



Strasbourg (France)

E-MRS 2005 Spring Meeting
May 31 – June 3, 2005

SYMPOSIUM A

Current trends in nanoscience from materials to applications

Symposium Organizers :

Piero Baglioni, University of Florence, Italy

Hermann Grimmeiss, University of Lund, Sweden

Giovanni Marletta, University of Catania, Italy

Joerg Weber, University of Technology Dresden, Germany

Papers to be published in
Materials Science and Engineering C

E-MRS 2005 Spring Meeting

SYMPOSIUM A

Tuesday, May 31, 2005
Mardi 31 mai 2005

Morning
Matin

Session I : Nano-physics

Session chair: **H. Grimmeiss**

- A-I.01** 9:00 -Invited- OBSERVATION OF ULTRA LONG ELECTRON SPIN LIFETIMES IN SELF ASSEMBLED QUANTUM DOTS
J. J. Finley, M. Kroutvar, D. Heiss, D. Schuh, M. Bichler and G. Abstreiter, Walter Schottky Institut, Technische Universität München, Germany.
- A-I.02** 9:30 ON PHASE CHANGES IN NANOSYSTEMS
A.S. Shirinyan, Cherkasy B. Khmelnytsky National University, Cherkasy 18017, Ukraine and M. Wautelet, University of Mons-Hainaut, 7000 Mons, Belgium
- A-I.03** 9:50 METAMORPHIC SELF-ASSEMBLED QUANTUM DOT NANOSTRUCTURES
L. Seravalli, P. Frigeri, M. Minelli, S. Franchi, P. Allegri and V. Avanzini, CNR-IMEM, Parco delle Scienze 37a, 43100 Parma, Italy
- A-I.04** 10:10 STATISTICS OF THERMAL ELECTRON EMISSION FROM InAs/GaAs QUANTUM DOTS
O. Engström(a) and P.T. Landsberg(b), (a)Chalmers University of Technology, Department of Microtechnology and Nanoscience, 412 96 Göteborg, Sweden, (b)University of Southampton, Faculty of Mathematical Studies, Southampton S09 5NH, U.K.
- A-I.05** 10:30 SILICA COATED MAGNETIC NANOPARTICLES: SYNTHESIS AND CHARACTERIZATION
Massimo Bonini, Piero Baglioni, Department of Chemistry and CSGI, University of Florence, via della Lastruccia 3, 50019 Sesto Fiorentino, Florence, Italy, Albrecht Wiedenmann, Hahn-Meitner-Institut, Glienicker Strasse 100, 14109 Berlin, Germany
- 10:50 **BREAK**

Session II : New measurement techniques

Session chair : **J. Weber**

- A-II.01** 11:10 -Invited- CARRIER EMISSION FROM THE ELECTRONIC STATES OF SELF ASSEMBLED INDIUM ARSENIDE QUANTUM DOTS
S.W. Lin, A.M. Song, M. Missous, I.D. Hawkins and A.R. Peaker, Centre for Electronic Materials, Devices and Nanostructures, School of Electrical and Electronic Engineering, University of Manchester, Manchester M60 1QD, U.K.
- A-II.02** 11:40 SELF-ORGANIZED NANOFOLD NETWORKS ON LAYERED CRYSTAL SURFACES
E. Spiecker(a,b) S. Hollensteiner(a), W. Jäger(a), A.K. Schmid(b), A.M. Minor(b), U. Dahmen(b), (a)Microanalysis of Materials, Faculty of Engineering, University of Kiel, Kaiserstrasse 2, 24143 Kiel, Germany, (b)National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, Berkeley, USA
- A-II.03** 12:00 PROBING VACANCY-ASSISTED TRANSPORT IN ORGANIC IONIC PLASTIC CRYSTAL ELECTROLYTES VIA POSITRON ANNIHILATION LIFETIME SPECTROSCOPY
Anita J. Hill(a,b), Steven J. Pas(a,b), Junhua Huang(b), Maria Forsyth(c), Douglas R. MacFarlane(b), (a)CSIRO Manufacturing and Infrastructure Technology, Private Bag 33, Clayton South, Victoria 3169, Australia, (b)School of Chemistry, Monash University, Clayton, Victoria 3800, Australia, (c)School of Physics and Materials Engineering, Monash University, Clayton, Victoria 3800, Australia
- A-II.04** 12:20 SPECTROSCOPIC AND MICROSCOPIC CHARACTERIZATION OF GOLD NANOPARTICLES FORMED BY CELLS AND S-LAYER SHEETS OF BACILLUS SPHAERICUS JG-A12
M. Merroun, A. Rossberg, C. Hennig, Forschungszentrum Rossendorf, Institut für Radiochemie, Dresden, Germany, M. Romero-González, University of Sheffield, Dept. of Civil and Structural Engineering, Sheffield, U.K., A.C. Scheinost, S. Selenska-Pobell, Forschungszentrum Rossendorf, Institut für Radiochemie, Dresden, Germany
- 12:40 **LUNCH**

Tuesday, May 31, 2005
Mardi 31 mai 2005

Afternoon
Après-midi

Session III : Semiconductor nanostructures
Session chairs : S. Pantelides

- A-III.01** 14:00 -Invited- SEMICONDUCTOR AND NANO-DUMBBELLS; SYNTHESIS AND PROPERTIES
Uri Banin, Institute of Chemistry and the Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem, Jerusalem 91904, Israel
- A-III.02** 14:30 SEEDED GROWTH OF Ge DOTS ON PATTERNED Si TEMPLATES
G. Chen, H. Malissa, Z. Zhong, H. Lichtenberger, F. Schäffler, G. Bauer, W. Jantsch, Institut für Halbleiter- und Festkörperphysik, Johannes Kepler Universität, Altenbergerstr. 69, 4040 Linz, Austria
- A-III.03** 14:50 GROWTH, STRUCTURE AND ELECTRIC PROPERTIES OF EPITAXIAL SILICON/
PRASEODYMIUM OXIDE/ SILICON HETEROSTRUCTURES
T. Schroeder, P. Zaumseil, G. Weidner, G. Lupina, J. Dabrowski, A. Mane, C. Wenger, G. Lippert and H.-J. Müssig IHP - Microelectronics, Im Technologiepark 25, 15236 Frankfurt (Oder), Germany
- A-III.04** 15:10 ONE-DIMENSIONAL SILICON NANOSTRUCTURES FABRICATED BY THERMAL
EVAPORATION METHOD
Jun Yu(a), Jian Sha(a,b), Lei Wang(a), Qing Yang(a), Deren Yang(a), (a)State Key Laboratory of Silicon Materials, Zhejiang University, (b)Department of Physics, Zhejiang University Hangzhou 310027, People's Republic of China
- A-III.05** 15:30 INITIAL STAGES OF ELECTROCHEMICAL ANODIZATION OF Si SURFACE IN
TRANSIENT REGIME: MONOLAYER FORMATION OF Si NANOPARTICLES
T. Nychyporuk, V. Lysenko, B. Gautier, and D. Barbier, Materials Physics Laboratory (LPM), CNRS UMR-5511, INSA de Lyon, 7 av. Jean Capelle, Bat. Blaise Pascal, 69621 Villeurbanne Cedex, France
- A-III.06** 15:50 SYNTHESIS AND CHARACTERIZATION OF SiC NANOWIRES BY DIRECT HEATING
METHOD
Yonghwan Ryu, Youngjo Tak, Kijung Yong, Department of Chemical Engineering, Pohang University of Science and Technology (POSTECH), Pohang 790-784, Korea
- 16:10 **BREAK**
- 16:30-19:00 **POSTER SESSION I**

POSTER SESSION I
Tuesday, May 31, 2005
16:30 – 19:00

Nano-physics

- A/PI.01** MULTISTRUCTURAL THEORY OF NANOMATERIALS
S.A. Beznosyuk, Altai State University, Lenin Av. 61, 656049 Barnaul, Russia
- A/PI.02** CHARACTERISTICS OF THE ULTRASMALL “QUASIOOPEN” QUANTUM DOTS
A. Grygor’ev, V. Litovchenko, V. Lashkarev Institute of Semiconductor Physics NAS Ukraine, Kiev, Ukraine
- A/PI.03** GROWTH SIMULATION OF SILICON WIRE-LIKE HETEROSTRUCTURES
A.I. Klimovskaya(a), A.A. Efremov(a), T.I. Kamins(b), S. Sharma(b), (a)Institute of Semiconductor Physics, National Academy of Sciences, Kyiv 03028, Ukraine, (b)Quantum Science Research, Hewlett-Packard Laboratories, Palo Alto CA 94304, USA
- A/PI.04** KINETIC RECTIFICATION IN A SINGLE MOLECULE: THEORETICAL MODEL
E.G. Petrov, Bogoliubov Institute for Theoretical Physics, National Academy of Sciences of Ukraine, Metrologichna Str. 14-b, 03143 Kiev, Ukraine, V. May, Institute of Physics, Humboldt University of Berlin, Newtonstrasse 15, 12489 Berlin, Germany and P. Hanggi, Institute of Physics, Augsburg University, University Str. 1, 86135, Augsburg, Germany
- A/PI.05** CORRELATION EFFECTS IN TWO-ELECTRON QUASI-ONE-DIMENSIONAL NANOCCLUSERS WITH A PARABOLIC CONFINEMENT
S.Ya. Goroshchenko, Bogolyubov Institute for Theoretical Physics, National Academy of Science of Ukraine, Metrologichna Street 14-b, 03143 Kiev, Ukraine
- A/PI.06** THEORY OF DOUBLE CHALCOGENIDE PASSIVATION OF METAL-GAAS DIODE CONTACT NANO-SIZED INTERFACES
S.A. Beznosyuk, L.V. Fomina, S.E. Lebedenko, Altai State University, Lenin Av., 61, 656049 Barnaul, Russia
- A/PI.07** EFFECT OF CAPILLARY CONDENSATION ON FRICTION FORCE IN A NANOMETER SCALE CONTACT
Pierre-Emmanuel Mazeran, Laboratoire en Mécanique Roberval, Université de Technologie de Compiègne, France
- A/PI.08** CARRIER IN SEMICONDUCTING NANOWIRE WITH ADJACENT COMPLEX MOLECULES
V.A. Lykah(a), E.S. Syrkin(b), (a)National Technical University 'Kharkov Polytechnic Institute', Ukraine; (b)Institute for Low Temperature Physics and Engineering, Kharkov, Ukraine
- A/PI.09** AB-INITIO SIMULATION OF Si-DOPED GaAs (110) CROSS-SECTIONAL SURFACES
Xiangmei Duan(a), Maria Peressi(a,b), Stefano Baroni(a,c), (a)INFN-DEMOCRITOS National Simulation Center, Trieste, Italy, (b)Dipartimento di Fisica Teorica, Univ. of Trieste, Trieste, Italy, (c)Scuola Internazionale Superiore di Studi Avanzati, Trieste, Italy
- A/PI.10** NONEQUILIBRIUM CARRIER STATISTICS IN DEEP InGaN/GaN QUANTUM DOTS
D.S. Sizov, V.S. Sizov, G. E. Onushkin, V.V. Lundin, A.F. Tsatsul’nikov, E.E. Zavarin, N.N. Ledentsov, A.F. Ioffe Physico-Technical Institute, Russian Academy of Sciences, 26 Politekhnikeskaya st., St.Petersburg 194021, Russia

New measurement techniques

- A/PI.12** SUB-CRITICAL ZONE REVERSION IN Al-Cu-Mg ALLOYS OBSERVED BY ⁶³Cu NMR
T.J. Bastow, CMIT CSIRO, Private Bag 33, Clayton 3169, Victoria, Australia
- A/PI.13** MAGNETIC RESONANCE STUDY OF MULTIWALL BORON NITRIDE NANOTUBES
A.M. Panich, A.I. Shames, N. Froumin, C.C. Tang and Y. Bando, Department of Physics, Ben-Gurion University of the Negev, Beer Sheva 84105, Israel, Department of Materials Engineering, Ben-Gurion University of the Negev, Beer Sheva 84105, Israel, Advanced Materials Laboratory, National Institute for Materials Science, 1-1 Namiki, Tsukuba 305-0044 Ibaraki, Japan
- A/PI.14** ELECTRON SPIN PROBING OF FUNDAMENTAL POINT DEFECTS IN NM-SIZED SILICA PARTICLES
K. Clémer, A. Stesmans and V.V. Afanas’ev, University of Leuven, Department of Physics and Astronomy, 3001 Leuven, Belgium

