



Strasbourg (France)

E-MRS Spring Meeting 2004
May 24-28, 2004

SYMPOSIUM A2

Nanophotonic materials

Symposium Organizers:

Albert Polman, FOM, Amsterdam, The Netherlands

Henri Lezec, Louis Pasteur University, Strasbourg, France

Harry A. Atwater, CALTECH, USA

Symposium Support:

We wish to thank the following for their contribution to the success of this conference:



EOARD

European Office of Aerospace Research and Development of the USAF

E-MRS 2004 SPRING MEETING

SYMPOSIUM A2

Thursday, May 27, 2004

Morning

Joint Session Symposium A1, A2: Silicon-based nanophotonics

Session chairs: P. Fauchet (University of Rochester, NY, USA)

and P. Polman (FOM-Institute AMOLF, Amsterdam, The Netherlands)

- A1-A2/01** 08:30 -Invited- NANOENERGETICS, NANOMATERIALS, NANODEVICES, NANOCOMPUTING - PUTTING THE PIECES TOGETHER
G. Bourianoff, Intel Corporation, USA
- A1-A2/02** 09:00 -Invited- TOWARDS CMOS COMPATIBLE NANOPHOTONICS
M.L. Brongersma, Stanford University, Geballe Laboratory for Advanced Materials, 476 Lomita Mall, Stanford CA 94305, USA
- A1-A2/03** 09:30 -Invited- PHOTONIC CRYSTALS BASED ON MACROPOROUS SILICON
U. Gösele, S. Matthias and F. Müller, Max-Planck-Institut für Mikrostrukturphysik, Experimentelle Abteilung II, Weinberg 2, 06120 Halle/Saale, Germany
- A1-A2/04** 10:00 -Invited- Si-BASED NANOPHOTONICS
S. Coffa, ST Microelectronics, Catania, Italy
- 10:30 **BREAK**

Session I: Surface plasmons 1

Session chair: H. Lezec (Louis Pasteur University, Strasbourg, France)

- A2-I.1** 11:00 -Invited- NANO-COMPONENTS FOR PLASMONICS
J.R. Krenn, H. Ditlbacher, A. Hohenau, A. Stepanov, A. Leitner, F.R. Aussenegg, Institute for Experimental Physics and Erwin Schroedinger Institute for Nanoscale Research, Karl-Franzens-University Graz, A-8010 Graz, Austria
- A2-I.2** 11:30 LAUNCHING AND DECOUPLING SURFACE PLASMONS VIA MICRO-GRATINGS
Eloïse Devaux and Thomas Ebbesen, Laboratoire des Nanostructures, ISIS, Université Louis Pasteur, BP 70028, 67083 Strasbourg, France, Jean-Claude Weeber and Alain Dereux Laboratoire de Physique, Optique Submicronique, Université de Bourgogne, BP 47870, 21078 Dijon, France
- A2-I.3** 11:45 ADVANCES TOWARD DESIGN OF SUBWAVELENGTH PLASMONIC DEVICES
Luke A. Sweatlock(a), Jennifer A. Dionne(a), Joan J. Penninkhof(b), Albert Polman(b), Harry A. Atwater(a), (a)Caltech USA, (b)FOM AMOLF Inst., The Netherlands
- A2-I.4** 12:00 CHERENKOV RADIATION AND PLASMONIC EXCITATIONS IN PHOTONIC CRYSTALS
F.J. García de Abajo(a,b), A.G. Pattantyus-Abraham(c), N. Zabala(a,b), A. Rivacoba(a,b), M.O. Wolf(c) and P.M. Echenique(a,b), (a)Centro Mixto CSIC-UPV/EHU, Apartado 1072, 20080 San Sebastián, Spain, (b)Donostia International Physics Center (DIPC), Apartado 1072, 20080 San Sebastián, Spain, (c)Department of Chemistry, UBC, 2036 Main Mall, Vancouver, BC, V6T 1Z1, Canada
- A2-I.5** 12:15 EXTRAORDINARY TRANSMISSION OF THZ RADIATION THROUGH SUBWAVELENGTH APERTURES IN SEMICONDUCTOR GRATINGS
J. Gómez Rivas, P. Haring Bolivar, C. Janke and H. Kurz, Institut für Halbleitertechnik, RWTH Aachen, Sommerfeldstrasse 24, 52074 Aachen, Germany
- 12:30 **LUNCH**

