

GENERAL INFORMATION

NANOMEETING-2011 is an International Conference traditionally held each two years in Minsk, Belarus. The Conference has arisen from the Belarusian-French initiative and purposes to bring together scientists and engineers from around the world, who work in the fast-developing areas of nanoscience, nanotechnology, nanostructure based electronics and optoelectronics. The meeting addresses the latest results achieved in fabrication, study and application of nanosize structures. It will be in May 24-27, 2011 at the Belarusian State University of Informatics and Radioelectronics in Minsk.

Registration

The registration fee is 110 EURO. It is paid in cash in EURO or equivalently in Belarusian rubles during the registration. The fee includes a copy of the Conference Proceedings, admission to all sessions, coffee breaks, and the city sightseeing bus tour.

Attendees are checked-in at the Conference Registration Desk in the lobby of the second floor of the Building № 1 (P. Browka Str. 6) of the Belarusian State University of Informatics and Radioelectronics. It is easily reached from the subway station "Akademiya Nauk" or by bus number 100 (see the city map at the back cover of the Program). The registration starts on May 24 (Tuesday) at 8:30.

Meeting Activities

The technical program includes invited talks, oral presentations and poster session. Two seminars, namely "Nanoelectromagnetics" and "Frontiers of Nanotechnologies and Nanomaterials in Energy Conversion" are organized during the Conference.

All presentations will be in English in the Conference Hall (Building № 1, room 229) of the Belarusian State University of Informatics and Radioelectronics. Oral presentations should be not longer than 30 min for invited speakers and 15-20 min for others including 3-5 min for questions and short discussion. Audio-visual equipment is available for speakers.

The poster session will take place in the lobby nearby the Conference Hall on Wednesday, May 25. Posters may be prepared in any form and will be displayed on poster boards of 1 m × 1.5 m. All posters should be put up on the boards in the morning May 25. That day authors are requested to be present at their posters starting from 17:00. Informal comments and discussion are encouraged during the session.

On May 24 (Tuesday), the Conference participants are invited to the city sightseeing tour just after finishing of the evening session. Conference Reception is planned to be on May 26 (Thursday).

For further information contact:

Dr. Andrei Leshok

Belarusian State University of Informatics and Radioelectronics

P. Browka 6, 220013 Minsk, Belarus

Phone: +375 17 293 88 69

Fax: +375 17 293 88 69

E-mail: nanomeeting@nanomeeting.org

ORGANIZERS

	Ministry of Education of Belarus Belarusian State University of Informatics and Radioelectronics
	Université de la Méditerranée Aix-Marseille II
	Nanyang Technological University
	EU FP7 project FP7-266529 BY-NANOERA
	Centre National de la Recherche Scientifique
	Belarusian Republican Foundation for Fundamental Research
	Faldes
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A. A. Leshok (Belarusian State University of Informatics and Radioelectronics)

GENERAL SCHEDULE

Tuesday May 24, 2011

09:00 – 11:00 PLENARY SESSION
11:00 – 11:20 *Coffee Break*
11:20 – 12:50 PLENARY SESSION
12:50 – 14:30 *Lunch*
14:30 – 15:50 PHYSICS OF NANOSTRUCTURES
15:50 – 16:10 *Coffee Break*
16:10 – 17:55 PHYSICS OF NANOSTRUCTURES
18:00 – 20:00 *City Sightseeing Bus Tour*

Wednesday May 25, 2011

09:00 – 11:10 PHYSICS OF NANOSTRUCTURES
11:10 – 11:30 *Coffee Break*
11:30 – 13:10 PHYSICS OF NANOSTRUCTURES
13:10 – 14:30 *Lunch*
14:30 – 16:30 NANO ELECTROMAGNETICS
16:30 – 16:50 *Coffee Break*
16:50 – 17:50 NANO ELECTROMAGNETICS
17:50 – 19:30 *Poster Session*

Thursday May 26, 2011

09:00 – 10:40 CHEMISTRY OF NANOSTRUCTURES
10:40 – 11:00 *Coffee Break*
11:00 – 12:20 CHEMISTRY OF NANOSTRUCTURES
12:20 – 14:00 *Lunch*
14:00 – 16:00 NANOTECHNOLOGY
16:00 – 16:20 *Coffee Break*
16:20 – 17:00 NANOTECHNOLOGY
Conference Reception

Friday May 27, 2011

09:00 – 11:30 NANOSTRUCTURE BASED DEVICES
11:30 – 11:50 *Coffee Break*
11:50 – 12:50 NANOSTRUCTURE BASED DEVICES
12:50 – 14:00 *Lunch*
14:00 – 15:50 FRONTIERS OF NANOTECHNOLOGIES AND NANOMATERIALS IN ENERGY CONVERSION
15:50 – 16:10 *Coffee Break*
16:10 – 17:10 FRONTIERS OF NANOTECHNOLOGIES AND NANOMATERIALS IN ENERGY CONVERSION
17:10 GENERAL DISCUSSION AND CLOSING OF THE CONFERENCE

PROGRAM

Tuesday May 24, 2011

PLENARY SESSION

- 9:00 1. **Welcome to Nanomeeting-2011**
S. A. Maskevich (Chairman of the National Organizing Committee, Minister of Education of Belarus)
M. Raineri (Ambassador of France in Belarus)
M. P. Batura (Rector of Belarusian State University of Informatics and Radioelectronics)
- 9:30 2. PRECISE DETERMINATION OF THE ATOMIC STRUCTURE OF A
invited NANOTUBE BY ELECTRON DIFFRACTION
Ph. Lambin
PMR - Physics Department, FUNDP - University of Namur Rue de Bruxelles, Namur, Belgium
- 10:00 3. ELECTRON ENERGY SPECTRUM AND OPTICAL PHENOMENA IN
invited DENSE ARRAYS OF Ge QUANTUM DOTS IN Si
A. V. Dvurechenskii, A. I. Yakimov
Rhazanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia
- 10:30 4. NANOWIRE GROWTH FOR SOLAR CELL APPLICATIONS
invited E.P.A.M. Bakkers^{1,2}, J.E.M. Haverkort¹
¹*Eindhoven University of Technology, Eindhoven, The Netherlands*
²*Delft University of Technology, Delft, The Netherlands*
Coffee Break
- 11:20 5. ROOM TEMPERATURE SINGLE ELECTRON TRANSISTORS BASED
invited ON SILICON NANOWIRES
Yongshun Sun^{1,2}, Rusli¹, Navab Singh²
¹*Division of Microelectronics, School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore*
²*Institute of Microelectronics Science, Singapore Science Park II, Singapore*
- 11:50 6. QUANTUM DOT SINGLE PHOTON SOURCES FOR QUANTUM
invited COMMUNICATION
S. Höfling
Universität Würzburg, Germany
- 12:20 7. UNDERNEATH THE FASCINATION OF CARBON NANOTUBES AND
invited GRAPHENE NANORIBBONS
C. Q. Sun
Nanyang Technological University, Singapore
Lunch

PHYSICS OF NANOSTRUCTURES

- 14:30 1. FUNCTIONALIZATION OF GRAPHENE WITH ATOMIC SPECIES
invited R. Larciprete¹, P. Lacovig², S. Gardonio², S. Lizzit², A. Baraldi³
¹*CNR - Institute for Complex Systems, UOS Tor Vergata, Roma, Italy*
²*Elettra - Sincrotrone Trieste S.C.p.A, Trieste, Italy*
³*Physics Department and CENMAT, University of Trieste, and IOM-CNR, Trieste, Italy*
- 15:00 2. ELECTRONIC AND OPTICAL PROPERTIES OF WO₃ NANOWIRES
invited Qing Zhang
Nanyang Technological University, Singapore

