

WORKSHOP PROGRAMME

WEDNESDAY, February 13th, 2013

09:30 – 09:40 Opening

We.1: Quantum dots in cavities

09:40 – 10:10 P. Gold, F. Albert, M. Gschrey, E. Stock, C. Hopfmann, M. Lerner, C. Schneider, S. Höfling, A. Forchel, M. Kamp and S. Reitzenstein

Single quantum dot photocurrent spectroscopy and on-chip quantum optics using electrically contacted micropillar cavities

10:10 – 10:30 S. Weiler, A. Ulhaq, S. M. Ulrich, M. Jetter, P. Michler, C. Roy and S. Hughes

Emission characteristics of the Mollow triplet sidebands of a resonantly driven semiconductor quantum dot

10:30 – 10:50 A. Vagov, M. Glässl, L. Sörgel, M. D. Croitoru, T. Kuhn and V. M. Axt

Combined impact of phonon induced pure dephasing and photon losses on quantum dot-cavity systems

10:50 – 11:20 Coffee break

We.2: Coherent dynamics and dephasing in quantum dots

11:20 – 11:50 P. Machnikowski, A. Sitek, P. Karwat, M. Kozub and Ł. Pawicki

Collective spontaneous emission from double quantum dots and QD ensembles

11:50 – 12:20 J. Kasprzak and W. Langbein

Exploring coherence of individual emitters in a solid

12:20 – 12:40 A. Musiał, G. Sęk, A. Maryński, M. Kozub, J. Misiewicz, A. Löffler, S. Höfling, S. Reitzenstein, J. P. Reithmaier, M. Kamp and A. Forchel

Exciton dephasing in large GaAs-based epitaxial nanostructures

12:40 – 14:00 Lunch

We.3: Dynamics in nanostructures

14:00 – 14:30 R. C. Iotti and F. Rossi

Coupled carrier-quasiparticle nonequilibrium dynamics in unipolar optoelectronic quantum devices: A Monte Carlo analysis

14:30 – 15:00 T. Kuhn

Fluctuation properties of optical phonons generated by optical excitation of quantum dot and quantum well structures

15:00 – 15:20 R. Rosati, R. C. Iotti and F. Rossi

The Wigner-function formalism applied to semiconductor quantum devices: Failure of the conventional boundary-condition scheme

15:20 – 15:40 M. Azizi and P. Machnikowski

Dynamics of dissipative multiple exciton generation in a nanocrystal

15:40 Coffee break

15:40 – 18:00 Poster session

THURSDAY, February 14th, 2013

Th.1: Spin dynamics in thin films and quantum wells

- 09:30 – 10:00 M. Bayer, M. Bombeck, J. Jäger, A. V. Scherbakov, A. S. Salsyuk, C. Brüggemann, T. L. Linnik, B. A. Glavin, X. Liu, J. K. Furdyna, D. R. Yakovlev and A. V. Akimov
Interaction of sound and magnetization in ferromagnetic semiconductor thin films on picosecond timescales
- 10:00 – 10:30 R. Bratschitsch
Thermally assisted all-optical helicity-dependent magnetic switching in $Fe_{100-x}Tb_x$ films
- 10:30 – 10:50 C. Gradl, M. Kugler, C. Schönhuber, D. Schuh, D. Bougeard, C. Schüller and T. Korn
Hole spin coherence in coupled GaAs/AlAs quantum wells
- 10:50 – 11:20 Coffee break

Th.2: State preparation and dynamics with chirped pulses

- 11:20 – 11:50 P. Brereton, I. M. Piper, Y. Wu, M. Ediger, E. R. Schmidgall, P. R. Eastham, C. Creatore, M. Hugues, M. Hopkinson and R. T. Phillips
Adiabatic rapid passage in semiconductors
- 11:50 – 12:10 M. Glässl, A. M. Barth, M. D. Croitoru, A. Vagov and V. M. Axt
Phonon-assisted fast and robust preparation of excitons and biexcitons in a quantum dot
- 12:10 – 12:30 S. Lüker, D. Wigger, D. E. Reiter, V. M. Axt and T. Kuhn
Generation of squeezed acoustic phonons by excitation of a quantum dot with detuned and chirped laser pulses
- 12:30 – 14:00 Lunch