Thursday, May 27, 2004

Afternoon

Session II: Surface plasmons 2

Session chair: N.J. Halas (Rice University, Houston TX, USA)

- A2-II.1** 14:00 -Invited- LINEAR AND NONLINEAR MULTIPLE SCATTERING OF SURFACE PLASMON POLARITONS AT NANOSTRUCTURED SURFACES
Sergey I. Bozhevolnyi, Department of Physics and Nanotechnology, Aalborg University, Pontoppidanstræde 103, 9220 Aalborg Øst, Denmark
- A2-II.2** 14:30 SURFACE-PLASMON ENHANCED EMISSION RATE AND EFFICIENCY OF SLOW OPTICAL EMITTERS
J. Kalkman and A. Polman, FOM-Institute AMOLF, Kruislaan 407, 1098 SJ Amsterdam, The Netherlands
- A2-II.3** 14:45 OPTICAL TRANSMISSION OF ISOLATED SUBWAVELENGTH APERTURES IN REAL METALS
A. Degiron(a),**H.J. Lezec**(a),**N. Yamamoto**(b)and **T.W. Ebbesen**(a), (a)ISIS, Louis Pasteur University, 8,allée G. Monge, 67000 Strasbourg, France, (b)Physics Department, Tokyo Institute of Technology, 2-12-1 Oh-okayama, Meguro-ku, Tokyo 152-8551, Japan
- A2-II.4** 15:00 -Invited- METAL NANOPARTICLE PLASMON WAVEGUIDES FOR ELECTROMAGNETIC ENERGY TRANSPORT
Stefan Alexander Maier, Department of Applied Physics, California Institute of Technology, MC 128-95, Pasadena CA 91125, USA
- 15:30 **BREAK**

Session III: Negative refraction, near-field effects

Session chair: S.I. Bozhevolnyi (Aalborg University, Aalborg, Denmark)

- A2-III.1** 15:45 THE BLACK CORNER REFLECTOR
S. Guenneau(a), **B. Gralak**(b) **J.B. Pendry**(a), (a)The Blackett Laboratory, Imperial College London, Prince Consort Road, London SW7 2AZ, UK, (b)FOM-Institute for Atomic and Molecular Physics, Kruislaan 407, 1098 SJ Amsterdam, The Netherlands
- A2-III.2** 16:00 REFLECTANCE CHARACTERIZATION OF OPALS OF CORE-SHELL AU/POLYSTYRENE
P.-T. Miclea, **S.G. Romanov**, **C.M. Sotomayor Torres**, Institute of Materials Science, University of Wuppertal, Gauss Str. 20, 42097 Wuppertal, Germany, **A. Susha**, Max Planck Institute of Colloids and Interfaces, 14424, Potsdam, Germany, **Z. Liang**, **F. Caruso**, Department of Chemical and Biomolecular Engineering, University of Melbourne, Australia
- A2-III.3** 16:15 OPTICAL PHASE EFFECTS AND RESONANCE SHIFT IN SCATTERING-TYPE NEAR-FIELD INFRARED MICROSCOPY
T. Taubner, **F. Keilmann** and **R. Hillenbrand**, Max-Planck-Institut für Biochemie, 82152 Martinsried, Germany
- A2-III.4** 16:30 FLUORESCENCE TRANSMISSION THROUGH NANOSTRUCTURED METAL FILMS
Yongdong Liu and **Steve Blair**, University of Utah, Electrical and Computer Engineering Department, 50 S. Central Campus Drive, Rm 3280, Salt Lake City UT 84112, USA
- A2-III.5** 16:45 SPONTANEOUS DECAY DYNAMICS IN ATOMICALLY DOPED CARBON NANOTUBES
Igor Bondarev and **Philippe Lambin**, Laboratoire de Physique du Solide, Facultes Universitaires Notre-Dame de la Paix, 61 rue de Bruxelles, 5000 Namur, Belgium
- 17:00-19:00 POSTER SESSION

