

Monday 26 April

Session 1 – Colloidal heterostructures and applications (Chair: Victor Klimov)

- 09:00 **Invited: Electronic, optical and transport properties of single semiconductor nanorods**
Uri Banin, The Hebrew University of Jerusalem
- 09:30 **Orientation dependent optical and electrical properties of self assembled semiconductor core-shell nanorod arrays**
Roman Krahne, Italian institute of Technology
- 09:45 **Phonon properties of CdSe nanorods**
Ulrike Woggon, TU Berlin
- 10:00 **Optical gain and laser action in CdSe/CdS core/shell colloidal quantum rods self-assembled in microcavities**
Guglielmo Lanzani, Dipartimento di Fisica - Politecnico di Milano
- 10:15 **Enhanced color conversion from colloidal dot/rods by vertical microcavities**
Harald Pühringer, University Linz
- 10:30 Refreshment Break

Session 2 – Photonics with dots I (Chair: Glenn Solomon)

- 11:00 **Invited: Picosecond scale photon statistics of quantum dot microcavity lasers**
Marc Assmann, TU Dortmund
- 11:30 **Femtosecond few-fermion dynamics and deterministic single photon gain in a single quantum dot**
Tim Thomay, University of Konstanz
- 11:45 **Highly efficient electrically driven quantum dot micropillar single photon sources**
Tobias Heindel, University of Würzburg
- 12:00 **A highly efficient single-photon source based on a quantum dot in a photonic nanowire**
Joël Bleuse, CEA, Inac, SP2M
- 12:15 **Quantum-dot single photon emitter of higher photon extraction efficiency and lower multiple-photon emission probability with metal-embedded structure**
Hidekazu Kumano, Hokkaido University
- 12:30 Lunch

Session 3 – Carbon based dots (Chair: Pawel Hawrylak)

- 14:00 **Invited: Graphene quantum circuits**
Klaus Ensslin, ETH Zurich
- 14:30 **Invited: Strong Coupling Between Single-Electron Tunneling and Nanomechanical Motion**
Gary Steele, Delft
- 15:00 **Invited: Electron-nuclear and spin-orbit interactions in carbon nanotube double quantum dots**
Ferdinand Kuemmeth, Harvard University
- 15:30 Refreshment Break

Session 4 – Novel Optical Phenomena in QDs (Chair: Fritz Henneberger)

- 16:00 **Invited: Optically induced magnetization in colloidal semiconductor quantum dots**
Gerd Bacher, Duisburg-Essen University
- 16:30 **Resonant optical pumping of an individual Mn spin**
Claire Le Gall, Institut Néel, CNRS
- 16:45 **Magnetic anisotropy of the sp-d exchange in individual InAs/GaAs quantum dots doped by a single Mn atom**
Emile Benjamin, CNRS-Laboratoire de Photonique et de Nanostructures
- 17:00 **Exchange interactions in QDs: symmetric vs. asymmetric**
Alex Greulich, Naval Research Laboratory

- 17:15 **Shallow quantum dots strongly coupled to an electron reservoir: observation of Mahan excitons in quantum dots**
Joost van Bree, University of Technology Eindhoven
- 17:30 **Making Nanoscale LEDs by Direct Laser Writing**
Oleg Makarovskiy, University of Nottingham

Tuesday 27 April

Session 5 – Nanocrystal Applications (Chair: Roman Krahné)

- 09:00 **Invited: Near-field electrical detection of the emission from a single quantum dot**
Frank Koppens, Harvard University
- 09:30 **Four-Wave Mixing Imaging of Colloidal Nanoparticles**
Paola Borri, Cardiff University
- 09:45 **Novel hybrid structures based on colloidal PbS nanocrystals**
Lyudmila Turyanska, University of Nottingham
- 10:00 **Surface plasmon effects on Förster resonant energy transfer in colloidal quantum dot structures**
Manuela Lunz, Trinity College Dublin
- 10:15 **Hybrid optoelectronics with colloidal QDs for photovoltaic and light emitting applications**
Junis Rindermann, University of Southampton
- 10:30 Refreshment Break

Session 6 – Spin in Quantum Dots (Chair: Artur Zrenner)

- 11:00 **Keynote: Charges and spins in self-assembled quantum dots**
Richard Warburton, Heriot-Watt University
- 11:45 **Relaxation of hole spins in quantum dots via two-phonon processes**
Mircea Trif, University of Basel
- 12:00 **Spin noise of electrons and holes in self-assembled InGaAs quantum dots**
Dmitri Yakovlev, TU Dortmund University
- 12:15 **Opportunities for single hole-spin control using delocalized states of Quantum Dot Molecules**
Matthew Doty, University of Delaware
- 12:30 Lunch