- A/PI.15** THE INFLUENCE OF BOTH PLASTICIZER AND STRETCHING STRAIN ON THE PERCOLATION THRESHOLD IN POLYISOPRENE-CARBON NANOCOMPOSITES: POSITRON ANNIHILATION LIFETIME SPECTROSCOPY AND ELECTRIC RESISTANCE MEASUREMENTS
M. Knite(a), A.J. Hill(b), S.J. Pas(b), V. Teteris(a), J. Zavickis(a), (a)Riga Technical University, 14 Azenes St., Riga 1048, Latvia, (b)CSIRO Manufacturing and Infrastructure Technology and Monash University School of Chemistry, Australia
- A/PI.16** UNRAVELLING THE WORK FUNCTION OF SELF-ASSEMBLED NANOGRAFENE ARCHITECTURES BY KELVIN-PROBE FORCE MICROSCOPY
Matteo Palma(a,b), Vincenzo Palermo(a), Zeljko Tomovic(c), Mark D. Watson(c,d), Rainer Friedlein(e), Klaus Müllen(c), Paolo Samori(a,b), (a)ISOF-CNR, via Gobetti 101, 40129 Bologna, Italy, (b)Nanochemistry Laboratory, ISIS-UPL, 8 allée Gaspard Monge, 67083 Strasbourg, France, (c)Max-Planck Institute for Polymer Research, Ackermannweg 10, 55124 Mainz, Germany, (d)Department of Chemistry, University of Kentucky, Lexington KY 40506-0055, USA, (e)Department of Physics (IFM), Linköping University, 581 83 Linköping, Sweden
- A/PI.17** A ¹H NMR VIEW ON THE CAPPING OF COLLOIDAL SEMICONDUCTOR QUANTUM DOTS
Z. Hens(a), I. Moreels(a), J.C. Martins(b), (a)Physical Chemistry Laboratory, Gent University, Krijgslaan 281-S12, 9000 Gent, Belgium, (b)NMR and structure analysis unit, Gent University, Krijgslaan 281-S4, 9000 Gent, Belgium
- A/PI.18** TUNNEL CURRENT MEASUREMENT OF A LIMITED NUMBER OF NANO-PARTICLES DURING TEM OBSERVATION
Ryusuke Hirose, Masashi Arita, Kouichi Hamada and Yasuo Takahashi
- A/PI.19** IN-SITU LORENTZ-TEM ANALYSIS ON MAGNETORESISTANCE DUE TO THE MAGNETIZATION RIPPLE
Noriaki Michita, Masashi Arita, Kouichi Hamada, and Yasuo Takahashi
- A/PI.20** SCANNING PROBE MICROSCOPY OF SINGLE AU⁺ ION IMPLANTS IN Si
L. Vines, E. Monakhov, K. Maknys, B.G. Svensson and A. Kuznetsov, University of Oslo, Dep. of Physics/SMN, P.O. Box 1048 Blindern, 0316 Oslo, Norway, J. Jensen, Uppsala University, Sweden, A. Hallén, Royal Institute of Technology, Stockholm, Sweden
- A/PI.21** POSITRON ANNIHILATION LIFETIME SPECTROSCOPY AS CHARACTERISATION TOOL FOR NANOSCALE EXTENDED DEFECTS IN TOPOLOGICALLY DISORDERED SOLIDS
O. Shpotyuk(a,b), J. Filipecki(a), A. Ingram(cb) and H. Klym(b), (a)Jan Dlugosz University of Czestochowa, 13/15 al. Armii Krajowej, Czestochowa 42201, Poland, (b)Lviv Scientific Research Institute of Materials, 202 Stryjska str., Lviv 79031, Ukraine, (c)Opole Technical University, 75 Ozimska str., 45370 Opole, Poland

Semiconductor nanostructures

- A/PI.22** GERMANIUM NANOSTRUCTURES PRODUCED BY TEMPLATE-ASSISTED SATURATED VAPOR ABSORPTION
Y.F. Mei, G.G. Siu, Ricky K.Y. Fu, and Paul K. Chu, Dept. of Physics & Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China, Z.M. Li, Z.K. Tang, Department of Physics, Hong Kong University of Science & Technology, Clear Water Bay, Kowloon, Hong Kong, China
- A/PI.23** BULK CdTe MATERIALS BASED ON COLD FORMING OF NANOCRYSTAL POWDER
N.N. Kolesnikov(a), E.B. Borisenko(a), D.N. Borisenko(a), V.V. Kveder(a), R.B. James(b), V.K. Gartman(a) and B.A. Gnesin(a), (a)Institute for Solid State Physics, the Russian Academy of Sciences, Chernogolovka Moscow distr. 142432 Russia, (b)Brookhaven National Laboratory, Upton L.I. NY 11973 USA
- A/PI.24** FORMATION AND MORPHOLOGY OF Si NANOPARTICLES OBTAINED FROM NANO-GRINDING OF BULK POROUS Si NANOSTRUCTURES
T. Nychporuk(a), V. Lysenko(a), B. Gautier(a), O. Marty(b) and D. Barbier(a), (a)Materials Physics Laboratory (LPM), CNRS UMR-5511, INSA de Lyon, 7 av. Jean Capelle, Bat. Blaise Pascal, 69621 Villeurbanne, France, (b)Laboratory on Electronics, Nanotechnologies, Sensors (LENAC), Claude Bernard University of Lyon, Bat. Brillouin, 8 rue André-Marie Ampère, 69622 Villeurbanne, France
- A/PI.25** Si-NANOCLUSTERS IN SiO_x FILMS DEPOSITED ON SEMICONDUCTOR SUBSTRATES FOR FIELD EMITTERS
A.A. Evtukh, I.Z. Indutnyy, V.G. Litovchenko, M.O. Semenenko, Institute of Semiconductor Physics, National Academy of Science of Ukraine, 41 prospect Nauki, 03028 Kiev, Ukraine, and H. Hartnagel, O. Yilmazoglu, Technische Universität Darmstadt, Institut für Hochfrequenztechnik, Merckstrasse 25, 64283 Darmstadt, Germany
- A/PI.26** ELECTRIC FIELD ASSISTED POSITIONING OF SI NANOWIRES ON GLASS
H.L. Hsiao, B.W. Lin, J.Y. Chen and A.B. Yang, Department of Physics, Tunghai University, Taichung 407, Taiwan
- A/PI.27** ION-IMPLANTATION AND NANOTECHNOLOGY
D.A. Tashmukhamedova, B.E. Umirzakov, Tashkent State Technical University, Univirsitetskaya Street, 2 Home, 700095 Tashkent, Uzbekistan

- A/PI.28** MORPHOLOGICALLY CONTROLLED SUBMICROMETER SCALE GROWTH OF STRUCTURED SUBSTRATES FOR LOCALISED QUANTUM DEVICES RE-GROWTH
E. Gil-Lafon, A. Trassoudaine, Y. André, D. Castelluci, LASMEA UMR CNRS / Université Blaise Pascal 6602, Campus des Cézeaux, 63177 Aubière Cedex, France
- A/PI.29** SCANNING ELECTRON MICROSCOPY AND RAMAN SPECTROSCOPY STUDIES OF POROUS SILICON OBTAINED UNDER DIFFERENT CHEMICAL ETCHING CONDITIONS
A. García-Borquez(a), J. Aguilar-Hernández(a), A. Arias-Carbajal(b), G. Contreras-Puente(a), (a)Escuela Superior de Física y Matemáticas – I.P.N., Edificio No.9, U.P.A.L.M., 07738 Mexico D.F., México, (b)Facultad de Química – IMRE, Universidad de La Habana, 10400 La Habana, Cuba
- A/PI.30** A CORRELATION BETWEEN THE ENERGY AND SHAPE OF THE Ge(SiGe) NANOISLANDS ON Si
A.M. Yaremko, V.O. Yukhymchuk, M.Ya. Valakh, O.S. Lytvyn, V.M. Dzhagan, Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Prospekt Nauki 45, 03028 Kyiv, Ukraine
- A/PI.31** NEW APPROACH TO SYNTHESIS OF SEMIMAGNETIC SEMICONDUCTOR NANOPARTICLES
A.I. Savchuk, V.I. Fediv, A.G. Voloshchuk, T.A. Savchuk, Department of Physics of Semiconductors and Nanostructures, Chernivtsi National University, 2 Kotsubinsky Str., 58012 Chernivtsi, Ukraine, Yu.Yu. Bacherikov, Institute of Semiconductor Physics of NASU, Pr. Nauki 45, Kyiv-28, 03028, Ukraine, A. Perrone, University of Lecce, Physics Department and INFN, Via per Arnesano, 73100 Lecce, Italy
- A/PI.32** CoSi₂ NANOSTRUCTURES BY WRITING FIB ION BEAM SYNTHESIS
Ch. Akhmadaliev, L. Bischoff, B. Schmidt, Research Centre Rossendorf Inc., Institute of Ion Beam Physics and Materials Research, PO Box 510119, 01314 Dresden, Germany
- A/PI.33** INFLUENCE OF NANOCRYSTALLINE STRUCTURE OF SURFACE ON BORON GETTERING FROM SILICON
Yu.V. Gorelkinskii, Kh.A. Abdullin, B.N. Mukashev, A.C. Serikkanov, Institute of Physics and Technology, Ibragimov str. 2, 050032 Almaty, Kazakstan
- A/PI.34** A PIEZOELECTRIC PHOTOTHERMAL STUDY OF InGaAs/GaAs QUANTUM WELL HETEROSTRUCTURES
P. Wang, A. Fukuyama, K. Maeda, Y. Iwasa, M. Ozeki, Y. Akashi, and T. Ikari, Faculty of Engineering, Univ. of Miyazaki, 1-1 Gakuen-Kibanadai-Nishi, Miyazaki 889-2192, Japan
- A/PI.35** HRTEM ANALYSIS OF THE NANOSTRUCTURE OF POROUS SILICON
R.J. Martín-Palma(a), L. Pascual(b), A. Landa(b), P. Herrero(b), J.M. Martínez-Duart(a), (a) Departamento de Física Aplicada C-12, Universidad Autónoma de Madrid, 28049 Cantoblanco, Madrid, Spain, (b) Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas, 28049 Cantoblanco, Madrid, Spain
- A/PI.36** ELECTRONIC PROPERTIES OF SILICON NANOCRYSTALLITES OBTAINED BY RIE FOR NON-VOLATILE MEMORY APPLICATIONS
B. Karunakaran, Sungwook Jung, Jinsu Yoo, Yungkuk Kim, Kyunghae Kim, S.K. Dhungel, U. Gangopadhyay, J. Yi
- A/PI.37** SELF-ALIGNED Si DOUBLE-DOT SYNTHESIS WITH ION BEAMS - PREDICTIONS OF ATOMISTIC COMPUTER SIMULATIONS
K.-H. Heinig Research Center Rossendorf, Dresden, Germany
- A/PI.38** ION BEAM SYNTHESIS OF COSI₂ NANOWIRES IN SI AND THEIR STABILITY — PREDICTIONS OF ATOMISTIC COMPUTER SIMULATIONS
Lars Röntzsch and Karl-Heinz Heinig, Research Center Rossendorf, Dresden, Germany
- A/PI.39** SYNTHESIS OF MONO AND BI-LAYER OF Si NANOCRYSTALS EMBEDDED IN A DIELECTRIC MATRIX BY E-BEAM EVAPORATION OF SiO/SiO₂ THIN FILMS
M. Perego, M. Fanciulli, S. Spiga, Laboratorio MDM-INFM, Via Olivetti 2, Agrate Brianza, Italy, C. Bonafos, N. Cherkashin, CEMES-CNRS, 29 rue J. Marvig, 31055 Toulouse, France
- A/PI.40** MOLECULAR ELECTROACTIVE MONOLAYERS FORMED ON Si(100) BY WET CHEMISTRY FUNCTIONALIZATION: AN AFM, XPS AND ELECTROCHEMICAL STUDY
R. Zanoni, A. Aurora, F. Decker, A.G. Marrani, Dipartimento di Chimica, Università degli Studi di Roma “La Sapienza”, p.le A. Moro, 5, 00185 Roma, Italy, C. Coluzza, G. Di Santo, Dipartimento di Fisica, Università degli Studi di Roma “La Sapienza”, A. Flamini, and F. Cattaruzza, CNR-ISM, Area della Ricerca di Montelibretti, 00016-Monterotondo Stazione, Italy, E.A. Dalchiele, Instituto de Física, Facultad de Ingeniería, Herrera y Reissig 565, C.C. 30, 11000 Montevideo, Uruguay
- A/PI.41** THE FORMATION AND CHARACTERIZATION OF HIGH-DENSITY InAs/AlAs QUANTUM DOTS BY ADOPTING GaAs INSERTION LAYER
C.H. Roh, J.S. Park, Y.S. Choi, C.-K. Hahn, Nano Scale Quantum Devices Research Center, Korea Electronics Technology Institute, South Korea
- A/PI.42** OPTICAL PROPERTIES OF Sb SURFACTANT ASSISTED GROWN InGaNAs/GaAs QUANTUM WELLS
L. Borkovska, N. Korsunskaya, ISP NASU, 03028 Kyiv, Ukraine, R. Beyer, J. Weber, IAP TU Dresden, 01062 Dresden, Germany, S. Johnson, Yu. Sadofyev, Y.-H. Zhang, ASU, AZ 85287 Tempe, USA

