

Second Announcement



Russia
Saint-Petersburg
June, 16-18 2008

The Second Saint-Petersburg International Conference on NanoBiotechnologies

GENERAL INFORMATION

Scope

The NANOBIO'08 is intended to give a comprehensive picture of the latest R&D breakthroughs in Nanobiotechnology, to discuss open problems and define future trends in this exciting field.

Biological systems are inherently nano in scale. Nanobiotechnology is at the interface of physical and biological sciences. It is a new R&D direction, with the potential of revolutionizing medicine: it combines the tools, ideas and materials of nanoscience and biology; it addresses biological problems that can be studied and solved by nanotechnology; it thinks out ways to construct molecular devices using biomacromolecules; and it attempts to build molecular machines utilizing concepts seen in nature.

Biology is increasingly asking quantitative questions. Quantification is essential if we are to understand how the cell works, and details of its regulation. The physical sciences provide tools and strategies to obtain accurate measurements and simulate the information to allow to comprehend the processes. The development of computational modeling and informatics software will enable scientists and engineers to apply nanotechnology to key areas of medical research, including diagnostics, biosensing, drug delivery and biomaterial design.

The aim of this event is to set the discussion between biologists, physicists, computer scientists and engineers, traditionally divided groups, and bridge the gap between materials science and life science.

This event will bring together leading scientists, representatives of industry, public research and governmental bodies and will provide the international forum for exchange of information and expertise in the area of Nanobiotechnology. The organizers hope that the event will be an ideal platform for experts from around the world to interact, network and exchange ideas.

During NanoBio'08 conference a special session will be devoted to the responsible approach of development of Nanobiotechnology. The main objective of the special session is to discuss joining of Russia to the bodies responsible for international cooperation on environmental, health and safety impacts of nanobiotechnology; to present and to launch Russian Technology Platform "Nanobiotechnology". The session will provide new possibilities for strengthening and enhancing international cooperation between European and Russian scientists in the area of Nanobiotechnology, in particular in the fields affiliated to the Thematic Priority 4 of FP7 - NMP.

The scientific program NanoBio'08 will consist of oral, poster and position presentations.

The first conference (Nanobio'06) was held on November 27-29, 2006 in the St Petersburg Physics and Technology Centre for Research and Education of RAS. It was focused on biological aspects of nanobiotechnology.

Topics

- Artificial Nanostructures
- Self-organized Nanostructures
- Nanoscale Organization of Biological Systems
- Nanocarbon
- Energy Nanomaterials
- Systems Biology
- Synthetic Biology
- Nanobionics
- Molecular Design
- Intellectual Data Analysis
- Nanomechanics and Nanohydrodynamics
- Diagnostics and Nanobiosensors
- Bio and Medical Applications
- Nanobiotech Risks Assessment for Human Health and Environment
- Nanobiotech Education and Industrial Innovation
- Far Future Challenges

Official Language: English

Organizers

- Ministry of Education and Science of Russian Federation
- M.V. Lomonosov Moscow State University
- Saint-Petersburg State Polytechnical University
- Saint-Petersburg State University
- Saint-Petersburg State University of Technology and Design
- Scientific Journal “Nanotechnologies in Russia”
- Austrian-Russian Working Group on Innovation Cooperation in the Industry and Science
- National Scientific Council “Fullerenes and Atomic Clusters”
- National Documentation Center (Greece)
- National Information Center on Science and Innovations (Russia)
- Applied Nanobiotechnology JSC
- Center for Advanced Studies of Saint-Petersburg State Polytechnical University
- Exhibition Center “Lenexpo”

Supporting State and Local Authorities



Saint-Petersburg
City Government



Federal Agency
on Science and Innovations



Russian Foundation
for Basic Research



The Foundation for Assistance to Small Innovative Enterprises
(for the Russian Young Scientists Competition “UMNIK”)



RUSSIAN CORPORATION OF NANOTECHNOLOGIES

Information Partnership

- [Russian National Contact Point “Nanotechnologies” of FP7 EU](#)
- [International Conference “Nanotec2008.it: Nanotechnology for Industry 2015”](#)
- [Russian National Contact Point “Biotechnology” of FP7 EU](#)
- [The Integrated Nanosystems Site, MITRE Corporation](#)
- [CORDIS: Community Research and Development Information Service](#)
- [PapersINVITED: World's largest listing of Calls for Papers](#)
- [Scientific Electronic Library eLIBRARY.RU](#)

CONFERENCE COMMITTEES

Conference Chairs

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Mikhail Fiodorov, Corresponding Member of RAS, Rector of the Saint-Petersburg State Polytechnical University, Russia

Viktor Sadovnichij, Academician of RAS, Rector of the M.V.Lomonosov Moscow State University, Russia

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Yuri Yevdokimov, Institute of Molecular Biology of the RAS

Georgiy Zegrya, Nanotechnology Centre for Biology and Medicine, Ioffe Physico-Technical Institute of RAS

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Victor Luchinin, Saint-Petersburg Electrotechnical University (LETI)

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Alexander Omel'chenko, Saint-Petersburg State University Technology and Design

Andrey Rudskoy, Saint-Petersburg State Polytechnical University

Timur Semenov, Analytical Department of the Council of the Federation Staff

Sergey Vasiliev, Board of Directors of the Bank for Development and Foreign Economic Affairs (Vnesheconombank)

Local Organizing Committee

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Alla Smirnova, SPbSPU

Tatyana Yakunina, SPbSPU

Monday, June 16

Venue: Mariinsky Palace, Commons Hall



The Mariinsky Palace is known these days mostly for being the seat of the local Legislative Assembly. However, it is a fine palace, situated just across the square from the St Isaac's Cathedral, with plenty of history behind it. Built for the Grand Duchess Maria, daughter of Emperor Nicholas I, in 1839-44, the palace still retains many of its original splendid interiors.



