



Strasbourg (France)

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

## SYMPOSIUM G

Current trends in nanoscience – from materials  
to applications

### Symposium Organizers:

Marshall Stoneham, University College, London, U.K.

Hermann Grimmeiss, University of Lund, Sweden

Giovanni Marletta, University of Catania, Italy

George Jeronimidis, University of Reading, U.K.

Papers will be published in Materials Science and Engineering C

# E-MRS 2004 SPRING MEETING

## SYMPOSIUM G

Tuesday, May 25, 2004

Morning

Session I

- G-I.01** 09:10 THE GROWTH AND ELECTRICAL PROPERTIES OF SELF-ORGANIZED METAL-OXIDE NANOSTRUCTURES FORMED BY ANODIC OXIDATION OF SPUTTER-DEPOSITED Ta-Al BILAYERS  
A. Mozaley, G. Gorokh, Department of Microelectronics, Belarusian State University of Informatics and Radioelectronics, 6, Brovka Str., Minsk 220013, Belarus and M. Sakairi, H. Takahashi, Interface Micro-Structure Analysis Laboratory, Graduate School of Engineering, Hokkaido University, N-13,W-8, Sapporo 060-8628, Japan
- G-I.02** 09:25 OPTIMIZING THE GROWTH OF 1300 NM INAS/GAAS QUANTUM DOTS WITH INGAAS AND INALAS LAYER  
H.Y. Liu(a), I.R. Sellers(b), K.M. Groom(a), M. Hopkinson(a), T.J. Badcock(b), D.J. Mowbray(b) and M. S. Skolnick(b), (a)Department of Electronic & Electrical Engineering, University of Sheffield, Sheffield S1 3JD, U.K., (b)Department of Physics & Astronomy, University of Sheffield, Sheffield S3 7RH, U.K.
- G-I.03** 09:40 -Invited- ELECTRONIC CONFINEMENT AND C-AXIS CONDUCTIVITY IN LAYERED PEROVSKITE MANGANITES  
**Ch. Renner**(a), H.M. Roennow(b) and G. Aeppli(a), (a)London Centre for Nanotechnology, UCL, London, U.K., (b)Paul Scherrer Institute, Villigen, Switzerland
- G-I.04** 10:15 NANOFABRICATION OF COILS FOR BIOSENSOR APPLICATIONS BY FOCUSED ION BEAM (FIB)  
A. Vilà, F. Hernández, A. Romano-Rodríguez, S. Martínez, C. Serre, A. Pérez-Rodríguez, J.R. Morante, EME-CeRMAE, Department of Electronics, Physics Faculty, University of Barcelona, Martí i Franqués 1, 08028-Barcelona, Spain
- G-I.05** 10:30 NANO-SCALE STRUCTURES BASED ON PHOTOCHROMIC ORGANIC COMPOUNDS  
Valery A. Barachevsky, Photochemistry Center, Russian Academy of Sciences, 7a Novatorov Street, Moscow 119421, Russia
- 10:45 **BREAK**

Session II

- G-II.01** 11:10 -Invited- ADVANCES IN SCANNING PROBE MICROSCOPY FOR NANOTECHNOLOGY  
**Mervyn Miles**, Andy Humphris, Jamie Hobbs, Massimo Antognozzi, Andy Round, James Vicary, Loren Picco and Terry McMaster, H.H. Wills Physics Laboratory & Interdisciplinary Research Centre for Nanotechnology, University of Bristol, Tyndall Avenue, Bristol BS8 1TL, U.K.
- G-II.02** 11:45 SUB-MICROMETER ADHESION MODULATION ON POLYMER SURFACES CONTAINING GRATINGS PRODUCED BY TWO-BEAM INTERFERENCE  
M. Csete, Cs. Vass, N. Kresz, K. Osvay and Zs. Bor, Department of Optics and Quantum Electronics, University of Szeged, Dóm tér 9, 6720 Szeged, Hungary, S. Hild, O. Marti, Department of Experimental Physics, University of Ulm, Albert Einstein Allee 11, 89069 Ulm, Germany
- G-II.03** 12:00 LIGHT-INDUCED RANDOM WALK MOTION OF AN AZOBENZENE-CONTAINING POLYMER  
**Boris Bellini**, Jorg Ackermann, Hubert Klein, Philippe Dumas, CRMCN – UPR 7251, Faculté des Sciences de Luminy, Université Aix-Marseille II et III, Marseille, France
- G-II.04** 12:15 SWITCHING OF INDIVIDUAL PHOTOCHROMES  
Nicolas Battaglini, Hubert Klein, Philippe Dumas, CRMC, CNRS, Marseille, France
- 12:30 **LUNCH**

Tuesday, May 25, 2004

Afternoon

Session III

- G-III.01** 14:00 -Invited- GROWTH OF HIGH QUALITY SINGLE WALL CARBON NANOTUBES AND THEIR APPLICATION IN TOP GATE AND SIDE GATE TRANSISTORS  
**K.B.K. Teo**(a), R.G. Lacerda(a), M.H. Yang(a), A.S. Teh(a), L.A.W. Robinson(a), S.H. Dalal(a), N.L. Rupesinghe(a), F. Wyczisk(b), K. Koziol(a), D. Roy(a), M. Chhowalla(a), D.G. Hasko(a), P. Legagneux(b), G.A.J. Amaratunga(a), and W.I. Milne(a), (a)University of Cambridge, U.K., (b)Thales Research and Technology, France
- G-III.02** 14:35 OPTICAL MEASUREMENT OF SINGLE WALL CARBON NANOTUBE PROCESSING BY PULSED LASER  
F. Nakanishi, K. Sakamoto, T. Ikegami, K. Ebi-hara, Kumamoto University, 2-39-1 Kurokami, Kumamoto, 860-8555, Japan
- G-III.03** 14:50 A COMPREHENSIVE STUDY OF THE CVD PROCESSES TO GROW ALIGNED FILMS OF CARBON NANOTUBES AND OTHER CARBON NANOSTRUCTURES  
CS Cojocar(u), B. Vigolo(a), O. Ersen(a), P. Parent(b), K. Lafon(b), F. Le Normand(a), (a)IPCMS, UMR 7504 CNRS, Po Box 43, Bat 69, 23 rue du Loess, 67034 Strasbourg Cedex, France, (b)LURE, B. 209D, Centre Universitaire Paris Sud, 91405 Orsay Cedex, France
- G-III.04** 15:05 NUCEATION MECHANISM OF Ag NANOCRYSTALS IN SILICATE GLASSES UNDER GAMMA - vs. HEAVY ION - IRRADIATION  
R. Espiau de Lamaestre, H.Béa and H. Bernas, CSNSM-CNRS (UMR 8609), Université Paris-Sud, 91405 Orsay, France
- G-III.05** 15:20 SINGLE ELECTRON CHARGING MECHANISMS INTO SILICON QUANTUM DOTS REALIZED BY ULTRA LOW ENERGY IMPLANTATION  
A. Beaumont(A), P. Normand(B), G. Ben Assayag(C), A. Claverie(C), A. Souifi(a), (a)LPM-INSA, Bât.502, 20 Avenue Albert Einstein, 69621 Villeurbanne cedex, France, (b)IMEL, NCSR "Demokritos", 15310 Aghia Paraskevi, Greece, (c)CEMES-CNRS, 29 rue J. Marvig BP 4347, 31055 Toulouse Cedex 4, France
- 15:35 **BREAK**

Session IV

- G-IV.01** 16:10 -Invited- RECENT ADVANCES IN THE FABRICATION OF 1-DIMENSIONAL NANOSTRUCTURES  
**K. Shantha Shankar** and A.K. Raychaudhuri, Department of Physics, K. Shantha Shankar Indian Institute of Science, Bangalore 560012, India
- G-IV.02** 16:45 LIGHT INDUCED CHARGE SEPARATION ON MGO AND TiO<sub>2</sub> NANOPARTICLES  
Q. Diwald, M. Sterrer, T. Berger and E. Knözinger, Institut für Materialchemie, Technical University of Vienna, c/o Veterinärplatz 1/ Trakt GA, 1210 Vienna, Austria
- G-IV.03** 17:00 STUDIES ON THE EFFECT OF UV IRRADIATION ON Mn-DOPED ZnS NANOPARTICLES  
Almira B. Cruz, Taro Toyoda, Department of Applied Physics and Chemistry, The University of Electro-Communications, 1-5-1 Chofugaoka, Chofu City, Tokyo 182-8585, Japan
- G-IV.04** 17:15 ULTRAFAST CARRIER DYNAMICS OF CdSe-SENSITIZED NANOSTRUCTURED TiO<sub>2</sub> ELECTRODES USING LENS-FREE HETERODYNE DETECTION TRANSIENT GRATING TECHNIQUE  
T. Toyoda, Q. Shen, Department of Applied Physics and Chemistry, The University of Electro-Communications, 1-5-1 Chofugaoka, Chofu, Tokyo 182-8585, Japan and K. Katayama, T. Sawada, Graduate School of Frontier Sciences, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656, Japan
- G-IV.05** 17:30 HIERACHY OF ELECTRON AND HOLE TRAPS AND ENERGY TRANSFER ON OXIDES SURFACES: CASE STUDY OF MGO  
P.V. Sushko, A.L. Shluger, Department of Physics & Astronomy, University College London, Gower Street, London, WC1E 6BT, U.K. and M. Sterrer, O. Diwald, E. Knözinger, Institut für Materialchemie, Technische Universität Wien, c/o Veterinärplatz 1/GA, 1210 Wien, Austria
- 17:50 – 19:00 POSTER SESSION 1

