XII International Conference on Nanostructured Materials (NANO 2014)

July 13-18
2014
www.nano2014.org

Program

Lomonosov Moscow State University
We are delighted to meet a brilliant thousand of new faces of the best scientists over the World in summer Moscow at the XII International Conference on Nanostructured Materials (NANO 2014) on July 13 – 18, 2014. For the first time held in Russia, the NANO 2014 Congress is hosted by Lomonosov Moscow State University and has accepted above 1250 presentations from Australia, Austria, Belarus, Belgium, Brazil, Canada, China, Egypt, Estonia, Finland, France, Germany, Hong Kong, India, Iran, Israel, Italy, Japan, Mexico, Poland, Portugal, Russia, Singapore, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, Ukraine, United Kingdom and United State of America. NANO 2014 stays one of the largest top-rated international events bringing together a community of scientists and engineers interested in recent developments on nanostructured materials in various renowned areas. This unique scientific meeting promoted by the International Committee on Nanostructured Materials continues the prestigious series of biannual conferences held since 1992 in Cancun - Mexico (1992), Stuttgart - Germany (1994), Kona - Hawaii, USA (1996), Stockholm - Sweden (1998), Sendai - Japan (2000), Orlando - USA (2002), Wiesbaden - Germany (2004), Bangalore - India (2006), Rio de Janeiro - Brazil (2008), Rome - Italy (2010), Rhodes - Greece (2012).

We are happy to provide a forum for outstanding scientists in chemistry, physics, mechanics, computer simulation, biomedical applications, new approaches on nanostructured materials preparation including smart nanoparticles, thin films, heterostructures, superlattices, soft matter materials, the development of templating, patterning, self-assembling, nanofabrication techniques in laboratory and industrial scales, and advanced characterization techniques. As usual, the Congress will discuss the state–of–the–art research, recent achievements, global trends, and it will favor exchange of novel ideas, concepts, techniques and exciting prospects in nanoscience, nanotechnology and related rapidly developing fields. We hope that our guests will enjoy opening and closing ceremonies, 10 plenaries, more that 100 keynote and invited talks from distinguished scientists, about 80 oral and 200 poster contributions per each day of the Congress, exhibition, young scientist contest and, of course, the welcome party, banquet and cultural program. In 2014, the third annual ACS NANO Lectureship Award accompanies the Congress and thus we will honor the contributions of three top-level scientists who have made major achievements in the field of nanoscience and nanotechnology from around the world.

We are more than happy to provide a friendly welcome to all our participants and help them to communicate fruitfully, discuss comprehensively their research and work together – and this will be the best contribution to peace and international cooperation that we can make as scientists.

Chairman of NANO 2014                              Professor Alexei R. Khokhlov
Co - chairman of NANO 2014                                                Professor Ruslan Z. Valiev
Chairman of ICNM                                 Dr. Elisabetta Agostinelli
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# Committees

**Organizing Committee**

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Professor Ruslan Z. Valiev, Ufa State Aviation Technical University (Russia) – **co-chairman**

**Committee members**

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NANO 2014 Committees

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Professor Evgeny V. Antipov, Lomonosov Moscow State University (Russia)
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Professor Sergey M. Deyev, Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry of the Russian Academy of Sciences (Russia)
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Professor Yury Gogotsi, Drexel University (USA)
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Professor Martin Möller, RWTH Aachen University (Germany)
Professor Kenneth R. Poeppelmeier, Northwestern University (USA)
Professor Sergei A. Ponomarenko, Enikolopov Institute of Synthetic Polymeric Materials of the Russian Academy of Sciences (Russia)
Professor Edik U. Rafailov, University of Dundee (UK)
Professor Andrey A. Rempel, Institute of Solid State Chemistry of the Ural Branch of the Russian Academy of Science (Russia)
Professor Reshef Tenne, Weizmann Institute of Science (Israel)
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Professor Victor M. Ustinov, Ioffe Physico-Technical Institute of the Russian Academy of Sciences (Russia)

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Dr. Leonid V. Gusev, Lomonosov Moscow State University (Russia)

Committee members:

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Professor Andrey G. Svinarenko, Fund for Infrastructure and Educational Programs (Russia)
Professor Nikolay N. Sysoev, Lomonosov Moscow State University (Russia)
Professor Aslan Yu. Tsivadze, Frumkin Institute of Physical chemistry and Electrochemistry of the Russian Academy of Sciences (Russia)

International Advisory Committee

International Committee on Nanostructured Materials

Dr. Elisabetta Agostinelli, Istituto di Struttura della Materia- CNR (Italy) – chairman
Professor Jeff Th.M. De Hosson, Zernike Institute of Advanced Materials and Materials Innovation (Netherlands) – past chairman

Committee members:

Professor Walter J. Botta Filho, Federal University of Sao Carlos (Brazil)
Dr. James H. Dickerson, Brookhaven National Lab. (USA)
Dr. Jürgen Eckert, IFW Dresden (Germany)
Professor Ignacio Garzon, Universidad Nacional Autónoma de Mexico (Mexico)
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Professor Kenneth F. Kelton, Washington University in St. Louis (USA)
Professor Jian Lu, City University of Hong Kong (Hong Kong)
Dr. Lei Lu, Chinese Academy of Sciences (Shenyang) (China)
Professor Michel Trudeau, Hydro-Québec Research Institute (Canada)
Professor Deliang Zhang, Shanghai Jiao Tong University (China)
Professor Ruslan Z. Valiev, Ufa State Aviation Technical University (Russia)
Plenary lecture
«Nanostructured Semiconductors for Opto- and Nanoelectronics»
Location: Lomonosov Building Conference Hall
Date: Thursday, July 17, 10:00 AM – 10:45 AM
Professor Alexander L. Aseev
Rzhanov Institute of Semiconductor Physics of Siberian Branch of Russian Academy of Sciences (Russia)

Plenary lecture
«Light Energy Harvesting and Charge Carrier Collection in Mesoscopic Solar Energy Conversion Systems»
Location: Lomonosov Building Conference Hall
Date: Monday, July 14, 10:45 AM – 11:30 AM
Professor Michael Graetzel
Ecole Polytechnique de Lausanne (Switzerland)

Plenary lecture
«Polymeric Micelles for Drug Delivery»
Location: Lomonosov Building Conference Hall
Date: Friday, July 18, 2:45 PM – 3:30 PM
Professor Alexander V. Kabanov
Lomonosov Moscow State University (Russia)
University of North Carolina at Chapel Hill (USA)

Plenary lecture
«Carbon in Nano and Outer Space»
Location: Lomonosov Building Conference Hall
Date: Wednesday, July 16, 10:00 AM – 10:45 AM
Professor Harold Kroto
Florida State University (USA)
Nobel Prize in Chemistry (1996)

Plenary lecture
«Spherical Nucleic Acid (SNA) Nanostructures as Intracellular Probes and Gene Regulation Agents»
Location: Lomonosov Building Conference Hall
Date: Tuesday, July 15, 10:45 AM – 11:30 AM
Professor Chad A. Mirkin
Northwestern University (USA)

Plenary lecture
«Building with Artificial Atoms: Programming the Assembly of Multi-Functional Nanocrystal Thin Films through Precise Control of Particle Size and Shape»
Location: Lomonosov Building Conference Hall
Date: Friday, July 18, 2:00 PM – 2:45 PM
Professor Christopher B. Murray
University of Pennsylvania (USA)

Plenary lecture
«Probing Structure, Properties and Dynamics of Nanostructures Through Scanning Transmission Electron Microscopy and First-Principles Theory»
Location: Lomonosov Building Conference Hall
Date: Tuesday, July 15, 09:15 AM – 10:00 AM
Professor Stephen J. Pennycook
University of Tennessee (USA)

Plenary lecture
«Positive And Negative Aspects Of The Nano-Approach Within The Field Of Li-Based Batteries»
Location: Lomonosov Building Conference Hall
Date: Wednesday, July 16, 10:45 AM – 11:30 AM
Professor Jean-Marie Tarascon
College de France (France)

Plenary lecture
«Carbon Nanomaterials Synthesis and Applications»
Location: Lomonosov Building Conference Hall
Date: Tuesday, July 15, 10:00 AM – 10:45 AM
Professor James M. Tour
Rice University (USA)

Plenary lecture
«Imaging Nanomaterials in Three Dimensions»
Location: Lomonosov Building Conference Hall
Date: Thursday, July 18, 10:45 AM – 11:30 AM
Professor Gustaaf Van Tendeloo
University of Antwerp (Belgium)
In 2014, the third annual ACS NANO Lectureship Awards will honor the contributions of three winners who have made major impacts on the field of nanoscience and nanotechnology from around the world. The 2014 ACS NANO Lectureship event will be presented at the on Wednesday, 16 July starting from 3 p.m. in the Lomonosov Building Conference Hall.

**ACS Nano Lectureship Selection Committee:**

- Professor Paul S. Weiss, University of California, Los Angeles (USA)
- Professor Yury Gogotsi, Drexel University (USA)
- Professor Alexei R. Khokhlov, Lomonosov Moscow State University (Russia)
- Professor Molly M. Stevens, Imperial College (UK)
- Professor Andrew T. S. Wee, National University of Singapore (Singapore)

Professor Paul S. Weiss will lead the ceremony and the lectures will be delivered by Professor Chad Mirkin (The Americas region awardee), Professor Klaus Müllen (Europe/Middle East/Africa), Professor Amanda Barnard (Asia/Pacific region) and also their quests selected from an extraordinarily competitive pool of nominees.

**ACS Nano awardee lecture «In Silico Veritas: Toward Computational Models of Realistic Nanosystems»**

Location: Lomonosov Building Conference Hall
Date: Wednesday, July 16, 3:10 PM – 3:55 PM

Professor Amanda S. Barnard
Commonwealth Scientific and Industrial Research Organization (Australia)

**ACS Nano awardee lecture «Nucleic Acid-Modified Nanostructures as Programmable Atom Equivalents: Forging a New «Table of Elements»»**

Location: Lomonosov Building Conference Hall
Date: Wednesday, July 16, 4:20 PM – 5:05 PM

Professor Chad A. Mirkin
Northwestern University (USA)

**ACS Nano awardee lecture «Graphene Nanoribbons: The Next-Generation Semiconductors?»**

Location: Lomonosov Building Conference Hall
Date: Wednesday, July 16, 5:40 PM – 6:25 PM

Professor Klaus Müllen
Max Planck Institute for Polymer Research (Germany)

**ACS Nano guest lecture «Future Directions for First-Principles Calculations in Nanoscience»**

Location: Lomonosov Building Conference Hall
Date: Wednesday, July 16, 3:55 PM – 4:20 PM

Dr. Manolo C. Per
Commonwealth Scientific and Industrial Research Organisation (Australia)

**ACS Nano guest lecture «Nanoscale Controlled Dynamic (Non-)Covalent Chemistry in 2D»**

Location: Lomonosov Building Conference Hall
Date: Wednesday, July 16, 5:15 PM – 5:40 PM

Dr. Paolo Samori
University of Strasbourg (France)
The primary scope of NANO 2014 covers many exciting topics closely related to nanostructured materials. In particular, NANO 2014 is related to various hot topics such as:

- carbon nanomaterials, graphene, nanotubes, nanodiamonds,
- nanostructured semiconductors,
- nanomagnetism,
- plasmonic nanostructures,
- nanoelectronics, optoelectronics, molecular electronics,
- various construction nanomaterials,
- nanomaterials in catalysis,
- nanomaterials for energy,
- nanostructured materials for medicine and sustainable development.

All the subjects are split into two major groups – Preparation and Characterization of Nanostructured Materials (sections 01 – 06) and Practical Applications of Nanostructured Materials (section 07 – 11). NANO 2014 allows to discuss advanced approaches on nanostructured materials preparation including smart nanoparticles, thin films, heterostructures, superlattices, soft matter materials, the development of templating, patterning, self – assembling, nanofabrication techniques in laboratory and industrial scales. All the NANO 2014 sections disclose their unique features and this makes it more comfortable for our participants with diverse scientific interests to reach new conclusions and ideas.
Section 01

Section Scope
This section includes all kind of carbon nanomaterials, formation mechanisms of inorganic nanoparticles, surface chemistry and stabilization, new physical and chemical preparation routes, shaping and self-assembly of nanoparticles of a different nature.

Section Topics
- Carbon nanomaterials: graphene, nanotubes, nanodiamond
- Non-carbon systems mimicking graphene; exfoliated 2D materials
- Non-carbon inorganic nanotubes
- Zero – to two dimensional inorganic nanoparticle design: growth mechanisms, shaping and new preparation techniques
- Engineering of multifunctional and Janus particles
- Nanopowders for industry
- Plasmonic nanoparticles and structures
- Preparation, structure, properties of SPION and other magnetic nanoparticles
- Quantum dots
- Self-assembled nanostructures with advanced functional properties
- Conjugated nanoparticles
- Nanoparticles and ecology
- Nanoparticles and nuclear energy
- Advanced characterization techniques
- Smart colloidal systems

Section Chairmen
- Professor Eugene A. Goodilin, Lomonosov Moscow State University (Russia) – co-chairman
- Professor Yury Gogotsi, Drexel University (USA) – co-chairman

Section Coordinator
- Dr. Ekaterina A. Pomerantseva, Drexel University (USA)

Section Program Board
- Professor Yulia G. Gorbunova, Frumkin Institute of Physical Chemistry and Electrochemistry of the Russian Academy of Sciences (Russia)
- Professor Vladimir K. Ivanov, Kurnakov Institute of General and Inorganic Chemistry of the Russian Academy of Sciences (Russia)
- Professor Stepan N. Kalmykov, Lomonosov Moscow State University (Russia)
- Professor Vladimir A. Korshun, Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry of the Russian Academy of Sciences (Russia)

Keynote speakers
- Professor Yury Gogotsi, Drexel University (USA)
- Professor Paul S. Weiss, University of California, Los Angeles (USA)

Invited speakers
- Professor Eugene A. Goodilin, Lomonosov Moscow State University (Russia)
- Professor Jianhua Hao, The Hong Kong Polytechnic University (Hong Kong)
- Professor Mark C. Hersam, Northwestern University (USA)
- Professor Ernesto Joselevich, Weizmann Institute of Science (Israel)
- Professor Valeria Nicolosi, Trinity College Dublin (Ireland) – the talk will be delivered by Dr. Beatriz Mendoza Sanchez, Trinity College Dublin (Ireland)
- Professor Olga Shenderova, International Technology Center (USA)
- Professor Alexander Sinitskii, University of Nebraska - Lincoln (USA)
- Professor Carl V. Thompson, Massachusetts Institute of Technology (USA)
- Professor Eugene Zubarev, Rice University (USA)
Section 02

Thin Films and Heterostructures, 2D and 3D Nanofabrication

Section Scope
Thin film preparation and patterning, lithography approaches and nanofabrication, thin film functional nanomaterials and synthetic approaches for production of valuable materials.

Section Topics
- Atomic layer deposition (ALD)
- Metalorganic chemical vapor deposition (MOCVD)
- Langmuir–Blodgett films
- Physical deposition techniques
- Nanostructured functional thin films and coatings
- Heterostructures with advanced functional properties
- Complex structures and supercells
- Photonic crystals and structures
- Nanolithography
- Nanofabrication
- 3D structures
- Templated self-assembly
- Epitaxial Graphene and Graphene – based structures
- Carbon nanotube – based planar structures
- Nanostructured semiconductors
- Templating and new patterning techniques
- Advanced characterization techniques

Section Chairmen
- Professor Evgeny A. Levashov, National University of Science and Technology «MISIS» (Russia) – co-chairman
- Professor Carl V. Thompson, Massachusetts Institute of Technology (USA) – co-chairman

Section Coordinator
- Dr. Marina Bychkova, National University of Science and Technology «MISIS» (Russia)

Section Program Board
- Professor Rostislav Andrievskii, Institute of New Chemical Problems of the Russian Academy of Science (Russia)
- Professor Albano Cavaleiro, Coimbra University (Portugal)
- Dr. Philipp Kiryukhantsev-Korneev, National University of Science and Technology «MISIS» (Russia)
- Professor Paul Mayrhofer, University of Wien (Austria)
- Professor Jindrich Musil, University of West Bohemia (Czech Republic)
- Professor Oleg Sobol’, Khar’kov Technical University (Ukraine)
- Dr. Aleksey Yerokhin, University of Sheffield (United Kingdom)

Keynote speakers
- Professor Francesco Stellacci, École Polytechnique Fédérale de Lausanne (EPFL) (Switzerland)

Invited speakers
- Professor Rostislav Andrievskii, Institute of New Chemical Problems of the Russian Academy of Science (Russia)
- Professor Karl K. Berggren, Massachusetts Institute of Technology (USA)
- Professor Albano Cavaleiro, Coimbra University (Portugal)
- Professor Dmitri Golberg, National Institute for Materials Science (NIMS) (Japan)
- Professor Cheol Seong Hwang, Seoul National University (South Korea)
- Professor Jozef Keckes, Montanuniversitaet Leoben (Austria)
- Professor Evgeny A. Levashov, National University of Science and Technology «MISIS» (Russia)
- Professor Paul H. Mayrhofer, Vienna University of Technology (Austria)
- Professor Jindrich Musil, University of West Bohemia (Czech Republic)
- Professor Alexander Rogachev, Institute of Structural Macrokinetics and Materials Science of the Russian Academy of Science (ISMAN) (Russia)
- Professor Dmitry V. Shtansky, National University of Science and Technology «MISIS» (Russia)
- Professor Stan Veprek, Technical University Munich (Germany)
- Dr. Aleksey Yerokhin, University of Sheffield (United Kingdom)
Section 03 Nanoceramics

Section Scope
Structural and functional ceramics and composites of improved properties and enhanced performance resulting from nanoscale structure organization.

Section Topics
- Structural nanoceramics for severe environments
- Bioceramics and bionanocomposites
- Glass-ceramics
- Nanoceramics for magnetic and electronic devices
- Optical and active laser ceramics
- Ceramics for energy storage and conversion
- Filters and membranes
- Thin ceramic films
- Carbon-base nanomaterials
- Smart ceramic materials
- Hard alloys and nanoceramic tools
- Advanced characterization techniques

Section Chairmen
- Professor Sergey M. Barinov, Baikov Institute of Metallurgy and Materials Science of the Russian Academy of Sciences (Russia) – co-chairman
- Professor Harry L. Tuller, Massachusetts Institute of Technology (USA) – co-chairman

Section Coordinator
- Professor Vladimir S. Komlev, Baikov Institute of Metallurgy and Materials Science of the Russian Academy of Sciences (Russia)

Section Program Board
- Professor Jan Dusza, Institute of Materials Research of the Slovak Academy of Sciences (Slovakia)
- Dr. Giuseppina Padeletti, Institute of Nanomaterials Research of the Italian National Research Council (Italy)
- Professor Tatiana Prikhna, Bakul Institute for Superhard Materials, National Academy of Sciences of Ukraine (Ukraine)
- Professor Natalia S. Sergeeva, Hertzen Moscow Oncology Research Institute (Russia)

Keynote speakers
- Professor Evgeny V. Antipov, Lomonosov Moscow State University (Russia)
- Professor Harry L. Tuller, Massachusetts Institute of Technology (USA)

Invited speakers
- Dr. Uliana V. Ancharova, Institute of Solid State Chemistry and Mechanochemistry of the Siberian Branch of the Russian Academy of Sciences (Russia)
- Professor Yet-Ming Chiang, Massachusetts Institute of Technology (USA)
- Professor Jan Dusza, Institute of Materials Research, Slovak Academy of Sciences (Slovakia)
- Professor Paul Heitjans, Leibniz University Hannover (Germany)
- Professor Christian Hellmich, Vienna University of Technology (Austria)
- Professor Vladimir S. Komlev, Baikov Institute of Metallurgy and Materials Science of the Russian Academy of Sciences (Russia)
- Professor Alexander Mukasyan, University of Notre Dame (USA)
- Professor Tatiana A. Prikhna, Bakul Institute for Superhard Materials, National Academy of Sciences of Ukraine (Ukraine)
- Dr. Julietta Rau, Institute of Structure of Matter, Italian National Research Council (Italy)
- Professor Brian W. Sheldon, Brown University (USA)
- Professor Rainer Waser, RWTH Aachen University of Technology (Germany)
  – the talk will be delivered by Dr. Vikas Rana, Forschungszentrum Juelich (Germany)
Section 04

**Section Scope**
Production and special properties of bulk metallic nanomaterials.

**Section Topics**
- Processing techniques
- Grain refinement and advanced structural characterization
- Superior mechanical and physical properties of bulk nanomaterials
- Interfaces and grain boundaries in bulk nanomaterials
- Modeling approaches to strength and plasticity of bulk nanomaterials
- Innovation potential and applications
- Advanced characterization techniques

**Section Chairmen**
- Professor Ruslan Z. Valiev, Ufa State Aviation Technical University, Saint Petersburg State University (Russia) – co-chairman
- Professor Yuri Estrin, Monash University (Australia) – co-chairman

**Section Coordinator**
- Zarema Safargalina, Ufa State Aviation Technical University (Russia)

**Section Program Board**
- Professor Sergei Dobatkin, Baikov Institute of Metallurgy and Materials Science of the Russian Academy of Sciences (Russia)
- Professor Hyoung Seop Kim, Pohang University of Science and Technology (South Korea)
- Dr. Ilchat Sabirov, IMDEA Materials Institute (Spain)
- Professor Boris Straumal, Institute of Solid State Physics of the Russian Academy of Sciences (Russia)
- Professor Laszlo Toth, Université Paul Verlaine de Metz (France)

**Keynote speakers**
- Professor Alexei Vinogradov, Togliatti State University (Russia)
- Professor Zenji Horita, Kyushu University (Japan)

**Invited speakers**
- Professor Mikhail Iv. Alimov, Institute of Structural Macromolecular and Materials Science of the Russian Academy of Sciences (Russia)
- Professor Walter J. Botta, Federal University of São Carlos (Brazil)
- Professor Sergei Dobatkin, Baikov Institute of Metallurgy and Materials Science of the Russian Academy of Sciences (Russia)
- Professor Alex M. Glezer, Bardin Central Research Institute for Ferrous Metallurgy (Russia)
- Professor Dmitri V. Louzguine, Tohoku University (Japan)
- Professor Lei Lu, Institute of Metal Research, Chinese Academy of Sciences (China)
- Dr. Ilchat Sabirov, IMDEA Materials Institute (Spain)
- Professor Boris Straumal, Institute of Solid State Physics of the Russian Academy of Sciences (Russia)
- Professor Viktor Varyukhin, Donetsk Institute for Physics and Engineering named after A.A. Galkin, National Academy of Sciences of Ukraine (Ukraine)
- Professor Michael Zehetbauer, Physics of Nanostructured Materials, University of Vienna (Austria)
- Professor Deliang Zhang, Shanghai Jiao Tong University (China)
Section 05

Nanocomposites and Hybrid Nanomaterials

Section Scope
Preparation and functional properties of different nanocomposites and hybrid materials with advanced optical, magnetic, electrical, electrochemical and other properties.

Section Topics
- Functional nanocomposites
- Membrane materials and technologies
- Polymer-based nanocomposites
- Metal – ceramic nanocomposites
- Opal-based structures
- Synchrotron techniques for nanocomposites investigations
- Nanocell materials
- Carbon-based nanocomposites
- Advanced characterization techniques

Section Chairmen
- Professor Alexey V. Lukashin, Lomonosov Moscow State University (Russia) – co-chairman
- Professor Reshef Tenne, Weizmann Institute (Israel) – co-chairman

Section Coordinator
- Dr. Olga V. Boytsova, Lomonosov Moscow State University (Russia)

Section Program Board
- Dr. Andrei A. Eliseev, Lomonosov Moscow State University (Russia)
- Professor Sergei V. Kalinin, Oak Ridge National Lab (USA)
- Professor Alexey A. Vertegel, Clemson University (USA)

Keynote speakers
- Professor Reshef Tenne, Weizmann Institute (Israel) – the talk will be delivered by Dr. Rita Rosentsveig, Weizmann Institute (Israel)

Invited speakers
- Dr. Davide Calestani, IMEM-CNR (Italy)
- Dr. Andrei A. Eliseev, Lomonosov Moscow State University (Russia)
- Dr. Giovanni Golemme, University of Calabria (Italy)
- Professor Alexander Grüneis, University of Cologne (Germany)
- Dr. Curtis Marcott, University of Delaware (USA)
- Dr. Elisabetta Mazzotta, University of Salento (Italy)
- Professor Yury A. Shchipunov, Pusan National University (South Korea) and Institute of Chemistry, Far East Department of the Russian Academy of Sciences (Russia)
- Dr. Jeremy Sloan, The University of Warwick (UK)
- Dr. Alexey A. Vertegel, Clemson University (USA)
Section 06

Polymer, Organic and Other Soft Matter Materials

Section Scope
Soft matter nanomaterials, their preparation and behavior.

Section Topics
- Functional precision molecules and their nanostructures
- Nanostructured materials in organic electronic devices
- Polymer nanostructures in photonics
- Stimuli responsive polymers and nanostructures
- Bioactive and biohybrid polymers and colloids
- Self-assembly of nanostructures
- Supramolecular chemistry and nanomaterials
- Advanced characterization techniques

Section Chairmen
- Professor Martin Möller, RWTH Aachen University (Germany) – co-chairman
- Professor Sergei A. Ponomarenko, Enikolopov Institute of Synthetic Polymeric Materials of the Russian Academy of Sciences (Russia) – co-chairman

Section Coordinator
- Professor Irina V. Perminova, Lomonosov Moscow State University (Russia)

Section Program Board
- Dr. Abderrahim Yassar, Ecole Polytechnique (France)
- Dr. Xiaomin Zhu, RWTH Aachen University (Germany)

Keynote speakers
- Professor Krzysztof Matyjaszewski, Carnegie Mellon University (USA)
- Professor Antonio Facchetti, Northwestern University (USA)
- Professor Klaus Müllen, Max-Plank Institute of Polymer Chemistry (Germany)

Invited speakers
- Dr. Alexey Bobrovsky, Lomonosov Moscow State University (Russia)
- Professor Vladimir Dyakonov, Julius Maximilian University of Wuerzburg (Germany)
- Professor Marcus Halik, Friedrich-Alexander-University Erlangen-Nürnberg (Germany)
- Dr. Leonid Ionov, Leibniz-Institut für Polymerforschung Dresden (Germany)
- Professor Dimitri Ivanov, Institut de Sciences des Matériaux, Mulhouse (France)
- Professor Martin Möller, RWTH Aachen University (Germany)
- Professor Irina V. Perminova, Lomonosov Moscow State University (Russia)
- Professor Vitaly Podzorov, Rutgers University (USA)
- Professor Sergei A. Ponomarenko, Enikolopov Institute of Synthetic Polymeric Materials of the Russian Academy of Sciences (Russia)
- Professor Sergei Sheiko, The University of North Carolina at Chapel Hill (USA)
- Professor Raisa Tal’rose, Institute of Petrochemical Synthesis of the Russian Academy of Sciences (Russia) – the talk will be delivered by Dr. Alexander A. Ezhov, Topchiev Institute of Petrochemical Synthesis of the Russian Academy of Sciences (Russia)
- Dr. Abderrahim Yassar, Ecole Politechnique, University Paris-Saclay (France)
- Dr. Xiaomin Zhu, RWTH Aachen University (Germany)
Section 07

Nanomaterials for Energy

Section Scope
Electrochemical energy conversion and storage, alternative energy

Section Topics
- Nanomaterials for electrochemical energy storage
- Nanostructured materials for fuel cells
- Nanomaterials for effective hydrogen generation and storage
- Thermoelectric nanomaterials
- Nanomaterials for photovoltaics and solar cells
- Advanced characterization techniques

Section Chairmen
- Professor Evgeny V. Antipov, Lomonosov Moscow State University (Russia) – co-chairman
- Professor Kenneth R. Poeppelmeier, Northwestern University (USA) – co-chairman

Section Coordinator
- Dr. Daniil Itkis, Lomonosov Moscow State University (Russia)

Section Program Board
- Dr. Sergei Istomin, Lomonosov Moscow State University (Russia)
- Dr. Nellie Khasanova, Lomonosov Moscow State University (Russia)
- Dr. Dmitry Paraschuk, Lomonosov Moscow State University (Russia)
- Professor Andrei Shevelkov, Lomonosov Moscow State University (Russia)

Keynote speakers
- Professor Yang Shao-Horn, Massachusetts Institute of Technology (USA)

Invited speakers
- Professor Zhumabay Bakenov, Nazarbayev University (Kazakhstan)
- Dr. Catherine Bougerol, Institut Neel CNRS (France)
- Dr. Tim G. Fawcett, International Centre for Diffraction Data (USA)
- Dr. Oleg Lebedev, CRISMAT, CNRS-ENSICAEN, Université de Caen (France)
- Professor Ru-Shi Liu, National Taiwan University (Taiwan)
- Professor Elena R. Savinova, University of Strasbourg (France)
- Professor Carl V. Thompson, Massachusetts Institute of Technology (USA)
Section 08

Biological and Biomedical Nanomaterials

**Section Scope**
Nanomaterials in biology and medicine.

**Section Topics**
- Bioinspired hybrid materials and nanocomposites for remediation
- Nanomedicine
- Nuclei medicine
- Conjugated nanostructures for biology and medicine
- Biocompatible nanoparticles and nanotoxicity
- Biosensors
- Multifunctional nanomaterials for biomedical applications
- Liposomes and target delivery of drugs
- Nanomaterials for biomedical visualization
- Medical diagnostics
- Carbon nanomaterials in biology and medicine
- Magnetic nanoparticles in medicine
- Advanced characterization techniques

**Section Chairmen**
- Professor Alexander V. Kabanov, Lomonosov Moscow State University (Russia) and Carolina Institute for Nanomedicine (USA) – co-chairman
- Professor Sergey M. Deyev, Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry of the Russian Academy of Sciences (Russia) – co-chairman

**Section Program Board**
- Professor Tatiana K. Bronich, University of Nebraska Medical Center (USA)
- Professor Andrei V. Zvyagin, Macquarie University (Australia)

**Keynote speakers**
- Professor Daniel G. Anderson, Massachusetts Institute of Technology (USA)
- Professor Sergey M. Deyev, Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry of the Russian Academy of Sciences (Russia)

**Invited speakers**
- Professor Tatiana K. Bronich, University of Nebraska Medical Center (USA)
- Professor Abraham J. Domb, The Hebrew University of Jerusalem (Israel)
- Professor Rainer Jordan, Technical University of Dresden (Germany)
- Professor Nikolai G. Khebtsov, Institute of Biochemistry and Physiology of Plants and Microorganisms of the Russian Academy of Sciences, Saratov State University (Russia)
- Guillaume Thomas, Universite de Bourgogne (France)
- Dr. Pavel A. Troshin, Institute for Problems of Chemical Physics of the Russian Academy of Sciences (Russia)
- Dr. Paola Valentini, Istituto Italiano di Tecnologia - CBN (Italy)
- Professor Andrei V. Zvyagin, Macquarie University (Australia)
Section 09

Nanomaterials: Mechanics and Applications in Mechanical Engineering

Section Scope
Nanomaterials for mechanical engineering with advanced operational properties

Section Topics
- Mechanical models of nanomaterials
- Modeling of relationships between structure and mechanical properties of nano- and microscale units
- Mechanical behavior of natural and artificial materials with hierarchical structure
- Mechanics of functional-gradient coatings
- Structural nanomaterials
- Mechanical testing of micro- and nanoscale samples (devices)
- Nanotribology
- Mechnochemistry
- Carbon-based advanced structural materials
- Advanced characterization techniques for mechanical engineering applications

Section Chairmen
- Professor Robert V. Goldstein, Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences (Russia) – co-chairman
- Professor Horacio D. Espinosa, North-Western University (USA) – co-chairman

Section Coordinator
- Dr. Alexander V. Chentsov, Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences (Russia)

Section Program Board
- Professor Nikita F. Morozov, Saint Petersburg State University (Russia)
- Professor Alexei E. Romanov, Institute of Physics, University of Tartu (Estonia) and Ioffe Physico-Technical Institute of the Russian Academy of Sciences (Russia)

Keynote speakers
- Professor Jeffrey Th. M. De Hosson, University of Groningen (The Netherlands)

Invited speakers
- Professor Alberto Carpinteri, Politecnico di Torino (Italy)
- Professor Tobin Filleter, University of Toronto (Canada)
- Professor Sergey A. Kukushkin, Institute of Problems of Mechanical Engineering Russian Academy of Sciences IPME RAS (Russia)
- Professor Nikita F. Morozov, Saint Petersburg State University (Russia)
- Professor Emmanuel Gdoutos, Democritus University of Thrace (Greece)
- Professor Irina G. Goryacheva, Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences (Russia)
- Professor Robert V. Goldstein, Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences (Russia)
- Professor Alexander Golubok, ITMO University, Institute for Analytical Instrumentation of the Russian Academy of Sciences (Russia)
- Professor Reinhard Pippan, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences (Austria)
- Professor Alexei E. Romanov, Institute of Physics, University of Tartu (Estonia) and Ioffe Physico-Technical Institute of the Russian Academy of Sciences (Russia)
Section 10

Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics

Section Scope
Nanomaterials for organic, molecular and nanoelectronics.