- A2/P.01** MANIPULATING OPTICAL PLASMON POLARITONS WITH SURFACE NANOSTRUCTURES
A.L. Stepanov, H. Ditlbacher, J.R. Krenn, A. Hohenau, A. Leitner, F. R. Aussenegg, Institute for Experimental Physics and Erwin Schrödinger Institute for Nanoscale Research, Karl-Franzens-University Graz, 8010 Graz, Austria
- A2/P.02** TRANSMISSION, REFLECTION AND ABSORPTION IN THE SUBWAVELENGTH HOLES ARRAYS
W.L. Barnes(a), W.A. Murray(a), J. Dintinger(b), E. Devaux(b), H.J. Lezec(b) and T.W. Ebbesen(b), (a)School of Physics, University of Exeter, Stocker Road, Exeter, U.K., (b)ISIS, Louis Pasteur University, 8 allée G. Monge, 67000 Strasbourg, France
- A2/P.03** SURFACE PLASMONS IN METAL NANOPARTICLES ON FLAT AND PATTERNED SEMICONDUCTOR SURFACE
N.L. Dmitruk, T.R. Barlas, V.R. Romanyuk, Institute for Physics of Semiconductors of NASU, Pr. Nauki 41, 03028 Kyiv, Ukraine, I.N. Dmitruk, Kyiv National Taras Shevchenko University, Pr. Glushkov 6, 03127 Kyiv, Ukraine, and A. Szekeres, Institute of Solid State Physics, Sofia, Bulgaria
- A2/P.04** SURFACE PLASMON INTERACTION WITH SINGLE GROOVES IN THIN SILVER FILMS
J. Seidel, S. Grafström, L. M. Eng, Institut für Angewandte Photophysik, University of Technology Dresden, 01062 Dresden, Germany, L. Bischoff, FZ Rossendorf, Institut für Ionenstrahlphysik und Materialforschung, 01314 Dresden, Germany and T. Gemming, Leibniz-Institut für Festkörper- und Werkstofforschung Dresden e.V, 01069 Dresden, Germany
- A2/P.05** NEAR-FIELD INDUCED SURFACE PHONON POLARITONS ON FOCUSED ION BEAM IMPLANTED SiC
Nenad Ocelic, Rainer Hillenbrand, Nano-Photonics Group, Max-Planck Institute for Biochemistry, 82152 Martinsried, Germany
- A2/P.06** SURFACE PLASMONS IN ANISOTROPIC AU-SHELL/SILICA-CORE COLLOIDS
J.J. Penninkhof(a), C. Graf(b,c), A. Moroz(b), A. Polman(a), A. van Blaaderen(b), (a)FOM Institute AMOLF, Amsterdam, The Netherlands, (b)Universiteit Utrecht, Utrecht, The Netherlands, (c)Universität Würzburg, Würzburg, Germany
- A2/P.07** TOTAL TRANSMISSION THROUGH SUBWAVELENGTH HOLE ARRAYS
M. Beruete(a), M. Sorolla(a), I. Campillo(b), J.S. Dolado(b), L. Martín-Moreno(c) and F.J. García-Vidal(d), (a)Departamento de Ingeniería Eléctrica y Electrónica, Universidad Pública de Navarra, 31006 Pamplona, Spain, (b)Laboratorio de Tecnología, Cuesta de Olabeaga, 16, 48013 Bilbao, Spain, (c)Departamento de Física de la Materia Condensada, ICMA-CSIC, Universidad de Zaragoza, 50015, Zaragoza, Spain, (d)Departamento de Física Teórica de la Materia Condensada, Universidad Autónoma de Madrid, 28049 Madrid, Spain
- A2/P.08** SELECTIVE TRANSMISSION THROUGH SUB-WAVELENGTH METALLIC SLITS, P. Quémerais, A. Barbara, J. Lepercq and T. López-Ríos, LEPES-CNRS, 25 av. des Martyrs, BP 166, 38042 Grenoble Cedex 9, France
