

Graduiertenkolleg 1782
„Functionalization of Semiconductors“
Seminarzentrum Schloss Bettenburg, Hofheim



Program Seminar 07. – 08.10.2015

Wednesday, 07.10.2015

till 11:30	Arrival
12:00 – 12:30	Welcome Snack
13:00 – 13:10	Introduction: <i>Kerstin Volz</i>
	Session I Chair: <i>Andreas Stegmüller</i>
13:10 – 13:30	<i>Benjamin Ringler:</i> Novel interpnictogenes as possible group 15 single source MOVPE precursors
13:30 – 13:50	<i>Eduard Sterzer:</i> Novel precursor for Ga(NAs) MOVPE growth with high efficient N incorporation
13:50 – 14:10	<i>Lukas Nattermann:</i> MOVPE growth of dilute Bi containing III/V materials for efficient optoelectronics application
14:10 – 14:30	Break
	Session II Chair: <i>Phil Rosenow</i>
14:30 – 14:50	<i>Lars Finger:</i> Ionic Liquids with Chalcogenide Anions and their Application for the Synthesis of Amorphous MoS ₂
14:50 – 15:10	<i>Jens Eußner:</i> Functional Organotetrel Chalcogenide Clusters
15:10 – 15:30	<i>Susanne Pulz:</i> Substituted Amidines, Guanidines and Formazanes: Hydrazine-Based Ligands for the Synthesis of MOVPE-Precursors
15:30 – 16:00	Coffee Break
	Session III Chair: <i>Philip Springer</i>
16:00 – 16:20	<i>Sebastian Gies:</i> Optical and Electronic Properties of Ga(N,As,P) Quantum Wells on Silicon for Laser Application
16:20 – 16:40	<i>Christian Lammers:</i> Time resolved photoluminescence spectroscopy on Ga(NAsP)/Si MQWs
16:40 – 17:00	<i>Nils Rosemann:</i> Nonlinear optical properties of adamantane-like functionalised semiconductor clusters
17:00 – 17:20	Break

Session IV Chair: *Marcel Reutzel*

- 17:20 – 17:40 *Phillip Springer*: Consequences of Anisotropic Electron Masses on THz Absorption
- 17:40 – 18:00 *Phil Rosenow*: Structural and chemical effects on the electronic structure of semiconductor alloys
- 18:00 – 18:20 *Andreas Stegmüller*: Insight into GaP-Si semiconductor interfaces from DFT
- 19:00 Dinner

Thursday, 08.10.2015

- 08:00 – 09:00 Breakfast

Session V Chair: *Jan Oliver Oelerich*

- 09:00 – 09:20 *Alexandra Ostapenko*: Surface etching of single crystalline ZnO by phosphonic acid based SAMs
- 09:20 – 09:40 *Paul Rotter*: Molecules on Rails: Coupling of Diffusion and Orientation for Pentacene on an Organic Surface
- 09:40 – 09:50 Break

Session VI Chair: *Andreas Beyer*

- 09:50 – 10:10 *Lennart Duschek*: Structural formation processes of III/V semiconductors in HAADF STEM
- 10:10 – 10:30 *Katharina Werner*: Chemical vapor deposition and physical characterization of gallium, and carbon-related structures on Si (001) and GaP/Si (001) templates for the growth of graphene layers
- 10:30 – 10:50 *Marcel Reutzel*: Binding Energy and Dissociation Barrier - Experimental Determination of the Key Parameters of the Potential Energy Curve of Diethyl Ether on Si(001)
- 10:50 – 11:00 Break

Session VII Chair: *Sebastian Gies*

- 11:00 – 11:20 *Lars Kraft*: An introduction to NMR at surfaces
- 11:20 – 11:40 *Martin Wiemer*: Theory to generation, transport, and recombination of carriers in disordered materials
- 11:40 – 12:00 *Nadeem Sabir*: Manganese doped semiconductor quantum dot structures
- 12:00 – 13:30 Lunch Break

1. *Andreas Beyer*: Quantitative Determination of Chemical Composition of Multinary III/V Semiconductors with Sublattice Resolution using Aberration Corrected HAADF-STEM
2. *Florian Dobener*: Gain Measurements of Ga(NAsP)/(BGa)(AsP) Heterostructures
3. *Lars Finger*: Low Temperature Synthesis of MoS₂ from Tetrathiomolybdate and Sulfide Ionic Liquids
4. *Lars Kraft*: Tailoring specimens for nuclear double resonance experiments on single crystal surfaces
5. *Christian Lammers*: Generation of high power THz pulses by tilted-pulse-front excitation
6. *Jan Oliver Oelerich*: Computer Simulation of Growth Kinetics of Compound Semiconductors
7. *Andre Pick*: Site-selective deposition of perylene and polymorph-selective growth of single-crystals
8. *Christian Prinzisky*: Absorption and Photoluminescence Spectroscopy of Anthraquinone Dyes
9. *Susanne Pulz*: New MOCVD-Precursors with Application in the Synthesis of Group III/V Semiconductor Compounds
10. *Marcel Reutzel*: Adsorption Dynamics of Organic Molecules on Si(001) - Control of Reactivity
11. *Niklas Rinn*: Binary and Ternary Organo Selenide Clusters
12. *Johannes Röder*: Optical and Magnetic Studies of MBE-grown Ferromagnetic CrSe and CrS-layers in Zincblende Structure
13. *Phil Rosenow*: On the interplay of the spatial and electronic structure in ternary and quaternary III/V semiconductors
14. *Nadeem Sabir*: ZnO nanoparticles
15. *Phillip Springer*: On optical properties of nitride containing quantum wells
16. *Mikko Wilhelm*: Energy transfer characteristics in Mn doped CdS/ZnS quantum dots
17. *Johannes Völkner*: Towards Spatially Resolving Photoelectrochemical Sensors

Workshop

Chemical Contributions to Semiconductor Development – in Vitro and in Silicio

Program Workshop 09.10.2015

Friday, 09.10.2015

- 09:00 – 10:00 *Prof. Dr. Andreas Schnepf*, Institut für Anorganische Chemie der Eberhard Karls Universität Tübingen
Cryochemistry
- 10:00 – 11:00 *Dr. Ralf Tonner*, FB Chemie, Philipps-Universität Marburg
Bonding analysis
- 11:00 – 11:30 Coffee
- 11:30 – 12:30 *Prof. Dr. Axel Schulz*, Institut für Anorganische Chemie der Universität Rostock und Leibnitz-Institut für Katalyse, Rostock
[(Un)usual] Reaction Media
- 12:30 – 13:30 Lunch Break
- 13:30 – 14:30 *Prof. Dr. Andreas Schnepf*, Institut für Anorganische Chemie der Eberhard Karls Universität Tübingen
Chemistry With Outer Space Molecules: Insights into the borderland between molecules and the solid state of (semi-)metals
- 14:30 – 15:30 *Dr. Ralf Tonner*, FB Chemie, Philipps-Universität Marburg
In silico functionalization - from precursor chemistry to surface reactions with quantum chemical methods
- 15:30 – 16:00 Coffee
- 16:00 – 17:00 *Prof. Dr. Axel Schulz*, Institut für Anorganische Chemie der Universität Rostock und Leibnitz-Institut für Katalyse, Rostock
Pnictogen Chemistry: Ions, Rings, Radicals, Biradicals and more