



Strasbourg (France)

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

SYMPOSIUM I

Advanced multifunctional nanocarbon materials
and nanosystems 04

Symposium Organizers:

Peter Scharff, Technology University of Ilmenau, Germany

Hans Kuzmany, University of Vienna, Austria

Siegmar Roth, Max-Planck-Institut, Stuttgart, Germany

Jean-François Nierengarten, CNRS, IPCMS-GMO, Strasbourg, France

Eugenia Buzaneva, Scientific and Training Center
University of Kiev and NASU, Ukraine

Papers will be published in Fullerenes, Nanotubes and Carbon
Nanostructures

E-MRS 2004 SPRING MEETING

SYMPOSIUM I

Tuesday, May 25, 2004

Morning

Session I: Nanoscience of integrated nanosystems: bases of the designing

Session chair: Peter Scharff

- 08:15 WELCOME
- I-I.1** 08:30 NANOTECHNOLOGICAL R&D ALONG THE VALUE-ADDED CHAIN
Gerd Bachmann, VDI-Technologiezentrum, Graf-Recke Str. 84, 40239 Düsseldorf, Germany, Phone: +49 2116214235, Fax:+49 2116214484, bachmann@vdi.de
- I-I.2** 09:00 SELF-ASSEMBLING SYSTEMS AND SURFACE PATTERNING STRATEGIES FOR NANOCHNOLOGIES OF BIOACTIVE SYSTEMS
Giovanni Marletta, Department of Chemistry, University of Catania, viale Andrea Doria, 95125, Catania, Italy, gmarletta@dipchi.unict.it
- I-I.3** 09:30 MOLECULAR-SCALE ENCAPSULATION OF DYES AND MOLECULAR WIRES
Harry L. Anderson, Oxford University, Department of Chemistry, South Parks Road, Oxford OX1 3QY, UK harry.anderson@chem.ox.ac.uk
- 09:45 **BREAK**

Session II: Nanoscience of integrated nanosystems: models of molecular designing

Session chair: Gerd Bachmann

- I-II.1** 10:15 MOLECULAR GELS: A RESERVOIR FOR ORGANIC ROD-LIKE NANOPARTICLES
Pierre Terech, CEA-Grenoble, DRFMC-SI3M UMR 5819 CEA-CNRS-Université J. Fourier, 17 rue des Martyrs, 38054 Grenoble Cédex 9, France pterech@cea.fr
- I-II.2** 10:45 DNA NANOPARTICLE ADDUCTS FOR CHIP BASED NANOTECHNOLOGY
Wolfgang Fritzsche (a), **Michael Kohler** (a,b), **Th. Kirner** (b), **J. Wagner** (b), **A. Csaki** (a), **R. Möller** (a), (a) Institute for Physical High Technology Jena, Biotechnical Microsystem Department, Jena, Germany fritzsche@ipht-jena.de, (b) Technical University of Ilmenau, Department for Physical Chemistry and Microreaction Technology michael.koehler@tu-ilmenau.de

Session III: Nanoscience of integrated nanosystems: basic phenomena in solid state and molecular nanosystems

Session chair: Wolfgang Fritzsche

- I-III.1** 11:00 2-D ARRAYS OF SEMICONDUCTOR NANOCRYSTALS IN THIN SiO₂ LAYERS FOR APPLICATION IN QUANTUM DOT MEMORIES
Androula Nassiopoulou, Inst. of Microelectronics IMEL/NCSR Demokritos, P.O. Box 60228, 153 10 Aghia Paraskevi Attikis, Athens, Greece. A.Nassiopoulou@imel.demokritos.gr
- I-III.2** 11:30 CELL-TARGETING NANOBIODEVICES WITH FLUORESCENCE AND MAGNETISM
Dai-Wen Pang, College of Chemistry and Molecular Sciences, Wuhan University, Wuhan 430072, P. R. China; dwpan@whu.edu.cn
- I-III.2** 12:00 A FURTHER STEP TOWARDS AN ALL SILICON BASED PHOTONICS: OPTICAL GAIN IN SI NANOCRYSTALS
Nicolo Daldosso, **M. Cazzanelli**, **Z. Gaburro**, **M. Ghulynian**, **D. Navarro**, **P. Bettotti**, **F. Riboli**, **M. Melchiorri**, **F. Sbrana**, **L. Pavesi**, INFN and Dipartimento di Fisica, Università di Trento, Via Sommarive 14, 38050 Povo Trento, Italy daldosso@science.unitn.it

Session IV: Theory, modeling, computer simulation of designing processes

Session chair: Laszlo Biró

- | | | |
|---------------|-------|---|
| I-IV.1 | 12:15 | SIMULATION OF PACKING STRUCTURES IN MIXED AROMATIC SELF-ASSEMBLED MONOLAYERS ON GOLD
<u>G. L. Gambino</u> , A. Auditore, N. Tuccitto, A. Licciardello, A. Grassi, G. Marletta, Department of Chemistry, University of Catania, viale Andrea Doria, 95125, Catania (Italy) lgambino@unict.it |
| I-IV.2 | 12:30 | HEAT-INDUCED TRANSFORMATION AND SELF-AGGREGATION OF NANODIAMONDS: FIRST-PRINCIPLES AND MOLECULAR DYNAMIC CALCULATION STUDIES
<u>Jaejun Yu</u> , School of Physics and CSCMR, Seoul National University, 151-747, Seoul, Korea jyu@snu.ac.kr |
| I-IV.2 | 12:45 | MAINFOLD NANOSIZED METALLIC COMPOSITES PREPARATION AND THEORETICAL SIMULATIONS
Adam Kosiorek, Witold Kandulski, Michael Giersig Center CAESAR, Dept. Nanopartikel Technologie, Ludwig Erhard Allee 2, 53175 Bonn, Germany, kosiorek@caesar.de |
| | 13:00 | LUNCH |

Tuesday, May 25, 2004

Afternoon

Session V: Theory, modeling, computer simulation of the fundamental characteristics

Session chair: Valentin Popov

- I-V.1** 14:00 REGULARLY CURVED CARBON NANOTUBES
Laszlo. P. Biró, G.I. Márk, A.A. Koós, Z. E. Horváth, Z. Vértessy, A. Szabó, A. Fonseca, J.B. Nagy, E. Hernández, T. M. Gruenberger, L. Fulcheri, Ph. Lambin, Research Institute for Technical Physics and Materials Science, Budapest., Hungary; Laboratoire RMN, Facultes Universitaires Notre-Dame de la Paix, Rue de Bruxelles, Belgium; Institut de Ciencia de Materials de Barcelona–CSIC, Campus de la Universitat Autònoma de Barcelona, Barcelona, Spain; Ecole des Mines de Paris, Centre for Energy Studies, Sophia Antipolis, France; Laboratoire de Physique du Solide, Facultes Universitaires Notre-Dame de la Paix, B-5000 Namur, Rue de Bruxelles 61, Belgium biro@mfa.kfki.hu
- I-V.2** 14:15 THE ELECTRONIC STRUCTURE OF NANOTUBES AND THE TOPOLOGICAL ARRANGEMENTS OF CARBON ATOMS
Istvan Laszlo, Budapest University of Technology and Economics, Institute of Physics, Department of Theoretical Physics, 1521 Budapest, Hungary laszlo@feynman.phy.bme.hu
- I-V.3** 14:30 A POSSIBILITY OF ENDOHEDAL FULLERENES WITH COPPER AND SILVER SMALL CLUSTERS
Valerij Gurin, Physico-Chemical Research Institute, Belarusian State University, Leningradskaya str.,14, Minsk 220080, Belarus gurin@bsu.by
- I-V.4** 14:45 COMPUTER SIMULATIONS OF CARBON NANOSTRUCTURES UNDER PRESSURE
Maria Fyta, P.C. Kelires, Physics Department, University of Crete, P.O. Box 2208, 71003 Heraclion, Crete, Greece, and Foundation for Research and Technology-Hellas (FORTH), P.O. Box 1527, 71110 Heraclion, Crete, Greece kelires@physics.uoc.gr mfyta@physics.uoc.gr
- I-V.4** 15:00 VACUUM FIELD EFFECTS IN ATOMICALLY DOPED CARBON NANOTUBES
Igor V. Bondarev, Ph. Lambin, Laboratoire de Physique du Solide Facultes Universitaires Notre-Dame de la Paix 61, rue de Bruxelles 5000 Namur, Belgium igor.bondarev@fundp.ac.be

Session VI: Theory, modeling, computer simulation of the functioning of nanosystems

Session chair: Istvan Laszlo

- I-VI.1** 15:15 NANOTUBES AS BUILDING BLOCKS FOR NANOTECHNOLOGY
Eunja Kim¹, C. Chen¹, D. Tománek², ¹Physics department University of Nevada Las Vegas 4505 Maryland Parkway, Box 454003, Las Vegas, NV 89154-4003, USA ; ²Physics and Astronomy Department, 4231 Biomedical and Physical Sciences Bldg, Michigan State University, USA kimej@physics.unlv.edu tomanek@msu.edu <http://www.pa.msu.edu/~tomanek/>
- I-VI.2** 15:45 NO₂/CNT: PHOTOEMISSION AND THEORETICAL STUDIES
Luca Lozzi(a), S. Picozzi(a), S. Santucci(a), C. Cantalini(b), L. Valentini(c), I. Armentano(c), J.M. Kenny(c), S. La Rosa(d), M. Coreno(e), M. De Simone(f), (a)INFN and Department of Physics, University of L'Aquila, L'Aquila, Italy, (b)INFN and Department of Chemistry and Materials, University of L'Aquila, L'Aquila, Italy, (c)Materials Engineering Center, University of Perugia, 05100 Terni, Italy, (d)Sincrotrone Trieste SCpa, 34012 Basovizza, Trieste, Italy, (e)CNR-IMIP & INFN-TASC, c/o Sincrotrone Trieste, 34012 Basovizza, Trieste, Italy, (f)TASC-INFN, c/o Sincrotrone Trieste, 34012 Basovizza, Trieste, Italy luca.lozzi@aquila.infn.it
- I-VI.3** 16:00 LINEAR AND NONLINEAR OPTICAL PROPERTIES OF EXCITONS IN CARBON NANOTUBES
Thomas G. Pedersen, Inst. of Physics, Aalborg University, Denmark tgp@physics.auc.dk
- I-VI.4** 16:15 STABILITY AND SPECTROSCOPICAL ACTIVITIES OF LITHIUM-DOPED CARBON NANOSTRUCTURES: A COMPUTATIONAL STUDY
Giorgia Brancolini, Fabrizia Negri, Dipartimento di Chimica "G. Ciamician", Università di Bologna, Via F. Selmi 2, 40126 Bologna, Italy giorgia@ciam.unibo.it fabrizia.negri@unibo.it
- I-VI.5** 16:30 CARBON NANOTUBES WITHIN A NON-ORTHOGONAL TIGHT-BINDING MODEL
Valentin Popov, University of Sofia Faculty of Physics, 5 James Bourchier Blvd., 1164 Sofia, Bulgaria vpopov@phys.uni-sofia.bg
- 16:45 **BREAK**