Saint Isaac's Square (Isaakiyevskaya ploshchad) is a major city square sprawling between the Mariinsky Palace and Saint Isaac's Cathedral, which separates it from Decembrists Square. The square is graced by the equestrian Monument to Nicholas I. The Blue Bridge (Sinii most) is the widest bridge in Saint Petersburg. It spans the Moika River and is located in front of the Mariinsky Palace at Saint Isaac's Square.



Mariinsky Palace

Address: Saint Isaac's Square, 6

The nearest Metro stations are “Sadovaya” and “Nevsky Prospect”.

From Sadovaya Metro station one can walk along the Grivtsova lane up to Embankment of Moika river and turn left

(~ 15 minutes to walk).

Monday, June 16

Venue: Mariinsky Palace, Commons Hall

9.00-10.00 Registration

10.00-10.30 **Opening Ceremony** (in Russian, with translating)
Welcome from Organizing Committee, State and Local Authorities:

Special Lecture

L0: 10.30-11.20 Mikhail V. Alfimov, Andrey N. Petrov
Nanotechnologies in Russia

11.20-11.40 Coffee Break

Keynote Lectures

Chairs: Sergey Kozyrev, Uwe Sleytr

L1: 11.40-12.20 Vladimir Torchilin
Multifunctional Nanocarriers: Pharmaceutical Perspectives

L2: 12.20-13.00 Konstantin Shaitan, Mikhail Kirpichnikov
Molecular Simulations and Rational Design of Nanobiosystems

13.00-14.00 Lunch

Special Session “The International Dialog on Nanotechnology Risk Assessment and Management: Opportunities for Russia”

Chairs: Eva Hellsten, Marine Melkonyan

14.00-14.30 **Eva Hellsten** (Scientific Advisor, EC Environment Directorate-General)
Environment and Health Aspects of Nanomaterials – an EU Policy Perspective

14.30-15.00 **Peter Hatto** (Chairman ISO/TC 229 – Nanotechnologies)
International Standardization to Support Innovation, Safety and Effective Governance of Nanotechnologies

15.00-15.20 **Valeriy Gavrilenko, Pavel Todua** (Center for Surface and Vacuum Research, Federal Agency on Technical Regulating and Metrology, GOST R)
Nanometrology and Development of Standards for Nanotechnologies in Russia

15.20-15.40 Coffee Break

Mariinsky Palace, Commons Hall

15.40-18.00 Special Session

(continued)

Mariinsky Palace, White Hall

16.00 – 18.00 Co-ordinated Meeting

Joint Meeting of the Coordination Council on Nanotechnology Development at the Council of the Russian Federation and the Commission on Science and Education of the Legislative Assembly of Saint Petersburg

Special Session “The International Dialog on Nanotechnology Risk Assessment and Management: Opportunities for Russia” (continued)

15.40–16.00 **Frederic Schuster** (CEA, France)
European Technology Platform on Industrial Safety – ETPIS. EU Project Nanosafety

16.00–16.20 **Kai Savolainen** (Finnish Institute of Occupational Health)
A Systematic Approach for the Evaluation of Safety and Risks of Engineered Nanoparticles – The Finnish Perspective

16.20–16.40 **Marine Melkonyan** (FP7 NCP “NANO”, A.V.Shubnikov Institute of Crystallography of RAS, Russia), **Sergey Kozyrev** (Center for Advanced Studies of SPbSPU, Russia)

Current State-of-Art in the Area of Nanorisks Research Studies in Russia

16.40–16.55 **Maxim Vonsky** (Institute of Cytology of RAS, Saint-Petersburg, Russia)
Public Perception of Biotechnology Risks: GMO Lessons

16.55–17.10 **Sergey Ignatov** (State Research Center for Applied Microbiology and Biotechnology, Rospotrebnadzor, Russia)
RF Regulations Concerning the Inspection of New Products Containing Nanomaterials

17.10–17.25 **Philippe Galiay** (EC, Research Directorate-General, Science, Economy and Society Directorate)
The Code of Conduct for Responsible Nanosciences and Nanotechnologies Research

17.25–18.00 **Discussion** with participation of the Official Representatives of the Ministry of Education and Science of RF, Russian Corporation of Nanotechnologies, and others.