- A2/P.09** PHOTO-DETECTIVE PROPERTIES OF NANO-PATTERNED MODULATION-DOPED In_{0.48}Al_{0.52}As/In_{0.47}Ga_{0.53}As GROWN ON THE SEMI-INSULATING Fe-DOPED InP SUBSTRATE
Hongjoo Song, Hong Goo Choi, Youngchang Jo, Hoon Kim, Korea Electronics Technology Institute, Korea
- A2/P.10** WAVEGUIDING EFFECTS IN LAYER BY LAYER DEPOSITED FILMS OF CHEMICALLY SYNTHESIZED CdTe NANOCRYSTALS
W. Heiss, J. Roither, K. Hingerl, S. Andreeva, Institute of Semiconductor and Solid State Physics, University of Linz, Altenbergerstraße 69, 4040 Linz, Austria, M. Kovalenko, P. Feichuk, O. Panchuk, Institute of Inorganic Chemistry, University of Chernivtsi, Chernivtsi 58012, Ukraine
- A2/P.11** APPLICATION OF THE BAND STRUCTURE ANALYSIS AND DYNAMICAL DIFFRACTION THEORY TO THE DESIGN OF VAPOUR SENSORS BASED ON POROUS SILICON MICROCAVITIES
L. De Stefano(a), V. Mocella(a), L. Moretti(b), I. Rendina(a), (a)Institute for Microelectronics and Microsystems, CNR Sez. Napoli, Via P. Castellino 111, 80131 Napoli, Italy, (b)DIMET University of Reggio Calabria, Loc. Feo di Vito, 89060 Reggio Calabria, Italy
- A2/P.12** PHOTOLUMINESCENCE STUDIES OF ZINC SELENIDE QUANTUM DOTS
V.V. Nikesh(a), Hiroshi Ono(b), Shinji Nozaki(b), Shailaja Mahamuni(a), (a)Department of Physics, University of Pune, Pune 411 007, India, (b)Department of Electronic Engineering, The University of Electro-Communications, 1-5-1 Chofugaoka, Chofu-shi, Tokyo 182-8585, Japan
- A2/P.13** PHOTOLUMINESCENCE PROPERTIES OF SELENIUM TREATED POROUS SILICON
R. Jarimavicius(a), V. Grigalinas(b), R. Tomašilnas(c), I. Mikulskas(c), S. Tamulevičius(a,b), M. Andrulevičius(b), Š. Meškiniš(b), (a)Physics department, Kaunas University of Technology, Studentu 50, 3031 Kaunas, Lithuania, (b)Institute of Physical Electronics, Kaunas University of Technology, Savanorių 271, 3009 Kaunas, Lithuania, (c)Institute of Materials Science and Applied Research, Vilnius University, Saulėtekio 10, 2040 Vilnius, Lithuania
- A2/P.14** MICROSCOPIC CHARACTERIZATION OF LUMINESCENCE OF ZnO NANOWIRES GROWN ON SAPPHIRE
F. Bertram, D. Forster and J. Christen, Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany, H. Fan, M. Zacharias and U. Gösele, Max-Planck-Institute of Microstructure Physics Halle, Germany
- A2/P.15** THE NEW METHOD OF SI NANOWIRES GROWTH BY MW PLASMA ENHANCED CVD METHOD
N.N. Dzubanovsky, V.V. Dvorkin, A.F. Pal, V.G. Pirogov and N.V. Suetin, Moscow State University, Institute of Nuclear Physics, Moscow, Russia
- A2/P.16** ELECTROOPTIC EFFECTS IN HYBRID POLYMER-SiC NANOCRYSTALS COMPOSITES
J. Boucle, A. Kassiba, M. Makowska-Janusik, I.V. Kityk and N. Herlin-Bolme