Session VII: Nanotechnology, engineering: carbon nanomaterials

Session chair: Vladimir Kuznetsov

- I-VII.1** 17:00 SYNTHESIS OF CARBON NANOMATERIALS BY A CATALYTIC DISPROPORTIONATION OF CARBON MONOXIDE
Eugene A. Katz, Department of Solar Energy and Environmental Physics, J. Blaustein Institute for Desert Research, Ben-Gurion University of the Negev, Sede Boqer, 84990 Israel keugene@bgumail.bgu.ac.il
- I-VII.2** 17:30 ONE DIMENSIONAL SOLID-STATE NANOREACTORS: THE WAY TO CONTROLABLE GROWTH OF NANOWIRES
Yu.D. Tretyakov, A.A. Eliseev, K.S. Napolskii, A.V. Lukashin, , Dept. of Materials Science, Moscow State University, 119992 Moscow, Russia yudt@inorg.chem.msu.ru
- I-VII.3** 18:00 TAILOR-MADE CARBON NANOMATERIALS FOR BULK APPLICATIONS VIA HIGH INTENSITY ARC PLASMA
Thomas M. Gruenberger(a), José Gonzalez-Aguilar(a), Frédéric Fabry(b), Eusebiu Grivei(b), Nicolas Probst(b), Gilles Flamant(c), Laszlo P. Biró(d), Jean-Christophe Charlier(e) and Laurent Fulcheri(a), (a)Ecole des Mines de Paris, Centre for Energy Studies, Rue Claude Daunesse B.P. 207, 06904 Sophia Antipolis, France, (b)Timcal Belgium S.A., 534 Av. Louise, 1050 Brussels, Belgium, (c)IMP-CNRS, B.P. 5 Odeillo, 66125 Font Romeu, France, (d)Research Institute for Technical Physics and Material Science, 1525 Budapest, Hungary, (e)University of Louvain, Unit of Physico-Chemistry and Physics of Materials, Place Croix du Sud 1, 1348 Louvain La Neuve, Belgium thomas.gruenberger@cenerg.cma.fr
thomas.gruenberger@ensmp.fr
- I-VII.4** 18:15 SYNTHESIS AND PROPERTIES OF LONG CHAINS OF sp-HYBRIDIZED CARBON ATOMS: POLYYNES
Franco Cataldo, Soc. Lupi Chemical Research Institute, Via Casilina 1626/A, 00133 Rome, Italy cdcata@flashnet.it
- I-VII.5** 18:30 TRANSFORMATION OF AMORPHOUS "SUPERHARD PHASE" INTO CRYSTALLINE MATERIAL CONSISTING OF UNBROKEN FULLERENE MOLECULES
A.V. Talyzin(a), F. Langenhorst(b), N.A. Dubrovinskaia(b), L.S. Dubrovinsky(b), S.Dub(c), (a)Uppsala University, Department of Materials Chemistry, Ångström Laboratory, Box 538, 75121 Uppsala, Sweden (on leave): Umeå University, Department of Experimental Physics, Sweden, (b)Bayerisches Geoinstitut, Universität Bayreuth, 95440 Bayreuth, Germany, (c) Institute for Superhard Materials, Kiev, 04074, Ukraine talyzine@imra-europe.com
- I-VII.6** 18:45 SYNTHESIS OF SiC NANORODS BY CHEMICAL VAPOR DEPOSITION
A. Leonhardt, H. Liepack, Leibniz-Institute for Solid State and Materials Research Dresden, Helmholtzstr. 20, 01069 Dresden, Germany A.Leonhardt@ifw-dresden.de
- I-VII.7** 19:00 NANOCARBON MATERIALS OBTAINED BY GAS-SOLID REACTION
Urszula Narkiewicz, Institute Of Chemical And Environment Engineering, Technical University Of Szczecin, Pulaskiego 10, 70-322 Szczecin, Poland un@ps.pl
- I-VII.8** 19:15 FORMATION OF SILICON CARBIDE NANORODS FROM WOOD-BASED CARBONS
Toshimitsu Hata¹; Sylvie Bonnamy²; Paul Bronsveld³; Vinicius Castro¹; Masashi Fujisawa¹; Hikari Kikuchi⁴; Yuji Imamura¹ ¹ Wood Research Institute, Kyoto University, Kyoto 611-0011, Japan ² CRMD, CNRS-Université, 1B rue de la Férollerie, 45071 Orléans Cedex 2, France ³ Department of Applied Physics, Materials Science Center, Groningen-Netherlands ⁴ S S Alloy, Kagamiyama, Higashi Hiroshima 739-0046, Japan n50120@sakura.kudpc.kyoto-u.ac.jp

19:30 - 20:30 POSTER SESSION I

Nanoscience of integrated nanosystems: bases of the designing; models of molecular designing; basic phenomena in solid state and molecular nanosystems; theory, modeling, computer simulation of designing processes; theory, modeling, computer simulation of the fundamental characteristics; theory, modeling, computer simulation of the functioning of nanosystems.

Nanotechnology, engineering: carbon nanomaterials; carbon nanotubes, fullerene peapods; nanocarbon inorganic materials and carbon nanotubes systems for devices.

Fundamental properties: fullerenes, endofullerenes; inside carbon nanotubes; carbon nanotubes, carbon nanotubes fibers, nanotube buckypaper, peapods;

- I/PI.01** TWO-DIMENSIONAL SELF-ASSEMBLED MOLECULAR NANOSTRUCTURES REVEALED BY NANOSCALE PROBE
Nathalie Katsonis, L.R.C. Semi-Conducteurs Organiques, DSM/DRECAM/SPCSI, CEA-Saclay, France
KATSONIS@drecam.cea.fr
- I/PI.02** LASER-INDUCED SURFACE NANOSTRUCTURES IN CARBON COATING
O.Yu. Semchuk, Institute of Surface Chemistry NAS of Ukraine, 17 General Naumov Street, Kyiv, Ukraine
inchem@mail.kar.net
- I/PI.03** REFRACTIVE INDEX OF FERROMAGNETIC SEMICONDUCTORS WITH LASER-INDUCED NANOSTRUCTURED GRATINGS
Oleksandr Semchuk, Institute of Surface Chemistry NAS of Ukraine, 17, General Naumov Street, 03164 Kyiv, Ukraine
inchem@mail.kar.net
- I/PI.04** OPTICAL AND ELECTROPHYSICAL PROPERTIES OF THE BARRIER NANOSILICON INTEGRATED SYSTEMS FORMED BY AN IMPULSE LASER RADIATION
George I. Vorobets, V.N. Strebejev, Y.Fed'kovych Chernivtsi National University, Ukraine vgeorge@au.cv.ua
- I/PI.05** ELECTROANALYTICAL PROPERTIES OF THE NANOSTRUCTURE ON THE BASIS OF POROUS SILICON
A.G. Voloshchuk, **Maria M. Vorobets**, V.T. Bilogolovka, Ya.Yu. Tevtul, Yu. Fed'kovych Chernivtsi National University, Chemical Faculty, 2 Kotsjubynskiy Str., Chernivtsi 58012, Ukraine vgeorge@au.cv.ua
- I/PI.06** ORDERING OF GE DOTS ON SELF-PATTERNED SI SUBSTRATE
Isabelle Berbezier, A. Ronda, A. Pascale, A. Karmous, CRMC2 - CNRS, Campus de Luminy, Case 913, Marseille, France
berbezier@crmc2.univ-mrs.fr
- I/PI.07** CONDUCTIVITY AT 20...300 K TEMPERATURE RANGE OF DNA POLYMERIZED MOLECULES LAYER
Olexandr Ivanyuta, A. Shaternic, Taras Shevchenko Kiev National University of Radiophysical Faculty, The Scientific and Training Center "Physical and Chemical Material Science of Kiev National Taras Shevchenko University and NASU", 64 Vladimirska Str., 01033 Kiev, Ukraine iva@univ.kiev.ua
- I/PI.08** THE ESR- AND IR -ABSORPTION STUDY IN QUASI-1D -CARBYNOID MATERIALS AND THEIR STABILITY
D. Yearchuck, National Academy of Sciences of RB, Brest Division, Moskovskaya Str. 204, Brest 224020, Belarus, M. Guseva, A. Alexandrov, Physics Department, M.V.Lomonosov State University, Vorobyovy Gory, Moscow 119899, Russia, H.-J.von Bardeleben, Universites Paris 7 et 6, 2 Place Jussieu, 75251 Paris Cedex 5, France dpy@tut.by
- I/PI.09** SINGLE ELECTRON CHARGING MECHANISMS INTO SILICON QUANTUM DOTS REALIZED BY ULTRA LOW ENERGY IMPLANTATION
Arnaud Beaumont(a), P. Normand(b), G. Ben Assayag(c), A. Clavier(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 arnaud.beaumont@insa-lyon.fr
- I/PI.10** THE CALCULATION OF BN-NANOTUBES ABSORPTION SPECTRA
Ludger Wirtz, Andrea Marini, Angel Rubio
Department of Material Physics, University of the Basque Country and Donostia International Physics Center (DIPC), Po. Manuel de Lardizabal 4, 20018 San Sebastian, Spain arubio@sc.ehu.es swxluluw@sc.ehu.es
- I/PI.11** FRAGMENTATION OF FREE AND SUPPORTED C60 FULLERENES BY ION BEAMS
M.V. Makarets(a), **Yury I. Prylutskyi**(b), **O.V. Zaloyilo**(b), **P. Scharff**(c), Kyiv National Shevchenko University, Faculty of (a)Physics and (b)Biology, Volodymyrska Str. 64, Kyiv 01033, Ukraine, (c)Technical University of Ilmenau, Institute of Physics, 98684 Ilmenau, Germany prylut@biocc.univ.kiev.ua
- I/PI.12** QUANTUM CHEMICAL STUDIES ON FULLERENE DIMERS (C₇₀)₂
Xiang Zhao, Lab. of Theoretical/Computational Chemistry, Dept. of Knowledge-based Information Engineering, Toyohashi University of Technology, Toyohashi Aichi 441-8580, Japan zhao@cochem2.tutkie.tut.ac.jp
- I/PI.13** CALCULATIONS ON ORGANIC-SOLVENT DISPERSIONS OF SINGLE-WALL CARBON NANOTUBES
Francisco Torrens, Institut Universitari de Ciència Molecular, Universitat de València, Dr. Moliner 50, 46100 Burjassot (València), Spain Francisco.Torrens@uv.es