18.15-19.15

Wellcome Party



19.30-22.30 City Sightseeing Giuded Bus Tour “Magnificent Saint-Petersburg”

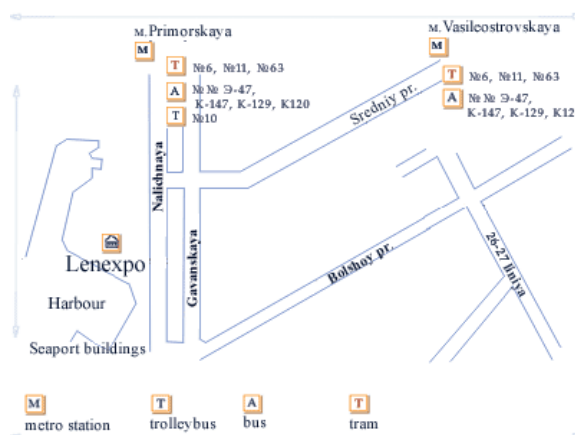
Thursday, June 17

***Venue: Exhibition Center “LENEXPO”
Pavilion 6, Congress Hall***



<http://www.lenexpo.ru/a0/en/index.shtml>

Lenexpo, with its 85.000 sq. meters of total exhibition space and excellent set of offered services, is the leading exhibition company in the North-West region, and one of the top exhibition businesses in Russia.



The nearest Metro stations are “Primorskaya” and “Vasileostrovskaya”.

Thursday, June 17

**Venue: Exhibition Center "LENEXPO"
Pavilion 6, Congress Hall**

9.30-10.00 *Registration and Poster Mounting*

Keynote Lectures

L3: 10.00-10.40 **Pavel Yakutseni, Sergey Kozyrev**

Present and Prospects of Nanobiotechnology

L4: 10.40-11.20 **Frank Breitling**

Particle-Based Combinatorial Synthesis of Peptide Arrays

11.20-11.40 *Coffee Break*

L5: 11.40-12.20 **Ron Lifshitz**

Mechanics at the Nano Scale

L6: 12.20-13.00 **Eduard Son**

Modern Problems of Nanohydrodynamics

13.00-14.00 *Lunch*

L7: 14.00-14.40 **Vadim Govorun**

Bacterial Sensors and Microfluidic Technology

L8: 14.40-15.20 **Mario N. Baibich**

Nanostructured Magnetic Materials: A World of Applications

Oral Session 1

15.20-15.35 **Oral Report 1**

15.35-15.50 **Oral Report 2**

15.50-16.10 *Coffee Break*

Oral Session 1 (continued)

16.10-16.25 **Oral Report 3**

16.25-16.40 **Oral Report 4**

16.40-16.55 **Oral Report 5**

16.55-17.10 **Oral Report 6**

17.10-17.25 **Oral Report 7**

17.25-17.40 **Oral Report 8**

17.40-17.55 **Oral Report 9**

Presentation of Poster Reports

18.00-19.00 **Poster Session**

Round Table Room

**16.10-16.50 Meeting of the Austrian-Russian
Workgroup on Nanobiotechnology**

**17.00-18.30 Round Table "Horizons of the Russian-
Brazilian Cooperation in Science and Innovations"**

19.15-22.00

Conference Dinner (on Ship)



Wednesday, June 18

**Venue: Exhibition Center "LENEXPO"
Pavilion 6, Congress Hall**

Keynote Lectures

L9: 9.20-10.00 Humberto Terrones, Julio A. Rodríguez Manzo, Litao Sun, Florian Banhart, Mauricio Terrones, and Harold W. Kroto

In Situ High Temperature Electron Irradiation Effects in Carbon Nanostructures

L10: 10.00-10.40 Uwe Sleytr

Nanobiotechnological Applications of S-Layer Proteins

L11: 10.40-11.20 Yury Yevdokimov

Nanotechnology and Nucleic Acids

11.20-11.40 Coffee Break

L12: 11.40-12.20 Chung-Hao Wang, Yi-Shiou Hsu, Ching-An Peng,

Quantum Dots-Tagged Viruses for Anti-Viral Drug Screening

L13: 12.20-13.00 Alyona Sukhanova, Igor Nabiev, and Vladimir Oleinikov

FRET with Nanocrystals for Ultrasensitive Detection and Medical Diagnosis

13.00-14.00 Lunch

Oral Session 2

14.00-14.15 **Oral Report 10**

14.15-14.30 **Oral Report 11**

14.30-14.45 **Oral Report 12**

14.45-15.00 **Oral Report 13**

15.00-15.15 **Oral Report 14**

15.15-15.30 **Oral Report 15**

15.30-15.45 **Oral Report 16**

15.45-16.05 Coffee Break

16.20 Poster Dismounting

Oral Session 3

16.05-16.20 **Oral Report 17**

16.20-16.35 **Oral Report 18**

16.35-16.50 **Oral Report 19**

16.50-17.05 **Oral Report 20**

17.05-17.20 **Oral Report 21**

17.20-17.35 **Oral Report 22**

17.35-17.50 **Oral Report 23**

**Round Table Room
Special Session "UMNIK"**

**14.00-15.45 Russian Young Scientists Competition
"UMNIK"**

Round Table Room

**Meetings of the Working Groups on Forthcoming
Co-ordinated Events**

16.05-17.50 Discussion on the organisation of:

- NATO ARW "Silicon vs Carbon"
June 18 -20, 2008
- Round table "Horizons of Russian - South African
R&D Cooperation"
Exact date will be announced later
- Russian - Israeli Workshop on Advanced Research
and Emerging Technology. Honorary Lecturer -
Prof. Aaron Ciechanover (Nobel Prize Winner,
Chemistry 2004)
Autumn 2008, exact date will be announced later