- A2/P.17** SUB-WAVELENGTH PATTERNING OF THE OPTICAL NEAR-FIELD
Romain Quidant and Gonçal Badenes, ICFO- Institut de Ciències Fotòniques, c/ Jordi Girona 29, 08034 Barcelona, Spain, Jean-Claude Weeber, LPUB, UMR-CNRS 5027, Optique submicronique, 9 av. Alain Savary, 21078 Dijon, France, Christian Girard, CEMES, UPR-CNRS 8011, 29 rue Jeanne Marvig, 31055 Toulouse, France
- A2/P.18** FABRICATION OF NEARFIELD PROBE UNDER THE INFLUENCE OF ELECTRON BEAM EXPOSURE
D.W. Kim, S.S. Choi, Department of Physics and Nanoscience, SunMoon University, Ahsan, Chungnam 336-708, Korea, J.S. Moon, J.H. Boo, Department of Chemistry, Sungkyunkwan University, Kyung Gi Do, Suwon 440-746, Korea
- A2/P.19** SPONTANEOUS EMISSION IN A ONE-DIMENSIONAL PHOTONIC CRYSTAL
Adan S. Sanchez and P. Halevi, Instituto Nacional de Astrofísica, Óptica y Electrónica, Apdo. Post. 51, 72000 Puebla Pue, Mexico
- A2/P.20** ELECTRICAL TUNING OF PHOTONIC CRYSTALS INFILLED WITH LIQUID CRYSTALS
J.A. Reyes-Cervantes, Instituto de Física Universidad Nacional Autónoma de México, P. Halevi and J.A. Reyes-Avendano, Instituto Nacional de Astrofísica Óptica y Electrónica, México
- A2/P.21** BLUE LUMINESCENT Alq₃ SINGLE MOLECULES
M. Levichkova, J. Assa, H. Fröb, K. Leo, Institut für Angewandte Photophysik, Technische Universität Dresden, 01069 Dresden, Germany
- A2/P.22** NEAR-FIELD PROBING OF MODE COUPLING AND RESONANCE DYNAMICS IN PHOTONIC BAND GAP MATERIAL
B. Cluzel, E. Picard, T. Charvolin, V. Calvo, E. Hadji, Laboratoire Silicium Nanoélectronique Photonique et Structure, Service de Physique des Matériaux et Microstructures, Département de Recherche Fondamentale sur la Matière Condensée, Commissariat à l'Énergie Atomique, D. Gérard, F. de Fornel, Groupe optique de champ proche, Laboratoire de Physique de l'Université de Bourgogne, Unité mixte de Recherche Centre National de la Recherche scientifique, France
- A2/P.23** OPTICALLY VARIABLE IMAGING USING NANOIMPRINT TECHNIQUE
V. Grigaliunas, D. Jucius, S. Tamulevicius, A. Guobiena, V. Kopustinskas, Institute of Physical Electronics, Kaunas University of Technology, Savanoriu 271, 3009 Kaunas, Lithuania
- A2/P.24** EBV-DEPOSITED SESQUIOXIDE FILMS ON ALPHA-AL₂O₃
Lutz Rabisch, Sebastian Bär, Günter Huber, Institut für Laser-Physik, Universität Hamburg, Luruper Chaussee 149, 22761 Hamburg, Germany
- A2/P.25** TAILORING GAP POROSITY THROUGH PHOTON ASSISTED ELECTROCHEMICAL ETCHING.
P.C. Ricci, A. Anedda, C.M. Carbonaro, F. Clemente and R. Corpino, Dipartimento di Fisica, Università di Cagliari and INFN UdR Cagliari, Cittadella Universitaria, 09042 Monserrato(Ca), Italy
- A2/P.26** REFRACTIVE INDEX ENGINEERING OF NANOPARTICLE-POLYMER COMPOSITES
Yigal D. Blum and D. Brent MacQueen, SRI International, Chemical Science and Technology Lab, Menlo Park CA, USA, Nobuyuki Kambe, NanoGram Corporation, San Jose CA, USA
- A2/P.27** EXCITED STATE TPA OF SOLUBLE CARBON NANOTUBES AND TMTTF RADICAL DIMERS
Moreno Meneghetti(a), Mattia Garbin(a), Nicola Schiccheri(a), Gabriele Marcolongo(a), Maurizio Prato(b) Enzo Menna(a) and Michele Maggini(a), (a)University of Padova, Department of Chemical Sciences, 1 Via Marzolo, 35131 Padova, Italy, (b)University of Trieste, Department of Pharmaceutical Sciences, 1 Piazzale Europa, 34127 Trieste, Italy
- A2/P.28** PREPARATION, OPTICAL PROPERTIES AND UPCONVERSION EFFECT OF THE Y₂O₃ NANOPHOSPHORS DOPED WITH RARE EARTH IONS Er, Yb
Nguyen Vu(a), Tran Kim Anh(a), Man Hoai Nam(a), Charles Barthou(b) and Le Quoc Minh(a), (a)Institute of Materials Science, NCNST of Viet nam 18 Hoang Quoc Viet Road, Nghia Do, Cau Giay, Hanoi, Vietnam, (b)Laboratoire d'Optique des Solids UMR 7601, Univ. P&M Curie, 4 Place Jussieu, 75252 Paris, France
- A2/P.29** DIFFERENTIAL REFLECTIVITY OF A NANOSCALE SI-LAYERED SYSTEM
Z.T. Kuznicki and V. Svrcek, Laboratoire de Physique et Applications des Semi-conducteurs PHASE, CNRS UPR 292, 23 rue du Loess, 67037 Strasbourg cedex 2, France and M. Ley, University of Basel, Klingelbergstrasse 82, 4056 Basel, Switzerland, B. Rousset, F. Rossel and G. Sarabayrouse, LAAS-CNRS, 7 Avenue du colonel Roche, 31077 Toulouse cedex 04, France
- A2/P.30** SELENIUM/ZEOLITE NANOCOMPOSITES
Andreas Goldbach and Marie-Louise Saboungi, Centre de Recherche sur la Matière Divisée, 1b rue de la Férollerie, 45071 Orléans, France