- I/PI.14** THEORY OF ELECTRON PROPERTIES OF CHIRAL CARBON NANOTUBES
Oleg V. Kibis, Department of Applied and Theoretical Physics, Novosibirsk State Technical University, Novosibirsk, Russia
Oleg.Kibis@nstu.ru
- I/PI.15** NOVEL PROCESSES FOR PREPARATION OF NANOCARBONS, NANO-SIZED AND NANO-STRUCTURED CARBONS
Michio Inagaki, Aichi Institute of Technology, Yakusa, Toyota 470-0392, Japan ina@aitech.ac.jp
- I/PI.16** MULTIWALL CARBON NANOTUBES FOR PARALLEL E-BEAM NANOLITHOGRAPHY
L. Gangloff, E. Minoux, G. Pirio, J. -P. Schnell, and P. Legagneux Thales Research and Technology, Orsay, France; K. B. K. Teo, R. Lacerda, M. H. Yang, G. A. J. Amaratunga, and W. I. Milne; Department of Engineering, University of Cambridge, UK; V. Semet, P. Vincent, and Vu Thien Binh Claude Bernard University, Lyon, France, laurent.gangloff@thalesgroup.com
- I/PI.17** GOLD CLUSTER DIMERS: A TOOL TO CONTACT SINGLE MOLECULES
Roman Krahne(a), Tali Dadosh(b), Yoav Gordin(b), Amir Yacoby(b), Hadas Shtrikman(b), Diana Mahalu(b), Israel Bar-Joseph(b) and Joseph Sperling(b), (a)National Nanotechnology Labs of INFN, University of Lecce, Italy, (b)Braun Center for Submicron Research, Weizmann Institute of Science, Israel roman.krahne@unile.it
- I/PI.18** NANO OR FINELY STRUCTURED COATINGS FOR SOFCS DEPOSITED BY PLASMA SPRAYING OF SUSPENSIONS
P. Fauchais, Faculte des Sciences, 123 avenue Albert Thomas, 87060 Limoges cedex, France fauchais@unilim.fr
- I/PI.19** RECENT ADVANCES IN THE FABRICATION OF 1-DIMENSIONAL NANOSTRUCTURES
Kundapura Shantha Shankar and A.K. Raychaudhuri Department of Physics, Indian Institute of Science, Bangalore 560012, India, shan@physics.iisc.ernet.in
- I/PI.20** STRUCTURAL CHARACTERIZATION OF ER DOPED GAN LAYERS GROWN BY MBE
Tomasz Wojtowicz(a), H. Ng(b) and P. Ruterana(a), (a)SIFCOM, UMR 6176, CNRS-ENSICAEN, 6 Bld Maréchal Juin, 1450 Caen, France, (b)Bell Laboratories, Lucent Technologies, 600 Mountain Avenue, Murray Hill NJ, USA tomasz.wojtowicz@ismra.fr
- I/PI.21** SPLITTING UP SINGLE WALLED CARBON NANOTUBE BUNDLES VIA CHEMICAL INDUCED CHARGING OF THE TUBES
Jürgen Abrahama, Andreas Hirscha, Institute of Organic Chemistry, Henkestraße 42, 91054 Erlangen, Germany
Abraham@chemie.uni-erlangen.de
- I/PI.22** HIGHLY ORIENTED CARBON RIBBONS FOR ADVANCED MULTIFUNCTIONAL MATERIALS ENGINEERING
S. Vulpe, Anca Dumitru, Adina Morozan, Georgeta Nan, Iuliana Pasuk*, Ioan Stamatiu, University of Bucharest, Faculty of Physics, 3Nano-SAE Research Centre, Bucharest MG 11, Romania, *Research Institute for Electrical Engineering – Advanced Research, 313 Splaiul Unirii, 74204, Bucharest, 3, Romania istarom@polymer.fizica.unibuc.ro
- I/PI.23** SELECTIVE GROWTH OF ALIGNED CO-FILLED CARBON NANOTUBES ON SILICON SUBSTRATES
R. Kozhuharova, M. Ritschel, A. Graff (a), A. Leonhardt, I. Moench, T. Muehl, C. M. Schneider(b) Leibniz Institute of Solid State and Materials Research Dresden, Helmholtzstr. 20, D-01069 Dresden, Germany, r.kozhuharova@ifw-dresden.de, Phone: +49(0)3514659673, Fax: +49(0)3514659745 a) Max Planck Institute of Microstructure Physics, Halle, b) Institute of Solid State Research IFF-IEE, Juelich, Germany;
- I/PI.24** PECVD-GROWN CARBON NANOTUBES ON SILICON SUBSTRATES SUITABLE FOR REALIZATION OF SELF-ALIGNED FIELD-EMISSION TRANSISTORS
J. Koohsorkhi, H. Hosseinzadegan, Shamsoddin Mohajerzadeh, S. Kiani and A. Khodadadi, Thin Film Laboratory, Department of Electrical and Computer Engineering, University of Tehran, Tehran, Iran smohajer@vlsi.uwaterloo.ca
- I/PI.25** PURIFICATION AND ISOLATION OF SINGLE WALLED CARBON NANOTUBES
Elizabeth Gegan, G. Chambers, S. Keogh, T. Hedderman, H. Byrne, School of Physics/FOCAS, Dublin Institute of Technology, Dublin, Ireland Elizabeth.Gegan@dit.ie
- I/PI.26** CHEMICAL FUNCTIONALIZATION OF SINGLE-WALLED CARBON NANOTUBES
Karl S. Coleman, Inorganic Chemistry Laboratory, University of Oxford, South Parks Road, Oxford, OX1 3QR, U.K.
karl.coleman@chemistry.oxford.ac.uk
- I/PI. 27** EFFECT OF TEMPERATURE ON NUCLEATION, GROWTH AND DIAMETER OF CARBON NANOTUBES BY MODIFIED PLASMA-ENHANCED CHEMICAL VAPOR DEPOSITION
Bahram Ganjipour(a), S. Mohajerzadeh(b), (a)University of Kashan, Iran, (b)University of Tehran, Iran
ganjipour@kashanu.ac.ir
- I/PI.28** REDUCTIVE FUNCTIONALIZATION OF CARBON NANOTUBES
F. Borondics(a), E. Jakab(b), M. Bokor(a), P. Matus(a), K. Tompa(a), Sandor Pekker(a), (a)Research Institute for Solid State Physics and Optics, HAS, 1525 Budapest, P.O.Box 49, Hungary, (b)Chemical Research Center, HAS, 1525 Budapest, P.O.Box 17, Hungary 392 2219 pekker@szfki.hu
- I/PI.29** FUNCTIONALIZED SOLUBLE CARBON NANOTUBES
Maurizio Prato, Dipartimento di Scienze Farmaceutiche, Università di Trieste, Piazzale Europa 1, 34127 Trieste, Italy
prato@units.it

- I/PI.30** CARBON NANOTUBES GROWTH ON PAN AND PITCH BASED CARBON FIBRES BY HFCVD
Theodoros Dikonimos Makris, R. Giorgi, N. Lisi, L. Pilloni, E. Salernitano, ENEA Casaccia Research Center, via Anguillarese 301, 00060 Rome, Italy F. De Riccardis, D. Carbone, ENEA Brindisi Research Center, SS.7 Appia Km 712, 72100 Brindisi, Italy dikonimos@casaccia.enea.it
- I/PI.31** VIBRATIONAL SPECTRA OF CARBONACEOUS MATERIALS: A SEIRA SPECTROSCOPY VERSUS FTIR AND RAMAN
 G.I. Dovbeshko, O.P. Gnatyuk, Institute of Physics of National Academy of Sciences of Ukraine, Prospect Nauki, 46, 03028 Kyiv, Ukraine; A.N. Nazarova, National Taras Shevchenko University of Kyiv, Volodymyrska str., 64, 01033 Kyiv, Ukraine; Yu.I Sementsov, Institute of Surface Chemistry National Academy of Sciences of Ukraine, Generala Naumova, 17, 03680 Kyiv, Ukraine galyna@ukma.kiev.ua
- I/PI.32** DYNAMIC CHARACTERISTIC STUDY OF FULLERENE-DOPED LC SYSTEMS BASED ON PHTHALOCYANINE NANOCRYSTALS
 Yu.A.Zubtsova, 5th year student of State Electrotechnical University, 5 Prof. Popova Str., St. Petersburg, 197376, Russia, V.A. Shulev, 5th year student of State Electrotechnical University, 5 Prof. Popova Str., St. Petersburg, 197376, Russia, M.M. Mikhailova, Research Center "Vavilov State Optical Inst.", 12 Birzhevaya Line, St.Petersburg, 199034, Russia, I.Yu. Denisyyuk (Dr.Sci., PhD), Research Center "Vavilov State Optical Inst.", 12 Birzhevaya Line, St.-Petersburg, 199034, Russia, Natalie V. Kamanina (Dr.Sci., PhD), Research Center "Vavilov State Optical Inst.", 12 Birzhevaya Line, St.-Petersburg, 199034, Russia kamanin@ffm.ioffe.ru
- I/PI.33** MECHANICAL BEHAVIOR OF INDIVIDUAL WS₂ NANOTUBES
I. Kaplan-Ashiri(a), S.R. Cohen(b), K. Gartsman(b), R. Rosentsveig(a), R. Tenne(a), (a)Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, Israel, (b)Chemical Research Support, Weizmann Institute of Science, Rehovot, Israel Ifata@wisemail.weizmann.ac.il
- I/PI.34** ELECTRON TRANSPORT PROPERTIES OF FULLERENE C₆₀ NANOCUSTER ENSEMBLES ON A SURFACE
 D. Zherebetsky, A. Chomenko, O. Ivanyuta, Oleg Lysko, O. Gorchinsky, Taras Shevchenko Kiev National University of Biophysics Faculty, 64 Vladimirska Str., 01033 Kiev, Ukraine iva@univ.kiev.ua
- I/PI.35** PHONON FREQUENCY SHIFTS IN RAMAN SPECTRA OF SINGLE-WALL CARBON NANOTUBES HIGHLY DOPED WITH BORON AND NITROGEN
Tatyana Skipa, P.Schweiss, K.-P. Bohnen, S. Lebedkin, B.Renker, Forschungszentrum Karlsruhe, Institut für Festkörperphysik and Institut für Nanotechnologie, 76021 Karlsruhe, Germany skipa@ifp.fzk.de
- I/PI.36** ARRANGEMENT AND ELECTRONIC STRUCTURE OF OXIDIZED CARBON NANOTUBES
Lyubov G. Bulusheva, A.V. Okotrub and V.V. Belavin Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia, U. Dettlaff-Weglikowska, Max-Planck-Institute for Solid State Research, Stuttgart, Germany, A. El-Barbary and M.I. Heggie, School of Chemistry, Physics and Environmental Science, University of Sussex at Brighton, U.K bul@che.nsk.su
- I/PI.37** SUBSTITUTIONAL DOPED SINGLE-WALLED NANOTUBES
Marianne Glerup(a,b), V. Krstic(b,c), A.M. Janssens(a,d), S. Roth(b), P. Bernier(a), C. Ewels(e), O. Stéphan(e), (a)GDPC (UMR5581), Université Montpellier II, Place E. Bataillon, 34095 Montpellier Cedex 5, France, (b)Max-Planck-Institut für Festkörperforschung, Heisenbergstrasse 1, 70569 Stuttgart, Germany, (c)Grenoble High Magnetic Field Laboratory, Max-Planck-Institut für Festkörperforschung CNRS, 25, Ave. des Martyrs, 38042 Grenoble France, (d)Department of Applied Physics and DIMES, Delft University of Technology, Lorentzweg 1, 2628 CJ Delft, The Netherlands, (e)LPS, Université Paris-Sud, Bat. Bat. 510, 91405 Orsay Cedex, France glерup@GDPC.univ-montp2.fr
- I/PI.38** ESR OF Fe-FILLED MULTIWALLED CARBON NANOTUBES
V.Sohatsky (a), J.Schumann (b), T.Muhl (b), C.Schneider (b), S.Kolesnik (a), (a) Taras Shevchenko Kiev National University of Radiophysics Faculty, 64 Vladimirska Str., 01033 Kiev, Ukraine; (b) Leibniz Institute of Solid State and Materials Research Dresden, Helmholtzstr. 20, D-01069 Dresden, Germany vso@univ.kiev.ua
- I/PI.39** IRRADIATION EFFECTS IN CARBON NANOTUBES
Arkady V. Krasheninnikov, Accelerator Laboratory, 00014 University of Helsinki, Finland akrashen@acclab.helsinki.fi
- I/PI.40** EFFECT OF SOCl₂ TREATMENT ON ELECTRICAL PROPERTIES OF SINGLE WALL CARBON NANOTUBES
Urszula Dettlaff-Weglikowska(a), Viera Skakalova(b), Ralf Graupner(b), Sung Ho Jhang(c), Sang Wook Lee(c), Dong Su Lee(c), Lothar Ley(b), Yung Woo Park(c) and Siegmund Roth(a), (a)Max-Planck-Institut fuer Festkoerper Forschung, Heisenbergstr.1, 70569 Stuttgart, Germany, (b)Institute of Technical Physics, University of Erlangen, Erwin-Rommel Str. 1, 91058 Erlangen, Germany, (c)School of Physics and Condensed Matter Research Institute, Seoul National University, Seoul, 151-747, Korea u.dettlaff@fkf.mpg.de
- I/PI.41** OPTICAL SPECTROSCOPY AND CONDUCTIVITY OF SINGLE AND DNA BUTT-JOINT CHAINS OF CARBYNE
 Oleksandr Ivanyuta, Dmitriy Kolomijets, Taras Shevchenko National University of Kiev, The Scientific and Training Center "Physical and Chemical Material Science" of this University and NASU, Ukraine kio13@mail.univ.kiev.ua
- I/PI.42** THE NANO CLEAN ROOM REACTOR INSIDE OF SWCNTs
 R. Pfeiffer^{1,2}, F. Simon¹, M. Hulman¹, Ch. Kramberger¹, M. Holzweber¹, H. Kuzmany¹, V. Popov², H. Kataura³, ¹ Institut für Materialphysik, Universität Wien, Vienna, Austria; ² Faculty of Physics, University of Sofia, Sofia, Bulgaria; ³ Department of Physics, Tokyo Metropolitan University, Tokyo, Japan kuzman@ap.univie.ac.at
- I/PI.42** DIRECT SYNTHESIS OF PURE CARBON-NANOTUBES
 Vinay Gupta, Peter Scharff, and Toni Frohlich Department of Chemistry, Institute of Physics, Technische Universität Ilmenau PF 10 05 65 98684 Ilmenau Germany drvinaygupta@netscape.net