17.55-18.30 Closing Ceremony

Announcement of the Young Scientists Competition Winners

Special Lecture

L0) NANOTECHNOLOGIES IN RUSSIA

Mikhail V. Alfimov¹, Andrey N. Petrov²

¹*Academician, Director of the Photochemistry Center of RAS, Editor-in-chief of Scientific Journal "Nanotechnologies in Russia"*

²*General Director of State Directorate of Target S&T Program of Russian Federation*

Keynote Lectures

L1) MULTIFUNCTIONAL NANOCARRIERS: PHARMACEUTICAL PERSPECTIVES

Vladimir Torchilin

Department of Pharmaceutical Sciences and Center for Pharmaceutical Biotechnology and Nanomedicine, Northeastern University, Boston, USA

L2) MOLECULAR SIMULATIONS AND RATIONAL DESIGN OF NANOBIOSYSTEMS

Konstantin Shaitan, Mikhail Kirpichnikov

M.V.Lomonosov Moscow State University, Biology Faculty, Moscow, Russia

L3) PRESENT AND PROSPECTS OF NANOBIO TECHNOLOGY

Pavel Yakutseni, Sergey Kozyrev

Center for Advanced Studies of Saint-Petersburg State Polytechnical University, St. Petersburg, Russia

L4) PARTICLE-BASED COMBINATORIAL SYNTHESIS OF PEPTIDE ARRAYS

Frank Breitling, Alexander Nesterov, Volker Stadler, Ralf Bischoff

Dept. Chip Based Peptide Arrays, German Cancer Research Center (DKFZ), Germany

L5) MECHANICS AT THE NANO SCALE

Ron Lifshitz

Raymond and Beverly Sackler School of Physics and Astronomy, Tel Aviv University, Israel

L6) MODERN PROBLEMS OF NANOHYDRODYNAMICS

Eduard Son

Moscow Institute of Physics and Technology, Russia

L7) BACTERIAL SENSORS AND MICROFLUIDIC TECHNOLOGY

Vadim Govorun

Institute of Physico-Chemical Medicine, Moscow, Russia

L8) IN SITU HIGH TEMPERATURE ELECTRON IRRADIATION EFFECTS IN CARBON NANOSTRUCTURES

Humberto Terrones¹, Julio A. Rodríguez Manzo¹, Litao Sun², Florian Banhart², Mauricio Terrones¹, Harold W. Kroto³

¹*Advanced Materials Department, IPICyT, San Luis Potosí, México*

²*Institut für Physikalische Chemie, Universität Mainz, Germany*

³*Dept. of Chemistry and Biochemistry, Florida State University, Tallahassee, Florida, USA*

L9) NANOSTRUCTURED MAGNETIC MATERIALS: A WORLD OF APPLICATIONS

Mario N. Baibich

Ministério da Ciência e Tecnologia, Brasília, Brazil

L10) NANOBIO TECHNOLOGICAL APPLICATIONS OF S-LAYER PROTEINS

Uwe B. Sleytr

Center for NanoBiotechnology, University of Natural Resources and Applied Life Sciences (BOKU), Vienna, Austria

L11) NANOTECHNOLOGY AND NUCLEIC ACIDS

Yury Yevdokimov

V.A.Engelhardt Institute of Molecular Biology of RAS, Moscow, Russia

L12) QUANTUM DOTS-TAGGED VIRUSES FOR ANTI-VIRAL DRUG SCREENING

Chung-Hao Wang, Yi-Shiou Hsu, Ching-An Peng

Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan

L13) FRET WITH NANOCRYSTALS FOR ULTRASENSITIVE DETECTION AND MEDICAL DIAGNOSIS

Alyona Sukhanova¹, Igor Nabiev¹, Vladimir Oleinikov²

¹ *University of Reims Champagne-Ardenne, France*

² *Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry of RAS, Moscow, Russia*

Oral Session 1

O1) INJECTION MAGNETORESISTANCE EFFECT IN MAGNETIC NANOSTRUCTURES AND ITS APPLICATION IN SPINTRONICS

L.V. Lutsev¹, A.I. Stognij², N.N. Novitskii²

¹ *Centre for Advanced Studies of Saint-Petersburg State Polytechnical University, St. Petersburg, Russia*

² *The Scientific and Practical Materials Research Center, National Academy of Sciences of Belarus, Minsk, Belarus*

O2) THE USE OF MICRO AND NANOSTRUTURED SYSTEMS TO IMPROVE DRUG AND VACCINE EFFICACY

Bartira Rossi-Bergmann

Lab. of Leishmaniasis, Instituto de Biofisica, Universidade Federal do Rio de Janeiro, Brazil

O3) CARBON NANO DISCS – NEW AND PROMISING MATERIAL AS A TRANSDUCER FOR NANO-SENSORS WITH LOW DETECTION LIMIT AND FAST KINETICS

Jiri Muller and Arne T. Skjeltorp

Institute for Energy Technology, Kjeller, Norway

O4) ANISOTROPIC MICROCAPSULES COATED WITH METAL NANOPARTICLES

R.F. Fakhruллин^{1,2}, R.I. Khakimova¹, A.I. Zamaleeva¹, Z.I. Abramova¹, V.N. Paunov²

