

Sunday, July 20

18:00 - 19:30 Registration

19:00 - Welcome banquet

Monday, July 21

09:00 - 09:20 Opening by Roderich Moessner, Director of the MPIPES and the Organizers

Nanostructures: Theory and experiment (Session chair: Gilberto Medeiros-Ribeiro)

09:20 - 10:00 Stephan W. Koch (Philipps Universität Marburg)
Microscopic theory of the optical properties of semiconductor nanostructures

10:00 - 10:40 Khaled Karrai (Ludwig-Maximilians-Universität München)
The non-linear Fano effect in charge tunable quantum dots

10:40 - 11:00 Coffee break

Voltage-tunable QDs as a model system for quantum optical phenomena (Session chair: Allan Bracker)

11:00 - 11:40 Pawel Hawrylak (National Research Council of Canada, Ottawa)
Electric field manipulation of neutral and charged multi-exciton complexes in a quantum dot

11:40 - 12:20 Richard Warburton (Heriot-Watt University Edinburgh)
Optical pumping and quantum interferences in the laser spectroscopy of single InAs quantum dots

12:20 - 12:40 Martin Kroner (Ludwig-Maximilians-Universität München)
Rabi splitting and ac-Stark shift of a neutral and charged exciton

12:40 - 14:00 Lunch

Quantum optics with QDs (Session chair: Alexander Högele)

14:00 - 14:40 Peter Michler (Universität Stuttgart)
Quantum optical studies of single coupled quantum dot pairs

14:40 - 15:20 Artur Zrenner (Universität Paderborn)
Single photon emission based on coherent state preparation

15:20 - 15:40 Marek Seliger (Karl-Franzens-Universität Graz)
Entangled photons from quantum dot-devices

15:40 - 16:00 Niek Kleemans (Eindhoven University of Technology)
Observation of an additional splitting in the magneto-luminescence of single self-assembled InAs/GaAs quantum rings

16:00 - 16:30 Coffee break

16:30 - 17:30 **OPCSMN08-Colloquium (public for all members of MPIPES)
(Chair: Alexander Eychmüller)**

Uri Banin (Hebrew University of Jerusalem)
*Hybrid metal-semiconductor and semiconductor-semiconductor nanoparticles;
From architecture to function*

17:40 - 19:30 Dinner

Tuesday, July 22

QDs in cavities (Session chair: Martin Kroner)

- 09:00 - 09:40 Jean-Michel Gerard (CEA Grenoble)
Novel photon confinement geometries for advanced QD microlasers and single photon sources
- 09:40 - 10:20 Jonathan James Finley (Technische Universität München)
Tunable single dot nanocavities for cavity QED phenomena
- 10:20 - 10:40 Mohamed Benyoucef (IFW Dresden)
Strong coupling in photonic molecules formed from closely-spaced microdisks
- 10:40 - 11:00 Coffee break

Control of QD emission (Session chair: Alf Mews)

- 11:00 - 11:40 Efrat Lifshitz (Technion Haifa)
Single and multi-excitons in single core-shell semiconductor nanocrystals
- 11:40 - 12:20 Oliver Benson (Humboldt-Universität zu Berlin)
*Manipulation of single emitters on photonic crystal:
A route towards complex coupled systems*
- 12:20 - 12:40 Yury Rakovich (Trinity College Dublin)
Light-controlled nano-composite switches for modulation of quantum dot emission
- 12:40 - 14:00 Lunch

Control of QD emission (continued) (Session chair: Carsten Sönnichsen)

- 14:00 - 14:20 Hilmi Volkan Demir (Bilkent University, Ankara)
Device engineering using semiconductor nanocrystal emitters
- 14:20 - 14:40 Christian von Borczyskowski (Technische Universität Chemnitz)
Electron-phonon coupling and localization of excitons in single silicon nanocrystals

Spins in QDs (Session chair: Eric Stinaff)

- 14:40 - 15:20 Alex Greulich (Technische Universität Dortmund)
All-optical control of electron spins in quantum dots
- 15:20 - 15:40 Maarten van Weert (Delft University of Technology)
Addressing a single spin state in a nanowire quantum dot
- 15:40 - 16:00 Jose M. Villas-Boas (Technische Universität München)
Electro-optical control and initialization of a single charge spin in a quantum dot molecule
- 16:00 - 16:30 Coffee break

Multiexcitons (Session chair: Sergey V. Gaponenko)

- 16:30 - 17:10 Alexander Efros (Naval Research Laboratory, Washington)
Multiexciton generation by a single photon in nanocrystals
- 17:10 - 17:50 Victor Klimov (Los Alamos National Laboratory)
*Carrier multiplication in semiconductor nanocrystals:
Mechanism and competing energy-loss processes*
- 17:50 - 19:30 Dinner
- 19:30 - 21:00 Poster Session 1 (all the posters with even poster numbers)

Wednesday, July 23

Growth and ordering (Session chair: Joanna Kolny-Olesiak)