- 15:30 3. LIGHT EMITTING β -FeSi₂ NANOCRYSTALS IN MULTILAYER
Si/ β -FeSi₂ NCs/Si/.../Si NANOHETEROSTRUCTURES GROWN BY SPE,
RDE AND MBE TECHNIQUES
N. G. Galkin¹, E. A. Chusovitin¹, K. N. Galkin¹, T. S. Shamirsaev²,
A. K. Gutakovski², A. V. Latyshev²
¹*Institute for Automation and Control Processes of FEB RAS, Vladivostok,
Russia*
²*Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia*
Coffee Break
- 16:10 4. ANISOTROPY EFFECTS IN ELECTRONIC PROPERTIES OF ANATASE
TiO₂ NANOWIRES AND NANOTUBES
D. B. Migas
*Belarusian State University of Informatics and Radioelectronics, Minsk,
Belarus*
- 16:25 5. FIRST PRINCIPLES SIMULATIONS ON DISSOCIATIVE ADSORPTION
OF METHANE MOLECULES UPON NICKEL SUBSTRATE RESULTING
IN A GROWTH OF NANOTUBES
Yu. F. Zhukovskii¹, E. A. Kotomin¹, S. Piskunov²
¹*Institute of Solid State Physics, University of Latvia, Riga, Latvia*
²*University of Latvia, Riga, Latvia*
- 16:40 6. MOLECULAR DYNAMICS SIMULATION OF POLYMERS IN
NANOCONFINED GEOMETRIES
H. Eslami
College of Sciences, Persian Gulf University, Boushehr, Iran
- 16:55 7. ELECTRONIC AND MAGNETIC PROPERTIES OF SPIN GAP SYSTEMS
A. Saul¹, G. Radtke²
¹*CINaM, Campus de Luminy, Marseille, France*
²*IM2NP, Faculté des Sciences de Saint-Jérôme, Marseille, France*
- 17:10 8. DEFORMED VOLCANO DISK IN MAGNETIC FIELDS
O. Olendski¹, L. Mikhailovska²
¹*King Abdullah Institute for Nanotechnology, King Saud University, Riyadh,
Saudi Arabia*
²*Military Academy, Minsk, Belarus*
- 17:25 9. MECHANICAL PROPERTIES OF THIN FILMS: A NEW ANALYTICAL
MODEL
K. R. Gadelrab, M. Chiesa
Masdar Institute of Science and Technology United Arab Emirates (UAE)
- 17:40 10. GEOMETRICAL MODELS FOR BARE BORON NANOTUBES
L. Chkhartishvili
Georgian Technical University, Tbilisi, Georgia
- 18:00 **City Sightseeing Bus Tour**

Wednesday May 25, 2011

PHYSICS OF NANOSTRUCTURES

- 9:00 1. ELECTRIC TRANSPORT PROPERTIES AND CRITICAL CHARACTERISTICS OF SUPERCONDUCTOR/FERROMAGNET NANOSTRUCTURES
invited V. N. Kushnir¹, S. L. Prischepa¹, C. Cirillo², C. Attanasio²
¹Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
²CNR-SPIN Salerno and Dipartimento di Fisica "E.R. Caianiello", Università degli Studi di Salerno, Fisciano (Sa), Italy
- 9:30 2. PHOTOLUMINESCENCE PROPERTIES OF CADMIUM SELENIDE QUANTUM DOTS
G. Tselikov¹, V. Timoshenko¹, S. Dorofeev²
¹Faculty of Physics, Moscow State University, Moscow, Russia
²Faculty of Chemistry, Moscow State University, Moscow, Russia
- 9:50 3. PROBING THE STRUCTURE OF NANOCHANNEL ARRAYS BY ELECTROSTATIC FORCE MICROSCOPY
P. Murugaraj¹, N. Kumar¹, T. Jakobov¹, D. E. Mainwaring¹, R. Siegele²
¹Royal Melbourne Institute of Technology, Melbourne, Australia
²Institute for Environmental Research, Australian Nuclear Science and Technology Organization, Menai, Australia
- 10:10 4. THERMALLY STABLE PHOSPHATES FILLED WITH MICRO-SIZED BORON COMPOUNDS AND CARBON NANOTUBES: TOWARDS IONIZING RADIATION SHIELDING
P. P. Kuzhir¹, S. A. Maksimenko¹, A. O. Pliushch¹, K. N. Lapko², A. I. Lesnikovich², V. A. Lomonosov², E. A. Frolova², P. V. Sedyshev³, V. N. Shevtsov³, A. S. Kurilin³, A. G. Kurenya⁴, A. N. Okotrub⁴
¹Research Institute for Nuclear Problems, Belarusian State University, Minsk, Belarus
²Belarusian State University, Minsk, Belarus
³Joint Institute for Nuclear Research, Dubna, Moscow region, Russia
⁴Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia
- 10:30 5. UNIAXIAL COMPRESSIVE BUCKLING OF BORON NITRIDE NANOTUBES USING MOLECULAR DYNAMICS SIMULATION
S. Ebrahimi-Nejad, A. Shokuhfar, A. Zare-Shahabadi, A. Zolriasatein
Advanced Materials & Nanotech. Research Lab., K.N. Toosi University of Tech., Tehran, Iran
- 10:50 6. MOLECULAR INTERACTIONS IN FULLERITE NANOSTRUCTURES
T. Jakobov, D. Mainwaring
School of Applied Sciences, Royal Melbourne Institute of Technology, Melbourne, Australia
- Coffee Break**
- 11:30 7. DECAY OF THE SECOND-ORDER POPULATION IN QUANTUM DOTS
S. Makhlespour, J. E. M. Haverkort
Eindhoven University of Technology, Eindhoven, The Netherlands
- 11:50 8. EFFECTIVE INTERACTIONS IN A HYBRID POLARITON-ELECTRON SYSTEM
O. Kyriienko, I. A. Shelykh
Science Institute, University of Iceland, Reykjavik, Iceland
International Institute for Physics, Capim Macio, Natal-RN, Brazil

- 12:10 9. FULL DENSITY MATRIX FORMALISM APPLIED TO 1D EXCITON-POLARITON TRANSPORT
I. G. Savenko, E. B. Magnusson, I. A. Shelykh
Science Institute, University of Iceland, Reykjavik, Iceland
Department of PTN, Academic University, St. Petersburg, Russia
- 12:30 10. ELECTRICAL PROPERTIES AND ELECTROMAGNETIC SHIELDING EFFECTIVENESS OF EPOXY/SWCNT COMPOSITES
V. Ksenevich¹, T. Veselova¹, P. Kuzhir², S. Bellucci³, L. Coderoni³, F. Micciulla³, I. Sacco³, G. Rinaldi⁴
¹*Belarusian State University, Minsk, Belarus*
²*Research Institute for Nuclear Problems, Minsk, Belarus*
³*National Institute of Nuclear Physics, Frascati (Rome), Italy*
⁴*University of Rome "Sapienza", Rome, Italy*
- 12:50 11. CONDUCTANCE BISTABILITIES IN NANOMETRIC SIZED GOLD WIRES: AN ATOMISTIC PICTURE
H. Klein, T. Leoni, R. Zoubkof, A. Saül and Ph. Dumas
CINaM, Campus de Luminy, Marseille, France
Lunch

Wednesday May 25, 2011

NANOELECTROMAGNETICS

- 14:30 1. CARBON NANOTUBES FOR FUTURE HIGH-SPEED NANO-
invited INTERCONNECTS
A. Maffucci
University of Cassino, D.A.E.I.M.I., Cassino, Italy
- 15:00 2. NANOINTERCONNECTS: FABRICATION, CHARACTERIZATION, MODELING AND SIMULATION
S. Bellucci
Frascati National Laboratory, National Institute of Nuclear Physics, Frascati (Rome), Italy
- 15:20 3. EFFECTIVE MEDIUM MODEL FOR A PERIODIC ARRAY OF METALLIC CARBON NANOTUBES AND EIGENWAVES PROPAGATING IN A FINITE-THICKNESS CARBON NANOTUBE SLAB
I. Nefedov, S. Tretyakov
Aalto University, Aalto, Finland
- 15:50 4. TOWARDS BACKWARD-WAVE NEGATIVE-INDEX NONLINEAR-OPTICAL MICRODEVICES
A. K. Popov¹, S. A. Myslivets²
¹*University of Wisconsin-Stevens Point Stevens Point, WI, USA*
²*Institute of Physics, Siberian Division RAS, Krasnoyarsk, Russia*
- 16:10 5. TERAHERTZ PROCESSES IN CARBON NANOTUBES CONTROLLED BY A MAGNETIC FIELD
M. E. Portnoi¹, O. V. Kibis²
¹*School of Physics, University of Exeter, Exeter, United Kingdom*
²*Novosibirsk State Technical University, Novosibirsk, Russia*