- A/PI.43** STRUCTURE MODIFICATION OF CRYSTALLIC AND AMORPHOUS SiO₂ UNDER VARIOUS IRRADIATIONS
J.D. Ibragimov, Tashkent State Economic University, Uzbekistan; I. Nuritdinov, Institute of Nuclear Physics, p. Ulugbek, 702132 Tashkent, Uzbekistan; and R.T. Turdiev, Tashkent State Art Institute, Uzbekistan
- A/PI.44** PATTERNED NANOSCALE OXIDE - SEMICONDUCTOR INTERFACE EFFECT ON TRANSPORT IN pnn+ GaAs STRUCTURES
T.Ya. Gorbach, P.S. Smertenko, S.V. Svechnikov, V. Lashkarev Institute of Semiconductors Physics, National Academy of Sciences of Ukraine, 45 prospekt Nauki, 03028 Kyiv, Ukraine
- A/PI.45** NANOSTRUCTURE SYNTHESIS ON SURFACE LAYERS OF SINGLE CRYSTALS BY LOW-ENERGY GRAZING ION BOMBARDMENT
A.A. Dzhurakhalov, S.E. Rahmatov, I.D. Yadgarov, Arifov Institute of Electronics, Theoretical Dept., F.Khodjaev Street 33, 700125 Tashkent, Uzbekistan
- A/PI.46** TERRACE WIDTH DISTRIBUTION DURING UNSTABLE HOMOEPITAXIAL GROWTH OF GaAs(110): AN EXPERIMENTAL STUDY
M.L. Crespillo(a), J.L. Sacedón(a), B.A. Joyce(b) and P. Tejedor(a), (a)Instituto de Ciencia de Materiales de Madrid, Cantoblanco, 28049 Madrid, Spain, (b)Department of Physics, Imperial College, London SW7 2BZ, U.K.
- A/PI.47** GROWTH MODE TRANSITIONS INDUCED BY HYDROGEN-ASSISTED MBE ON VICINAL GaAs(110)
P. Tejedor, M. Crespillo, J.L. Sacedón, Instituto de Ciencia de Materiales de Madrid, Cantoblanco, 28049 Madrid, Spain and B.A. Joyce, Imperial College of Science, Technology and Medicine, The Blackett Laboratory, London SW7 2BZ, U.K.
- A/PI.48** FORMATION OF CdS_xSe_{1-x} NANOPARTICLES BY ION IMPLANTATION
P. Huber, H. Karl and B. Stritzker, University of Augsburg, Institute of Physics, 86135 Augsburg, Germany
- A/PI.49** CONDUCTIVE NANOSCOPIC ION-TRACKS IN DIAMOND-LIKE-CARBON
J.-H. Zollondz(a,b), D. Schwen(a), A.-K. Nix(a), C. Trautmann(c), J. Berthold(d), J. Krauser(e), H. Hofsäss(a), (a)Universität Göttingen, (b)Hahn-Meitner-Institut, (c)Gesellschaft für Schwerionenforschung, (d)Fraunhofer Institut Dresden, (e)Hochschule Harz, Germany
- A/PI.50** ON THE BALANCE BETWEEN ION BEAM INDUCED NANOPARTICLE FORMATION AND DISPLACIVE PRECIPITATE RESOLUTION IN THE C-SI SYSTEM
J.K.N. Lindner, M. Haeberlen, B. Stritzker, University of Augsburg, Institute of Physics, 86135 Augsburg, Germany
- A/PI.51** STRUCTURE AND MECHANICAL PROPERTIES OF CARBON DERIVED Si₃N₄+SiC NANOMATERIAL
M. Kašiarová(a), J. Dusza(a), M. Hnatko(b), P. Šajgalik(b), (a)Institute of Materials Research, Slovak Academy of Sciences (SAS), Košice, Slovak Republic, (b)Institute of Inorganic Chemistry, SAS, Bratislava, Slovak Republic
- A/PI.52** ELECTRICAL CHARACTERIZATION OF InAs/GaAs QUANTUM DOT STRUCTURES
E. Gombia, R. Mosca, S. Amighetti, S. Franchi, P. Frigeri, IMEM-CNR, Parco Area delle Scienze 37a, 43010 Fontanini-Parma, Italy, C. Ghezzi, INFN and Dipartimento di Fisica Università di Parma, Parco Area delle Scienze 7a, 43010 Parma, Italy

Wednesday, June 1, 2005
Mercredi 1er juin 2005

Afternoon
Après-midi

Session IV : Nanoelectronics 1
Session chairs : A.R. Peaker

- A-IV.01** 14:00 -Invited- NANO-SCALE CHALLENGES IN MOSFETS: GATE DIELECTRICS AND DEVICE MODELING
S.T. Pantelides(a,b), M. H. Evans(a,c), X. Zhang(b), J. D. Joannopoulos(c), Z. Lu(b), K. Van Benthem(b) and S. J. Pennycook(a,b), (a)Department of Physics and Astronomy, Vanderbilt University, Nashville TN, USA, (b)Oak Ridge National Laboratory, Oak Ridge TN, USA, (c)Department of Physics, Massachusetts Institute of Technology, Cambridge MA, USA
- A-IV.02** 14:30 DEVICE PROPERTIES OF INAS/INP NANOWIRE HETEROSTRUCTURES
Linus E. Jensen, Mikael T. Björk, Claes Thelander, Adam E. Hansen, Andreas Fuhrer, and Lars Samuelson, Solid State Physics/The Nanometer Structure Consortium, Lund University, Box 118, 221 00, Lund, Sweden, Magnus W. Larsson and L. Reine Wallenberg, Materials Chemistry/The Nanometer Structure Consortium, Lund University, Box 124, 221 00, Lund, Sweden
- A-IV.03** 14:50 NON VOLATILE MEMORIES BASED ON CVD SILICON NANOCRYSTALS: THE EFFECTS OF THE SILICON ADATOM DIFFUSION ON THE DISTRIBUTION OF THE SILICON SURFACE COVERAGE AND ON THE DEVICE THRESHOLD VOLTAGE WINDOW
R.A. Puglisi, S. Lombardo, D. Corso, G. Nicotra, CNR-IMM, Str.le Primosole 50, 95121 Catania, Italy, L. Perniola, B. DeSalvo, CEA-LETI, 38054 Grenoble Cedex 9, France, C. Gerardi, STMicroelectronics, Str.le Primosole 50, 95121 Catania, Italy
- A-IV.04** 15:10 DEEP LEVELS INDUCED BY InAs/GaAs QUANTUM DOTS
M. Kaniewska(a), O. Engström(b), A. Barcz(a), M. Pacholak(a), (a)Department of Fundamental Problems of Electronics, Institute of Electron Technology, Al. Lotnikow 32/46, 02-668 Warsaw, Poland, (b)Department of Microtechnology and Nanoscience, Chalmers University of Technology, 412 96 Göteborg, Sweden
- A-IV.07** 15:30 QUANTUM THEORY FOR AC-ADMITTANCES
P.N. Racec(a,b) and U. Wulf(a,c), (a)IHP/BTU Joint Lab, Postfach 101344, 03013 Cottbus, Germany, (b)National Institute of Materials Physics, PO Box MG-7, 077125 Bucharest Magurele, Romania, (c)Technische Universitaet Cottbus, Fakultat 1, Postfach 101344, 03013 Cottbus, Germany
- A-IV.07** 15:50 NANOCONTACTING CARBON NANOTUBES AND SEMI-CONDUCTOR NANOWIRES: THE ROLE OF COULOMB BLOCKADE
J.-E. Wegrowe, X. Hoffer, J.-F. Dayen, T. Wade, Laboratoire des solides irradiés, Ecole Polytechnique, France
- 16:10 **BREAK**
- 16:30-19:00 **POSTER SESSION II**
- 19:00 **AWARD CEREMONY**
The symposium organizers and the candidates to the graduate student award are requested to attend.
- CONFERENCE RECEPTION**

POSTER SESSION II
Wednesday, June 1, 2005
16:30 – 19:00

Nanoelectronics

- A/PII.01** AN OPTIMAL HIGH CONTRAST E-BEAM LITHOGRAPHY PROCESS FOR THE PATTERNING OF DENSE FIN NETWORKS
F. Fruleux, J. Penaud, E. Dubois, M. Francois, M. Muller, IEMN laboratory, UMR CNRS 8520, avenue Poincaré B.P.69, 59652 Villeneuve d'ascq Cedex, France
- A/PII.02** STUDY THE SCALING CAPABILITY OF THE UNDOPEDED DG MOSFET USING ARTIFICIAL NEURAL NETWORK
F. Djeflal(a), S. Guessasma(b), A. Benhaya(a) and M. Chahdi(a), (a)LEPCM, Univeristy of Batna, Algeria, (b)LERMPS-UTBM, Site de Sevenans, Belfort, France
- A/PII.03** RECTIFICATION PROPERTIES OF A MOLECULAR WIRE CAUSED BY ITS TERMINAL GROUPS
E.G. Petrov, Ya.R. Zelinsky, Bogolyubov Institute for Theoretical Physics, National Academy of Science of Ukraine, Metrologichna Street 14-b, 03143 Kiev, Ukraine and V. May, Institute of Physics, Humboldt-University at Berlin, Newtonstrasse 15, D-12489 Berlin, Germany
- A/PII.04** XRD ANALYSIS OF CoFeB LAYERS FOR NANOMAGNETIC MATERIALS
N. Franco, N. P. Barradas, Instituto Tecnológico e Nuclear, E.N. 10, 2685-953 Sacavém, Portugal, S. Cardoso, P. Freitas, INESC-MN, R. Alves Redol 9-1, 1000-029 Lisboa, Portugal
- A/PII.05** THE CONTROL OF TWO-DIMENSIONAL-ELECTRON-GAS DENSITY AND MOBILITY IN AlGaIn/GaN HETEROSTRUCTURES WITH SCHOTTKY GATE
A. Asgari; M. Kalafi Research Institute for Applied Physics, Tabriz University, Tabriz 51665-163, Iran
- A/PII.06** MANUFACTURE AND CHARACTERIZATION OF NITRIDE SPACER IN MOSFET SELF ALIGNED NANO-TRANSISTORS
M. Derras, A. Kadoun, V. Bayot

Solid nanostructures

- A/PII.07** EVALUATING THE SUITABILITY OF THICK FILM TiO₂ CAPACITORS FOR USE IN A WIRELESS PRESSURE MEASUREMENT SYSTEM
K. Arshak(a), A. Arshak(b), D. Morris(b), O. Korostynska(a), E. Jafer(a), (a)Dept. of Electronics & Computer Engineering, University of Limerick, Limerick, Ireland, (b)Dept. of Physics, University of Limerick, Limerick, Ireland +Dept. of Electronics & Computer Engineering, University of Limerick, Ireland
- A/PII.8** MASS AND VELOCITY DISTRIBUTIONS OF SUPERSONIC CLUSTER BEAMS
G. Compagnini, L. D'Urso, O. Puglisi, Dipartimento di Scienze Chimiche, Università di Catania, Viale A.Doria, Catania, Italy
- A/PII.9** FIELD-ASSISTED ION DIFFUSION OF TRANSITION METALS FOR THE SYNTHESIS OF NANOCOMPOSITE SILICATE GLASSES
P. Canton, E. Cattaruzza and F. Gonella, Dipartimento di Chimica Fisica, Università di Venezia, Dorsoduro 2137, 30123 Venezia, Italy, A. Quaranta, Dipartimento di Ingegneria dei Materiali, via Mesiano 77, 38050 Povo, Trento, Italy, and C. Sada, Dipartimento di Fisica, Università di Padova, via Marzolo 8, 35131 Padova, Italy
- A/PII.10** SIZE EFFECT IN FORMATION OF NANOSCALE PARTICLES BY DEPOSITION FROM GAS PHASE
V.V. Levdsansky, Heat and Mass Transfer Institute NASB, 15 P. Brovka Str., 220072 Minsk, Belarus, J. Smolik and P. Moravec, Institute of Chemical Process Fundamentals AS CR, Rozvojova 135, 165 02 Prague 6, Czech Republic
- A/PII.11** COPPER-BASED NANOCUSTER COMPOSITE SILICA FILMS BY RF-SPUTTERING DEPOSITION
E. Cattaruzza(a), G. Battaglin(a), P. Canton(b), T. Finotto(b), C. Sada(c), (a)Dipartimento di Chimica Fisica and INFN, Università Ca' Foscari di Venezia, Dorsoduro 2137, 30123 Venezia, Italy; (b)Dipartimento di Chimica Fisica, Università Ca' Foscari di Venezia, via Torino 155/b, 30172 Venezia-Mestre, Italy; (c)INFN and Dipartimento di Fisica, Università degli Studi di Padova, via Marzolo 8, 35131 Padova, Italy
- A/PII.12** PREPARATION OF HIGH QUALITY FILMS OF MAGNESIUM DIBORIDE
A. Sidorenko, V. Zdravkov, Institute of Applied Physics, 2028 Kishinev, Moldova; A. Rossolenko, Institute of Solid State Physics, 142432 Chernogolovka, Russia; E. Nold, Th. Koch, Th. Schimmel, Forschungszentrum Karlsruhe, 76021 Karlsruhe, Germany
- A/PII.13** PREPARATION OF COLLOIDAL SILICA NANO-ABRASIVE WITH LARGE PARTICLE AND CMP PROPERTIES IN ULSI
Kailiang Zhang, Zhitang Song and Songlin Feng 1Research Center of Functional Semiconductor Film Engineering & Technology, 2State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of sciences, Shanghai 200050, China