Section Topics
- Nanoheterostructures for optoelectronics (quantum wells, quantum wires, and quantum dots)
- Advanced light emitters
- Nanomaterials for solar energy conversion
- Silicon based nanostructures for nanophotonics
- Synthesis of nanoheterostructures for photonics and electronics
- Nanostructures for THz and short pulse generation and detection
- Carbon nanomaterials in nanoelectronics
- Magnetic nanostructures and Spintronics
- Advanced characterization techniques

Section Chairmen
- Professor Victor M. Ustinov, Ioffe Physico-Technical Institute of the Russian Academy of Sciences (Russia) – co-chairman
- Professor Edik U. Rafailov, Aston University (UK) – co-chairman

Section Coordinator
- Professor Grigorii S. Sokolovskii, Ioffe Physico-Technical Institute of the Russian Academy of Sciences (Russia)

Section Program Board
- Professor Vladimir G. Dubrovskii, Saint Petersburg Academic University - Nanotechnology Research and Education Centre of the Russian Academy of Sciences (the Academic University) (Russia)
- Professor Grigorii S. Sokolovskii, Ioffe Physico-Technical Institute of the Russian Academy of Sciences (Russia)

Keynote speakers
- Professor Richard De La Rue, Glasgow University (UK)

Invited speakers
- Professor Viacheslav M. Andreev, Ioffe Physico-Technical Institute of the Russian Academy of Sciences (Russia)
- Dr. Stefan Breuer, Darmstadt University of Technology (Germany)
- Dr. Alessandro Casaburi, University of Glasgow (UK)
- Dr. Arkadi Chipouline, Institute of Applied Physics, Friedrich-Schiller-University of Jena (Germany)
- Professor Tomasz Czyszczanowski, Lodz University of Technology (Poland)
- Dr. Pavel Dorozhkin, NT-MDT Co. (Russia)
- Professor Vladimir G. Dubrovskii, Saint Petersburg Academic University - Nanotechnology Research and Education Centre of the Russian Academy of Sciences (the Academic University) (Russia)
- Professor Anatoly V. Dvurechenskii, Rzhanov Institute of Semiconductor Physics, Siberian Branch of the Russian Academy of Science (Russia)
- Dr. Maria Farsari, FORTH Institute of Electronic Structure and Laser (Greece)
- Professor Andrei V. Kabashin, CNRS - Aix-Marseille University (France)
- Professor Sergey A. Kukushkin, Institute of Problems of Mechanical Engineering Russian Academy of Sciences IPME RAS (Russia)
- Professor Irina N. Yassievich, Ioffe Physico-Technical Institute of the Russian Academy of Sciences (Russia)
Section 11
Nanomaterials and Catalysis

Section Scope
New processes in catalysis utilizing nanomaterials.

Section Topics
- Nanoparticle catalysis for organic synthesis and industry
- Fundamentals and mechanism of nanocatalysis
- Nanoparticle characterization
- New nanomaterials for catalysis
- Interconversion of heterogeneous and homogeneous catalytic systems
- Leaching and stability of nanoparticles
- Nanoparticles for sustainable catalysis
- Advanced characterization techniques

Section Chairmen
- Professor Valentin P. Ananikov, Zelinsky Institute of Organic Chemistry of the Russian Academy of Sciences (Russia) – co-chairman
- Professor Christian W. Lehmann, Max-Planck-Institut für Kohlenforschung (Germany) – co-chairman

Section Program Board
- Professor Andrey A. Rempel, Institute of Solid State Chemistry of the Ural Branch of the Russian Academy of Sciences (Russia).

Keynote speakers
- Professor Valentin P. Ananikov, Zelinsky Institute of Organic Chemistry of the Russian Academy of Sciences (Russia)
- Professor Christian W. Lehmann, Max-Planck-Institut für Kohlenforschung (Germany)

Invited speakers
- Dr. Pieter Glatzel, European Synchrotron Radiation Facility (ESRF) (France)
- Professor Christel Laberty-Robert, Laboratoire de Chimie de la Matière Condensée de Paris (France)
- Professor Edward A. Karakhanov, Lomonosov Moscow State University (Russia)
- Dr. Peter Miedziak, Cardiff University (UK)
- Professor Andrey A. Rempel, Institute of Solid State Chemistry of the Ural Branch of the Russian Academy of Sciences (Russia)
- Professor Anna Trzeciak, University of Wroclaw (Poland)
### NANO 2014 Schedule

**July 13 (Sunday)**
- **2:00 PM – 7:00 PM** | Registration
- **7:00 PM – 10:00 PM** | Social event – Moscow River Boat Trip

**July 14 (Monday)**
- **9:00 AM – 7:00 PM** | Registration
- **10:00 AM – 6:00 PM** | Exhibition
- **10:00 AM – 11:30 AM** | Opening ceremony. Plenary session
  **Location:** Lomonosov Building Conference Hall
- **10:00 AM – 10:45 AM** | Opening ceremony
- **10:45 AM – 11:30 AM** | Plenary lecture
  **Light Energy Harvesting and Charge Carrier Collection in Mesoscopic Solar Energy Conversion Systems**
  **Michael Graetzel**
  **1 Laboratory of Photonics and Interfaces, Institute of Chemical Science and Engineering Faculty of Basic Science, Ecole Polytechnique Federale de Lausanne, Switzerland**
- **11:30 AM – 12:00 PM** | Coffee break
- **12:00 PM – 2:00 PM** | Poster session
- **1:00 PM – 3:00 PM** | Lunch
- **3:00 PM – 5:00 PM** | Oral sessions 01 – 11 (parallel)

*The conference site – Lomonosov Building of Moscow University, Lomonosovsky Avenue 27, Building 1*
### July 14 (Monday)

#### Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location: B3</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 PM – 5:20 PM</td>
<td>Oral session Diversity of Nanostructures and Their Characterization</td>
<td>Chairman: Professor Yury G. Gogotsi</td>
</tr>
<tr>
<td>3:00 PM – 3:35 PM</td>
<td>Keynote lecture MXenes: A New Family of Two-Dimensional Materials</td>
<td>Yury G. Gogotsi Department of Materials Science and Engineering, and A. J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, Pennsylvania 19104, USA</td>
</tr>
<tr>
<td>3:35 PM – 4:05 PM</td>
<td>Invited lecture Functional Carbon Nanomaterial Heterostructures</td>
<td>Mark C. Hersam Northwestern University, 2220 Campus Drive, Evanston, IL 60208-3108, USA</td>
</tr>
<tr>
<td>4:05 PM – 4:35 PM</td>
<td>Invited lecture Synthesis, Optical Spectra and Luminescence of Metal-Ion Doped Inorganic Nanoparticles and Graphene-Based Hybrid Structures</td>
<td>1 Jianhua Hao Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong, China 2 The Hong Kong Polytechnic University Shenzhen Research Institute, Shenzhen 518057, China</td>
</tr>
<tr>
<td>4:35 PM – 5:05 PM</td>
<td>Ultra-Fast Nucleation and Growth of CdS Quantum Dots Observed by Ultra-Fast SAXS/WAXS</td>
<td>1 Andreas Schiener, 1 Andreas Magerl University of Erlangen-Nuernberg, Staudtstr. 3, 91058 Erlangen, Germany</td>
</tr>
<tr>
<td>4:50 PM – 5:05 PM</td>
<td>Highly Transparent and Conductive Single-Walled Carbon Nanotube Films for Electronic Applications</td>
<td>1 Albert G. Nasibulin Skolkovo Institute of Science and Technology, 100 Novaya st., Skolkovo, Moscow Region, 143025 Russia 2 Department of Applied Physics, Aalto University School of Science, PO Box 15100, 00076 Aalto, Espoo, Finland</td>
</tr>
<tr>
<td>5:05 PM – 5:20 PM</td>
<td>Strategies in the Design of Colloidal Low and High Porosity Silica-Based Nanoarchitectures</td>
<td>1, 2 Carla Cannas, 1 Andrea Ardu, 1 Davide Peddis, 1 Anna Musinu University of Cagliari, S.S. 554 bivio per Sestu, Monserrato, 09042 (CA), Italy 3 Istituto di Struttura della Materia, CNR, Via Salaria, Km. 29,300 - 00016 Monterotondo RM Laz, Italy</td>
</tr>
</tbody>
</table>

#### Section 02 – Thin Films and Heterostructures, 2D and 3D Nanofabrication

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location: C1</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 PM – 5:15 PM</td>
<td>Oral session Diversity of Nanostructures and Their Characterization</td>
<td>Chairman: Professor Evgeny Levashov</td>
</tr>
<tr>
<td>3:00 PM – 3:35 PM</td>
<td>Keynote lecture Ligand Coated Nanoparticles for Novel Biomedical Applications</td>
<td>Francesco Stellacci Institute of Materials, EPFL, Lausanne, Switzerland</td>
</tr>
<tr>
<td>3:25 PM – 4:05 PM</td>
<td>Invited lecture Nobel Metal Containing Nanocomposite thin Coatings Deposited by Sputtering-Based Techniques</td>
<td>Albano Cavaleiro 1 University of Coimbra, RuaDep Eng Mecanica, Luis Reis Santos, 3030-788 Coimbra, Portugal</td>
</tr>
<tr>
<td>4:05 PM – 4:35 PM</td>
<td>Invited lecture Nanostructured Multi-Component Thin Films</td>
<td>Paul H. Mayrhofer Vienna University of Technology, Vienna, Austria</td>
</tr>
<tr>
<td>4:35 PM – 4:55 PM</td>
<td>Nanostructured Surfaces for Biological Applications</td>
<td>1 Jolanda Spadavecchia, 1, 2 Ramesh Perumal, 1 Claire-Marie Pra-dier 1 Laboratoire de Reactivite de Surface, UMR CNRS 7197, Univer-sit-e Pierre et Marie Curie – Paris VI, Site d'Ivy-Le Raphael, 94200 Ivy-sur-Seine, France</td>
</tr>
<tr>
<td>4:55 PM – 5:15 PM</td>
<td>Confinement Effects on the Swelling Behavior of Nanostructured Block Copolymer Films</td>
<td>Larisa A. Tsarkova, 1 Anja Stenbock, 1 Alexander Boeker 1 DWI - Leibniz-Institute fur Interactive Materialien, Forckenbeckstrasse 50, Germany</td>
</tr>
</tbody>
</table>
## Section 03 – Nanoceramics

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 PM – 3:35 PM</td>
<td>Keynote lecture&lt;br&gt;Oxide Superlattices and Nanostructures: Roles in Solid State Ionics</td>
<td>Harry L. Tuller&lt;br&gt;Massachusetts Institute of Technology, Dept. of Materials Science and Engineering, 77 Mass. Ave., Cambridge, MA 02139 USA</td>
</tr>
<tr>
<td>3:35 PM – 4:05 PM</td>
<td>Invited lecture&lt;br&gt;Electrochemically Induced Stresses in Ceramics for Energy Applications</td>
<td>Brian W. Sheldon&lt;br&gt;Brown University, School of Engineering, USA</td>
</tr>
<tr>
<td>4:05 PM – 4:25 PM</td>
<td>Transport Properties of Nanostructured Ferrous Membrane Materials with Perovskite-Like Structure</td>
<td>Victor L. Kozhevnikov&lt;br&gt;Institute of Solid State Chemistry, Ural Branch of RAS, Pervomaiskaya str. 91, Yekaterinburg, Russia</td>
</tr>
<tr>
<td>4:25 PM – 4:45 PM</td>
<td>Preparation of Monodisperse Microparticles from Metal Oxides for the Fabrication of Thermally Stable Photonic Crystals</td>
<td>Elisabeth W. Leib, Ulla Vainio, Horst Weller, Tobias Vossmeier&lt;br&gt;University of Hamburg, Grindelallee 117, 20146 Hamburg, Germany, Germany</td>
</tr>
<tr>
<td>4:45 PM – 5:05 PM</td>
<td>Synthesis of Ultrahard Fullerite with a Catalytic 3D Polymerization Reaction of C&lt;sub&gt;60&lt;/sub&gt;</td>
<td>Mikhail Popov, Vladimir Mordkovich, Sergey Perfilov, Alexey Kirichenko, Boris Kunitskiy, Igor Perezhogin, Danila Ovsyannikov, Vladimir Blank&lt;br&gt;Technological Inst. For Superhard and Novel Carbon Materials, 142190, Centralnaya 7a, Troitsk, Moscow, Russian Federation</td>
</tr>
</tbody>
</table>

## Section 04 – Bulk Metallic Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 PM – 3:35 PM</td>
<td>Keynote lecture&lt;br&gt;Mechanical Properties and Fatigue of Ultrafine Grained Metals: History, Challenges and Perspectives</td>
<td>Alexei Vinogradov&lt;br&gt;Togliatti State University, Belorusskaya 14, Togliatti 445667, Russia</td>
</tr>
<tr>
<td>3:35 PM – 4:05 PM</td>
<td>Invited lecture&lt;br&gt;Generation of Materials with Multi-Scale Structure by Methods of Plastic Deformation</td>
<td>Viktor Varyukhin, Yan Beygelzimer, Viktor Beloshenko&lt;br&gt;Donetsk Institute for Physics and Engineering named after A.A. Galkin NAS of Ukraine, R.Luxemburg str. 72, Donetsk, 83114, Ukraine</td>
</tr>
<tr>
<td>4:05 PM – 4:25 PM</td>
<td>A New Paradigm of Severe Plastic Deformation: Fabrication of Hybrid Nanomaterials</td>
<td>Yuri Estrin, Rimma Lapovok&lt;br&gt;Centre for Advanced Hybrid Materials, Department of Materials Engineering, Monash University, 3800 Clayton, Victoria, Australia, Laboratory of Hybrid Nanostructured Materials, NITU MISiS, Leninsky prospect 4, 119049 Moscow, Russia</td>
</tr>
<tr>
<td>4:25 PM – 4:45 PM</td>
<td>Fabrication of Stainless Steel Micro- and Nano-Powder Mixture by RF Plasma Treatment</td>
<td>Dong-Youl Yang, Yong-Jin Kim, Tae-Soo Lim, Sangsun Yang&lt;br&gt;Powder Technology Department, Korea Institute of Materials Science (KIMS), Korea</td>
</tr>
<tr>
<td>4:45 PM – 5:05 PM</td>
<td>Nanostructure Formation and Phase Separation of the Composite CuFe by SPD</td>
<td>Alexander V. Lukyanov, Dmitry Gunderov, Anna A. Churakova, Alexander Yu. Filatov, Eduard E. Levin, Evgeny V. Antipov, Ruslan Z. Valiev&lt;br&gt;Ufa State Aviation Technical University, 450000, Ufa, K. Marx st. 12, Russia, Institute of molecule and crystal physics RAS, 450075, Ufa, Prospekt Oktyabrya 151, Russia, Lomonosov Moscow State University, Faculty of Chemistry, 119991, Moscow 1, GSP-1, 1-3 Leniniskie Gory, Russia</td>
</tr>
</tbody>
</table>
### Section 05 – Nanocomposites and Hybrid Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Type</th>
<th>Title</th>
<th>Speakers</th>
<th>Institutions</th>
</tr>
</thead>
</table>
| 3:00 PM – 3:35 PM | Oral session      | Keynote lecture: Inorganic Nanotubes and Fullerene-Like Nanoparticles at the Crossroad Between Solid State Chemistry and Nanotechnology | Rita Rosentsveig, 1 Reshef Tenne  
1 Weizmann Institute, Department of Materials and Interfaces, Rehovot 76100, Israel |                                                                           |
| 3:35 PM – 4:05 PM | Oral session      | Invited lecture: Nanomaterials for Targeted Delivery of Antioxidant Enzymes and Enzyme Mimetics | Alexey Vertegel, 1 Raisa Kiseleva, 1 Victor Maximov, 2 Carl Atkinson, 2 Mark Kindy, 2 Rodney Schlosser  
1 Clemson University, Dept. Bioengineering, 301 Rhodes Hall, Clemson, SC 29634-0905, USA  
2 Medical University of South Carolina, 171 Ashley Avenue Charleston, SC 29425 USA | 1 Clemson University, Dept. Bioengineering, 301 Rhodes Hall, Clemson, SC 29634-0905, USA  
2 Medical University of South Carolina, 171 Ashley Avenue Charleston, SC 29425 USA |
| 4:05 PM – 4:25 PM | Oral session      | Novel Polyampholytic Hydrogels and Multi-Responsive Microgels         | Vural Butun  
1 Eskişehir Osmangazi University, Department of Chemistry, 26480, Eskişehir, Turkey | 1 Eskişehir Osmangazi University, Department of Chemistry, 26480, Eskişehir, Turkey |
| 4:25 PM – 4:45 PM | Oral session      | Functionality in 1D and 3D Bio-Inorganic Hybrid Materials             | Mikhail Pashchanka, 1 Joerg J. Schneider, 1 Christiane Thielemann  
1 Technische Universität Darmstadt, Fb Chemie, Eduard-Zintl-Institut f. Anorganische und Physikalische Chemie, Alarich-Weiss-Str.12, 64287 Darmstadt, Germany  
2 Hochschule Aschaffenburg, Fakultaet f. Ingenieurwissenschaften, bio-mems lab, Wuerzburger Str.45, 63743 Aschaffenburg, Germany | 1 Technische Universität Darmstadt, Fb Chemie, Eduard-Zintl-Institut f. Anorganische und Physikalische Chemie, Alarich-Weiss-Str.12, 64287 Darmstadt, Germany  
2 Hochschule Aschaffenburg, Fakultaet f. Ingenieurwissenschaften, bio-mems lab, Wuerzburger Str.45, 63743 Aschaffenburg, Germany |
| 4:45 PM – 5:05 PM | Oral session      | Engineering of a New Nanobiohybrid Composed of Titanate Nanoribbons for Regenerative Medicine | Vanessa Bellat, 1 Mathieu Moreau, 1 Julien Boudon, 1 David Vandreux, 2 Franck Denat, 1 Nadine Millot  
1 Laboratoire ICB UMR 6303 CNRS-Universite de Bourgogne, 9 Av. A. Savary, BP 47 870, F-21078 DIJON Cedex, France  
2 Institut de Chimie Moléculaire de l’Université de Bourgogne, UMR 6302 CNRS/Université de Bourgogne, BP 47870, 21078 Dijon cedex, France | 1 Laboratoire ICB UMR 6303 CNRS-Universite de Bourgogne, 9 Av. A. Savary, BP 47 870, F-21078 DIJON Cedex, France  
2 Institut de Chimie Moléculaire de l’Université de Bourgogne, UMR 6302 CNRS/Université de Bourgogne, BP 47870, 21078 Dijon cedex, France |

### Section 06 – Polymer, Organic and Other Soft Matter Materials

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Type</th>
<th>Title</th>
<th>Speakers</th>
<th>Institutions</th>
</tr>
</thead>
</table>
| 3:00 PM – 3:35 PM | Oral session      | Keynote lecture: Nanostructured Functional Materials by Atom Transfer Radical Polymerization | Krzysztof Matyjaszewski  
1 Carnegie Mellon University, Pittsburgh, PA, 15213, USA | 1 Carnegie Mellon University, Pittsburgh, PA, 15213, USA |
| 3:35 PM – 4:05 PM | Oral session      | Invited lecture: Functional and Light - Actuated Microgels – from Responsive Hydrogels towards Microscopic Locomotor Systems | Ahmed Mournan, 1 Hang Zhang, 1 Martin Moeller  
1 DWI Leibniz - Institute of Interactive Materials and RWTH Aachen University, Aachen, Germany | 1 DWI Leibniz - Institute of Interactive Materials and RWTH Aachen University, Aachen, Germany |
1 University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-3290, USA | 1 University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-3290, USA |
1 University of Strasbourg, Institut Charles Sadron - CNRS 23 rue du Loess, BP84047 67034 Strasbourg Cedex 2, France | 1 University of Strasbourg, Institut Charles Sadron - CNRS 23 rue du Loess, BP84047 67034 Strasbourg Cedex 2, France |
| 5:05 PM – 5:25 PM | Oral session      | New Examples of Supramolecular Gels and Metallogels – Exciting Members of Soft-Matter | Sergey Vatsadze, 1 Alexey Medved’ko, 1 Vyacheslav Nuriev, 1 Alexander Ezhov, 2 Andrey Churakov, 3 Vladimir Ivanov, 4 Haojie Yu, 1 Li Wang  
1 M. V. Lomonosov Moscow State University, Moscow 119991, Russia  
2 N. S. Kurnakov Institute of General and Inorganic Chemistry, RAS, Moscow 119991, Russia  
3 State Key Laboratory of Chemical Engineering, Department of Chemical and Biological Engineering, Zhejiang University, Hangzhou 310027, China | 1 M. V. Lomonosov Moscow State University, Moscow 119991, Russia  
2 N. S. Kurnakov Institute of General and Inorganic Chemistry, RAS, Moscow 119991, Russia  
3 State Key Laboratory of Chemical Engineering, Department of Chemical and Biological Engineering, Zhejiang University, Hangzhou 310027, China |
| 5:25 PM – 5:45 PM | Oral session      | Patterned Arrays of Polyelectrolyte Multilayer Chambers | Maxim V. Kryukhin  
1 Institute of Materials Research and Engineering, A*STAR, 3 Research Link 117602 Singapore | 1 Institute of Materials Research and Engineering, A*STAR, 3 Research Link 117602 Singapore |
July 14 (Monday)

Section 07 – Nanomaterials for Energy

3:00 PM – 3:35 PM  
Keynote Lecture  
Enabling Oxides for Oxygen Electrocatalysis  
1 Yang Shao-Horn  
1 Department of Mechanical Engineering, Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139 USA

3:35 PM – 4:05 PM  
Invited Lecture  
Noble-Metal-Free Electrode Materials for Alkaline Fuel Cells  
1 Elena R. Savinova  
1 Institut de Chimie et Procédés pour l’Energie, l’Environnement et la Santé ECPM, Université de Strasbourg, UMR 7515 CNRS-ECPM-University of Strasbourg, 25 rue Becquerel 67087 Strasbourg Cedex 2, France

4:05 PM – 4:35 PM  
Invited Lecture  
Carpets of Vertically-Aligned Carbon Nanotubes and Nanofibers for Li-Air Batteries  
1 Carl V. Thompson  
1 Dept. of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA  
2 Skoltech Center for Electrochemical Energy, Skolkovo Institute of Science and Technology, Skolkovo, Russia

4:35 PM – 5:05 PM  
Invited Lecture  
Quantum Dots, Nanosized Au, and Upconversion Nanoparticles Sensitized ZnO Nanowires-Array Photoelectrodes for Water Splitting  
1 Ru-Shi Liu, 1 Chih-Kai Chen, 1 Hao-Ming Chen, 1 Chih-Jung Chen, 2 Shu-Fen Hu  
1 Department of Chemistry, National Taiwan University, Taipei, 106, Taiwan  
2 Department of Physics, National Taiwan Normal University, Taipei, 116, Taiwan

5:05 PM – 5:20 PM  
Chemical Stability of Electrode Materials for Oxygen Reduction in Aprotic Media  
1 Daniil M. Itkis  
1 Lomonosov Moscow State University, Leninskie gory, Moscow, 119991 Russia

July 14 (Monday)

Section 08 – Biological and Biomedical Nanomaterials

3:00 PM – 3:35 PM  
Keynote Lecture  
Heteronanostructures for Diagnostics and Therapy  
1 Sergey M. Devey  
1 Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Miklukho-Maklaya, 16/10, Moscow, 117997 Russia

3:35 PM – 4:05 PM  
Invited Lecture  
Nanoparticles for Oral and Brain Delivery  
1 Abraham (Avi) Domb  
1 School of Pharmacy- Faculty of Medicine, The Hebrew University of Jerusalem and Jerusalem College of Engineering, 91120, Faculty of Medicine, Eyn Kerem Camp, Faculty of Medicine, Eyn Kerem Camp, JERUSALEM, Jeru, Israel

4:05 PM – 4:25 PM  
VEGF-Targeted Delivery of Nanoparticles to the Brain Tumor  
1 Natalia V. Nukolova, 2 Sergey A. Shein, 3 Vladimir P. Baklauhev, 3 Anna A. Korchagina, 1 Tatiana O. Abakumova, 3 Ilya I. Kuznetsov, 3 Anton D. Aleksashkin, 3 Dmitry A. Bychkov, 3 Nadezhda F. Grinenko, 3 Alexander V. Kabanov, 2 Vladimir P. Chekhonin  
1 Lomonosov Moscow State University, Leninskie gory, 3/1, Moscow, 119991, Russia  
2 Serbsky National Research Center for Social and Forensic Psychiatry, Kropotkinsky per, 23, Moscow, 119034, Russia

4:25 PM – 4:45 PM  
Smart Nanostructured Materials in the Biomedical Research  
1 Gianni Ciofani, 1 Giada Genchi, 1 Elmira Farrokhhtakin, 1 Antonella Rocca, 1 Attilio Marino, 1 Barbara Mazzolai, 1 Virgilio Mattoli  
1 Italian Institute of Technology, Viale Rinaldo Piaggio 34, 56025 Pontedera (Pisa), Italy

4:45 PM – 5:05 PM  
Nanotechnology Approaches to Parkinson’s Disease Treatment  
1 Giada Graziana Genchi, 1 Barbara Mazziolai, 1 Virgilio Mattoli, 1 Gianni Ciofani  
1 Istituto Italiano di Tecnologia, Center for Micro-BioRobotics, Viale Rinaldo Piaggio 34, 56025, Pontedera, PI, Italy
July 14 (Monday)

Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
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<tbody>
<tr>
<td>3:00 PM –</td>
<td>Oral session</td>
<td>Chairman: Professor Robert V. Goldstein</td>
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<tr>
<td>4:45 PM</td>
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<td>Location: E2</td>
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<tr>
<td>3:00 PM –</td>
<td>Keynote lecture</td>
<td>Jeff T. DeHosson, Eric Detsi, Patrick Onck</td>
</tr>
<tr>
<td>3:35 PM</td>
<td></td>
<td>University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands</td>
</tr>
<tr>
<td>3:35 PM –</td>
<td>Invited lecture</td>
<td>Maria Konsta-Gdoutos, Emmanuel Gdoutos</td>
</tr>
<tr>
<td>4:05 PM</td>
<td></td>
<td>School of Engineering, Democritus University of Thrace, 12 Vasilissis Sofias, Greece</td>
</tr>
<tr>
<td>4:05 PM –</td>
<td>Electrical Conductivity and Piezoresistive Properties of Cementitious Nanocomposites</td>
<td>Maria Konsta-Gdoutos, Chrysula Aza</td>
</tr>
<tr>
<td>4:25 PM</td>
<td></td>
<td>School of Engineering, Democritus University of Thrace, 12 Vasilissis Sofias, Greece</td>
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<tr>
<td>4:25 PM –</td>
<td>Modeling of Elastomeric Nanocomposite Reinforcement due to the Appearance of Oriented Polymer Regions Between Filler Particle Aggregates</td>
<td>Alexander L. Svistkov</td>
</tr>
<tr>
<td>4:45 PM</td>
<td></td>
<td>Institute of continuous media mechanics UB RAS, 614013 Perm, street Academika Koroleva, 1, Russia</td>
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</tbody>
</table>