Coffee Break

- 16:50 6. THEORETICAL SIMULATION OF ELECTRIC PROPERTIES OF CNT-Me AND GNR-Me INTERCONNECTS
Yu. N. Shunin¹, Yu. F. Zhukovskii², N. Burlutskaya¹, S. Bellucci³
¹Information Systems Management Institute, Riga, Latvia
²Institute of Solid State Physics, University of Latvia, Riga, Latvia
³INFN-Laboratori Nazionali di Frascati, Frascati, Italy
- 17:05 7. CYLINDRICAL WAVE METHOD FOR IDEAL AND DOPED NANOTUBES
P. N. D'yachkov, D. V. Kutlubav, D. V. Makaev
Kurnakov Institute of General and Inorganic Chemistry RAS, Moscow, Russia
- 17:20 8. ENHANCEMENT OF THE INFRARED ABSORPTION BY BIOMOLECULES ADSORBED ON SINGLE WALL CARBON NANOTUBES
G. Dovbeshko¹, O. Fesenko¹, O. Gnatyuk¹, K. Yakovkin¹, M. V. Shuba², S. A. Maksimenko²
¹Institute of Physics NASU, Kiev, Ukraine
²Institute for Nuclear Problems, Belarusian State University, Minsk, Belarus
- 17:35 9. TERAHERTZ TIME DOMAIN SPECTROSCOPY OF CARBON NANOTUBES COMPOSITE
J. Macutkevic¹, R. Adomavicus¹, A. Krotkus¹, G. Valusis¹, A. Poddubskaya², V. L. Kuznetsov³, I. N. Mazov³, I. A. Simonova³
¹Center for Physical Sciences and Technology, Vilnius, Lithuania
²Institute of Nuclear Problems of Belarusian State University, Minsk, Belarus
³Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia

POSTER SESSION

17:50-19:30 at the lobby nearby the Conference Hall

Thursday May 26, 2011

CHEMISTRY OF NANOSTRUCTURES

- 9:00 1. SYNTHESIS AND CHARACTERIZATION OF CADMIUM PHOSPHIDE NANOCRYSTALS OPTICALLY ACTIVE IN THE VISIBLE TO NEAR-INFRARED
S. G. Hickey¹, S. Miao¹, C. Waurisch¹, A. Eychmüller¹, B. Rellinghaus²
¹TU Dresden, Dresden, Germany
²IFW Dresden, Dresden, Germany
- 9:20 2. NEW ASPECTS IN THE HOT INJECTION SYNTHESIS TO PROVIDE LARGE SCALE HIGH QUALITY QUANTUM DOTS
C. Waurisch, L. Liebscher, E. Sperling, S. G. Hickey, A. Eychmüller
TU Dresden, Dresden, Germany
- 9:40 3. MAGNETIC LANGMUIR-BLODGETT FILMS WITH GLUING PROPERTIES
G. K. Zhavnerko¹, I. V. Paribok¹, V. E. Agabekov¹, Soliman H. Al-Khowaiter², Muhanna K. A.-Almuhanna²
¹Institute of Chemistry of New Materials NASB, Minsk, Belarus
²National Nanotechnology Research Center of King Abdulaziz City for Science and Technology, Saudi Arabia
- 10:00 4. ULTRASOUND-ASSISTED FORMATION OF METAL BASED NANOCOMPOSITES
E. V. Skorb¹, D. V. Andreeva²
¹Belarusian State University, Minsk, Belarus
²University of Bayreuth, Bayreuth, Germany
- 10:20 5. PREPARATION OF NOVEL Al/β-Al₂O₃/Mg₂ NANOCOMPOSITE BY MECHANICAL MILLING AND HOT PRESSING
A. Zolriasatein¹, A. Shokuhfar¹, M. Ghadimi¹, S. Ebrahimi-Nejad¹, R. A. Khosroshahi², N. Nemati²
¹Advanced Materials and Nanotechnology Research Lab, K.N. Toosi University of Technology, Tehran, Iran
²Sahand University of Technology, Tabriz, Iran
- Coffee Break**
- 11:00 6. OPTICAL AND ELECTRICAL CONDUCTION PROPERTIES OF POLYMER-METAL COMPOSITES WITH GOLD AND SILVER NANOPARTICLES
A. V. Kukhta¹, E. E. Kolesnik¹, I. N. Kukhta¹, A. E. Pochtenny², A. V. Misevich², I. A. Milevich³, E. M. Semenova³, E. Sarantopoulou⁴
¹B. I. Stepanov Institute of Physics NASB, Minsk, Belarus
²Belarusian State University of Technology, Minsk, Belarus
³Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus
⁴Institute of Theoretical and Physical Chemistry, Athens, Greece
- 11:20 7. FABRICATION AND INVESTIGATION OF SILICON NANOPARTICLES FOR APPLICATIONS IN ULTRASOUND THERAPY
L. A. Osminkina¹, M. B. Gongalsky¹, K. P. Tamarov¹, A. P. Sviridov¹, R. A. Galkin¹, A. V. Motuzuk¹, V. Yu. Timoshenko¹, A. A. Kudryavtsev²
¹M. V. Lomonosov Moscow State University, Moscow, Russia
²Institute of Theoretical and Experimental Biophysics, RAS, Pushino, Russia

- 11:40 8. FROM VAPOR-LIQUID-SOLID TO WET CHEMICALLY ETCHED SILICON NANOWIRES
V. Sivakov¹, F. Voigt¹, F. Talkenberg¹, B. Hoffmann¹, G. Brönstrup¹, M. Schreivogel¹, A. Bochmann, M. Kulmas¹, F. Voigt², G. Bauer², M. Pietsch³, S. Christiansen³
¹*Institute of Photonic Technology, Jena, Germany*
²*Institute of Physics, Carl-von-Ossietzky University, Oldenburg, Germany*
³*Max Planck Institute for the Science of Light, Erlangen, Germany*
- 12:00 9. SILICATE GLASSES WITH NANOPARTICLES OF CuInSeTe SOLID SOLUTION
I. V. Bodnar¹, N. P. Solovei¹, V. S. Gurin², A. P. Molochko¹
¹*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
²*Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus*

Lunch

NANOTECHNOLOGY

- 14:00 1. LOW TEMPERATURE TECHNOLOGY FOR ENERGY HARVESTING DEVICES
invited S. Gavrilov
Moscow Institute of Electronic Technologies, Zelenograd, Russia
- 14:30 2. PHOTOELECTRIC APPLICATIONS OF NANOWIRES
invited C. Soci
Nanyang Technological University, Singapore
- 15:00 3. EPITAXIAL GROWTH OF GRAPHENE-LIKE SILICON SINGLE LAYER ON A SILVER SURFACE
B. Lalmi, J. P. Biberian, B. Aufray
CINaM, Campus de Luminy, Marseille, France
- 15:20 4. APPLICATION OF NANOMATERIALS IN NANOMEDICINE RESEARCH
T. Rakovich¹, A. Prina-Mello^{1,2}, A. Rakovich², S. J. Byrne^{2,3}, A. Atzberger⁴, J. E. Mccarthy^{2,3}, Y. K. Gun'ko^{2,4}, Y. Volkov²
¹*Department of Clinical Medicine, Trinity College Dublin, College Green Dublin, Ireland*
²*Centre for Research on Adaptive Nanostructures and Nanodevices*
³*School of Chemistry*
⁴*Flow Cytometry Facility, Institute of Molecular Medicine, Trinity College Dublin*
- 15:40 5. CRYOTREATMENT EFFECT ON THE MORPHOLOGY OF MESOPOROUS CERIA PREPARED BY SOL-GEL TECHNIQUE
E. A. Trusova¹, A. A. Khrushcheva¹, I. V. Zagainov¹, S. V. Kutsev¹, N. S. Trutnev²
¹*A. A. Baikov Institute of Metallurgy and Materials Science RAS, Moscow, Russia*
²*Moscow State University of Environmental Engineering, Moscow, Russia*

