

Monday, July 11, 2005

MSS-12

07:30 Onsite Registration
Elevator area, Second Floor
continues until 16:00

08:00 Continental Breakfast
Pre-function Area, Second Floor

09:00 **Welcome and Conference Opening**

Jerry Simmons and Evelyn Hu
Grand Pavilion - Second Floor

09:45 **Stephen Forrest** A1 - Plenary Speaker
Princeton University
*Organic Semiconductors: New Materials, Physics and Devices for
Modern Optoelectronics*

10:30 Morning Break
Pre-function Area, Second Floor

11:00 **Gerhard Abstreiter** A2 - Plenary Speaker
Technische Universität Muenchen
Charge and Spin Excitations in Single and Coupled Quantum Dots

11:45 **Leo Kouwenhoven** A3 - Plenary Speaker
Kavli Institute of Nanoscience, Delft
Spin Physics in Few-electron Quantum Dots

12:30 Lunch
(your own arrangements)

Session B
Non-linear Behavior of Superlattice Structures

14:00 **S. James Allen** B1 - Invited Talk
University of California - Santa Barbara
Loss and Gain in Bloch Oscillating Semiconductor Super-Superlattices

14:30 **Kazuhiko Hirakawa** B2 - Invited Talk
University of Tokyo
Dispersive terahertz gain of non-classical oscillator: Bloch oscillation in semiconductor superlattices

15:00 **Carlo Sirtori** B3 - Invited Talk
Thales Research and Technology
Quantum cascade lasers: physics and applications

15:30 **Daniel Wasserman** B4 - Invited Talk
Princeton University
Stimulated Anti-Stokes Raman Emission in Quantum Cascade Lasers

16:00

PA - Poster Session A

Enchantment Ballroom, Second Floor

PA1-Formation and Characterization of Quantum Dots and Rings [I]

PA2-Formation and Characterization of Quantum Wells and Two-dimensional Heterostructures

PA3-Two-dimensional Heterostructure Devices

18:00

Daily Session Concludes

Tuesday, July 12, 2005

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08:00 Continental Breakfast
Pre-function Area, Second Floor

Session C Quantum Dots and Rings [I]
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- 09:00 **Peter Offermans** C1 - Invited Talk
Eindhoven University of Technology
Atomic-scale structure and formation of self-assembled In(Ga)As quantum rings
- 09:30 **Naoki Kondo** C2 - Contributed Oral Presentation
Institute of Industrial Science, University of Tokyo
Possible Generation of Electric Multipole Radiation from Solid State Quantum Rings
- 09:45 **Eric Stinaff** C3 - Contributed Oral Presentation
Naval Research Laboratory
Optical Pumping of a Single Charge-Tunable Quantum Dot
- 10:00 **Martin Kroner** C4 - Contributed Oral Presentation
Ludwig-Maximilians-Universität
Absorption and Emission Spectroscopy on a Single Charge-Tunable Quantum Dot
- 10:15 **Minkyung Jung** C5 - Contributed Oral Presentation
University of Tokyo
Electron transport and shell structures of single InAs quantum dots probed by nanogap electrodes

10:30 Morning Break
Pre-function Area, Second Floor

Session D Quantum Dots and Rings [II]

- 11:00 **Eric Stinaff** D1 - Invited Talk
Naval Research Laboratory
Polarization Spectroscopy of Single and Coupled InAs Quantum Dots
- 11:30 **S.A. Braitbar** D2 - Contributed Oral Presentation
Solid State Institute, Technion
Magneto Optics of Single Photons Emitted From Single Quantum Dots in Planar Microcavities.
- 11:45 **Gustavo Narvaez** D3 - Contributed Oral Presentation
National Renewable Energy Laboratory (NREL), Colorado
Electronic and optical properties of neutral and charged excitons in million-atom InGaAs/GaAs quantum dots
- 12:00 **Kouichi Akahane** D4 - Contributed Oral Presentation
National Institute of Information and Communications Technology, Japan
1.5 μm emission from InAs quantum dots using an InGaAsSb strain-reducing layer grown on GaAs substrate

12:15 **Robert Seguin** D5 - Contributed Oral Presentation
Technische Universität Berlin
Quantum Dot Size Dependence of Exciton Fine Structure Splitting

12:30 Lunch
(your own arrangements)