July 14 (Monday)

Section 10 – Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics

<table>
<thead>
<tr>
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<tr>
<td>3:00 PM –</td>
<td>Oral session</td>
<td>Chairman: Professor Victor M. Ustinov</td>
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<tr>
<td>Location: F1</td>
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<tr>
<td>3:00 PM –</td>
<td>Keynote lecture</td>
<td>Richard M. De La Rue</td>
</tr>
<tr>
<td>3:35 PM</td>
<td></td>
<td>University of Glasgow, University of Glasgow, School of Engineering, Rankine Building, Oakfield Avenue, Glasgow G12 8LT, Scotland, UK</td>
</tr>
<tr>
<td>3:35 PM –</td>
<td>Invited lecture</td>
<td>Alessandro Casaburi, Nathan Gemmell, Michael G. Tanner, Robert M. Heath, Robert A. Kirkwood, Andrea Pizzone, Robert Hadfield</td>
</tr>
<tr>
<td>4:05 PM</td>
<td></td>
<td>University of Glasgow - School of Engineering, Rankine Building, Oakfield Avenue, G12 8LT, Glasgow, UK</td>
</tr>
<tr>
<td>4:05 PM –</td>
<td>Colorful Light-Emitting-Diodes via Modulation of the Concentration of Red-Emitting Silicon Nanocrystal Phosphors</td>
<td>Giuseppe Barillaro, Lucanos Strambini</td>
</tr>
<tr>
<td>4:25 PM</td>
<td></td>
<td>Information Engineering Dpt, University of Pisa, via G. Caruso 16, 56121 Pisa - Italy</td>
</tr>
<tr>
<td>4:25 PM –</td>
<td>High-k Modes in Hyperbolic Metamaterials and Their Extraction into Free Space</td>
<td>Andrey A. Pavlov, Vasily V. Klimov, Ilya V. Zakbok</td>
</tr>
<tr>
<td>4:45 PM</td>
<td></td>
<td>Lebedev Physical Institute, 53 Leninskiy Prospekt, 119991, Moscow, Russia</td>
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<tr>
<td>4:45 PM –</td>
<td>Light Emitting Panels Based on ZnSe:Cu Nanostructures in Porous Anodic Alumina</td>
<td>Rishat Valeev, Artemi Beltyukov, Andrey Chukavin</td>
</tr>
<tr>
<td>5:05 PM</td>
<td></td>
<td>Physical-Technical Institute of UB RAS, Kirova str. 132, Izhevsk, 426000 Russia</td>
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<tr>
<td>Time</td>
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<tr>
<td>3:00 PM – 3:35 PM</td>
<td>Keynote lecture&lt;br&gt;High Resolution Electron Microscopy for Chemical Analysis of Nanoparticles</td>
<td>C2</td>
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<tr>
<td>3:35 PM – 4:05 PM</td>
<td>Invited lecture&lt;br&gt;In-Situ Studies of Electronic Structure Using High Brilliance X-Ray Spectroscopy</td>
<td>C2</td>
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<tr>
<td>4:05 PM – 4:25 PM</td>
<td>Electronic Defect Characterisation in Blue Titanium Dioxide and Implications for Visible Light Photocatalysis</td>
<td>C2</td>
</tr>
<tr>
<td>4:25 PM – 4:45 PM</td>
<td>Multifunctional Polymetallic Catalysts with Nanostructured Surface</td>
<td>C2</td>
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<tr>
<td>4:45 PM – 5:05 PM</td>
<td>Electronic Structure and Coordination Environment of Cu Sites in Cu-SSZ-13 Zeolite</td>
<td>C2</td>
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<tr>
<td>5:30 PM – 7:30 PM</td>
<td>Social event – Welcome Reception</td>
<td>C2</td>
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July 15 (Tuesday)

Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

3:00 PM – 5:05 PM
Location: B3
Oral session
Interactions in Nanoparticle Ensembles
Chairman: Professor Mark C. Hersam

3:00 PM – 3:35 PM
Keynote lecture
Cooperative Function in Atomically Precise Nanoscale Assemblies
1 Paul S. Weiss
California NanoSystems Institute and Departments of Chemistry & Biochemistry and Materials Science & Engineering, University of California, Los Angeles, CA 90095, USA

3:35 PM – 4:05 PM
Invited lecture
SERS Materials for Biological Objects
1 Eugene A. Good林, 1 Anna A. Semenova, 1 Asia S. Sarycheva, 2 Nadezhda A. Brazhe, 2 Adil Baijuemanov, 2 Georgy V. Maximov
1 Lomonosov Moscow State University, Faculty of Materials Sciences, Lenin Hills, 119991, Moscow, Russia
2 Lomonosov Moscow State University, Faculty of Biology, Lenin Hills, 119991, Moscow, Russia

4:05 PM – 4:25 PM
Vibrational, Elastic, and Thermal Properties of Metal Nanoparticles
1 Ignacio L. Garzon, 1 Huziel E. Sauceda, 1 Luis A. Perez, 2 Fernando Salazar
1 Universidad Nacional Autonoma de Mexico, Instituto de Fisica, 01000 Mexico, D. F., Mexico
2 Instituto Politecnico Nacional, ESIME Culhuacan, 04430 Mexico, D. F. Mexico

4:25 PM – 4:45 PM
Fundamental Nature of the Tube-Tube Repulsive Barrier: A Kinetics Study of SWCNT Aggregation
1 Jordan C. Poler, 1 Thomas J. Younts, 1 Shiho Kobayashi, 1 Shawn G. Ridlen, 1 Natalie P. Herring, 1 Michael W. Forney, 1 Jeffrey R. Alston, 1 Andrea N. Giordano, 1 Anjail A. Ameen, 1 Sarah S. Subaran
1 University of North Carolina at Charlotte, 9201 University City Blvd. Charlotte NC 28223 USA

4:45 PM – 5:05 PM
Thermal Conductivity of Polymer Composites Filled with Aligned CNTs
1 Ekaterina A. Vorotieva, 2 Irina V. Makarenko, 1 Nikolai G. Chechenin, 1 Alexander V. Dunaev
1 Lomonosov Moscow State University, Faculty of Physics, Leninskie Gory, 1/2
2 Lomonosov Moscow State University, Institute of New Carbon Materials and Technologies, Leninskie Gory, 1/11

July 15 (Tuesday)

Section 02 – Thin Films and Heterostructures, 2D and 3D Nanofabrication

3:00 PM – 4:40 PM
Location: C1
Oral session
Chairman: Professor Albano Cavaleiro

3:00 PM – 3:30 PM
Invited lecture
The Limits to the Preparation of Super- and Ultrahard Nanocomposite Coatings, and their Industrial Applications
1 Stan A. Veprek, 1 M.G. J. Veprek-Henjman
1 Technical University Munich, Department of Chemistry, Germany

3:30 PM – 4:00 PM
Invited lecture
Mechanical and Microstructural Properties of Nanocrystalline Thin Films Revealed at the Nanoscale
1 Jozef Keckes
1 Montanuniversitaet Leoben, Jahnstrasse 12, 8700 Leoben, Austria

4:00 PM – 4:20 PM
Mechanical Behavior of Nanostructured Coatings on Titanium Alloys Under Indentation and Cyclic Impact
1 Mikhail Petrzhik, 1 Evgeny Levashov, 1 Dmitri Shtansky, 1 Konstantin Kuptsov, 1 Sergey Prokoshkin, 2 Ruslan Valiev
1 National University of Science and Technology MISIS, Leninsky pr. 4, Moscow 119049, Russia
2 Institute for Physics of Advanced Materials USATU, ul. K. Marx 12, Ufa 450000, Russia

4:20 PM – 4:40 PM
The New Approach for Nanostructural Hard W-C Films Formation
1 Vladimir V. Dushik, 1 Yuri V. Lakhotkin, 1 Vladimir P. Kuzmin, 1 Nikolay V. Rozhanski
1 Frumkin Institute of physical chemistry and electrochemistry, Moscow, Leningsky prospekt, 31, b. 4, Russia

4:40 PM – 5:00 PM
The New Approach for Nanostructural Hard W-C Films Formation
1 Vladimir V. Dushik, 1 Yuri V. Lakhotkin, 1 Vladimir P. Kuzmin, 1 Nikolay V. Rozhanski
1 Frumkin Institute of physical chemistry and electrochemistry, Moscow, Leningsky prospekt, 31, b. 4, Russia
July 15 (Tuesday)

Section 03 – Nanoceramics

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>3:00 PM –</td>
<td>Oral session Chairmen: Professor Evgeny V. Antipov, Professor Harry</td>
</tr>
<tr>
<td>4:55 PM</td>
<td>L. Tuller</td>
</tr>
<tr>
<td>Location: F2</td>
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</tr>
<tr>
<td>3:00 PM –</td>
<td>Keynote lecture Cathode Materials for IT-SOFC Based on Perovskites</td>
</tr>
<tr>
<td>3:35 PM</td>
<td>with 3d-Metal Cations</td>
</tr>
<tr>
<td>1 Evgeny V.</td>
<td>Antipov, 1 Sergey Ya. Istomin</td>
</tr>
<tr>
<td>2 Department</td>
<td>Chemistry, Lomonosov Moscow State University, Leninskije Gory,</td>
</tr>
<tr>
<td>Moscow, 119991, Russia</td>
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<tr>
<td>3:35 PM –</td>
<td>Invited lecture Fluid Mixed Electronic-Ionic Conductors based on</td>
</tr>
<tr>
<td>4:05 PM</td>
<td>Percolating Nanoscale Networks, and Applications to Advanced</td>
</tr>
<tr>
<td></td>
<td>Rechargeable Batteries</td>
</tr>
<tr>
<td>1 Yet-Ming</td>
<td>Chiang</td>
</tr>
<tr>
<td>2 Massachusetts Institute of Technology, Cambridge, MA 02139</td>
<td></td>
</tr>
<tr>
<td>4:05 PM –</td>
<td>Invited lecture Nanodomain Structure of Perovskite-Like Oxides</td>
</tr>
<tr>
<td>4:35 PM</td>
<td>Based on Strontium Ferrites with High Oxygen Deficiency</td>
</tr>
<tr>
<td>1 Uliana V.</td>
<td>Ancharova</td>
</tr>
<tr>
<td>2 Institute of Solid State Chemistry and Mechanochemistry SB RAS,</td>
<td></td>
</tr>
<tr>
<td>Kutateladze 18, Novosibirsk 630128 Russia</td>
<td></td>
</tr>
<tr>
<td>4:35 PM –</td>
<td>In Situ Processing of Ceramic/Metal Composites</td>
</tr>
<tr>
<td>4:55 PM</td>
<td>1 Nahum Travitzky, 1 Peter Greil</td>
</tr>
<tr>
<td></td>
<td>2 Universitaet Erlangen-Nuernberg, Materials Science and</td>
</tr>
<tr>
<td></td>
<td>Engineering, Glass and Ceramics, Martensstr. 5, 91058 Erlangen,</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
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July 15 (Tuesday)

Section 04 – Bulk Metallic Nanomaterials

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<th>Time</th>
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<tr>
<td>3:00 PM –</td>
<td>Oral session Chairman: Dr. Ilchat Sabirov</td>
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<tr>
<td>3:00 PM –</td>
<td>Keynote lecture Production of Bulk Nanostructured Materials with</td>
</tr>
<tr>
<td>3:35 PM</td>
<td>Enhanced Functionality Using High-Pressure Torsion</td>
</tr>
<tr>
<td>1, 2 Zenji</td>
<td>Horita</td>
</tr>
<tr>
<td>1 Department</td>
<td>of Materials Science and Engineering, Faculty of Engineering,</td>
</tr>
<tr>
<td>Kyushu</td>
<td>University, Fukuoka 819-0395, Japan</td>
</tr>
<tr>
<td>2 WPI,</td>
<td>International Institute for Carbon-Neutral Energy Research</td>
</tr>
<tr>
<td>Kyushu</td>
<td>University, Fukuoka 819-0395, Japan</td>
</tr>
<tr>
<td>University,</td>
<td></td>
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<tr>
<td>3:35 PM –</td>
<td>Invited lecture Plastic Deformation of Cu with Highly Oriented</td>
</tr>
<tr>
<td>4:05 PM</td>
<td>Nanotwins</td>
</tr>
<tr>
<td>4:25 PM</td>
<td>1 Lei Lu</td>
</tr>
<tr>
<td></td>
<td>2 Institute of Metal Research, CAS, 72 Wenhua Road, Shenyang, China</td>
</tr>
<tr>
<td>4:05 PM –</td>
<td>Nanostructure and Properties of Cu-Cr Bulk Alloy Processed by High</td>
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<td>4:25 PM</td>
<td>Energy Ball Milling and Spark Plasma Sintering</td>
</tr>
<tr>
<td>1 Natalia</td>
<td>Shkadrich, 1 Alexander Rogachev, 1 Sergey Vadchenko, 1 Alexander</td>
</tr>
<tr>
<td>2 Alexander</td>
<td>Mukasyan, 2 Dmitry Moskovskikh, 2 Sergey Rouvimov</td>
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<tr>
<td>1 Institute of Structural Macromolecular and Materials Science</td>
<td></td>
</tr>
<tr>
<td>RAS, Moscow</td>
<td>Region, 142432, Russia</td>
</tr>
<tr>
<td>2 Department</td>
<td>of Chemical and Biomolecular Engineering, University of Notre Dame,</td>
</tr>
<tr>
<td>of Chemical and</td>
<td>Notre Dame, IN, 46556 USA</td>
</tr>
<tr>
<td>Biomolecular</td>
<td>3 National University of Science and Technology MISiS, Moscow,</td>
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<td>University of</td>
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<tr>
<td>4:25 PM –</td>
<td>Structure Refinement by Severe Plastic Deformation with Pulse Current</td>
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<tr>
<td>4:45 PM</td>
<td>1 Vladimir V. Stolyarов</td>
</tr>
<tr>
<td>1 Mechanical</td>
<td>Engineering Research Institute of Russian Academy of Sciences,</td>
</tr>
<tr>
<td>Engineering</td>
<td>Maly Kharitonievski lane, 4, 101990, Moscow, Russia</td>
</tr>
<tr>
<td>Institute of</td>
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<tr>
<td>Russian Academy</td>
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<tr>
<td>of Sciences,</td>
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<td>4:45 PM –</td>
<td>Self-Propagating High-Temperature Synthesis of Cast Nano-Structured</td>
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<td>5:05 PM</td>
<td>Poly-metallic High Entropy Alloys and Coatings Based of Them</td>
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<tr>
<td>1 Vladimir</td>
<td>Sanin, 1 Denis Iskornikov, 1 Dmitry Andreev, 1 Vladimir Yukhvid</td>
</tr>
<tr>
<td>2 Institute of Structural Macromolecular and Materials Science of</td>
<td></td>
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<tr>
<td>the Russian</td>
<td>Academy of Sciences, ISMAN, Academician Osipyan str., 8, Chernogolovka,</td>
</tr>
<tr>
<td>Academy of</td>
<td>Moscow Region, 142432, Russia</td>
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July 15 (Tuesday)

Section 05 – Nanocomposites and Hybrid Nanomaterials

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<th>Time</th>
<th>Event</th>
<th>Authors and Affiliations</th>
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<tbody>
<tr>
<td>3:00 PM – 4:30 PM</td>
<td>Oral session</td>
<td>Chairman: Dr. Alexey A. Vertegel</td>
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<tr>
<td>3:00 PM – 3:30 PM</td>
<td>Invited lecture</td>
<td><strong>ZnO-Based Composite Nanostructures for Multifunctional Applications</strong></td>
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<tr>
<td></td>
<td>Davide Calestani, 1 Marco Villani, 2 Nicola Coppede, 3 Laura Lazzarini, 4 Sathish C. Dhanabalan, 5 Andrea Zappettini</td>
<td>1 IMEM-CNR, Parco Area delle Scienze 37/A, Italy</td>
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<tr>
<td>3:30 PM – 3:50 PM</td>
<td>Noble Metal Nanoparticle Deposition on Functionalised Biotemplates</td>
<td>Cordt Zollfrank, 1 Alex Kaessner, 1 Sabine Gruber, 1 Daniel Van Opdenbosch</td>
</tr>
<tr>
<td></td>
<td>1 Technische Universität Muenchen, Schulgasse 16, 94315 Straubing, Germany</td>
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<tr>
<td>3:50 PM – 4:10 PM</td>
<td>High Pressure-Induced Laser-Enhanced Polymerisation of Nanoparticulate Organic-Inorganic TiO2-Phema Hybrids</td>
<td>Egor Evlyukhin, 1 Luc Museur, 2 Andreas Zerr, 2 Mamadou Traore, 2 Sergey Nikitin, 2 Andrei Kanaev</td>
</tr>
<tr>
<td></td>
<td>1 Laboratoire de Physique des Lasers - LPL CNRS, Université Paris 13, Sorbonne Paris Cité, 93430 Villetaneuse, France</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Laboratoire des Sciences des Procédés et des Matériaux, CNRS, Université Paris 13, Sorbonne Paris Cité, 93430 Villetaneuse, France</td>
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<tr>
<td>4:10 PM – 4:30 PM</td>
<td>New Titanates Nanotubular Structures Metal-Doped and Co-Sensitized by Crystalline Metal Chalcogenide Nanoparticles</td>
<td>Olinda C. Monteiro, 1 Tiago J. Entradas, 1 Andreia J. Mota, 1 Manuel R. Nunes, 2 Marcia C. Neves, 2 Antonio J. Silvestre</td>
</tr>
<tr>
<td></td>
<td>1 University of Lisbon, Faculty of Sciences, DQB-CQB Portugal, Campo Grande 1749-016 Lisbon, Portugal</td>
<td></td>
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<tr>
<td></td>
<td>2 University of Aveiro, CICECO and Department of Chemistry, 3810-193 Aveiro, Portugal</td>
<td></td>
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<tr>
<td></td>
<td>3 Instituto Superior de Engenharia de Lisboa, Department of Physics and ICEMS, Lisbon, Portugal</td>
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July 15 (Tuesday)

Section 06 – Polymer, Organic and Other Soft Matter Materials

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<th>Authors and Affiliations</th>
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<tr>
<td>3:00 PM – 5:05 PM</td>
<td>Oral session</td>
<td>Chairman: Professor Sergei Sheiko</td>
</tr>
<tr>
<td>3:00 PM – 3:35 PM</td>
<td>Keynote lecture</td>
<td><strong>Materials Synthesis and Interface Engineering for Printed Opto-Electronic Devices</strong></td>
</tr>
<tr>
<td></td>
<td>Antonio Facchetti</td>
<td>1 Department of Chemistry, Northwestern University and Polyera Corporation, 2145 Sheridan Road, Evanston IL 60208 USA</td>
</tr>
<tr>
<td>3:35 PM – 4:05 PM</td>
<td>Invited lecture</td>
<td>Engineering of Hybrid Interfaces and Electronic Functionality via Molecular Self-Assembly</td>
</tr>
<tr>
<td></td>
<td>Marcus Halik</td>
<td>1 University Erlangen-Nurnberg, Martensstrasse 7, 91058 Erlangen, Germany</td>
</tr>
<tr>
<td>4:05 PM – 4:25 PM</td>
<td>Tunable Water Templates as an Accessible Nanofabrication Tool for Opto-electronics</td>
<td>Francesco Galeotti, 1 Mariuccia Pasini, 1 Wojtek Mrzo, 1 Chiara Botta, 2 Franco Trespindi, 3 Giuseppe Quero, 3 Agostino Iadicicco, 3 Marco Pisco, 3 Michele Giordanino, 3 Andrea Cusano</td>
</tr>
<tr>
<td></td>
<td>1 IMMAC-CNRS, via bassini 15, 20133, Milano, Italy</td>
<td>1 Department of Chemistry, Northwestern University and Polyera Corporation, 2145 Sheridan Road, Evanston IL 60208 USA</td>
</tr>
<tr>
<td></td>
<td>2 RSE, Strada Torre della Razza, loc. Le Mose, 29122 Piacenza, Italy</td>
<td>1 Department of Chemistry, Northwestern University and Polyera Corporation, 2145 Sheridan Road, Evanston IL 60208 USA</td>
</tr>
<tr>
<td></td>
<td>3 University of Sannio, Corso Garibaldi 107, 82100, Benevento, Italy</td>
<td>1 Department of Chemistry, Northwestern University and Polyera Corporation, 2145 Sheridan Road, Evanston IL 60208 USA</td>
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<tr>
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<td>4 IMC-NR, p.le Enrico Fermi 1, Portici, 80055 Napoli, Italy</td>
<td>1 Department of Chemistry, Northwestern University and Polyera Corporation, 2145 Sheridan Road, Evanston IL 60208 USA</td>
</tr>
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<td>5 University of Napoli “Parthenope”, Centro Direzionale – Isola C4, 80143 Napoli, Italy</td>
<td>1 Department of Chemistry, Northwestern University and Polyera Corporation, 2145 Sheridan Road, Evanston IL 60208 USA</td>
</tr>
<tr>
<td>4:25 PM – 4:45 PM</td>
<td>Self-Assembled Monolayer Field-Effect Transistors from Organosilicon Derivatives of Oligothiophenes</td>
<td>Alexey S. Sizov, 1 Elena V. Agina, 1 Maxim A. Shcherbina, 1 Artem V. Bakirov, 2 Oleg V. Borishev, 3 Sergey N. Chvalun, 3 Dmitry Yu. Parschuk, 3 Sergei A. Pononarenko</td>
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<td>1 Institute of Synthetic Polymeric Materials of Russian Academy of Sciences, 2 Lomonosov Moscow State University, Leninskie Gory, Moscow, Russia</td>
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<td>2 Lomonosov Moscow State University, Leninskie Gory, Moscow, Russia</td>
<td>1 Institute of Synthetic Polymeric Materials of Russian Academy of Sciences, 2 Lomonosov Moscow State University, Leninskie Gory, Moscow, Russia</td>
</tr>
<tr>
<td>4:45 PM – 5:05 PM</td>
<td>Polymer Surface Modification by Organosilicon Self-Assembled Layers for Flexible Electronic Devices</td>
<td>Elena V. Agina, 1 Alexey S. Sizov, 1 Mikhail Yu. Yablokov, 2 Alexander Bessonov, 2 Marina N. Kirkova, 3 Marc Bailey, 3 Sergei A. Pononarenko</td>
</tr>
<tr>
<td></td>
<td>1 Enikolopov Institute of Synthetic Polymeric Materials of the Russian Academy of Sciences, 2 Lomonosov Moscow State University, Leninskie Gory, Moscow, Russia</td>
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<td>2 Nokia Research Center, Skolkovo, Moscow region, Russia</td>
<td>1 Enikolopov Institute of Synthetic Polymeric Materials of the Russian Academy of Sciences, 2 Lomonosov Moscow State University, Leninskie Gory, Moscow, Russia</td>
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### Section 07 – Nanomaterials for Energy

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Details</th>
</tr>
</thead>
</table>
| 3:00 PM – 3:35 PM | **Invited lecture**                                                      | The Analysis of Nanomaterials by Powder Diffraction  
1 Tim G. Fawcett, 1 Suri N. Kabekkodu, 1 Justin R. Blanton, 1 Cyrus E. Crowder, 1 Thomas N. Blanton  
ICDD, 12 Campus Boulevard, Newtown Square, PA, USA |
| 3:35 PM – 4:05 PM | **Invited lecture**                                                      | Simple Synthesis of a Novel Sulfur/Multi-Walled Carbon Nanotube Nanocomposite Cathode for Lithium/Sulfur Rechargeable Batteries  
1 Yongguang Zhang, 1 Yan Zhao, 1 Zhumabay Bakanov  
Nazarbayev University, Kabanbay Batyr Avenue 53, Astana 010000 Kazakhstan  
2 Institute of Batteries, Kabanbay Batyr Avenue 53, Astana 010000 Kazakhstan |
| 4:05 PM – 4:25 PM | **Invited lecture**                                                      | Sb-Carbon Nanocomposites as Anodes for Sodium-Ion Batteries: Charge Storage Mechanism and Effect of Composition  
1 Thrinathreddy Ramireddy, 1 Md Mokhlesur Rahman, 1 Tan Xing, 1 Neeraj Sharma, 1 Ying Chen, 1 Alexey M. Glushenkov  
Deakin University, Institute for Frontier Materials, Australia  
University of New South Wales, School of Chemistry, Australia  |
| 4:25 PM – 4:45 PM | **Invited lecture**                                                      | Structure and Electrochemistry of Li,MPO$_2$F$_3$ Fluorophosphates as Positive Electrode Materials for Li-Ion Batteries  
1 Nellig R. Khasanova, 1 Oleg A. Drozhzhin, 1 Stanislav S. Fedotov, 1 Yaroslav V. Golubev, 1 Evgeny V. Antipov  
Lomonosov Moscow State University, Chemistry Department, Leninsky Gory 1-3, Moscow, 119991, Russia  |
| 4:45 PM – 5:05 PM | **Invited lecture**                                                      | Analysis of Charging/Discharging Processes in Li-Ion Batteries by Neutron Diffraction at Pulsed Neutron Source  
1 Ivan Bobrikov, 1 Anatoly Balagurov, 1 Chih-Wei Hu, 1 Chih-Hao Lee, 1 Deleg Sangaa  
Joint Institute for Nuclear Research, Russia  
National Tsing-Hua University, Taiwan  
National Synchrotron Radiation Research Center, Taiwan  
Institute of Physics and Technology, Mongolia |

### Section 08 – Biological and Biomedical Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Details</th>
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</thead>
</table>
| 3:00 PM – 3:35 PM | **Keynote lecture**                                                      | Combinatorial Development of Biomaterials and Synthetic siRNA Delivery Systems  
1 Daniel G. Anderson  
1 Massachusetts Institute of Technology, 02139, 500 Main Street, Building 76, Room 653, Cambridge, Massachusetts, USA |
| 3:35 PM – 4:05 PM | **Invited lecture**                                                      | Ionic Nanogels for Targeted Drug Delivery in Cancer  
1 Tatiana K. Bronich  
1 University of Nebraska Medical Center, 985830 Nebraska Medical Center, Omaha, NE 68198-5830, USA  |
| 4:05 PM – 4:25 PM | **Invited lecture**                                                      | Amplified Plasmonic Detection of DNA Hybridization Using Post-Labeling with Doxorubicin-Capped Gold Particles  
1 Jolanda Spadavecchia, 1 Ramesh Perumal, 1 Claire-Marie Pradier, 2 Alexandre Barras, 2 Joel Lyskawa, 1 Patrice Woisel, 1 William Laure, 2 Rabah Boukherroub, 2 Sabine Szuneritz  
1 Laboratoire de Réactivité de Surfaces, UMR CNRS 7197, Université Pierre & Marie Curie – Paris VI, 3 rue Galilee Site d’Ivy – Le Raphaël, 94200 Ivry-sur-Seine, France  
2 de Recherche Interdisciplinaire (IRI, USR 3078 CNRS), Université Lille 1, 50 Avenue de Halley, BP 70478, 59658 Villeneuve d’Ascq, France |
| 4:25 PM – 4:45 PM | **Invited lecture**                                                      | Magnetic Nanoparticles in Biomimetic and Biological Systems: Generation of Iron Oxide Magnetic Nanoparticles in DNA Complexes, Isolated Chloroplasts and High Plants  
1 Gennady B. Khomutov, 1 Kirill V. Potapenkov, 1 Yuri A. Koksharov, 1 Boris V. Trubitsin, 1 Alexander N. Tikhonov, 1 Mahir D. Mamedov, 1 Aygun N. Nasibova, 2 S M. Ismailova, 1 Rosvihan I. Khalilov  
1 Lomonosov Moscow State University, Faculty of Physics, Leniny Gory 1-2, Moscow, Russia  
2 Lomonosov Moscow State University, A.N. Belozersky Institute of Physical–Chemical Biology, Leniny Gory 1-5, Moscow, Russia  
3 Baku State University, Faculty of Biology, Academic Zahid Khalilov street, 23, Baku city, Azerbaijan Republic  
4 Institute of Radiation problems NAS of Azerbaijan Republic, B.Vaxabzade street 9, Baku city, Azerbaijan Republic  |
| 4:45 PM – 5:05 PM | **Invited lecture**                                                      | Protein Coated Magnetic Nanoparticles for Cancer Therapy and Diagnostics  
1 Maxim A. Abakumov, 1 Alevtina S. Semkina, 1 Natalia V. Nukolova, 1 Vladimir P. Chekhonin, 1 Alexander V. Kabanov  
1 Russian National Research Medical University, Ostrovityanova st, 1, Russia  
2 Moscow State University, Chemistry Department, 119991 Moscow, Russia  |
### Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