Coffee Break

- 16:20 6. THIN FILM NANOSTRUCTURES PREPARED WITH LASER
ABLATION OF COMBINED Ni-Pd TARGETS
A. Bagmut
*National Technical University "Kharkov Polytechnical Institute", Kharkov,
Ukraine*
- 16:40 7. INFLUENCE OF EMBEDDED LOW-DIMENSIONAL Mg₂Si ON THE
CONDUCTIVITY OF Si/Mg₂Si/Si(111) HETEROSYSTEMS
K. N. Galkin, N. G. Galkin
*Institute of Automation and Control Processes of FEB RAS, Vladivostok,
Russia*
- 17:00 8. SYNCHROTRON INVESTIGATION OF Si SURFACE AFTER LOW
ENERGY PLASMA TREATMENT IN HYDROGEN AND ARGON
S. Yu. Turishchev¹, V. A. Terekhov¹, E. V. Parinova¹, O. V. Korolik², A. V.
Mazanik², A. K. Fedotov²
¹*Voronezh State University, Voronezh, Russia*
²*Belarusian State University, Minsk, Belarus*

Conference Reception

Friday May 27, 2011

NANOSTRUCTURE BASED DEVICES

- 9:00 1. PHOTONIC, ELECTRONIC, AND ACOUSTIC APPLICATIONS OF
invited NANOSILICON
N. Koshida, T. Ohta, Y. Hirano, R. Mentek, B. Gelloz
Graduate School of Engineering, Tokyo Univ. of Agri. & Tech., Tokyo, Japan
- 9:30 2. A HYBRID MICRORESONATOR WITH SPATIALLY SEPARATED
invited MASS SENSING AND OPTICAL DETECTION AREA
J. Kehrbusch, E. A. Ilin, P. Bozek, B. Schaaf, E. Oesterschulze
Technical University of Kaiserslautern, Kaiserslautern, Germany
- 10:00 3. ELECTRONIC DEVICES USING POROUS ANODIC ALUMINUM
invited OXIDE
E. Hourdakis, A. G. Nassiopoulou
IMEL, NCSR "Demokritos", Athens, Greece
- 10:30 4. SINGLE-ELECTRON TRANSISTORS FABRICATED BY FIELD-
invited EMISSION-INDUCED ELECTROMIGRATION
Jun-Ichi Shirakashi
Tokyo University of Agriculture and Technology, Tokyo, Japan
- 11:00 5. QUANTUM DOTS FOR BIOENERGETICS: EXPLORATION OF THE
invited ENERGY TRANSFER FROM NANOCRYSTALS TO
PHOTOSYNTHETIC BIOLOGICAL COMPLEXES
Y. P. Rakovich
Materials Physics Center (CFM), CSIC-UPV/EHU, San Sebastian, Spain
IKERBASQUE, Basque Foundation for Science, Bilbao, Spain
Coffee Break
- 11:50 6. SPIN VALVES WITH THE TRANSPORT LAYER OF A NON-
CONJUGATED POLYMER
N. V. Vorob'eva, A. N. Lachinov, A. A. Lachinov
Institute of Physics of Molecules and Crystals URC RAS, Ufa, Russia
- 12:10 7. PREPARATION OF FINE-GRAINED CERAMICS FOR VARISTOR
APPLICATION
K. V. Vokhmintsev¹, E. A. Trusova¹, E. V. Shelekhov¹, A. E. Chalykh²,
S. A. Pisarev²
¹*A.A. Baikov Institute of Metallurgy and Materials Science RAS, Moscow, Russia*
²*A.N. Frumkin Institute of Physical Chemistry and Electrochemistry RAS, Moscow, Russia*
- 12:30 8. THERMAL FORMATION OF SWITCHING RESISTIVITY NANOWIRES
IN HAFNIUM DIOXIDE
A. L. Danilyuk¹, D. B. Migas¹, M. A. Danilyuk¹, V. E. Borisenko¹, X. Wu²,
N. Raghavan², K. L. Pey²
¹*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
²*Microelectronics Center, School of EEE, Nanyang Technological University, Singapore*

Friday May 27, 2011

**FRONTIERS OF NANOTECHNOLOGIES AND
NANOMATERIALS IN ENERGY CONVERSION**

- 14:00 1. NANOSTRUCTURED TiO₂ FOR LI-ION BATTERIES
invited P. Knauth, T. Djenizian
University of Provence, Marseille, France
- 14:30 2. INTRINSIC ABSORPTION IN ORGANIC THIN FILM INCLUDING
METALLIC NANOPARTICLES
P. Torchio¹, S. Vedraïne¹, W. Vervisch¹, L. Escoubas¹, F. Flory², A. Merlen³
¹*Aix-Marseille University, Institut Matériaux Microélectronique Nanosciences
de Provence-IM2NP, Domaine Universitaire de Saint-Jérôme, Marseille,
France*
²*Ecole Centrale Marseille, IM2NP, Technopôle de Château-Gombert,
Marseille, France*
³*Université du Sud Toulon-Var, IM2NP, La Garde, France*
- 14:50 3. CHARACTERIZATION OF GaSb SOLAR CELLS STRUCTURES UNDER
HIGH SOLAR CONCENTRATIONS
Y. Cuminal¹, N. Cammalleri¹, P. Christol¹, A. Dollet², A. Perona², L. Pujol²
¹*Institut d'Electronique du Sud (IES), Université de Montpellier 2,
Montpellier, France*
²*Laboratoire Procédés, Matériaux et Energie Solaire - UPR-CNRS – Rembla
de la thermodynamique, Perpignan, France*
- 15:10 4. MECHANICAL IMPULSE GENERATED BY NANOSTRUCTURED
SILICON DURING ITS COMBUSTION AND EXPLOSION
S. K. Lazarouk¹, A. V. Dolbik¹, V. A. Labunov¹, V. C. Nguyen², K. Pita²,
C. H. Kam²
¹*Belarusian State University of Informatics and Radioelectronics, Minsk,
Belarus*
²*Nanyang Technological University, Singapore*
- 15:30 5. ADVANCES IN NANOMATERIALS FOR PROTON EXCHANGE
MEMBRANE FUEL CELLS
S. Cavaliere, D. J. Jones, J. Rozière
Institut Charles Gerhardt, Université Montpellier 2, Montpellier, France
Coffee Break
- 16:10 6. COMPOSITE MEMBRANES BASED ON SPEEK FOR POLYMER
ELECTROLYTE MEMBRANE FUEL CELLS
M. Luisa Di Vona¹, P. Knauth², G. Auer³
¹*Università di Roma Tor Vergata, Rome, Italy*
²*University of Provence, Marseille, France*
³*Crenox Pigments GmbH, Krefeld, Germany*
- 16:30 7. PROPERTIES OF NOVEL CHALCOPYRITE SEMICONDUCTORS FOR
OPTOELECTRONICS
A. V. Krivosheeva¹, V. L. Shaposhnikov¹, F. Arnaud d'Avitaya²,
J.-L. Lazzari²
¹*Belarusian State University of Informatics and Radioelectronics, Minsk,
Belarus*
²*CINaM, Campus de Luminy, Marseille, France*
- 16:50 8. THIN FILM LAYERS AND MULTILAYER NANOSTRUCTURES FOR
PHOTOVOLTAIC APPLICATIONS
O. Goncharova¹, V. Gremenok²
¹*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*
²*Scientific-Practical Materials Research Centre NASB, Minsk, Belarus*

