

Scientific Program

20th European Workshop on Molecular Beam Epitaxy



Sunday, 17.02.2019	
17:00	Registration
18:00	Welcome Reception
20:00	

Monday, 18.02.2019		
Time	room: Stauß I + II	
08:00	Registration	
08:30	Opening	
	III-Vs	
08:45	Charles Cornet (invited)	A universal mechanism to describe III-V epitaxy on Si
09:15	Marta Rio Calvo	GaSb growth on Si (001) using a GaAs nucleation layer
09:30	Fabrice Oehler	Epitaxy of GaAs on Ge 111 : twinning and polarity
09:45	Aaron Maxwell Andrews	Barrier height selection for high temperature THz quantum cascade lasers
10:00	Esperanza Luna	Transmission electron microscopy of GaAs/(Al,Ga)As terahertz quantum-cascade lasers with ultra-thin barriers: the impact of the intrinsic interface width
10:15	Coffee Break	
	Nanowires I	
10:45	Federico Panciera (invited)	Real-time TEM observations of III-V nanowire growth
11:15	Emmanouil Dimakis	Complex three-dimensional heterostructures in III-As nanowires
11:30	Ali Jaffal	Optimizing the shape of InAs/InP quantum dot-nanowires grown by MBE on silicon for efficient light sources emitting in the telecom band
11:45	Valentina Zannier	Growth dynamics of InAs/InP nanowire heterostructures by Au-assisted Chemical Beam Epitaxy
12:00	Teemu Hakkarainen	Te incorporation in self-catalyzed MBE of n-GaAs nanowires
12:15	Lunch, Sightseeing or Skiing	
	Oxides I	
16:30	Oliver Bierwagen (invited)	Suboxide-related kinetics, thermodynamics, catalysis, and faceting governing the MBE of Ga ₂ O ₃ , In ₂ O ₃ , SnO ₂ and their alloy
17:00	Bruce A. Davidson	Oxides grow differently: using RHEED to construct unit cells and interfaces
17:15	Mohamed Elhachmi Bouras	Perovskite oxide based hyperbolic epitaxial superlattices grown by oxide molecular beam epitaxy
17:30	Hélène Rotella	Molecular beam epitaxy growth of ZnMg-oxynitrides
17:45	Lambert Alff	Defect control by oxide MBE in HfO ₂ based memristors
18:00	Poster Session I	

room: Gabelsberger		
	Isha Verma	Growth and Transport study of InSb Nanoflags
	Max Kraut	Selectively grown GaN Nanowalls for Photocatalysis: Growth and optical Properties
	Pooja D	Mg-doped GaN nanowall network photoanodes for solar-driven efficient overall water splitting
	Praveen KUMAR	Surface modified III-Nitrides Photoanodes for Efficient Photoelectrochemical Water Splitting
	Theresa Hoffmann	Selective Area Growth of GaN Nanowires on Silicon Carbide
	Rodion Reznik	MBE growth and properties of III-V and nitride nanowires on hybrid SiC/Si substrates.
	Thomas Auzelle	Directly sputtered refractory TiN _x films as substrates for high-quality GaN nanowires
	mani azadmand	High-temperate growth of self-assembled AlN nanowires on sputtered TiN
room: Pettenkofer		
	Stanislav Petrov	High temperature ammonia MBE to improve crystal quality of GaN-based HEMT heterostructures
	Konstantin Zhuravlev	Electron-stimulated formation of the AlN crystalline structure on the reconstructed ($\sqrt{31} \times \sqrt{31}$) R $\pm 9^\circ$ sapphire surface
	Konstantin Zhuravlev	Transformation of inverse domains at the AlN / AlGaN interface
	Pawel Wolny	Experimental evidence of indium incorporation limit to ML-thick InGaN pseudomorphically grown on GaN
	Erdi Kusdemir	Mg-doping in (In,Ga)N / GaN superlattices for hole injection in light emitting diodes
	Mateusz Hajdel	InGaN laser diodes with low optical losses grown by PAMBE
	Paulina Ciechanowicz	MBE growth and characterization of GaN _{1-x} As _x with x<5%
room: Miller		
	Marta Sawicka	InAlN growth with high nitrogen flux by plasma-assisted molecular beam epitaxy
	Natalia Fiuczek	Shutter control method for InAlN growth by plasma-assisted molecular beam epitaxy
	Aleksander Gusev	PA-MBE of GaN and AlN on graphene buffer layers
	Alexandra Papadogianni	Comparison of the MBE growth of semiconducting oxides on graphene and SiC
	Georg Hoffmann	Efficient suboxide sources for oxide MBE using sublimation of SnO ₂ +Sn and Ga ₂ O ₃ +Ga mixtures
	Ivana Vobornik	Electronic band structure of SrNbO ₃ perovskite thin films
	Sergey Sadofev	(In,Er) ₂ O ₃ alloys and Er ³⁺ photoluminescence at indirect excitation via the crystalline host
	Sergey Sadofev	Tunable intersubband transitions in ZnO/ZnMgO quantum wells
room: Magnus		
	Pamela Jurczak	Growth optimisation of thin Ge buffers on Si for III-V/Si integration
	H. Liang	Wafer-scale integration of high quality InP on Si substrates
	Vladimir Mansurov	Reconstruction phase transition c(4×4) – (1×3) on the InAlSb surface
	Konstantin Zhuravlev	The origin of structural defects at the interface of the AlInAs layer and the InP substrate
	Alejandro F. Braña	Growth of GaP _{1-x-y} As _y N _x on Si substrates by Chemical Beam Epitaxy
	Janne Puustinen	Analysis of surface morphology in GaAsBi epitaxy