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<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>3:00 PM – 4:45 PM</td>
<td>Oral session</td>
<td>Chairman: Professor Nikita F. Morozov</td>
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<tr>
<td>3:00 PM – 3:35 PM</td>
<td>Keynote lecture</td>
<td>Deformation and Fracture of Ultrafine Grained and Nanocrystalline Materials</td>
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<td></td>
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<td>Reinhard Pippan, T. Leitner, O. Renk, C. B. Yang, M. Kapp, L. Krämer, A. Hohenwarter</td>
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<td>1 Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Jahnstrasse 12, A-8700, Austria</td>
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<td>2 Department of Material Physics, University of Leoben, Leoben, Jahnstrasse 12, A-8700, Austria</td>
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<tr>
<td>3:35 PM – 4:05 PM</td>
<td>Invited lecture</td>
<td>Mechanics and Tribology of Ultrathin Films</td>
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<td>Tobin Filleter</td>
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<td></td>
<td></td>
<td>University of Toronto, S King’s College Rd, Canada</td>
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<td>4:05 PM – 4:25 PM</td>
<td>A Theoretical Approach to Describe the Formation of Fine Grain Structure in Severe Plastic Deformation Processes and in the Vicinity of Frictional Surfaces in Traditional Metal Forming Processes</td>
<td>Sergei Alexandrov, Robert Goldstein</td>
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<td>A. Ishlinskii Institute for Problems in Mechanics, 101-1 Prospect Vernadskogo, 119526 Moscow, Russia</td>
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<td>Marko Vilotic, Damir Kakas, Sergei Alexandrov, Leposava Sidjanin, Yeau-Ren Jeng</td>
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<td>University of Novi Sad, Faculty of Technical Sciences, Trg Dosteja Obradovica 6, 21000 Novi Sad, Serbia</td>
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<td>A.Yu. Ishlinskii Institute for Problems in Mechanics, Russian Academy of Sciences, 101-1 Prospect Vernadskogo, 119526 Moscow, Russia</td>
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<td>Department of Mechanical Engineering and Advanced Institute of Manufacturing with High-tech Innovations, National Chung Cheng University, 62102 Chia-Yi, Taiwan</td>
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<td>Departament Physics Siberian State Industrial University, 654007, Novokuaznetsk, Kirov Street 42, Russia</td>
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<td>Research Tomsk Polytechnic University, Tomsk, Russia</td>
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<td>PLC «EVRAZ – ZSMK», Novokuaznetsk, Russia</td>
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<td>Institute of High Current Electronics SO RAN, Tomsk, Russia</td>
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### Section 10 – Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics

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<th>Time</th>
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<tbody>
<tr>
<td>3:00 PM – 4:10 PM</td>
<td>Oral session</td>
<td>Chairman: Professor Grigorii S. Sokolovskii</td>
</tr>
<tr>
<td>3:00 PM – 3:30 PM</td>
<td>Invited lecture</td>
<td>Silicon Based Nanoheterostructures for Nanophotonics and Nanoelectronics</td>
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<tr>
<td></td>
<td></td>
<td>Anatoly V. Dvurechenski</td>
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<td></td>
<td>Rzhavanov Institute of Semiconductor Physics, Siberian Branch of Russian Academy of Science, Lavrentiev Prospect 13, 630090, Novosibirsk, Russia</td>
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<td></td>
<td>Novosibirsk State University, Pirogova 2, 630090, Novosibirsk, Russia</td>
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<td></td>
<td>Birck Nanotechnology Center, Purdue University, West Lafayette, IN 47907, USA</td>
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<td></td>
<td></td>
<td>University of Wisconsin-Stevens Point, Stevens Point, WI 54481, USA</td>
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<tr>
<td></td>
<td></td>
<td>Institute of Physics, Siberian Branch of the Russian Academy of Sciences, 660036 Krasnoyarsk, Russian Federation</td>
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<td></td>
<td>Aalto University, FIN-00076 Aalto, Finland</td>
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<td></td>
<td>Lebedev Physical Institute, Leninsky prospect 53, Moscow 119991 Russia</td>
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<td></td>
<td></td>
<td>Frumkin Institute of Physical Chemistry and Electrochemistry, Leninsky prospect 31, Moscow 119071 Russia</td>
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<td></td>
<td>Advanced Energy Technologies Ltd, Skolkovo, Novaya ul. 100, 143025, Moscow Region, Russia</td>
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</table>
### July 15 (Tuesday)

#### Section 11 – Nanomaterials and Catalysis

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 PM – 5:05 PM</td>
<td>Oral session Chairperson: Professor Christian W. Lehmann</td>
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<tr>
<td>3:00 PM – 3:35 PM</td>
<td>Keynote lecture Self-Assembled Metal Chalcogenides: From Nanotechnology to Material Science and Adaptive Catalysis</td>
<td>1, 2 Valentine P. Ananikov 1, 2 Zelinsky Institute of Organic Chemistry of the Russian Academy of Sciences, Leninsky Prospekt 47, Moscow, 119991, Russia 1 Department of Chemistry, Saint Petersburg State University, Stary Petergof, 198504, Russia</td>
</tr>
<tr>
<td>3:35 PM – 4:05 PM</td>
<td>Invited lecture Contribution of Pd(0) Nanoparticles in C-C Cross-Coupling Reactions</td>
<td>1 Anna M. Trzeciak 1 Univers Faculty of Chemistry, University of Wroclaw, 14 F. Joliot-Curie St., 50-383 Wroclaw, Poland</td>
</tr>
<tr>
<td>4:05 PM – 4:25 PM</td>
<td>Sophisticated Ruthenium and Cobalt Colloids for Catalysis</td>
<td>1 Pascal Lignier, 2 Eric Bonnefille, 3 Pier-Francesco Fazzini, 4 Pierre Lecante, 4 Ronan Bellabarba, 4 Robert P. Tooze, 4 Karine Philippot, 4 Bruno Chaudret 1 CNRS, LCC (Laboratoire de Chimie de Coordination), 205 route de Narbonne, F-31077 Toulouse, France; 2 Université de Toulouse, UPS, LCC, F-31077 Toulouse, France; 3 Sasol Technology (U.K.) Ltd, Purdie Building, St. Andrews KY16 9ST, United Kingdom; 4 LPCNO (Laboratoire de Physique et Chimie de Nano-Objets), 135 avenue de Rangueil, F-31077 Toulouse, France; 4 CNRS, CEMES (Centre d’Elaboration de Matériaux et d’Etudes Structurales), BP 94347, 29 rue Jeanne Marvig, F-31055 Toulouse, France</td>
</tr>
<tr>
<td>4:25 PM – 4:45 PM</td>
<td>A Facile Route to Monodisperse MPd (M = Co, Ni) Alloy Nanoparticles and Their Catalysis in the Reduction of Nitro/Nitrile Compounds to Primary Amines</td>
<td>1 Onder Metin, 2 Haydar Goksu, 2 Sally F. Ho, 2 Mehmet S. Gultekin, 2 Shouheng Sun 1 Ataturk University, Department of Chemistry, Science Faculty, Erzurum 25240, Turkey 2 Brown University, Department of Chemistry, Providence, RI 02912, USA</td>
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<tr>
<td>4:45 PM – 5:05 PM</td>
<td>Laser Ablation in Liquids for Preparation of Highly Active Nanocomposite Catalysts of Low Temperature CO Oxidation</td>
<td>1 Andrei I. Boronin, 2 Elena M. Slavinskaya, 1 Roman V. Gulyaev, 2 Dmitry Y. Osadchii, 2 Olga A. Stokkus, 2 Valeri A. Svetlichnyi, 2 Ivan N. Lapin, 4 Tatyana I. Izak, 4 Darya O. Martynova 2 Boreskov Institute of Catalysis, Prospekt Lavrentieva 5, Novosibirsk 630090, Russia 2 Siberian Physical-Technical Institute of the Tomsk State University, Novosobornaya pl. 1, Tomsk 634050, Russia 2 Tomsk State University, 36, Lenina Avenue, Tomsk, 634050, Russia</td>
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<tr>
<td>5:00 PM – 5:30 PM</td>
<td>Coffee break</td>
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<td>5:30 PM – 7:20 PM</td>
<td>Oral sessions 01 – 11 (parallel)</td>
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July 15 (Tuesday)

Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

5:30 PM – 7:00 PM
Location: B3
Oral session
Optical Functions of Nanoparticles
Chairman: Professor Ignacio L. Garzon

5:30 PM – 6:00 PM
Invited lecture
Synthesis and Self-Assembly of Gold Nanorods and Nanowires
1 Eugene Zubarev
Rice University, 6100 Main St. Houston TX 77005 USA

6:00 PM – 6:20 PM
Amorphous to Crystal Conversion as a Mechanism Governing the Structure of Luminescent YVO₄:Eu Nanoparticles
1 Blaise Fleury, 1 Marie-Alexandra Neouze, 1 Jean-Michel Guigner, 1 Nicolas Menguy, 2 Olivier Spalla, 1 Thierry Gacoin, 2 David Carrier
1 CEA de Saclay, NIMBE/LIONS, 91191 Gif-sur-Yvette cedex, France
2 Ecole polytechnique, PMC, 91128 Palaiseau, France
3 Universite Pierre et Marie Curie, IMPMC, 75252 Paris, France

6:20 PM – 6:40 PM
Colloidal LaPO₄ Nanorods: From Liquid Crystalline Behavior to Directed Assembly into Anisotropic Thin Layers
1 JongWook Kim, 1 Khalid Lahlil, 1 Jean-Pierre Boilot, 1 Jacques Peretti, 1 Thierry Gacoin
1 CNRS - Ecole Polytechnique, PMC lab, Ecole Polytechnique, route de saclay, 91128 Palaiseau, France

5:30 PM – 7:20 PM
Location: C1
Oral session
Chairman: Professor Paul Mayrhofer

5:30 PM – 6:00 PM
Invited lecture
Multicomponent Nanostructured Films with Unique Characteristics for Mechanical Engineering and Medicine
1 Dmitry V. Shtansky
1 National University of Science and Technology «MISIS», Leninsky prospect 4, Moscow 119049, Russia

6:00 PM – 6:20 PM
Investigation of the Structure and Properties of Nanostructured Transparent Magnetic Metallic Thin Films
1 Dmitri V. Louzguine, 1 S. V. Ketov, 1 S. Mizukami, 1 T. Hitosugi, 1 V. Yu. Zadorozhnyy, 1 A. Caron, 1 N. Chen, 1 A. Sluger
1 WPI Advanced Institute for Materials Research, Tohoku University, Katahira 2-1-1, Aoba-Ku, Sendai, Japan
2 Department of Physics and Astronomy, University College London, London WC1E 6BT, United Kingdom

6:20 PM – 6:40 PM
New Class of Super Soft Magnetic Nanocrystalline Fe-Based Films
1 Elena N. Sheftel
1 Baikov Institute of Metallurgy and Material Science RAS, Leninskiy pr. 49, Moscow, 119991 Russia

6:40 PM – 7:00 PM
Nanocomposite and Amorphous MeSiBN (Me: Mo,Zr,Cr,Al,Ti) Coatings with Extremely High Oxidation Resistance
1 Philipp V. Kryukhantsev-Korneev, 1 Evgeny A. Levashov, 1 Yury S. Pogozhev, 1 Andrey V. Bondarev, 1 Artem Yu. Potanin, 1 Vyacheslav M. Beresnev, 1 Aleksandr D. Pogrebnyak
1 National University of Science and Technology «MISIS», Leninsky pr., 4, Moscow 119049, Russia

July 15 (Tuesday)

Section 02 – Thin Films and Heterostructures, 2D and 3D Nanofabrication

5:30 PM – 7:20 PM
Location: C1
Oral session
Chairman: Professor Paul Mayrhofer

5:30 PM – 6:00 PM
Invited lecture
Multicomponent Nanostructured Films with Unique Characteristics for Mechanical Engineering and Medicine
1 Dmitry V. Shtansky
1 National University of Science and Technology «MISIS», Leninsky prospect 4, Moscow 119049, Russia
## July 15 (Tuesday)

### Section 03 – Nanoceramics

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<th>Time</th>
<th>Session</th>
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<tr>
<td>5:30 PM –</td>
<td><strong>Oral session</strong> Chairmen: Professor Sergey M. Barinov, Professor Jan Dusza</td>
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<tr>
<td>6:50 PM</td>
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</table>
| 5:30 PM – 6:00 PM | **Invited lecture** Ion Dynamics in Ceramics and the Effects of Mechanical Treatment  
                      1 Paul Heitjans  
                      1 Leibniz University Hannover, Institute of Physical Chemistry and Electrochemistry, Callinstr. 3-3a, 30167 Hannover, Germany |
| 6:00 PM – 6:30 PM | **Invited lecture** Ceramic + Carbon Based Filler Nanocomposites  
                      1 Jan Dusza  
                      1 IMR SAS, Slovak Academy of Science, Kosice, Slovakia |
| 6:30 PM – 6:50 PM | **Transition-Metal Oxide Fermi Glasses: Electronic Structure, Conduction, and Band Offsets**  
                      1 Ilan Goldfarb, 2 Joshua Yang, 3 John Paul Strachan, 4 Matthew Pickett, 4 Stanley Williams  
                      1 Tel Aviv University, Israel  
                      2 Hewlett-Packard Laboratories, USA |

### Section 04 – Bulk Metallic Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</table>
| 5:30 PM – 7:20 PM | **Oral session** Chairman: Professor Lei Lu  
                      **Invited lecture** Nanocrystals Prepared by Melt Quenching and Severe Plastic Deformation  
                      1 Alex M. Glezer, 1 Inga E. Permyakova  
                      1 I.P. Bardin Central Research Institute for Ferrous Metallurgy, 105005, 2nd Baumanskaya st., bldg. 9/23, Moscow, Russia |
| 5:30 PM – 6:00 PM |                                                                                                                       |
| 6:00 PM – 6:20 PM | **Chemical Nanostructuring of Bulk Metal Matrix is a Route for Directional Regulation of Mechanical Properties of Composite Material**  
                      1 Alexey V. Monin, 1 Vladimir M. Smirnov, 1 Elena G. Zemtsova, 1 Denis V. Yurchuk  
                      1 Saint-Petersburg State University, St-Petersburg, Universitetskaya pr 25, Russia |
| 6:20 PM – 6:40 PM | **Grain Refinement Mechanisms Under Hot And Warm Plastic Deformation in TiNi-Based Alloys**  
                      1 Alexander I. Lotkov, 1 Victor N. Grishkov, 1 Anatoly A. Baturin, 1 Vladimir I. Kopylov  
                      1 Institute of Strength Physics and Materials Science SB RAS, 2/4, pr. Akademicheskii, Tomsk, 634021, Russia  
                      2 Physical Technical Institute of the National Academy of Sciences of Belarus, Minsk, Belarus, 10, Kuprevich St., Minsk, 220141, Belarus |
| 6:40 PM – 7:00 PM | **SPD-Produced Nanostructured TiNi Alloys with Enhanced Strength and Superelasticity**  
                      1 Dmitry V. Gunderov, 1 Anna A. Churakova, 2 Alexandr V. Lukyanov, 2 G. Raab, 1 Y. Tong, 1 Nikolai K. Tsernev  
                      1 Ufa State Aviation Technical University, K.Marks 12, Ufa, 450000, Russia  
                      2 Institute of Molecule and Crystal Physics RAS, Prospekt Oktyabrya 151 Ufa, 450075 Russia  
                      3 Modern Technologies LLC, Tramvainaia 5/1 Ufa, 450027, Russia  
                      4 Harbin Engineering University, Harbin 150001, China |
| 7:00 PM – 7:20 PM | **Bulk Metallic Nanomaterials at Extremes**  
                      1 Rostislav A. Andrievski  
                      1 Institute of Problems of Chemical Physics, Russian Academy of Sciences, Semenov Prospect, 1, Chernogolovka, Moscow Region, 142432, Russia |
### July 15 (Tuesday)

#### Section 05 – Nanocomposites and Hybrid Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>5:30 PM – 6:00 PM</td>
<td><strong>Invited lecture</strong> Nanostructure and Gas Transport of Polymer - Molecular Sieve Mixed Matrix Membranes</td>
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<tr>
<td></td>
<td>1 Gianni Golemme, 1 Anna Santaniello</td>
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<tr>
<td></td>
<td>2 University of Calabria, Via P. Bucci 45/A, 87036 Rende, Italy</td>
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<td>2 INSTM Consortium, at University of Calabria, Italy</td>
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<td>6:00 PM – 6:30 PM</td>
<td><strong>Invited lecture</strong> Bimodal Meso-/Macroporous Silica of SBA-15 Type Prepared via Regulated Phase Decomposition</td>
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<tr>
<td></td>
<td>1 Yury Shchipunov, 1 Irina Postnova</td>
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<td></td>
<td>1 Institute of Chemistry, Far East Department, Russian Academy of Sciences, Institute of Chemistry, Far East Department, Russian Academy of Sciences, Russia</td>
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<tr>
<td>6:30 PM – 6:50 PM</td>
<td><strong>Magnetic Nano-Sorbent Based on Graphene/Cellulose Nanocrystals (CNC)/Fe₃O₄ NPs for the Efficient Removal of Boron from Seawater</strong></td>
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<td>1 Khaleed A. Mahmoud, 1 Deema Elmasri, 2 Ahmed Abdel-Wahab</td>
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<td>2 Qatar Environment &amp; Energy Research Institute, Doha, Qatar</td>
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<td>2 Chemical Engineering Department, Texas A&amp;M University at Qatar, Doha, Qatar</td>
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<tr>
<td>6:50 PM – 7:10 PM</td>
<td><strong>Making Nanoparticles Sustainable: Ultralight Magnetic Composites from Processing Waste</strong></td>
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<td>1 Yury V. Kolenchko, 1 Carlos Rodriguez-Abreu</td>
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<td></td>
<td>2 International Iberian Nanotechnology Laboratory, Av. Mestre José Veiga, 4715-330 Braga, Portugal</td>
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#### Section 06 – Polymer, Organic and Other Soft Matter Materials

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:30 PM – 7:00 PM</td>
<td><strong>Invited lecture</strong> Design of Novel Nanostructured Materials for Organic Electronics and Photonics</td>
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<tr>
<td></td>
<td>1 Sergei A. Ponomarenko</td>
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<tr>
<td></td>
<td>1 Énkolopov Institute of Synthetic Polymeric Materials of the Russian Academy of Sciences, 70 Profsoyuznaya str., Moscow 117393, Russia</td>
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<tr>
<td>6:00 PM – 6:20 PM</td>
<td><strong>Optical and Photoelectrical Properties of Polymer Nanocomposites</strong></td>
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<tr>
<td></td>
<td>1 Alexey Tameev, 1 Anatoly Vannikov</td>
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<td></td>
<td>1 A.N.Frumkin Institute of Physical Chemistry and Electrochemistry, 31, bld.4, Leninsky Prospect, Moscow 119071, Russia</td>
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<tr>
<td>6:20 PM – 6:40 PM</td>
<td><strong>The Neighbor Effect in Charge-Transfer Complex Formation Between a Conjugated Polymer and Small-Molecule Organic Acceptor</strong></td>
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<td>1 Andrey Y. Sosorev, 1 Olga D. Parashchuk, 1 Sergei A. Zapunidi, 1 Grigoriy S. Kashtanov, 1 Igor F. Peregipichka, 1 Dmitry Y. Parashchuk</td>
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<td></td>
<td>1 Lomonosov Moscow State University, Moscow, 119991, Russian Federation</td>
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<td>2 School of Chemistry, Bangor University, Bangor LL57 2UW, UK</td>
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<tr>
<td>6:40 PM – 7:00 PM</td>
<td><strong>Terbium Aromatic Carboxylate-Based Organic Light-Emitting Diodes</strong></td>
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<td>1 Valentina V. Utochenkova, 1 Alena S. Kalyakina, 1 Elena Yu. Sokolova, 2 Andrey A. Vaschenko, 2 Leonid S. Lepnev, 1 Natalia P. Kuzmina</td>
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<td>1 Lomonosov Moscow State University, Leninsky gory 1/3, 119991 Moscow, Russia</td>
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<td>2 EVOLED Ltd, Pushkina str. 1a -24, LV 1050 Riga, Latvia</td>
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<td></td>
<td>3 P.N. Lebedev Physical Institute, Russian Academy of Sciences, Leninsky Prospect 53, 119991 Moscow, Russia</td>
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</tbody>
</table>

### July 15 (Tuesday)

#### Oral session

**Chairman:** Professor Yury A. Shchipunov

**Chairman:** Professor Kalle Levon
### Section 07 – Nanomaterials for Energy

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Authors</th>
<th>Affiliations</th>
</tr>
</thead>
</table>
| 5:30 PM – 6:00 PM | Invited lecture ZnTe/CdSe Superlattices for Photovoltaics Investigated by Transmission Electron Microscopy and Atom Probe Tomography | Catherine Bougerol, 1 Bastien Bonef, 1 Lionel Gerard, 1 Pierre-Henri Jouneau, 1 Adeline Grenier, 1 Regis Andre  
1 Institut Néel, CNRS-Université Grenoble Alpes, 25 avenue des martyrs 38042 Grenoble France  
2 CEA-INAC/UFJ, SP2M, LEMMA, 17 rue des martyrs 38054 Grenoble France  
3 CEA-LETI, Miniatur Campus 38054 Grenoble France |
| 6:00 PM – 6:20 PM | Electronics and Photonics Towards Plasmonics and New Solar Energy Devices | Mihaela Girtan  
Phonetics Laboratory, Angers University, 2, Bd. Lavoisier, 49045, Angers, France |
| 6:20 PM – 6:40 PM | Doped Metal Oxides for High Performance Inverted Organic Photovoltaics | Achilleas Savva, 1 Stelios A. Choulis  
1 Cyprus University of Technology, Molecular Electronics and Photonics Research Unit, 45 Kitiou Kyprianou St, Limassol 3041, Cyprus |
| 6:40 PM – 7:00 PM | TBTBT Unit as a Building Block for Designing Novel Low Band Gap Conjugated Polymers for Efficient Organic Solar Cells | Pavel A. Troshin, 1 Alexander V. Akkurtatov, 1 Diana K. Susarova, 1 Dmitry V. Novikov, 1 Lyubov A. Frolova, 1 Vladimir F. Razumov  
1 Institute for Problems of Chemical Physics of RAS, Semenov ave. 1, Chernogolovka, Moscow region, 142432, Russia |

### Section 08 – Biological and Biomedical Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Authors</th>
<th>Affiliations</th>
</tr>
</thead>
</table>
| 5:30 PM – 6:00 PM | Invited lecture Poly(2-oxazoline) Nanocarriers for Cancer Therapy | Rainer Jordan  
1 TU Dresden, Chair of Macromolecular Chemistry, Mommsenstr. 4, 01069 Dresden, Germany |
| 6:00 PM – 6:20 PM | Molecular Effects of Nanostructured Formulation of Biological Response Modifier P-MAPA on Bladder Cancer | Nelson Duran, 1 Priscyla D. Marcato, 1 Queila C. Dias, 1 Parick V. Garcia, 1 Wagner J. Favaro, 1 Ana Claudia S. Lima  
1 Institute of Chemistry, BioChemLab, UNICAMP-SP, CP.6154, CEP 13083-970, Campinas, SP, Brazil  
2 CCNH-UFABC-SP, Brazil  
3 Farmabrasilis R&D Division, Campinas, SP, Brazil  
4 FCF-USP-Riberão Preto, Brazil  
5 Depart. Struct. Funct. Biol, UNICAMP-SP, Brazil |
| 6:20 PM – 6:40 PM | Docetaxel-Titanate Nanotubes Nanohybrids for Dual Therapy with a View to Prostate Cancer Treatment | Julien Boudon, 2 Celine Mirjolet, 1 Thomas Gautier, 1 Alexis Loiseau, 1 Jeremy Paris, 1 Gilles Crehange, 1 Nadine Millot  
1 Laboratoire ICB UMR 6303 CNRS-Universite de Bourgogne, 9 Av. A. Savary, BP 47 870, F-21078 Dijon Cedex, France  
2 Centre Georges-Francois Leclerc, BP 77980, 21079 Dijon cedex, France |
| 6:40 PM – 7:00 PM | Non-Washing Layer-by-Layer Assembly of Anticancer Drug Nanocapsules | Tatsiana G. Shutava  
1 Institute of Chemistry of New Materials, National Academy of Sciences of Belarus, F.Skoriny St, 36, 220141, Minsk, Belarus |
| 7:00 PM – 7:20 PM | Nontraditional Method for Drug Nanoform Synthesis | Yury N. Morozov, 1 Anastasia Yu. Utehina, 1 Vladimir P. Shabatin, 1 Vladimir V. Chernyshev, 1 Gleb B. Sergeev  
1 Chemistry Department of Lomonosov Moscow State University, Leninskie Gory 1-3, Moscow 119991, Russia |
Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

5:30 PM – 7:00 PM
Oral session
Chairman: Professor Nikita F. Morozov

Invited lecture
The Stability of Nanosized Plates
1 Svetlana Bauer, 1 Stanislava Kashitanova, 1 Nikita Morozov, 1 Boris Semenov
1 St. Petersburg State University, Universitetskaya pr., 28, Peterhof, St. Petersburg, 198504 Russia

Transition to Nanostructural State as the Form of Criticality in Solid with Defects
1 Oleg Naimark
1 Institute of Continuous Media Mechanics UB RAS, 1 Acad.korolev str., 614013 Perm, Russia

The Investigation of Rotational Field into Solid Nanostructures at the Pulse Uniaxial Compression
1 Igor F. Golovnev, 1 Elena I. Golovneva, 1 Aleksei M. Demianenko, 1 Vasily M. Fomin
1 Siberian Branch of Russian Academy of Science Khristianovich Institute of Theoretical and Applied Mechanics, 630090, Institutskaya str., 4/1, Novosibirsk, Russia

Nanogauges for Optical Strain Sensors
1 Thomas F. Maurer, 1 Joseph Marae Djouda, 1 Guillaume Montay, 1 Pierre-Michel Adam, 2 Yazid Madi, 1 Thomas Burgi, 1 Roberto Caputo
1 Universite de Technologie de Troyes, 12 rue Marie Curie, CS 42060, 10004 Troyes Cedex, France
2 Liquid Crystals Laboratory, University of Calabria, Calabria, Italy
3 Université de Genève, Geneve, Switzerland
4 Ecole Polytechnique Feminine, Sceaux, France

Section 10 – Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics

5:30 PM – 7:10 PM
Oral session
Chairman: Professor Anatoly V. Dvurechenskii

Invited speaker
Direct Laser Writing: Principles, Materials and Applications
1 Maria Farsari, 1 Alexandros Selimis, 1 Elmina Kabouraki, 1 Maria Vamvakaki
1 IESL-FORTH, N. Plastira 100, 70013, Heraklion, Crete, Greece

Invited lecture
High-Contrast Grating Vertical-Cavity Surface-Emitting Lasers
1 Marcin Gebski, 1 Olga Kuzior, 1 Maciej Dem, 2 Michal Wasiak, 2 Anna Szerling, 2 Anna Wojciech-Jedlińska, 1 Norbert Palka, 4 Dao Hua Zhang, 1 Tomasz Czyżanowski
1 Lodz University of Technology, ul. Wolczanska 219, 90-924 Lodz, Poland
2 Institute of Electron Technology, Al. Lotników 32/46 02-668 Warsaw
3 Military University of Technology, ul. gen. Sylwestra Kaliskiego 2 00-908 Warsaw
4 Nanyang Technological University, 50 Nanyang Ave., 637979, Singapore

Metallic Photonic Crystals for Spectral Control in High-Temperature Energy Conversion
1 Veronika Rinnerbauer, 2 Yi X. Yeng, 2 Walker R. Chan, 3 Veronika Stelmakh, 2 Jay J. Senkevich, 2 Andrej Lenert, 2 David M. Bierman, 1 Evelyn N. Wang, 2 John D. Joannopoulos, 1 Marin Soljacic, 1 Ivan Celanovic
1 Johannes Kepler University Linz, Austria, Altenberger Str. 69, 4040 Linz, Austria
2 Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge 02139, USA

Photoabsorption and Photorefraction at Nanocomposite Structure Based on Quantum Dots Embedded at Silica Matrix
1 Sergey S. Voznesensky, 1 Yuri N. Kulchin, 1 Alexander A. Sergeev, 1 Anna N. Galkina, 2 Yuri A. Shchipunov, 2 Irina V. Postnova
1 Institute of Automation and Control Processes FEB RAS, 5, Radio Street, Vladivostok 690041, Russia
2 Institute of Chemistry FEB RAS, 159, Prosp. 100-Letiya Vladivostoka, Vladivostok 690022, Russia
July 15 (Tuesday)

Section 11 – Nanomaterials and Catalysis

| 5:30 PM – 6:00 PM | Oral session
| Location: C2 | Chairman: Dr. Pieter Glatzel |

5:30 PM – 6:00 PM

Invited lecture
Nanoparticles Immobilized on Ordered Organic and Hybrid Materials as Catalysts for Selective Hydrogenation
Edward A. Karakhanov, Anton L. Maximov, Edward Rosenberg
Lomonosov Moscow State University, Department of Chemistry, Moscow, Russia
Department of Chemistry and Biochemistry, University of Montana, Missoula, MT USA

6:00 PM – 6:40 PM

Palladium-Polypyrrolyl Nanocomposites in Catalysis of Carbon-Carbon Bond Formation: Advantages and Limitations
Tatiana V. Mapdesyeva, Oleg M. Nikitin, Ekaterina V. Zolotukhina, Mikhail A. Vorotyntsev
Lomonosov Moscow State University, Chemistry Department, Leninskoe Gory 1/3, Moscow, Russia
A.N. Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences, Vavilov St. 28, Moscow, Russia
Institute for Problems of Chemical Physics, Russian Academy of Sciences, Semenov ave. 1, Chernogolovka, Moscow region, Russia

6:40 PM – 7:20 PM

About Intrinsic Activity of Graphene-Like Carbon Shell of Me@C Nanocomposites in H₂ Activation
Ekaterina S. Lokteva, Alexey V. Erokhin, Anatoly Ye. Yermakov, Mikhail G. Limin, Darii W. Boukhvalov, Valery V. Lunin
Moscow Lomonosov State University, Chemistry Department, Lengory 1 str, Moscow 119991 Russian Federation
Institute of Metal Physics Ural Branch of RAS, Yekaterinburg S.Kovalyevskaya str. 620990 Russian Federation
School of Computational Studies, Korea Institute for Advanced Study (KIAS), Seoul 130-722 Korea