¹ *Department of Biochemistry, Kazan State University, Kazan, Tatarstan, Russia*

² *Department of Chemistry, University of Hull, Hull, HU6 7RX, United Kingdom*

O5) INLUENCE OF PROTEINS ON RESONANCE SCATTERING SPECTRA OF NOBLE METAL'S NANOPARTICLES IN COLLOIDS

A.D. Levin¹, A.V. Aseichev², O.A. Azizova², E.M. Bekman², V.I. Roldugin³

¹ *All-Russian Scientific and Research Institute for Optical and Physical Measurements,*

² *Institute of Physical-Chemical Medicine*

³ *Institute of Physical Chemistry and Electrochemistry, RAS, Moscow, Russia*

O6) NEW SPM APPROACH FOR BIO INVESTIGATIONS

Ivan Bykov

NT-MDT Co, Zelenograd, Russia

O7) LOGICAL AND ONTOLOGICAL MODELING LEVELS OF SELF-ORGANIZATION IN NANOBIO AND MULTIAGENT INFORMATION SYSTEMS

A.S. Pisarev

Centre for Advanced Studies of Saint-Petersburg State Polytechnical University, St. Petersburg, Russia

O8) ATOMIC TRITIUM AS NANOZOND FOR MOLECULAR MODELING OF PROTEINS CONSISTING OF SUPRAMOLECULAR COMPLEXES

Elena N. Bogacheva¹, Alexey L. Chulichkov¹, Alexey A. Dolgov¹, Alexander V. Shishkov¹, Alexander L. Ksenofontov², Elena V. Lukashina², Lyudmila A. Baratova²

¹*N.N. Semenov Institute of Chemical Physics, RAS, Moscow, Russia*

²*Belozersky Institute of Physico-Chemical Biology of Moscow State University, Moscow, Russia*

O9) STRUCTURAL BIOLOGY AS A VERSATILE TOOL OF NANOBIO TECHNOLOGY

Arseniev A.S.^{1,2}, Sobol A.G.¹, Shenkarev Z.O.¹, Nolde S.B.¹, Efremov R.G.¹, Bocharov E.V.¹, Khodorkovskii M.A.²

¹*Shemyakin&Ovchinnikov Institute of Bioorganic Chemistry, RAS, Moscow, Russia*

²*Saint-Petersburg State Polytechnical University, St. Petersburg, Russia*

Oral Session 2

O10) BIOCENTRIC BIOTECHNOLOGY AND GENE ENGINEERING AS NANOTECHNOLOGY

Sergey Chebanov

Baltic State Technical University (VOENMECH in mem. of D.F.Ustinov), Dept. of Theoretical and Applied Linguistics, St. Petersburg, Russia

O11) ESTIMATION OF ERRORS IN GENE EXPRESSION DATA EXTRACTED FROM CONFOCAL IMAGES

Ekaterina Myasnikova, Svetlana Surkova, Maria Samsonova

Centre for Advanced Studies of Saint-Petersburg State Polytechnical University, St. Petersburg, Russia

O12) MECHANICAL PROPERTIES OF DNA LOCAL STRUCTURE: ULTRASOUND STUDIES

Dmitry Yu. Nechipurenko¹, Mikhail V. Golovkin², Sergej L. Grokhovsky², Irina A. Il'icheva², Larisa A. Panchenko³, Robert V. Polozov⁴, Yurii D. Nechipurenko^{1,2}

¹*Faculty of Physics M.V.Lomonosov Moscow State University, Moscow 119992, Russia*

²*Engelhardt Institute of Molecular Biology RAS Vavilov str., 32 Moscow 119991, Russia*

³*Faculty of Biology M.V.Lomonosov Moscow State University, Moscow 119992, Russia*

⁴*Institute of theoretical and experimental biophysics, Moscow region, Puschino 142290, Russia*

O13) FORMATION OF SELF-ORGANIZED NANOSTRUCTURES FROM PEPTIDES WITH UN-NATURAL AMINO ACIDS-A NOVEL APPROACH

Mandar R. Maduskar and M.M.V. Ramana

Department of Chemistry, University of Mumbai, Mumbai, India

O14) NANO-SCALE STRUCTURES FORMED BY RECOMBINANT ANALOGS OF SPIDROINS

V.G.Bogush¹, O.S.Sokolova², L.I.Davydova¹, D.V.Klinov³, K.V.Sidoruk¹, N.G.Esipova⁴, T.V.Neretina³, I.A.Orchanskyi², V.G. Tumanyan⁴, K.V.Shayjtan², V.G. Debabov¹, M.P.Kirpichnikov²

¹*State Scientific Center "GosNIIgenetika", Moscow, Russia*

²*Moscow State University, Faculty of Biology, Dept. of Bioengineering, Moscow, Russia*

³*Institute of Bioorganic Chemistry RAS, Moscow, Russia*

⁴*Engelhardt Institute of Molecular Biology RAS, Moscow, Russia*

O15) EXPERIMENTAL AND COMPUTATIONAL SIMULATION STUDIES OF COPOLYMERIC NANOCARRIERS FOR DELIVERY OF SMALL INTERFERING RNA THERAPEUTICS

Anastasia Malek¹, Paola Posocco^{2,3}, Giovanni Maria Pavan^{2,3}, Maurizio Fermeglia², Giulio Scocchi^{2,3}, Marek Maly^{3,4}, Andrea Danani³, Carlo Catapano¹, Sabrina Pricl^{2,3}

