Uniting Today's Nanotechnology for Advancing Tomorrow's Semiconductor Physics

821. WE-Heraeus-Seminar

13 Nov - 15 Nov 2024
at the Physikzentrum Bad Honnef/Germany

The WE-Heraeus Foundation supports research and education in science, especially in physics.
The Foundation is Germany's most important private institution funding physics.

WILHELM UND ELSE
HERAEUS-STIFTUNG

Program

Tuesday, November 12, 2024

17:00 – 21:00	Registration
18:00	*BUFFETT SUPPER / Informal get together*

Wednesday, November 13, 2024

07:45 – 08:45	*BREAKFAST*	
08:45 – 09:00	Scientific organizers	**Opening and welcome**
09:00 – 09:50	Keynote Iwan Moreels	**Challenges and Opportunities for the Synthesis of Size-Controlled 2D Colloidal Nanoplatelets**
09:50 – 10:10	Alireza Ghasemifard	**Computational guide to optimize electric conductance in MoS_2 films**
10:10 – 10:30	Dariia Matulka	**Microscopic analysis of the energy density of quasi-2D crystals**
10:30 – 10:45	*COFFEE BREAK*	
10:45 – 11:35	Keynote Klaus Ensslin	**Quantum Devices in Graphene**
11:35 – 11:55	Brindhu Malani Satya Seelan	**Quasi-2D Ruddlesden-Popper nanoparticle-based photodetectors**
11:55 – 12:15	James Caleb Peters	**Fabrication of topological insulator Bi_2Se_3 Photodetectors for Photo Galvanic Applications**
12:15 – 12:30	**Conference photo**	
12:30 – 14:00	*LUNCH*	

Program

Wednesday, November 13, 2024

14:00 – 14:50	Keynote Ivan Infante	**Surface Reconstructions in Colloidal Quantum Dots**
14:50 – 15:10	Rostyslav Lesyuk	**Tuning of localized surface plasmons in natural hyperbolic copper chalcogenides CuX (X=S, Se)**
15:10 – 15:30	K. David Wegner	**Advanced nanomaterials for the short-wave infrared**
15:30 – 16:00	*COFFEE BREAK*	
16:00 – 16:20	Zhouxiaosong Zeng	**Ultrafast hot carrier cooling enabled van der Waals photodetectors at telecom wavelengths**
16:20 – 17:05	**Panel Discussion** *Panel Members* : Klaus Ensslin Andreas Fery Iwan Moreels Christian Klinke *Discussion leader*: Marcus Scheele	**The future of material development in (semiconductor) physics.**
18:00 – 19:30	***HERAEUS DINNER at the Physikzentrum (cold and warm buffet, with complimentary drinks)***	
19:30	**POSTER SESSION I**	

Program

Thursday, November 14, 2024

08:00 – 09:00	*BREAKFAST*	
09:00 – 09:50	Keynote: Andreas Fery	**Nanoparticle based materials: Opportunities and challenges**
09:50 – 10:10	Florian Laible	**Plasmonic nanostructures on flexible substrates**
10:10 – 10:30	Lena Scholtz	**Luminescent, Semiconductor Nanoparticle-Loaded Polymer Microbeads – Comparing Particle Architectures**
10:30 – 10:45	*COFFEE BREAK*	
10:45 – 11:35	Keynote : Nahid Talebi	**Phase-Locked Photon-Electron Interactions in Electron Microscopes**
11:35 – 11:55	Daniel Lengle	**Tracking Cation Exchange in Individual Nanowires via Transistor Characterization**
11:55 – 12:15	Elshaimaa Darwish	**Enhancing room temperature synthesis of lead halide perovskite and exploring its potential as a downshifting layer in solar cells**
12:15 – 12:35	Christian Kuttner	**Meet the Editor (of Nature Communications)**
12:35 – 14:00	LUNCH	
14:00 – 14:50	Keynote : Caterina Cocchi	**Discovery and characterization of complex materials using high-throughput ab initio methods**
14:50 – 15:10	Zahra Shomali	**Effect of non-local theory on precise investigation of heat transport in semiconductor nanostructures using non-Fourier macroscopic models**

Program

Thursday, November 14, 2024

15:10 – 15:30	Kleopatra Papagrigoriou	**Single Nanoparticle Charging Dynamics in the Gas Phase**
15:30 – 15:50	*COFFEE BREAK*	
15:50 – 16:40	Keynote : Ute Kaiser	**Findings from the happy marriage between low-voltage atomically-resolved TEM and low-dimensional materials**
16:40 – 16:50	**Two Flash Talks from Poster Session I**	
16:50 – 17:30	**Panel Discussion** *Panel Members* : Ivan Infante Caterina Cocchi Ferry Prins Ute Kaiser Tobias Hertel *Discussion leader* : Christian Klinke	**The future of material characterization and modelling in (semiconductor) physics**
18:00 – 19:00	*DINNER*	
19:00	**POSTER SESSION II**	

Program

Friday, November 15, 2024

08:00 – 09:00	*BREAKFAST*	
09:00 – 09:50	Keynote : Monika Fleischer	**Top-down fabricated optical antenna configurations**
09:50 – 10:10	Yan Vogel	**Solvation Shifts the Band-Edge Position of Colloidal Quantum Dots by nearly 1 eV**
10:10 – 11:00	Keynote: Ferry Prins	**Visualizing Energy Transport in Nanostructured Semiconductors**
11:00 – 11:15	*COFFEE BREAK*	
11:15 – 12:05	Keynote : Tobias Hertel	**Charge-Carrier Interactions and Defect States in Semiconducting Carbon Nanotubes: From Excitons to Trions and Beyond**
12:05 – 12:15	**Two Flash Talks from Poster Session II**	
12:15 – 12:30	Scientific organizers	**Poster Awards and Concluding Keynote**
12:30	*LUNCH*	

End of seminar and departure