July 16 (Wednesday)

| 9:00 AM – 7:00 PM | Registration |
| 10:00 AM – 6:00 PM | Exhibition |
| 10:00 AM – 11:30 AM | Plenary session
| Location: Lomonosov Building Conference Hall |
| 10:00 AM – 10:45 AM | Plenary lecture
| Carbon in Nano and Outer Space |
| Harold W. Kroto |
| Florida State University, Department of Chemistry and Biochemistry, Chieftan Way, Tallahassee, Florida 32306 USA |
| 10:45 AM – 11:30 AM | Plenary lecture
<p>| Positive And Negative Aspects Of The Nano-Approach Within The Field Of Li-Based Batteries |
| Jean-Marie Tarascon |
| Collège de France, 11 place Marcelin Berthelot, 75005 Paris, France |
| 11:30 AM – 12:00 PM | Coffee break |
| 12:00 PM – 2:00 PM | Poster session |
| 1:00 PM – 3:00 PM | Lunch |
| 3:00 PM – 6:15 PM | ACS Lectureship Award |
| 3:00 PM – 5:00 PM | Oral sessions 01 – 11 (parallel) |
| 5:00 PM – 5:30 PM | Coffee break |
| 5:30 PM – 7:20 PM | Oral sessions 01 – 11 (parallel) |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>3:00 PM – 6:15 PM</td>
<td><strong>ACS Lectureship Award</strong>&lt;br&gt;Location: Lomonosov Building Conference Hall</td>
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<tr>
<td>3:00 PM – 3:10 PM</td>
<td><strong>Introduction</strong>&lt;br&gt;Paul S. Weiss&lt;br&gt;University of California, Los Angeles, USA</td>
</tr>
<tr>
<td>3:10 PM – 3:55 PM</td>
<td><strong>ACS Nano awardee lecture</strong>&lt;br&gt;<em>In Silico Veritas: Toward Computational Models of Realistic Nanosystems</em>&lt;br&gt;1Amanda S. Barnard&lt;br&gt;Virtual Nanoscience Laboratory, Commonwealth Scientific and Industrial Research Organisation, 343 Royal Parade, Parkville VIC 3052, Australia</td>
</tr>
<tr>
<td>3:55 PM – 4:20 PM</td>
<td><strong>ACS Nano guest lecture</strong>&lt;br&gt;Future Directions for First-Principles Calculations in Nanoscience&lt;br&gt;1Manolo C. Per&lt;br&gt;Virtual Nanoscience Laboratory, Commonwealth Scientific and Industrial Research Organisation, 343 Royal Parade, Parkville VIC 3052, Australia</td>
</tr>
<tr>
<td>4:20 PM – 5:05 PM</td>
<td><strong>ACS Nano awardee lecture</strong>&lt;br&gt;<em>Nucleic Acid-Modified Nanostructures as Programmable Atom Equivalents: Forging a New “Table of Elements”</em>&lt;br&gt;1Chad A. Mirkin&lt;br&gt;Department of Chemistry and International Institute for Nanotechnology, Northwestern University, 2145 Sheridan Rd. Evanston, IL 60208-3113 USA</td>
</tr>
<tr>
<td>5:05 PM – 5:15 PM</td>
<td><strong>Coffee break</strong></td>
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<tr>
<td>5:15 PM – 5:40 PM</td>
<td><strong>ACS Nano guest lecture</strong>&lt;br&gt;<em>Nanoscale Controlled Dynamic (Non-)Covalent Chemistry in 2D</em>&lt;br&gt;1Paolo Samorì&lt;br&gt;ISIS – University of Strasbourg &amp; CNRS, 67000 Strasbourg, France</td>
</tr>
<tr>
<td>5:40 PM – 6:15 PM</td>
<td><strong>ACS Nano awardee lecture</strong>&lt;br&gt;<em>Graphene Nanoribbons: The Next-Generation Semiconductors?</em>&lt;br&gt;1Klaus Müllen&lt;br&gt;Max-Planck-Institute for Polymer Research, Mainz, 55128, Germany</td>
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<tr>
<td>6:00 PM – 6:15 PM</td>
<td><strong>Gift presentation / Photo session</strong></td>
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July 16 (Wednesday)

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<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>3:00 PM – 5:00 PM</td>
<td>Oral sessions 01 – 11 (parallel)</td>
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</table>
### Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Location: B3</th>
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<tbody>
<tr>
<td>3:00 PM – 3:30 PM</td>
<td>Invited lecture</td>
<td>Oral session and Self-assembling</td>
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<tr>
<td></td>
<td>Carpets of Vertically-Aligned Carbon Nanotubes and Nanofibers for Water</td>
<td>Chairman: Professor Eugene Zubarev</td>
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<td></td>
<td>Treatment and Li-Air Batteries</td>
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<td>1 Massachusetts Institute of Technology, Room 13-5069, 77 Massachusetts</td>
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<td>Ave., Cambridge, MA, 02139, USA</td>
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<tr>
<td>3:30 PM – 3:50 PM</td>
<td>Self-Assembly in Thin Films during Copolymerization on Patterned Surfaces</td>
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<td></td>
<td>1 Alexey A. Gavrilov, 1 Alexander V. Chertovich</td>
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<td></td>
<td>1 Lomonosov Moscow State University, Physics Department, 119991, Moscow</td>
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<td>1 Russia</td>
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<td>3:50 PM – 4:10 PM</td>
<td>Advances in the Structures and Properties of Self-Assembling Nanoscale</td>
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<td>Uranium Peroxide Cage Clusters</td>
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<td>1 Peter C. Burns</td>
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<td></td>
<td>1 University of Notre Dame, 156 Fitzpatrick Hall, Notre Dame, IN 46556</td>
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<td></td>
<td>USA</td>
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<td>4:10 PM – 4:30 PM</td>
<td>Direct Synthesis of Metal and Metal Oxide Microspheres by Solution</td>
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<td>Combustion in Ultrasonic–Generated Aqueous Aerosols</td>
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<td>1 Alexey Tarasov, 2 German Trusov</td>
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<td>1 Institute of Problems of Chemical Physics RAS, Academician Semenov</td>
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<td></td>
<td>avenue 1, Chernogolovka, 142432, Russia</td>
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<td>2 Department of Chemistry, Lomonosov Moscow State University, Leninn</td>
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<td>Hills, Moscow, 119992, Russia</td>
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<td>4:30 PM – 4:50 PM</td>
<td>AFM Metrology of Nanoparticles</td>
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<td></td>
<td>1 Gian Bartolo Picotto, 1 Roberto Bellotti</td>
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<td>1 Istituto Nazionale di Ricerca Metrologica (INRIM), Strada delle</td>
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<td>1 Cacce 73, 10135 Torino, Italy</td>
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### Section 02 – Thin Films and Heterostructures, 2D and 3D Nanofabrication

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<tr>
<th>Time</th>
<th>Session</th>
<th>Location: C1</th>
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<tbody>
<tr>
<td>3:00 PM – 3:30 PM</td>
<td>Invited lecture</td>
<td>Oral session and Self-assembling</td>
</tr>
<tr>
<td></td>
<td>Two-Dimensional Boron Nitride and Metal Dichalcogenide Nanostructures</td>
<td>Chairman: Professor Dmitry V. Shtansky</td>
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<td>1 Dmitri Golberg</td>
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<td></td>
<td>1 National Institute for Materials Science (NIMS), Namiki 1-1, Tsukuba,</td>
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<td>1 Ibaraki 3050044, Japan</td>
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<tr>
<td>3:30 PM – 4:00 PM</td>
<td>Invited lecture</td>
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<td></td>
<td>Electrolytic Plasmas as a Tool for Fabrication of Nanostructured Materials and Surfaces</td>
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<tr>
<td></td>
<td>1 Aleksey Yerokhin, 1 Allan Matthews</td>
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<tr>
<td></td>
<td>1 Department of Materials Science and Engineering, University of Sheffield, 1 3JD, Dept MSE, Sir Robert Hadfield Building, Mappin Street, Sheffield, United Kingdom</td>
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<tr>
<td>4:00 PM – 4:20 PM</td>
<td>Synthesis and Characterization of Amorphous and Nanocrystalline CVD BC,N</td>
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<tr>
<td></td>
<td>1 Thierry Gacoin, 1 Jong Wook Kim, 1 Barbara Brudieu, 1 Jacque Peretti,</td>
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<td>1 Geraldine Danette, 1 Francois Guillenmot, 2 Jeremy Teisseire, 3 Fabien</td>
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<td>1 CNRS - Ecole Polytechnique, labo PMC, Ecole Polytechnique, 91128 Palaisseau cedex, Switzerland</td>
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<td>2 Saint-Gobain recherche, SGR, Quai Lucien Ierfanc, 93300 Aubervilliers,</td>
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<td></td>
<td>1 Institute of Materials, EPFL, Lausanne CH-1015XG) Station 12 CH-1015 Lausanne, Switzerland</td>
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</table>
July 16 (Wednesday)

Section 03 – Nanoceramics

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>3:00 PM – 5:10 PM</td>
<td>Oral session</td>
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<tr>
<td>Location: F2</td>
<td>Chairmen: Professor Valery I. Putlyaev, Professor Vladimir S. Komlev</td>
</tr>
<tr>
<td>3:00 PM – 3:30 PM</td>
<td>Invited lecture</td>
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<tr>
<td></td>
<td>Towards Micromechanics- and X-ray Physics Supported Design and Safety Assessment of Bioceramics</td>
</tr>
<tr>
<td></td>
<td>Christian Hellmich, Alexander Dejaco, Wojciech Swieszkowski, Vladimir Komlev</td>
</tr>
<tr>
<td></td>
<td>Vienna University of Technology (TU Wien), Institute for Mechanics of Materials and Structures, Vienna University of Technology, Karlplats 13/202, A-1040 Wien (Vienna), Austria</td>
</tr>
<tr>
<td></td>
<td>Warsaw University of Technology, Faculty for Materials Science, ul. Wołoska 141, 02-507 Warszawa (Warsaw), Poland</td>
</tr>
<tr>
<td></td>
<td>IMET Russian Academy of Sciences, Leninsky prospect 49, 119991 Moscow, Russia</td>
</tr>
<tr>
<td>3:30 PM – 4:00 PM</td>
<td>Invited lecture</td>
</tr>
<tr>
<td></td>
<td>Nanostructured Hard and Superhard Coatings for Technological Applications</td>
</tr>
<tr>
<td></td>
<td>Julietta V. Rau</td>
</tr>
<tr>
<td></td>
<td>The Institute of Structure of Matter, Italian National Research Council, Via del Fosso del cavalieri, 100 - 00133 Rome, Italy</td>
</tr>
<tr>
<td>4:00 PM – 4:30 PM</td>
<td>Invited lecture</td>
</tr>
<tr>
<td></td>
<td>Nanomaterials Based on Calcium Phosphate for Bone Tissue Engineering</td>
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<tr>
<td></td>
<td>Vladimir S. Komlev, Sergey M. Barinov</td>
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<tr>
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<td>IMET RAS, Leninsky prospect 49, 119991 Moscow, Russia</td>
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<tr>
<td>4:30 PM – 5:00 PM</td>
<td>Resorbable Osteoconductive Ceramics Based on Double Phosphates of Calcium and Alkali Metals with Kelvin Architecture</td>
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<td>Pavel V. Evdokimov, Valery I. Putlayev, Nikolay K. Orlov, Elena S. Kovaleva, Dmitri V. Prosvirin</td>
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<tr>
<td></td>
<td>Lomonosov Moscow State University, 119991, Moscow, Leninskie Gory, d.1, Russia</td>
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<td>A. A. Baikov Institute of Metallurgy and Materials Science, 119991, Moscow, Leninskiy prospekt, d.44, Russia</td>
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<tr>
<td>4:50 PM – 5:10 PM</td>
<td>Synthesis of Ordered Mesoporous Bioactive Glasses with Large Pore Diameter Using Triblock Terpolymers as Template</td>
</tr>
<tr>
<td></td>
<td>Oliver Winter, Stephanie Melchers, Joerg Werner, Ulrich Wiesner, Dominik Eder</td>
</tr>
<tr>
<td></td>
<td>Institute of Physical Chemistry, Westfälische Wilhelms-Universitaet Muenster, Corrensstrasse 28/30, 48149 Muenster, Germany</td>
</tr>
<tr>
<td></td>
<td>Dept. of Chemistry and Chemical Biology / Dept. of Materials Science and Engineering, Cornell University, 330 Bard Hall, Ithaca NY 14853, USA</td>
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July 16 (Wednesday)

Section 04 – Bulk Metallic Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>3:00 PM – 5:00 PM</td>
<td>Oral session</td>
</tr>
<tr>
<td>Location: E1</td>
<td>Chairman: Professor Alex M. Glezer</td>
</tr>
<tr>
<td>3:00 PM – 3:30 PM</td>
<td>Invited lecture</td>
</tr>
<tr>
<td></td>
<td>Phase Transformations Driven by the Severe Plastic Deformation</td>
</tr>
<tr>
<td></td>
<td>Boris B. Straumal, Andrei A. Mazilkin, Yulia Ivanisenko, Lilia Kurmanaeva, Askar R. Klimentov, Brititte Baretzky</td>
</tr>
<tr>
<td></td>
<td>Institute of Solid State Physics RAS, Chernogolovka, 142432 Russia</td>
</tr>
<tr>
<td></td>
<td>Karlsruher Institut für Technologie, Institut für Nanotechnologie, Eggenstein-Leopoldshafen, 76344 Germany</td>
</tr>
<tr>
<td></td>
<td>University of California, Davis, CA 95616, USA</td>
</tr>
<tr>
<td>3:30 PM – 4:00 PM</td>
<td>Invited lecture</td>
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<tr>
<td></td>
<td>Ultra-Fine Grained Mg and Mg Alloys for Hydrogen Storage</td>
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<td>Walter J. Botta, Ricardo Fioriano, Tomaz T. Ishikawa, Alberto M. Jorge Jr, Claudemiro Bolfarini, Claudio S. Kiminami, Daniel R. Leiva</td>
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<tr>
<td></td>
<td>Federal University of Sao Carlos, Rod. Washington Luiz, km 235, Sao Carlos, SP, CEP 13565-905, Brazil</td>
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<tr>
<td>4:00 PM – 4:20 PM</td>
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<tr>
<td></td>
<td>Corrosion Resistance of Ultrafine Grained and Nanocrystalline Bulk Metallic Materials: A Review of Methodology and Recent Results</td>
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<td></td>
<td>Andrey B. Rozhnev, Sergey A. Nikulin, Stanislav O. Rogachev</td>
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<td></td>
<td>National University of Science and Technology MISIS, 119049, Leninys prospekt, 4, Russia</td>
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<td>4:20 PM – 4:40 PM</td>
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<td></td>
<td>Mechanisms of Formation of High-Strength State in Nanostructured Steel 10, Subjected to Severe Plastic Deformation</td>
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<tr>
<td></td>
<td>Artur V. Ganeev, Xavier Sauvage, Ruslan Z. Valev</td>
</tr>
<tr>
<td></td>
<td>Ufa State Aviation Technical University, K. Marx Street 12, Ufa 450000 Russia</td>
</tr>
<tr>
<td></td>
<td>Saint Petersburg State University, 7-9, Universitetskaya nab., St.Petersburg, Russia 199034</td>
</tr>
<tr>
<td></td>
<td>University of Rouen, 76801 ST ET. Du Rouvray, Rouen, France</td>
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<tr>
<td>4:40 PM – 5:00 PM</td>
<td>Invited lecture</td>
</tr>
<tr>
<td></td>
<td>High Fatigue Strength and Enhanced Biocompatibility of UFG CP Ti for Innovation Medical Applications</td>
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<tr>
<td></td>
<td>Alexander V. Polyakov, Irina P. Semenova, Ruslan Z. Valev</td>
</tr>
<tr>
<td></td>
<td>Institute of physics of advanced materials, Ufa state aviation technical university, Ufa, 450000, 12 K.Marx st., Russia</td>
</tr>
<tr>
<td></td>
<td>Laboratory for Mechanics of Bulk Nanostructured Materials, Saint Petersburg State University, Saint Petersburg, Peterhof, 198504, Universitetsky pr. 28, Russia</td>
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### July 16 (Wednesday)

**Section 05 – Nanocomposites and Hybrid Nanomaterials**

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>3:00 PM – 4:40 PM</td>
<td><strong>Invited lecture</strong> Band Gap Expansion, Lattice Phonon and Phase-Change Properties of Low-Dimensional Crystals in Single-Walled Carbon Nanotubes</td>
</tr>
<tr>
<td>3:00 PM – 3:30 PM</td>
<td><strong>Invited lecture</strong> Doping Single-Walled Carbon Nanotubes by Introduction of Inorganic Compounds</td>
</tr>
<tr>
<td>3:30 PM – 4:00 PM</td>
<td><strong>Nature and Extent of Charge/Energy Transfer at the Nanocarbon-Metal Oxide Interface</strong></td>
</tr>
<tr>
<td>4:00 PM – 4:20 PM</td>
<td><strong>Design of Nanocrystalline Metals Wrapped in Graphene Layers - “Giant Fullerences”. Synthesis, Properties and Applications in Catalysis and Nanobiotechnology</strong></td>
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Chairman: Dr. Giovanni Golemme

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### July 16 (Wednesday)

**Section 06 – Polymer, Organic and Other Soft Matter Materials**

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>3:00 PM – 5:00 PM</td>
<td><strong>Invited lecture</strong> Light-Induced Surface Mass-Transfer Phenomena in Photochromic LC Polymer Systems</td>
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<tr>
<td>3:30 PM – 4:00 PM</td>
<td><strong>Invited lecture</strong> Friendly Cooperation of LC Polymer Matrices and Quantum Dots: Properties of Nanocomposites</td>
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<tr>
<td>4:00 PM – 4:20 PM</td>
<td><strong>In Situ Determination and Imaging of Physical Properties of Soft Organic Materials by ATEM</strong></td>
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<tr>
<td>4:20 PM – 4:40 PM</td>
<td><strong>Phase Diagram and Aging Behaviour of a Laponite Colloidal Suspension</strong></td>
</tr>
<tr>
<td>4:40 PM – 5:00 PM</td>
<td><strong>Molecular Arrangements in Monolayer J-Aggregates of Cyanine and Carboxy-anine Dyes</strong></td>
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Chairman: Professor Dimitri Ivanov
### Section 07 – Nanomaterials for Energy

<table>
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<tr>
<td>3:00 PM – 3:20 PM</td>
<td><strong>Oral session</strong></td>
<td>B2</td>
<td>Professor Zhumabay Bakenov</td>
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<tr>
<td>3:30 PM – 3:50 PM</td>
<td><strong>Invited lecture</strong></td>
<td>B2</td>
<td>Prof. Zhumabay Bakenov</td>
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<tr>
<td>3:00 PM – 4:20 PM</td>
<td><strong>Oral session</strong></td>
<td>C4</td>
<td>Professor Andrei V. Zvyagin</td>
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<tr>
<td>4:30 PM – 5:00 PM</td>
<td><strong>Invited lecture</strong></td>
<td>C4</td>
<td>Prof. Andrei V. Zvyagin</td>
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</tbody>
</table>

**Amorphous Carbon Nitride: A Promising Material for Energy Conversion and Storage**

1 Oleg Semenikhin
1 The University of Western Ontario, 1151 Richmond St, London, Ontario, Canada

**Vertically Aligned Carbon Nanotubes Based Materials for Electrochemical Energy Storage**

1 Mathieu Pinault, 1 Florent Tatard, 1 Marina Porcher, 1 Fouad Ghamouss, 1 François Tran-Van, 1 Pierre-Henri Aubert, 1 Martine Mayne-L’Hermite
1 CEA-Saclay DSM-IRAMIS-NIMBE, Bat. 522, 91191 Gif sur Yvette Cedex, France
2 Laboratoire de Physico-chimie des Polymères et des Interfaces, EA 2528, Université de Cergy-Pontoise, France
3 Laboratoire de Physico-Chimie des Matériaux et des Electrolytes pour l’Energie, EA 6299, Université François Rabelais, Parc de Grandmont, 37 200 Tours, France

**New Nanostructured Composite Cathode Materials via Mechanochemical Route**

1 Nina V. Kosova
1 Institute of Solid State Chemistry and Mechanochemistry SB RAS, 18 Kutateladze, Novosibirsk 630128, Russia

**Beyond the Conventional Electrochemical Double Layer Capacitors: A Novel Hybrid Micro-Ultracapacitor Based on Silicon Nanowires with Conducting Polymer**

1 David Aradilla, 1 Hülya Sahin, 2 Thomas Schubert, 2 Pedro Gómez-Romero, 3 Vanessa Ruiz, 3 Fleur Thissandier, 1 Patrick Weathers, 1 Pascal Gentile, 1 Gerard Bidan, 1 Said Sadki
1 CEA, 17 rue des Martyrs, 38054 Grenoble, France
2 ICN2 (CSIC - ICN), Campus UAB, 08193 Barcelona, Spain
3 IOLITEC, Salzstrasse 184, 74076 Heilbronn, Germany

### Section 08 – Biological and Biomedical Nanomaterials

<table>
<thead>
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<td>3:00 PM – 3:30 PM</td>
<td><strong>Oral session</strong></td>
<td>C4</td>
<td>Professor Andrei V. Zvyagin</td>
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<tr>
<td>3:30 PM – 4:00 PM</td>
<td><strong>Invited lecture</strong></td>
<td>C4</td>
<td>Prof. Andrei V. Zvyagin</td>
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<tr>
<td>4:00 PM – 4:20 PM</td>
<td><strong>Invited lecture</strong></td>
<td>C4</td>
<td>Prof. Andrei V. Zvyagin</td>
</tr>
</tbody>
</table>

**Plasmonic Gold and Composite Nanoparticles for Analytical and Theranostic Applications**

1 Nikolai Khlebtsov
1 Institute of Biochemistry and Physiology of Plants and Microorganisms, Russian Academy of Science, 13 prospekt Entuziastov, 410049 Saratov, Russia
2 Saratov State University, 83 Astrakhanskaya Str., Saratov 410012, Russia

**Gold Nanoparticles Based Sensors for the Colorimetric Detection of Biomarkers**

1 Paola Valenti, 1 Paola Cecere, 1 Stefano Persano, 1 Stefania Sabella, 1 Pier Paolo Pompa
1 Istituto Italiano di Tecnologia - CBN, via Barsanti, Arnesano, Lecce, Italy

**Synthesis, Characterization and Evaluation of Antimicrobial Activity of Nitric Oxide-Releasing Alginate/Chitosan Nanoparticles: A New Approach to Combat Chagas’ Disease**

1 Amedea B. Seabra, 1 Nidia A. Kitice, 2 Cesar AC. Lancheros, 2 Sueli F. Yamada-Ogatta
1 Universidade Federal de Sao Paulo, Exact and Earth Sciences Department, Rua Sao Nicolau 210, 09913-030, Diadema, SP, Brazil
2 Universidade Estadual de Londrina, Department of Microbiology, Londrina, PR, Brazil

**Production and Properties of Highly Voluminous Nanofibrous Structures Based on Hyaluronic Acid Made by 4SPIN® Technology**

1 Jana Ruzickova, 1 Katerina Knotkova, 1 Jindrich Novak, 1 Marek Pokorny
1 Contipro Biotech s.r.o, Dolni Dobrouc 401, 56102 Czech Republic
Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

3:00 PM – 5:00 PM
Location: E2
Oral session
Chairman: Professor Emmanuel Gdoutos

Invited lecture
Nanomechanics of Defects in Thin Film Materials and Small Particles
1 Alexei E. Romanov, 2 Anatoly A. Vikarchuk, 1 Anna L. Kolesnikova
1 Ioffe Physical-Technical Institute, St. Petersburg, Russia
2 Togliatti State University, Togliatti, Russia

Invited lecture
A New Mechanism of Elastic Energy Relaxation in Heteroepitaxy of Monocrystalline Films: Interaction of Point Defects and Dilatation Dipoles
1 Sergey A. Kukushkin, 2 Andrey V. Osipov
1 Institute of Problems of Mechanical Engineering Russian Academy of Sciences IPME RAS, 199178, Bolshoy pr. 61, V.O., St. Petersburg, Russia

Buckling Simulation of Single Layer Graphene Sheets by the Molecular Mechanics Method
1 Sergey N. Korobeynikov, 1 Vladimir V. Alyokhin, 1 Boris D. Annin, 1 Alexey V. Babichev
1 Lavrentyev Institute of Hydrodynamics, Lavrentyev ave., 15, 630090, Novosibirsk, Russia
2 Sobolev Institute of Geology and Mineralogy, Koptyug av., 3, Novosibirsk, 630090, Russia

Chemical Affinity Tensor and Coupled Problems of Mechanochemistry
1 Alexander B. Freidin, 1 Elena N. Vilchevskaya, 1 Igor K. Korolev, 1 Sergey P. Alekshchenko, 1 Igor V. Telezhko
1 Institute for Problems in Mechanical Engineering of Russian Academy of Sciences, Bolshoy pr. 61, V.O. St. Petersburg, 199178 Russia
2 St. Petersburg State Polytechnical University, Politechnicheskaya Str., 29, St. Petersburg, 195251 Russia

On Stability of Solids with FCC-BCC Crystal Structure at Finite Strains
1 Ekaterina Podolskaya, 2 Artem Panchenko, 1 Alexander Freidin, 2 Anton Krivtsov
1 Institute for Problems in Mechanical Engineering RAS, 61, Bolshoy pr. V.O., 199178, St. Petersburg, Russia
2 St. Petersburg State Polytechnical University, 29 Politechnicheskaya str., 195251, St. Petersburg, Russia

Section 10 – Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics

3:00 PM – 4:40 PM
Location: F1
Oral session
Chairman: Professor Victor M. Ustinov

Invited lecture
Nanostructured III-V Solar Cells
1 Viacheslav M. Andreev, 2 Antonio I. Luque, 1 Victor M. Emelyanov, 1 Nikolay A. Kalyuzhnyy, 1 Sergey A. Mintairov, 1 Maxim Z. Shvarts
1 Ioffe Physical-Technical Institute, 26 Polytekhnicheskaya str. 194021, Saint-Petersburg, Russia
2 Technical University of Madrid, Avda Complutense 30, Ciudad Universitaria, 28040 Madrid, Spain

Invited lecture
Optical Characterization at the Nanoscale: Experimental Approaches
1 Pavel Dorozhkin, 2 Artyom Shelaev, 1 Mikhail Yanul, 1 Igor Arkov, 1 Victor Bykov
1 NT-MDT Co, Build. 100, Zelenograd Moscow, 124460 Russia

Super-Resolution Imaging Using Metal Coated Carbon Nanotube Forest Nanolens
1 Choon-Gi Choi, 2 Jong-Ho Choe
1 Creative Research Center for Graphene Electronics, Electronics and Telecommunication Research Institute (ETRI), Yuseong-Gu, Daejeon, 305-700, Republic of Korea

Surface and Volume Photoeffects in Schottky Photodetectors with Plasmonic Nanoantennas
1 Alexander V. Uskov, 1 Igor E. Protsenko, 1 Renat Sh. Ikhsanov, 2 Viktoriia E. Babicheva, 1 Sergei V. Zhukovsky, 2 Andrey V. Lavrinenko, 1 Eoin P. O'Reilly, 1 Hongxing Xu
1 P. N. Lebedev Physical Institute, Russian Academy of Sciences IPME RAS, Bolshoy pr. 61, V.O., St. Petersburg, Russia
2 School of Physics & Technology, Wuhan University, Wuhan, 430072, P.R. China
4 Research Institute of Scientific Instruments, State Nuclear Energy Corporation “Rosatom”, Moscow, Russia
3 DTU Fotonik, Technical University of Denmark, Orsteds Plads 343, DK-2800 Kgs. Lyngby, Denmark
5 Tyndall National Institute, Cork, Ireland
### Section 11 – Nanomaterials and Catalysis

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<td>3:30 PM – 4:00 PM</td>
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<td></td>
<td>Visible Light Photocatalysts Based on TiO₂ and CdS Hybrid Nanoparticles</td>
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<tr>
<td></td>
<td>Andrey A. Rempel</td>
</tr>
<tr>
<td></td>
<td>¹ Institute of Solid State Chemistry, Russian Academy of Science, Pervomaiska-ya 91, Ekaterinburg 620990, Russia</td>
</tr>
<tr>
<td></td>
<td>² Ural Federal University named after the first president of Russia B.N. Yeltsin, Mira 19, Ekaterinburg 620002, Russia</td>
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<td>3:30 PM – 4:00 PM</td>
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<tr>
<td></td>
<td>The Optimization of Platinum Promoted Gold-Palladium Catalysts</td>
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<td>Peter J. Miedziak, Qian He, Nikolaos Dimitratos, Jennifer K. Edwards, Stuart H. Taylor, Christopher J. Kiely, Graham J. Hutchings</td>
</tr>
<tr>
<td></td>
<td>¹ Cardiff University, Main Building, Park Place, Cardiff, CF10 3AT, UK</td>
</tr>
<tr>
<td></td>
<td>² Lehigh University, Department of Materials Science and Engineering, 5 East Packer Avenue, Bethlehem, Pennsylvania, PA, 18015, USA</td>
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<tr>
<td>4:00 PM – 4:20 PM</td>
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<td>4:20 PM – 4:40 PM</td>
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<td>Synthesis of Sub-5 nm Co-Doped SnO₂ Nanoparticles and Their Structural, Microstructural, Optical and Photocatalytic Properties</td>
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<td>Tiago Entradas, Joana Cabrita, Manuel R. Nunes, Olinda C. Monteiro, Antonio J. Silvestre</td>
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<tr>
<td></td>
<td>¹ Instituto Superior de Engenharia de Lisboa, Department of Physics and ICEMS, R. Conselheiro Emidio Navarro 1, 1959-007 Lisboa, Portugal</td>
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<tr>
<td></td>
<td>² University of Lisbon, Faculty of Sciences, Department of Chemistry and Biochemistry and CQB, Campo Grande, 1749-016 Lisboa, Portugal</td>
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<td>³ University of Lisbon, Faculty of Sciences, Department of Physics and ICEMS, Campo Grande, 1749-016 Lisboa, Portugal</td>
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<td>4:20 PM – 4:40 PM</td>
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<td>Coffee break</td>
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<td>5:30 PM – 7:20 PM</td>
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### Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