Th.3: Spin dynamics and magnetooptics

- 14:00 – 14:30 T. Korn, M. Griesbeck, R. Völkl, M. Schwemmer, M. M. Glazov, E. Y. Sherman, D. Schuh, W. Wegscheider and C. Schüller
Spin dynamics, spin diffusion and electron-nuclear spin coupling in (110)-grown high-mobility two-dimensional electron systems
- 14:30 – 15:00 I. D'Amico
Anderson localization in spin chains
- 15:00 – 15:20 J. Kobak, W. Pacuski, T. Kazimierzuk, J. Suffczyński, T. Jakubczyk, J. G. Rousset, E. Janik, P. Kossacki, C. Kruse, D. Hommel and A. Golnik
Three-dimensional magneto-optical anisotropy studies of CdTe quantum dots
- 15:20 – 15:40 C. Thurn, M. Cygorek and V. M. Axt
Non-Markovian spin transfer dynamics in diluted magnetic semiconductors
- 15:40 – 16:10 Coffee break

Th.4: Phonon scattering and relaxation in quantum dots

- 16:10 – 16:40 A. Nazir
Phonon-enhanced coherent scattering and off-resonant sideband narrowing in a driven quantum dot
- 16:40 – 17:10 M. Syperek, M. Baranowski, G. Sęk, J. Misiewicz, A. Löffler, S. Höfling, S. Reitzenstein, M. Kamp and A. Forchel
Carrier relaxation processes in low-indium content, self-assembled (In,Ga)As/GaAs quantum dots
- 17:10 – 17:30 K. Gawarecki, P. Machnikowski and T. Kuhn
Carrier states in double quantum dots: phonon-assisted relaxation and tunneling
- 17:45 Bus transfer to the conference excursion

FRIDAY, February 15th, 2013

Fr.1: Modified light-matter interaction

- 09:30 – 10:00 O. Schubert, M. Porer, J. M. Menard, F. Junginger, B. Mayer, C. Schmidt, A. Pashkin, A. Leitenstorfer and R. Huber
Extreme limits of terahertz nonlinear optics: from four-wave mixing to ultrastrong light-matter coupling
- 10:00 – 10:20 I. Yeo, P. L de Assis, A. Gloppe, E. Dupont-Ferrier, N. S. Malik, E. Dupuy, J. Claudon, J.-M. Gérard, A. Auffèves, G. Nogues, S. Seidelin, J.-P. Poizat, O. Arcizet and M. Richard
Strain-induced optomechanical coupling of a semiconductor quantum dot in a photonic wire
- 10:20 – 10:40 K. Lindfors, M. Pfeiffer, B. Fenk, F. Phillipp, P. Atkinson, A. Rastelli, O. G. Schmidt, H. Giessen and M. Lippitz
Alignment of plasmonic nanoantennas on self-assembled quantum dots with sub-10 nm precision
- 10:40 – 11:10 Coffee break

Fr.2: Spin dynamics in quantum dots

- 11:10 – 11:40 P. Kossacki, T. Smoleński, M. Goryca, T. Kazimierczuk, M. Koperski, A. Bogucki, P. Wojnar, W. Pacuski and A. Golnik
Optical study of spin dynamics in CdTe/ZnTe quantum dots
- 11:40 – 12:00 D. E. Reiter, D. Thuberg, T. Kuhn and V. M. Axt
Optical spin control in a quantum dot doped with a single Mn atom: II-VI vs. III-V semiconductors
- 12:00 – 12:10 Closing remarks
- 12:10 – 13:30 Lunch