- G/PI.01** EFFECTS OF METALLIC CONTACTS ON SILICON NANOSTRUCTURES STUDIED QUANTUM MECHANICALLY  
C. Summonte and A.M. Mazzone, C.N.R.-Istituto IMM, Sezione di Bologna-Via Gobetti 101, 40129 Bologna, Italy
- G/PI.02** QUANTUM FIELD THEORY OF NANO-CRYSTALLIZATION OF IONIC CRYSTALS IN THE PRESENCE OF MAGNETIC FIELDS  
A.C. Cefalas(a), S. Kobe(b), Z. Kollia(a), E. Sarantopoulou(a), (a)National Hellenic Research Foundation, TPCI, Athens 11635, Greece, (b)Department of Nanostructured Materials, Jozef Stefan Institute, Jamova 39, Ljubljana, Slovenia
- G/PI.03** THEORETICAL STUDY ON JUNCTION OF METAL PORPHYRIN OLIGOMER FOR MOLECULAR NANO-ELECTRONICS  
Hiroshi Mizuseki, Yoshiyuki Kikuchi, Rodion V. Belosludov, Amir A. Farajian and Yoshiyuki Kawazoe, Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan
- G/PI.04** MANY PARTICLE APPROACH TO EXCITONS IN CRYSTALS AND IN QUANTUM SIZE STRUCTURES  
A.M. Yaremko(a), B. Silvi(b), (a)Institute of Semiconductor Physics NASU, 03-028 Kiev, Ukraine, (b)University P&M Curie, 75000, Paris, France
- G/PI.05** COMPUTER SIMULATION OF ELECTRON TRANSFER IN MOLECULAR ELECTRONIC DEVICES  
Helena M.G. Correia, Marta M. D. Ramos, Departamento de Física, Universidade do Minho, Largo do Paço, 4700-320 Braga, Portugal
- G/PI.06** FANO-TYPE RESONANCE IN OPTICAL TRANSITIONS BETWEEN THE ABOVE-BARRIER STATES IN ALGAAS/GAAS COMPOSITE QUANTUM WELL STRUCTURES  
S.J. Xu and Y. Huang, Department of Physics and HKU-CAS Joint Laboratory on New Materials, The University of Hong Kong, Pokfulam Road, Hong Kong, China
- G/PI.07** GIGAHERTZ ACTUATOR OF MULTI-WALL CARBON NANOTUBE ENCAPSULATING METALLIC IONS: MOLECULAR DYNAMICS MODELLING AND SIMULATIONS  
Jeong Won Kang(a), Ki Ryang Byun(a), Won Young Choi(a), On Keun Kwon(b) and Ho Jung Hwang(a), (a)Department of Electronic Engineering, Chung-Ang University, 221 HukSuk-Dong, DongJak-Ku, Seoul 156-756, South Korea, (b)Department of eCommerce, Semyung University, Jecheon 390-711, South Korea
- G/PI.08** ELECTRONIC STRUCTURE CALCULATIONS FOR ZnSxSe1-x  
S. Ben Nasrallah, S. Ben Afia, H. Belmabrouk and M. Said, Unité de Physique des solides, Département de Physique, Faculté des Sciences de Monastir, 5019 Monastir, Tunisie
- G/PI.09** NUMERICAL STUDY OF ALIGNED CARBON NANOTUBE ARRAYS ON FIELD EMISSION PROPERTIES  
Dohyung Kim, Jean-Eric Bourée, Laboratoire de Physique des Interfaces et des Couches Minces, CNRS UMR 7647, Ecole Polytechnique, 91128 Palaiseau Cedex, France
- G/PI.10** LINEAR ELECTRONIC RESPONSE OF AN ORGANIC COMPLEX  
Mathias Kula, Department of Theoretical Chemistry, Royal Institute of Technology, Sweden, Yi Luo, Department of Theoretical Chemistry, Royal Institute of Technology, Sweden
- G/PI.11** ENERGY STRUCTURE OF MAGNETIC QUANTUM WIRES  
M. Labuz(a), A. Wal(a), M. Kuzma(a), (a) University of Rzeszow, Institute of Physics, Rejtana 16a, 35-959 Rzeszow, Poland
- G/PI.12** SCHEMATICS AND SIMULATIONS OF NANO-MEMORY DEVICE BASED ON NANOPEAPODS  
Jeong Won Kang, Ki Ryang Byun, Won Young Choi and Ho Jung Hwang, Department of Electronic Engineering, Chung-Ang University, 221 HukSuk-Dong, DongJak-Ku, Seoul 156-756, Korea
- G/PI.13** SIMULATION OF SELF-ASSEMBLING FORMATION OF BARRIER-LAYER NANOSTRUCTURAL DIODE CONTACTS NI/IR-GAAS N-TYPE  
S.A. Beznosyuk, L.V. Fomina, Altai State University, Lenin Av. 61, 656049 Barnaul, Russia
- G/PI.14** UNIQUE OPPORTUNITY FOR PHOTO-ACOUSTO-ELECTRONIC RESONANCE IN QUANTUM NANOTUBES  
V.V. Pokropivny, Frantsevich Institute for Problems of Materials Science of NASU, Krzhynanovskiy 3, 03142 Kiev, Ukraine
- G/PI.15** RADIOLYTIC PREPARATION OF SILVER CLUSTERS FROM CATIONS-DOPED COLLOIDAL ZEOLITES  
V. De Waele(a), S. Mintova(b), M. Mostafavi(a), T. Bein(b), (a)Laboratoire de Chimie Physique-ELYSE, CNRS-Univ. Paris Sud.11, 91405 Orsay, France, (b)Department of Chemistry, LMU, Butenandtstr. 11, 81377 Munich, Germany
- G/PI.16** THERMAL TRANSPORT IN SIC NANOSTRUCTURES  
Eleni Ziambaras and Per Hyldgaard, Chalmers University of Technology, Gothenburg, Sweden
- G/PI.17** MODELING OF TUNNEL CONDUCTION IN SEMICONDUCTING NANO-DOT DEVICES  
Anne-Sophie Cordan, Yann Leroy, PHASE, BP 10413, 67412 Illkirch, France
- G/PI.18** DEPENDANCE OF TEMPERATURE OF HOMOGENE LINE WIDTH OF InGaAs/InAs/GaAs QUANTUM DOTS  
W. Ouerghui(a), A. Melliti(a), M.A. Maaref(a), J. Bloch(b), (a)Unité de recherche de physique des semi-conducteurs, Institut Préparatoire aux études Scientifiques et techniques, la Marsa 2070, Tunisia, (b)Laboratoire de photonique et nanostructures, CNRS, UPR20, France

- G/PI.19** PULSE PROPAGATION IN NANO-SCALE DEVICES  
Ulrich Wulf(a) and V.V. Skalozub(b), (a)IHP/BTU Joint Lab and Lehrstuhl Theoretische Physik, Postfach 101344, 03013 Cottbus, Germany, (b)Dnepropetrovsk National University, Dnepropetrovsk 49050, Ukraine
- G/PI.20** FROM MESOSCOPIC MAGNET TO QUANTUM WIRE. THE BETHE ANSATZ APPLICATION  
A. Wal, University of Rzeszow, Institute of Physics, Rejtana 16a, 35-959 Rzeszow, Poland
- G/PI.21** OPTICAL PROPERTIES OF A 1D RESONANT BRAGG REFLECTOR  
 Andrea D'Andrea, Laura Pilozzi, Istituto di Metodologie Inorganiche e dei Plasmi, IMIP, CNR, Roma, Italy
- G/PI.22** AB-INITIO ELECTRONIC AND MAGNETOTRANSPORT STUDIES OF M/Si/M TRILAYER SYSTEMS WITH M=Fe or Co  
P. Vlaić(a), M. Alouani(a), H. Dreyssé(a), O. Bengone(b), I. Turek(c), (a)Institute de Physique et Chimie des Matériaux de Strasbourg, UMR 7504 du CNRS, 23 rue du Loess, 67034 Strasbourg Cedex, France, (b)Condensed Matter Theory Group, Physics Department, Uppsala University, 75121 Uppsala, Sweden, (c)Institute of Physics of Materials, Academy of Science of the Czech Republic, 616 62 Brno, Czech Republic
- G/PI.23** MICRO AND MACRO-PHOTOLUMINESCENCE STUDIES ON INAS/INP(001) QUANTUM STICKS  
N. Chauvin, G. Bremond, B. Salem\*, T. Benyattou, C. Bru-Chevallier, G. Guillot, 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
- G/PI.24** THEORETICAL AND EXPERIMENTAL STUDY OF THE INFLUENCE OF GROWTH TEMPERATURE ON COMPOSITION IN SELF-ASSEMBLED SiGe QD's  
A.M. Yaremko, V.P. Bukalo, V.M. Dzhagan, V.P. Klad'ko, V.P. Melnik, M.Ya. Valakh, V.O. Yukhymchuk, Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Prospekt Nauki 45, 03028 Kyiv, Ukraine, Z.F. Krasil'nik, D.N. Lobanov, A.V. Novikov, Institute for Physics of Microstructures, RAS, 603600 N.Novgorod, Russia
- G/PI.25** BONDING OF SILICON BASED NANO-COMPOSITES ON THE SURFACE OF OPTICAL CRYSTALS  
 E. Sarantopoulou, Z. Kollia and A.C. Cefalas, National Hellenic Research Foundation, 48 Vassileos Constantinou Avenue, Athens 11635 Greece, S. Šturm, S. Kobe, Jozef Stefan Institute, Jamova 39, 1001 Ljubljana, Slovenia
- G/PI.26** CARBON NANOTUBES TIPS  
M. Kaempgen(a), S. Hofmann(b), J.C. Meyer(a), J. Robertson(b), S. Roth(a), (a)Max-Planck-Institute for Solid State Research, Stuttgart, Germany, (b)Electronic Devices and Materials, Engineering Department, Cambridge, U.K.
- G/PI.27** NANOCRYSTALS OF HYDROXYAPATITE IN AGGREGATES WITH C60 AS HIGH BIOACTIVE SYSTEM  
O.I. Lysko, Medical Radiophysical Department, National Taras Shevchenko University of Kiev, 64 Volodymirska St., 01033 Kyiv, Ukraine
- G/PI.28** AN EFFECT OF GLASS MATRIX UPON FORMATION AND OPTICAL PROPERTIES OF CdSe<sub>x</sub>Te<sub>1-x</sub> NANOPARTICLES  
 A.P. Molochko, N.P. Solovei, I.V. Bodnar, Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus, V.S. Gurin, Physico-Chemical Research Institute, Belarusian State University, Minsk, Belarus
- G/PI.29** SENSING OF BIOMOLECULES/CNT AND WATER/CNT NANOSYSTEMS PROPERTIES ON A TEMPERATURE AND UV-LIGHT ILLUMINATION  
D.G. Kolomyiets, Radiophysical Faculty, Medical Department, Taras Shevchenko National University of Kiev, The Scientific and Training Center "Physical and Chemical Material Science of Kiev National Taras Shevchenko University and NASU", 64 Vladimirska str., Kiev 01033, Ukraine
- G/PI.30** FERROELECTRIC NANOTUBE ARRAY GROWTH IN ANODIC POROUS ALUMINA NANOHOLES ON SILICON  
 Sungchul Kang, Kwan Hyi Lee, Won Young Jeung and Jeon-Kook Lee, Materials Science and Technology Division, Korea Institute of Science and Technology, P.O. Box 131, CheongRyang, Seoul 130-650, Korea
- G/PI.31** GROWTH OF SiC NANOFIBERS ON CARBON FIBERS  
Young-Jae Lee, R&D center, Samsung Fine Chemicals, Co., Ltd., 103-1 Moonji-Dong, Yoosung-Gu, Daejeon 305-380 Korea
- G/PI.32** PREPARATION OF ORDERED NANOWIRE ARRAYS USING POROUS ALUMINA TEMPLATES  
 A.A. Eliseev, K.S. Napolskii, A.V. Lukashin, Yu.D. Tretyakov, Department of Materials Science, Moscow State University, Moscow 119992, Russia, P. Görnert, Innovent e.V., Prussingstr. 27, Jena 07745, Germany
- G/PI.33** FABRICATION AND CHARACTERIZATION OF CdMnS NANOPARTICLES IN LANGMUIR-BLODGETT FILM MATRIX  
 V.I. Fediv, A.I. Savchuk, A.G. Voloshchuk, I.M. Fodchuk, Department of Physical Electronics and Non-Traditional Energy Sources, Chernivtsi National University, 58012 Chernivtsi, Ukraine
- G/PI.34** SYNTHESIS AND CHARACTERIZATION OF METAL NANOPARTICLES  
 V. Tzitzios, V. Georgakilas, D. Petridis, D. Tassis, Institute of Material Science N.C.S.R "Demokritos", Athens, Greece
- G/PI.35** ZIRCONIA-BASED NANOCRYSTALLINE MATERIAL SYNTHESIZED BY DIRECTIONAL CRYSTALLIZATION FROM THE MELT  
 V.V. Alisin(b), M.A. Borik(a), E.E. Lomonova(a), A.F. Melshanov(b), G.V. Moskvitin(b), V.V. Osiko(a), V.A. Panov(a), V.G. Pavlov(b), O.E. Porodinkov(a), M.A. Vishnyakova(a), (a)Laser Materials and Technologies Research Center of GPI, Russian Academy of Sciences, 38 Vavilov St., Moscow, 117942, Russia, (b)Mechanical Engineering Research Institute, Russian Academy of Sciences, 35 Vavilov St., Moscow, 117942, Russia