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<tr>
<td>5:30 PM – 6:00 PM</td>
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<tr>
<td></td>
<td>Nanodiamond Particles: Challenges and Opportunities</td>
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<tr>
<td></td>
<td>Olga Shenderova, Gary McGuire, Michail Ivanov, Igor Vlasov</td>
</tr>
<tr>
<td></td>
<td>¹ International Technology Center, 8100 Brownleigh Dr, Raleigh, NC, USA</td>
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<td>² Adâmas Nanotechnologies, 8100 Brownleigh Dr. S.120, Raleigh, NC, USA</td>
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<td></td>
<td>³ Ural Federal University, Yekaterinburg, Russia</td>
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<td>⁴ General Physics Institute, Moscow, Russia</td>
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<tr>
<td>6:00 PM – 6:20 PM</td>
<td>Analytical Chemistry of Nanodiamonds and Nanodiamond Materials</td>
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<tr>
<td></td>
<td>Dmitry S. Volkov, Mikhail A. Proskurnin, Mikhail V. Korobov</td>
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<td></td>
<td>¹ Lomonosov Moscow State University, Chemical Department, Lomonosov Moscow State University, Chemistry Department, 119991, 1-build. 3, Leninsky gory, MSU, Moscow, 119991 Russia</td>
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<tr>
<td></td>
<td>² Analytical Centre of Chemistry Department of M.V. Lomonosov Moscow State University, Lomonosov Moscow State University, Chemistry Department, Leninsky gory, 1-3, GSP-1, Moscow, 119991 Russia</td>
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<tr>
<td></td>
<td>Vladimir A. Popov, Christian Kuebel, Di Wang</td>
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<tr>
<td></td>
<td>¹ Frumkin Institute of physical chemistry and electrochemistry RAS, Leninsky pr. 31, korp. 4, Moscow 119071 Russia</td>
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<tr>
<td></td>
<td>² Institute of Nanotechnology (INT) and Karlsruhe Nano Micro Facility (KNMF), Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz Platz 1, 76344 Eggenstein-Leopoldshafen, Germany</td>
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<tr>
<td>6:40 PM – 7:00 PM</td>
<td>Structure of Nanoporous Carbons as Revealed by X-Ray Scattering and TEM</td>
</tr>
<tr>
<td></td>
<td>¹ Andrei A. Shiriyaev, Pascaline Pré, Jean-Noël Rouzaud, Vladimir V. Volkov, Albert M. Voloshchuk</td>
</tr>
<tr>
<td></td>
<td>¹ Frunkin Institute of physical chemistry and electrochemistry RAS, Leninsky pr. 31, korp. 4, Moscow 119071 Russia</td>
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<td></td>
<td>² EPEEA, Ecole des Mines de Nantes, UMR CNRS 6144, 4 rue Alfred Kastler, 44307 Nantes, France</td>
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<td></td>
<td>³ ENS, UMR CNRS 8538, 75231 Paris, France</td>
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<td></td>
<td>⁴ Shubnikov Institute of Crystallography, Moscow, Russia</td>
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<td>5:30 PM –</td>
<td>Oral session</td>
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<td>7:20 PM</td>
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<tr>
<td>5:30 PM –</td>
<td>Invited lecture</td>
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<tr>
<td>6:00 PM</td>
<td>Self-Assembly of Gold Nanoparticles via</td>
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<td>Copolymer Templates</td>
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<tr>
<td></td>
<td>Thomas F. Maurer, Arthur Gontier,</td>
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<td>Alexandre Plaud, Aurelien Sarrazin,</td>
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<td>Jeremy Beal, Samuel S. Lamarre, Anna M.</td>
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<td>Université de Technologie de Troyes–Laboratoire de Nanotechnologie et d'Instrumentation Optique</td>
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<td>D'Université de Technologie de Troyes–Laboratoire de Nanotechnologie et d'Instrumentation Optique</td>
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<tr>
<td></td>
<td>12 rue Marie Curie, CS 42060, 10004</td>
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<tr>
<td></td>
<td>Troyes Cedex, France</td>
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<tr>
<td></td>
<td>Département de chimie et CERMA, Université</td>
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<tr>
<td></td>
<td>Laval, Pavillon Alexandre-Vachon, 1045,</td>
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<tr>
<td></td>
<td>avenue de la Médecine, Quédéco (Québec),</td>
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<td></td>
<td>G1V 0A6 Canada</td>
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<tr>
<td>6:20 PM –</td>
<td>Ti_{0.05}Al_{0.95}N Coating with Nanocomposite Microstructure Through Self-Organization of Nanolamellae During Low-Pressure CVD</td>
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<tr>
<td>7:00 PM</td>
<td>Transrotational 2.5 D Nanostructures: Novel Solid State Order Observed by TEM in Crystallizing Amorphous Films</td>
</tr>
<tr>
<td></td>
<td>Vladimir Yu. Kolosov</td>
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<td></td>
<td>Ural Federal University, Ekaterinburg, Russia</td>
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<tr>
<td>7:00 PM –</td>
<td>InN/GaN Superlattices – Resolving the Discrepancies between Theory and Experiment</td>
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<td>7:40 PM</td>
<td>InN/GaN Superlattices – Resolving the</td>
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<td>Discrepancies between Theory and Experiment</td>
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<td>T. Markurt, T. Schulz, N. Christensen, X.Q.</td>
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<td>Gorczyca, M. Albrecht, T. Remmele, A.</td>
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<td>State Key Laboratory of Artificial</td>
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<td>Microstructure and Mesoscopic Physics,</td>
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<td></td>
<td>School of Physics, Peking University, Beijing, 100871, China</td>
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<td></td>
<td>Department of Physics and Astronomy, Aarhus University, 8000 Aarhus C, Denmark</td>
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**July 16 (Wednesday)**

**Section 04 – Bulk Metallic Nanomaterials**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
<th>Chairperson</th>
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<tbody>
<tr>
<td>5:30 PM –</td>
<td>Oral session</td>
<td>E1</td>
<td>Professor Michael Zehetbauer</td>
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<td>7:00 PM</td>
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<tr>
<td>5:30 PM –</td>
<td>Invited lecture</td>
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<tr>
<td>6:00 PM</td>
<td>Nano- and Submicrystaline Cu-Based Alloys with Cr, Zr and Hf: Structure, Mechanical Behaviour and Electrical Conductivity</td>
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<td></td>
<td>Sergey V. Dobatkin, D. V. Shangina, N. R.</td>
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<td>Bochvar, P. B. Straumal</td>
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<tr>
<td></td>
<td>1 A.A. Baikov Institute of Metallurgy and Materials Science, Russian Academy of Sciences, Leninskiy prospect 49, 119991 Moscow, Russia</td>
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<tr>
<td></td>
<td>National University of Science and Technology «MISIS», Laboratory of Hybrid Nanosstructured Materials, Leninskiy prospect 4, 119049 Moscow, Russia</td>
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<td>6:20 PM –</td>
<td>Ultrahigh-Strength 2024 Aluminium Alloy Sheet Due to Multilevel Nanostructuring Under Cryorolling and Heat Treatment</td>
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<tr>
<td>7:00 PM</td>
<td>Autowave Plastic Deformation on Torsion of Nanostructured Titanium</td>
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<td>Maxim B. Ivanov, Alexey V. Penkin, Yury R.</td>
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<td>Kolobov</td>
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<td></td>
<td>Belgorod National Research University, Pobedy 85, Belgorod, Russia</td>
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<tr>
<td>6:40 PM –</td>
<td>Titanium and Zirconium Base Alloys in Ultra-Fine Grained State: Mechanical Stability and Failure Behavior</td>
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<td>7:00 PM</td>
<td>InN/GaN Superlattices – Resolving the</td>
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<td>State Key Laboratory of Artificial Microstructure and Mesoscopic Physics, School of Physics, Peking University, Beijing, 100871, China</td>
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<td></td>
<td>Department of Physics and Astronomy, Aarhus University, 8000 Aarhus C, Denmark</td>
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## July 16 (Wednesday)

### Section 05 – Nanocomposites and Hybrid Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Type</th>
<th>Title</th>
<th>Speakers</th>
<th>Affiliations</th>
</tr>
</thead>
</table>
| 5:30 PM –     | Oral session          | Invited lecture                                                                          | Electronic Structure and Many-Body Effects in Chemically Functionalized Graphene                   | 1 Alexander A. Gruneis, 2 Alexander Fedorov, 1 Nikolay I. Verbitskiy, 2 Danny Haberer, 3 Dmitry Usachov, 4 Oleg Vilkov, 4 Denis V. Vyalikh, 2 Joerg Fink, 3 Claudia Struzzi, 1 Luca Petaccia  
| 6:00 PM       |                       |                                                                                         | University of Vienna, Faculty of Physics, Boltzmannstrasse 5, 1090 Wien, Austria                  | 1 IFW-Dresden, Helmholtzstrasse 20, 01069 Dresden, Germany  
|               |                       |                                                                                         | St. Petersburg State University, St. Petersburg, 198504, Russia                                  | 1 ELETTRA synchrotron, Area Science Park, I-34012 Basovizza, Trieste, Italy  
|               |                       |                                                                                         | TU-Dresden, D-01062 Dresden, Germany                                                             |                                                                                                                                           |
| 6:00 PM –     | Oral session          | Invited lecture                                                                          | Innovative Electrochemical Sensor Based on Electroactive Nanoparticles of Molecularily Imprinted Polymers for the Indirect Detection of Vancomycin | 1 Antonio Turco, 1 Elisabetta Mazzotta, 1 Cosimino Malitesta, 2 Iva Chianella, 2 Sergey A. Piletsky  
| 6:30 PM       |                       |                                                                                         | University of Salento, Dipartimento di scienze e tecnologie biologiche ed ambientali, Via Monteroni, 1 Lecce, Italy | 1 Cranfield University, Cranfield Health Vincent Building, MK43 0AL, Bedfordshire, Cranfield, UK                                                                 |

### Section 06 – Polymer, Organic and Other Soft Matter Materials

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Type</th>
<th>Title</th>
<th>Speakers</th>
<th>Affiliations</th>
</tr>
</thead>
</table>
| 5:30 PM –     | Oral session          | Invited lecture                                                                          | Electropreparation of Functional Nanoparticles                                                     | 1 Kalle Levon  
| 6:00 PM       |                       |                                                                                         | NYU, Six Metrotech Center, Brooklyn, NY 11201, USA                                                |                                                                                                                                           |
| 6:00 PM –     | Oral session          | Invited lecture                                                                          | Role of Morphology in Formation of Charge Transfer and Triplet States in OPV Materials             | 1 Vladimir Dyakonov  
| 6:30 PM       |                       |                                                                                         | Julius Maximilian University of Wuerzburg, Am Hubland, Germany                                  |                                                                                                                                           |
| 6:30 PM –     | Oral session          | Elaboration Application of TiO₂/MWCNT (Multiwall Carbon Nanotubes) Nanocomposites and Their Application in Solid State Dye Sensitized Solar Cells | 1 Jin Wang, 1 Yaochen Lin, 1 Aurelie Habert, 1 Mathieu Pinault, 2 Arianna Filoramo, 2 Bernard Ratier, 1 Johann Boucle, 1 Nathalie C. Herlin Boime  
| 6:50 PM       |                       |                                                                                         | IRAMIS-NIMBE-LEDNA-LFP, CEA-CNRS URA2453, CEA Saclay, France                                      | 2 IRAMIS-NIMBE-LICSEN, CEA Saclay, France  
|               |                       |                                                                                         | XLIM, Universit de Limoges, France                                                               |                                                                                                                                           |
| 6:50 PM –     | Oral session          | Towards Production of Composites with Tailored Characteristics via Optimization of Multi-Walled Carbon Nanotube Properties | 1 Vladimir L. Kuznetsov, 2 Dmitry V. Krasnikov  
| 7:10 PM       |                       |                                                                                         | Boreskov Institute of Catalysis, Novosibirsk, Russia  
|               |                       |                                                                                         | Novosibirsk State University, Novosibirsk, Russia                                               |                                                                                                                                           |
**July 16 (Wednesday)**

### Section 07 – Nanomaterials for Energy

<table>
<thead>
<tr>
<th>Time</th>
<th>Oral session</th>
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<tbody>
<tr>
<td>5:30 PM – 5:50 PM</td>
<td><strong>Synthesis and Post-Treatment Effects to the Properties of Core-Shell Pt-M/C Nanostructured Electro Catalyst for PEMFC</strong>&lt;br&gt;1 Vladimir E. Guterman, 1 Sergey V. Belenov, 1 Andrey Yu. Pakharev, 1 Tatiana A. Lastovina, 1 Larisa L. Vysochina, 1 Helena B. Micheikina, 1 Nataliya Yu. Tabachkova&lt;br&gt;1 Southern Federal University, Zorge st., 7. Rostov-on-Don, Russia</td>
</tr>
<tr>
<td>5:50 PM – 6:10 PM</td>
<td><strong>Synthesis of Pt/Carbon Xerogel Electro Catalysts for Proton Exchange Membrane Fuel Cells (PEMFC): Effect of the Reduction Procedure</strong>&lt;br&gt;1 Anthony Zubiaur, 2 Marian Chatenet, 3 Frédéric Maillard, 3 Nathalie Job&lt;br&gt;1 Laboratory of Chemical Engineering – Nanomaterials, Catalysis, Electrochemistry, University of Liège, B6a, 4000 Liège, Belgium&lt;br&gt;2 LEPMI, UMR 5279 CNRS/Grenoble INP/U. de Savoie/U. Joseph Fourier, Grenoble, France</td>
</tr>
<tr>
<td>6:10 PM – 6:30 PM</td>
<td><strong>Catalytic Layers for PEMFC Based on Carbon Xerogels</strong>&lt;br&gt;1 Fabien L. Deschamps, 2 Jean-Paul Pirard, 2 Nathalie Job&lt;br&gt;1 Université de Liège, Laboratoire de Génie chimique - Nanomatériaux, Catalyse, Electrochimie, Institut de Chimie B6a, Sart-Tilman, B-4000 Liège, Belgium</td>
</tr>
<tr>
<td>6:30 PM – 6:50 PM</td>
<td><strong>Polybenzimidazoles for High Temperature Fuel Cell Membranes</strong>&lt;br&gt;1 Dmitry Y. Razorenov, 2 Mikhail S. Kondratenko, 1 Yulia A. Volkova, 1 Kirill M. Skupov, 2 Marat O. Galyamov, 1 Igor I. Ponomarev&lt;br&gt;1 A.N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, 28 Vavilova St., Moscow, 119991, Russia&lt;br&gt;2 Faculty of Physics, Moscow State University, Leninskii Gory, Moscow, 119991, Russia</td>
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### Section 08 – Biological and Biomedical Nanomaterials

<table>
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<tr>
<th>Time</th>
<th>Oral session</th>
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<tbody>
<tr>
<td>5:30 PM – 7:00 PM</td>
<td><strong>Invited lecture</strong>&lt;br&gt;<strong>Nanoparticle Biocomplexes for Ultrahigh-Sensitivity Photoluminescence Imaging</strong>&lt;br&gt;1 Andrei V. Zvyagin&lt;br&gt;1 Macquarie University, Sydney, Australia&lt;br&gt;2 Lobachevsky State University of Nizhni Novgorod, Nizhny Novgorod, Russia</td>
</tr>
<tr>
<td>6:00 PM – 6:20 PM</td>
<td><strong>DNA Metallization in Solution and on Surface</strong>&lt;br&gt;1 Nina Kasyanenko, 1 Peter Sokolov, 1 Zakhar Reveguk, 1 Georgy Alekseev, 1 Zhang Qiushi, 1 Vladimir Bakulev&lt;br&gt;1 St.-Petersburg State University, Faculty of Physics SPBU, Ulusanovskaya 1, Petrodvorets, St.-Petersburg, 199504 Russia</td>
</tr>
<tr>
<td>6:20 PM – 6:40 PM</td>
<td><strong>Energy Transfer at a Silica/Water Interface as New Route to Reveal Properties of Phospholipid Bilayers Deposited onto Silica Nanoparticles</strong>&lt;br&gt;1 Alsu Mukhametshina, 2 Asiya Mustafina, 1 Nikolay Davydov, 1 Valery Gorbutchuk&lt;br&gt;1 Kazan Federal University, Kremlivskaya 18, Russia&lt;br&gt;2 A.E. Arbuzov Institute of Organic and Physical Chemistry, Arbuzov 8, Russia</td>
</tr>
<tr>
<td>6:40 PM – 7:00 PM</td>
<td><strong>Microstructure Deformation of Bi-Directionally Oriented Cylindrical Block Copolymers Under Fast Cyclical Loading for Potential Prosthetic Heart Valve Application</strong>&lt;br&gt;1 Joanna Stasiak, 1 Jacob Brubert, 1 Marta Serrani, 1 Amanda Talhat, 2 Francesco De Gaetano, 2 Maria L. Costantino, 1 Geoff D. Moggridge&lt;br&gt;1 Department of Chemical Engineering and Biotechnology, University of Cambridge, UK, Pembroke Street, Cambridge, CB2 3RA, UK&lt;br&gt;2 Department of Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Italy, Piazza Leonardo da Vinci, 32 20133 Milano, Italy</td>
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July 16 (Wednesday)

Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

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<tr>
<th>Time</th>
<th>Event</th>
<th>Authors/Institutions</th>
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<tbody>
<tr>
<td>5:30 PM – 6:00 PM</td>
<td>Invited lecture Hydrogen Embrittlement, Microcracking, and Piezonuclear Fission Reactions at the Ni and Pd Electrodes of Electrolysis “Cold Fusion” Experiments</td>
<td>Alberto Carpinteri, Oscar Borla, Alessandro Goi, Amedeo Manuelli, Diego Veneziano</td>
</tr>
<tr>
<td>6:20 PM – 6:40 PM</td>
<td>Transport of Polar and Nonpolar Fluids Through Nanotubes Placed into Liquid Medium</td>
<td>Andrei K. Abramian, Leonid V. Mirantsiev, Nicholas M. Bessonov, Natasha A. Reinyberg</td>
</tr>
<tr>
<td>6:40 PM – 7:00 PM</td>
<td>Dynamics of the Modulated Distortions and Microflows in Confined Nematic Liquid Crystals</td>
<td>Anna A. Vakulenko, Alex V. Zakharov, Institute of Problems of Mechanical Engineering, RAS, St.Petersburg, 199178, Russia</td>
</tr>
<tr>
<td>7:00 PM – 7:20 PM</td>
<td>Effective Nanofluid Thermal Conductivity Based on Temperature-Dependent Interfacial Nano-Layer and Nanoparticle Brownian Motion</td>
<td>Haifeng Jiang, Lin Shi, Tsinghua University, Department Of Thermal Engineering, Tsinghua University, Beijing, 100084, China</td>
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July 16 (Wednesday)

Section 10 – Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics

<table>
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<tr>
<th>Time</th>
<th>Event</th>
<th>Authors/Institutions</th>
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<tbody>
<tr>
<td>5:30 PM – 6:00 PM</td>
<td>Invited lecture A New Method for the Synthesis of Epitaxial Layers of SiC on Si for the Growth of Wide Bandgap Semiconductor Films</td>
<td>Sergey A. Kukushkin, Andrey V. Osipov, Andrey V. Lukyanov, Institute of Problems of Mechanical Engineering Russian Academy of Sciences IPME RAS, 199178, Bolshoy 61, V.O., St. Petersburg, Russia</td>
</tr>
<tr>
<td>6:00 PM – 6:20 PM</td>
<td>Optical Coupling between SiGe Heterostructures in 1.3-1.6 µm Wavelength Range</td>
<td>Alexey V. Novikov, Alexander A. Tonkikh, Dmitry V. Yurasov, Alexander V. Antonov, Natalia A. Baydakova, Konstantin E. Kudryavtsev, Michael V. Shaleev, Dmitry N. Lobanov, Zakary F. Kaslinsk, Institute for Physics of Microstructures RAS, 603950, GSP-105, Nizhny Novgorod, Russia</td>
</tr>
<tr>
<td>6:40 PM – 7:00 PM</td>
<td>Two-Dimensional Dipolar Electron-Hole Liquid in Si/SiGe Heterostructures</td>
<td>Dmitry S. Kozyrev, Timur M. Burbayev, Moscow State University, Leninskie Gory, Moscow, 119991 Russia</td>
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Oral session Chairman: Professor Alexei E. Romanov
Oral session Chairman: Professor Edik U. Rafailov
### July 16 (Wednesday)

#### Section 11 – Nanomaterials and Catalysis

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>5:30 PM – 7:00 PM</td>
<td>Oral session</td>
<td>Chairman: Professor Edward A. Karakhanov</td>
</tr>
<tr>
<td>5:30 PM – 6:00 PM</td>
<td>Invited lecture</td>
<td>Nanostructured Thin Film for Energy Conversion: Pros and Cons of the Sol-Gel Approach</td>
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<td>1 Christel Laberty-Robert</td>
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<td>Laboratoire de Chimie de la Matière Condensée de Paris – UPMC-7574 CNRS, Collège de France, 11 Place Marcelin Berthelot, 75005 Paris, France</td>
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<tr>
<td>6:00 PM – 6:20 PM</td>
<td>Study of PtPd Nanoalloys: From Solution Growth to Self-Organized Deposition and Structural Changes Under Influence of Gases</td>
<td>1 Suzanne F. Giorgio, 1 Astrid Declercq, 1 Walid Dachraoui, 1 Olivier Margeat, 1 Katrin Pelzer, 1 Claude Henry</td>
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<td>CNRS- Aix Marseille University, CINAM, UMR 7325, Aix Marseille Université-CNRS, Campus de Luminy, Case 913, 13288 Marseille Cedex 9 France</td>
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<tr>
<td>6:20 PM – 6:40 PM</td>
<td>Hybrid Nanocomposite Nafion Membranes for Adsorption and Photocatalytic Degradation of Methyl Orange Dye in Water</td>
<td>1 Simona Filice, 1 Daniele D’Angelo, 1 Sebania Libertino, 1 Vassiliki Kosma, 1 Isabel-la Nicotera, 1 Vittorio Privitera, 2 Silvia Scalese</td>
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<td>1 Institute for Microelectronics and Microsystems CNR-IIM, Zona Industriale Strada VIII, 5.1-95121 Catania, Italy</td>
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<td></td>
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<td>2 Dipartimento di Chimica e Tecnologie Chimiche, CTC, Università della Calabria, via P. Bucci. 1-87036 Arcavacata di Rende (CS), Italy</td>
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<td></td>
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<td>3 IMM-CNR, via Santa Sofia 64.1-95123 Catania, Italy</td>
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<tr>
<td>6:40 PM – 7:00 PM</td>
<td>EXAFS Study of Bimetallic Nanoparticles Atomic Structure in Metal-Carbon Catalysts Pt Ag/C: Determination of Components Distribution in the Range from the Uniform Solid Solutions to “Core-Shell” Structures</td>
<td>1 Vasily V. Pryadchenko, 1 Artem D. Galustov, 1 Elena B. Mikheykina, 1 Vasily V. Srbionyan, 1 Leon A. Avakyan, 1 Yan V. Zubavichus, 1 Ivo Zizak, 1 Vladimir E. Guterman, 1 Luspegan A. Bugaev</td>
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<td>1 Southern Federal University, B. Sadovaya Str. 105/42, 344006 Rostov-on-Don, Russia</td>
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<td>2 Kurchatov Center for Synchrotron Radiation and Nanotechnology, National Research Centre “Kurchatov Institute”, Academic Kurchatov Sq. T. 1, 123182 Moscow, Russia</td>
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<td>3 Institute Nanometre Optics and Technology, Helmholtz-Zentrum Berlin, Glienicker Str. 100, 14109 Berlin, Germany</td>
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### July 17 (Thursday)

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<th>Time</th>
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<tr>
<td>9:00 AM – 7:00 PM</td>
<td>Registration</td>
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<tr>
<td>10:00 AM – 6:00 PM</td>
<td>Exhibition</td>
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<tr>
<td>10:00 AM – 11:30 AM</td>
<td>Plenary session</td>
<td>Location: Lomonosov Building Conference Hall</td>
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<tr>
<td>10:00 AM – 10:45 AM</td>
<td>Plenary lecture</td>
<td>Nanostructured Semiconductors for Opto- and Nanoelectronics</td>
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<td>1 Alexander L. Aseev, 1 Anatoly V. Dvurechenskii, 1 Alexander V. Latyshev</td>
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<td>Rzhanyov Institute of Semiconductor Physics, Siberian Branch of the Russian Academy of Sciences, pr. Lavrentieva 13, Novosibirsk, 630090 Russia</td>
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<tr>
<td>10:45 AM – 11:30 AM</td>
<td>Plenary lecture</td>
<td>Imaging Nanomaterials in Three Dimensions</td>
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<td>1 Gustaaf Van Tendeloo, 1 Sara Bals</td>
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<td>EMAT research group, University of Antwerp, Belgium</td>
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<td>11:30 AM – 12:00 PM</td>
<td>Coffee break</td>
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<tr>
<td>12:00 PM – 2:00 PM</td>
<td>Poster session</td>
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<tr>
<td>1:00 PM – 3:00 PM</td>
<td>Lunch</td>
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<tr>
<td>3:00 PM – 5:00 PM</td>
<td>Oral sessions 01 – 11 (parallel)</td>
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<tr>
<td>5:00 PM – 5:30 PM</td>
<td>Coffee break</td>
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<td>5:30 PM – 7:20 PM</td>
<td>Oral sessions 01 – 11 (parallel)</td>
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July 17 (Thursday)

Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

3:00 PM – 4:50 PM
Location: B3
Oral session
Graphene-Based Nanostructures and Nanotubes
Chairman: Professor Eugene A. Goodilin

3:00 PM – 3:30 PM
Invited lecture
Guided Nanowires: New Building Blocks for Self-Integrated Nanosystems
1 Ernesto Joselevich
Weizmann Institute of Science, Herzl 234, Rehovot 76100 Israel

3:30 PM – 3:50 PM
Atomic Resolution Structure Study of Fluorinated Graphene by Phase Restoration of Focal Series of Images
1 Reza J. Kashtiban, 2 Mark A. Dyson, 3 Rahul R. Nair, 4 Recep Zan, 5 Jeremy Sloan
1 The University of Warwick, Coventry, UK
2 The University of Manchester, Manchester, UK
3 University of Limerick, Limerick, Ireland
4 Niğde University, Niğde, Turkey

3:50 PM – 4:10 PM
Synthesis of PbI₂ Single-Layered Inorganic Nanotubes Encapsulated within Carbon Nanotubes
1 Laura Cabana, 2 Belen Ballesteros, 3 Eudar Batista, 4 Cesar Magen, 5 Raul Arenal
6 Gerard Tobias
1 Institut de Ciencia de Materials de Barcelona (ICMAB-CSIC), Campus UAB, 08193, Bellaterra Barcelona, Spain
2 ICN2 – Institut Català de Nanociencia i Nanotecnologia, Campus UAB, 08193, Bellaterra Barcelona, Spain
3 Instituto de Nanociencia de Aragon (INA), Universidad de Zaragoza, 50018 Zaragoza, Spain
4 Universidad de Zaragoza, 50009 Zaragoza, Spain

4:10 PM – 4:30 PM
Structural Analysis of Cu Nanowires Deposited into Porous Al₂O₃ via Supercritical Fluid Electrodeposition
1 Samuel Marks, 2 Reza Kashtiban, 3 David Smith, 4 David Cook, 5 Charlie Cummings, 6 Richard Beanland, 7 Jeremy Sloan
8 University Of Warwick, Coventry, UK
9 University Of Southampton, Southampton, UK

4:30 PM – 4:50 PM
Quasi-Graphite: Hybrid Graphene-Nanotube Structure with Tunable Properties
1 Maria G. Ganchenkova, 2 Vladimir A. Borodin
1 National Research Nuclear University MEPhI, Kashirskoe Sh. 31, 115409, Moscow, Russia
2 NRC Kurchatov Institute, Kurchatov Sq. 1, 123182, Moscow, Russia

July 17 (Thursday)

Section 02 – Thin Films and Heterostructures, 2D and 3D Nanofabrication

3:00 PM – 5:00 PM
Location: C1
Oral session
Chairman: Professor Carl Thompson

3:00 PM – 3:30 PM
Invited lecture
Advanced Hard Nanocomposite Coatings with Unique Properties
1 Jindrich Musil
University of West Bohemia, Univerzitni 8, CZ-306 14 Plzen, Czech Republic

3:30 PM – 4:00 PM
Invited lecture
Irradiation Effect on Structure and Properties of Thin Films
1 Rostislav A. Andrievski
Institute of Problems of Chemical Physics, Russian Academy of Sciences, Semenov Prospect, 1, Chernogolovka, Moscow Region 142432, Russia

4:00 PM – 4:20 PM
Nucleation and Growth of Ordered Ge Nanoislands on Si Surface Patterned by Ion Irradiation
1 Zhanna V. Smagina, 2 Anatoly V. Dvurechenskii, 3 Pavel L. Novikov, 4 Alexey V. Nenashev, 5 Polina A. Kuchinskaya
1 Institute of Semiconductor Physics SB RAS, Lavrentjeva 13, Novosibirsk, 630090, Russia

4:20 PM – 4:40 PM
Advanced Fluorinated Graphene-Based Materials: New Approach for Creation and Application Perspectives
1 Nadezhda A. Nebogatikova, 2 Irina V. Antonova, 3 Viktor Ya. Prinz
1 Rzhakov Institute of Semiconductors Physics SB RAS, Novosibirsk, 630090, Lavrent’ev av. 13, Russia

4:40 PM – 5:00 PM
The Investigation of Phase Transition between Multilayered Graphene and Quasi-2D-Diamond Films
1 Pavel B. Sorokin, 2 Alexander G. Kvashnin, 3 Leonid A. Chernozatskii, 4 Boris I. Yakobson
1 Technological Institute for Superhard and Novel Carbon Materials, 7 a Centralnaya street, Troitsk, Moscow, Russia
2 Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, 4 Kosygin st., Moscow, Russia
3 Department of Mechanical Engineering & Materials Science and the Smalley Institute for Nanoscience Science and Technology, Rice University, Houston, Texas, USA
### Section 03 – Nanoceramics