Friday, May 28, 2004

Morning

Session IV: Surface plasmons 3

Session chair: J. Krenn (Karl-Franzens-University, Graz, Austria)

- A2-IV.1** 08:30 -Invited- TRANSMISSION OF LIGHT THROUGH SUBWAVELENGTH APERTURES
L. Martin-Moreno, Universidad de Zaragoza, Spain and F.J. Garcia-Vidal, Universidad Autonoma de Madrid, Spain
- A2-IV.2** 09:00 OPTICAL NEAR FIELDS OF MULTIPOLAR PARTICLE PLASMONS
A. Hohenau, J.R. Krenn, G. Schider, H. Ditlbacher, A. Stepanov, A. Leitner, F.R. Aussenegg, Institute for Experimental Physics, Karl-Franzens-University and Erwin, Schrödinger Institute for Nanoscale Research, Universitätsplatz 5, 8010 Graz, Austria, W.L. Schaich, Department of Physics, Indiana University, Bloomington IN 47405, USA
- A2-IV.3** 09:15 LONG RANGE SURFACE PLASMON PROPAGATION ON SILVER FILMS OF FINITE THICKNESS
Jennifer A. Dionne(a), Luke A. Sweatlock(a), Albert Polman(b), Harry A. Atwater(a), (a)Caltech, USA, (b)FOM Institute for Atomic and Molecular Physics, The Netherlands
- A2-IV.4** 09:30 TAILORING THE TRANSMITTANCE OF INTEGRATED OPTICAL WAVEGUIDES WITH SHORT METALLIC NANOPARTICLE CHAINS
Romain Quidant, ICFO-Institut de Ciències Fotòniques, Jordi Girona 29, Nexus II, 08034 Barcelona, Spain, Jean-Claude Weeber and Alain Dereux, LPUB, UMR-CNRS 5027, Optique Submicronique, UMR 9 av. Alain Savary, 21078 Dijon, France, Christian Girard, CEMES, UPR-CNRS 8011, 29 rue Jeanne Marvig, BP 4347, 31055 Toulouse, France
- A2-IV.5** 09:45 INFRARED SURFACE PLASMONS IN SELF-ASSEMBLED TWO-DIMENSIONAL SILVER NANOPARTICLE ARRAYS IN SILICON
H. Mertens, J. Verhoeven and A. Polman, FOM-Institute AMOLF, Amsterdam, The Netherlands
- A2-IV.6** 10:00 -Invited- NANOSHELLS: NANOSCALE MANIPULATION OF THE PLASMON RESPONSE
Naomi J. Halas, Department of Electrical and Computer Engineering and Department of Chemistry, Rice University, Houston TX, USA
- 10:30 **BREAK**

Session V: Quantum dots and rods

Session chair: H.A. Atwater (California Institute of Technology, Pasadena CA, USA)