- A/PII.14** MGO NANOSTRUCTURES SYNTHESIZED BY THERMAL EVAPORATION
Qing Yang(a), Jian Sha(a,b), Lei Wang(a), Jun Wang(a), Deren Yang(a), (a)State Key Laboratory of Silicon Materials, Zhejiang University, (a)Department of Physics, Zhejiang University Hangzhou, 310027, People's Republic of China
- A/PII.15** PREPARATION OF $Zr_{1-x}Al_xO_2$ BY ANNEALING OF ZrO_x/Al THIN FILMS IN THE AIR ATMOSPHERE
J. Cyviene, J. Dudonis, Department of Physics, Faculty of Fundamental Sciences, Kaunas University of Technology, Studentu st. 50, 51368 Kaunas, Lithuania
- A/PII.16** NANOSTRUCTURED COATINGS PREPARED BY FLAME SPRAYING OF COLLOIDAL SUSPENSIONS
Massimo Bonini and Piero Baglioni Department of Chemistry and CSGI, University of Florence, via della Lastruccia 3, I-50019 Sesto Fiorentino (Florence), Italy
- A/PII.17** FORMATION OF "DEFECT NETWORK" IN Zr-Ge-O NANOSYSTEM
E. Frolova, M. Ivanovskaya, Research Institute for Physical Chemical Problems, BSU, Leningradskaya str., 14, 220050 Minsk, Belarus
- A/PII.18** THE ORIGIN OF DEFECTS FORMATION IN NANOSIZED ZIRCONIA
E. Frolova, M. Ivanovskaya, Research Institute for Physical Chemical Problems, BSU, Leningradskaya str., 14, 220050 Minsk, Belarus
- A/PII.19** CHEMICAL VAPOR DEPOSITION OF METAL AND OXIDE NANOWIRES
Sanjay Mathur(a), Hao Shen(a), Sven Barth(a), Vladimir Sivakov(a), Thomas Ruegamer(a), Andreas Nilsson(a), Christian Petersen(a) and Christian Holzapfel(b), (a)CVD Division, Leibniz Institute of New Materials Saarland University Campus, Im Stadtwald PO box 50 11 63, 66041 Saarbruecken, Germany, (b)Institute of Functional Materials Saarland University, 66041 Saarbruecken, Germany
- A/PII.20** MONTE CARLO SIMULATION OF GOLD NANOCOLLOIDS AGGREGATIONS ON A MOLECULAR HETEROGENEOUS SURFACE
M. Biggerelle(a) and H. Haidara(b), (a)Laboratoire Roberval, FRE 2833, UTC/CNRS, Centre de Recherches de Royallieu, BP 20529, 60205 Compiègne France, (b)Institut de Chimie des Surfaces et Interfaces (ICSI), UPR CNRS 9069, 15, rue Jean Starcky, BP2488, 68057 Mulhouse Cedex, France
- A/PII.21** FABRICATION AND STRUCTURAL CHARACTERISATION OF $(Ba,Sr)TiO_3$ THIN FILMS PRODUCED BY ELECTROSTATIC SPRAY-ASSISTED VAPOUR DEPOSITION
Jing Du, Yiquan Wu and Kwang-Leong Choy, School of Mechanical, Materials and Manufacturing Engineering, University of Nottingham, Nottingham NG7 2RD, U.K.
- A/PII.22** SOLID-STATE SYNTHESIS OF INORGANIC ELECTRIDE WITH MAYENITE TYPE STRUCTURE
S. Narushima, S. Ito, Research Center, Asahi Glass Co., Ltd., 1150 Hazawa, Kanagawa-ku, Yokohama 221-8755, Japan, S. Kim, M. Miyakawa, K. Hayashi, M. Hirano, and H. Hosono, Frontier Collaborative Research Center, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan
- A/PII.23** FORMATION OF AU-FE ALLOY NANOCLUSTERS IN SILICA BY ION IMPLANTATION
G. Mattei, C. de Julián Fernández, P. Mazzoldi, C. Scian, INFN Dept. of Physics, Univ. of Padova, via Marzolo 8, Padova 50124, Italy, C. Maurizio, INFN, ESRF, GILDA-CRG, B.P. 220, 38043 Grenoble, France, G. Battaglin, INFN, Dept. of Chemical Physics, University of Venice, Dorsoduro 2137, 30123 Venice, Italy
- A/PII.24** SILICATE FORMATION AT THE INTERFACE OF HIGH-K DIELECTRICS AND $Si(001)$ SURFACES
D. Schmeißer(b), P. Hoffmann(a), F. Zheng(b), F.J. Himpsel(b), R. DoNigro(c), E. Zschech(c), (a)Brandenburgische Technische Universität Cottbus, Angewandte Physik-Sensorik, 03013 Cottbus, P.O.Box 101344, Germany, (b)University of Wisconsin-Madison, Department of Physics, B408 Sterling Hall, 1150 University Avenue, Madison, WI 53706-1390, USA, (c)Università di Catania, Italy
- A/PII.25** THE INVESTIGATION OF EMISSION OF IONIC WATER CLUSTERS FROM WATER ICE FILMS
Igor A. Wojciechowski(a), Uchkun Kutliev(a), Barbara J. Garrison(b), (a) Urganch Stae University, H.Olimjon str. 14, Urganch, Uzbekistan, (b)Department of Chemistry, Penn State University, 152 Davey Laboratory, PA 16802, USA,
- A/PII.26** THE INTERACTION OF Al, Au, Ag, AND Ti METAL CONTACTS WITH Pr_2O_3 THIN FILMS
M. Torche, K. Henkel, D. Schmeißer, Angewandte Physik-Sensorik, BTU Cottbus, Postfach 10 13 44, 03013 Cottbus, Germany
- A/PII.27** MICROSTRUCTURING OF UV-TRANSPARENT ULTRA THIN FUNCTIONALISED FILMS ON GLASS SURFACES BY EXIMER LASER IRRADIATION
T. Rudolph, K. Zimmer, IOM Leipzig, 04318 Leipzig, Germany, T. Betz, Fak. Physik und Geowissenschaften, Uni Leipzig, 04103 Leipzig, Germany

Nano-magnetism and spintronics

- A/PII.29** GISAXS STUDIES OF SELF-ASSEMBLING OF COLLOIDAL Co NANOPARTICLES
Y. Halahovets, L. Chitu, Y. Chushkin, S. Luby, E. Majkova, Institute of Physics SAS, 845 11 Bratislava, Slovakia, A. Satka, ILC and Fac. of Electrical Engn and Informatics STU, 812 19 Bratislava, Slovakia, G. Leo, ISMN-CNR, 00016 Monterotondo St. Roma, Italy, M. Giersig, M. Hilgendorff, caesar research center, 53175 Bonn, Germany, V. Holy, Inst. of Condensed Matter Physics, Masaryk Univ., 611 37 Brno, Czech Republic, O. Konovalov, European Synchrotron Radiation Facility, 38043 Grenoble Cedex, France

- A/PII.30** GRANULAR MAGNETIC BEHAVIOUR IN OXIDIZED IRON THIN FILMS GROWN BY SPUTTERING AT VERY LOW TEMPERATURES
F. Jimenez-Villacorta(a), R. Ramirez(b) and C. Prieto(a), (a)Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas, 28049 Cantoblanco, Madrid, Spain, (b)Departamento de Física. Escuela Politécnica Superior. Universidad Carlos III de Madrid, Avda. Universidad 30, 28911 Leganés, Spain
- A/PII.31** PREPARATION OF MAGNETIC NANOWIRES WITH CONTROLLED ANISOTROPY USING POROUS OXIDE MATRICES
A.A. Eliseev, I.V. Kolesnik, K.S. Napolskii, A.S. Vyacheslavov, A.V. Lukashin, Yu.D. Tretyakov. Department of Materials Science, Moscow State University, 119992 Moscow, Russia
- A/PII.32** EPITAXIAL GROWTH OF FE NANO-PARTICLES ON SRF2(111) / SI (111)
Hiroyuki Hosoya, Masashi Arita, Kouichi Hamada and Yasuo Takahashi, Hokkaido Univ., Graduate School of Information Science and Technology, 060-0814 Sapporo, Japan
- A/PII.33** ANNEALING EFFECTS ON THE STRUCTURAL AND MAGNETIC PROPERTIES OF FE-AL SILICA NANOCOMPOSITES PREPARED BY SEQUENTIAL ION IMPLANTATION
M.A. Tagliente, M. Massaro, ENEA, UTS MAT-COMP, Centro Ricerche Brindisi, SS. 7 Appia km 714, 72100 Brindisi, Italy, C. de Julián Fernández, G. Mattei and P. Mazzoldi, Dip. Fisica, INFN Università di Padova, via Marzolo 8, Padova 50124, Italy
- A/PII.34** DOPANT INFLUENCE ON BST FERROELECTRIC SOLID SOLUTIONS FAMILY
A. Ioachim(a), H.V. Alexandru(b), C. Berbecaru(b), S. Antohe(b), F. Stanculescu(b), M.G. Banciu(a), M.I. Toacsen(a), L. Nedelcu(a), D. Ghetu(a), A. Dutu(a), G. Stoica(c), (a)National Institute of Materials Physics, Bucharest-Magurele, (b)Faculty of Physics, Bucharest University, (c)S.C.IPEE Curtea de Arges, Romania
- A/PII.35** STUDY OF INITIAL GROWTH STAGES OF PLD PT FILM ON MGO(100) AS A FUNCTION OF DEPOSITION PROCESS
E. Agostinelli, S. Laureti, G. Varvaro, G. Scavia, ISM – CNR, P.O.Box10, 00016 Monterotondo Stazione (Roma), Italy and A. Generosi, ISM – CNR, Via Fosso del Cavaliere, 00100 Roma, Italy
- A/PII.36** THE ROTATIONAL BAND STRUCTURE OF ENERGY SPECTRUM FOR FINITE RING N = 6
A. Wal, M. Labuz, M. Kuzma Institute of Physics, University of Rzeszow, Rejtana 16 a, 35 – 310 Rzeszow, Poland
- A/PII.37** MAGNETIC NANOSTRUCTURES OF NI NANOPARTICLES: WIRES, HELICES, NANOTUBES
V.V. Kislov, Y.V. Gulyaev, I.V. Taranov, V.V. Kashin, Institute of Radioengineering & Electronics, Russian Academy of Sciences, Moscow, Russia; M. Kozhev, D.A. Yavsin, M.A. Zabelin, P.A. Tret'yakov, S.A. Gurevich, Ioffe Physico-Technical Institute, Russian Academy of Sciences, St. Petersburg, Russia
- A/PII.38** NANOCOMPOSITE MELT SPUN RIBBONS FOR HIGH TEMPERATURE PERMANENT MAGNETS
Sofoklis S. Makridis, Department of Energy Resources Engineering and Management, University of Western Macedonia, Kastorias and Fleming St. 50100, Kozani, Greece
- A/PII.39** MAGNETIC PROPERTIES AND MICROWAVE ABSORPTION OF NANOSCALE CoNi POWDERS
G.V. Kurylanskaya(a,b), S.M. Bhagat(a), C. Luna(c) and M. Vazquez(c), (a)FMR Group, Dpt. Physics, Un. Maryland, 2221 Physics Bldg College Park MD 20742, USA, (b)Un. Pais Vasco UPV-EHU, Dept. Electricidad y Electronica, Apdo. 644, 48080 Bilbao, Spain, (c)Instituto de Ciencia de Materiales, CSIC. 28049 Madrid. Spain
- A/PII.40** EFFECT OF SURFACE ANISOTROPY ON MAGNETIZATION OF CORE-SHELL BIMETALLIC NANOPARTICLES
V. Petrauskas, E.E. Tornau, Semiconductor Physics Institute, A. Goštauto 11, 2600 Vilnius, Lithuania and O. Crisan, National Institute for Materials Physics, P.O. Box MG-7, 76900 Bucharest, Romania

Carbon nanoclusters

- A/PII.41** INTERFACIAL ELECTRONIC STRUCTURE BETWEEN PENTACENE AND C60
S.J. Kang, Y. Yi, C.Y. Kim, M. Noh, C.N. Whang, Institute of Physics and Applied Physics, Yonsei University, 134 Shinchon-dong Sudaemoon-ku, Seoul 120-749, Korea
- A/PII.42** COMPUTER SIMULATION OF THE ELECTRON BEAM IRRADIATION EFFECT ON THE MODIFICATION OF CARBON NANOTUBES
M.V. Makarets and Yu.I. Prylutsky, Kyiv National Shevchenko University, Faculty of Physics and Biology, Volodymyrska Str., 64, Kyiv 01033, Ukraine; H. Bernas, CNRS-UMR 8609, University Paris XI, France; P. Scharff, Technical University of Ilmenau, Institute of Physics, 98684 Ilmenau, Germany
- A/PII.43** POSSIBILITY OF PHOTO-ACOUSTO-ELECTRONIC SUPER-RESONANCE IN NANOTUBES AND THEIR CRYSTALS
Vladimir Pokropivny, Frantsevich Institute NASU, 03142 Kiev, Ukraine
- A/PII.44** CARBON AND METAL SUPERSTRUCTURES AT NANOSCALE: FROM NANOTUBES TO HELICES, TOROIDS AND NANODISCS
V. Kislov, Institute of Radioengineering & Electronics, RAS, 125009, 11 Mokhovaya bld. 7, Moscow, Russia