POSTER CONTRIBUTIONS

- P1: M. Bombeck, A. S. Salasyuk, J. Jäger, D. R. Yakovlev, E. Yu. Trofimova, D. A. Kurdyukov, V. G. Golubev and M. Bayer
Optical generation and detection of hypersonic in opal-based ferromagnetic hypersonic crystals
- P2: M. Cygorek, C. Thurn and V. M. Axt
Correlated description of spin transfer between Mn ions and carriers in diluted magnetic semiconductors
- P3: J. M. Daniels, P. Machnikowski and T. Kuhn
Excitons in double quantum dots: The role of spin-orbit coupling and phonon-induced relaxation
- P4: Ł. Dusanowski, M. Syperek, W. Rudno-Rudziński, G. Sęk, J. Misiewicz, A. Somers, R. Schwertberger, J. P. Reithmeier, S. Höfling and A. Forchel
Ground states exciton dynamics in $InAs/In_{0.53}Ga_{0.23}Al_{0.24}As/InP$ quantum dashes: the quantum confinement issue
- P5: M. Gawelczyk and P. Machnikowski
Phonon-induced dynamical dephasing of optically initialized hole spins in semiconductor quantum wells
- P6: M. Glässl, V. M. Axt, M. D. Croitoru, A. Vagov and T. Kuhn
Polarization dependent damping of Rabi oscillations in quantum dots
- P7: M. Gschrey, T. M. Do, S. Rodt, W. Unrau, D. Quandt, J.-H. Schulze, T. Germann, A. Strittmatter, D. Bimberg and S. Reitzenstein
Cathodoluminescence spectroscopy and electron-beam-induced current mapping of site-controlled quantum-dot single-photon-sources with self-aligned current injection
- P8: J. Iles-Smith
Energy transport in dissipative nanosystems
- P9: J. Jäger, M. Bombeck, A. V. Scherbakov, X. Liu, J. K. Furdyna, D. R. Yakovlev and M. Bayer
Ultrafast excitation of magnetization precession in high-index $(Ga,Mn)As$ induced by picosecond phonon pulses
- P10: P. Kaczmarkiewicz, P. Machnikowski and T. Kuhn
Phonon-assisted relaxation in non-uniform quantum dashes
- P11: B. Kaiser, A. Brand, M. Glässl, A. Vagov and V.M. Axt
Coherent signatures in the ionization dynamics of atoms caused by highly intense free-electron laser pulses
- P12: P. Karwat and P. Machnikowski
The role of phonon-related processes on the evolution of spatial coherence and collective luminescence from double quantum dots

- P13: P. Kettmann, T. Papenkort, V. M. Axt and T. Kuhn
Investigating the Nonequilibrium Dynamics of Confined BCS-Superconductors
- P14: P. Kowalski and P. Machnikowski
Statistical distribution of the coupling magnitudes and degree of mixing between exciton and biexciton states in InAs nanocrystals
- P15: Ł. Marcinowski, K. Roszak and P. Machnikowski
Investigation of phonon effects on the measurement of spin states in a double quantum dot coupled to a quantum point contact
- P16: A. Maryński, A. Musiał, M. Kozub, G. Sęk, J. Misiewicz, S. Hein, S. Höfling and A. Forchel
Temperature dependence of the spectral linewidth of the emission from single InAs/InP quantum dashes
- P17: Q. Mermillod and J. Kasprzak
Development of spatio-temporal pulse shaping for coherent control of individual nanoemitters
- P18: P. Mrowiński, A. Maryński, A. Musiał, G. Sęk, J. Misiewicz, S. Hein, S. Höfling, A. Forchel
Exciton fine structure splitting and biexciton binding energy in InAs/InP quantum dashes
- P19: M. Pieczarka, P. Podemski, A. Musiał, K. Ryczko, A. Mika, M. Kozub, G. Sęk, J. Misiewicz, F. Langer, S. Höfling, M. Kamp and A. Forchel
Towards long-wavelength exciton polaritons in GaAs-based quantum well in a cavity structures
- P20: G. Plechinger, S. Heydrich, J. Eroms, D. Weiss, C. Schüller and T. Korn
Excitonic features of singlelayer MoS₂
- P21: K. Roszak, P. Mazurek and P. Horodecki
Quantum correlations beyond entanglement: anomalous evolution of the quantum discord of excitonic states in quantum dots
- P22: M. Schwemmer, R. Völkl, T. Korn, M. Griesbeck, S. A. Tarasenko, D. Schuh, W. Wegscheider and C. Schüller
Anomalous spin diffusion in high-mobility (110) GaAs-based quantum wells
- P23: A. Vagov, M. Glässl, L. Sörgel, M. D. Croitoru, T. Kuhn and V. M. Axt
Interaction of a quantum dot cavity system with acoustic phonons: Does a stronger light-matter coupling enhance the visibility of strong coupling effects?
- P24: D. Wigger, S. Lüker, D. E. Reiter, V. M. Axt and T. Kuhn
Controlling phonon wave packet emission from a semiconductor quantum dot by tailored light field excitation
- P25: M. Zachmann, M. D. Croitoru, A. Vagov, V. M. Axt, T. Papenkort, T. Kuhn
Coherent dynamics of the condensate state in superconducting nanowires