen Auler Statistical Analysis of the Spatial Distribution of MBE Grown InAs Quantum Dots on GaAs(100)
9:40	Massimo Grigoletto Distributed polarization p-type doping for 265 nm UVC LEDs	Felix Kohr Wetting Layer-Suppressed InAs/InP Quantum Dots Emitting in the Telecom-C Band
10:00–10:45	Coffee break	
10:45–12:25	Session 13: Quantum dots: growth, properties, devices	Session 14: Characterization aspects
10:45	Philipp Noack MOVPE grown InGaAs/GaAs quantum dots as gain medium in semiconductor lasers	Peter Zajac Transforming a used II-VI MBE into a III-V MBE – Growth, Characterization and Analysis of the first Samples
11:05	Severin Krüger Epitaxy of materials for high yield single photon source devices	Lars Grieger Crystal orientation quantification in less than 10 seconds
11:25	Pavel Avdienko Molecular beam epitaxy of InAs/InGaAs quantum dots emitting in O-band	Sahar Shekarabi Photoemission study and band alignment of GaN passivation layers on GaInP
11:45	Lena Engel Gaussian-shaped microcavities for enhanced QD emission in the NIR and the telecom C-Band	Shyjumon Ibrahimkutty Compound Semiconductor Material Evaluation by High Resolution X-ray Diffraction
12:05	Jochen Kaupp Purcell-Enhanced Emission of Single-Photons in the Telecom-C Band from Quantum Dots in Circular Bragg Grating Resonators	Juliane Koch Analysis of the impact of the contact between the measuring tip and the semiconductor on the electrical characterization of III-V nanowire structures
12:05–12:25	Closing	
12:25–13:55	Lunch/Farewell	