<table>
<thead>
<tr>
<th>3:00 PM – 4:50 PM</th>
<th>Oral session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location:</strong> F2</td>
<td>Chairmen: Professor Sergey M. Barinov, Dr. Julietta Rau</td>
</tr>
</tbody>
</table>

**Invited lecture**
Nanostructural Superconducting Materials for Fault Current Limiters, Cryogenic Electric Machines, High-Performance Magnets, and Magnetic Bearings
1. Tatiana A. Prikhna
   - Institute for Superhard Materials of the National Academy of Sciences of Ukraine, Institute for Superhard Materials of the National Academy of Sciences of Ukraine

<table>
<thead>
<tr>
<th>3:30 PM – 4:00 PM</th>
<th>Invited lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bipolar Redox-Based Resistive Switching in Binary Metal Oxides</td>
<td>Vikas Rana, 1 Rainer Waser</td>
</tr>
<tr>
<td>Forschungszentrum Juelich, PGI-7, Forschungszentrum Jülich, S2425 Jülich</td>
<td></td>
</tr>
</tbody>
</table>

**Invited lecture**
Self-Sustained Synthesis of 2D-Nano Materials
1. Alexander S. Mukasyan
   - University Of Notre Dame, Department of Department of Chemical and Biomolecular Engineering University of Notre Dame, Notre Dame, IN, 46556, USA

<table>
<thead>
<tr>
<th>4:00 PM – 4:50 PM</th>
<th>Nanostructured Powders for Rare Earth Oxides Based Ceramics – From Laboratory to Production</th>
</tr>
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<tbody>
<tr>
<td>1. Georgy A. Dosovitskiy, 1 Alexander L. Mikhin, 1 Daria E. Kuznetsova, 1 Konstantin B. Bogatov, 1 Alexey E. Dosovitskiy</td>
<td></td>
</tr>
<tr>
<td>Institute of Chemical Reagents and High Purity Chemical Substances, IREA, 107076, Moscow, Bogorodsky val, 3, Russia</td>
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### Section 04 – Bulk Metallic Nanomaterials

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<thead>
<tr>
<th>3:00 PM – 5:00 PM</th>
<th>Oral session</th>
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<tbody>
<tr>
<td><strong>Location:</strong> E1</td>
<td>Chairmen: Professor Sergei Dobatkin</td>
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</tbody>
</table>

**Invited lecture**
Designing Bulk Functional Nanomaterials By Severe Plastic Deformation Techniques
1. Michael J. Zehetbauer
   - University of Vienna, Faculty of Physics, Research Group Physics of Nanostructured Materials, Boltzmanngasse 5, A-1090 Wien, Austria

<table>
<thead>
<tr>
<th>3:30 PM – 4:00 PM</th>
<th>Invited lecture</th>
</tr>
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<tbody>
<tr>
<td>Investigation of the Mechanical Properties and Deformation Behaviour of Bulk Metallic Glassy and Mixed-Phase Nanostructured Alloys</td>
<td>Dmitri V. Louzguine-Luzgin, 1 V. Yu. Zadorozhnyy, 1 A. I. Bazlov, 1 O. M. Packwood, 2 G. Q. Xie</td>
</tr>
<tr>
<td>1. WPI Advanced Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan</td>
<td></td>
</tr>
<tr>
<td>2. National University of Science and Technology «MISIS», Leninsky prosp., 4, Moscow, 119049, Russia</td>
<td></td>
</tr>
<tr>
<td>1. Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan</td>
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<tr>
<th>4:00 PM – 4:20 PM</th>
<th>Composition and Grain Size Effects on the Structural and Mechanical Properties of CuZr Nanoglasses</th>
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<tbody>
<tr>
<td>Paulo S. Branicio, 1 Sara Adibi, 1 Yong Wei Zhang, 2 Shailendra P. Joshi</td>
<td></td>
</tr>
<tr>
<td>1. Institute of High Performance Computing, Singapore, A*STAR, 138632, Singapore</td>
<td></td>
</tr>
<tr>
<td>2. Mechanical Engineering Department, National University of Singapore, National University of Singapore, 117576, Singapore</td>
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<tr>
<th>4:20 PM – 4:40 PM</th>
<th>Microstructure and Properties of UFG Metals and Alloys</th>
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<tbody>
<tr>
<td>Lembit A. Kommel</td>
<td></td>
</tr>
<tr>
<td>Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia</td>
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</tbody>
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<tr>
<th>4:40 PM – 5:00 PM</th>
<th>Multiscale Simulation of Atomic Structure in the Vicinity of Nanovoids</th>
</tr>
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<tbody>
<tr>
<td>Andrei V. Nazarov, 1 Irina V. Ershova, 1 Alexander A. Zaluzhnyi</td>
<td></td>
</tr>
<tr>
<td>1. National research nuclear university (MEPhI), Kashirskoe shosse 31, Russia</td>
<td></td>
</tr>
<tr>
<td>2. SSC RF Institute for Theoretical and Experimental Physics (ITEP), Bolshaya Cheremushkinskaya 25, 117218, Moscow, Russia</td>
<td></td>
</tr>
</tbody>
</table>
### July 17 (Thursday)

**Section 05 – Nanocomposites and Hybrid Nanomaterials**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Author(s)</th>
</tr>
</thead>
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<tr>
<td>3:00 PM – 4:30 PM</td>
<td>Oral session</td>
<td>Chairman: Dr. Davide Calestani</td>
</tr>
</tbody>
</table>
| 3:00 PM – 3:30 PM | Invited lecture                      | Characterization of Polymer Nanocomposites Using AFM-Based Nanothermal, Nanomechanical, and Nanoscale Infrared Spectroscopy and Imaging  
  1. Curtis Marcott,  
  2. Vera Neudachina,  
  3. Michael Lo,  
  4. Kevin Kjoller,  
  5. Roshan Shetty,  
  6. Qichi Hu,  
  7. ogóhan Dillon,  
  8. Craig B. Prater   
  9. Department of Materials Science and Engineering, University of Delaware, Newark, Delaware, USA   
  10. Light Light Solutions, Athens, GA, USA   
  11. Intertech, Moscow, Russia   
  12. Analy Instruments, Santa Barbara, CA, USA   |
| 3:30 PM – 3:50 PM | Enhanced Gold Film-Coupled Graphene-Based Plasmonic Nanosensor |  
  1. Thomas Maurel,  
  2. Pierre-Michel Adam,  
  3. Bahram Djafari-Rouhan,  
  4. Abdelatif Akjouj,  
  5. Rabah Boukherrouba,  
  6. Jerome Plain,  
  7. Michel Kazan,  
  8. Ziad Herro,  
  9. Jean-Pierre Vicot,  
  10. Jeremie Beal,  
  11. Palan Subramanian,  
  12. Gatan Leveque,  
  13. Rana Nicolas,  
  14. Sabine Szunerits   
  1. Université de Technologie de Troyes-Laboratoire de Nanotechnologie et d’Instrumentation Optique, 12 rue Marie Curie, CS 42060, 10004 Troyes Cedex, France   
  2. Institut d’Electronique, de Microélectronique et de Nanotechnologie (IEMN, CNRS-8520), Cité Scientifique, Avenue Poincaré, 59652 Villeneuve d’Ascq, France   
  3. Institut de Recherche Interdisciplinaire (IRI), USR-3078, Université Lille 1, 59 Avenue de Halley, BP 70478, Villeneuve d’Ascq 59658, France   
  4. Université Libanaise, EDST, Plateforme de Recherche en NanoSciences et NanoTechnologie PR2N, FananBP 90239, Lebanon   
  5. Department of Physics, American University of Beirut, Riad El-Solh, 1107 2020 Beirut, Lebanon   |
| 3:50 PM – 4:10 PM | 0-3 Connectivity 2-phase PZT/PVDF Composite Hydrophone |  
  1. Sara Qaraz,  
  2. Muhammad Siddiq,  
  3. Muhammad Altaf   
  1. National Center for Physics, Quaid-i-Azam University, Islamabad 45320, Pakistan   
  2. Quaid-i-Azam University, Islamabad 45320, Pakistan   
  3. Institute of Industrial Control Systems, Islamabad, Pakistan   |
| 4:10 PM – 4:30 PM | Photosensitive Nanocomposites ”Metal Oxide / CdSe QD” for Gas Sensor Application |  
  1. Artyom S. Chizhoy,  
  2. Marina N. Rumyantseva,  
  3. Roman B. Vasilyev,  
  4. Artym M. Abakumov,  
  5. Alexander M. Gaskov   
  1. Lomonosov Moscow State University, Moscow, Russia   
  2. University of Antwerp, Antwerp, Belgium   |
### Section 07 – Nanomaterials for Energy

#### 3:00 PM – 5:00 PM
**Location: B2**

**Oral session**
Chairman: Dr. Catherine Bougerol

**3:00 PM – 3:20 PM**
**Thermophotovoltaic Fuel-to-Electricity Conversion Enabled by High-Temperature Photonic Crystals**
1. Walker Chan
2. Veronika Stelmakh
3. Veronika Rinnerbauer
4. Jay J. Senkevich
5. Marin Soljačić
6. John D. Joannopoulos
7. Ivan Celanovic

1. Massachusetts Institute of Technology, 77 Massachusetts Avenue Cambridge MA 02139 USA
2. Johannes Kepler University, Altenbergerstr. 69 4040 Linz, Austria

#### 3:20 PM – 3:40 PM
**Tantalum Tungsten Alloy Photonic Crystals for High-Temperature Energy Conversion**

1. Veronika Stelmakh
2. Veronika Rinnerbauer
3. Jay J. Senkevich
4. John D. Joannopoulos
5. Marin Soljačić
6. Ivan Celanovic

1. Massachusetts Institute of Technology, Institute for Soldier Nanotechnologies, 77 Massachusetts Avenue Cambridge MA 02139 USA
2. Johannes Kepler University Linz, Institute of Semiconductor and Solid State Physics, Altenbergerstr. 69 4040 Linz, Austria

#### 3:40 PM – 4:00 PM
**Intrinsic Inhomogeneity in Superconducting and Non-Superconducting Rb₂Fe₄Se₅ at Nano Level**

1. Maria V. Roslova
2. Oleg I. Lebedev
3. Igor V. Morozov
4. Andrei V. Shevelkov

1. Lomonosov Moscow State University, Leninskie Gory 1-3, 119991 Moscow, Russia
2. CRISTMAT, CNRS-ENSICAEN, UMR 6508, CNRS-ENSICAEN, 14050 Caen, France

#### 4:00 PM – 4:20 PM
**Electron Microscopy of New Superconducting Materials for Energy Applications**

1. Alexander L. Vasiliev
2. Michail Yu. Presnyakov
3. Vladimir I. Bondarenko
4. Alexey A. Mikhtuhkin
5. Igor A. Karateev
6. Mikhail V. Kovalchuk
7. Elena A. Dermunova
8. Irina P. Makarova
9. Evgeny V. Antipov

1. NRC "Kurchatov Institute", Kurchatova sq., 1 Moscow 123182, Russia
2. Institute of Crystallography RAS, Leninskiy pr.59, Moscow 119333, Russia
3. Bochvar institute of nonorganic materials, Rogova Sa, Moscow 123098, Russia
4. Chemistry Department, Moscow State University, Chemistry Department Moscow State University, 119991 Moscow, Russia

#### 4:20 PM – 4:40 PM
**Nanocarbon-Inorganic Hybrid Materials as Next-Generation Photocatalysts**

1. Dominik Eder
2. University of Muenster, Corrensstrasse 28-30, Germany

#### 4:40 PM – 5:00 PM
**Synthesis of Nanocrystalline HoN Particles for Magnetic Refrigerant in Hydrogen Storage System**

1. Dongsoo Kim
2. Jongbin Ahn
3. Kookchae Chung

1. Korea Institute of Materials Science, 797 Changwondaero, Seongsan-gu, Changwon, Gyeongnam, 642-831, South Korea

---

### Section 08 – Biological and Biomedical Nanomaterials

#### 3:00 PM – 4:40 PM
**Invited lecture**
DOTA-Functionalized Magnetite Nanoparticles as Contrast Agents for MRI/PET Double Imaging
1. Guillaume Thomas
2. Frederic Demoisson
3. Julien Boudon
4. Jeremy Paris
5. Nadine Millot

1. Laboratoire Interdisciplinaire Carnot de Bourgogne, Universite de Bourgogne, UMR 6303 CNRS-Universite de Bourgogne, 9 Av. A. Savary, BP 47870 F-21078 DIJON Cedex, France

**Invited lecture**
Design of Water Soluble Fulleren Derivatives as Promising Lead Compounds for Antiviral Pharmaceuticals
1. Pavel A. Troshin
2. Ekaterina A. Khakina
3. Regina R. Klimova
4. Sergei I. Troyanov
5. Natalia E. Fedorova
6. Alla A. Kushch

1. Institute for Problems of Chemical Physics of RAS, Semenov ave. 1, Cher-nogolovka, Moscow region, 142432, Russia
2. D.I. Ivanovsky Institute of Virology of the Ministry of Health and Social Development of the Russian Federation, Moscow, Russia
3. M. V. Lomonosov Moscow State University, Department of Fundamental Physical and Chemical Engineering, Leninskiy gory, Moscow, 119991, Russia
4. Rega Institute for Medical Research, Minderbroedersstraat 10, B-3000, Leuven, Belgium

#### 3:30 PM – 4:00 PM
**Chitosan-Dextran Sulfate Nanoparticles for Ocular Drug Delivery**

1. Wanachat Chaiyasan
2. Waree Tiyaboonchai
3. Sangly P. Srinivas
4. Uday B Kompella
5. Sakonwun Prapertbut

1. Naresuan University, Faculty of Pharmaceutical Sciences, Phitsanulok, Thailand
2. Indiana University, School of Optometry, Bloomington, Indiana, United States
3. University of Colorado, Pharmaceutical Sciences, Denver, Colorado, United States

#### 4:00 PM – 4:20 PM
**Lutien-Loaded Chitosan-Dextran Sulfate Nanoparticles: Development and Characterization**

1. Waree Tiyaboonchai
2. Wanachat Chaiyasan
3. Sangly P. Srinivas
4. Sakonwun Prapertbut
5. Uday B Kompella
6. Sakonwun Prapertbut

1. Naresuan University, Faculty of Pharmaceutical Sciences, Phitsanulok, Thailand
2. Indiana University, School of Optometry, Bloomington, Indiana, United States
3. University of Colorado, Pharmaceutical Sciences, Denver, Colorado, United States
### Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

<table>
<thead>
<tr>
<th>Time</th>
<th>Oral session</th>
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<tr>
<td>3:00 PM – 4:50 PM</td>
<td>Oral session: Professor Alberto Carpinteri</td>
</tr>
<tr>
<td>3:00 PM – 3:30 PM</td>
<td><strong>Invited lecture</strong>&lt;br&gt;Some Current Trends in Mechanics of Nanomaterials&lt;br&gt;1 Robert V. Goldstein&lt;br&gt;AYuISHlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences, 119526, Moscow, pr. Vernadskogo, 101-1, Russia</td>
</tr>
<tr>
<td>3:30 PM – 3:50 PM</td>
<td>Mechanical Properties of Nanomaterials Based on Graphene&lt;br&gt;Leonid A. Chernozatonskii&lt;br&gt;Institute of biochemical physics, Russian Academy of Sciences, 4 Kosygin St., Moscow 119334, Russia</td>
</tr>
<tr>
<td>3:50 PM – 4:10 PM</td>
<td>Rectangular Bilayered Graphene Nanomeshes: Structures and Properties&lt;br&gt;Victor A. Demin, Leonid A. Chernozatonskii&lt;br&gt;IBCP RAS, 119334, Moscow, Kosygin, 4, Russia</td>
</tr>
<tr>
<td>4:10 PM – 4:30 PM</td>
<td>Discrete-Continuum Modeling of Carbon-Based Nanomaterials Deformation and Fracture&lt;br&gt;Alexander Chentsov&lt;br&gt;IPMEch RAS, Vernadskogo prosp. 101-1, Russia</td>
</tr>
<tr>
<td>4:30 PM – 4:50 PM</td>
<td>Cubic, Hexagonal and Rhombohedral Nano/Microtubes with Curvilinear Anisotropy&lt;br&gt;Robert V. Goldstein, Valentin A. Gorodtsov, Dmitriy S. Lisovenko, Mihail A. Volkov&lt;br&gt;AYuISHinsky Institute for Problems in Mechanics RAS, prospect Vernadskogo 101, b1, Moscow, 119526, Russia</td>
</tr>
<tr>
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<td>Elastic and Dynamical Properties of Differential Graphene Resonator&lt;br&gt;Igor E. Beninskii, Dmitry A. Inditev, Nikita F. Morozov, Lev V. Shchukin, Dmitriy Yu. Skubov&lt;br&gt;Institute for Problems in Mechanical Engineering of Russian Academy of Sciences, 199178, St. Petersburg, Bol'shoy pr. V.O., 61, Russia</td>
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### Section 10 – Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics

<table>
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<th>Time</th>
<th>Oral session</th>
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<tbody>
<tr>
<td>3:00 PM – 4:20 PM</td>
<td>Oral session: Professor Vladimir G. Dubrovskii</td>
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<tr>
<td>3:00 PM – 3:30 PM</td>
<td><strong>Invited lecture</strong>&lt;br&gt;“Green” Laser-Ablative Synthesis of Ultrapure Nanophotonic Materials&lt;br&gt;Andrei V. Kabashin&lt;br&gt;Laboratoire LP3 (UMR 7341 CNRS), Aix-Marseille University, Case 917, 13288 Marseille, France</td>
</tr>
<tr>
<td>3:30 PM – 4:00 PM</td>
<td>Invited lecture&lt;br&gt;Semiconductor Quantum Dot Lasers: High-Power Short Pulse Generation, Two-State Lasing and Sensing Applications&lt;br&gt;Stefan Breuer&lt;br&gt;Institute of Applied Physics, Technische Universitat Darmstadt, Schlossgartenstr. 7, 64289 Darmstadt, Germany</td>
</tr>
<tr>
<td>4:00 PM – 4:20 PM</td>
<td>The Influence of Morphology and Structure on Magnetic Properties of FePd-Cu Thin Alloy Films Nanopatterned by Self-Assembly Methods&lt;br&gt;Michal Krupinski, Marcin Perzanowski, Yevhen Zabila, Arkadiusz Zarzycki, Marta Marszałek&lt;br&gt;Institute of Nuclear Physics Polish Academy of Sciences, Radzikowskiego 152, 31-342 Krakow, Poland</td>
</tr>
<tr>
<td>5:00 PM – 5:30 PM</td>
<td>Coffee break</td>
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<tr>
<td>5:30 PM – 7:20 PM</td>
<td>Oral sessions 01 – 11 (parallel)</td>
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</table>
July 17 (Thursday)

Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

5:30 PM – 7:20 PM
Location: B3
Oral session
2D Exfoliated Nanostructures and Inorganic Nanotubes
Chairman: Professor Yury G. Gogotsi

5:30 PM – 6:00 PM
Invited lecture
Processing and Characterisation of Liquid-Phase Exfoliated Two-Dimensional Nanosheets: Towards Large Scale Production & Energy Storage Applications
1 Beatriz Mendoza-Sanchez, 2 Valeria Nicolosi
1 School of Chemistry, CRANN, Trinity College Dublin, Dublin, Ireland
2 School of Chemistry, School of Physics, CRANN & AMBER, Trinity College Dublin, Dublin, Ireland

6:00 PM – 6:20 PM
Exfoliation of Hexagonal Boron Nitride Particles
1 Alexander Steinman, 1 Andrei Matveev, 2 Dmitri Golberg
1 National university of science and technology “MISiS”, Leninsky prospect 4, 119991 Moscow, Russia
2 National Institute for Materials Science, Namiki 1-1, Tsukuba, Ibaraki 3050044, Japan

6:20 PM – 6:40 PM
Synthesis, Properties and Potential Application of Carbon Nanoscrolls with Polygonal Cross-Section
1 Rinat R. Ismagilov, 1 Sergei A. Malykhin, 1 Andrey M. Alexeev, 1 Alexander N. Obraztsov
1 Lomonosov Moscow State University, Department of Physics, Leninskie Gory, Moscow 119991 Russia

6:40 PM – 7:00 PM
Formation of Heteronanostructures with Quasi-2D Geometry Based on Atomically Thin CdSe And CdTe Nanoplates via Ligand Exchange
1 Maria S. Sokolikova, 1 Elizaveta P. Lazareva, 1 Roman B. Vasiliev, 1 Alexander M. Gaskov
1 Lomonosov Moscow State University, Leninskie Gory, GSP-1, Moscow, 119991 Russia

7:00 PM – 7:20 PM
Hexagonalization of Imogolite Nanotubes
1 Mohamed-Salah Amen, 2 Stephan Rouziere, 1 Erwan Paineau, 1 Antoine Thill, 1 Pascale Launois
1 Laboratory of Solid State Physics, Paris Sud 11 University, B.S10., 91405 Orsay, France
2 Laboratoire Interdisciplinaire sur l’Organisation Nanométrique et Supramoléculaire, CEA Saclay, IRAMIS, LIONS, 91191 Gif-sur-Yvette, France

July 17 (Thursday)

Section 02 – Thin Films and Heterostructures, 2D and 3D Nanofabrication

5:30 PM – 7:20 PM
Location: C1
Oral session
Chairman: Professor Jindrich Musil

5:30 PM – 6:00 PM
Invited lecture
Non-Ideal Behaviors in Atomic Layer Deposition of Functional Chalco-Genide Thin Films
1 Cheol Seang Hwang
1 Seoul National University, Department of Materials Science and Engineering and Inter-university Semiconductor Research Center, 1 Gwanak-ro, Gwanak-gu, Seoul, 151-742, Republic of Korea

6:00 PM – 6:20 PM
ZnO-Based 3-D Structures for Novel Devices
1 Rui Li, 1 Pavel I. Reyes, 1 Yang Zhang, 1 Wen-chiang Hong, 1 Yicheng Lu
1 Department of Electrical and Computer Engineering, Rutgers University, 94 Brett Road, Piscataway, NJ 08854, USA

6:20 PM – 6:40 PM
GeSn Nanocrystals in Ge and Si Matrix
1 Alexander A. Tonkikh, 2 Alexandra A. Suvorova, 1 J Schilling, 3 Nikolai D. Zakharov, 3 Peter Werner
1 The University of Western Australia, 35 Stirling Highway, Crawley 6009, Australia
2 ZIK SiLi-nano, Martin Luther University Halle-Wittenberg, Karl-Freiherr-von-Fritsch-Str. 3, D-06120, Halle(Saale), Germany
3 Max Planck Institute of Microstructure Physics, Weinberg 2, D-06120, Halle(Saale), Germany
4 Institute for Physics of Microstructures RAS, GSP-105, Nizhnii Novgorod, Russia

6:40 PM – 7:00 PM
3D Microfabrication of Molecularly Imprinted Polymers by Light-Activated Electropolymerization on Micromachined Silicon. Characterization and Applications in Sulfadimethoxine Electrochemical Detection
1 Elisabetta Mazzotta, 1 Antonio Turco, 1 Cosimino Malitesta, 2 Salvatore Surdo, 2 Giuseppe Barillaro
1 DI.S.Te.B.A. - Universita’ del Salento, via Monteroni 73100 Lecce, Italy
2 Dip.to di Ingegneria Elettronica - Universit di Pisa, via G. Caruso, 16 56122 Pisa, Italy

7:00 PM – 7:20 PM
Characterization of Ultra-Thin Metal on Silicon Structures for Future Field Effect Devices
1 Bernhard Lutzer, 1 Ole Bethge, 1 Christina Zimmermann, 2 Sinan Simsek, 1 Jürgen Smoliner, 1 Ermericch Bertagnolli
1 Vienna University of Technology, Institute of Solid State Electronics, Florgasse 7/1, 1040 Wien, Austria
### Section 04 – Bulk Metallic Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Authors</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:30 PM – 6:00 PM</td>
<td><strong>Invited lecture</strong>&lt;br&gt;Advanced Technologies and Properties of Consolidated Nanopowder Materials&lt;br&gt;Mikhail Iv. Alimov, ISMAN, 8, Chernogolovka, Moscow Region, 142432, Russia</td>
<td>Chairman: Professor Deliang Zhang</td>
<td>Location: E1</td>
</tr>
<tr>
<td>6:00 PM – 6:20 PM</td>
<td><strong>Features of Dynamic Strain Aging and Formation of a Nanostructured State in Aluminium 6101 Alloy Subjected to SPD</strong>&lt;br&gt;Vil Sitdikov, Marat Hasanov, Pavel Chizhov, Maxim Murashkin, Ruslan Valiev&lt;br&gt;Ufa State Aviation Technical University, Ufa, K. Marx 12, Russia</td>
<td>1 Vil Sitdikov, 1 Marat Hasanov, 1 Pavel Chizhov, 1 Maxim Murashkin, 1 Ruslan Valiev</td>
<td>Moscow State University, Moscow, Leninskie Gory, 1, Russia</td>
</tr>
<tr>
<td>6:20 PM – 6:40 PM</td>
<td><strong>Effect of Severe Cryodeformation on Intergranular Corrosion of 2024 Aluminium Alloy</strong>&lt;br&gt;Stanislav Krymskiy, Elena Avtukravtova, Oleg Sitdikov, Michael Markushev&lt;br&gt;Institute for Metals Superplasticity Problems, 450001, Khalturin str., 39, Ufa, Russia</td>
<td>1 Stanislav Krymskiy, 1 Elena Avtukravtova, 1 Oleg Sitdikov, 1 Michael Markushev</td>
<td>Institute for Metals Superplasticity Problems, 450001, Khalturin str., 39, Ufa, Russia</td>
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</table>

### Section 05 – Nanocomposites and Hybrid Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Authors</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:30 PM – 6:50 PM</td>
<td><strong>Hybrid Metal-Mesogenic Nanosystems</strong>&lt;br&gt;Tatyana I. Shabatina&lt;br&gt;M.V. Lomonosov Moscow State University, Department of Chemistry, Leninskie Gory 1/3, 119991 Moscow, Russia</td>
<td>Chairman: Professor Alexander Gruneis</td>
<td>Location: B4</td>
</tr>
<tr>
<td>5:30 PM – 5:50 PM</td>
<td><strong>Nanostructured Hybrid Metal/Dielectric Thin Films with Outstanding Electrical and Optical Properties</strong>&lt;br&gt;Tapajyoti Das Gupta, Joelle Corde, Sandrine Perruchas, Jean-Pierre Boilot, Alistair Rowe, Thierry Gacon</td>
<td>1 Tapajyoti Das Gupta, 1 Joelle Corde, 1 Sandrine Perruchas, 1 Jean-Pierre Boilot, 1 Alistair Rowe, 1 Thierry Gacon</td>
<td>Ecole Polytechnique, 91128 palaiseau, France</td>
</tr>
<tr>
<td>5:50 PM – 6:10 PM</td>
<td><strong>The Nanothermites: Functional Nanocomposites for Fast Energy Release</strong>&lt;br&gt;Marc Comet, Boris Khasainov, Vincent Pichot, Barbara Baschung, Denis Spitzer&lt;br&gt;Laboratory NS3E, UMR 3208 CNRS/ISL/Uds, BP 70034, 68301 SAINT-LOUIS Cedex, France</td>
<td>1 Marc Comet, 1 Boris Khasainov, 1 Vincent Pichot, 1 Barbara Baschung, 1 Denis Spitzer</td>
<td>1 Laboratory NS3E, UMR 3208 CNRS/ISL/Uds, BP 70034, 68301 SAINT-LOUIS Cedex, France</td>
</tr>
<tr>
<td>6:10 PM – 6:30 PM</td>
<td><strong>Using Hybrid Nanoscope for Research Nanocomposites and Hybrid Nanomaterials</strong>&lt;br&gt;Vladimir D. Gelever, Alecsey Al. Manushkin, Evgeniy E. Usachev&lt;br&gt;Moscow State Technical University for Radioengineering, Electronics and Automation (MSTU MIREA), 5 Sokolinaja gora st., 22, 105275 Moscow, Russia</td>
<td>1 Vladimir D. Gelever, 1 Alecsey Al. Manushkin, 1 Evgeniy E. Usachev</td>
<td>1 Moscow State Technical University for Radioengineering, Electronics and Automation (MSTU MIREA), 5 Sokolinaja gora st., 22, 105275 Moscow, Russia</td>
</tr>
</tbody>
</table>
### July 17 (Thursday)

#### Section 06 – Polymer, Organic and Other Soft Matter Materials

<table>
<thead>
<tr>
<th>5:30 PM – 6:00 PM</th>
<th>Oral session</th>
<th>Chairman Professor Sergey Vatsadze</th>
</tr>
</thead>
</table>
| **Invited lecture** | Biomimetic Soft Microorigami: Smart 3D Micro-Constructs from Self-Folding Polymer Films | Leonid Ionov  
1 Leibniz Institute of Polymer Research, Hohe Str 6; 01069 Dresden, Germany |

<table>
<thead>
<tr>
<th>6:00 PM – 6:30 PM</th>
<th>Oral session</th>
<th>Chairman Professor Sergey Vatsadze</th>
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</thead>
</table>
| **Invited lecture** | Nature-Inspired Synthesis of Soft and Biohybrid Nanomaterials Based on a Smart Use of Natural Hyperbranched Polyelectrolytes – Humic Substances | Irina V. Perminova  
1 Department of Chemistry of the Lomonosov Moscow State University, Leninsky Gory 1-3, Moscow 119991 Russia |