- A/PII.45** MULTIWALL WS2 NANOTUBES: SYNTHESIS AND STUDY
R. Rosentsveig, A. Margolin, I. Kaplan-Ashiri, A. Albu-Yaron, R. Popovitz-Biro and R. Tenne
- A/PII.46** RADIAL ELECTRIC FIELD EFFECT ON THERMOELECTRIC TRANSPORT PROPERTIES OF Bi₂Te₃ CYLINDRICAL NANOWIRE COAXIAL STRUCTURE
V.G. Kantser, I.M. Bejenari, D.F. Meglei, LISES, Institute of Applied Physics, Kishinev 2028, Moldova
- A/PII.47** THE EFFECT OF THERMAL AND CHEMICAL TREATMENT ON THE STRUCTURAL AND PHASE COMPOSITION OF CARBON MATERIALS
I. Ovsiyenko, T. Len, L. Matzui, O. Golub and Yu. Prylutsky, Kyiv National Shevchenko University, Faculty of Physics, Chemistry and Biology, Volodymyrska Str. 64, Kyiv 01033, Ukraine; P. Eklund, Penn State University, 104 Davey Laboratory, University Park, PA 16802-6300, USA
- A/PII.48** INFLUENCE OF CATALYST DEPOSITION ON THE DIAMETER OF THERMAL CVD GROWN CARBON NANOTUBES
E. Terrado, M. Redrado, W.K. Maser, A.M. Benito, M.T. Martínez Instituto de Carboquímica CSIC, Miguel Luesma Castán 4, 50018, Zaragoza, Spain
- A/PII.49** CARBON NANOTUBES SYNTHESIS IN MICROWAVE PLASMA TORCH AT ATMOSPHERIC PRESSURE
O. Jašek, M. Eliáš, M. Bublan, V. Kudrle, L. Zajicková, Dept. Physical Electronics, Masaryk University, Kotlářská 2, Brno 61137, Czech Republic, J. Matějková, A. Rek, Institute of Scientific Instruments of ASCR, Královopolská 147, Brno 61264, Czech Republic, J. Buršík, Institute of Physics of Materials of ASCR, Žitkova 22, Brno 61662, Czech Republic, M. Kadleciková, Dept. Microelectronics of FEEIT, Slovak University of Technology, Ilkovicova 3, Bratislava 81219, Slovak Republic
- A/PII.50** SCANNING TUNNELING MICROSCOPY INVESTIGATION OF ATOMIC-SCALE CARBON NANOTUBE DEFECTS PRODUCED BY AR ION IRRADIATION
Z. Osváth, G. Vértesy, L. Tapasztó, F. Wéber, Z. E. Horváth, J. Gyulai, and L. P. Biró Research Institute for Technical Physics and Materials Science, H-1525 Budapest, P.O. Box 49, Hungary
- A/PII.51** POLYAZOMETHINE-CARBON NANOTUBES COMPOSITES
E. Lafuente(a), M. Piñol(b), L. Oriol(b), E. Muñoz(b), A.M. Benito(a), W.K. Maser(a), J.L. Serrano(b), M. T. Martínez(a), (a)Instituto de Carboquímica (CSIC), C/ Miguel Luesma Castán 4, 50018 Zaragoza, Spain, (b) Química Orgánica, Facultad de Ciencias-ICMA, Universidad de Zaragoza-CSIC, 5009, Zaragoza, Spain
- A/PII.52** TRANSMISSION ELECTRON MICROSCOPY STUDY OF DIFFERENT CARBON NANOPHASES PRODUCED BY ION BEAM IMPLANTATION
I. Djerdj, A.M. Toneje, M. Bijelic, Dept. of Physics, Faculty of Science, University of Zagreb, Bijenicka 32, PO Box 331, 10002 Zagreb, Croatia, M. Buljan, U.V. Desnica, Rudjer Boskovic Institute, PO Box 180, Zagreb, Croatia and C. Saguy, R. Kalish, Physics Department and Solid State Institute, Technion, Haifa, Israel
- A/PII.53** INFLUENCE OF METALS AND METHANE FLOW RATE ON THE MASSIVE PRODUCTION OF CARBON NANOTUBES BY CHEMICAL VAPOR DEPOSITION
C. Vallés(a), M. Pérez-Mendoza(a), W.K. Maser(a), M.T. Martínez(a), S. Langlois(b), J.L. Sauvajol(b) and A.M. Benito(a), (a)Instituto de Carboquímica (CSIC), C/ Miguel Luesma Castán 4, 50018 Zaragoza, Spain, (b)GDPC University of Montpellier II, 34000 Montpellier Cedex, France
- A/PII.54** POLYANILINE/CARBON NANOTUBE COMPOSITE: INFLUENCE OF MWNTs CONTENT ON PHYSICAL PROPERTIES
R. Sainz(a), A.M. Benito(a), M.T. Martínez(a), B. Corraze(b), O. Chauvet(b), J.N Coleman(c), K. Ryan(3), W. Blau(c), W.K. Maser(a), (a)Instituto de Carboquímica (C.S.I.C.), C/Miguel Luesma Castán 4, 50018 Zaragoza, Spain, (b)LPC, IMN, Univ. Nantes, rue de la Houssinière, 44322 Nantes, France, (c)Physics Department, Trinity College, Dublin 2, Ireland
- A/PII.55** A STUDY ON NANOTUBE-SUBSTRATE INTERACTION EFFECT FOR FULLERENE-SHUTTLE-MEMORY BASED ON NANOPEAPOD
Ki Ryang Byun, Jeong Won Kang, Ho Jung Hwang, Nano Electronics Future Technology Laboratory, School of Electrical and Electronic Engineering, Chung-Ang University, 221 HukSuk-Dong, DongJAK-Ku, Seoul 156-756, Korea
- A/PII.56** A STUDY ON ELECTROMECHANICAL CARBON NANOTUBE MEMORY
Jeong Won Kang, Ki Ryang Byun, and Ho Jung Hwang, Nano Electronics Future Technology Laboratory, School of Electrical and Electronic Engineering, Chung-Ang University, 221 HukSuk-Dong, DongJAK-Ku, Seoul 156-756, Korea
- A/PII.57** INVESTIGATION OF METAL/CARBON-RELATED MATERIALS FOR FUEL CELL APPLICATIONS BY ELECTRONIC STRUCTURE CALCULATIONS
Ki-jeong Kong, Youngmin Choi, Beyong-Hwan Ryu, Jeong-O Lee, and Hyunju Chang, Korea Research Institute of Chemical Technology, Korea
- A/PII.58** EFFECT OF HYDROGEN PLASMA PRETREATMENT ON GROWTH OF CARBON NANOTUBES BY MPCVD
Sung-Hun Choi, Jae-Hyeoung Lee, School of Electronic & Information Engineering, Kunsan national University, Won-Seok Choi, School of information & Communications Engineering, Sungkyunkwan University, Dong-Gun Lim, Kea-Joon Yang, Department of Electronic Engineering, Chungju National University

- A/PII.59** GROWTH OF CARBON NANOTUBES ON GLASS SUBSTRATE BY MPCVD FOR FED APPLICATIONS
Sung-Hun Choi, Jae-Hyeoung Lee, School of Electronic & Information Engineering, Kunsan national University, Won-Seok Choi, School of information & Communications Engineering, Sungkyunkwan University
- A/PII.60** COMPARISON OF CNT/Si₃N₄ COMPOSITES PREPARED BY HOT ISOSTATIC PRESSING AND SPARK PLASMA SINTERING
Csaba Balázs(a), Zhijian Shen(b), Zsuzsanna Kövér(a), Zoltán Kónya(c), Zsolt Kasztovszky(d), Ferenc Wéber(a), Zofia Vértesy(e), László Péter Biró(e), Imre Kiricsi(c), Péter Arató(a), (a)Ceramics and Composites Laboratory, Research Institute for Technical Physics and Materials Science, P.O. Box 49, 1525 Budapest, Hungary, (b)Stockholm University, Arrhenius Laboratory, Department of Inorganic Chemistry, 10691 Stockholm, Sweden, (c)Department of Applied and Environmental Chemistry, University of Szeged, Rerrich Béla tér 1., 6720 Szeged, Hungary, (d)Department of Nuclear Research, Institute of Isotope and Surface Chemistry, Chemical Research Center, Budapest, Hungary, (e)Laboratory for Nanostructures Research, Research Institute for Technical Physics and Materials Science, Budapest, Hungary
- A/PII.61** PECVD-GROWN CARBON-NANO-TUBES ON SILICON SUBSTRATES WITH AN ANOMALOUS NICKEL-SEEDED TIP-GROWTH STRUCTURE Y. Abdi(a), J. Koohsorkhi(a), J. Derakhshandeh(a), S. Mohajezadeh(a), H. Hoseinzadegan(a), M.D. Robertson(b) and C. Benet(b), (a)Thin Film Lab, University of Tehran, Tehran, Iran, (b)Department of Physics, Acadia University, Nova-Scotia, Canada
- A/PII.62** NEAR-FIELD ELECTRODYNAMICS OF ATOMICALLY DOPED CARBON NANOTUBES
Igor V. Bondarev, The Institute for Nuclear Problems, The Belarusian State University, Bobruiskaya Str. 11, 220050 Minsk, Belarus, Philippe Lambin, Laboratoire de Physique du Solide, Faculté Universitaires Notre-Dame de la Paix, 61 rue de Bruxelles, 5000 Namur, Belgium
- A/PII.63** STRUCTURAL AND ELECTRONIC STUDIES ON NON-CONVENTIONAL CARBON NANOTUBES AT SURFACES
Anna Maria Talarico(a), Vincenzo Palermo(a), Linjie Zhi(b), Jishan Wu(b), Klaus Müllen(b), Paolo Samori(a,c), (a)ISOF-CNR, via Gobetti 101, 40129 Bologna, Italy, (b) Max-Planck Institute for Polymer Research, Ackermannweg 10, 55124 Mainz, Germany, (c) Nanochemistry Laboratory, ISIS-ULP, 8 allée Gaspard Monge, 67083 Strasbourg, France
- A/PII.64** THE TRANSFER OF PHONONS AND ELECTRONS THROUGH THE MOLECULAR BRIDGE CONNECTING ELECTRODES
I.V. Tarasov, V.N. Evteev, L.V. Gurova, M.V. Moiseenko, N.A. Slusarenko, Krivoy Rog Pedagogical University, Krivoy Rog, 54 Gagarin Prsp, 50086 Ukraine; E.Ya. Glushko, V. Lashkarev Institute of Semiconductor Physics, 45 Nauki Prsp., Kyiv-03028, Ukraine
- A/PII.65** EXPERIMENTAL OBSERVATION OF CARBON AND CARBON-METAL NANOTOROIDS AND NANODISCS
V. Kislov, B. Medvedev, Institute of Radioengineering & Electronics, Russian Academy of Sciences, 11 Mokhovaya bld. 7, 125009 Moscow, Russia
- A/PII.66** CARBON AND CARBON-METAL SUPERSTRUCTURES: FROM NANOTUBES TO TOROIDS AND NANODISCS
V. Kislov, I. Taranov, Institute of Radioengineering & Electronics, Russian Academy of Sciences, 11 Mokhovaya bld. 7, 125009 Moscow, Russia
- A/PII.67** FIRST-PRINCIPLES STUDY OF EXTENSIVE DOPING OF C₆₀ WITH SILICON
M. Matsubara, Laboratory of Physics, Helsinki University of Technology, P.O. Box 1100, 02015 HUT, Finland and C. Massobrio, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504 CNRS, Université Louis Pasteur, 23 rue du Loess, BP 43, 67034 Strasbourg Cedex 02, France

Thursday, June 2, 2005
Jeudi 2 juin 2005

Morning
Matin

Session V : Nanoelectronics 2

Session chairs : M. Kittler

- A-V.01** 8:30 -Invited- FUNCTIONALIZED CLUSTER-ASSEMBLED NANOSTRUCTURES FOR APPLICATIONS TO HIGH INTEGRATION-DENSITY DEVICES
A. Perez, P. Mélinon, V. Dupuis, L. Bardotti, J. Tuillon-Combes, B. Masenelli, B. Prével, E. Bernstein, L. Favre, A. Hannour, D. Nicolas, C. Raufast, Laboratoire de Physique de la Matière Condensée et Nanostructures, Université Claude Bernard Lyon 1 and CNRS Domaine Scientifique de la Doua - 69622 Villeurbanne, France
- A-V.02** 9:00 A MOLECULAR SCALE FULL ADDER BASED ON CONTROLLED INTRAMOLECULAR ELECTRONIC ENERGY AND ELECTRON TRANSFER
Shammai Speiser, Department of Chemistry, Technion – Israel Institute of Technology, Haifa 32000, Israel
- A-V.03** 9:20 ULTRAVIOLET PHOTODETECTOR BASED ON SINGLE GaN NANOROD p-n JUNCTIONS
Min Su Son, S.I. Ihm, K.-H. Yoo, Institute of Physics and Applied Physics, Yonsei University, Seoul 120-749, Korea; Y.S. Park, C.M. Park, T.W. Kang, Quantum-functional Semiconductor Research Center, Dongguk University, Seoul 100-715, Korea
- A-V.04** 9:40 CHARACTERISTICS OF SB2TE3 PHASE-CHANGE MATERIAL USED FOR NONVOLATILE CHALCOGENIDE RANDOM ACCESS MEMORY
Bo Liu, Zhitang Song, Songlin Feng, Research Center of Functional Semiconductor Film Engineering & Technology, State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, 865 Changning Road, Shanghai, 200050, China, Bomy Chen, Silicon Storage Technology, Inc. 1171 Sonora Court, Sunnyvale CA 94086, USA
- A-V.05** 10:00 SINGLE ELECTRON TRANSISTOR FOR SPIN MEASUREMENT FABRICATED WITH SOI WAFER
Shigeyuki Kobayashi, Hirotohi Mori, Masahiro Imaeda, Satoru Matsumoto, Department of Electrical Engineering, Keio University, Yokohama 223-0061, Japan

10:20 **BREAK**

Session VI : Biotechnology

Session chairs : G. Marletta

- A-VI.01** 10:50 -Invited- SELF ORGANIZED PATTERN FORMATION OF BIOMOLECULES AT Si SURFACES
M. Kittler and X. Yu, M. Birkholz, IHP, Im Technologiepark 25, 15236 Frankfurt (Oder), Germany; T. Arguirov, BTU Cottbus & IHP/BTU Joint Lab; M. Reiche, MPI Halle; A. Wolff and W. Fritzsche, IPHT Jena; M. Seibt, Univ. Göttingen, Germany
- A-VI.02** 11:20 -Invited- NANOSTRUCTURED INTERFACES FOR STEERING CELLULAR BIOSYSTEMS
D.S. Sutherland, H. Agheli, A.-S. Andersson, U. Lidberg, J. Malmström, Dept Appl. Phys. Chalmers Göteborg Sweden, and J. Voros, Dept. Materials, ETH Zurich, Switzerland
- A-VI.03** 11:50 SELF-ASSEMBLING OF A SHORT HELICAL PEPTIDE CHEMISORBED ON Au(111)
G. Pace, M. Venanzi, A. Palleschi, L. Stella, B. Pispisa, Department of Chemical Sciences and Technologies, P. Castrucci, M. Scarselli, M. De Crescenzi, Department of Physics, Via della Ricerca Scientifica, 00133 Rome, Italy, G. Marletta Department of Chemistry, V.le A. Doria 6, 95125 Catania, Italy
- A-VI.04** 12:10 SWITCHABILITY, BIOLOGICAL MATERIALS AND IONIC SELF-ASSEMBLY: NEW ROUTES TOWARDS SELF-ASSEMBLED BIODEVICES?
Charl F.J. Faul, University of Bristol, School of Chemistry Inorganic and Materials Chemistry, Bristol BS8 1TS, U.K.