POSTERS

1. ELECTRON BEAM INSTABILITY IN GRAPHENE
K. Batrakov, V. Soroko
Institute for Nuclear Physics, Belarusian State University, Minsk, Belarus
2. FIRST PRINCIPLES STUDY OF HYDROGEN-INDUCED DECOUPLING OF EPITAXIAL GRAPHENE FROM SiC SUBSTRATES
A. Markevich¹, R. Jones¹, S. Öberg², P. R. Briddon³
¹*University of Exeter, Exeter, United Kingdom*
²*Luleå University of Technology Luleå, Sweden*
³*Newcastle University, Newcastle upon Tyne, United Kingdom*
3. SCATTERING OF THE ELECTROMAGNETIC FIELD BY A DIELECTRIC NANOTUBE COVERED BY A THIN METAL LAYER
D. Ushakou¹, A. M. Nemilentsau¹, G. Ya. Slepyan¹, V. V. Sergentu²
¹*Institute for Nuclear Problems, Belarus State University, Minsk, Belarus*
²*Institute of Applied Physics, Academy of Sciences of Moldova, Chisinau, Moldova*
4. ANISOTROPY AND ELECTROMAGNETIC PROPERTIES OF CARBON NANOTUBE BASED DEFORMED POLYMER COMPOSITES IN MICROWAVES
D. Bychanok¹, M. Shuba¹, A. Poddubskaya¹, A. Pliushch¹, A. Nemilentsau¹, M. Kanygin², A. Kurenya², A. Okotrub²
¹*Institute for Nuclear Problems, Belarus State University, Minsk, Belarus*
²*Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*
5. STABILITY OF SMALL BORON NITRIDE NANOTUBES
L. Chkharishvili¹, T. Berberashvili¹, I. Murusidze²
¹*Georgian Technical University, Tbilisi, Georgia*
²*Institute of Applied Physics, Ilia State University, Tbilisi, Georgia*
6. QUANTUM-CHEMICAL ANALYSIS OF FORMATION ENERGIES AND MIGRATION BARRIERS OF INTRINSIC POINT DEFECTS IN SILICON NANOWIRES
V. Gusakov, J. Gusakova, V. P. Markevich
¹*SSPA "Scientific-Practical Materials Research Centre NASB", Minsk Belarus*
²*EPAM System, Minsk, Belarus*
³*University of Manchester, Sackville Street Building Manchester, United Kingdom*
7. TOPOLOGY OPTIMIZATION OF 1.5 MM ALL-OPTICAL NARROW-BAND LIGHT MODULATOR BASED ON SEMICONDUCTOR NANOHETEROSTRUCTURES
M. V. Ermolenko
B. I. Stepanov Institute of Physics NASB, Minsk, Belarus
8. RABI WAVES IN ONE-DIMENSIONAL QUANTUM DOT CHAIN: EFFECT OF SPATIALLY INHOMOGENEOUS EXCITON-PHOTON COUPLING
G. Ya. Slepyan, Y. D. Yerchak
Institute for Nuclear Problems, Belarus State University, Minsk, Belarus
9. MATRIX CALCULATIONS OF CRITICAL STATES OF SUPERCONDUCTOR/FERROMAGNET MULTILAYERS
V. N. Kushnir
Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
10. AN EFFECT OF DEMAGNETIZING FIELD ON THE DYNAMIC BEHAVIOR OF DOMAIN WALLS IN FERROMAGNETIC NANOWIRES
X.-P. Ma¹, H.-G. Piao¹, J.-H. Shim², D.-H. Kim², S. K. Oh², S.-C. Yu²
¹*Huaihai Institute of Technology, Lianyungang, China*
²*Chungbuk National University, Cheongju, Korea*
11. THEORETICAL SIMULATION OF ELECTROSTATIC POTENTIAL IN SEMICONDUCTOR-VACUUM-METAL NANOSTRUCTURES
L. G. Il'chenko¹, V. V. Lobanov¹, V. V. Il'chenko²
¹*Chuiiko Institute of Surface Chemistry NASU, Kiev, Ukraine*
²*Kiev Taras Shevchenko University, Kiev, Ukraine*

12. ELASTIC MODULES AND LOW-FREQUENCY OSCILLATIONS OF ISOLATED CARBON NANOTUBES
A. A. Khrutchinsky¹, S. A. Kuten¹, A. L. Pushkarchuk^{1,2}, V. A. Pushkarchuk³, A. M. Saad⁴,
A. P. Nizovtsev⁵, S. Ya. Kilin⁵
¹*Institute for Nuclear Problems, BSU, Minsk, Belarus*
²*Institute of Physical Organic Chemistry NASB, Minsk, Belarus*
³*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
⁴*Al-Balqa Applied University, IAmman, Jordan*
⁵*B.I. Stepanov Institute of Physics NASB, Minsk, Belarus*
13. INDIVIDUAL NV CENTERS NEAR SURFACE OF NANOSTRUCTURED DIAMOND: DFT SIMULATION
V. A. Pushkarchuk¹, A. P. Nizovtsev², A. L. Pushkarchuk³, A. B. Filonov¹, S. A. Kuten⁴, S. Ya. Kilin²
¹*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
²*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*
³*Institute of Physical Organic Chemistry NASB, Minsk, Belarus*
⁴*Institute for Nuclear Problems BSU, Minsk, Belarus*
14. SURPRISING THERMAL EFFECTS DURING GROWTH OF CARBON NANOFIBRES VIA “VAPOR–LIQUID–SOLID” ROUTE
S. P. Fisenko, S. I. Shabunya, V. V. Martynenko, S. A. Zhdanok
A. V. Luikov *Heat & Mass Transfer Institute NASB, Minsk, Belarus*
15. INFLUENCE OF CARBON NANOTUBES FUNCTIONALIZED WITH -COOH GROUPS ON THE ISOTHERMAL ELASTIC MODULUS OF WATER
V. Korolovych
Kyiv National Taras Shevchenko University, Kyiv, Ukraine
16. OPTICAL PROPERTIES OF SILICON NANOCLUSTERS EMBEDDED IN ALUMINA MATRIX
V. L. Shaposhnikov, A. B. Filonov
Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
17. THE I-V CHARACTERISTIC FEATURES OF 2D-ORDERED VERTICALLY-ORIENTED CARBON NANOWIRES
G. Gorokh¹, D. Solovei¹, I. Obukhov²
¹*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
²*Helios Computers, Moscow, Russia*
18. EFFECT OF LOW-TEMPERATURE ANNEALING ON OPTICAL PROPERTIES OF C₆₀ AND C₇₀ THIN FILMS WITH NANOSIZED METAL OVERLAYER
N. L. Dmitruk¹, O. Yu. Borkovskaya¹, D. O. Naumenko¹, I. B. Mamontova¹, T. S. Havrylenko¹, E. M. Shpilevsky²
¹*V. Lashkaryov Institute of Semiconductors Physics NASU, Kiev, Ukraine*
²*A. Luikov Heat and Mass Transfer Institute NASB, Minsk, Belarus*
19. MASER EFFECT IN A JAHN-TELLER CENTER: SINGLE SUBSTITUTIONAL NITROGEN ATOM IN DIAMOND
N. A. Poklonski, E. F. Kislyakov, O. N. Bubel¹, S. A. Vyrko
Belarusian State University, Minsk, Belarus
20. INFLUENCE OF THE SUBMICRON LAYER OF THE IRRADIATION-INDUCED DEFECTS ON THE CAPACITANCE OF SILICON *pn*-DIODES
N. A. Poklonski¹, N. I. Gorbachuk¹, A. V. Ermakova¹, S. V. Shpakovski², V. A. Filipenia², V. A. Skuratov³, A. Wieck⁴
¹*Belarusian State University, Minsk, Belarus*
²*JSC Integral, Minsk, Belarus*
³*Joint Institute for Nuclear Research, Dubna, Moscow region, Russia*
⁴*Ruhr-Universitaet Bochum, Bochum, Germany*