Wednesday, May 26, 2004

Afternoon

Session VIII: Nanotechnology, engineering: carbon nanotubes, fullerene peapods

Session chair: Eugene Katz

- I-VIII.1** 14:00 CHEMICAL STRATEGIES FOR CARBON NANOTUBE FUNCTIONALIZATION
Stanislaus S. Wong, Department of Chemistry, State University of New York at Stony Brook, Stony Brook NY 11794-3400, USA sswong@notes.cc.sunysb.edu
- I-VIII.2** 14:30 REDOX DOPING OF CARBON NANOTUBES AND FULLERENE PEAPODS
[Ladislav Kavan](mailto:kavan@jh-inst.cas.cz)(a,b), Martin Kalbác(a,b), Markéta Zúkalová(a), Matthias Krause(b), Hiromichi Kataura(c) and Lothar Dunsch(b), (a)J. Heyrovský Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Dolejškova 3, 18223 Prague 8, Czech Republic, (b)Institute of Solid State and Materials Research, Helmholtzstr. 20, 01069 Dresden, Germany, (c)Department of Physics, Tokyo Metropolitan University, 1-1 Minami-Ohsawa, Hachioji, Tokyo 192-0397, Japan kavan@jh-inst.cas.cz
- I-VIII.3** 14:45 COMMON FEATURES OF THE FORMATION MECHANISM OF CARBON FILAMENTS, ANOTUBES AND SILICON CARBIDE WHISKERS ON METAL CATALYSTS.
Vladimir L. Kuznetsov, Borekov Institute of Catalysis, Lavrentieva 5, Novosibirsk, 630090 Russia
kuznet@catalysis.nsk.su

Session IX: Nanotechnology, engineering: nanocarbon /inorganic materials and carbon nanotubes systems for devices

Session chair: Ladislav Kavan

- I-IX.1** 15:00 BUILDING CARBON NANOTUBE ARCHITECTURES FOR DEVICE APPLICATIONS
[B.Q. Wei](mailto:weib@ece.lsu.edu), Department of Electrical and Computer Engineering and LSU CAPITAL, Louisiana State University, Baton Rouge LA 70803, USA, N. Chakrapani, Y.J. Jung, R. Vajtai, P.M. Ajayan, Department of Material Science and Engineering, A. Carrillo, R. Kane, Howard P. Isermann, Department of Chemical Engineering, Rensselaer Polytechnic Institute, Troy NY 12180, USA weib@ece.lsu.edu
- I-IX.2** 15:30 SURFACE REACTION OF C₆₀ WITH ATOMIC HYDROGEN: FORMATION OF A PROTECTING HYDROCARBON LAYER
[Maksim Eremtchenko](mailto:Maxim.Eremtchenko@TU-Ilmenau.de), S. Döring, R. Temirov, J.A. Schaefer, Institut für Physik und Zentrum für Mikro- und Nanotechnologien, Technische Universität Ilmenau, P.O. Box 100565, 98684 Ilmenau, Germany
Maxim.Eremtchenko@TU-Ilmenau.de
- I-IX.3** 15:45 FREESTANDING NANOTUBES WITH INDIVIDUAL CONTACTS IN THE TEM
[Jannik C. Meyer](mailto:j.meyer@fkf.mpg.de), Dirk Obergfell, Siegmar Roth, Max Planck Institute for Solid State Research, Stuttgart, Germany j.meyer@fkf.mpg.de
- I-IX.4** 16:00 SYNTHESIS, PROPERTIES AND POSSIBLE APPLICATIONS OF HELICAL CARBON NANOTUBES
[Antonio Fonseca](mailto:antonio.fonseca@fundp.ac.be)(1*), A. Szabó(1), A. Volodin(2), C. Van Haesendonck(2), J. B.Nagy(1). (1): Faculté Universitaires Notre-Dame de la Paix, Rue de Bruxelles 61, B-5000 Namur, Belgium. (2): Laboratorium voor Vaste-Stoffysica en Magnetisme, Katholieke Universiteit Leuven, B-3001 Leuven, Belgium.
antonio.fonseca@fundp.ac.be
- 16:15 **BREAK**

Session X: Fundamental properties: fullerenes, endofullerenes

Session chair: Maxim Eremtchenko

- I-X.1** 16:30 WHAT IS SPECIAL ABOUT ENDOFULLERENES?
K.-P. Dinse, Eduard-Zintl-Institut für Anorganische und Physikalische Chemie, Technische Universität Darmstadt, Petersenstr. 20, 64287 Darmstadt, Germany dinse@chemie.tu-darmstadt.de
- I-X.2** 17:00 THE DEVELOPMENT OF FUNCTIONAL ENDOHEDRAL METALLOFULLERENE MATERIALS
Shihe Yang, Department of Chemistry, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong chsyang@ust.hk
- I-X.3** 17:15 RAMAN SPECTROELECTROCHEMISTRY OF C₆₀ FULLERENE LAYERS
Matthias Krause, Denny Deutsch, Lothar Dunsch, Leibniz - Institut fuer Festkoerper- und Werkstoffforschung Dresden, Germany m.krause@ifw-dresden.de
- I-X.4** 17:30 ON CLUSTERIZATION OF FULLERENES IN NITROGENATED SOLVENTS
M.V. Korobov, N.V. Kozhemyakina, Moscow State University, Russia, Mikhail V. Avdeev, T.V. Tropin, A.A. Khokhryakov, V.L. Aksenov, Joint Institute for Nuclear Research, Dubna, Russia, L. Rosta, Research Institute for Solid State Physics and Optics, Budapest, Hungary avd@nf.jinr.ru
- I-X.5** 17:45 CRYSTALLINE AND AMORPHOUS STRUCTURES, FORMED BY THERMOBARIC TREATMENT OF C₆₀: HREM-STUDIES
V.D.Blank¹, Boris.A.Kulnitskiy¹, G.A.Dubitsky¹, I.Alexandrou², ¹Technological Institute for Superhard and Novel Carbon Materials (TISNCM), 7a Centralnaya Street, 142190, Troitsk, Moscow region, Russia, ²Department of Electrical Engineering and Electronics, University of Liverpool, Brownlow Hill, Liverpool L69 3GJ, UK boris@ntestm.troitsk.ru
- I-X.5** 18:00 AMBIPOLAR TRANSPORT BEHAVIOUR OF DY METALLOFULLERENE PEAPODS
Dirk Obergfell(a), Jannik C. Meyer(a), Po-Wen Chiu(a), Shihe Yang(b), Siegmur Roth(a), (a)Max Planck Institute for Solid State Research, Stuttgart, Germany, (b)Department of Chemistry, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, China D.Obergfell@fkf.mpg.de
- 18:15 **BREAK**

18:30 - 20:00 POSTER SESSION II

Fundamental properties: carbon films; fullerene or carbon nanotube-polymer, nanocomposite
Multifunctional applications, electronics, magnetronics; biomedicine; bioprobes
Key future nanosystems for renewable energies