- G/PI.36** MONODISPERSE GOLD NANOPARTICLES FORMED ON BACTERIAL CRYSTALLINE SURFACE LAYERS (S-LAYERS) BY ELECTROLESS DEPOSITION  
S. Dieluwit(a,b), D. Pum(a), U.B. Sleytr(a), W. Kautek(c), (a)Center for Nanobiotechnology, University of Natural Resources and Applied Life Sciences (BOKU), Gregor Mendel-Strasse 33, 1180 Vienna, Austria, (b)Present address: Research Centre Juelich, 52425 Juelich, Germany, (c)Laboratory for Thin Film Technology, Federal Institute for Materials Research and Testing, Unter den Eichen 87, 12205 Berlin, Germany
- G/PI.37** CRITICAL BARRIER THICKNESS FOR THE FORMATION OF InGaAs QUANTUM DOTS  
M. Gutiérrez, M. Hopkinson, J.S. Ng and H.Y. Liu, Department of Electronic and Electrical Engineering, University of Sheffield, Mapping Street, Sheffield S1 3JD, U.K., M. Herrera, D. González and R. García, Departamento de Ciencia de los Materiales e I.M. y Q.I., Universidad de Cádiz, Apartado 40, 11510 Puerto Real, Cádiz, Spain
- G/PI.38** NANOPARTICLES SEPARATION BY MESOPOROUS MOLECULAR SIEVES  
A.A. Eliseev, I.V. Kolesnik, A.V. Lukashin, R. B. Vasiliev Department of Materials Science, Moscow State University, Moscow 119992, Russia
- G/PI.39** PH-CONTROLLED SELF ASSEMBLED NANO-HETERO-STRUCTURES BASED ON OLIGOTHIOPHENE FUNCTIONALISED RU NANOPARTICLES  
M. Tarik, A. Yassar, G. Viau, N. Chakroune, A. Jaafari, F. Fievet, P-C. Lacaze, ITODYS, Université Denis Diderot Paris-7, 1 rue Guy de la Brosse, 75005 Paris, France
- G/PI.40** MOLECULAR CONTROLLED ELECTRONIC DEVICES IT IS ALL A MATTER OF CONTACTS?  
David Cahen, Adi Salomon, Jamal Ghabboun, Hossam Haick, Weizmann Institute of Science, Rehovoth, Israel
- G/PI.41** APPLICATION OF MATHEMATICAL CHEMISTRY APPROACHES IN NANOSCIENCE  
S.A. Beznosyuk, Altai State University, Lenin Av. 61, 656099 Barnaul, Russia
- G/PI.42** LANGMUIR-SHAEFER FILMS OF TAILORED MULTIFUNCTIONAL DIPOLAR RUTHENIUM COMPLEXES  
Sabrina Conoci(a), Santo Di Bella(b), Salvatore Petralia (b), Salvatore Sortino(b)and Ludovico Valli(c), (a)Sioptics & post Silicon Technologies Corporate R&D STMicroelectronics, Stradale Primosole 50, 95121 Catania,(Italy, (b)Dipartimento di Scienze Chimiche, Università di Catania, Viale Andrea Doria 8, 95125 Catania, Italy, (c)Dipartimento di Ingegneria dell'Innovazione, Università degli Studi di Lecce, Via Monteroni, 73100 Lecce, Italy

Wednesday, May 26, 2004

Afternoon

Session V: Joint with Symposium F

Hierarchical self-assembly at surfaces and interfaces

- F/G-V.01** 14:00 -Invited- RECENT ADVANCES ON THE LONG WAY FROM MONOLAYER SELF-ASSEMBLY TO ENTIRE SELF-ASSEMBLED NANODEVICES: A HIERARCHICAL BOTTOM-UP APPROACH  
R. Maoz, S. Hoepfner, S. Liu and **J. Sagiv**, Department of Materials & Interfaces, The Weizmann Institute of Science, 76100 Rehovot, Israel
- F/G-V.02** 14:40 MOLECULAR CONTROLLED ELECTRONIC DEVICES IT IS ALL A MATTER OF CONTACTS?  
David Cahen, Adi Salomon, Jamal Ghabboun, Hossam Haick, Weizmann Institute of Science, Rehovoth, Israel
- F/G-V.03** 15:00 SELF-ASSEMBLED PEPTIDE FIBRILS AS POTENTIAL ENGINEERING-MATERIALS  
Patrick Mesquida(a), Rachel McKendry(a), Cait MacPhee(b), (a)London Centre for Nanotechnology, Department of Medicine, University College London, U.K., (b)Department of Physics, University of Cambridge, U.K.
- F/G-V.04** 15:20 FRANK-KASPER NANOSTRUCTURES AND THE FIRST SUPRAMOLECULAR QUASICRYSTAL  
X.B. Zeng(a), G. Ungar(a), D.R. Dukeson(a), Y. Liu(a), V. Percec(b) and M.N. Holerca(b), (a)University of Sheffield, Department of Engineering Materials, Sheffield, U.K., (b)University of Pennsylvania, Department of Chemistry, Philadelphia, USA
- 15:40 **BREAK**

Session VI

16:10 – 17:50

Nanotechnology and Public Perceptins and Issues of Scientific Ethics:

Can we keep public confidence and avoid the concerns met by other technologies?