Session 7 – Resonant Optical Manipulation (Chair: Henri Mariette)

- 14:00 **Invited: Optical Access to Quantum Dot Spins: Qubits to Sensors**
Mete Atatüre, University of Cambridge
- 14:30 **Optical 1e and 2e Qubits in Coupled Quantum Dots**
Danny Kim, Naval Research Laboratory
- 14:45 **Intensity damping of exciton Rabi rotations in InAs/GaAs quantum dots: the role of acoustic phonons**
Andrew Ramsay, University of Sheffield
- 15:00 **Coherent optoelectronic manipulation of a single exciton in a self-assembled InGaAs/GaAs quantum dot**
Artur Zrenner, CeOPP/University of Paderborn
- 15:15 **Coherent spin preparation, manipulation and read-out with light and microwaves in a quantum well and dot**
Hideo Kosaka, Tohoku University
- 15:30 Refreshment Break

Session 8 – Photonics with Dots II (Chair: David Gershoni)

- 16:00 **Invited: Deterministic light matter coupling with single quantum dots**
Pascale Senellart, LPN/CNRS
- 16:30 **Deterministic Approach to Coupled Quantum Dot - Microcavity Devices**
Dan Dalacu, National Research Council of Canada
- 16:45 **Up on the Jaynes-Cummings ladder of a quantum-dot microcavity system**
Wolfgang Langbein, Cardiff University

- 17:00 **Interference of photons from separated quantum dots**
Anthony Bennett, Toshiba Research Europe Limited
- 17:15 **Two-Photon Interference from Separate Quantum Dots**
Edward Flagg, National Institute of Standards and Technology

Poster Session I

17:30 – 19:00

Wednesday 28 April

Session 9 – Exciton Dynamics in Nanocrystals (Chair: Wolfgang Langbein)

- 09:00 **Keynote: Multiexciton effects in semiconductor nanocrystals from the perspective of lasing and solar-energy conversion**
Victor Klimov, Los Alamos
- 09:45 **Multiple excitons in Blinking-free core/alloy-shell colloidal quantum dots**
Efrat Lifshitz, Technion - Israel Institute of Technology
- 10:00 **Carrier Dynamics in Lead Salt Colloidal Quantum Dots**
Francesco Masia, Cardiff University
- 10:15 **Fine Structure of Band-Edge Excitons in PbSe Nanocrystals**
Joseph Tischler, Naval Research Laboratory
- 10:30 Refreshment Break

Session 10 – Nuclear spin effects in QDs (Chair: Manfred Bayer)

- 11:00 **Invited: Coherent optical control of the nuclear and electron spin in quantum dots: Fast rotations and a geometrical phase gate**
Duncan Steel, University of Michigan
- 11:30 **Dragging of quantum dot optical resonances by bi-directional nuclear spin polarization**
Christian Latta, ETHZ
- 11:45 **Pumping of nuclear spins by optical excitation of spin-forbidden transitions in a quantum dot**
Evgeny Chekhovich, University of Sheffield
- 12:00 **Optical manipulation of nuclear spins in quantum dots**
Martin Kroner, ETH Zürich
- 12:15 **Anomalous Hanle Effect in single InAs/GaAs quantum dots due to unconventional transverse Overhauser field**
Olivier Krebs, CNRS
- 12:30 **Optically-Induced Nuclear Polarization of Vertically Coupled Quantum Dots**
Stefan Badescu, NRL
- 12:45 **Control of Nuclear Spins in a single Quantum Dot**
Maxim Makhonin, University of Sheffield
- 13:00 **Control of the electron spin-nuclear spin interaction time in a self-assembled quantum dot**
Christoph Kloeffel, University of Basel
- 13:15 Lunch and Social Programme

Thursday 29 April

Session 11 – Optics of Single Dots (Chair: Xavier Marie)

- 09:00 **Uniaxial strain tuning of the emission energy and fine structure splitting of single InGaAs quantum dots**
Robert Hafenbrak, University of Stuttgart
- 09:15 **Manipulating fine structure splitting in semiconductor quantum dots**
Ranber Singh, Max Planck Institute for Solid State Research