- I/PII.01** C₆₀ INTERCALATED GRAPHITE: A NEW FORM OF CARBON
Vinay Gupta, Department of Physics, Ilmenau Technical University, Weimarer Strasse 32 (Faradaybau), phone = 49 (03677) 200774, fax = 49 (03677) 693271 98693 Ilmenau, Germany drvinaygupta@netscape.net
- I/PII.02** STRUCTURAL ORDERING OF ORGANIC NANOCOMPOSITES
Tiziana Di Luccio, ENEA Brindisi Research Center, Composite and Nanostructured Materials Unit, SS7 Appia, 72100 Brindisi, Italy tiziana.diluccio@brindisi.enea.it
- I/PII.03** CARBON NANOCLUSTER-BASED SUPERHARD MATERIALS
Michael Popov, High Pressure Group, Max-Planck Institute for Chemistry, 55020 Mainz, Germany m-popov@mpch-mainz.mpg.de
- I/PII.04** INTERACTION OF OXYGEN WITH N-TYPE DOPING CONDUCTING POLYMERS AND CARBON NANOTUBES NANOCOMPOSITES: ROLE OF CHARGE TRANSFER COMPLEX FORMATION WITH POLY(3-OCTYLTHIOPHENE)
L. Valentini, I. Armentano, **Jose M. Kenny**, Materials Science and Technology Center, INSTM Unit, Università di Perugia, 05100 Terni, Italy, S. Bidali, A. Mariani, Department of Chemistry, INSTM Unit, Università di Sassari, Via Vienna 2, 07100 Sassari, Italy kenny@unipg.it
- I/PII.05** CARBON NANOTUBE NUCLEATED CRYSTALLINITY IN A CONJUGATED POLYMER COMPOSITE
Kevin P. Ryan(a), Stephen M. Lipson(a), Anna Drury(a), Martin Cadek(a), Manuel Ruether(a), Sean M. O' Flaherty(a), Valerie Barron(a), Brendan McCarthy(b), Hugh J. Byrne(c), Werner J. Blau(a), Jonathan N. Coleman(a), (a)Materials Ireland Polymer Research Centre, Department of Physics, Trinity College Dublin, Dublin 2, Ireland, (b)Optical Sciences Center, University of Arizona, 1630 E, University Blvd., Tucson AZ 85721, USA, (c)School of Physics/FOCAS, Dublin Institute of Technology, Kevin Street, Dublin 8, Ireland kpryan@tcd.ie
- I/PII.06** CATALYTIC GRAPHITIZATION OF WOOD-BASED CARBONS WITH ALUMINA BY PULSE CURRENT HEATING
Toshimitsu Hata(a), Paul Bronsveld(b), Tomas Vystavel(b), Jeff De Hosson(b), Hikari Kikuchi(c), Kengo Ishimaru(a), Kouei Nishimiya(c); Takashi Nishizawa(d), (a)Yuji Imamura Wood Research Institute, Kyoto University, Japan, (b)Department of Applied Physics, Materials Science Center, University of Groningen, The Netherlands, (c)S S Alloy, Japan, (c)Hokkaido Forest Products Research Institute, (d)NanoCarbon Research Institute Ltd., Japan n50120@sakura.kudpc.kyoto-u.ac.jp
- I/PII.07** POLYANILINE/MULTI-WALL CARBON NANOTUBE COMPOSITES
R. Sainz, A.M. Benito, M.T. Martínez, **Wolfgang K. Maser**, Instituto de Carboquímica (CSIC), C/Miguel Luesma Castán 4, 50018 Zaragoza, Spain, S. Quillard, B. Corraze, O. Chauvet, Laboratoire de Physique Cristalline, IMN, Université de Nantes, UMR 6502, 2 rue de la Houssinière, 44322 Nantes Cedex 3, France wmaser@carbon.icb.csic.es rakel@carbon.icb.csic.es
- I/PII.08** CARBON / CARBON COMPOSITES: FAILURE MECHANISMS IN INFILTRATED CARBON FIBER FELTS
B. Reznik, Laboratorium für Elektronenmikroskopie, Universität Karlsruhe, Kaiserstrasse 12, 76128 Karlsruhe, Germany reznik@lem.uni-karlsruhe.de
- I/PII.09** HOMOGENEOUSLY DISPERSED NANOTUBES IN POLYMER MATRICES
Michael Holzinger, Johannes Steinmetz, Marianne Glerup, Damian Samaille and Patrick Bernier, GDFC, Université de Montpellier II, CC26, 34095 Montpellier Cedex 05, France jyu@phya.snu.ac.kr
- I/PII.10** CHARACTERISTICS OF CARBON AND CARBON-NITRIDE NANOSTRUCTURES PRODUCED BY PLASMA DEPOSITION FROM AMMONIA AND METHANE OR ACETYLENE
J.G. Céspedes(a), C.Corbella(a), G. Viera(b), M. Galán(b), M.C. Polo(a), E.Bertran(a), (a)FEMAN- Dept. de Física Aplicada i Òptica, Universitat de Barcelona, Av. Diagonal 647, 08028 Barcelona, Spain, (b)MONOCROM S.L., C. Vilanoveta 6, 08800 Vilanova i la Geltrú, Spain ebertran@ub.edu
- I/PII.11** OPTICAL PROPERTIES OF NANOCRYSTALLINE DIAMOND/AMORPHOUS CARBON COMPOSITE FILMS
S. Boycheva(a), **Cyril Popov**(a), J. Bulir(b), A. Piegari(b), W. Kulisch(a), (a)Institute of Microstructure Technologies and Analytics (IMA), University of Kassel, Heinrich-Plett-Str. 40, 34132 Kassel, Germany, (b)ENEA Research Center, Optical Coatings Group, Via Anguillarese 301, 00060 Rome, Italy popov@schottky.physik.uni-kassel.de
- I/PII.12** SURFACE PREPARED DOUBLE WALL CARBON NANOTUBES BASED ON THIN FILMS OF C60 PEAPODS
F. Hasi, F. Simon, H. Kuzmany, Institut für Materialphysik, Universität Wien, Strudlhofgasse 4, A-1090 Wien, Austria, kuzman@ap.univie.ac.at
- I/PII.13** SEPARATION OF THE PHOTO-OLIGOMERS OF C₆₀
Eva Kovats, S. Pekker, Research Institute for Solid State Physics and Optics, HAS, H-1525 Budapest, P.O.Box 49, Hungary kovatse@szfki.hu

- I/PII.14** MORPHOLOGICAL AND SPECTROSCOPIC CHARACTERIZATION OF NANOSTRUCTURED CARBON FILMS CONTAINING METAL NANOPARTICLES
C. Lenardi(a), T. Caruso(b), R. G. Agostino(b), G. Bongiorno(c), E. Barborini(c), P. Piseri(c), S. La Rosa(d), M. Bertolo(d), C. Ducati(e) and P. Milani(c), (a)INFN-Istituto di Fisiologia Generale e Chimica Biologica and CIMAINA, Università di Milano, via Trentacoste 2, 20134 Milano, Italy, (b)INFN-Dipartimento di Fisica, Università della Calabria, Ponte Bucci, Cubo 33c, 87036 Arcavacata di Rende (CS), Italy, (c)INFN-Dipartimento di Fisica and CIMAINA, Università di Milano, via Celoria 16, 20133 Milano, Italy, (d)Sincrotrone Trieste, S. S. 14 km 163.5, in Area Science Park, 34012 Basovizza- Trieste, Italy, (e)Department of Engineering, University of Cambridge, Trumpington Street, Cambridge CB2 1PZ, U.K cristina.lenardi@mi.infn.it
- I/PII.15** ELECTRON-MICROSCOPIC RESEARCHES OF VARIOUS EXTERNAL INFLUENCES ON THIN FILMS C₆₀
Yeacheslav Rahvalov, D. Spoiola, Institute of Applied Physics, Academy of Science of Moldova, Kishinev, Moldova rava@phys.asm.md
- I/PII.16** X-RAY SPECTROSCOPIC EXAMINATION OF ANNEALED NANODIAMONDS
Alexander V. Okotrub(a), L.G. Bulusheva(a), A.V. Gusel'nikov(a), V.L. Kuznetsov(b), Yu.V. Butenko(b), (a)Nikolaev Institute of Inorganic Chemistry SB RAS, av.Ak.Lavrentieva 3, Novosibirsk 630090, Russia, (b)Borskov Institute of Catalysis SB RAS, av.Ak.Lavrentieva 5, Novosibirsk 630090, Russia spectrum@che.nsk.su
- I/PII.17** THIN FILM PROCESSING OF ISOLATED INDIVIDUAL SWNTs AND THEIR ABSORPTION/LUMINESCENCE PROPERTIES
S. Kazaoui, Nobutsugu Minami, Y. Kim, Nanotechnology Research Institute, AIST, Central 5, Tsukuba, Ibaraki 305-8565, Japan n.minami@aist.go.jp
- I/PII.18** CHEMICAL FUNCTIONALIZATION OF SWNT AND ITS APPLICATIONS: LB FILM DEPOSITION AND ATTACHMENT OF LUMINESCENT FUNCTIONALITY
Nobutsugu Minami, S. Kazaoui, Y. Kim, W. Zhu, M. Matsumoto, R. Azumi, Nanotechnology Research Institute, AIST, Central 5, Tsukuba, Ibaraki 305-8565, Japan n.minami@aist.go.jp
- I/PII.19** SURFACE TO DEPTH ANALYSIS OF CHEMICAL FUNCTIONALISED MULTI-WALL CARBON NANOTUBES (FMWCNTS) BY XPS AND SIMS TECHNIQUES
Thomas Okpalugo¹, P. Papakonstantinou¹, H. Murphy¹, J. McLaughlin¹, N.M.D Brown¹, T. McNally², ¹NIBEC, University of Ulster, Shore Road, BT37 0QB, Northern Ireland, UK; ²School of Mechanical Engineering, Queen's University Belfast, Belfast BT9 5AH UK thomas@nibec-s1.nibec.ulst.ac.uk
- I/PII.20** SOLUTION-PROCESSED FABRICATION AND CHARACTERIZATION OF SINGLE-WALLED CARBON NANOTUBE FIELD EFFECT TRANSISTORS
Masashi Shiraishi(a,b), Taishi Takenobu(c), Yoshihiro Iwasa(c), Hiromichi Kataura(d) and Masafumi Ata(a), (a)SONY Corporation, (b)Graduate School of Engineering Science, Osaka Univ., (c)IMR, Tohoku Univ., (d)Graduate School of Science, Tokyo Metropolitan Univ., Japan gaetano@yds.so-net.ne.jp
- I/PII.21** MAGNETIC AND ELECTRICAL PROPERTIES OF NANOPOROUS CARBON WITH PORES FILLED BY Ni ATOMS
A.I. Veynger, V.V. Popov, A.M. Danishevskii, V.B. Shuman, D.A. Kurdyukov, A.F. Ioffe Phys&Techn Institute of Russ.Acad.Sci., St.Petersburg, Russia, Bela D. Shanina, M.Ya. Valakh, Institute of Semiconductor Physics, NASU, Kiev 03028, Ukraine, S.K. Gordeev Central Scientific Research Institute of Materials, St.Petersburg, Russia shanina_bela@rambler.ru
- I/PII.22** CARBON NANOSTRUCTURES/CLAY COMPOSITES. NEW ORGANIC/INORGANIC HYBRID MATERIALS
Vasilio Georgakilas, D. Gourmis, D. Petridis, Institute of Material Science, N.C.S.R "Demokritos", Ag. Paraskevi, Attikis 15310 Athens, Greece georgaki@ims.demokritos.gr
- I/PII.23** NOVEL SOLID MADE BY A COMPRESSION OF CARBON NANOPOWDER
O. Prilutskiy, CMC Ltd., POB 633, Ofakim 80300 Israel, Eugene A. Katz, Department of Solar Energy and Environmental Physics, Ben-Gurion University of the Negev, Sede Boqer, 84990 Israel, E. Prilutskiy, S. N. Dub, Institute for Problems of Materials Science, National Academy of Sciences of Ukraine, Krzhizhanovskii Str. 3, Kiev, 03142 Ukraine, E. Mogilko, A. Butenko and Y. Schlesinger, Department of Physics and Center for Superconductivity, Bar-Ilan University, Ramat Gan, 52900 Israel keugene@bgumail.bgu.ac.il
- I/PII.24** BUILDING CARBON NANOTUBES DEVICES. DETERMINISTIC GROWTH, STATUS AND CHALLENGES
Costel-Sorin Cojocaru, Laboratory of Physics of Interfaces and Thin Films (LPICM), École Polytechnique, (UMR 7647) CNRS, Route de Saclay, 91128 PALAISEAU Cedex, France Costel-Sorin.Cojocaru@polytechnique.fr
- I/PII.25** RECENT PROGRESS OF CARBON-BASED NANOSTRUCTURES/NANOTUBES IN ELECTRON EMISSION DEVICES: A CRITICAL REVIEW
Ahalapitiya H. Jayatissa, The University of Toledo, Ohio 43606, USA ajayati@UTNet.UToledo.Edu
- I/PII.26** NANOCARBON MATERIALS FOR ACTIVE ELECTRONICS AND BIO-NANOTECHNOLOGY
Cengiz S. Ozkan, Mechanical Engineering, University of California, Riverside CA 92521, USA cozkan@engr.ucr.edu
- I/PII.27** EMISSION PROPERTIES OF CARBON NANOTUBES
Alexander V. Eletsii, RRC "Kurchatov Institute", Kurchatov Square, Moscow 123182, Russia eletsii@imp.kiae.ru
- I/PII.28** ELECTRON-ELECTRON INTERACTION AND ITS MODIFICATION IN CARBON NANOTUBES
Anatoly I. Romanenko, Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia romanenk@casper.che.nsk.su
- I/PII.29** MICROELECTRONIC INTERCONNECTS BASED ON CARBON NANOTUBES
Andrew P. Graham, Maik Liebau, Georg S. Duesberg, Robert Seidel, Eugen Unger and Franz Kreupl, Infineon Technologies Corporate, Otto-Hahn-Ring 6, 81739 Munich, Germany Andrew.Graham@infineon.com