**Presentations:** **Professor Mark Welland (Cambridge)**  
**Dr. Renzo Tomellini (CEC)**

**Discussion**

17:50 – 19:00

POSTER SESSION 2

- G/PII.01** THERMAL EMISSION AND BAND-FILLING EFFECTS ON THE RISE TIME OF InGaAs/InAs/GaAs QUANTUM DOTS  
A. Melliti(a), M.A. Maaref(a), B. Sermage(b), J. Bloch(b), F. Saibi(c), F. Hassen(c), H. Maaref(c), (a)Unité de Recherche de Physique des Semiconducteurs et capteurs, Institut Préparatoire aux Etudes Scientifiques et Techniques, LAMarsa 2070, Tunisie, (b)Laboratoire de Photonique et de Nanostructures, CNRS, UPR20, France, (c)Laboratoire de Physique des Semiconducteurs, Faculté des Sciences de Monastir, Monastir, Tunisie
- G/PII.02** TRANSIENT SIMULATION FOR KINETIC RESPONSIVE BEHAVIORS OF ELECTRIC-SENSITIVE HYDROGELS SUBJECT TO THE APPLIED ELECTRIC FIELD  
Jun Chen, Department of Mechanical Engineering, National University of Singapore, Hua Li, Institute of High Performance Computing, Singapore, K.Y. Lam, Department of Mechanical Engineering, National University of Singapore
- G/PII.03** EXCITON DYNAMICS IN SELF-ORGANIZED InAs/GaAs QUANTUM DOTS  
A. Melliti(a), M.A. Maaref(a), F. Hassen(b), H. Maaref(b), J. Tignon(c), B. Sermage(d), (a)Unité de recherche de physique des semiconducteurs et capteurs, Institut préparatoire aux études scientifiques et techniques, La Marsa 2070, Tunisia, (b) Laboratoire de physique des semiconducteurs, Faculté des Sciences de Monastir, Monastir, Tunisia, (c) Laboratoire de physique de la matière condensée, Ecole Normale Supérieure, 24 rue Lhomond, 75231 Paris cedex 05, France, (d) Laboratoire de Photonique et de Nanostructures, CNRS, Route de Nozay, 91460 Marcoussis, France
- G/PII.04** ON THE ELECTRONIC TRANSPORT AND OPTICAL PROPERTIES OF SOME NEW POLY(AZOMETHINE) URETHANES IN THIN FILMS  
Mihaela Rusu(a), A. Stanciu(b), Mihaela Vasiloschi(a), G.G. Rusu(a), Mihaela Gîrtan(a), G.I. Rusu(a), (a)“A.I.I.Cuza” University, Faculty of Physics, Bd.Carol I 11, Iassy 700506, Romania, (b)“P.Poni” Institute of Macromolecular Chemistry, Aleea Grigore Ghica Voda 41 A, Iassy 6600, Romania
- G/PII.05** RHODAMINE 6G IMPREGNATED POROUS SILICA: A PHOTOLUMINESCENCE STUDY  
A. Anedda, C.M. Carbonaro, F. Clemente, R. Corpino, P.C. Ricci and S. Rossini, Dipartimento di Fisica, Università of Cagliari and INFM, UdR-Ca, s.p. n°8, Km 0.7, 09042 Monserrato, Cagliari, Italy
- G/PII.06** PHOTOLUMINESCENCE OF SILICA PARTICLES COATED WITH ZnO  
Márcia C. Neves, Tito Trindade, Chemistry Department, CICECO, University of Aveiro, 3810-193 Aveiro, Portugal, M.J. Soares, A. Neves, T. Monteiro, Physics Department, University of Aveiro, 3810-193 Aveiro, Portugal
- G/PII.07** PHOTOLUMINESCENCE FROM POROUS SILICON IMPREGNATED WITH COBALT PHTHALOCYANINE  
V. Vrkoslav(a), I. Jelínek(a), M. Matocha(b), V. Král(b), J. Dian(a), (a)Charles University Prague, Ke Karlovu 3, 121 16 Prague 2, Czech Republic, (b)Institute of Chemical Technology, Technická 5, 166 28 Prague 6, Czech Republic
- G/PII.08** CHARACTERISATION OF STRUCTURE AND DEFECTS IN DOT-IN-WELL LASER STRUCTURES  
M. Gutiérrez, M. Hopkinson, K. Groom and H.Y. Liu, Department of Electronic & Electrical Engineering, University of Sheffield, Sheffield S1 3JD, U.K., M. Herrera, D. González and R. García, Departamento de Ciencia de los Materiales e I.M. y Q.I., Universidad de Cádiz, Apartado 40, 11510 Puerto Real, Cádiz, Spain
- G/PII.09** METAL NANOCULSTER DIFFUSION IN POROUS SUBSTRATES ASSISTED BY PLASMA  
P. Brault, A. Caillard, A.L. Thomann, Groupe de Recherches sur l’Énergétique des Milieux Ionisés UMR6606-CNRS, Institut Polytechnique de l’Université d’Orléans, BP6744, 45067 Orléans Cedex 2, France, J. Durand, Institut Européen des Membranes UMR5635-CNRS, Université de Montpellier II - CC 47, Place Eugène Bataillon, 34095 Montpellier Cedex 5, France, R. Durand, Laboratoire de Matériaux Catalytiques et Catalyse en Chimie Organique UMR5618-CNRS, Ecole nationale supérieure de chimie de Montpellier, 8 Rue de l’école Normale, 34296 Montpellier Cedex 5, France, T. Sauvage, Centre d’Etudes et de Recherches par Irradiation UPR33-CNRS, 3A Rue de la Férollerie, 45071 Orléans cedex 2, France, S. Escribano, DRT/DTEN/SCSE/LHPAC CEA Grenoble, 17 rue des Martyrs, 38054 Grenoble cedex 9, France
- G/PII.10** PHOTOLUMINESCENCE IN NANOSTRUCTURED ZnO GROWN BY ELECTRODEPOSITION  
B. Marí(a), F.J. Manjón(a), M. Mollar(a), J. Cembrero(b), R. Gómez(c), (a)Departament de Física Aplicada, Universitat Politècnica de València, 46071 València, Spain, (b)Departament d’Enginyeria Mecànica i Materials, Universitat Politècnica de València, 46071 València, Spain, (c)Departament de Química Física, Universitat d’Alacant, Alacant, Spain
- G/PII.11** HYDROGENATION OF STRAIN ENGINEERED InAs/(InGa)As QUANTUM DOTS  
S. Mazzucato, D. Nardin, M. Capizzi, A. Polimeri, A. Frova, INFM – Physics Dept., Univ. of Roma “La Sapienza”, P.le A. Moro 2, 00185 Roma, Italy, P. Frigeri, L. Seravalli, S. Franchi, CNR-IMEM Institute, Parco delle Scienze 37a, 43100 Parma, Italy
- G/PII.12** MODIFICATION OF CaF<sub>2</sub> FILMS BY IMPLANTATION OF ACTIVE METALS IONS  
D.A. Tashmukhamedova, Tashkent State Technical University, Univirsitetskaya Street, 2 Home, 700095 Tashkent, Uzbekistan
- G/PII.13** THE FORMATION OF NANOCRYSTALLINE STRUCTURES ON THE SURFACE OF METALS BY THE LOW-ENERGY ION IRRADIATION  
I.V. Tereshko, V.V. Glushchenko, A.M. Tereshko, I.E. Elkin and V.V. Abidzina, Belarusian - Russian University, Prospect Mira 43, 212005 Mogilev, Belarus
- G/PII.14** THERMAL SPIKES IN NANOSCALE TRACKS OF SWIFT HEAVY IONS IN WIDE BAND GAP DIELECTRICS  
Alexander E. Volkov and Michael V. Sorokin, Institute of General and Nuclear Physics, Russian Research Centre “Kurchatov Institute”, Kurchatov Sq.1, 123182 Moscow, Russia, Kurt Schwartz, Gessellschaft fuer Schwerionenforschung, GSI, Planckstrasse 1, 64291, Darmstadt, Germany