12:30 **LUNCH**

Thursday, June 2, 2005
Jeudi 2 juin 2005

Afternoon
Après-midi

Session VII : Applications, products
Session chairs : O. Engström

- A-VII.01** 14:00 -Invited- DRIVING AT FULL THROTTLE INTO THE NANO-WORLD- INCREASING APPLICATIONS OF NANOTECHNOLOGY IN THE AUTOMOTIVE INDUSTRY
H. Presting, DaimlerChrysler Research, Wilhelm-Runge-Str-11, D-89081 Ulm, Germany
- A-VII.02** 14:30 FLEXIBLE ORGANIC SOLAR CELLS – THE PATH TO A PRODUCT
Jens Hauch, Pavel Schilinsky, Christoph Brabec, Konarka Technologies GmbH, Paul-Gossen-Str. 100, 91052 Erlangen, Germany
- A-VII.03** 14:50 CILIA ASSEMBLY: THE CONSTRUCTION OF A CELLULAR NANOMACHINE
L.V. Melo(a), H. Soares(b,c), C. Seixas(b) and P. Brogueira(a), (a)Physics Department and ICEMS, IST, Lisboa, Portugal, (b)IGC, Oeiras, Portugal, (c)ESTeSL, Lisboa, Portugal
- A-VII.04** 15:10 NANOLITHOGRAPHY AND SUBNANO MOLECULAR INTERACTIONS WITH BIOMIMETRIC SENSORS
F.L. Dickert, O. Hayden, S. Krassnig, P. Chen, Institute of Analytical Chemistry, Vienna University, Waehringer Str. 38, 1090 Vienna, Austria
- A-VII.05** 15:30 SINGLE-WALLED CARBON NANOTUBES NANOCOMPOSITE MICROACOUSTIC ORGANIC VAPOR SENSORS
M. Penza, M.A. Tagliente, P. Aversa, G. Cassano, L. Capodiecì, ENEA, Materials and New Technologies Unit, C.R. Brindisi, SS. 7, Appia, km 714, 72100 Brindisi, Italy
- 15:50 **BREAK**
- 16:15-19:00 **POSTER SESSION III**

POSTER SESSION III
Thursday, June 2, 2005
16:15 – 19:00

Biotechnology

- A/PIII.01** NEXAFS, XPS AND RAIRS INVESTIGATION OF A SELF-ASSEMBLING PEPTIDE FILMS ON TiO₂ AND GOLD
G. Polzonetti, G. Iucci, Department of Physics and unità INFM, INSTM and CISDiC, University "Roma Tre", Via della Vasca Navale 84, 00146 Rome, Italy, C. Battocchio, Department of Chemistry, University of Rome "La Sapienza" P.le A. Moro 5, 00185, Rome, Italy, M. Dettin and C. Di Bello Department of Chemical Process Engineering, University of Padova, Via Marzolo 9, 35131 Padova, Italy
- A/PIII.02** TEMPERATURE DEPENDENCE OF CAPACITANCE ON DNA SOLUTIONS
K.E. Kim, S.D. Suck, M.S. Sohn, B.K. Kang, K.-H. Yoo, Institute of Physics and Applied Physics, Yonsei University, Seoul 120-749, Korea
- A/PIII.03** A NOVEL STRATEGY THAT ALLOWS CELL GROWTH WITHIN SILICA MONOLITHS
Mercedes Perullini(a), Matías Jobbágy(a), Galo J.A.A Soler-Illia(a,b) and Sara Aldabe Bilmes(a), (a)INQUIMAE-DQIAQF, Universidad de Buenos Aires, Facultad de Ciencias Exactas y Naturales. Ciudad Universitaria Pab. II, C1428EHA Buenos Aires, Argentina, (b)Unidad de Actividad Química, Centro Atómico Constituyentes – CNEA, Av. Gral Paz 1499, San Martín (B1650KNA), Pcia. de Buenos Aires, Argentina
- A/PIII.04** A NOVEL SURFACE TO IMMOBILIZE BIOMOLECULES AND IMAGING BY ATOMIC FORCE MICROSCOPE
Loveleen K. Brar(a), Priya Rajdev(b), A.K. Raychaudhuri(a), Dipankar Chatterji(b), (a)Department of Physics, Indian Institute of Science, Bangalore, India, (b)Molecular Biophysics Unit, Indian Institute of Science, Bangalore, India
- A/PIII.05** THERMALLY ACTIVATED- CVD FUNCTIONALIZATION OF SILICON SURFACES
M. Arroyo-Hernández(a), J. Pérez-Rigüero(b) and J.M. Martínez- Duart(a), (a)Applied Physics Dept., Faculty of Science, Universidad Autónoma de Madrid, 28049 Cantoblanco, Madrid, Spain, (b)Material Science Dept., ETSI Caminos, Canales y Puertos, Universidad Politécnica de Madrid, 28040 Madrid, Spain
- A/PIII.06** CELL ADHESION ON NANOPATTERNED POLYMER SURFACES
C. Satriano(a), P. Netti(b) and G. Marletta(a), (a)Laboratory for Molecular Surfaces and Nanotechnologies, Department of Chemical Sciences, University of Catania, Viale Andrea Doria, 6, 95125 Catania, Italy, (b)Department of Materials and Production Engineering, University of Naples Federico II, Napoli, Italy
- A/PIII.07** COMPREHENSIVE REVIEW: SELF-ORGANIZED NANOSYSTEMS ON BIOLOGICAL MOLECULE/METAL NANOPARTICLE BUILDING BLOCKS: NANOSTRUCTURE, BONDS, PHOTOSENSITIVITY AND BIOMEDICAL APPLICATIONS
A. Veligura(a), J.M. Kohler(b), W. Fritzsche(c), E. Buzaneva(a), (a)National Taras Shevchenko University of Kyiv, Medical Radiophysics Department, The Scientific and Training Center "Physical and Chemical Material Science" of this University and NASU; 64, Vladimirska Str., 01033 Kiev, Ukraine, (b)Technische Universität Ilmenau, Institut für Physik / FG Chemie, Postfach 100565, 986884 Ilmenau, Germany, (c)Institute for Physical High Technology, PF 100239, 07702 Jena, Germany
- A/PIII.08** THIRD-GENERATION BIOSENSORS BASED ON TiO₂ NANOSTRUCTURED FILMS
M. Viticoli(a), A. Curulli(a), A. Cusma(a), S. Kaciulis (a), S. Nunziante(a), L. Pandolfi(a), G. Padeletti(a), F. Valentini(a,b), (a)Institute for the Study of Nanostructured Materials (ISMN)-CNR, Rome, Italy, (b)University of Rome "Tor Vergata", Rome, Italy
- A/PIII.09** THE REVELATION AT ELECTRONIC STRUCTURE OF Au/DNA NANOSYSTEMS QUANTUM-SIZE EFFECT UNDER THE DECREASE OF Au PARTICLES ASSEMBLIES SIZES
A. Gorchinskiy, A. Veligura, O. Vysokolyan, E. Buzaneva, National Taras Shevchenko University of Kiev, Radiophysical Faculties, The Scientific and Training Center "Physical and Chemical Material Science of Kiev National Taras Shevchenko University and NASU", 64, Vladimirska Str., 01033 Kiev, Ukraine
- A/PIII.10** SUB-NANOMETER ETCH AND DEPTH CONTROL OF BIO-POLYMER FILMS WITH 157 NM LASER
E. Sarantopoulou, Z.Kollia, A.C. Cefalas, National Hellenic Research Foundation, TPCI, Athens 11635 Hellas, Greece
- A/PIII.11** BIOPATTERN NANOENGINEERING: NEW NANOSCALE-ORGANIZED HIGHLY LUMINESCENT CDSE NANOROD-DNA COMPLEXES
V.V. Kislov, Institute of Radioengineering and Electronics RAS, 101999 Moscow, Russia, M. Artemyev, Institute for Physico-Chemical Problems, Belarussian State University, 220080 Minsk, Belarus, G.B. Khomutov, Faculty of Physics, Moscow State University, Lenin Gory, 119992 Moscow, Russia
- A/PIII.12** CLASSIFICATION NANOSTRUCTURE MULTICOMPONENT ORGANIC FAT
T.A. Rashevskaya

- A/PIII.13** EVALUATION OF BACTERIAL DETACHMENT STRENGTH FROM HYDROPHOBIC AND HYDROPHILIC SUBSTRATA USING JET IMPINGEMENT
Sonia Bayouhd(a), Ali Othmane(b), Laurence Ponsonnet(d), Amina Bakhrouf(c), Hafedh Ben Ouada(a), (a)Laboratoire de Physique et Chimie des Interfaces, Faculté des Sciences de Monastir, Tunisia, (b)Laboratoire de Biophysique, Faculté de Médecine de Monastir, Tunisia, (c)Laboratoire d'Analyse et de Contrôle des Polluants Chimique et Biologique de l'Environnement, Faculté de Pharmacie de Monastir, Tunisia, (d)Centre de Génie Electrique, Ecole Centrale, Université Claude Bernard Lyon 1, France
- A/PIII.14** NUCLEATION OF METAL PARTICLES ON PROTEIN-BASED NANORINGS
S. Behrens(a), W. Habicht(a), E. Unger(b), (a)Institut für Technische Chemie, Forschungszentrum Karlsruhe, Germany, (b)Institut für Molekulare Biotechnologie, Jena, Germany

Nano optics

- A/PIII.15** ZERO-BIREFRINGENCE OPTICAL POLYMERS BY NANO-BIREFRINGENT CRYSTALS FOR LIQUID CRYSTAL DISPLAYS
Akihiro Tagaya(a,b), Hisanori Ohkita(a,b), and Yasuhiro Koike(a,b), (a)Faculty of Science and Technology, Keio University, 3-14-1, Hiyoshi, Kohoku-ku, Yokohama 223-0061, Japan, (b)ERATO Koike Photonics Polymer Project, Japan Science and Technology Agency, K2 Town Campus, 144-8 Ogura, Saiwai-ku, Kawasaki 212-0054, Japan
- A/PIII.16** RED ELECTROLUMINESCENCE IN ORGANIC LIGHT-EMITTING DEVICES USING EUROPIUM COMPLEXES
R. Antony(a), R.Demadrille(b) and A. Moliton(a), (a)U.M.O.P., Faculté des Sciences, 123 av. Albert Thomas, 87060 Limoges cedex, France, (b)DRFMC/Si3M/GEM, CEA-Grenoble, 17 rue des Martyrs, 38054 Grenoble Cedex, France
- A/PIII.17** IRRADIATED THICKNESS EFFECTS ON THE ORGANIC LIGHT-EMITTING DEVICE CATHODES MADE BY ION BEAM ASSISTED DEPOSITION
P.Taillepierre, R.Antony and A.Moliton U.M.O.P. Faculté des sciences,123 av. Albert Thomas 87060 Limoges cedex (France).
- A/PIII.18** TUNING OPTICAL PROPERTIES OF HIGH IN CONTENT InGaAs/GaAs CAPPED SELF-ASSEMBLED InAs QUANTUM DOTS BY POST GROWTH RAPID THERMAL ANNEALING
B. Ilahi, L. Sfaxi and H. Maaref, Laboratoire de Physique des Semiconducteurs et des Composants Electroniques, Faculté des Sciences, Avenue de l'environnement, 5019 Monastir, Tunisia, G. Bremond, Laboratoire de Physique de Matière (UMR CNRS 551), INSA de Lyon, 69621 Villeurbanne, France
- A/PIII.19** WELL ALIGNED AND SIZE CONTROLLED FABRICATION OF ZNS NANOWIRES ON AAO TEMPLATES AND THEIR LASING PROPERTIES
Wang Danbin, J.A. Zapien, J.X. Ding, Y.Y. Shan, C.S. Lee, S.T. Lee, Center of Super Diamond & Advanced-Films, Department of Physics and Material Science, City University of Hong Kong, Department of Physics & Materials City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong
- A/PIII.20** OPTICAL PROPERTIES OF HIGH DENSITY InGaN QDs GROWN BY MOCVD
Chao-Kuei Lee, Institute of Electro-Optical Engineering, National Sun Yat Sen University, Taiwan, ROC, Jue-Hung Hsu, Department of Materials and Optoelectronic Engineering, National Sun Yat Sen University, Taiwan, ROC, Y.H. Chang, H.C. Kou, S.C. Wang, Institute of Electro-Optical Engineering, National Chiao Tung University, Taiwan, ROC
- A/PIII.21** FABRICATION OF METAL MIRROR MICROCAVITIES WITH INASSB QUANTUM DOTS AND THEIR PROPERTIES
A. Ueta, S. Gozu, K. Akahane, N. Yamamoto, and N. Ohtani, National Institute of Information and Communications Technology
- A/PIII.22** ENHANCEMENT OF Mn LUMINESCENCE IN ZnS:Mn MULTI QUANTUM WELLS
N. Taghavinia, Physics Department, Sharif University of Technology, Tehran 14588, Iran, H. Makino and T. Yao, Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan
- A/PIII.23** MULTI-ELECTRONIC HYDROGEN ATOM IN NANOSTRUCTURES
S.A. Beznosyuk, D.A. Mezentsev, M.S. Zhukovsky, T.M. Zhukovsky, Altai State University, 61 Lenin Av., 656049, Barnaul, Russia
- A/PIII.24** ELECTRO-OPTICS POLED SOL-GEL MATERIALS DOPED WITH HETEROCYCLE PUSH-PULL CHROMOPHORES
Giovanna Brusatin, Gioia Della Giustina, Massimo Guglielmi, Dipartimento di Ingegneria Meccanica– Settore Materiali, via Marzolo 9, 35131 Padova, Italy; Plinio Innocenzi, Dipartimento di Architettura e Pianificazione - Laboratorio di Scienza dei Materiali e Nanotecnologie, Università di Sassari Palazzo Pou Salit, Piazza Duomo 6, 07041 Alghero (SS), Italy; Mauro Casalboni, Alessia Quatela, Fabio De Matteis, Dipartimento di Fisica, Università di Roma "Tor Vergata", V. della Ricerca Scientifica 1, 00133 Roma, Italy; Emilia Giorgetti, Andrea Margheri, ISC (Istituto dei Sistemi Complessi) – CNR, Via Panciatichi 64, 50127 Firenze, Italy; Alessandro Abbotto, Luca Beverina, Giorgio A. Pagani, Dipartimento di Scienza dei Materiali, Università Milano-Bicocca, via Cozzi 53, 20125 Milano, Italy
- A/PIII.25** ABSORPTION ENHANCEMENT OF MOLECULAR VIBRATION OF LIQUID CRYSTALS IN PORES OF TWO-DIMENSIONAL PHOTONIC CRYSTALS
O.A. Usov, M.V. Maximov Ioffe Physico-Technical Institute, RAS, Polytechnical str. 26, 194021 St. Petersburg, Russia