21. CATALYST-FREE SYNTHESIS AND CHARACTERIZATION OF BORON NITRIDE NANOTUBES AND WHISKERS
L. L. Sartinska¹, A. A. Frolov¹, M. I. Danylenko¹, I. I. Timofeeva¹, V. A. Tin'kov²
¹Frantsevich Institute for Problems of Materials Science NASU, Kiev, Ukraine
²Kurdyumov Institute for Metal Physics NASU, Kiev, Ukraine
22. POLARIZATION-DEPENDENT OPTICAL PROPERTIES OF POROUS SILICON BASED MULTILAYER STRUCTURES AND MICROCAVITIES
A. I. Efimova, S. A. Dyakov, A. I. Bondar, L. A. Golovan
Faculty of Physics, M. V. Lomonosov Moscow State University, Moscow, Russia
23. EFFECT OF HIGH PRESSURE SINTERING TEMPERATURE ON PHASE COMPOSITION AND FINE STRUCTURE OF NANOCRYSTALLINE Si₃N₄
V. S. Urbanovich¹, A. M. Makei¹, L. V. Sudnik², L. V. Markova², G. P. Okatova³, P. Klimczyk⁴, L. Jaworska⁴
¹Scientific-Practical Materials Research Centre NASB, Minsk, Belarus
²The Institute of Powder Metallurgy NASB, Minsk, Belarus
³The Belarus State Technological University, Minsk, Belarus
⁴The Institute of Advanced Manufacturing Technology, Krakow, Poland
24. INFLUENCE OF SIZE EFFECTS ON GROWTH RATE OF Si NANOWHISKERS
V. V. Levdansky¹, J. Smolik², V. Zdimal²
¹A. V. Luikov Heat and Mass Transfer Institute NASB, Minsk, Belarus
²Institute of Chemical Process Fundamentals AS CR, Prague, Czech Republic
25. DIFFUSION OF SMALL VACANCY CLUSTERS AND THEIR INTERACTION WITH OXYGEN ATOMS IN SILICON
V. P. Markevich¹, A. R. Peaker¹, L. I. Murin², S. B. Lastovskii²
¹University of Manchester, Manchester, United Kingdom
²Scientific-Practical Materials Research Center NASB, Minsk, Belarus
26. EXCITATION ENERGY TRANSFER FROM SEMICONDUCTOR QUANTUM DOTS TO CYANINE J-AGGREGATES
D. Savateeva¹, D. Melnikau², V. Lesnyak³, N. Gaponik³, Y. P. Rakovich⁴
¹Materials Physics Center (CFM), CSIC-UPV/EHU, San Sebastian, Spain
²CIC nanoGUNE Consolider, Donostia-San Sebastian, Spain
³Physikalische Chemie/Elektrochemie TU Dresden, Dresden, Germany
⁴Materials Physics Center (CFM), CSIC-UPV/EHU, San Sebastian, Spain and IKERBASQUE, Basque Foundation for Science, Bilbao, Spain
27. PHOTOINDUCED LONG-DISTANT SUPEREXCHANGE ELECTRON TRANSFER IN NANOSCALE PORPHYRIN TRIADS WITH COVALENTLY LINKED ACCEPTORS
E. Zenkevich
National Technical University of Belarus, Minsk, Belarus
28. FRET AND NON-FRET PROCESSES IN NANOASSEMBLIES «QUANTUM DOT-ORGANIC MOLECULE» (BULK EXPERIMENTS AND DETECTION OF SINGLE OBJECTS)
E. Zenkevich¹, T. Blaudeck², D. Kowerko², C. von Borczyskowski², F. Cichos³
¹National Technical University of Belarus, Minsk, Belarus
²Institute for Print and Media Technology, Institute of Physics, Center for Nanostructured Materials and Analytics, Chemnitz University of Technology, Chemnitz, Germany
³Molecular Nanophotonics, University of Leipzig, Leipzig, Germany
29. INFLUENCE OF POLAR ENVIRONMENT ON CdSe/ZnS NANOCRYSTALS: STARK EFFECT MODELLING
N. Strekal¹, A. Medzvedz¹, S. Maskevich¹, O. Kulakovich², A. Orlova³, A. Fedorov³, A. Baranov³
¹Yanka Kupala Grodno State University, Grodno, Belarus
²Institute of Physics NASB, Minsk, Belarus
³State University of Information Technologies, Mechanics and Optics, St. Petersburg, Russia

30. TWO-DIMENSIONAL FEW CYCLE OPTICAL PULSES IN SEMICONDUCTOR CARBON NANOTUBES IN THE PRESENCE OF A HIGH-FREQUENCY ELECTRIC FIELD
N. Yanyushkina¹, M. Belonenko², N. Lebedev¹
¹*Volgograd State University, Volgograd, Russia*
²*Volgograd Institute of Business, Volgograd, Russia*
31. EFFECT OF NANOSTRUCTURING UPON THERMAL CHARACTERISTICS OF ARGENTONANOBIOCOMPOSITES
G. Aleksandrova, M. Lesnichaya, Ju. Myachin, B. Trofimov
A. E. Favorsky Irkutsk Institute of Chemistry SB RAS, Irkutsk, Russia
32. PREPARATION AND SOME PROPERTIES OF Pd NANOPARTICLES CAPPED WITH TETRAZOLE-5-THIOLS
M. N. Nichick, S. V. Voitekhovich, O. A. Ivashkevich
Research Institute for Physical Chemical Problems, Minsk, Belarus
33. DESIGN OF PHOTOCONTROLLABLE POLYELECTROLYTE-BASED NANOENGINEERED CONTAINER SYSTEMS
E. V. Skorb¹, D. V. Sviridov¹, D. G. Shchukin², H. M. Möhwald²
¹*Belarusian State University, Minsk, Belarus*
²*Max Planck Institute of Colloids and Interfaces, Potsdam, Germany*
34. GENERATION OF MICROPLASMA FROM NANOPORES OF ZEOLITE IN SEMICONDUCTOR GAS DISCHARGE ELECTRONIC DEVICES
N. N. Lebedeva¹, V. I. Orbukh¹, E. Koç², S. Karakose², B. G. Salamov²
¹*Institute for Physical Problems, Baku State University, Baku, Azerbaijan*
²*Gazi University, Ankara, Turkey*
35. NANO-PIPETTE PROBE WITH SEPARATIVE ION DETECTION
T. Takami, J. Wan Son, Joo-Kyung Lee, Bae Ho Park, T. Kawai
Konkuk University, Seoul, Korea
36. SCANNING FORCE MICROSCOPY STUDY OF HUMAN MESENCHYMAL STEM CELLS
L. V. Kukhareenko¹, Th. Schimmel², M. Barczewski², T. V. Shman³, A. V. Tarasova³
¹*Belarusian State Medical University, Minsk, Belarus*
²*Institut für Angewandte Physik und Centrum für Funktionelle Nanostrukturen, Karlsruhe, Germany*
³*Belarusian Center for Pediatric Oncology and Hematology, Minski distr., Pos. Lesnoe, Belarus*
37. EVALUATION OF THE MORPHOFUNCTIONAL STATE OF PLATELETS BY SCANNING FORCE MICROSCOPY
L. V. Kukhareenko¹, S. A. Chizhik², E. S. Drozd², S. V. Syroezhkin², L. G. Gelis³, I. V. Lazareva³, E. A. Medvedeva³
¹*Belarusian State Medical University, Minsk, Belarus*
²*Heat and Mass Transfer Institute NASB, Minsk, Belarus*
³*Republican Scientific Center of Cardiology, Minsk, Belarus*
38. ZnMgSSe/ZnSe GRADED-INDEX SUPERLATTICE WAVEGUIDE HETEROSTRUCTURES WITH (Zn)CdSe QUANTUM DOT ACTIVE REGION FOR GREEN LASER APPLICATION
A. G. Vainilovich¹, E. V. Lutsenko¹, V. N. Pavlovskii¹, G. P. Yablonskii¹, I. V. Sedova², S. V. Sorokin², S. V. Gronin², S. V. Ivanov², P. S. Kop'ev², Ahmed ALYAMANI³
¹*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*
²*Ioffe Physical Technical Institute RAS, St. Petersburg, Russia*
³*King Abdulaziz City for Science and Technology (KACST) National Nanotechnology Center, Riyadh, Saudi Arabia*
39. FABRICATION OF GRAPHENE OXIDE USING LOCAL ANODIC OXIDATION BY ATOMIC FORCE MICROSCOPY
Seung-Woong Lee, Bae Ho Park
School of Physics, Konkuk University, Seoul, Korea