- G/PII.15** SPATIAL SEGREGATION OF COMPONENTS IN MULTICOMPONENT SOLID SOLUTIONS IRRADIATED WITH SWIFT HEAVY IONS  
Alexander E.Volkov and Denis N. Korolev, Institute of General and Nuclear Physics, Russian Research Centre “Kurchatov Institute”, Kurchatov Sq.1, 123182 Moscow, Russia
- G/PII.16** MAGNETORESISTANCE DUE TO DOMAIN WALLS IN SEMICONDUCTING MAGNETIC NANOSTRUCTURES  
V.K. Dugaev, J. Berakdar, MPI fuer Mikrostrukturphysik, Halle, Germany, J. Barnas, A. Mickiewicz University, Poznan, Poland, W. Dobrowolski, Institute of Physics, PAN, Warsaw, Poland, V.F. Mitin, Institute of Semiconductor Physics, Kiev, Ukraine, M. Vieira, ISEL, Lisbon, Portugal
- G/PII.17** THERMALLY INDUCED RELAXATION PROCESSES IN SUPER-HARD NANOCOMPOSITES STUDIED BY MEANS OF INTERNAL FRICTION MEASUREMENTS  
S.Z. Li(a), Q.F. Fang(b), Z.S. Li(b), J. Gao(c), P. Nesladek(d), J. Prochazka(d) and S. Veprek(d), (a)Qingdao University of Science and Technology, Qingdao 266042, P.R. China, (b)Key Laboratory of Internal Friction and Defects in Solids, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei 230031, P.R. China, (c)Chengdu Tool Research Institute, Chengdu 610051, P.R.China, (d)Institute for Chemistry of Inorganic Materials, Technical University Munich, 85747 Garching, Germany
- G/PII.18** A COMPARATIVE STUDY OF PURE AND DOPED WITH PARAMAGNETIC IMPURITIES SEMICONDUCTOR NANOCRYSTALS  
A.I. Savchuk, V.I. Fediv, Ye.O. Kandyba, T.A. Savchuk, D.V. Ivanchenko, Department of Physical Electronics and Non-Traditional Energy Sources, Chernivtsi National University, 58012 Chernivtsi, Ukraine, A. Perrone, Physics Department and National Nanotechnology Laboratory of National Institute of Matter Physics, University of Lecce, 73100 Lecce, Italy
- G/PII.19** TEMPERATURE MODIFICATIONS OF BLUE EMISSION IN MESOPOROUS SILICA  
A. Anedda, C.M. Carbonaro, F. Clemente, R. Corpino, and P.C. Ricci Dipartimento di Fisica, Università di Cagliari, and INFN, UdR-Ca, s.p. n°8, Km 0.7, 09042 Monserrato, Cagliari, Italy
- G/PII.20** QUANTUM CONDUCTANCE OF AU NANO-WIRE PRODUCED IN TEM  
M. Arita, T. Tajiri, K. Hamada, R. Hirose and H. Miyagi, Hokkaido University, Sapporo, Japan
- G/PII.21** MOTT-SCHOTTKY ANALYSIS OF NANOCOLUMNAR ZnO FILMS  
F. Fabregat-Santiago(a), J. Bisquert(a), B. Mari(b), J. Cembrero(c), (a)Departament de Ciències Experimentals, Universitat Jaume I, 12080 Castelló, Spain, (b)Departament de Física Aplicada, Universitat Politècnica de València, València, Spain, (c)Departament d'Enginyeria Mecànica i de Materials, Universitat Politècnica de València, València, Spain
- G/PII.22** MAGNETORESISTANCE IN GRANULAR FE - SRF2 FILMS  
Hiroyuki Hosoya, Masashi Arita, Kouichi Hamada, Ryusuke Hirose, Hokkaido University, Sapporo, Japan
- G/PII.23** ON THE MECHANISM OF ELECTRONIC TRANSPORT IN SOME CHELATE MODIFIED POLYSULFONES  
G.G.Rusu(a), A.Airinei(b), I.Cuplunel(c), C.Baban(a), Petronela Prepelicu (a), G.I.Rusu(a), (a)Faculty of Physics, “A.I.Cuza” University, Iassy, Romania, (b)“P.Poni” Institute of Macromolecule Chemistry, Iassy, Romania, (c)Faculty of Physics, University of Bucharest, Bucharest, Romania
- G/PII.24** ELECTRON FIELD EMISSION FROM SEMICONDUCTOR CATHODES COATED WITH NANOCOMPOSITE SiO<sub>2</sub>(Si) FILMS  
A.A. Evtukh(a), V.G. Litovchenko(a), I.P. Lisovskyy(a), I.Z. Indutnyy(a), M.O. Semenenko(a), H. Hartnagel(b), O. Yilmazoglu(b), (a)Institute of Semiconductor Physics, National Academy of Science of Ukraine, 45 Prospekt Nauki, 03028, Kyiv, Ukraine, (b)Technische Universität Darmstadt, Institut für Hochfrequenztechnik, Merckstrasse 25, 64283 Darmstadt, Germany
- G/PII.25** /
- G/PII.26** EFFECT OF RUTILE TYPE CONTENT ON NANOSTRUCTURED ANATASE-TYPE TiO<sub>2</sub> ELECTRODES SENSITIZED WITH CdSe QUANTUM DOTS CHARACTERIZED WITH PHOTOACOUSTIC AND PHOTOELECTROCHEMICAL CURRENT SPECTROSCOPIES  
T. Toyoda, T. Tsuboya, Q. Shen, Department of Applied Physics and Chemistry, The University of Electro-Communications, 1-5-1 Chofugaoka, Chofu, Tokyo 182-8585, Japan
- G/PII.27** PHOTOSENSITIZATION OF NANOSTRUCTURED TiO<sub>2</sub> ELECTRODES WITH CdSe QUANTUM DOTS: CHARACTERIZATION BY PHOTOACOUSTIC AND PHOTOELECTROCHEMICAL METHODS  
T. Toyoda, H. Yamamoto, M. Hayashi, Q. Shen, Department of Applied Physics and Chemistry, The University of Electro-Communications, 1-5-1 Chofugaoka, Chofu, Tokyo 182-8585, Japan
- G/PII.28** PHOTOCATALYTIC PROPERTIES OF NANOCRYSTALLINE TiO<sub>2</sub> POWDERS PREPARED BY SOL-GEL METHOD FOLLOWED BY SUPERCRITICAL DRYING  
Yu.V. Kolen'ko(a), B.R. Churagulov(a), M. Kunst(b) and C. Colbeau-Justin(c), (a)Materials Science Department, Moscow State University, Moscow, Russia (b)Hahn-Meitner-Institut, Berlin, Germany, (c)LIMHP-CNRS, Université Paris 13, Villetaneuse, France
- G/PII.29** NANOCOMPOSITES FOR MEMBRANES WITH MIXED ELECTRONIC-IONIC CONDUCTIVITY  
V. Zyryanov, Institute of Solid State Chemistry and Mechanochemistry SB RAS, Kutateladze str., 18, 630128 Novosibirsk, Russia, M. Ivanovskaya, L. Ivashkevich, D. Kotsikau, Research Institute for Physical and Chemical Problems of Belarusian State University, Leningradskaya str. 14, 220050 Minsk, Belarus, J. Criado, Instituto de Ciencias de Materiales de Sevilla, 4192, Spain, and S. Neophytides, Institute of Chemical Engineering & High temperature Processes, Stadio 18, Platani, Rion Achaias, 26500 Patras, Greece

- G/PII.30** THE EFFECT OF COMPOUND PROPORTIONS ON THE PIEZORESISTANCE EFFECT IN CARBON-ELASTOMER NANOCOMPOSITES  
M. Knite, V. Teteris, A. Kiploka, J. Zicans, I. Yuchnevicha, Ilona Pavlovska Riga Technical University, 14 Azenes St., Riga 1048, Latvia, B.Polyakov, University of Latvia, 84 Krovalda St., Riga 1063, Latvia
- G/PII.31** MICRO-ELECTROMECHANICAL SYSTEMS BASED ON 3C-SiC/Si HETEROSTRUCTURES  
Ch. Förster, V. Cimalla, M. Fischer, J. Pezoldt, O. Ambacher, FG Nanotechnologie, Zentrum für Mikro- und Nanotechnologien, Technische Universität Ilmenau, PF100565, 98693 Ilmenau, Germany and K. Brückner, M. Hein, FG Hochfrequenz- und Mikrowellentechnik, Institut für Kommunikations- und Meßtechnik, Technische Universität Ilmenau, PF100565, 98693 Ilmenau, Germany
- G/PII.32** IN VITRO COMPARATIVE STUDIES FOR TITANIUM SUBSTRATES COATED WITH PULSED LASER DEPOSITED AND MAGNETRON SPUTTERED HYDROXYAPATITE FILMS  
L. Verestiuc(a), M. Bercu(b), C. Morosanu(c), C. Plapcianu(c), F. Miroiu(d), L.N. Mihailescu(d), (a)Faculty of Medical Bioengineering, University of Medicine and Pharmacy Iassy, 16 University Street, Iassy, Romania, (b)Faculty of Physics, Bucharest University, P. O Box MG-11, 77125 Bucharest, Romania, (c)National Institute for Materials Physics, PO Box MG-7, 77125 Bucharest-Magurele, Romania, (d)National Institute for Lasers, Plasma and Radiation Physics, PO Box MG-54, 77125 Bucharest-Magurele, Romania
- G/PII.33** PROPERTIES OF OXYGEN PERMEATION MEMBRANE MATERIALS  $R_{0.6}Sr_{0.4}Co_{0.8}Fe_{0.2}O_{3-\delta}$  (R = La, Ce, Pr, Nd, Sm, Dy and Yb)  
E.V. Iakoubovitch(a), O.S. Petrova(b), N.N. Oleynikov(b), V.A. Ketsko(a), (a)Kurnakov Institute of General and Inorganic Chemistry, Russian Academy of Sciences, Leninsky prospect, 31., 119991 Moscow, Russia, (b)Lomonosov Moscow State University, Department of Inorganic Chemistry, Vorobjovy Gory, 119899 Moscow, Russia
- G/PII.34** TiO<sub>2</sub> NANOROD/Ag NANOCOMPOSITE IN HOMOGENEOUS NONPOLAR SOLUTION: SYNTHESIS AND PHOTOCATALYTIC PROPERTIES  
P. Davide Cozzoli(a), Roberto Comparelli(a), Elisabetta Fanizza(a), M. Lucia Curri(b), Angela Agostiano(a,b), (a)Dipartimento di Chimica, Università di Bari, via Orabona 4, 70126 Bari, Italy, (b)CNR IPCF Sez. Bari c/o Dip. Chimica, Università di Bari, Via Orabona 4, 70126 Bari, Italy
- G/PII.34** A LUMINESCENCE STUDY OF NANO-POROUS DIATOMS  
K.S.A. Butcher(a), J.M. Ferris(b), M.R. Phillips(c), M. Wintrebert-Fouquet(a), Nemanja Jovanovic(a), C.J. Garvey(b), E. Drabarek(b), W. Vyverman(d) and V.A. Chepurinov(d), (a)Physics Department, Macquarie University, NSW 2109, Australia, (b)Australian Nuclear Science and Technology Organisation, PMB 1 Menai 2234, NSW, Australia, (c)Microstructural Analysis Unit, Faculty of Science, University of Technology, Sydney, Broadway NSW 2007, Australia, (d)Laboratory of Protistology and Aquatic Ecology, Department of Biology, University of Gent, Krijgslaan 281-S8, -9000 Gent, Belgium