- A/PIII.26** THE NATURE OF EFFICIENT LIGHT EMISSION FROM SILICON BASED NANOSTRUCTURES
B. Bulakh, N. Baran, L. Khomenkova, N. Korsunskaya, T. Stara, M. Sheynkman, V. Lashkaryov Institute of Semiconductor Physics at National Academy of Sciences of Ukraine, 45 prospect Nauky, Kyiv 03028, Ukraine
- A/PIII.27** PHOTOLUMINESCENCE AND MAGNETOPHOTOLUMINESCENCE OF CIRCULAR AND ELLIPTICAL InAs/GaAs QUANTUM DOTS
K. Kuldová, A. Hospodková, J. Oswald, J. Pangrác, E. Hulicius, Institute of Physics AS CR, Cukrovarnická 10, 16253 Prague 6, Czech Republic and V. Krápek, J. Fikar and J. Humlíček, Institute of Condensed Matter Physics, Faculty of Science, Masaryk University, Kotlářská 2, 61137 Brno, Czech Republic
- A/PIII.28** NANOSTRUCTURAL AND OPTICAL PROPERTIES OF COBALT AND NICKEL - OXIDE/SILICA NANOCOMPOSITES
C. de Julián Fernández, G. Mattei, C. Sada and P. Mazzoldi, INFN.-Dipartimento di Fisica, Univ. Padova, via Marzolo 8, 35131 Padova, Italy
- A/PIII.29** ENHANCED TRANSMISSION OF VISIBLE LIGHT THROUGH AN ARRAY OF SUB-WAVELENGTH APERTURES MODULATED BY A METAL-INSULATOR TRANSITION
J.Y. Suh, E. Donev, R. Lopez, L.C. Feldman and R. F. Haglund, Jr., Vanderbilt University, Nashville TN 37235, USA
- A/PIII.30** RABI SPLITTING AND PHOTONIC MODES IN LATERALLY PATTERNED MICROCAVITY
A. D'Andrea, N. Tomassini, D. Schiumarini and L. Pilozzi, CNR Istituto dei Sistemi Complessi, Sezione Staccata di Montelibretti, 00016 Monterotondo Scalo (Roma), Italy
- A/PIII.31** TUNING OF DEFECT MODES INSIDE BAND GAP OF PHOTONIC CRYSTAL OF INVERSE OPAL STRUCTURE
L. Rasteniene, R. Vaisnoras, Vilnius Pedagogical University, Studentu 39, 08106 Vilnius, Lithuania, J. Sabataityte, Semiconductor Physics Institute, Gostauto 11, 01108 Vilnius, Lithuania

Polymers

- A/PIII.32** EFFECTS OF ELECTRIC FIELD AND CHARGE DISTRIBUTION ON NANOELECTRONIC PROCESSES INVOLVING CONDUCTING POLYMERS
Marta M.D. Ramos, Helena M.G. Correia, Hugo Carmo, Departamento de Física, Universidade do Minho, Campus de Gualtar, 4710-057 Braga, Portugal
- A/PIII.33** COLLOIDAL NANOMASKS: FORMATION AND GEOMETRY MODIFICATIONS BY KEV IONS
J.K.N. Lindner, B. Stritzker, Universität Augsburg, Institut für Physik, 86135 Augsburg, Germany, and B. Gehl, Universität Bremen, Institut für Angewandte und Physikalische Chemie, 28359 Bremen, Germany
- A/PIII.34** IN SITU INCORPORATION OF METALLIC PHTHALOCYANINES INTO A POLYPYRROLE MATRIX AND ITS EFFECT ON THE ELECTROACTIVITY OF THE POLYMER FILMS
A.D. Pedra, Marysilvia Ferreira, Programa/Departamento de Engenharia Metalúrgica e de Materiais, COPPE-EP – UFRJ, CP 68505, 21945-970, Rio de Janeiro/RJ, Brasil, Marystela Ferreira, Depto de Física, Química e Biologia, Faculdade de Ciências e Tecnologia, CP 467, 19060-900, Presidente Prudente/SP, Brasil, V. Zucolotto, O.N. Oliveira Jr., Instituto de Física de São Carlos – USP, CP 369, 13566-590, São Carlos/SP, Brasil, W.C. Moreira, Depto de Química, UFSCar, CP 676, 13565-905, São Carlos/SP, Brasil
- A/PIII.35** LANGMUIR-BLODGETT FILMS FROM PPV DERIVATIVES USED IN SENSORS OF PHENOLIC COMPOUNDS
Marystela Ferreira, Clarissa A. Olivati, Antonio Riul Jr., José A. Giacometti Unesp, CP 467, 19060-900, Presidente Prudente, SP, Brazil, Débora T. Balogh, Osvaldo. N. Oliveira Jr IFSC, USP, CP 369, 13560-970, São Carlos, SP, Brazil
- A/PIII.36** VISCOELASTIC RESPONSE OF ROTAXANE THIN FILMS AT NANOMETER SCALE
R. Kshirsagar, J.C. Kengne, J.-F. Moulin, M. Cavallini, F. Biscarini, CNR-Institute for the Study of Nanostructured Materials-Bologna Division Via P. Gobetti 101, 40129 Bologna, Italy, S. Léon, F. Zerbetto, Dipartimento di Chimica “G. Ciamician”, Università di Bologna, V.F. Selmi 2, 40126 Bologna, Italy, G. Bottari and D.A. Leigh, School of Chemistry, University of Edinburgh, The King's Buildings, West Mains Road, Edinburgh EH9 3JJ, U.K.
- A/PIII.37** POLYMER-NANOFILLER-COMPOSITES: PROPERTIES AND REPLICATION
J. Böhm, E. Ritzhaupt-Kleissl, Th. Hanemann
- A/PIII.38** SELF-ORGANIZATION OF PORPHYRIN STRUCTURES ON Si
J. Sabataityte, I. Simkiene, G.J. Babonas, A. Reza, Semiconductor Physics Institute, Gostauto 11, 01108 Vilnius, Lithuania, V. Snitka, R. Rodaite, Kaunas University of Technology, Studentu 65, 51369 Kaunas, Lithuania
- A/PIII.49** PHOTOINDUCED FORMATION OF GOLD NANOPARTICLES IN POLYMERIC FILMS
Marco Bernabò(a), Francesco Ciardelli(b), Paolo Elvati(c), Andrea Pucci(a,d), Giacomo Ruggeri(a,d), (a)Department of Chemistry and Industrial Chemistry, University of Pisa, via Risorgimento 35, 56126 Pisa, Italy, (b)INFN-PolyLab, largo Pontecorvo 3, 56127 Pisa, Italy, (c)Scuola Normale Superiore, Piazza dei Cavalieri 7, 56126 Pisa, Italy, (d)INSTM, Pisa Research Unit, via Risorgimento 35, 56126 Pisa, Italy

- A/PIII.40** SYNTHESIS OF p-TYPE CONJUGATED DENDRIMERS BEARING PHENOTHIAZINE MOIETY AT THE PERIPHERY AND THEIR LIGHT-EMITTING DEVICE CHARACTERIZATION
Kyu Il Han(a), In-Hee Chang(a), Suk-Ho Choi(a), Xiaohang Zhang(a), Kwang-Hyun Ahn(a), Dong Hoon Choi(b), Yong Kyun Lee(c), and Jin Jang(c), (a)Institute of Natural Sciences, Kyung Hee University, Suwon 449-701, Korea, (b)Department of Chemistry, Korea University, Seoul 136-701, Korea, (c)Advanced Display Research Center, Hoegi-dong, Dongdaemoon-gu, Kyung Hee University, Seoul 130-701, Korea
- A/PIII.41** OPTICAL AND ELECTROPHYSICAL PROPERTIES OF Ag-PEPK NANOCOMPOSITES
A. Kukhta, E. Kolesnik, D. Ritchik, Institute of Molecular and Atomic Physics, NAS, F.Skaryna Ave.70, 220072 Minsk, Belarus and A. Lesnikovich, M. Nichik, S. Vorobyova, Research Institute for Physical & Chemical Problems of Belarusian State University, 14 Leningradskaya str., Minsk, 220050, Belarus
- A/PIII.42** THE MORPHOLOGY AND SIZE OF NANOSTRUCTURED AU AND PT IN AU/SBA-15 AND PT/MCM-48 AFFECTED BY PREPARATION CONDITION
P.H. Liu, Y.P. Chang and K.J. Chao, Department of Chemistry, National Tsinghua University, 30017 Hsinchu, Taiwan
- A/PIII.43** A GREEN-EMITTING CdSe/POLY(BUTYL ACRYLATE) NANOCOMPOSITE
T. Monteiro, M. Peres, L.C. Costa, M.J. Soares, A. Neves, Department of Physics, University of Aveiro, 3810-193 Aveiro, Portugal; A.C.C. Esteves, A. Barros-Timmons, T. Trindade, Department of Chemistry, CICECO, University of Aveiro, 3810-193 Aveiro, Portugal; E. Alves, Instituto Tecnológico e Nuclear, Sacavém, Lisboa, Portugal
- A/PIII.44** ELECTRICAL TRANSPORT PROPERTIES AND THEIR REPRODUCIBILITY FOR LINEAR PORPHYRIN ARRAYS
Bonkeun Kang, K.-H. Yoo, Department of Physics, Yonsei University, Seoul, 120-742, Korea, N. Aratani, A. Tsuda, A. Osuka, Department of Chemistry, Kyoto University, Kyoto 606-8502, Japan
- A/PIII.45** SYNTHESIS AND PATTERNING OF POLYANILINE DOPED WITH COORDINATION COMPOUNDS
Massimiliano Massi, Massimo Facchini, Cristiano Albonetti, Massimiliano Cavallini and Fabio Biscarini. CNR-Institute for the Study of Nanostructured Materials, Bologna Division, Via P. Gobetti 101, 40129, Bologna, Italy
- A/PIII.46** ROLE OF CO-CONFORMATIONS AND SURFACE HYDROPHILICITY IN DEWETTING OF BISTABLE AMPHIPHILIC CATENANE THIN FILM
Massimiliano Cavallini(a), F. Biscarini(a), F. Zerbetto(b) D. Leigh(c), (a)CNR-Istituto per lo studio dei materiali Nanostrutturati Bologna Division, Via P. Gobetti 101, 40129 Bologna, Italy, (b) Dip. Chimica "G. Ciamician", Università di Bologna, Via Selmi 2, 40100 Bologna, Italy, (c)Dept. of Chemistry, University of Edinburgh, U.K.
- A/PIII.47** ORGANIC THIN FILM TRANSISTORS WITH POLYMER HIGH-K DIELECTRIC INSULATOR
Klaus Müller, Ioanna Paloumpa, Karsten Henkel, Dieter Schmeißer, Brandenburgische Technische Universität Cottbus, Angewandte Physik-Sensorik, 03013 Cottbus, P.O.Box 101344, Germany
- A/PIII.48** EXCESS NOISE IN A POLY(VINYL BUTYRAL)/CARBON BLACK NANOCOMPOSITE GAS SENSITIVE RESISTOR
K.I. Arshak, L.M. Cavanagh, E.G. Moore, ECE Dept, University of Limerick, Limerick, Ireland
- A/PIII.49** PHOTOSTABILITY OF POROUS SILICA - RHODAMINE 6G HYBRID SAMPLES
C.M. Carbonaro, F. Clemente, R. Corpino, P.C. Ricci, D. Atzori, A. Anedda
- A/PIII.50** AZULENE-PYRROLE PLASMA POLYMERIZED, STRUCTURE AND PROPERTIES
F. Nastase(a), Ioan Stamatina(a), Claudia Nastase(a), D. Mihaiescu(b), I. Burzo(b), (a)University of Bucharest, Polymer Science Department, P.O. Box MG-11, 077125 Magurele – Bucharest, Romania, (b)University of Agriculture Sciences and Veterinary Medicine, 59 Marasti, Bucharest, Romania
- A/PIII.51** PLASMA POLYMERIZED ANILINE - DIPHENILAMINE, WITH IR-SIGNATURE
Ioan Stamatina(a), F. Nastase(a), Claudia Nastase(a), D. Mihaiescu(b), A. Vaseashta(c), (a)University of Bucharest, Polymer Science Department, P.O. Box MG-11, 077125 Magurele – Bucharest, Romania, (b)University of Agriculture Sciences and Veterinary Medicine, 59 Marasti, Bucharest, Romania, (c)Marshall University, Department of Physics, Materials Processing and Characterization Laboratories, Huntington WV 25701, USA
- A/PIII.52** INTERCHAIN INTERACTIONS IN CHARGED CONJUGATED OLIGOMERS CARRYING BULK SUBSTITUENTS
M. Ottonelli, D. Comoretto, G.F. Musso and G. Dellepiane, Università di Genova, Dipartimento di Chimica e Chimica Industriale, Via Dodecaneso 31, 16146 Genova, Italy
- A/PIII.53** CHEMICAL TEMPLATE SYNTHESSES OF POLYPYRROLE NANOTUBES
B. Schulz(a), I. Diez(a), K.-D. Tauer(b), (a)University of Potsdam, Institute of Physics, Am Neuen Palais 10, 14469 Potsdam, Germany, (b)Max-Planck-Institute of Colloid and Interface Sciences Potsdam, Germany
- A/PIII.54** POLYMER MICROMACHINING FOR MICRO- AND NANO-PHOTONICS
Dana Cristea, Paula Obreja, Mihai Kusko, Elena Manea, National Institute for Research and Development in Microtechnologies, Bucharest, Romania
- A/PIII.55** NANOSTRUCTURE OF BUTTER WITH BIOPOLYMER PECTIN ADDITIVE
T.A. Rashevskaya, A.I. Ukrainets, National University of Food Technologies, Volodimirska str. 68, 01033 Kyiv, Ukraine