40. VICINAL Si(111) SURFACES AS NANOTEMPLATES FOR NANOWIRES GROWTH
S. I. Bozhko¹, A. N. Chaika¹, A. M. Ionov¹, D. A. Fokin¹, I. F. Sveklo²
¹*Institute of Solid State Physics RAS, Chernogolovka, Moscow District, Russia*
²*Kupala State University, Grodno, Belarus*
41. SYNTHESIS OF QUATERNARY TiZrAIN NANOCOMPOSITE FILMS BY REACTIVE UNBALANCED MAGNETRON SPUTTERING
G. Abadias¹, V. V. Uglov², S. V. Zlotski²
¹*Institut P', Département Physique et Mécanique des Matériaux, Université de Poitiers-CNRS-ENSMA, SP2MI, Chasseneuil Futuroscope, France*
²*Belarusian State University, Minsk, Belarus*
42. MICROWAVE-HYDROTHERMAL SYNTHESIS AND PHOTOCATALYTIC ACTIVITY OF NANODISPERSED ZINC OXIDE
A. E. Baranchikov, A. S. Shaporev, V. K. Ivanov
Kurnakov Institute of General and Inorganic Chemistry RAS, Moscow, Russia
43. HOMOGENEOUS PRECIPITATION OF SUB-10 NM Ce_{1-x}R_xO_{2-δ} (R = Pr, Nd, Sm, Eu, Gd, Yb) SOLID SOLUTIONS
O. S. Ivanova¹, A. E. Baranchikov¹, V. K. Ivanov¹, E. A. Dolgoplova²
¹*Kurnakov Institute of General and Inorganic Chemistry RAS, Moscow, Russia*
²*Moscow State University, Moscow, Russia*
44. FORTHPUTTING THE CONCEPT OF MAXWELL'S ETHER FOR THE DETERMINATION OF DIELECTRIC AND MAGNETIC FUNCTIONS OF A PHOTONIC CRYSTAL FROM THE FREQUENCY SPECTRUM
V. Sergentu¹, V. Ursaki¹, V. Damaschin², I. Tiginyanu²
¹*Institute of Applied Physics of the Academy of Sciences of Moldova, Chisinau, Moldova*
²*Institute of Electronic Engineering and Nanotechnology of the Academy of Sciences of Moldova, Chisinau, Moldova*
45. SYNTHESIS OF CADMIUM SULFIDE COATED MAGNETIC NANOPARTICLES
E. M. Semenova, S. A. Vorobyova, A. I. Lesnikovich
Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus
46. OPTICAL AND ELECTROCHEMICAL PROPERTIES OF CdS AND CdSe QUANTUM DOTS STABILIZED BY POLYETHYLENIMINE
A. E. Raevskaya¹, G. Ya. Grodzyuk¹, A. L. Stroyuk¹, S. Ya. Kuchmiy¹, L. V. Pysarzhevskiy¹, E. A. Streltsov², P. V. Chulkin², S. M. Rabchynski², G. A. Ragoisha²
¹*Institute of Physical Chemistry NASU, Kiev, Ukraine*
²*Belarusian State University, Minsk, Belarus*
47. BOROSILICATE GLASS WITH LEAD SELENIDE NANOPARTICLES
G. E. Rachkovskaya¹, G. B. Zakharevich¹, E. E. Trusova¹, A. M. Malyarevich², V. S. Gurin³, V. V. Golubkov⁴
¹*Belarusian State Technological University, Minsk, Belarus*
²*Belarusian National Technical University, Minsk, Belarus*
³*Research Institute for Physical Chemical Problems of the Belarusian State University, Minsk, Belarus*
⁴*Institute of Silicate Chemistry RAS, St. Petersburg, Russia*
48. FUNCTIONALIZATION OF SILICON OXIDE NANOSTRUCTURES VIA COVALENT BINDING OF FLUORESCIN DYE MOLECULES
T. Baumgärtel¹, H. Graaf¹, C. Von Borczyskowski¹, M. Ara², H. Tada²
¹*Institute of Physics, University of Technology Chemnitz, Chemnitz, Germany*
²*Osaka University, Osaka, Japan*
49. INFLUENCE OF SYNTHESIS CONDITIONS ON SIZE, MORPHOLOGY AND STRUCTURE OF IRON OXIDES PARTICLES
A. Filipovich, M. Ivanovskaya, D. Kotsikau, V. Pankov
Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus

50. ELECTROLESS NICKEL PLATING ON SILICATE GLASS SENSITIZED WITH Sn(II) CONTAINING ORGANOSOL
A. Kobets, T. Vorobyova
Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus
51. PREPARATION AND INVESTIGATION OF GOLD NANOPARTICLES CAPPED BY DIFFERENT LIGANDS
I. A. Milevich, S. A. Vorobyova
Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus
52. RED PHOTOLUMINESCENCE OF CaTiO₃:Dy³⁺/Al₂O₃ NANO-SYSTEM UNDER UV-EXCITATION
E. V. Frolova¹, G. P. Shevchenko¹, A. P. Stupak²
¹*Research Institute for Physical Chemical Problems of Belarusian State University, Minsk, Belarus*
²*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*
53. SYNTHESIS AND SPECTRAL-LUMINESCENT PROPERTIES OF CuI NANO- AND MICROCRYSTALS
G. P. Shevchenko¹, Y. V. Bokshits¹, I. Y. Piskunovitch¹, V. A. Zhuravkov¹, G. E. Malashkevich²
¹*Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus*
²*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*
54. HYBRID COMPOSITES BASED ON CHITOSAN/ORGANOSILAN FILMS AND Au NANOPARTICLES
P. Boltovets¹, S. Sevostyanov²
¹*V. Lashkaryov Institute of Semiconductor Physics NASU, Kiev, Ukraine*
²*O. O. Chuiko Institute of Surface Chemistry NASU, Kiev, Ukraine*
55. ENHANCING HARDNESS AND STRENGTH OF Al-MATRIX NANOCOMPOSITE USING β-Al₃Mg₂ NANOPARTICLES
A. Zolriasatein¹, A. Shokuhfar¹, M. Ghadimi¹, R. A. Khosroshahi², N. Nemati²
¹*Advanced Materials and Nanotechnology Research Lab, K.N. Toosi University of Technology, Tehran, Iran*
²*Sahand University of Technology, Tabriz, Iran*
56. STATE OF Au CLUSTERS IN Au-In₂O₃ NANOCOMPOSITE AND THE NATURE OF INTERACTION BETWEEN THE COMPONENTS
E. Ovodok¹, M. Ivanovskaya¹, D. Kotsikau¹, I. Asarko²
¹*Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus*
²*Belarusian State University, Minsk, Belarus*
57. AB INITIO MODELING OF SMALL NETWORK-FORMING NANOCLUSTERS IN CHALCOGENIDE GLASSES
V. Boyko¹, O. Shpotyuk^{1,2}
¹*Scientific Research Company "CARAT", Lviv, Ukraine*
²*Institute of Physics of Jan Dlugosz University, Czestochowa, Poland*
58. PHOTO-INDUCED PROCESSES IN CdSe/ZnS QUANTUM DOTS UNDER EXTERNAL ELECTRIC FIELD
L. I. Gurinovich¹, A. P. Stupak¹, S. Ya. Prislopski¹, S. V. Gaponenko¹, M. V. Artemyev²
¹*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*
²*Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus*
59. HEAVY AND LIGHT HOLES STATES MIXING AND ELECTROLUMINESCENCE INTENSITY INCREASE IN p-Al_xGa_{1-x}As/GaAs_{1-y}P_y/n-Al_xGa_{1-x}As NANOSTRUCTURES UNDER UNIAXIAL COMPRESSION
E. V. Bogdanov, P. S. Marintsev, N. Ya. Minina, D. E. Mironov, S. S. Shirokov
Physics Department, M. V. Lomonosov Moscow State University, Moscow, Russia