¹Laboratory of Experimental Oncology, Oncology Institute of Southern Switzerland (IOSI), Bellinzona, Switzerland;

²Molecular Simulation Engineering (MOSE) Laboratory, DICAMP, University of Trieste, Trieste, Italy;

³University for Applied Sciences of Southern Switzerland (SUPSI) - Institute of Computer Integrated Manufacturing for Sustainable Innovation (ICIMSI), Manno, Switzerland;

⁴Department of Physics, Faculty of Science, J. E. Purkinje University, Usti nad Labem, Czech Republic;

O16) NANOBIOLOGICALS: SELF-ASSEMBLY OF PROTEINS INDUCED SURFACE OF CARBON POLYMER

V.A.Levchenko, V.N. Matveenko

Lomonosov Moscow State University, Moscow, Russia

Oral Session 3

O17) ADVANTAGES OF LIPOSOMAL ANTICANCER DRUGS

A.Yu. Baryshnikov, N.A. Oborotova

N.N.Blokhin Russian Cancer Research Center RAMS, Institute of Experimental Diagnostics and Biotherapy of Cancer, Moscow, Russia

O18) WHOLE-BODY IMAGING OF TUMORS LABELED WITH SEMICONDUCTOR QUANTUM DOTS

Balalaeva I.V.^{1,2}, Brilkina A.A.^{1,2}, Shirmanova M.V.^{1,3}, Zdobnova T.A.^{2,4}, Edelveys E.F.⁴, Sirotkina M.A.³, Stremovsky O.A.⁴, Turchin I.V.², Deev S.M.⁴

¹Nizhny Novgorod State University, Nizhny Novgorod, Russia

²Institute of Applied Physics of Russian Academy of Science, Nizhny Novgorod, Russia

³Nizhny Novgorod State Medical Academy, Nizhny Novgorod, Russia

⁴Institute of Bioorganic Chemistry of Russian Academy of Science, Moscow, Russia

O19) MODERN APPROACHES TO CRYOBANKING: FROM THE DEVELOPMENT AND FABRICATION OF NEW MICRO- AND NANOSTRUCTURED CRYOSUBSTRATES TO LONGTERM PRESERVATION FOR REGENERATIVE MEDICINE

Alisa Katsen-Globa and Heiko Zimmemann

Fraunhofer Institute for Biomedical Engineering, Ingbert, Germany

O20) THE INFLUENCE OF THE NANO-SIZE FULLERIDES C60(FECP2)2, C60(NICP2)2, AND ITS DERIVATIVES ON THE CELL PROLIFERATION IN VITRO

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O21) NANODIAMOND COMPOSITES AS AN ACTIVE BIOPROTECTOR

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O22) FUNCTIONAL BIOACTIVE NANOSTRUCTURED HETEROPHASE IMPLANTS FOR TREATMENT OF PARODONTOSIS

Gizatullin R.M., Arsenov P.A., Borisenko N.I., Gunderov D.V., Gurfinkel L.N., Koledov V.V., Sazonov, Sokov S.L., Chehovoy A.N., Afonona V.S., Kalashnikov V.S.

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O23) CONFORMATIONAL STATISTICS OF GLOBULAR PROTEINS WITH RESPECT TO HYDROPHOBICITY/INTERFACIAL ACTIVITY OF AMINO ACID RESIDUES

Alexey Shaytan, Alexei R. Khokhlov

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Poster session

P1) DEVELOPMENT OF NANOSTRUCTURED MATERIALS ON THE BASIS OF PEPTIDE FIBRILS

Egorov V. V.¹, Vasin A.V.¹, Dyukov M. I.¹, Sirotkin A. K.¹, Plotnikova M. A.¹, Shaldjan A. A.¹, Nekrasov P. A.¹, Garmaj J. P.¹, Krylova I. V.¹, Grudinina N. A.², Solovyov K. V.², Schavlowsky M. M.², Kiselev O. I.¹

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P2) PEPTIDE-FUNCTIONALIZED OLIGOTHIOPHENE HYBRIDS: COMPUTATIONAL MODELING OF BIOINSPIRED MATERIALS

Olga A. Gus'kova¹, Pavel G. Khalatur^{1,2}, Alexei R. Khokhlov^{1,2}

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P3) MOLECULAR MODELING STUDY OF PROTEIN KINASE A IA (PKA IA) AND CYCLIC ADENOSINE MONOPHOSPHATE (CAMP) INTERACTIONS

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P4) STUDIES OF PROTEIN/DNA INTERACTIONS BY SINGLE MOLECULE DNA STRETCHING.