- A/PIII.56** CHEMISTRY ON SURFACE-IMMOBILIZED MONOLAYERS: THE STEPWISE SYNTHESIS OF MONOLAYERS CONTAINING POLYPYRIDINE METAL COMPLEXES
A. Licciardello, N. Tuccitto, V. Torrisi, Dip. di Scienze Chimiche, V.le A. Doria 6, 95125 Catania, Italy; S. Campagna, Dip. di Chimica, V. Sperone 31, 98166 Messina, Italy; S. Quici, CNR-ISTM, V. Golgi 19, 20133 Milano, Italy
- A/PIII.57** APPLICATION POSSIBILITIES AND CHEMICAL ORIGIN OF SUB-MICROMETER ADHESION MODULATION ON POLYMER GRATINGS PRODUCED BY UV LASER ILLUMINATION
M. Csete, G. Kurdi, J. Kokavecz, K. Osvay, Zs. Bor, Department of Optics and Quantum Electronics, University of Szeged, Dóm tér 9, 6720 Szeged, Z. Schay, Department of Surface Chemistry and Catalysis, Chemical Research Centre, Konkoly Thege M. út 29-33, 1121 Budapest, Hungary, O. Marti, Department of Experimental Physics, University of Ulm, Albert Einstein Allee 11, 89069 Ulm, Germany
- A/PIII.58** SYNTHESIS OF NANOSTRUCTURED FIBERS
T.M. Ulyanova, N.P. Krut'ko, L.V. Titova, S.V. Medichenko, Paemurd E.S., O.Y. Kalmychkova, Institute of General and Inorganic Chemistry of the National Academy of Sciences of Belarus, 9 Surganov Str., Minsk 220072, Belarus
- A/PIII.59** PROPERTIES OF NANOSTRUCTURED ZrO₂, ZrSi_xO_y AND HfSi_xO_y THIN FILMS DEPOSITED BY LASER ABLATION
M. Filipescu(a), N. Scarisoreanu(a), V. Craciun(b), G. Dinescu(a), A. Ferrari(c), M. Balucani(c), C. Ghica(d), L.C. Nistor(d), M. Dinescu(a), (a)National Institute for Laser, Plasma and Radiation Physics, PO Box MG-16 Magurele, 077125 Bucharest, Romania, (b)University of Florida, USA, (c)INFN, Unit E6, University "La Sapienza", Rome, Italy, (d)National Institute for Material Research, Bucharest, 77125, Bucharest, Romania
- A/PIII.60** FORMATION OF NANOCRYSTALLINE STRUCTURES AND DEVELOPMENT OF SELF-ORGANIZING PROCESSES IN METALS BY THE LOW-ENERGY ION IRRADIATION
I.V. Tereshko, V.V. Glushchenko, A.M. Tereshko, I.E. Elkin, V.V. Abidzina, Belarusian-Russian University, Prospect Mira 43, 212005 Mogilev, Belarus and S. Stoye, Noble Products, Germany GmbH, Postfach 0110, Clara-Zetkin Str. 34, Roslau, Germany
- A/PIII.61** SELF-ORGANIZATION OF CONDUCTIVE NANO-DOTS ON ITO LAYERS BY HYDROGEN PLASMA TREATMENTS
A.G. Ulyashin, K. Maknys, A.Yu. Kuznetsov, B.G. Svensson, University of Oslo, Department of Physics, Centre for Material Science and Nanotechnology, Sem Saelands vei 24, P.O.Box 1048 Blindern, 0316 Oslo, Norway
- A/PIII.62** FABRICATION OF METALLIC CONTACTS TO NANOMETRE-SIZED MATERIALS USING A FOCUSED ION BEAM (FIB)
F. Hernández-Ramírez, J. Rodríguez, O. Casals, A. Vilà, A. Romano-Rodríguez, J.R. Morante, EME, Dept Electronics, Universitat de Barcelona, Martí i Franqués 1, 08028 Barcelona, Spain, and M. Abid, LPMN, EPFL, 1015 Lausanne, Switzerland
- A/PIII.63** THERMOPLASTIC POLYMER NANOCOMPOSITES FOR APPLICATIONS IN OPTICAL DEVICES
Eberhard Ritzhaupt-Kleissl(a,b), Johannes Böhm(a), Thomas Hanemann(a,b), Jürgen Haußelt(a,b), (a)Institute for Materials Research III, Forschungszentrum Karlsruhe, Postfach 3640, 76021 Karlsruhe, Germany, (b)Institut für Microsystem Technology, Universität Freiburg, Georges-Köhler-Allee 102, 79110 Freiburg, Germany
- A/PIII.64** SYNTHESIS AND PURIFICATION OF NANOCRYSTALLINE TITANIUM OXIDE BY COLUMNAR SEPARATION
Ahalapitiya H. Jayatissa and Ananthramprasad Dadi, MIME Department, College of Engineering, The University of Toledo OH 4600, USA
- A/PIII.65** POLYPYRROLE FUNCTIONALIZED POROUS SILICON FOR GAS SENSING APPLICATIONS
V. Vrkoslav, I. Jelínek, Department of Analytical Chemistry, Charles University Prague, Faculty of Sciences, Hlavova 2030, 128 40 Prague 2, Czech Republic, G. Broncová, V. Král, Department of Analytical Chemistry, Institute of Chemical Technology, Technická 5, 166 28 Prague 6, Czech Republic, J. Dian, Department of Chemical Physics and Optics, Charles University Prague, Faculty of Mathematics and Physics, Ke Karlovu 3, 121 16 Prague, Czech Republic
- A/PIII.66** DEVELOPMENT OF A POLYMER LIGHT-EMITTING DIODE BASED ON A COMBINATION OF LANGMUIR-BLODGETT DEPOSITION AND LAYER-BY-LAYER ASSEMBLY
F. Gambinossi(a), G. Barile(b), P. Baglioni(a) and G. Caminati(a), (a)Department of Chemistry, University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino, Florence, Italy, (b)Sirio Panel S.p.A, Levannella Becorpi, 52025 Montevarchi-Arezzo, Italy

Friday, June 3, 2005
Vendredi 3 juin 2005

Morning
Matin

Session VIII : Nano optics
Session chairs : W. Jantsch

- A-VIII.01** 8:30 NANOCRYSTAL BASED MICROCAVITY EMITTERS OPERATING AT A WAVELENGTH OF 1.54 MICRONS
J. Roither, M.V. Kovalenko, S. Pichler, T. Schwarzl, and W. Heiss, Institute of Semiconductor and Solid State Physics, University of Linz, 4040 Linz, Austria
- A-VIII.02** 8:50 DEMONSTRATION OF AN ELECTRICALLY PUMPED SI-BASED QUANTUM DOT OPTICAL AMPLIFIER
S. Fukatsu(a,b), M. Jo(a), N.Yasuhara(a), Y. Sugawara (c), and K. Kawamoto(a), (a)Graduate School of Arts and Sciences, The University of Tokyo, Komaba, Meguro, Tokyo 153-8902, Japan, (b)PRESTO, JST, Kawaguchi, Saitama 332-0012, Japan, (c)JST, Kawaguchi, Saitama 332-0012, Japan
- A-VIII.03** 9:10 SIZE AND SHAPE IMPACT ON EXCITON AND BIEXCITON IN SINGLE INAS/INP QUANTUM ISLANDS
N. Chauvin, B. Salem, G. Guillot, C. Bru-Chevallier, G. Bremond, LPM, UMR CNRS 5511, INSA de Lyon, 69621 Villeurbanne Cedex, France, C. Monat, P. Rojo-Romeo, M. Gendry LEOM, UMR CNRS 5512, Ecole Centrale de Lyon, 69134 Ecully Cedex, France
- A-VIII.04** 9:30 METAL AND SEMICONDUCTOR NANOPARTICLES IN THE SOL-GEL MATRICES: STRUCTURAL FEATURES, LINEAR AND NON-LINEAR OPTICS AND APPLICATIONS
V.S. Gurin, Physico-Chemical Research Institute, Belarusian State University, Leningradskaya str. 14, 220080 Minsk, Belarus; A.A. Alexeenko, Gomel State Technical University, Gomel, Belarus; S.A. Zolotovskaya, K.V. Yumashev, International Laser Center, Minsk, Belarus
- A-VIII.05** 9:50 OPTICAL PROPERTIES AND PHOTONIC MODES IN PATTERNED SEMICONDUCTOR SYSTEMS
L. Pilozzi, N. Tomassini, D. Schiumarini and A. D'Andrea, Istituto dei Sistemi Complessi, CNR, Sezione Staccata di Montelibretti, 00016 Monterotondo Scalo (Roma), Italy
- A-VIII.06** 10:10 NON-LINEAR OPTICAL FUNCTIONS OF CRYSTALLINE-Si RESULTING OF NANOSCALE LAYERED SYSTEM
Z.T. Kuznicki, M. Ley, 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, G. Sarabayrouse, B. Rousset, F. Rossel, LAAS-CNRS, 7 Avenue du colonel Roche, 31077 Toulouse cedex 4, France, H. Migeon, T. Wirtz, LAM, Centre de Recherche Public – Gabriel Lippmann, 162a, av. de la Faiaencerie, 1511 Luxemburg, Luxembourg
- 10:30 **BREAK**

Session IX : Polymers
Session chairs : P. Baglioni

A-IX.01	11:00	<p>NANOSTRUCTURING FUNCTIONAL MATERIALS BY COMBINED LITHOGRAPHICALLY CONTROLLED WETTING AND MICROMOLDING IN CAPILLARIES</p> <p>Massimiliano Cavallini(a), Pablo Stoliar(a), Massimo Facchini(a), Fabio Biscarini(a), Mathieu Surin(b), Roberto Lazzaroni(b), Philippe Leclère(b), Andrew C. Grimsdale(c), Prashant Sonar(c), Klaus Müllen(c), (a)CNR Istituto per lo Studio dei Materiali Nanostrutturati sez. Bologna, Italy, (b)Service de Chimie des Matériaux Nouveaux, Université de Mons-Hainaut, Mons, Belgium, (c)Max-Planck-Institut für Polymerforschung, Mainz, Germany</p>
A-IX.02	11:20	<p>MICRO AND NANO STRUCTURING BY MICROCONTACT PRINTING AND SELECTIVE SURFACE DEWETTING</p> <p>Amare Benor, Dietmar Knipp, Veit Wagner, International University Bremen, School of Science and Engineering, 28759 Bremen, Germany</p>
A-IX.03	11:40	<p>SELF-ASSEMBLY OF SUPRAMOLECULAR NANOSTRUCTURED ACCEPTOR-DONOR BLENDS FOR PHOTOVOLTAIC APPLICATIONS: STRUCTURAL AND ELECTRICAL PROPERTIES</p> <p>Vincenzo Palermo(a), Susanna Morelli(a,b), Christopher Simpson(c), Fabian Nolde(c), Klaus Müllen(c), Paolo Samori(a,d), (a)ISOF-CNR, via Gobetti 101, 40129 Bologna, Italy, (b)DICMA, Università di Bologna, viale Risorgimento 2, 40136 Bologna Italy, (c)Max-Planck Institute for Polymer Research, Ackermannweg 10, 55124 Mainz, Germany, (d)Nanochemistry Laboratory, ISIS-ULP, 8 allée Gaspard Monge , 67083 Strasbourg, France</p>
A-IX.03	12:10	<p>OLIGO- AND POLY-MERIC FET DEVICES: THIOPHENE-BASED ACTIVE MATERIALS AND THEIR INTERACTION WITH DIFFERENT GATE DIELECTRICS</p> <p>W. Porzio, A. Angiulli, P. Di Gianvincenzo, Istituto per lo Studio delle Macromolecole del CNR, via E. Bassini 15, 20133 Milano, Italy, E. Peron, F. Perissinotti, Laboratorio MDM Istituto Nazionale di Fisica della Materia, via Olivetti 2, 20041 Agrate (Mi), Italy, D. Natali, M. Caironi, L. Fumagalli, Dipartimento di Elettronica e Informazione, Politecnico di Milano, p.za L. da Vinci 32 20133 Milano, Italy, and Istituto Nazionale Fisica Nucleare, sez. di Milano, via Celoria 16, 20133 Milano Italy</p>
	12:30	LUNCH