	Karim Ben Saddik	GaAs doping by Chemical Beam Epitaxy using CBr ₄ and Ditertiarybutylsilane as gaseous precursors
	Camilla Nichetti	Effects of p doping on GaAs/AlGaAs SAM-APDs for the detection of X rays
	Lianhe Li	Broadband heterogeneous terahertz frequency quantum cascade lasers
	Anton Egorov	Single-mode quantum cascade arch lasers by industrial MBE system
	Christoph Deneke	Nanomembranes as substrates for the growth of semiconductor nanostructures
19:30		

Tuesday, 19.02.2019

Time	room: Stauß I + II	
08:00	Registration	
	Oxides II and droplet epitaxy	
08:30	Martin Eickhoff (invited)	Sn-induced growth of metastable epsilon-Ga ₂ O ₃
09:00	Martina Müller	Redox-controlled growth of functional oxides
09:15	Christian Heyn	Mechanisms for self-assembled droplet etching of nanoholes
09:30	Sergey Balakirev	Independent control over size and density of nanostructures during InAs/GaAs droplet epitaxy
09:45	Stefano Sanguinetti	High-Yield Fabrication of Entangled Photon Emitters Using High-Temperature Droplet Epitaxy
10:00	Coffee Break	
	Layered materials and quantum dots	
10:30	Thomas Michely (invited)	Quasi-free standing transition metal disulphide layers through van der Waals epitaxy
11:00	Akhil Rajan	Epitaxial growth of monolayer charge-density wave transition metal dichalcogenides
11:15	Sergey Sadofev	Pulsed thermal evaporation of transition metal dichalcogenides
11:30	Johannes Aberl	Epitaxial defect-enhanced (Si)Ge quantum dots as platform for novel Si-based light-emitting devices
11:45	Sebastian Tamariz	Low density GaN quantum dots by MBE for room temperature single photon emission
12:00	Lunch, Sightseeing or Skiing	
	Selective-area growth and in-plane nanowires	
16:30	Peter Krogstrup (invited)	Bi- and tri-crystal epitaxy of scalable hybrid quantum materials
17:00	Pavel Aseev	Selective area growth of III-V nanowire networks: a general approach to selectivity mapping
17:15	Sergei Gronin	Selective area epitaxy of complex InAs nanowire networks via ternary buffer In _{1-x} Ga _x As alloys on GaAs (001) substrates
17:30	Roberto Bergamaschini	Continuum model of out-of-equilibrium crystal growth: theory and experiments
17:45	Gunther Springholz	Fully reversible nanowire formation of Ge on vicinal Si (001) due to entropy effects revealed by in vivo STM and X-ray scattering