Session E Quantum Wells and Two-Dimensional Heterostructures
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14:00 **Sebastian Roth** E1 - Invited Talk
Technische Universität München
Realization of a quantum wire with double cleaved-edge overgrowth

14:30 **Klaus Reimann** E2 - Contributed Oral Presentation
Max-Born-Institut
Radiative coupling of intersubband transitions in GaAs/AlGaAs multiple quantum wells

14:45 **Mark Fromhold** E3 - Contributed Oral Presentation
University of Nottingham
Observation of strong current resonances due to the formation of stochastic conduction networks in superlattices

15:00 **Thomas Feil** E4 - Contributed Oral Presentation
Universität Regensburg
Stable static and dynamic superlattice transport

15:15 **Lukas Worschech** E5 - Contributed Oral Presentation
Universität Wuerzburg
Sub kT switching in strongly correlated one dimensional conductors

15:30 **Sebastien Moreau** E6 - Contributed Oral Presentation
Grenoble High Magnetic Field Laboratory, Centre National de la Recherche Scientifique (CNRS)
Optically detected cyclotron resonance in a high mobility 2DEG

PB – Poster Session B

Enchantment Ballroom, Second Floor

PB1-Formation and Characterization of Quantum Dots and Rings [II]

PB2-Formation and Characterization of Quantum Wires

PB3-Modeling, Processing and Probing Modulated Semiconductor Structures

PB4-Magnetism and Spin in Nanostructures [I]

18:00 Daily Session Concludes

Wednesday, July 13, 2005

MSS-12

08:00 Continental Breakfast
Pre-function Area, Second Floor

Session F Magnetism and Spin in Nanostructures [I]
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09:00 **Henri Mariette** F1 - Invited Talk
Commissariat à l'Energie Atomique (CEA)- Centre National de la Recherche Scientifique (CNRS)- Université Joseph Fourier
One single spin in a quantum dot

09:30 **Atsushi Tackeuchi** F2 - Invited Talk
Waseda University
Spin Relaxation and Antiferromagnetic Coupling in Semiconductor Quantum Dots

10:00 **Eiji Saitoh** F3 - Invited Talk
Keio University
Current induced resonance of a single magnetic domain wall

10:30 Morning Break
Pre-function Area, Second Floor

11:00 **Jelena Vuckovic** G1 - Plenary Speaker
Stanford University
Generation and manipulation of classical and nonclassical light using photonic crystals

11:45 **Emmanuel Rashba** G2 - Plenary Speaker
Harvard University
Spin-orbit Coupling and Spin Transport

12:30 Group Outing Tours
includes lunch
Buses depart from and return to the front of the Hyatt

18:30 Conference Reception
Buses depart from the front of the Hyatt

19:30 Conference Banquet
Albuquerque BioPark

21:30 Buses return to the front of the Hyatt

22:00 Daily Session Concludes

Thursday, July 14, 2005

MSS-12

08:00 Continental Breakfast
Pre-function Area, Second Floor

Session H Novel Organic and Semiconductor Devices

- 09:00 **Konstantin Novoselov** H1 - Invited Talk
University of Manchester
Field Effect Transistor Based on Thin Films of Graphite
- 09:30 **Sungwoo Hwang** H2 - Contributed Oral Presentation
Korea University
High frequency response of a single wall carbon nanotube field effect transistor
- 09:45 **Constantinos Simserides** H3 - Contributed Oral Presentation
Leibniz Institute for Neurobiology
A small polaron hopping model for the multiphonon-assisted transport along DNA molecules, in the presence of disorder
- 10:00 **Axel Lorke** H4 - Contributed Oral Presentation
Universität Duisburg-Essen
Charge pumping in adiabatically driven electron ratchets
- 10:15 **Emilio Mendez** H5 - Contributed Oral Presentation
State University of New York
Drastic Reduction of Shot Noise in Superlattice-based p-i-n Photodiodes

10:30 Morning Break
Pre-function Area, Second Floor

Session I Quantum Dots and Microcavities
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- 11:00 **Grzegorz Sek** I1 - Invited Talk
Universität Würzburg
Investigation of strong coupling between single quantum dot excitons and single photons in pillar microcavities
- 11:30 **Isabelle Philip** I2 - Contributed Oral Presentation
Centre National de la Recherche Scientifique (CNRS)
Controlling coherence of single quantum dots embedded in a microcavity
- 11:45 **Felix Hofbauer** I3 - Contributed Oral Presentation
Technische Universität München
High Quality Photonic Crystal Nano-cavities for Solid State Quantum Optics
- 12:00 **Kevin Hennessey** I4 - Contributed Oral Presentation
University of California - Santa Barbara
Deterministic coupling of photonic crystal nanocavity modes to single quantum dot excitons