- 09:00 - 09:40 Gilberto Medeiros-Ribeiro (Laboratório Nacional de Luz Síncrotron, Campinas)
Mechanisms and driving forces for intermixing in nanocrystals
- 09:40 - 10:20 Nikolai Gaponik (Technische Universität Dresden)
The synthesis and assembling of thiol-capped colloidal nanocrystal
- 10:20 - 10:40 Armando Rastelli (IFW Dresden)
Quantum dots with perfectly resonant emission energies
- 10:40 - 11:00 Coffee break

Optical properties of NCs (Session chair: Nikolai Gaponik)

- 11:00 - 11:40 Sergey V. Gaponenko (National Academy of Sciences of Belarus, Minsk)
(co-authors: S.A. Maskevich, N.D. Strekal, O.S. Kulakovich, and A.A. Lutich)
Mechanisms for photoluminescence enhancement of isolated and aggregated quantum dots
- 11:40 - 12:20 Gotthard Seifert (Technische Universität Dresden)
Optical excitations in CdS nanoparticles
- 12:20 - 12:40 Oliver Schöps (Technische Universität Dortmund)
Colloidal quantum dots, fluorescent proteins and organic dyes in a self-assembled structure for long-range energy transfer
- 12:40 - 14:00 Lunch
- 14:00 - 19:00 Excursion (Guided city tour and steamboat ride)
- 19:00 - Conference dinner in the Schlosshotel Pillnitz

Thursday, July 24

NC assemblies

(Session chair: Mikhail Artemyev)

- 09:00 - 09:40 Paul Alivisatos (University of California, Berkeley)
Optical properties of individual DNA-assembled nanocrystal molecules
- 09:40 - 10:20 Jochen Feldmann (Ludwig-Maximilians-Universität München)
Optical applications of bioconjugated gold nanoparticle assemblies
- 10:20 - 10:40 Group photo (to be published on the workshop's web page) & Coffee break

Excitons in QD and QD molecules

(Session chair: Armando Rastelli)

- 10:40 - 11:20 Andries Meijerink (Utrecht University)
Exciton dynamics in quantum dots
- 11:20 - 12:00 Eric Stinaff (Ohio University, Athens)
Excitation and polarization photoluminescence in quantum dot molecules
- 12:00 - 12:40 Allan Bracker (Naval Research Laboratory, Washington)
Orbital and spin phenomena in the optical spectra of InAs quantum dot molecules
- 12:40 - 14:00 Lunch

Excitons and plasmons - I

(Session chair: Klaus Rademann)

- 14:00 - 14:40 Nicholas Kotov (University of Michigan)
Self-organization of nanoparticles and hybrid exciton-plasmon excited states
- 14:40 - 15:20 Garnett W. Bryant (National Institute of Standards and Technology, Gaithersburg)
*Optical response of hybrid quantum dot-metal nanoparticle systems:
Strong coupling, exotic Fano response and bistability*
- 15:20 - 15:40 Carsten Sönnichsen (Universität Mainz)
Gold tipped hyperbranched CdTe particles
- 15:40 - 16:00 Thomas Härtling (Technische Universität Dresden)
Photochemical tuning of plasmon resonances in noble metal nanostructures
- 16:00 - 16:30 Coffee break

Excitons and plasmons - II

(Session chair: Alexander V. Govorov)

- 16:30 - 17:10 Vincent Reboud (Catalan Institute of Nanotechnology, Bellaterra)
Exciton and plasmon coupling in printed 2D polymer photonic structures
- 17:10 - 17:50 David Citrin (Georgia Institute of Technology, Atlanta)
Optics of surface plasmon polaritons in nanoparticle arrays
- 17:50 - 19:30 Dinner
- 19:30 - 21:00 Poster Session 2 (all the posters with odd poster numbers)

Friday, July 25

Hybrid systems with carbon nanotubes
(Session chair: Beatriz Hernández Juárez)

09:00 - 09:40 Alf Mews (Universität Siegen)
Nanosopic hybrid systems from carbon nanotubes, metal nanocrystals and semiconductor nanowires

09:40 - 10:20 Alexander Högele (ETH Zürich)
Quantum dots in semiconducting carbon nanotubes

10:20 - 10:50 Coffee break

Metal-NC hybrids
(Session chair: Vasily Temnov)

10:50 - 11:30 Mathias Brust (University of Liverpool)
Controlling cellular uptake and intracellular fate of gold nanoparticles

11:30 - 12:10 Stephen Hickey (Technische Universität Dresden)
Charge carrier transfer from IV-VI semiconductor particles coupled to metallic substrates

12:10 - 12:30 Sebastian Mackowski (Nicolaus Copernicus University, Torun)
Metal enhanced fluorescence of single chlorophylls in light-harvesting complexes

12:30 - 14:00 Lunch

Metal NCs and applications
(Session chair: Garnett W. Bryant)

14:00 - 14:40 Vasily Temnov (Universität Dortmund)
Surface plasmon mediated interference phenomena in nanooptics

14:40 - 15:20 Hugh Richardson (Ohio University, Athens)
Characterization of heat generation from single gold nanoparticle complexes

15:20 - 15:40 Klaus Rademann (Humboldt-Universität zu Berlin)
Photoluminescence of small gold and silver particles in soda-lime silicate glasses

15:40 - 16:00 Closing session (Chair: Alexander Eychmüller)

16:00 - 17:00 Coffee break