18:00	Poster Session II	
	room: Gabelsberger	
	Maxim Solodovnik	Critical thickness of 2D-3D growth mode transition during droplet MBE
	Artur Tuktamyshev	Ga droplet nucleation regimes on vicinal GaAs(111)A substrates
	Artur Tuktamyshev	Anomalous temperature density dependence of Indium islands grown on vicinal GaAs(111)A substrates
	Sergey Balakirev	Monte Carlo simulation of the In/GaAs growth by droplet epitaxy on nanopatterned substrates
	Akos Nemcsics	Studies on Droplet-epitaxially Grown Nano-structure Design
	Klaus Biermann	InGaAs quantum dots grown by droplet epitaxy on in-plane GaAs quantum wires
	Leonardo Ranasinghe	Room-temperature luminescence from droplet-etched GaAs quantum dots
	mani azadmand	Growth Dynamics of Nitride Semiconductors in the Presence of Metal Droplets
	room: Pettenkofer	
	Alexey Bolshakov	Selective area epitaxial growth of III-V nanowires over the large-scale masks fabricated with microsphere photolithography
	Alexei Bouravleuv	Colloidal nanoparticle assisted MBE growth and thermal thinning of GaAs nanowires
	Anna Spirina	Analyses of new crystal layer formation at droplet-crystal interface during $A^{III}B^V$ nanowire growth by Monte Carlo simulation
	Nickolay Sibirev	Nanowire growth in a metastable phase – insight from the elastic stress
	Vladimir Fedorov	Stabilization of wurtzite phase in III-phosphide based nanoheterostructures: structural and optical properties
	Daniel Ruhstorfer	Vapor-solid selective area molecular beam epitaxy and doping of catalyst-free GaAs nanowires on silicon
	qiandong zhuang	Realization and the optical properties of GaAsSb/GaAs nanodisk-in-nanowires
	Lutz Geelhaar	Excitonic Aharonov-Bohm oscillations in core-shell nanowires
	room: Miller	
	Saransh Raj Gosain	MBE growth of tapered ZnSe/ZnMgSe core/shell photonic-wire for directed single photon emission
	Joel Cibert	Burton-Cabrera-Frank model of the radial growth of nanowires
	Silvia Rubini	Ga_2Se_3 nanowires growth via Au-assisted heterovalent exchange reaction on GaAs
	Im Sik Han	Structural and optical properties of InAs/Ga(In)As sub-monolayer quantum dots with various numbers of multiple stack layers
	Somsak Panyakeow	Antimonide based quantum nanostructures : MBE growth and applications
	Vladimir Mansurov	Influence of the temperature and ammonia flux onto the 2D-3D transition during GaN QDs formation on the (0001)AlN surface
	Lukas Spindlberger	Post-growth optimization of defect-enhanced Ge quantum dots towards Si-based laser sources for on-chip data communication
	room: Magnus	
	Taizo Nakasu	Epitaxial Relationship analysis of MBE grown ZnTe/sapphire structure
	Sergey Dvoretzky	The growth of multiple HgTe quantum wells by MBE
	Jean-Guy Rousset	Condensation threshold of semimagnetic microcavity polaritons

	Lukas Lunczer	Approaching quantized conductance in long HgTe topological edge modes
	Stefan Wimmer	Self-Organized Topological Insulator Superlattices
	Kaycee Underwood	Epitaxial growth of monolayer NbSe ₂
	Dmitry Rogilo	Interaction of selenium molecular beam with atomically clean Si(111) surface studied by in situ REM
	Daniele Nazzari	Silicene passivation by few-layers graphene
	Joao Marcelo Jordao Lopes	Nucleation and large-area growth of few-layer hexagonal boron nitride on Ni/MgO(111) by MBE
	Lukas Scheffler	Molecular beam epitaxy and characterisation of the half-Heusler antiferromagnet CuMnSb
	Evangelos Papaioannou	Roadmap of efficient and broadband THz-radiation from MBE-grown metallic spintronic emitters
19:30		

Wednesday, 20.02.2019

Time	room: Stauß I + II	
08:00	Registration	
	Nitrides	
08:30	Henryk Turski (invited)	Nitrogen-rich growth for device quality N-polar nitride structures
09:00	Caroline Chèze	(In,Ga)N/GaN short-period superlattices on Zn- and O-polar ZnO
09:15	Grzegorz Muziol	Highly efficient optical transition between excited states in wide InGaN quantum wells
09:30	Mikołaj Żak	InGaN-based tunnel junctions grown by plasma-assisted molecular beam epitaxy
09:45	Marcin Siekacz	Stack of two III-nitride laser diodes interconnected by a tunnel junction
10:00	Coffee Break	
	Nanowires II	
10:30	Žarko Gačević (invited)	Ga(In)N nanowires grown by MBE: nanotransistors and quantum light emitters
11:00	Marion Gruart	Control of catalyst-free GaN nanowire morphology and effect on optical properties by molecular beam epitaxy
11:15	Sergio Fernandez-Garrido	Top-down fabrication of ordered arrays of GaN nanowires by selective area sublimation
11:30	Frank Glas	Nucleation statistics in III-V NW growth with very-group-V-poor liquid droplets
11:45	Jesús Herranz	Coaxial GaAs/(In,Ga)As dot-in-a-well nanowire structures for infrared light generation on silicon
12:00	Lunch	
	Dilute alloys	
13:00	Alexandre ARNOULT (invited)	A sensitive in-situ curvature measurement tool applied to dilute bismide growth
13:30	Olivier Delorme	Study of In incorporation into GaSbBi alloys
13:45	Miriam Oliva	Growth of axial GaAs/Ga(As,Bi) nanowire heterostructures
14:00	Arto Aho	High Efficiency Lattice Matched Four-Junction Solar Cells on GaAs

14:15	Friedrich Schäffler	Efficient phase separation in Ge _{1-x} Sn _x epilayers induced by free running Sn precipitates
14:30	Coffee Break	
	Topological insulators and magnetic materials	
15:00	Detlev Grützmacher (invited)	In-situ Fabrication of Topological Insulator Josephson Devices
15:30	Steffen Schreyeck	Epitaxy and characterisation of magnetically doped topological insulators
15:45	Janusz Sadowski	Spinodal decomposition in wurtzite (Ga,Mn)As nanowires investigated in-situ by annealing in transmission electron microscope
16:00		
16:30	Workshop Dinner	
23:00		