- 12:15 **Paulo Santos** I5 - Contributed Oral Presentation
 Paul-Drude-Institut
Acoustically tunable photonic structures based on microcavity polaritons
- 12:30 **Lunch**
 (your own arrangements)
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| Session J
Nanophotonics |
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- 14:00 **Naomi Halas** J1 - Invited Talk
 Rice University
Plasmon Hybridization: manipulating electromagnetic fields with mesoscale structures
- 14:30 **Clivia Sotomayor Torres** J2 - Contributed Oral Presentation
 University College Cork
Propagation and scattering of light in opal heterojunctions
- 14:45 **Gernot Fasching** J3 - Contributed Oral Presentation
 Vienna University of Technology
Microcavity THz Quantum Cascade Laser
- 15:00 **Nitin Samarth** J4 - Contributed Oral Presentation
 Pennsylvania State University
Observation of Ultrahigh Spontaneous Emission Factor in GaAs(Ga,Al)As Microdisk Lasers
- 15:15 **Dan Dalacu** J5 - Contributed Oral Presentation
 Institute for Microstructural Sciences, National Research Council, Canada
Optical Characterisation of InAs/InP Quantum Dot Photonic Cavity Membranes
- 15:30 **Naokatsu Yamamoto** J6 - Contributed Oral Presentation
 National Institute of Information and Communications Technology
Optical communications waveband lasing from Sb-based quantum dot vertical-cavity laser
- 15:45 **Stefan Strauf** J7 - Contributed Oral Presentation
 University of California - Santa Barbara
High β , "self-tuned" photonic-crystal quantum-dot laser
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| PC - Poster Session C |
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- 16:00 Enchantment Ballroom, Second Floor
- PC1-Magnetism and Spin in Nanostructures [II]
- PC2-Novel Organic and Semiconductor Devices
- PC3-Physics and Devices for Quantum Information & Communication
- 18:00 **Daily Session Concludes**

Friday, July 15, 2005

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08:00 Continental Breakfast
Pre-function Area, Second Floor

07:30 Information Desk - MSS
Elevator area, Second Floor
continues until 14:00

Session K Magnetism, Spin & Transport in Nanostructures

- 09:00 **Paul Koenraad** K1 - Invited Talk
Eindhoven University of Technology
Mn in GaAs studied by X-STM: from a single impurity to ferromagnetic layers
- 09:30 **Dirk Reuter** K2 - Contributed Oral Presentation
Ruhr-Universität Bochum
Mapping the hole wave function in InAs quantum dots by magneto-capacitance-voltage spectroscopy
- 09:45 **Ahsan Nazmul** K3 - Contributed Oral Presentation
University of Tokyo
Ferromagnetism and anomalous Hall effect of Mn delta-doped GaAs/p-AlGaAs heterostructures
- 10:00 **Haruki Sanada** K4 - Contributed Oral Presentation
Tohoku University
Tunability of hyperfine interaction in n-GaAs (110) quantum well
- 10:15 **Yoshihiro Akiyama** K5 - Contributed Oral Presentation
University of Tokyo
Temperature-dependent conductance of quasi-one-dimensional electrons in a novel constricted In_{0.1}Ga_{0.9}As/GaAs channel with corrugated interfaces
- 10:30 Morning Break**
Pre-function Area, Second Floor

Session L Magnetism and Spin in Nanostructures [II]

- 11:00 **Ilya Krivorotov** L1 - Invited Talk
Cornell University
Dynamics of Nanomagnets Driven By Spin Current
- 11:30 **Jonathan Finley** L2 - Contributed Oral Presentation
Technische Universität Muenchen
Dynamics of optically generated single electron spins in self-assembled quantum dots
- 11:45 **Paulo Santos** L3 - Contributed Oral Presentation
Paul-Drude-Institut
Spin transport and manipulation by mobile potential dots in GaAs quantum wells

12:00 **Yuichi Igarashi** L4 - Invited Talk
University of Tokyo
Observation of Hund's first rule in strongly coupled InAs self-assembled dots

12:30 Conference Concludes