- I/PII.30** ELECTRIC AND MAGNETORESISTANCE OF NANOCOMPOSITE MATERIAL GRAPHITE-COBALT
Ludmila Vovchenko, [L. Matzui](mailto:L.Matzui), O. Stelmakh, M.Zakharenko, Kyiv National Taras Shevchenko University, Departments of Physics, Volodymyrska Str. 64, 01033 Kyiv, Ukraine vovch@univ.kiev.ua
- I/PII.31** STRUCTURE AND PROTON CONDUCTIVITY OF GAMMA-IRRADIATED CARBON FILMS
[Elvira M. Ibragimova](mailto:Elvira.M.Ibragimova), V.N. Sandalov, M.U. Kalanov, M.A. Mussaeva, M.I. Muminov, Institute of Nuclear Physics Academy of Sciences, p. Ulugbek, 702132 Tashkent, Uzbekistan mmukhtar@yandex.ru
- I/PII.32** ELECTRONIC TRANSPORT THROUGH BENT CARBON NANOTUBE HETEROJUNCTION FOR NANO-SENSORS
Amir A. Farajian, [Hiroshi Mizuseki](mailto:Hiroshi.Mizuseki) and Yoshiyuki Kawazoe, Institute for Materials Research, Tohoku University, Sendai, 980-8577, Japan mizuseki@imr.edu
- I/PII.33** MAGNETO-TRANSPORT EFFECTS IN CARBON NANOTUBES
[Vojislav Krstic](mailto:Vojislav.Krstic)(a,b), M. Glerup(b,c), G.L.J.A. Rikken(d), S. Roth(b), (a)Grenoble High Magnetic Field Laboratory, CNRS, 25 Ave. des Martyrs, 38042 Grenoble, France, (b)Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, 70569 Stuttgart, Germany, (c)GDPC (UMR5581), Université Montpellier II, Place E. Bataillon, 34095 Montpellier, France, (d)Laboratoire des Champs Magnétiques Pulsés, CNRS/INSA/UPS, B.P. 4245, 31432 Toulouse, France krstic@grenoble.cnrs.fr
- I/PII.34** CONDUCTIVE POLYMER NANO-COMPOSITES
[Marion Wienecke](mailto:Marion.Wienecke), Mihaela-C. Bunescu, Marlis Pietrzak, K. Deistung, H. Hansmann, Hochschule Wismar, Institut für Oberflächen- und Dünnschichttechnik, Philipp-Müller-Str., 23952 Wismar, Germany m.wienecke@et.hs-wismar.de
- I/PII.35** MAGNETO-TRANSPORT IN SELF-ASSEMBLED ARRAYS OF MULTIWALL CARBON NANOTUBES
J. Galibert, Laboratoire National des Champs Magnétiques Pulsés, 143 Avenue de Ranguel, 31432 Toulouse Cedex 4, France, E. Couteau, M.Seo, L.Forro, Ecole Polytechnique Federale de Lausanne, DP-IGA, PH Ecublens, 1015 Lausanne, Switzerland, M. Rafailovich, J. Sokolov, [Vladimir A. Samuilov](mailto:Vladimir.A.Samuilov)*, Department of Materials Science, SUNYSB, Stony Brook NY 11794-2275, USA, *on leave from the Department of Physics State University of Belarus, 22000 Minsk, Belarusvsamuilov@notes.cc.sunysb.edu
- I/PII.36** ENDOHEDRAL FULLERENES: FROM CHEMICAL PHYSICS TO NANOTECHNOLOGY AND NANOMEDICINE
[Vitaly K. Koltover](mailto:Vitaly.K.Koltover), Institute of Problems of Chemical Physics, Russian Academy of Sciences, Chernogolovka, Moscow Region, Russia koltover@icp.ac.ru
- I/PII.37** SENSING OPTICAL TRANSITION IN C₆₀ DERIVATIVES AND IN MIXTURE WITH ss-DNA TO TIME OF UV IRRADIATION
[Oleksandr Vysokolyan](mailto:Oleksandr.Vysokolyan), M.Koehler, W. Fritzsche, P. Scharff, E. Buzaneva, (a) Medical radiophysics department, National Taras Shevchenko University of Kiev, The Scientific and Training Center “Physical and Chemical Material Science” of Kiev National Taras Shevchenko University and NASU, 64 Vladimirska Str., 01033 Kiev, Ukraine, (b) Department for Physical Chemistry and Microreaction Technology, Technical University of Ilmenau, Germany,(c) Institute for Physical High Technology Jena, Biotechnical Microsystem Department, Jena, Germany, (d) Technical University of Ilmenau, Institute of Physics, 98684 Ilmenau, Germany, vysokolyan@univ.kiev.ua
- I/PII.38** DNA/CARBONE NANOTUBES BLOCKS IN BIOMEDICAL APPLICATIONS
[Dmitriy Kolomiyets](mailto:Dmitriy.Kolomiyets), Taras Shevchenko National University of Kiev, The Scientific and Training Center “Physical and Chemical Material Science” of this University and NASU, Ukraine kio13@mail.univ.kiev.ua
- I/PII.39** NANOCRYSTALS OF HYDROXYAPATITE IN AGGREGATES WITH C₆₀ AS HIGH BIOACTIVE SYSTEM.
Oleg Lysko¹, Katrin Risch², Peter Scharff², V. Dubok³, ¹⁾ Medical Radiophysical Department, National Taras Shevchenko University of Kiev, 64 Volodymyrska St., 01033 Kyiv, Ukraine, LysOl@univ.kiev.ua ²⁾ Institut für Physik, Fakultät für Mathematik und Naturwissenschaften, Technische Universität Ilmenau, ³⁾Institute of Matirial Science NASU, Kyiv, Ukraine.
- I/PII.40** ON THE FRACTAL STRUCTURE OF FULLERENE C₆₀ AQUEOUS SOLUTION
I.I. Adamenko(a), K.O. Moroz(a), V.M. Yashchuk(a), M. Galak(a), [Yury I. Prylutsky](mailto:Yury.I.Prylutsky)(b), S.S. Durov(a), P. Scharff(c), C. Siegmund(c), Kyiv National Shevchenko University, Faculty of (a)Physics and (b)Biology, Volodymyrska Str. 64, Kyiv 01033, Ukraine, (c)Technical University of Ilmenau, Institute of Physics, 98684 Ilmenau, Germany prylut@biocc.univ.kiev.ua
- I/PII.41** CHARACTERIZATION OF WATER-SOLUBLE FULLERENE C₆₀ DERIVATIVES AS PHOTSENSITIZERS
I.Lysko (a), P.Scharff (b), K.Risch (b), E.Buzaneva (a), (a) Medical radiophysics department, National Taras Shevchenko University of Kiev, The Scientific and Training Center “Physical and Chemical Material Science” of Kiev National Taras Shevchenko University and NASU, 64 Vladimirska Str., 01033 Kiev, Ukraine, IgorLysko@univ.kiev.ua, (b) Department for Physical Chemistry and Microreaction Technology, Technical University of Ilmenau, Germany
- I/PII.42** TRANSPORT OF GOLD NANOPARTICLES ACROSS BACTERIAL MEMBRANES DUE TO MICROWAVE-INDUCED ACTIVATION OF CARBON NANOTUBES
Jose Rojas-Chapana, Center CAESAR, Dept. Nanopartikel Technologie, Ludwig Erhard Allee 2, 53175 Bonn, Germany rojas@caesar.de
- I/PII.43** WATER-SOLUBLE FULLERENE DERIVATIVES FOR PHOTSENSITIZATION OF BIOLOGICAL TARGETS
[Berhard Vileno](mailto:Berhard.Vileno), LNNME-IPMC-EPFL 1015 Lausanne, Suisse, A. Sienkiewicz, Institute of Physics, PAS, Al. Lotników 32/ 46, 02-668 Warsaw Poland, M. Lekka, Institute of Nuclear Physics, PAS, ul. Radzikowskiego, 152, 31-342 Kraków, Poland; P. Marcoux, LNNME-IPMC, EPFL, 1015 Lausanne, Switzerland; B. Livramento, ICMB, EPFL, 1015 Lausanne, Switzerland and László Forró, LNNME-IPMC, EPFL 1015 Lausanne,Suisse bertrand.vileno@epfl.ch