- 09:30 **A Light Emitting Diode Source of Entangled Photons**
Mark Stevenson, Toshiba Research Europe Limited
- 09:45 **Polarization entangled photons produced with high-symmetry site-controlled pyramidal quantum dots**
Arun Mohan, EPFL
- 10:00 **Ultrafast few-fermion optoelectronics of a single QD**
Markus Zecherle, TU Muenchen
- 10:15 **Coherent 'writing' and 'reading' of quantum dot exciton states**
David Gershoni, Technion-Israel Institute of Technology
- 10:30 Refreshment Break

Session 12 - Transport (Chair: Andrew Sachrajda)

- 11:00 **Keynote: All-electrical control of individual electron spins in quantum dots**
Lieven Vandersypen, Delft
- 11:45 **Nuclear state preparation and electron spin manipulation via Landau-Zener-Stückelberg interferometry**
Hugo Ribeiro, University of Konstanz
- 12:00 **Spin SWAP in a Scalable Qubit System including a Split Micro-Magnet**
Yun-Sok Shin, ICORP-JST
- 12:15 **Few electron double quantum dots in InAs nanowires: effects of strong spin-orbit and hyperfine interactions**
Stevan Nadj-Perge, TU Delft
- 12:30 **Quantum Dot as an on-demand Single Electron Source: AC current quantization and noise**
François Parmentier, Laboratoire Pierre Aigrain
- 12:45 Lunch

Session 13 – Photonics with Dots III (Chair: Paulo Guimaraes)

- 14:00 **Invited: Quantum and classical information processing with a single quantum dot in photonic crystal cavity**
Arka Majumdar, Stanford
- 14:30 **High frequency tuning of photonic crystal nanocavity modes using surface acoustic waves**
Hubert Krenner, Universitaet Augsburg
- 14:45 **Dephasing and few dot coherent coupling in electrically tunable photonic crystal nanocavities**
Arne Laucht, Walter Schottky Institut
- 15:00 **Invited: on 2D and 3D photonic crystals**
Yasuhiko Arakawa, University of Tokyo
- 15:30 Refreshment Break

Session 14 – Synthesis and Characterisation (Chair: Pavlos Lagoudakis)

- 16:00 **Invited: Synthesis and assembly of shape and composition controlled colloidal nanocrystals**
Liberato Manna, IIT
- 16:30 **Near-infrared luminescent and photoconductive Ag₂Se nanocrystals**
Maksym Yarema, University Linz
- 16:45 **Excitonic emission of colloidal nano-crystals embedded in MBE grown ZnSe**
Mohamed Rashad Ahmed, University of Paderborn
- 17:00 **Simulation of MeV electron energy deposition in CdS quantum dots absorbed in silicate glass for radiation dosimetry**
Ruzalina Baharin, Brunel University
- 17:15 **Gram Scale Synthesis of Mn doped ZnS Semiconductor nanocrystals: QY > 50%**
Bhupendra Bahadur Srivastava, Indian Association for the Cultivation of Science

Poster Session II

17:15 – 19:00

Friday 30 April

Poster Session III

09:00 – 10:30

Session 15 - Applications and Growth (Chair: Paul Koenraad)

- 10:30 **Invited: Commercialization of Self-Assembled Quantum-Dot Optical Devices: From Optical Communication to Consumer Electronics**
Mitsuru Sugawara, Fujitsu Laboratories
- 11:00 **Ordered 1-D and 2-D InAs/InP quantum dot arrays at telecom wavelength**
Nut Sritirawisarn, Eindhoven University of Technology
- 11:15 **GaN/AlN quantum dots in nanowires : optical properties**
Bruno Gayral, CEA-Grenoble, INAC-SP2M
- 11:30 **3D exciton confinement and drift in graded-bandgap quantum wires**
Justyna Szeszko, Ecole Polytechnique Fédérale de Lausanne
- 11:45 **Direct impurity doping into InAs quantum dots by utilizing self-assembling growth steps**
Tomoya Inoue, Kobe University
- 12:00 **In(Ga)As quantum dots grown on GaAs(111) substrates for entangled photons pairs**
Irina A. Ostapenko, Technische Universitaet Berlin
- 12:15 **Formation of low density GaAs quantum dots by droplet epitaxy method**
Jindong Song, Korea institute of Science and Technology
- 12:30 **MOVPE grown InGaAs quantum dots of high optical quality as seed layer for low-density InP quantum dots**
Daniel Richter, IHFG
- 12:45 Closing remarks
- 12:50 Lunch
- 13:30 Close of Conference