Thursday, May 27, 2004

Morning

Session VII

- G-VII.01** 09:10 -Invited- INFLUENCE OF MOLECULAR ARCHITECTURE ON THE PROPERTIES AND PERFORMANCE OF CuPc-C<sub>60</sub> PHOTOVOLTAIC DEVICES  
**Tim Jones**, Sandrine Heutz, Paul Sullivan, Brett Sanderson, Stephan Schultes, Centre for Electronic Materials and Devices, Department of Chemistry, Imperial College London, London SW7 2AZ, U.K.
- G-VII.02** 09:45 SEARCH FOR FUTURE MATERIALS FOR ADVANCED PHOTOVOLTAIC CONCEPTS, SUCH AS NANOCOMPOSITE OR EXTREMELY THIN ABSORBER (ETA) SOLAR CELLS  
**F. Lenzmann**(a), **B. O'Regan**(a), **J.v. Roosmalen**(a), **M. Nanu**(b), **A. Goossens**(b), (a)Solar Energy Department, ECN, Westerduinweg 3, 1755 ZG Petten, The Netherlands, (b)Laboratory for Inorg. Chemistry, Faculty of Applied Sciences, Delft University of Technology, Julianalaan 136, 2628 BL Delft, The Netherlands
- G-VII.03** 10:00 DESIGN, SYNTHESIS AND PHOTOVOLTAIC PROPERTIES OF [60]FULLERENE BASED MOLECULAR MATERIALS  
**José L. Segura**, Francesco Giacalone, Rafael Gómez, Nazario Martín, Departamento de Química Orgánica, Facultad de Ciencias Químicas, Universidad Complutense de Madrid, 28040-Madrid, Spain, **Dirk M. Guldi**, Radiation Laboratory, University of Notre Dame IN 46556, USA, **Christoph Brabec**, Helmut Neugebauer, N. Serdar Sariciftci, Christian Doppler Laboratory for Plastic Solar Cells, Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University Linz, 4040 Linz, Austria, **Franz Padinger**, Konarka Austria Forschungs- u Entwicklungsges.m.b.H., Gruberstrasse 40-42, 4020 Linz, Austria
- G-VII.04** 10:15 STUDY OF SILICON NANOCRYSTAL SIZE DISTRIBUTION IN MOS *nc*-Si MEMORIES BY FT-DLTS  
**S. Ferraton**, **L. Montès**, **J. Zimmermann**, IMEP-INPG, 23 rue des Martyrs, 38016 Grenoble, France, **A. Souifi**, Laboratoire de Physique de La Matière, UMR-CNRS 5511, INSA de Lyon, Bât.502, 20 Av. Albert Einstein, 69621 Villeurbanne Cedex, France
- G-VII.05** 10:30 NEW ADVANCES IN THE ELABORATION OF SILICON-BASED NANOWIRES AND NANOCABLES  
**D. Cornu**(a), **M. Bechelany**(a), **K. Saulig**(a), **F. Chassagneux**(a), **C. Jacquier**(a), **T. Epicier**(b) and **P. Miele**(a), (a)Laboratoire des Multimatériaux et Interfaces, UMR 5615 CNRS, Université Claude Bernard Lyon 1, 43 Bd du 11 Novembre 1918, 69622 Villeurbanne Cedex, France, (b)GEMPPM, UMR 5510 CNRS, INSA Lyon, 20 Avenue Albert Einstein, 69621 Villeurbanne Cedex, France

10:45

**BREAK**

Session VIII

- G-VIII.01** 11:10 -Invited- UNUSUAL QUANTUM CONFINEMENT EFFECTS IN IV-VI MATERIALS  
**Guy Allan** and **Christophe Delerue**, IEMN - Dept. ISEN, 41 boulevard Vauban, 59046 Lille Cedex, France
- G-VIII.02** 11:45 PHOTOLUMINESCENCE DECAY DYNAMICS OF NON-INTERACTING SILICON NANOCRYSTALS  
**O. Guillois**, **N. Herlin-Boime** and **C. Reynaud**, Laboratoire Francis Perrin (URA CEA-CNRS 2453), Service des Photons, Atomes et Molécules, DSM/DRECAM, CEA-Saclay, 91191 Gif/Yvette Cedex, France, **G. Ledoux**, LPCML CNRS UMR5620, UCBL Lyon I, 69622 Villeurbanne Cedex, France, **F. Huisken**, MPI f. Astronomie, Heidelberg and Friedrich-Schiller Universität, Jena, Germany
- G-VIII.03** 12:00 POROUS SILICON PARTICLES; A NEW NANOMATERIAL  
**Takashi Matsuura** and **Nicholas St J Braithwaite**, The Open University, Oxford Research Unit, Foxcombe Hall, Boars Hill, Oxford OX1 5HR, U.K.
- G-VIII.04** 12:15 VAN DER WAALS INTERACTIONS OF POLYAROMATIC HYDROCARBON DIMERS  
**Svetla D. Chakarova** and **Elsebeth Schroder**, Department of Applied Physics, Chalmers University of Technology and Gothenburg University, 41296 Gothenburg, Sweden

12:30

**LUNCH**

Thursday, May 27, 2004

Afternoon

Session IX: Joint with Symposium F  
SPM, Structural, electrical and optical properties

- F/G-IX.01** 14:00 -Invited- ELECTRONIC FUNCTIONS OF SINGLE SUPRAMOLECULAR NANOSTRUCTURES AT INTERFACES  
**J.P. Rabe**, Department of Physics, Humboldt University Berlin, Newtonstr. 15, 12489 Berlin, Germany
- F/G-IX.02** 14:40 -Invited- FUNDAMENTAL PROCESSES AT THE SINGLE MOLECULE LEVEL  
**F.C De Schryver**, KULeuven, Department of Chemistry, Leuven, Belgium
- F/G-IX.03** 15:20 **F/G-IX.03** 15:20 PATTERNING BY LANGMUIR-BLODGETT MONOLAYERS  
**B. Pignataro**, L. Sardone, A. Raudino, G. Marletta, Dipartimento di Scienze Chimiche, Università di Catania, V.le A. Doria 6, 95125 Catania, Italy
- 15:40 **BREAK**

Session X

- G-X.01** 16:00 -Invited- SEMICONDUCTOR NANOPARTICLES AS ELECTRONIC MATERIALS  
**B. Sun** and **N.C. Greenham**, Cavendish Laboratory, Madingley Road, Cambridge CB3 0HE, U.K.
- G-X.02** 16:35 INTEGRATION OF SI QUANTUM DOTS IN MEMORY DEVICES  
**T. Baron**(a), **F. Mazen**(b), **B. De Salvo**(c), **M. Gely**(c), **S. Decossas**(a), **C. Gerardi**(d), **G. Ammendola**(d), **S. Lombardo**(e), (a)LTM, 17 Rue des Martyrs, 38054 Grenoble, France, (b)LPM, 20 Avenue A. Einstein 69621 Villeurbanne Cedex, France, (c)CEA-DRT, LETI/DTS, CEA/GRE, 17 Rue des Martyrs, 38054 Grenoble, France, (d)ST-Microelectronics R&D Catania/Agrate Italy, (e)IMM-CNR, Catania, Italy
- G-X.03** 16:50 WORLD BEST PEAK TO VALLEY CURRENT RATIOS IN SiGe/Si BASED ESAKI DIODES  
**M. Stoffel**, G.S. Kar and O.G. Schmidt, Max-Planck-Institut für Festkörperforschung, Heisenbergstrasse 1, 70569 Stuttgart, Germany
- G-X.04** 17:05 /
- G-X.05** 17:20 ELECTRON LOCALIZATION AND CONFINED ELECTRON GAS IN NANO-POROUS ELECTRIDES  
**P.V. Sushko**, A.L. Shluger, Department of Physics and Astronomy, University College London, Gower St., London WC1E 6BT, U.K. and **K. Hayashi**, **M. Hirano**, **H. Hosono**, Transparent Electro-Active Materials Project, ERATO, JST, KSP C-1232, 3-2-1 Sakado, Takatsu-ku, Kawasaki 213-0012, Japan
- 17:40 – 19:00 POSTER SESSION 3