- I/PII.44** CHEMISORPTION OF HYDROGEN ON SP²-BONDED CARBON: INFLUENCE OF THE LOCAL CURVATURE AND EFFECTS ON THE LOCAL ELECTRONIC STRUCTURE
P. Ruffieux (1), O. Gröning (1), M. Biemann (1,2), L. Schlapbach (1), and P. Gröning (1,2), (1) Swiss Federal Laboratories for Material Testing and Research, Überlandstrasse 129, 8600 Dübendorf, Switzerland (2) University of Fribourg, Physics Department, Pérolles, 1700 Fribourg, Switzerland Pascal.Ruffieux@empa.ch
- I/PII.45** ADVANCES IN CARBON NANOTUBE ACTUATORS AND OTHER DEVICES
Joseph N. Barisci, G.M. Spinks, G.G. Wallace, Intelligent Polymer Research Institute, University of Wollongong, NSW 2522, Australia and R.H. Baughman, NanoTech Institute, University of Texas at Dallas TX 75083-0688, USA nbarisci@uow.edu.au
- I/PII.46** NEW ANODE MATERIALS FOR RECHARGEABLE BATTERIES: SNO-CARBON NANOTUBE COMPOSITE AS ANODE MATERIAL FOR LITHIUM-ION BATTERIES
M.H. Chen, State Key Laboratory for Physical Chemistry of Solid Surface, Department of Chemistry, Xiamen University, Xiamen, Fujian 361005, China mhchen8@yanan.xmu.edu.cn
- I/PII.47** CNT-BASED CATHODE MATERIAL FOR DMFC
B. Rohland(a), Mihaela-C. Bunescu(b), Marlies Pietrzak(a), Marion Wienecke(b), S. Möller(a), (a)HIAT GmbH, Hagenower Straße 73, 19061 Schwerin, Germany, (b)Hochschule Wismar, Institut für Oberflächen- und Dünnschichttechnik, Philipp-Müller-Str., 23952 Wismar, Germany m.wienecke@et.hs-wismar.de
- I/PII.48** FUNCTIONALIZED SURFACES BASED ON CARBON NANOTUBES AND CONDUCTING POLYMERS FOR GAS SENSING APPLICATIONS
L. Valentini(a), V. Bavastrello(b), I. Armentano(a), C. Nicolini(b), J.M. Kenny(a), (a)Materials Science and Technology Center, Università di Perugia, 05100 Terni, Italy, (b)Department of Biophysical M&O Science and Technologies, University of Genoa, 16132 Genoa, Italy kenny@unipg.it

Thursday, May 27, 2004

Morning

Session XI: Fundamental properties: inside carbon nanotubes

Session chair: Elena Obraztsova

- I-XI.1** 08:15 PHYSICS AND CHEMISTRY INSIDE THE TUBES
Hans Kuzmany, F. Hasi, M. Holzweber, M. Hulman, Ch. Kramberger, M. Mannsberger, R. Pfeiffer, Institut fuer Materialphysik, Universitaet Wien, Austria kuzman@ap.univie.ac.at
- I-XI.2** 08:45 CONFINEMENT OF SE INTO CARBON NANOTUBES
Jérôme Chancolon, Sylvie Bonnamy, Françoise Archambault, Alain Pineau, Patrick Simon, Marie Louise Saboungi, Andreas Goldbac, CRMD, CNRS-Université, Irue de la Férollerie, 45071 Orléans Cedex 2, France bonnamy@cns-orleans.fr
- I-XI.3** 09:00 ELECTRONIC PROPERTIES OF LITHIUM DOPED SINGLE-WALLED CARBON NANOTUBES
Rosanna Larciprete,^{1,2} A. Goldoni,¹ S. Lizzit,¹ Luca Petaccia¹ ¹Sincrotrone Trieste, S.S. 14 Km 163.5, I-34012 Trieste, Italy, ²CNR-IMIP, Zona Industriale, I-85050 Tito Scalo (PZ), Italy luca.petaccia@elettra.trieste.it
- I-XI.3** 09:15 STRUCTURAL AND MAGNETIC PROPERTIES OF FE-FILLED CARBON NANOTUBES
Radinka Kozhuharova, Institute of Electronic Properties, Dept. of Solid State Research, Research Center Jülich, 52425 Jülich, Germany, R.Kozhuharova@ifw-dresden.de

Session XII: Fundamental properties: Carbon nanotubes, Carbon nanotubes fibers, nanotube buckypaper, peapods (I)

Session chair: Yung Woo Park

- I-XII.1** 09:30 CORRELATION OF PROPERTIES WITH PREFERRED ORIENTATION IN EXTRUDED AND STRETCH-ALIGNED SINGLE WALL CARBON NANOTUBE FIBERS
Stéphane Badaire, Cécile Zakri, Philippe Poulin, CRPP-CNRS, Av Schweitzer, 33600 Pessac, France, Vincent Pichot, Pascale Launois, LPS, Université de Paris Sud, 91405 Orsay, France, Csaba Guthy, Michelle Chen, John Fischer, MSE Department, University of Pennsylvania, Philadelphia PA 19104-6272, USA fischer@seas.upenn.edu
- I-XII.2** 10:00 COMPLEX OPTICAL DIAGNOSTICS OF SINGLE-WALL CARBON NANOTUBES GROWN AND TREATED BY DIFFERENT TECHNIQUES
Elena D. Obraztsova¹, M.Fujii², S. Hayashi², A.S. Lobach³, A.V. Osadchy¹, K. Imakita², K. Matsumoto², M.Usui², ¹Natural Sciences Center of A.M. Prokhorov General Physics Institute, RAS, 38 Vavilov street, 119991, Moscow, Russia, ² Department of Electrical and Electronics Engineering, Kobe University, 1-1 Rokkodai, Nada, Kobe 657-8501, Japan, ³ Institute of Chemical Physics Problems, RAS, 142432, Chernogolovka, Russia elobr@kapella.gpi.ru
- I-XII.3** 10:15 PROPERTIES OF GAMMA-IRRADIATED AND FUNCTIONALIZED SINGLE WALL NANOTUBES BUCKYPAPER
Viera Skákalová¹, M. Hulman², P. Fedorko³, U. Dettlaff⁴, S. Roth¹, ¹Max Planck Institute, Stuttgart, Germany; ²Solid State Physics Institute, University Vienna, Austria, ³Slovak Technical University, Bratislava, Slovakia V.Skabalova@fkf.mpg.de
- 10:30 **BREAK**

Session XII: Fundamental properties: Carbon nanotubes, Carbon nanotubes fibers, nanotube buckypaper, peapods (II)

Session chair: Hans Kuzmany

- I-XII.5** 10:45 CARBON NANOTUBE PEAPODS: ANOTHER NOVEL FORM OF CARBONS
Hisanori Shinohara, Department of Chemistry & Institute for Advanced Research, Nagoya University, Nagoya 464-8602, Japan noris@cc.nagoya-u.ac.jp
- I-XII.6** 11:15 RANDOM TELEGRAPH NOISE SIGNAL IN CARBON NANOTUBE PEAPODS TRANSISTORS
S. H. Jhang, S. W. Lee, D. S. Lee, Yung Woo Park, School of Physics and Condensed Matter Research Institute, Seoul National University, 151-747 Seoul, Korea, M. S. Kabir, M. Sveningsson, E. E. B. Campbell, Department of Experimental Physics, Gothenburg University and Chalmers University of Technology SE-41296 Gothenburg, Sweden, U. Dettlaff-Weglikowska and S. Roth, Max-Planck Institute for Solid State Research, Heisenbergstr. 1, D-70569, Stuttgart, Germany, G. -H. Jeong, T. Hirata and R. Hatakeyama, Department of Electronic Engineering, Tohoku University, Sendai 980-8579, Japan ywpark@phy.snu.ac.kr
- I-XII.7** 11:30 ELECTRONIC AND OPTICAL PROPERTIES OF FUNCTIONALISED NANOTUBES
Thomas Pichler¹, H. Rauf¹, E. Borowiak-Palen¹, M. Rummeli¹, X. Liu¹, M. Knupfer¹, F. Simon², H. Kuzmany², H. Kataura³, ¹IFW-Dresden, Helmholtzstr. 20, D-01171, Dresden, Germany, ²Inst. for Materials Physics, Vienna University, Strudlhofg. 4, A-01190 Wien, Austria, ³Tokyo Metropolitan University, 1-1 Minami-Ohsawa, Hachioji, Tokyo 192-0397, Japan pichler@biela.ifw-dresden.de
- I-XII.8** 11:45 MAGNETIC PROPERTIES OF METALLIC PARTICLES ENCAPSULATED INTO NANOTUBES
Francois Le Normand, C. Meny, A. Derory, S. Colis and C.S. Cojocaru, IPCMS, UMR 7504 CNRS, Po Box 43, Bat 69, 23, rue du Loess 67 034 STRASBOURG Cedex France francois.le-normand@ipcms.u-strasbg.fr
- I-XII.9** 12:00 MODIFICATION OF THE ELECTRONIC STRUCTURE AND CONDUCTANCE IN CARBON NANOPEAPODS AND DEFECT-CONTAINING NANOTUBE JUNCTIONS
Jisoon Ihm, School of Physics, Seoul National University, 346633, Korea, nsjisoona@phy.snu.ac.kr

Session XIII: Fundamental properties: carbon films

Session chair: Mikhail Avdeev

- I-XIII.1** 12:15 GROWTH AND APPLICATIONS OF NANOCRYSTALLINE DIAMOND FILMS
Jean-Charles Arnault, CEA, Laboratoire Surfaces et Interfaces de Matériaux Avancés associé à l'Université Paris Sud Orsay, DSM-DRECAM-SPCSI, bât 462 Saclay, 91191 Gif sur Yvette Cedex, France arnault@drecam.cea.fr
- I-XIII.2** 12:45 NANO- AND MESOSCALE PROPERTIES OF NANOSTRUCTURED CARBON FILMS
Carlo S. Casari, A. Li Bassi, C.E. Bottani, INFN-Dipartimento di Ingegneria Nucleare, Politecnico di Milano, Via Ponzio 34/3, 20133 Milano, Italy, C. Lenardi, INFN-Istituto di Fisiologia Generale e Chimica Biologica, Via Trentacoste 2, 20134 Milano, Italy, L. Ravagnan, F. Siviero, E. Barborini, P. Piseri, P. Milani, INFN-Dipartimento di Fisica, Università degli Studi di Milano, Via Celoria 16, 20133 Milano, Italy carlo.casari@polimi.it
- 13:00 LUNCH

Thursday, May 27, 2004

Afternoon

Session XIV: Fundamental properties: fullerene or carbon nanotube-polymer,
nanocomposite

