

One Day Quantum Dot Meeting

11 January 2008

The Blackett Laboratory, Imperial College London

Programme and oral presentations

09:30-10:25	Registration and coffee	
10:25	Welcome and introduction	
Session 1		
10:30	Invited Talk: Size, shape and composition control in nanocrystals QDs: from science to applications	Uri Banin, The Hebrew University, Jerusalem
11:00	Efficient Auger cooling in PbSe nanocrystals	Marco Califano, University of Leeds
11:15	Novel multi-photon microscopy based on resonant nonlinear optics of colloidal quantum dots	Francesco Masia, University of Cardiff
11:30	Invited Talk: Colloidal multi-material heterostructure nanocrystals: synthetic strategies, properties and prospective applications	Davide Cozzoli, National Nanotechnology Laboratory, Lecce
12:00	Novel hybrid nanocomposites based on colloidal PbS quantum dots	Lyudmila Turyanska, University of Nottingham
12:15	Nanocrystal doped luminescent solar concentrators	Amanda Chatten, Imperial College London
12:30-14:00	Lunch and poster session	
Session 2		
14:00	Invited Talk: Epitaxial quantum rods – controlling electron confinement in the growth direction	Andrea Fiore, Eindhoven University of Technology
14:30	Two-photon interference experiments with photons from quantum dots	Anthony Bennett, Toshiba Research Europe Ltd
14:45	Nuclear spin dynamics in a single quantum dot in the nuclear spin bistability regime	Maxim Makhonin, University of Sheffield
15:00	High-fidelity hole spin initialisation in single QDs	Daniel Brunner, Heriot-Watt University
15:15	Sequential preparation, optical control and detection of single quantum dot hole spin	Andrew Ramsey, University of Sheffield
15:30	Excitonic Mott transitions in type-II quantum dots	Manus Hayne, Lancaster University
15:45-16:15	Afternoon Tea	
Session 3		
16:15	Invited Talk: An atomic scale study of magnetically doped quantum dots	Paul Koenraad, Eindhoven University of Technology
16:45	Wavefunctions and energy levels of QDs created by Mn interstitial donors in n-i-p GaMnAs diodes	Oliver Thomas, University of Nottingham
17:00	Direct subsurface imaging of III-V semiconductor nanostructures via ultrasonic force microscopy	Oleg Kolosov, Lancaster University
17:15	Radiative and non-radiative recombination via excited states in InAs/GaAs 1.3 μm QD lasers	Alf Adams, University of Surrey
17:30	Gain dynamics in InGaAs QD amplifiers: the effect of p-doping	Paola Borri, University of Cardiff
17:45	Quantum-confined Stark effect and ultrafast absorption dynamics in a bilayer QD waveguide at 1340 nm	David Malins, University of St Andrews
18:00	Close of Meeting	

Poster Presentations

Controlled-rotation quantum logic gate in a single self-assembled quantum dot	Stephen Boyle	University of Sheffield
InSb QD LEDs grown by MBE for mid-IR applications	Peter Carrington	Lancaster University
Resonant tunnelling injection of carriers in InAs QD LEDs	Ricky Chagger	University of Nottingham
Direct measurement of nuclear spin dynamics of two different types of quantum dots	Ilias Drouzas	University of Sheffield
Electronic structure calculations for Si QDs in SiO ₂ in an applied magnetic field using the finite-element method	David Grocutt	University of Surrey
Spectroscopic characterisation of an InAs QD VECSEL	Jennifer Hastie	University of Strathclyde
Tuneability in the detection wavelength of a quantum dots-in-a-well infrared photodetector	Linda Höglund	Linköping University
Effective tuning of the charge state of a single InAs/GaAs quantum dot by means of external fields	Per Olof Holtz	Linköping University
Effect of photon and thermal coupling mechanisms on self-assembled InAs/GaAs quantum dot lasers	Chaoyuan Jin	University of Sheffield
Whispering gallery modes in quantum dot micropillar cavities	Ben Jones	University of Sheffield
Characterisation of InAs/GaAs QDs on the nanometre scale using analytical electron microscopy (AEM)	Shima Kadkhodazadeh	Imperial College London
Polarisation-resolved four-wave mixing field from individual excitonic transitions	Jacek Kasprzak	University of Cardiff
Near-IR photoluminescence spectroscopy of quantum dots embedded in planar photonic crystal cavities	Sang Lam	University of Sheffield
Tailoring quantum dot saturable absorber mirrors for ultra-short pulse generation	Matthew Lumb	Imperial College London
Confinement-deconfinement transition in single layer graphene quantum dots	Peter Maksym	University of Leicester
GHz electrically triggered exciton spin flip in a single quantum dot	Jamie McFarlane	Heriot-Watt University
Modelling of exciton and trion recombination in single quantum dots under selective optical pumping	Guillermo Muñoz-Martinez	Universidad de Valencia
The effect of device structure on the performance of quantum dot lasers	Deepal Naidu	University of Cardiff
Cavity-enhanced polarisation control and observation of off-resonant coupling in quantum dot nanocavities	Ruth Oulton	University of Sheffield
Pseudopotential calculations of interband and intraband optical transitions in InAs nanocrystals quantum dots	Theerapong Puangmali	University of Leeds
PL calculation of InGaAs QDs	Bob Ren	University of Bristol
The non-equilibrium distribution of carriers in QD lasers	Judy Rorison	University of Bristol
Conduction band Γ -L crossover in III-V GaSb SAQDs induced by lattice-mismatch strain	Sergey Rybchenko	University of Hull
Simulation of nanoscale mapping of InSb/GaAs SAQDs obtained by Kelvin Probe Force Microscopy	Sergey Rybchenko	University of Hull
Self-assembled InAs quantum dots for intersubband devices	Matthias Schramböck	Technical University of Vienna
Overhauser effect in individual InP/GaInP quantum dots	Joanna Skiba-Szymanska	University of Sheffield
Electrical studies of filamentation and carrier dynamics in InAs/GaAs quantum dot laser diodes	Peter Spencer	Imperial College London
Valence band structure of strained type-II InSb/InAs quantum dots: a multi-band k.p study	Gik Hong Yeap	University of Hull

A prize of £50 will be awarded to the best student poster