- G/PIII.01** DEVELOPMENT OF A NEW SYNTHESIS METHOD TO POLY(THIENYLENE VINYLENE) : POLYMERISATION AND ORGANIC SOLAR CELL PROPERTIES  
Laurence Lutsen(a), Anja Henckens(b), Kristof Colladet(b), Martin Knipper(b), Jean Manca(a), Dirk Vanderzande(b), (a)IMEC, IMOME division, Wetenschapspark 1, 3590 Diepenbeek, Belgium, (b)Laboratory of Organic and Polymer Chemistry, Limburg University, Institute for Material Research, Division Chemistry, Univ. Campus, Building D, SBG/OS, 3590 Diepenbeek, Belgium
- G/PIII.02** SELF ASSEMBLY OF FLOUR-AND OTHER POLYMERS WITH LASER LIGHT AT 157 nm  
 Z. Kollia, E. Sarantopoulou, A.C. Cefalas, National Hellenic Research Foundation, TPCI, Athens 11635, Greece, S. Kobe, Department of Nanostructured Materials, Jozef Stefan Institute, Jamova 39, Ljubljana, Slovenia
- G/PIII.03** SYNTHESIS AND CHARACTERIZATION OF MESOPOROUS TITANIA THIN FILMS BY SOL-GEL METHOD  
 L. Armelao(a), E. Bontempi(b), G. Bottaro<sup>3</sup>, L. E. Depero(b), F. Poli(c) and E. Tondello(c), (a)INSTM and CNR-ISTM, Dipartimento di Scienze Chimiche, Padova University, Italy, (b)INSTM and Dipartimento di Ingegneria Meccanica, Brescia University, Italy, (c)INSTM and Dipartimento di Scienze Chimiche, Padova University, Italy
- G/PIII.04** MILLING OF POLYMERIC PHOTONIC CRYSTAL BY FIB  
E. Pialat, T. Trigaud, V. Bernical, J.P. Moliton, Université de Limoges, Laboratoire UMOP, Limoges, France
- G/PIII.05** SYNTHESIS OF Fe<sub>3</sub>O<sub>4</sub> THIN FILMS BY SOLID STATE REACTIONS  
A. Iijinas(a), R. Brucas(b), V. Stankus(a), J. Dudonis(a), (a)Department of Physics, Kaunas University of Technology, Studentu 50, 3031 Kaunas, Lithuania, (b)The Material Physics Department, Uppsala University, Box 256, 75105 Uppsala, Sweden
- G/PIII.06** NANOPATTERNING OF MOLECULAR MAGNETS BY LITOGRAPHICALLY CONTROLLED WETTING  
M. Cavallini, M. Massi, F. Biscarini, C. Albonetti, CNR - ISMN Sez. Bologna, Via P. Gobetti 101, 40129 Bologna, Italy, D. Ruiz-Molina, J. Gomez, C. Rovira, J. Veciana, Institut de Ciencia de Materials de Barcelona (CSIC), Campus Universitari de Bellaterra, 08193 Cerdanyola, Spain
- G/PIII.07** ION IRRADIATION OF ALLOY NANOCCLUSERS IN SILICA  
 G. Mattei, Y. Bello, G. De Marchi, P. Mazzoldi, INFN - Univ of Padua, Dept of Physics, Padua, Italy, C. Maurizio, INFN, ESRF, GILDA-CRG, Grenoble, France, G. Battaglin, INFN - Univ of Venice, Dept of Physical Chemistry, Venice, Italy
- G/PIII.08** EPITAXY GROWTH OF IRON ON Si(001) BY ION BEAM SPUTTERING  
Shu-Fang Chen, Chuan-Pu Liu, Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan
- G/PIII.09** SYNTHESIS AND STUDY OF ELECTRONIC TRANSPORT PROPERTIES OF SOME NEW CHELATE COMPOUNDS CONTAINING SILOXANE  
 M. Marcu, M. Cazacu, "P.Poni" Institute of Macromolecular Chemistry, Iassy, Romania, Mihaela Vasiloschi, L. Leontie, G.I. Rusu, Faculty of Physics, "A.I.Cuza" University, Iassy, Romania
- G/PIII.10** POROUS THIN FILMS GROWN BY SIZE-SELECTED Si-NANOPARTICLES  
F. Voigt(a), R. Brüggemann(a), F. Huisken(b), G.H. Bauer(a) (a)Institute of Physics, Carl von Ossietzky University, 26111 Oldenburg, Germany, (b)Institute of Solid State Physics, Friedrich-Schiller University, 07743 Jena, Germany
- G/PIII.11** MAGNETIC PROPERTIES OF NANOCRYSTALLINE Sm-Fe COMPOSITES FABRICATED BY PULSE LASER DEPOSITION AT 157 nm  
S. Kobe, K. Žužek, Department of Nanostructured Materials, Jozef Stefan Institute, Jamova 39, Ljubljana, Slovenia, E. Sarantopoulou, Z. Kollia, A. C. Cefalas, National Hellenic Research Foundation, TPCI, Athens 11635, Greece
- G/PIII.12** ALUMINA NANOTUBE ARRAY AND ITS FORMATION MECHANISM  
Y.F. Mei(a), G.G. Siu(a), X.L. Wu(b), Paul K. Chu(a) (a)Department of Physics and Materials Science, City University of Hong Kong, Kowloon, Hong Kong, China, (b)National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing 210093, China
- G/PIII.13** ESAVD OF NANOCRYSTALLINE TiO<sub>2</sub>-BASED FILMS FOR PHOTOCATALYSIS APPLICATIONS  
 Xianghui Hou and Kwang-Leong Choy, School of Mechanical, Materials, Manufacturing Engineering and Management, The University of Nottingham, University Park, Nottingham NG7 2RD, U.K.
- G/PIII.14** STRUCTURAL ANALYSIS OF THE THERMAL EVOLUTION OF Si NANOCCLUSERS PRODUCED BY PECVD  
Simona Boninelli and Francesco Priolo, INFN-MATIS and Dipartimento di Fisica e Astronomia, Università di Catania, via Santa Sofia 64, 95123 Catania, Italy, Fabio Iacona, Corrado Bongiorno and Corrado Spinella, CNR-IMM, Sezione di Catania, Stradale Primosole 50, 95121 Catania, Italy
- G/PIII.15** THERMAL EVOLUTION OF COBALT NANOCRYSTALS EMBEDDED IN SILICA  
 C. Maurizio(a), G. Mattei(b), P. Canton(c), E. Cattaruzza(b), C. de Julian Fernandez(b), P. Mazzoldi(b), F. D'Acapito(a), G. Battaglin(d), (a)INFN-OGG, European Synchrotron Radiation Facility, BP 220, 38043 Grenoble Cedex, France, (b)INFN and Dipartimento di Fisica, Università di Padova, via Marzolo 8, 35131 Padova, Italy, (c)Dipartimento di Chimica Fisica, via Torino 155/b, 30172 Venezia-Mestre, Italy, (d)INFN and Dipartimento di Chimica Fisica, Università di Venezia, Dorsoduro 2137, 30123 Venezia, Italy
- G/PIII.16** RF-SPUTTERING OF GOLD ON SILICA SURFACES: DYNAMICS FROM CLUSTERS TO CONTINUOUS FILMS  
 Lidia Armelao(a), Davide Barreca(a), Gregorio Bottaro(b), Giovanni Bruno(c), Alberto Gasparotto 2, Maria Losurdo(c), Eugenio Tondello(b), (a)ISTM-CNR and INSTM, Padova University, Padova, Italy, (b)INSTM and Department of Chemistry, Padova University, Padova, Italy, (c)IMIP-CNR, Bari, Italy

- G/PIII.17** SIZE-REDUCED SILICON NANOWIRES: FABRICATION AND ELECTRICAL CHARACTERIZATION  
Robert Juhász, Kai Kylmänen, Augustinas Galeckas, and Jan Linnros, Dept of Microelectronics and Information Technology, Royal Institute of Technology, Electrum 229, 164 40 Kista-Stockholm, Sweden
- G/PIII.18** CALCIUM PHOSPHATE PRECIPITATION IN CATIONIC TEMPLATES  
Bénédicte Prelot, CNRS - LAMMI, Univ Montpellier 2, Bât. 15, Case courrier 015, Place Eugène Bataillon, 34095 Montpellier cedex 5, France, and Thomas Zemb, LIONS, Service de Chimie Moléculaire, CEA Saclay, 91191 Gif sur Yvette cedex, France
- G/PIII.19** PATTERNING BY LANGMUIR-BLODGETT MONOLAYERS  
B. Pignataro, L. Sardone, A. Raudino, G. Marletta, Dipartimento di Scienze Chimiche, Università di Catania, V.le A. Doria 6, 95125 Catania, Italy
- G/PIII.20** NANOPARTICLES OF TERNARY COMPOUNDS IN THE SYSTEM Zr-Ge-O: PRODUCTION BY THE ORGANIC-FREE SOL-GEL METHOD AND INCORPORATION INTO SILICA GLASSES  
V.S. Gurin and E.V. Frolova, Physico-Chemical Research Institute, Belarusian State University, Minsk, Belarus, E.A. Tyavlovskaya and K.N. Kasparov, Institute of Electronics, National Academy of Sciences of Belarus, Minsk, Belarus, N.I. Gorbachuk, Belarusian State University, Minsk, Belarus
- G/PIII.21** ELECTRIC FIELD AND TIP-SURFACE INTERACTION DEPENDENCE IN NANOPATTERN DEPOSITION BY ELECTROPULSED SCANNING PROBE MICROSCOPY  
L.V. Melo(a,b), F. Delgado(a) and P. Brogueira(a,b), (a)Physics Department, Instituto Superior Técnico, Av. Rovisco Pais, 1049-001 Lisboa, Portugal, (b)ICEMS, Instituto Superior Técnico, Av. Rovisco Pais, 1049-001 Lisboa, Portugal
- G/PIII.22** STRUCTURAL MODIFICATION OF SILICON DURING THE FORMATION PROCESS OF POROUS SILICON  
R.J. Martín-Palma, J.M. Martínez-Duart, Departamento de Física Aplicada, Universidad Autónoma de Madrid, 28049 Cantoblanco, Madrid, Spain, L. Pascual, A. Landa, P. Herrero, Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas, 28049 Cantoblanco, Madrid, Spain
- G/PIII.23** PRODUCTION OF NANOSIZED PARTICLES IN THERMAL REDUCTIVE PLASMA  
A.V. Samokhin, N.V. Alexeev, Y.V. Tsvetkov, Y.V. Blagoveshensky, Baikov Institute of Metallurgy and Material Science RAS, 49 Leninsky pr., Moscow, Russia
- G/PIII.24** INVESTIGATION OF ELECTRIC CHARACTERISTICS OF ZnCdHgTe/CdTe NANOSCALED INTERFACE  
G. Khlyap, P. Sydoruk, State Pedagogical University, 24 Franko str., Drohobych 82100, Ukraine
- G/PIII.25** AN IMPEDANCE SPECTROSCOPY INVESTIGATION OF NANOCRYSTALLINE CsPbBr<sub>3</sub> FILMS  
G. Conte and G. Vitale, INFN and Electronic Engineering Dept., University "Roma Tre" Via della Vasca Navale 84, 00146 Rome, Italy, P. Aloe and F. Somma, INFN and Physics Dept., University "Roma Tre", Via della Vasca Navale 84, 00146 Rome, Italy
- G/PIII.26** STUDIES OF IRON-CONTAINING SILICA FILMS ON Si  
J. Sabataityte, I. Simkiene, G.J. Babonas, A. Reza, Semiconductor Physics Institute, Gostauto 11, 2600 Vilnius, Lithuania, R. Szymczak, H. Szymczak, M. Baran, M. Kozłowski, Institute of Physics, Polish Academy of Sciences, al. Lotnikow 32/46, 02-668 Warsaw, Poland, S. Gierlotka, High Pressure Research Center Unipress, Polish Academy of Sciences, Warsaw, Poland
- G/PIII.27** ELECTRIC PROPERTIES OF NaSbSe<sub>2</sub> THIN FILMS: EXPERIMENT AND NUMERICAL SIMULATION  
G. Khlyap, State Pedagogical University, 24 Franko str., Drohobych 82100, Ukraine, V. Bilozertseva, S. Ovcharenko, S. Krivonos, N. Dyakonenko, National Technical University "KPI", 21 Frunze str., Kharkov 61022, Ukraine
- G/PIII.28** NANOSTRUCTURAL CHARACTERIZATION OF VOID-SPECIES ARRANGEMENT IN TOPOLOGICALLY DISORDERED SOLIDS WITH POSITRON ANNIHILATION LIFETIME TECHNIQUE  
O. Shpotyuk, Pedagogical University of Czestochowa, 13/15, al. Armii Krajowej, 42201 Czestochowa, Poland + Institute of Materials of SRC "Carat", 202 Stryjska str., 79031 Lviv, Ukraine and J. Filipecki, Pedagogical University of Czestochowa, 13/15 al. Armii Krajowej, 42201 Czestochowa, Poland
- G/PIII.29** IN SITU CONDUCTANCE MEASUREMENT OF FE-SRF<sub>2</sub> GRANULAR FILM DURING TEM OBSERVATION  
Ryusuke Hirose, Masashi Arita, Kouichi Hamada, Takayuki Tajiri, Hiroyuki Hosoya, Tamaki Shibayama, Hokkaido University, Sapporo, Japan
- G/PIII.30** PHOTOACOUSTIC AND PHOTOELECTROCHEMICAL CURRENT CHARACTERIZATION OF NANOSTRUCTURED TiO<sub>2</sub> ELECTRODES  
T. Toyoda, M. Hayashi, Q. Shen, Department of Applied Physics and Chemistry, The University of Electro-Communications, Chofu, Tokyo 182-8585, Japan
- G/PIII.31** POROSITY OF ANODIC ALUMINA MEMBRANES FROM ELECTROCHEMICAL MEASUREMENTS  
Carmelo Sunseri, Chiara Spadaro, Patrizia Bocchetta, Salvatore Piazza, Francesco Di Quarto, Dipartimento di Ingegneria Chimica dei Processi e dei Materiali, Università di Palermo, Viale delle Scienze, 90128 Palermo, Italy
- G/PIII.32** CHARACTERISATION OF CO/Al<sub>2</sub>O<sub>3</sub>/CO/NiFe MULTILAYERS ELABORATED BY ULTRA-HIGH VACUUM ION BEAM SPUTTERING  
E.H. Oubensaid(a), C. Maunoury(a), T. Devolder(a), N. Marsot(a), C. Schwebel(a), (a)Institut d'Electronique Fondamentale, Université Paris Sud, Bâtiment 220, 91405 Orsay Cedex, France