Session chair: Valerij Gurin

- I-XIV.1** 14:00 MELT MIXING AS METHOD TO DISPERSE CARBON NANOTUBES INTO THERMOPLASTIC POLYMERS
Petra Pötschke¹, Arup R. Bhattacharyya¹⁺, Andreas Janke¹, Albrecht Leonhardt², Christine Täschner², Manfred Ritschel², Siegmund Roth³, Björn Hornbostel³, Jiri Cech³, ¹Institute of Polymer Research Dresden, Hohe Str. 6, 01069 Dresden, Germany, ²Leibniz-Institute for Solid State and Materials Research Dresden, Helmholtzstr. 20, 01069 Dresden, Germany, ³Max-Planck-Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, ⁺ Department of Metallurgical Engineering & Materials Science, Indian Institute of Technology Bombay, Powai, Mumbai 400076, India poe@ipfdd.de
- I-XIV.2** 14:15 NANOSCALE ORGANISATION OF [C60] FULLERENES BY SELF-ASSEMBLY IN A POLYMER MATRIX
Bruno Schmaltz, Martin Brinkmann, Claude Mathis, Institut Charles Sadron (CNRS-ULP), 6 rue Boussingault, 67083 Strasbourg, France cmathis@ics.u-strasbg.fr
- I-XIV.3** 14:30 NANO-ENCAPSULATION OF FULLERENE IN DENDRIMERS
Jean-François Nierengarten^a, Yannick Rio^a, Gianluca Accorsi^b, Nicola Armaroli^b, ^a Groupe des Matériaux Organiques, Institut de Physique et Chimie des Matériaux de Strasbourg, Université Louis Pasteur et CNRS 23 rue du Loess, B.P. 43 67034 Strasbourg Cedex 2, France niereng@ipcms.u-strasbg.fr, ^b Istituto per la Sintesi Organica e la Fotoreattività, Consiglio Nazionale de la Ricerche Via Gobetti 101 40129 Bologna, Italy
- I-XIV.4** 14:45 TRANSPORT PROPERTIES OF CARBON NANOTUBES BASED COMPOSITE
Ludmila Yu. Matzui(a), I.V.Ovsienko(a), T.A.Len(a), Yu.I. Prylutsyy(b), P. Scharff(c), Kyiv National Shevchenko University, Faculty of (a)Physics and (b)Biology, Volodymyrska Str. 64, Kyiv 01033, Ukraine, (c)Technical University of Ilmenau, Institute of Physics, 98684 Ilmenau, Germany matzui@univ.kiev.ua

Session XV: Multifunctional applications

Session chair: Siegmund Roth

- I-XV.1** 15:00 FUTURE MULTIFUNCTIONAL CARBON NANOTUBES SYSTEMS
John Robertson, Engineering Department, Cambridge University, Cambridge CB2 1PZ, U.K. jr@eng.cam.ac.uk
- I-XV.2** 15:30 CARBON NANOTUBES OVER METALLIC WIRES AND ITS POSSIBLE APPLICATIONS
Debajyoti Sarangi^a, C. Hierold, Micro- and Nanosystems, Swiss Federal Institute of Technology Zürich, ETH Zentrum – CLA H1, Tannenstrasse 3, CH-8092 Zurich, Switzerland. Debajyoti.Sarangi@ethz.ch
- 15:45 **BREAK**

Session XVI: Multifunctional applications: electronics, magnetronics

Session chair: Eugenia Buzaneva

- I-XVI.1** 16:00 SUPERCONDUCTIVITY IN INDIVIDUAL CARBON MOLECULES
A.Yu.Kasumov, RIKEN, Hirosawa 2-1, Wako, Saitama 351-0198, Japan kasumov@postman.riken.go.jp
- I-XVI.2** 16:30 ELECTROMAGNETIC EFFECTS IN NANOTUBES: WAVEGUIDING, NONLINEAR RESPONSE, QED
Sergey A. Maksimenko, G.Ya Slepyan, Institute for Nuclear Problems, Belarus State University, 11 Bobruiskaya Str, 220050 Minsk, Belarus, J. Herrmann, Max-Born-Institut für Nichtlineare Optik und Kurzzeitspektroskopie, Max-Born-Str. 2A, 12489 Berlin, Germany maksim@bsu.by
- I-XVI.3** 17:00 NANO-ELECTRONICS BASED ON CARBON NANOTUBES – TECHNOLOGICAL CHALLENGES AND RECENT DEVELOPMENTS
Maik Liebau, A. Graham, G.S. Duesberg, E. Unger, R. Seidel, F. Kreupl, Infineon Technologies AG, Otto-Hahn-Ring 6, 81739 Munich, Germany maik.liebau@infineon.com
- I-XVI.4** 17:15 PENTACENE NANOTRANSISTOR: PENTACENE NANOCRYSTAL CONNECTED BY CARBON NANOTUBE ELECTRODES
Kazuhiro Tsukagoshi(a,b), Iwao Yagi(a,c) and Yoshinobu Aoyagi(a,c), (a)RIKEN, Hirosawa 2-1, Wako, Saitama 351-0198, Japan, (b)PRESTO, JST, Honcho 4-1-8, Kawaguchi, Saitama, Japan, (c)Department of Information Processing, Tokyo Institute of Technology, Nagatsuda 4259, Midori, Yokohama, Kanagawa 226-8502, Japan tsuka@riken.jp
- 17:30 GENERAL DISCUSSION

Friday, May 28, 2004

Morning

Session XVII: Multifunctional applications: biomedicine

Session chair: Silke Krol

- I-XVII.1** 08:15 IN-SITU FLUID STUDIES IN MULTI-WALLED CARBON NANOTUBES FOR CELLULAR PROBES AND OTHER BIOMEDICAL APPLICATIONS
Yury Gogotsi¹, P. Rossi,¹ N. Naguib,¹ H. Ye,¹ A.G. Yazicioglu,² C.M. Megaridis², ¹Drexel University, Philadelphia, PA, USA ²University of Illinois at Chicago, Chicago IL, USA Gogotsi@drexel.edu
- I-XVII.2** 08:45 FORMATION OF IMAGE-STATE BANDS IN LATTICES OF METALLIC NANOTUBES AND CONTROL OF PROTEINS IN VIVO BY INFRARED-EXCITED NANOTUBE ROPES
Petr Kral, Department of Chemical Physics, Weizmann Institute of Science, 76100 Rehovot, Israel and Department of Chemistry, University of British Columbia, Vancouver V6T1Z1, Canada kral@weizmann.ac.il

Session XVIII: Multifunctional applications: bioprobes (I)

Session chair: Yury Gogotsi

- I-XVIII.1** 09:15 TOWARDS A BIO/MOLECULAR ELECTRONICS: CONCEPTS, RESULTS AND PERSPECTIVES
Giuseppe Maruccio, P. Visconti, A. Biasco, A. Bramanti, A. Della Torre, R. Cingolani, R. Rinaldi, National Nanotechnology Laboratory of INFN, University of Lecce, Italy giuseppe.maruccio@unile.it
- I-XVIII.2** 09:45 TOP-DOWN AND BOTTOM-UP APPROACHES FOR CARBONACEOUS AND BIOMOLECULAR NANOSYSTEMS
Wolfgang Kautek, Laboratory for Thin Film Technology, Federal Institute for Materials Research and Testing, Unter den Eichen 87, 12205 Berlin, Germany Wolfgang.Kautek@bam.de
- I-XVIII.3** 10:00 FUNDAMENTAL ELECTROCHEMICAL PROPERTIES OF CARBON NANOTUBE ELECTRODES
Pagona Papakonstantinou, J. Irvine, T. Cuning, T. Byrne, E. McAdams, J. McLaughlin, Northern Ireland Bio-Engineering Research Centre, NIBEC, University of Ulster, BT37 0QB Belfast, Northern Ireland, U.K. p.papakonstantinou@ulst.ac.uk
- I-XVIII.4** 10:15 NANOCAPSULES – SUITABLE TOOL FOR CELL STUDIES
Silke Krol, Alberto Diaspro, Ornella Cavalleri, Raffaella Magrassi, Paolo Bianchini, Davide Cavanna, Alessandra Gliozzi INFN, Department of Physics, University of Genoa, Genoa, Italy krol@fisica.unige.it
- I-XVIII.5** 10:30 BIOLOGICAL MOLECULE CONFORMATIONS PROBED AND ENHANCED BY METAL AND CARBON NANOSTRUCTURES,
Galina Dovbeshko, O.P. Gnatyuk, Fesenko O.M.-Institute of Physics of National Academy of Sciences of Ukraine, Prospect Nauki, 46, 03028 Kyiv, Ukraine, Chegel V.I, Shirshov Yu.M. Institute of Physics of Semiconductors of National Academy of Sciences of Ukraine, Prospect Nauki, 45, 03028 Kyiv, Ukraine
- 10:45 **BREAK**

Session XVIII: Multifunctional applications: bioprobes (II)

Session chair: Yury Gogotsi

- I-XVIII.6** 11:00 GENOMAGNETIC ASSAYS COMBINED WITH ELECTROCHEMICAL SENSORS
Arzum Erdem, Analytical Chemistry Department, Faculty of Pharmacy, Ege University, 35100 Bornova, Izmir, Turkey; erdema@pharm.ege.edu.tr Joseph WANG, Department of Chemistry and Biochemistry, New Mexico State University Las Cruces, NM 88003, USA. joewang@nmsu.edu
- I-XVIII.7** 11:15 SWNT-DOUBLE STRANDED DNA: SPECTROSCOPY STUDY
V.A. Karachevtsev(a), A.Yu. Glamazda(a), G.O. Gladchenko(a), U. Dettlaff-Weglikowska(b), V.S. Leontiev(a), N.Yu. Nedbailo(a), V.A. Sorokin(a), V.A. Valeev(a), S. Roth(b) and A. Rao(c), (a)Institute for Low Temperature Physics and Engineering, NAS of Ukraine, Kharkov 61103, Ukraine, (b)Max-Planck Institute for Solid State Research, Heisenberg Str.1, 70569 Stuttgart, Germany, (c)Clemson University, 107 Kinar Laboratory of Physics, Clemson, SC 29634-0978, USA karachevtsev@ilt.kharkov.ua

Session XIX: Key future nanosystems for renewable energies

Session chair: Androula Nassiopoulou

- I-XIX.1** 11:30 INNOVATIVE PHOTOVOLTAIC MATERIALS: METALLPHTALOCYANINE/ FULLERENE MOLECULAR COMPLECS FOR DONOR-ACCEPTOR SOLAR CELLS
Wolfgang Bruetting, Lehrstuhl für Experimentalphysik IV, Universitätsstr. 1/Geb. Nord 86135 Augsburg, Germany; Thomas Stuebinger, Institute of Physics, University of Bayreuth, 95440 Bayreuth, Germany; Wolfgang.Bruetting@physik.uni-augsburg.de
- I-XIX.2** 12:00 HYDROGEN DENSITY IN NANOCARBON AND COMPLEX MATERIALS
Andreas Züttel, Ph. Mauron University of Fribourg, Physics Department, Pérolles, 1700 Fribourg, Switzerland, Tel.: +41-56-3104076; fax: +41-56-3105301, andreas.zuettel@unifr.ch
- I-XIX.3** 12:30 SYNTHESIS OF C60-[3]PHENYLENE DYAD TOWARDS EFFICIENT PHOTOINDUCED CHARGE TRANSFER
Sebastien Taillemite, D. Fichou, CEA Saclay, DSM/DRECAM/SPCSI, LRC Semi-Conducteurs Organiques, CNRS-CEA, Pierre et Marie Curie Univ., 91191 Gif-Sur-Yvette, France taillemite@drecam.cea.fr
- 13:00 CONCLUSION REMARKS