- A2-V.1** 11:00 -Invited- PHOTONIC CRYSTAL COMPONENTS FOR SOLID-STATE PHOTONIC QUANTUM INFORMATION SYSTEMS
Jelena Vuckovic, **David Fattal**, Edo Waks, Charles Santori, Dirk Englund, Hatice Altug and Yoshihisa Yamamoto, Edward L. Ginzton Laboratory, Stanford University, Stanford CA 94305-4088, USA
- A2-V.2** 11:30 HIGHLY DIRECTIONAL EMISSION FROM COLLOIDALLY SYNTHESIZED NANOCRYSTALS IN VERTICAL CAVITIES WITH SMALL MODE SPACING
J. Roither, W. Heiss, Institute of Semiconductor and Solid State Physics, University of Linz, 4040 Linz, Austria, D.V. Talapin, N. Gaponik, A. Eychmüller, Institute of Physical Chemistry, University of Hamburg, 20146 Hamburg, Germany
- A2-V.3** 11:45 RESONANCE-ENHANCED RAMAN SCATTERING AND ANTI-STOKES EMISSION FROM SPHERICAL MICROCAVITIES WITH CdTe QUANTUM DOTS
Yu.P. Rakovich, M. Gerlach, E.M. McCabe, J.F. Donegan, Department of Physics, Trinity College, Dublin, Ireland, T. Perova, A. Moore, Department of Electronic and Electrical Engineering, Trinity College, Dublin, Ireland, A.L. Rogach, Department of Physics and CeNS, University of Munich, Munich, Germany, N. Gaponik, University of Hamburg, Hamburg, Germany
- A2-V.4** 12:00 OPTICAL AND STRUCTURAL PROPERTIES OF SELF-ORGANIZED GROWN ZnO NANORODS
D. Forster, F. Bertram, Th. Hempel and J. Christen, Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany, R. Kling, C. Kirchner, Dept. of Semiconductor Physics, Ulm University, Ulm, Germany, A. Waag, Institute of Semiconductor Technology, Braunschweig Technical University, Germany
- A2-V.5** 12:15 OPTICAL GAIN IN SILICON NANOCRYSTALS GROWN BY DIFFERENT TECHNIQUES
M. Cazzanelli, D. Navarro-Urriós, F. Riboli, Z. Gaburro, N. Daldosso, and L. Pavesi, INFN-Dipartimento di Fisica, Università di Trento, via Sommarive 14, 38050 Povo (Trento), Italy
- 12:30 **LUNCH**

Friday, May 28, 2004

Afternoon

Session VI: Nanoscale emitters

Session chair: L. Pavesi (University of Trento, Povo, Italy)

- A2-VI.1** 14:00 Si/Si:Er MULTI-NANOLAYERS FOR SILICON PHOTONICS
N.Q. Vinh, M.A.J. Klik and T. Gregorkiewicz, Van der Waals-Zeeman Institute, University of Amsterdam, The Netherlands, B.A. Andreev, Institute for Physics of Microstructures, Nizhny Novgorod, Russia
- A2-VI.2** 14:15 THE PECULIARITIES OF LIGHT PROPAGATION THROUGH SELF-ORDERED POROUS ANODIC ALUMINA MATRIX
N.V. Gaponenko, I.S. Molchan, Belarusian State University of Informatics and Radioelectronics, P. Browki St. 6, 220013 Minsk, Belarus, A.A. Lutich and S.V. Gaponenko, Institute of Molecular and Atomic Physics, National Academy of Science, F. Skaryna Ave. 70, 220072 Minsk, Belarus
- A2-VI.3** 14:30 NON-LINEAR OPTICAL BEHAVIOUR OF A NANOSCALE Si-LAYERED SYSTEM
Z.T. Kuznicki, Laboratoire PHASE, CNRS UPR 292, 23 rue du Loess, 67037 Strasbourg cedex 2, France, H.J. Lezec, ISIS, ULP, 8 allée Gaspard Monge, 67083 Strasbourg cedex, France and Y. Takakura, TRIO/LSIIT (UMR 7005), BP 10413, Bd Sébastien Brant, 67412 Illkirch, France
- A2-VI.4** 14:45 NANOPILLARS PHOTONIC QUASICRYSTAL ADD-DROP FILTER
D.N. Chigrin, A.V. Lavrinenko, J. Romero-Vivas and C.M. Sotomayor Torres, University of Wuppertal, Department of Electrical, Information and Media Engineering & Institute of Materials Science, Wuppertal 42097, Germany
- 15:00 CLOSING REMARKS
H.A. Atwater, H. Lezec and A. Polman