- G/PIII.33** CHARACTERIZATION OF MAGNETIC NANOSTRUCTURED FILMS MADE OF VARIOUS NANOPARTICLES SYNTHESIZED BY PULSED RF PLASMA CVD  
I. Matsui and T. Nagasawa, JCII, Kandajinbo-cho, chiyoda-ku, Tokyo, Japan and Toshiba R&D center, Kawasaki, Japan
- G/PIII.34** ANOMALOUSLY STRONG ABSORPTION OF MICROWAVE POWER BY POROUS SILICON  
Yu.V. Gorelinskii, Kh.A. Abdullin, B.N. Mukashev, A.C. Serrikanov, Institute of Physics and Technology Kazakstan Ministry of Education and Science, 480082 Almaty, Kazakstan
- G/PIII.35** STRUCTURE AND MAGNETIC PROPERTIES OF THERMAL TREATED FE-MG GRANULAR FILMS  
C. de Julián Fernández, E. Cattaruzza, G. Mattei and P. Mazzoldi, INFN and Dip. Fisica, Univ. Padova, via Marzolo 8, 35131 Padova, Italy, G. Battaglin, INFN and Dip. Chimica Fisica, Univ. Venezia, Dorsoduro 2137, 30123 Venezia, Italy, P. Canton, Dip. Chimica Fisica, Univ. Venezia, via Torino 155/b, 30172 Venezia-Mestre, Italy, C. Maurizio and F. D'Acapito, GILDA-CRG, ESRF, B.P. 220, 6 rue J. Horowitz, 38043 Grenoble, France
- G/PIII.36** STRUCTURAL AND OPTICAL STUDY OF SNO<sub>2</sub> NANOBELTS  
D. Calestani, M. Zha, A. Zappettini, L. Lazzarini, G. Salviati, L. Zanotti, IMEM-CNR, Parco Area delle Scienze 37/A, 43010 Fontanini Parma, Italy, G. Sberveglieri, SENSOR Lab., INFN - Univesità di Brescia, Via Valotti 9, 25133 Brescia, Italy
- G/PIII.37** CRYSTAL QUALITY DEPENDENCE OF PHOTOLUMINESCENCE IN NANOSTRUCTURED ZnO GROWN BY ELECTRODEPOSITION  
B. Marí(a), F. J. Manjón(a), M. Mollar(a), J. Cembrero(b), R. Gómez(c), (a)Departament de Física Aplicada, Universitat Politècnica de València, 46071 València, Spain, (b)Departament d'Enginyeria Mecànica i Materials, Universitat Politècnica de València, 46071 València, Spain, (c)Departament de Química Física, Universitat d'Alacant, Alacant, Spain
- G/PIII.38** LOW COST TECHNIQUE FOR MEASURING IN SITU STRAIN OF NANOSTRUCTURES  
A. Rizzo(a), D. Rizzo(b), U. Galietti(b),(a)ENEA, UTS MAT-Tec, CR Brindisi, SS Appia Km 714, 72100 Brindisi, Italy, (b)DIMEG - Politecnico di Bari, Italy
- G/PIII.39** FePt NANOPARTICLES: SELF-ORGANISED ARRAYS EMBEDDED ON SiO Matrix And Compacted Powder  
C. Luna, M. P. Morales, C. J. Serna, O. Chubykalo, J. M. González and M. Vázquez, Instituto de Ciencia de Materiales, CSIC, 28049 Madrid, Spain
- G/PIII.40** SURFACTANT FREE FABRICATION OF POLYMERIC NANOPARTICLES BY COMBINED LIQUID-LIQUID PHASE SEPARATION AND SOLVENT/NONSOLVENT MIXING TECHNOLOGY  
J.Y. Xiong(a), X.Y. Liu(b), P.D. Sawant(b), S.B. Chen(a), T. S. Chung(a), K.P. Pramoda(c), (a)Department of Chemical and Environmental Engineering, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260, Singapore, (b)Department of Physics, National University of Singapore, 2 Science Drive 3, Singapore 117542, Singapore, (c)Institute of Materials Research and Engineering, 3 Research Link, Singapore 117602, Singapore
- G/PIII.41** STANDING WAVE NANOSENSOR  
H. Stiebig(a), D. Knipp(b), E. Bunte(a), (a)Forschungszentrum Jülich, Institute of Photovoltaic, 52425 Jülich, Germany, (b)International University Bremen, Department of Science and Engineering, 28759 Bremen, Germany

Friday, May 28, 2004

Morning

Session XI

- G-XI.01** 09:10 AB INITIO STUDY OF THE GROWTH MODE FOR THIN Cu FILMS ON OXIDE SUBSTRATE  
Yuri F. Zhukovskij and Eugene A. Kotomin, Institute for Solid State Physics, University of Latvia, Kengaraga str. 8, Riga 1063, Latvia, David Fuks, Materials Eng. Dept, Ben Gurion University, Beer-Sheeva 84105, Israel, Simon Dorfman, Dept. of Physics, Technion – Israel Institute of Technology, Haifa 32000, Israel
- G-XI.02** 09:25 -Invited- ONION-LIKE GROWTH OF AND INVERTED MANY-PARTICLE ENERGIES IN QUANTUM DOTS  
**D. Bimberg**, Institut für Festkörperphysik, TU Berlin, Germany, \*in cooperation with F. Guffarth, K. Pötsche, S. Rodt and A. Schliwa
- G-XI.03** 10:00 SYNTHESIS AND CHARACTERIZATION OF PbSe/PbS CORE/SHELL NANOCRYSTALS  
A. Kigel, A. Sashchiuk, M. Brumer, L. Amirav, E. Lifshitz, Dep. of Chem. and Solid State Institute, Technion, Haifa 32000, Israel
- G-XI.04** 10:15 SYNTHESIS AND PHOTOLUMINESCENCE OF PbS CLUSTERS IN LEAD-CONTAINING GLASSES  
R. Espiau de Lamaestre and H. Bernas, CSNSM (UMR 8609), CNRS-Univ. Paris-Sud, 91405 Orsay, France
- G-XI.05** 10:30 INCORPORATION OF COBALT INTO ZINC OXIDE NANO-CLUSTERS  
I. Ozerov, F. Chabre and W. Marine, CRMC-N UPR 7251 CNRS, Université de la Méditerranée, Case 901, 13288 Marseille cedex 9, France
- 10:45 **BREAK**

Session XII

- G-XII.01** 11:10 -Invited- NOVEL SEMICONDUCTOR NANO-DEVICES: CONTROL OF SINGLE CHARGES, SPINS AND PHOTONS  
**Gerhard Abstreiter**, Walter Schottky Institut, TUM, 85748 Garching, Germany
- G-XII.02** 11:45 "CONSTRUCTIVE NANOLITHOGRAPHY" - A HIERARCHICAL FABRICATION APPROACH TOWARDS THE CONTROLLED ASSEMBLY OF COMPLEX NANODIMENSIONAL CIRCUITS  
S. Hoepfener, R. Maoz, J. Sagiv, Dept. of Materials and Interfaces, Weizmann Institute of Science, 76100 Rehovot, Israel
- G-XII.03** 12:00 OLIGOPEPTIDE GRAFTING ON NANOPATTERNED POLYSILOXANE SURFACES  
C. Satriano and G. Marletta, Laboratory for Molecular Surfaces and Nanotechnologies, Department of Chemical Sciences, University of Catania, Viale Andrea Doria 6, 95125 Catania, Italy
- G-XII.04** 12:15 DNA IMMOBILIZATION ON BIOFUNCTIONALIZED POROUS SILICON SURFACES  
M. Arroyo-Hernández(a), R.J. Martín-Palma(a), J. Pérez-Rigueiro(b), J.P. García-Ruiz(c) and J.M. Martínez-Duart(a), (a)Departamento de Física Aplicada C-12, Universidad Autónoma de Madrid, 28049 Cantoblanco, Madrid, Spain, (b)Departamento de Ciencia de Materiales, ETSI Caminos, Canales y Puertos, Universidad Politécnica de Madrid, 28040 Madrid, Spain, (c)Departamento de Biología Molecular, Universidad Autónoma de Madrid, 28049 Cantoblanco, Madrid, Spain