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P5) ON THE WAY TO THE OPTIMAL SYNTHESIS OF ARTIFICIAL SELF-ASSEMBLE DNA NANOSTRUCTURES: THE DESIGN

Alexey A. Bogdanov^{1,2}, Andrey A. Bogdanov^{1,2}, Valerii V. Lesnichii², Sergey V. Kozyrev^{1,2}

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P6) ANALYSIS OF GENE POLYMORPHISMS BY PHARMACY BIOCHIP IN NEWBORN AND ELDERLY PEOPLE FROM NORTH-WEST REGION OF RUSSIA

O.S. Glotov^{1,3}, A.S. Glotov¹, G.S. Demin¹, M.V. Moskalenko², N.Y. Shved¹, V.G.Vakharlovsky¹, T.E. Ivashchenko¹, V.S. Baranov^{1,2}

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P7) IMMOBILIZATION OF DNA FRAGMENTS ONTO NANOPARTICLES OF TITANIUM DIOXIDE, SILICIUM DIOXIDE, AND AURUM

Asya Levina¹, Marina Repkova¹, Valentina Zarytova¹, Viktor Zinov'ev², Eugenii Belanov², Sergei Balakhnin², Alexei Evdokimov², Dmitrii Pletnev², Ernst Malygin², Nadezhda Shikina³, Zinfer Ismagilov³, Sergei Baiborodin⁴, Stanislav Zagrebelnyi⁴, Dmitrii Kalinin⁵, Valentina Serdobintseva⁵

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P8) SIMULTANEOUS DETECTION OF DISTINCT DNA LESIONS ON CARBON NANOTUBE MODIFIED ELECTRODE

I. I. Nikitina, O. V. Bondar, E. R. Bulatov, T. I. Abdullin
Kazan State University, Kazan, Tatarstan, Russia

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Kasyanenko N. A., Volkov I. L., Bazlov N. V., Bondarenko A. S., Vyvenko O. F.
Faculty of Physics, Saint-Petersburg State University, Saint-Petersburg, Russia

P10) POLYSACCHARIDE STABILIZER'S CONSEQUENCE IN SELF-ORGANIZING NANOSTRUCTURED COMPOSITES

G.P. Aleksandrova, L.A. Grishchenko, B.G. Sukhov, B.A. Trofimov
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P11) NANOPARTICLES OF TITANIUM DIOXIDE BEARING BLEOMYCINE A5 OR OLIGONUCLEOTIDE-POLYAMINE CONJUGATES CONTAINING PHOTOACTIVE ARYLAZIDE GROUPS

Marina Repkova¹, Asya Levina¹, Valentina Zarytova¹, Anna Pavlova¹, Viktor Zinov'ev², Eugenii Belanov², Sergei Balakhnin², Alexei Evdokimov², Dmitrii Pletnev², Ernst Malygin², Nadezhda Shikina³, Zinfer Ismagilov³, Sergei Baiborodin⁴, Stanislav Zagrebelnyi⁴

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P12) BIONANOTEHNOLOGY IN PROCESS OF THE CELLS' FISSION IN THE ALIVE ORGANISM. THE HYPOTHESIS

I.N. Ruban, N.L. Voropaeva, M.D. Sharipov
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P13) SHAPING BIOECENOCOMPLEXES IN ECOSYSTEMS. BIOTECHNOLOGICAL ASPECT

A.U. Sagdullaev, L.G. Konstantinova, I.N. Ruban, N.L. Voropaeva, G.A. Mirzaeva, M.D.Sharipov
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P14) MICROBAL DEGRADATION OF PESTICIDES AND CREATION OF NANOMICROBAL-SORPTION PREPARATIONS

L.G. Konstantinova, I.N. Ruban, N.L. Voropaeva, M.D. Sharipov

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P15) SYSTEM FEATURES OF THE BIOLOGICAL OBJECTS

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O.V. Zaborova, D.N. Pavlov, T.Yu. Dorodnych, N.S. Melik-Nubarov

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P17) SYNTHETIC MACROCYCLIC BLOCKATORS OF BIOSPECIFIC INTERACTION: THE ROLE OF SPATIAL ARRANGEMENT AT THE NANOMETER SCALE

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P18) HYBRID CARBON NANOCOMPLEXES AS A NOVEL DRUGS' FORM

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P19) NANOMEDICINE IN RUSSIA AND WORLDWIDE

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P20) BIORESORBABLE CARBONATED HYDROXYAPATITE NANOPOWDERS FOR BIOACTIVE MATERIALS PREPARATION

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P21) ARTIFICIAL BLOOD ON THE BASIS OF BACTERIAL PHOSPHOLIPIDS FUNCTIONALIZED BY NANOSTRUCTURES

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P22) NEW WAY OF INTRAVESICAL DRUG ELECTROPHORESIS THERAPY OF BLADDER DISEASE

Kubin N.D., Protoschak V.V., Petrov S.B.

Military Medical Academy named S.M. Kirov, Department of urology, Saint Petersburg, Russia

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A.E.Pavlov¹, I.M.Spivak², S.V.Surma³, B.F.Shchegolev³, V.E.Stefanov¹

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I.Ya. Podolski^{1,2}, Z.A. Podlubnaya^{1,2}, E.A. Mugantseva^{1,2}, E.G. Makarova^{1,2},

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G.N. Rytchkov^{1,2}, K.S. Bobrov¹, A.S. Borisova¹, K.A. Shabalin¹, M.G. Petukhov^{1,2}, A.A. Kulminskaya¹

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Baranov V.I., Sopova E.A.