60. THE ANISOTROPY OF ELECTRICAL PROPERTIES OF InGaAs/GaAs HETEROSTRUCTURES WITH CHAINS OF InGaAs QUANTUM DOTS
O. V. Vakulenko, S. L. Golovynskyi, S. V. Kondratenko
Kyiv National Taras Shevchenko University, Kyiv, Ukraine
61. MICROMAGNETIC STUDY OF TEMPERATURE-DEPENDENT DOMAIN WALL DEPINNING BEHAVIOR IN FERROMAGNETIC NANOWIRES
H.-G. Piao¹, X.-P. Ma¹, J.-H. Shim², S.-C. Yu², S. K. Oh², D.-H. Kim²
¹*College of Science, Huaihai Institute of Technology, Lianyungang, China*
²*Chungbuk National University, Cheongju, Korea*
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A. Prudnikau, M. Artemyev
Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus
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A. E. Salamianski, G. K. Zhavnerko, N. V. Karatay
Institute of Chemistry of New Materials NASB, Minsk, Belarus
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H. Bandarenka¹, S. Redko¹, P. Nenzi², M. Balucani²
¹*Belarusian State University of Informatics and Radioelectronics, Belarus*
²*University "Sapienza" of Rome, Roma, Italy*
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Kiev National University, Kiev, Ukraine
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K. A. M. Ahmed, K. Huang
School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan, P.R. China
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Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
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A. A. Leshok, P. S. Katsuba, V. B. Vysotski
Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
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M. Belonenko¹, N. Yanyushkina², N. Lebedev²
¹*Volgograd Institute of Business, Volgograd, Russia*
²*Volgograd State University, Volgograd, Russia*
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R. P. Borges¹, A. O. Ankiewicz², J. S. Martins², E. R. Zhiteyev², A. P. Gonçalves^{1,3}, P. Ferreira⁴, N. A. Sobolev², M. Godinho^{1,5}
¹*CFMC-Universidade de Lisboa, Lisboa, Portugal*
²*Departamento de Física and I3N, Universidade de Aveiro, Aveiro, Portugal*
³*Instituto Tecnológico e Nuclear, Sacavém, Portugal*
⁴*Departamento de Engenharia Cerâmica e do Vidro and CICECO, Universidade de Aveiro, Aveiro, Portugal*
⁵*Departamento de Física, Universidade de Lisboa, Lisboa, Portugal*

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E. A. TRUSOVA¹, K. V. KOTCAREVA¹, K. V. VOKHMINTCEV¹, V. M. KOGAN²
¹A. A. Baykov Institute of Metallurgy and Materials Science RAS, Moscow, Russia
²N. D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia
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Y. Mironchik, N. Bogomazova, N. Shishkin, A. Pochtenny
Belarusian State Technological University, Minsk, Belarus
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N. V. Tarasenko, A. V. Butsen, A. A. Nevar, M. I. Nedelko
B. I. Stepanov Institute of Physics NASB, Minsk, Belarus
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A. Nabiullin, M. Kvach, M. Tatulchenkov, S. Tumanov, V. Shmanai
Institute of Physical Organic Chemistry NASB, Minsk, Belarus
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D. N. Bui¹, X. L. Zhao¹, S.-Z. Kang², J. Mu¹
¹Key Laboratory for Advanced Materials, School of Chemistry and Molecular Engineering, East China University of Science and Technology, Shanghai, China
²Department of Chemical Engineering, Laboratory of New Energy Materials, Shanghai Institute of Technology, Shanghai, China
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Y. Yan¹, C. C. Li¹, X. Q. Li¹, S.-Z. Kang², J. Mu¹
¹Key Laboratory for Advanced Materials, School of Chemistry and Molecular Engineering, East China University of Science and Technology, Shanghai, China
²Department of Chemical Engineering, Laboratory of New Energy Materials, Shanghai Institute of Technology, Shanghai, China
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T. Shutava, V. Agabekov
Institute of Chemistry of New Materials NASB, Minsk, Belarus
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C. Frigeri¹, S. Bietti², C. Somaschini², N. Koguchi², S. Sanguinetti²
¹CNR-IMEM Institute, Parco Area delle Scienze, Parma, Italy
²L-NESS and Dipartimento di Scienza dei Materiali, Milano, Italy
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A. Prudnikava¹, B. Shulitski¹, V. Labunov¹, M. Shakerzadeh², Tan Dunlin², Tay Beng Kang²
¹Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
²School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore
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Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
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Volgograd State University, Russia

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A. A. Kovalevskii, A. S. Strogova, A. A. Shevchenok
Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
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S. Lazarouk¹, O. Kupreeva¹, T. Orekhovskaya¹, D. Sasinovich¹, F. Arnaud d'Avitaya², N. Rochdi²
¹*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
²*CINAM, Campus de Luminy, Marseille, France*
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E. A. Trusova¹, K. V. Kotcareva¹, K. V. Vokhmintcev¹, V. M. Kogan²
¹*A. A. Baykov Institute of Metallurgy and Materials Science RAS, Moscow, Russia*
²*N. D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia*
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A. Watts¹, M. Green², A. Waheed¹, D. Forsyth¹, M. Farmer¹
¹*British Institute of Technology & E-commerce, London, United Kingdom*
²*King's College London, London, United Kingdom*
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A. Waheed^{1,3}, M. C. Buoso², D. Ceccato², Naseem Qureshi¹, A. Watts¹, S. Frank¹, M. Farmer¹, G. Mitchell³
¹*British Institute of Technology and E-Commerce, London, United Kingdom*
²*INFN Laboratories of Legnaro, Legnaro, Italy*
³*Centre for Advanced Microscope, University of Reading, Reading, United Kingdom*
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A. V. Petrov¹, A. A. Klimsa¹, L. I. Gurskii², E. V. Telesh², K. A. Minin², G. Gerlach³, G. Suchanek³, B. Adolphi³
¹*Scientific-Practical Materials Research Center NASB, Minsk, Belarus*
²*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
³*Dresden University of Technology, Dresden, Germany*
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N. A. Kalanda¹, S. E. Demyanov¹, L. V. Kovalev¹, L. I. Gurskii², E. V. Telesh², D. A. Kotov², V. M. Garamus³, R. Willumeit³
¹*Scientific-Practical Materials Research Center NASB, Minsk, Belarus*
²*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
³*GKSS Research Center, Geesthacht, Germany*
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E. Yu. Kaniukov, S. E. Demyanov, L. S. Lobanovsky
Scientific-Practical Materials Research Center NASB, Minsk, Belarus
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E. Yu. Kaniukov¹, A. V. Petrov¹, V. V. Fedotova¹, E. K. Belonogov², C. Trautmann³, R. Neumann³, D. A. Kotov⁴
¹*Scientific-Practical Materials Research Center NASB, Minsk, Belarus*
²*Voronezh State Technical University, Voronezh, Russia*
³*Gesellschaft für Schwerionenforschung (GSI), Darmstadt, Germany*
⁴*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*

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D. B. Migas¹, V. E. Borisenko¹, Rusli², Wang Hong²
¹Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
²Microelectronics Center, School of EEE, Nanyang Technological University, Singapore
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A. Bystrytskyi, A. Goloborodko, S. Savenkov
National Taras Shevchenko University of Kyiv
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W. Ensinger, M. Ali
Technical University of Darmstadt, Darmstadt, Germany
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M. A. Gabal¹, Abdullah M. Asiri^{1,2}, Y. M. Al Angari¹
¹Chemistry Department, Faculty of Science, King Abdul Aziz University, Jeddah, Saudia Arabia
²The Center of Excellence for Advanced Materials Research, King Abdul Aziz University, Jeddah, Saudia Arabia
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M. A. Gabal, Y. M. Al Angari, A. Y. Obaid
Chemistry Department, Faculty of Science, King Abdul Aziz University, Jeddah, Saudi Arabia
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I. G. Savenko¹, N. Yu. Gordeev², O. I. Romyantsev², A. S. Payusov²
¹Science Institute, University of Iceland, Reykjavik, Iceland;
St. Petersburg Academic University - Nanotechnology Research and Education Centre, St. Petersburg, Russia
²Ioffe Physical Technical Institute, St. Petersburg, Russia; St. Petersburg Academic University - Nanotechnology Research and Education Centre, St. Petersburg, Russia
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M. R. Rezvani, A. Shokuhfar, M. Shariyat, M. Ghadimi
K. N. Toosi University of Technology, Tehran, Iran