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E.V. Tazina, E.V. Ignatieva, O.L. Orlova, V.V. Mescherikova, A. Wainson,

N.A. Oborotova, A.Yu. Baryshnikov

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P29) RESEARCH OF THE EFFICIENT NANODIAMOND-BASED ANTITUMOR PREPARATION

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Viktor Zinov'ev¹, Eugeni Belanov¹, Sergei Balakhnin¹, Alexei Evdokimov¹, Olga Serova¹,

Dmitriy Pletnev¹, Ernst Malygin¹, Asya Levina², Marina Repkova², Valentina Zarytova²,

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P32) THE USE OF DIFFERENT GENERATIONS OF PAMAM DENDRIMERS TO IMPROVE DRUG ACTIVITY.

Camila A. B. Falcão¹; Vanessa L. R. Furtado² and Bartira Rossi-Bergmann¹

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P33) TOF MEASUREMENTS OF MASS OF BIOMOLECULES DESORBED BY 6-20 NM Au NANOCUSTER IONS WITH THE ENERGY OF 0.1-1 MeV .

I. Baranov¹, A. Korobkin¹, A. Novikov², V. Obnorsky¹, P. Håkansson³

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P34) SUB-NANOMETER RESOLUTION NON CONTACT AFM WITH SELF ACTUATED PIEZORESISTIVE CANTILEVER IN ROOM AMBIENT CONDITIONS

C. Bitterlich, U. Wenzel, K. Ivanova, T. Ivanov, B.E. Volland, Y. Sarov, E. Guliyev, S. Klett, J.-P. Zöllner, A. Frank, and I. W. Rangelow

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P35) SIMULTANEOUS DETERMINATION OF WATER- AND FAT-SOLUBLE VITAMINS BY MICROEMULSION ELECTROKINETIC CHROMATOGRAPHY

T.V. Khmel'nitskaya

St.-Petersburg State University, Chemical Department, St.-Petersburg, Russia

P36) DEVELOPMENT OF THE METHOD FOR EVALUATION OF LISOMUSTINE INCORPORATION INTO THE LIPOSOMES

K. V. Kostin, E. V. Ignatyeva, O. L. Orlova, A. V. Lantsova, A. P. Polozkova, N. A. Oborotova, A. Ju. Baryshnikov

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P37) OPTICAL NANOBIOSENSORS BASED ON SURFACE PLASMON RESONANCE.

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P38) QSAR STUDIES OF FLAVONOIDS AS ANTIOXIDANTS AND ANTIHYPOXANTS IN COMPLEX WITH FULLERENE C₆₀

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P39) DEVELOPMENT OF TEST-SYSTEMS FOR GENETICALLY MODIFIED CROP DIAGNOSTICS USING REAL-TIME PCR IN MULTIPLEX NANOPANELS

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P40) PHOTOLUMINESCENCE AND NONLINEAR OPTICAL PROPERTIES OF C₆₀-Zn(II)TETRAPHENYLPORPHYRIN CHARGE-TRANSFER COMPLEXES

I.B.Zakharova¹, E.G.Donenko¹ G.M. Ermolaeva², V.B.Shilov², V.V.Danilov²,

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P41) NEW TRENDS AND ACHIEVEMENTS IN PRODUCTION OF NANOFIBERS-BASED FILTER MEDIA

M. Akbari, V. Mottaghitlab, M. Hasanzadeh, A. K. Haghi
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P42) SELF-ASSEMBLING, HIERARCHY AND ARCHITECTURE OF NANOOBJECTS

A.E. Madison

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P43) ACCESSIBLE SYNTHESIS OF CdS AND CdS/ZnS QUANTUM DOTS

A.O. Manyashin, I.I. Taraskina, M.S. Wakstein

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P44) WATER SOLUBLE HIGHLY LUMINESCENT CORE-SHELL QUANTUM DOTS CdSe/ZnSe

Wakstein M.S., Manyashin A.O., Taraskina I.I., Zubova N.N., Sizmin D.V., Tusova V.V.

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P45) ELECTRIC DISCHARGE SOLUBILIZING OF CARBON NANOTUBES IN WATER AND THEIR CHEMICAL FUNCTIONALIZATION

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P46) PHYSICAL MECHANISMS OF THE EFFECTS OF METALS ON SELF-ASSEMBLY OF NANOTUBES OF BIOLOGICAL ORIGIN: MODEL STUDIES

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P47) EVOLUTION AS IDEOLOGY

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P48) NATURE OF BIO-MEDICAL ACTIVITY OF NANOCARBONS

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P49) ELECTRON PHOTOTRANSFER BETWEEN PHOTOSYNTHETIC REACTION CENTERS AND SEMICONDUCTOR MESOPOROUS TiO₂ FILMS

A.B. Rubin, V.A. Nadtochenko, E.P. Permenova, E. P. Lukashev

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P50) SIZE, ASPECT RATIO, AND FUNCTIONAL CONJUGATE EFFECTS OF SILICA AND CHALCOPYRITE NANOMATERIAL TOXICITY IN DEVELOPING ZEBRAFISH EMBRYOS

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P51) DEVELOPMENT OF NOVEL PHARMACEUTICAL SUBSTANCES WITH IMPROVED PROPERTIES BASED ON BIOCOMPATIBLE PARTICLES AND POLYMERS
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PROCEEDINGS

The Proceedings of the Second Saint-Petersburg International Conference on NanoBiotechnologies (NanoBio'08) will be published by the American Institute of Physics as a Special Volume of the AIP Conference Proceedings Series in early 2009.

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We are looking forward to see you in Saint-Petersburg!