<table>
<thead>
<tr>
<th>6:30 PM – 7:10 PM</th>
<th>Oral session</th>
<th>Chairman Professor Sergey Vatsadze</th>
</tr>
</thead>
</table>
| **New Thermal Superinsulating Materials from Pectin Based Bio-Aerogels** | Arnaud Demilecamps, Cyrielle Rudaz, Claudia Hildenbrand, Arnaud Rigacci, Tatiana Budtova  
1 Centre for material forming (CEMEF) Mines ParisTech, 1 Rue Claude Daunessé, Sophia Antipolis, France  
2 Centre de Recherche en Études et Environnements (PERSÉE) Mines ParisTech, 1 Rue Claude Daunessé, Sophia Antipolis, France |

<table>
<thead>
<tr>
<th>7:10 PM – 7:30 PM</th>
<th>Oral session</th>
<th>Chairman Professor Sergey Vatsadze</th>
</tr>
</thead>
</table>
| **Formation of Poly(ester-block-4-vinyl pyridine) Nanoreactors in Solutions in Carbonic Acid** | Marina A. Pigaleva, Marat O. Gallyamov, Martin Möller, Alexei R. Khokhlov  
1 Faculty of Physics, Lomonosov Moscow State University, Leninsky Gory 1-2, GSP-1, Moscow 119991, Russian Federation  
2 DWI Leibniz – Institut für Interactive Materials, Forckenbeckstr. 50, Aachen D-52056, Germany |

### July 17 (Thursday)

#### Section 07 – Nanomaterials for Energy

<table>
<thead>
<tr>
<th>5:30 PM – 6:40 PM</th>
<th>Oral session</th>
<th>Chairman Professor Andrei Shevelkov</th>
</tr>
</thead>
</table>
| **Invited lecture** | Advance Transmission Electron Microscopy of Epitaxy-Enabled Morphology Controlling ITO Nanowires | Oleg I. Lebedev, Stuart Turner, Youde Shen, Tom Wu  
1 Laboratoire CRISMAT, UMR 6508, CNRS ENSICAEN, F-14050 Caen, France  
2 EMAT, Department of Physics, University of Antwerp, B-2020, Antwerp, Belgium  
3 Division of Physics and Applied Physics, Nanyang Technological University, 637371 Singapore  
4 Materials Science and Engineering, King Abdullah University of Science and Technology, Thuwal 23955, Saudi Arabia |

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<tr>
<th>6:00 PM – 6:20 PM</th>
<th>Oral session</th>
<th>Chairman Professor Andrei Shevelkov</th>
</tr>
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</table>
| **Multiresonant Coherent Multidimensional Spectroscopy of Semiconductor Nanocrystals** | Andrei V. Pakoulev, Danial D. Kohler, John C. Wright  
1 University of Wisconsin-Madison, 1101 University Avenue, Madison, Wisconsin, 53705 USA |

<table>
<thead>
<tr>
<th>6:20 PM – 6:40 PM</th>
<th>Oral session</th>
<th>Chairman Professor Andrei Shevelkov</th>
</tr>
</thead>
</table>
| **Development of Nanomaterials and Nanotechnologies in Nuclear Industry of Russia** | Vadim F. Petrunin  
1 Nation Investigation Nuclear University, 31, Kashirskoe av., Moscow, 115409, Russia |
### Section 08 – Biological and Biomedical Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Oral session</th>
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<tbody>
<tr>
<td>5:30 PM – 5:50 PM</td>
<td>A Fluorescent Microbead Sensor for Detecting Nitric Oxide (NO)</td>
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<tr>
<td></td>
<td>1 Eunhae Koo, Korea Institute of ceramic Engineering and Technology,</td>
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<td>Digital-ro 10-gil Geumcheon-gu, Seoul, Korea</td>
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<td>5:50 PM – 6:10 PM</td>
<td>Structural and Optical Properties of DNA-Based Silver Fluorescent Nanoclusters</td>
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<td></td>
<td>1 Alexei Kononov, 1 Ivan Volkov, 1 Ruslan Ramazanov, 1 Pavel Serdobintsev,</td>
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<td></td>
<td>1 Viktorija Karpenko, 1 Dmitrij Usachov, 1 Vera Adamchuk</td>
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<td></td>
<td>1 Saint Petersburg State University, Ulyanovskaya 1, Saint-Petersburg,</td>
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<tr>
<td></td>
<td>198504 Russia</td>
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<tr>
<td>6:10 PM – 6:30 PM</td>
<td>Induced Antimicrobial Resistance to Nanosilver</td>
</tr>
<tr>
<td></td>
<td>1 Cindy Gunawan, 2 Wey Yang Teoh, 1 Christopher P. Marquis, 1 Rose Amal</td>
</tr>
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<td></td>
<td>1 UNSW Australia, Sydney, Australia</td>
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<td></td>
<td>2 City University of Hong Kong, Kowloon, Hong Kong S. A. R</td>
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### Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

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<tr>
<td>5:30 PM – 6:00 PM</td>
<td>Invited lecture</td>
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<tr>
<td></td>
<td>Mechanical Effects in Contact Interaction of the Surfaces at Micro- and</td>
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<td></td>
<td>Nanoscales</td>
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<tr>
<td></td>
<td>1 Irina G. Goryacheva, 1 Nikolai K. Myshkin</td>
</tr>
<tr>
<td></td>
<td>1 Ishlinsky Institute for Problems in Mechanics of Russian Academy of Sciences,</td>
</tr>
<tr>
<td></td>
<td>Prospect Vernadskogo, 101 Bld.1, Moscow 119526 Russia</td>
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<tr>
<td></td>
<td>2 V.A. Bely Metal-Polymer Research Institute of NASB, 32A Kirov Street,</td>
</tr>
<tr>
<td></td>
<td>246050 Gomel, Belarus</td>
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<tr>
<td>6:00 PM – 6:20 PM</td>
<td>Application of Piezoresonance Probe for the Mapping of Nanostructured</td>
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<tr>
<td></td>
<td>Materials Mechanical Properties</td>
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<tr>
<td></td>
<td>1 Igor I. Maslenikov, 2 Alexey S. Useinov, 1 Vladimir N. Reshetov</td>
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<tr>
<td></td>
<td>1 Moscow Institute of Physics and Technology, 9 Institutskiy per., Dolgoprudny,</td>
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<td></td>
<td>Moscow Region, Russia</td>
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<td></td>
<td>2 Technological Institute for Superhard and Novel Carbon Materials, 7a Central-</td>
</tr>
<tr>
<td></td>
<td>naya Street, Troitsk, Moscow, Russia</td>
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<tr>
<td></td>
<td>3 National Research Nuclear University “MEPhI”, 31 Kashirskoe Hwy, Moscow,</td>
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<td></td>
<td>Russia</td>
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<tr>
<td>6:20 PM – 6:40 PM</td>
<td>Following the Deformation Processes of Nanocrystalline Pd Au1-x by the</td>
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<td>Combination of In-Situ Straining and ACOM-TEM</td>
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<td></td>
<td>1 Aaron Kobler, 1 Christian Kuebel, 2 Horst Hahn</td>
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<tr>
<td></td>
<td>1 Karlsruhe Institute of Technology (KIT), 76021 Karlsruhe, Germany</td>
</tr>
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<td></td>
<td>2 Technische Universität Darmstadt (TUD), 64287 Darmstadt, Germany</td>
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<tr>
<td>6:40 PM – 7:00 PM</td>
<td>From Thin Film Buckling to Interfacial Adhesion</td>
</tr>
<tr>
<td></td>
<td>1 Sergey Grachev, 1 Jean-Yvon Faou, 2 Guillaume Parry, 3 Etienne Barthel</td>
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<tr>
<td></td>
<td>1 Surface du Verre et Interfaces, UMR 125 CNRS/Saint-Gobain, 39 quai Lucien</td>
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<td></td>
<td>Lefranc, F-93303 Aubervilliers Cedex, France</td>
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<tr>
<td></td>
<td>2 SIMaP – Laboratoire de Thermodynamique et Physico-Chimie Métallurgiques,</td>
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<tr>
<td></td>
<td>Grenoble-INP, Domaine Universitaire Grenoble, BP75, 38420 Saint Martin</td>
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<td></td>
<td>d’Hères Cedex, France</td>
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<td>7:00 PM – 7:20 PM</td>
<td>The Prediction of Defects in the Carbon Nanostructures Based on the Analysis</td>
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<td></td>
<td>of the Local Stress Field for Atomic Grid</td>
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<td></td>
<td>1 Olga E. Glukhova, 1 Anna S. Kolesnikova, 1 Michael M. Slepechenkov</td>
</tr>
<tr>
<td></td>
<td>1 Saratov State University, Astrakhanskaya street 83, Saratov, 410012 Russia</td>
</tr>
</tbody>
</table>
### Oral session

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Authors</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:30 PM – 6:00 PM</td>
<td><strong>Invited lecture</strong> Crystal Phase Design in III-V Nanowires and Optical Wurtzite-Zincblende Heterostructures</td>
<td>Vladimir G. Dubrovskii&lt;br&gt;1 Saint Petersburg Academic University - Nanotechnology Research and Education Centre of the Russian Academy of Sciences (the Academic University),&lt;br&gt;Khlopina 8/3, 194021 St.-Petersburg, Russia</td>
<td></td>
</tr>
<tr>
<td>6:00 PM – 6:30 PM</td>
<td><strong>Invited lecture</strong> Energy Relaxation of Hot Carriers in Silicon Nanocrystals</td>
<td>Irina N. Yassievich&lt;br&gt;1 Ioffe Physical Technical Institute, Polytechnicheskaya 26, 194021 St. Petersburg, Russia</td>
<td></td>
</tr>
<tr>
<td>6:30 PM – 6:50 PM</td>
<td><strong>Controlled Doping of Semiconductor Nanowires</strong></td>
<td>Yossi Rosenwaks, Ido Amit, Elad Koren, Eliyzer Halpern, Gil Shalev, Alex Henning, Uri Givan, Eric Hemesath, Lincoln J. Lauhon, Ori Hazut, Roie Yerushalmi&lt;br&gt;1 Tel-Aviv University, Tel-Aviv 69978, Israel&lt;br&gt;2 Northwestern University, Evanston, Illinois, United States&lt;br&gt;3 The Hebrew University of Jerusalem, Edmond J. Safra Campus, Givat Ram Jerusalem, 91904 Israel</td>
<td></td>
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<tr>
<td>6:50 PM – 7:10 PM</td>
<td><strong>Stimulated Low-Frequency Raman Scattering in Nanomaterials</strong></td>
<td>Nikolay V. Tcherniega, Anatoly N. Baranov, Heinrich V. Ehrlich, Anna D. Kudryavtseva, Georgi V. Lisichkin, Marina P. Zhilenko&lt;br&gt;1 P.N.Lebedev Physical Institute of the RAS, Leninskii pr., 53, Moscow, 119991, Russia&lt;br&gt;2 M. V. Lomonosov Moscow State University, Vorob’evy Gory, Moscow, 119991, Russia</td>
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<tr>
<td>7:10 PM – 7:30 PM</td>
<td><strong>Femtosecond Intrapulse Evolution of the Transverse Magneto-Optic Kerr Effect in One-Dimensional Iron-Based Magnetoplasmonic Crystal</strong></td>
<td>Aleksandr Yu. Frolov, Polina P. Vabischchevich, Maxim R. Shcherbakov, Tatyana V. Dolgova, Andrey A. Fedyanin&lt;br&gt;1 Faculty of Physics, Lomonosov Moscow State University, Moscow, 119991, Russia</td>
<td></td>
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<tr>
<td>7:30 PM – 10:00 PM</td>
<td>Social event – Conference Banquet</td>
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### July 18 (Friday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>9:00 AM – 12:00 PM</td>
<td>Registration</td>
</tr>
<tr>
<td>10:00 AM – 3:00 PM</td>
<td>Exhibition</td>
</tr>
<tr>
<td>10:00 AM – 12:00 PM</td>
<td>Oral sessions 01 – 11 (parallel)</td>
</tr>
</tbody>
</table>

### Oral sessions 01 – 11 (parallel)

#### Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

<table>
<thead>
<tr>
<th>Time</th>
<th>Oral session</th>
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<tbody>
<tr>
<td>10:00 AM – 11:50 AM</td>
<td><strong>Graphene Derivatives and Their Applications</strong></td>
</tr>
<tr>
<td>Location: B3</td>
<td>Chairman: Professor Ernesto Joselevich</td>
</tr>
<tr>
<td>10:00 AM – 10:30 AM</td>
<td><strong>Invited lecture</strong></td>
</tr>
<tr>
<td></td>
<td><em>Synthetic Graphene Nanoribbons</em></td>
</tr>
<tr>
<td></td>
<td>- Alexander Sinitski</td>
</tr>
<tr>
<td></td>
<td>1 Department of Chemistry and Nebraska Center for Materials and Nanoscience,</td>
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<tr>
<td></td>
<td>University of Nebraska - Lincoln, Lincoln, NE 68588, USA</td>
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<tr>
<td>10:30 AM – 10:50 AM</td>
<td><strong>Graphene Oxide for Effective Radionuclide Removal from Aqueous Solutions</strong></td>
</tr>
<tr>
<td></td>
<td>- Stepan Kalmykov, Anna Romanchuk, Alexander Slesarev, James Tour</td>
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<td></td>
<td>- Lomonosov Moscow State University, Leninsky Gory, 1, bld. 3, Moscow, Russia</td>
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<td></td>
<td>- Rice University, MS-700 6100 Main St., Houston, TX 77005, USA</td>
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<tr>
<td>10:50 AM – 11:10 AM</td>
<td><strong>Fluorination of Isotopically Labelled Bilayer Graphene</strong></td>
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<td></td>
<td>- Johan Ek Weis, Sara Costa, Otakar Frank, Martin Kalbac</td>
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<tr>
<td></td>
<td>- J. Heyrovsky Institute of Physical Chemistry, Dolejškova 3, CZ-18223 Prague,</td>
</tr>
<tr>
<td></td>
<td>Czech Republic</td>
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<tr>
<td>11:10 AM – 11:30 AM</td>
<td><strong>Resistive Switching Nanostructures Based on Graphene Oxide</strong></td>
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<td></td>
<td>- Olesya Kapitanova, Gennady Panin, Andrey Baranov, Tae Won Kang</td>
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<td></td>
<td>- Lomonosov Moscow State University, 1199992, Moscow, Russia</td>
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<td></td>
<td>- Dongguk University, 100715, Seoul, South Korea</td>
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<tr>
<td>11:30 AM – 11:50 PM</td>
<td><strong>Electrical Contacts in Graphene and Carbon Nanotube Transistors</strong></td>
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<tr>
<td></td>
<td>- Vasili Perebeinos</td>
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<tr>
<td></td>
<td>- Skolkovo Institute of Science and Technology, 100 Novaya st., Skolkovo, Mos-</td>
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<td>cow Region, 143025 Russia</td>
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</table>
### Section 02 – Thin Films and Heterostructures, 2D and 3D Nanofabrication

**Oral session**
Chairman: Professor Rostislav Andrievskii

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 AM – 10:30 AM</td>
<td><strong>Invited lecture</strong>&lt;br&gt;Self-Sustained Exothermic Waves in Nanostructured Foils: Macroscopic Behavior, Reaction Mechanisms, Applications</td>
<td>Alexander S. Rogachev, Alexander E. Kudryashov&lt;br&gt;1 National University of Science and Technology «MISiS», 4, Moscow, 119049, Russia&lt;br&gt;1 Institute of Structural Macrokinetics and Materials Science (ISMAN), 142432 Russia, Chernogolovka, Moscow region, acad.Osipyan str., 8, Russia</td>
<td>1 National University of Science and Technology «MISiS», Leninsky prospect, 4, Moscow, 119049, Russia</td>
</tr>
<tr>
<td>10:30 AM – 11:00 AM</td>
<td><strong>Invited lecture</strong>&lt;br&gt;Pulsed Electrospark Deposition of Functional Nanostructured Coatings</td>
<td>Evgeniy I. Zamulaeva, Alexander A. Levashov, Evgeny A. Levashov, Philipp V. Kryukhantsev-Korneev&lt;br&gt;1 National University of Science and Technology «MISiS», Leninsky prospect, 4, Moscow, 119049, Russia&lt;br&gt;1 Bauman Moscow State Technical University, 105005, Moscow, Baumanskaya 2-ya str., Russia</td>
<td>1 National University of Science and Technology «MISiS», Leninsky prospect, 4, Moscow, 119049, Russia</td>
</tr>
<tr>
<td>11:00 AM – 11:20 AM</td>
<td><strong>Study of Mechanical and Tribological Properties of Multinanolayer Ti/Al Coatings</strong></td>
<td>Marina Ya. Bychkova, Mikhail I. Petzhik, Evgeny A. Levashov, Philipp V. Kryukhantsev-Korneev, Petr A. Tsygankov&lt;br&gt;1 National University of Science and Technology «MISiS», Leninsky prospect, 4, Moscow, 119049, Russia&lt;br&gt;1 Bauman Moscow State Technical University, 105005, Moscow, Baumanskaya 2-ya str., Russia</td>
<td>1 National University of Science and Technology «MISiS», Leninsky prospect, 4, Moscow, 119049, Russia</td>
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<tr>
<td>11:20 AM – 11:40 AM</td>
<td><strong>From Ni/Ti Nano-Multilayers to Micro-Joints: A In-Situ Synchrotron Radiation Study</strong></td>
<td>André J. Cavaleiro, A. S. Ramos, F.M.B. Fernandes, C. Baetz, N. Schell, M. T. Vieira&lt;br&gt;1 DEM-FCTUC, Department of Mechanical Engineering, University of Coimbra, R. Luís Reis Santos, 3030-788 Coimbra, Portugal&lt;br&gt;2 CENIMAT/13N, Department of Materials Science, Faculty of Sciences and Technology, University Nova de Lisboa, 2829-516 Caparica, Portugal&lt;br&gt;3 Helmholtz-Zentrum Dresden-Rossendorf (Helmholtz-Zentrum Dresden-Rossendorf), Institute of Ion Beam Physics and Materials Research, D-01314 Dresden, Germany&lt;br&gt;4 Helmholtz-Zentrum Geesthacht, Max-Planck-Str. 1, 21502 Geesthacht, Germany</td>
<td>1 DEM-FCTUC, Department of Mechanical Engineering, University of Coimbra, R. Luís Reis Santos, 3030-788 Coimbra, Portugal&lt;br&gt;2 CENIMAT/13N, Department of Materials Science, Faculty of Sciences and Technology, University Nova de Lisboa, 2829-516 Caparica, Portugal&lt;br&gt;3 Helmholtz-Zentrum Dresden-Rossendorf (Helmholtz-Zentrum Dresden-Rossendorf), Institute of Ion Beam Physics and Materials Research, D-01314 Dresden, Germany&lt;br&gt;4 Helmholtz-Zentrum Geesthacht, Max-Planck-Str. 1, 21502 Geesthacht, Germany</td>
</tr>
<tr>
<td>11:40 AM – 12:00 PM</td>
<td><strong>Intrinsic Stresses in Thin Metal Films on Cu and Silica-Based Substrates</strong></td>
<td>Gregory P. Egorov, Andrey A. Volkov&lt;br&gt;1 National Research Nuclear University “MEPhI”, Kashirskoye shosse 31, Moscow, 115409, Russian Federation</td>
<td>1 National Research Nuclear University “MEPhI”, Kashirskoye shosse 31, Moscow, 115409, Russian Federation</td>
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</table>

### Section 04 – Bulk Metallic Nanomaterials

**Oral session**
Chairman: Professor Yuri Estrin

<table>
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<th>Speaker(s)</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 AM – 10:30 AM</td>
<td><strong>Invited lecture</strong>&lt;br&gt;Microstructures and Mechanical Properties of Bulk Ultrafine Structured Al and Cu based Metal Matrix Nanocomposites Synthesized by Powder Metallurgy</td>
<td>Deliang Zhang, Xun Yao, Dengshan Zhou, Jiamiao Liang, Yifeng Zheng&lt;br&gt;1 State Key Laboratory of Metal Matrix Composites, School of Materials Science and Engineering, Shanghai Jiao Tong University, 800 Dongchuan Road, Shanghai 200240, China&lt;br&gt;2 Waikato Centre for Advanced Materials, School of Engineering, The University of Waikato, Hamilton, New Zealand</td>
<td>1 State Key Laboratory of Metal Matrix Composites, School of Materials Science and Engineering, Shanghai Jiao Tong University, 800 Dongchuan Road, Shanghai 200240, China&lt;br&gt;2 Waikato Centre for Advanced Materials, School of Engineering, The University of Waikato, Hamilton, New Zealand</td>
</tr>
<tr>
<td>10:30 AM – 11:00 AM</td>
<td><strong>Invited lecture</strong>&lt;br&gt;Bulk Nanostructured Al Alloys with Improved Mechanical and Functional Properties</td>
<td>Ilchat Sabirov&lt;br&gt;1 IMDEA Materials Institute, Getafe, Madrid, Spain</td>
<td>1 IMDEA Materials Institute, Getafe, Madrid, Spain</td>
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<tr>
<td>11:00 AM – 11:20 AM</td>
<td><strong>Fatigue Properties of Ultra-Fine Grained Al-Cu-Mg Alloy</strong></td>
<td>Elvira Khafizova, Rinat Islamgaliev, Vil Shtidikov&lt;br&gt;1 Ufa State Aviation Technical University, Karl Marks St 12, 450000 Ufa, Russia</td>
<td>1 Ufa State Aviation Technical University, Karl Marks St 12, 450000 Ufa, Russia</td>
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<tr>
<td>11:20 AM – 11:40 AM</td>
<td><strong>Formation of Amorphous State in TiNiCu Alloy by High Pressure Torsion</strong></td>
<td>Vacheslav Yu. Slesarenko, Dmitry A. Gunderov, Askar R. Kilmamechov, Ruslan Z. Valley&lt;br&gt;1 Saint Petersburg State University, 28 Universitetskiy pr., Saint Petersburg 198504 Russia&lt;br&gt;2 Institute of Physics of Advanced Materials, 12 K. Marx str., Ufa 450000 Russia&lt;br&gt;3 Institute of Nanotechnology, Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz-Platz 1, 76344 Germany</td>
<td>1 Saint Petersburg State University, 28 Universitetskiy pr., Saint Petersburg 198504 Russia&lt;br&gt;2 Institute of Physics of Advanced Materials, 12 K. Marx str., Ufa 450000 Russia&lt;br&gt;3 Institute of Nanotechnology, Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz-Platz 1, 76344 Germany</td>
</tr>
<tr>
<td>11:40 AM – 12:00 PM</td>
<td><strong>Transformation of the TiNi Alloy Microstructure Caused by Repeated Martensitic Transformations B2-B19’</strong></td>
<td>Anna Churakov, Dmitry Gunderov, Alexandr Lukyanov&lt;br&gt;1 Ufa State Aviation Technical University, K. Marks street, 12, Russia&lt;br&gt;2 Institute of Molecular and Crystal Physics RAS, Prospect Oktyabrnya, 71, Russia</td>
<td>1 Ufa State Aviation Technical University, K. Marks street, 12, Russia&lt;br&gt;2 Institute of Molecular and Crystal Physics RAS, Prospect Oktyabrnya, 71, Russia</td>
</tr>
</tbody>
</table>
**July 18 (Friday)**

**Section 06 – Polymer, Organic and Other Soft Matter Materials**

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<thead>
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<th>Time</th>
<th>Oral session</th>
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<td>10:00 AM – 12:00 PM</td>
<td>Oral session Chairmen: Dr. Pavel A. Troshin</td>
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<tr>
<td>10:00 AM – 10:30 AM</td>
<td><strong>Invited lecture</strong></td>
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<tr>
<td>10:30 AM – 11:00 AM</td>
<td><strong>Invited lecture</strong></td>
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<tr>
<td>11:00 AM – 11:20 AM</td>
<td>Conjugated Polymer Self-Organization due to Charge-Transfer Complexation with Small-Molecule Acceptors</td>
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<tr>
<td>11:20 AM – 11:40 AM</td>
<td>High Tunable Thermochromism in Polymer Donor-Acceptor Blends</td>
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<tr>
<td>11:40 AM – 12:00 PM</td>
<td>Design of Photoswitchable Organic Field Effect Transistors for Organic Memory Applications</td>
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</tbody>
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**July 18 (Friday)**

**Section 08 – Biological and Biomedical Nanomaterials**

<table>
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<tr>
<td>10:00 AM – 12:00 PM</td>
<td>Oral session Chairmen: Professor Tatiana K. Bronich</td>
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<tr>
<td>10:00 AM – 11:40 AM</td>
<td>Aqueous Synthesis of Biocompatible Magnetite Nanocrystals with High Saturation Magnetization Values</td>
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<tr>
<td>11:40 AM – 12:00 PM</td>
<td>Interaction of Type I Collagen with TiO₂ Nanoparticles: Evidences of Changes of Supramolecular Organization in the Adsorbed Phase</td>
</tr>
<tr>
<td>11:20 AM – 12:00 PM</td>
<td>Self-Assembly of Fatty Acids on Hydroxylated Aluminum Surface: Nanoscale Organization, Wettability and Effect on Protein Adsorption</td>
</tr>
</tbody>
</table>
July 18 (Friday)

Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

10:00 AM – 11:50 AM
Oral session
Chairman: Professor Leonid Chernozatonskii

10:00 AM – 10:30 AM
Invited lecture
Experimental and Theoretical Study of Physical-Mechanical Properties of Nanoresonators Based on Graphene and Nanowhiskers
1, 2 Alexander O. Golubok, 1, 3 I. S. Mukhin, 4, 5 E. Berinskii, 4, 5 D. A. Indeitsev, 4, 5 A. M. Krivtsov, 4 N. F. Morozov, 4, 5 D. Yu. Skubov, 4, 5 L. V. Shitukin
1 St. Petersburg National Research University of Information Technologies, Mechanics and Optics (ITMO University), Saint-Petersburg, Russia
2 Institute for Analytical Instrumentation RAS, Saint-Petersburg, Russia
3 Institute for Problems in Mechanical Engineering RAS, Saint-Petersburg, Russia
4 St. Petersburg Academic University RAS, Saint-Petersburg, Russia
5 St. Petersburg State Polytechnical University, Saint-Petersburg, Russia

10:30 AM – 10:50 AM
Large-Area Gecko-Inspired Reversible Adhesives with Hierarchical Structure
1 Vladimir A. Seleznev, 1 Victor Ya. Prinz, 1 Ivan A. Korneev
1 Institute of Semiconductor Physics, The Siberian Branch of Russian Academy of Sciences, Lavrentiev Ave. 13, 630090 Novosibirsk, Russia

10:50 AM – 11:10 AM
Mechanical Models of Nanocorrugated 3D Materials
1 Victor Ya. Prinz, 1 Alexander V. Kopilov, 1 Alexander V. Prinz
1 Institute of Semiconductor Physics, The Siberian Branch of Russian Academy of Sciences, Lavrentiev Ave. 13, 630090 Novosibirsk, Russia

11:10 AM – 11:30 AM
On Refined Theory of Microstructure-Dependent Beams and Plates
1 Sergey A. Lurie
1 Inst. of Appl. Mech. (RAS) and Inst. for Problems of Mech (RAS), Leningradskii pr. 7, 125040, Moscow, Russia

11:30 AM – 11:50 AM
Influence of Defects on the State Switching Kinetics and Domain Structure in Quasi-One-Dimensional Nanosystems
1 Boris V. Petukhov
1 Shubnikov Institute of Crystallography RAS, 119333 Moscow, Leninsky pr., 59, Russia

July 18 (Friday)

Section 10 – Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics

10:00 AM – 11:10 AM
Oral session
Chairman: Professor Edik U. Rafailov

10:00 AM – 10:30 AM
Invited lecture
Interaction of Plasmonic Nanostructures and Quantum System: Recent Results
1 Arkadi Chipouline
1 Institute of Applied Physics, Friedrich-Schiller-University of Jena, Max-Wien-Platz 1, D-07743 Jena, Germany

10:30 AM – 10:50 AM
Magnetic Size Effects in Mesoscopically Ordered Silicide Nanoislands
1 Ilan Goldfarb, 1Gil Markovich, 2Wayne Kaplan
1 Tel Aviv University, Israel
2 Technion - Israel Institute of Technology, Israel

10:50 AM – 11:10 AM
Ordered Arrays of Magnetic Nanowires Investigated by Polarized Small-Angle Neutron Scattering
1 Thomas F. Maurer, 2 Stuttgart Gartrot, 3 Frederic Ott, 3 Gregory Chaboussant, 3 Fatih Zighem, 4 Laurent Cagnon, 6 Olivier Fruchart
1 Universite de Technologie de Troyes-Laboratoire de Nanotechnologie et d'Instrumentation Optique, 12 rue Marie Curie, CS 42060, 10004 Troyes Cedex, France
2 LSPM, Institut Galilee, Universite Paris 13, 93430 Villetteuse, France

12:00 PM – 2:00 PM
Lunch

2:00 PM – 4:30 PM
Plenary session. Closing ceremony
Location: Lomonosov Building Conference Hall

2:00 PM – 2:45 PM
Plenary lecture
Building with Artificial Atoms: Programming the Assembly of Multi-Functional Nanocrystal Thin Films through Precise Control of Particle Size and Shape
1 Christopher B. Murray, 1Taejong Paik, 1Xingchen Ye, 1Benjamin T. Diroll, 1Matteo Cargnello, 1Elizabeth E. Gaulding, 1Cherie R. Kagan
1 University of Pennsylvania, 231 South 34th Street, Philadelphia, PA 19104-6323 USA

2:45 PM – 3:30 PM
Plenary lecture
Polymeric Micelles for Drug Delivery
1 Alexander Kabanov
1 Center for Nanotechnology in Drug Delivery, Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, NC 27599, USA

4:00 PM – 4:30 PM
Closing ceremony
### Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

**Poster session**

**July 14 (Monday)**

<table>
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<tr>
<th>Time</th>
<th>Poster session</th>
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<tbody>
<tr>
<td>12:00 PM – 2:00 PM</td>
<td>Two-Dimensional Alignment and Patterning of Single-Walled Carbon Nanotubes Forest 1. Ana P. Mousinho, 2. Ronaldo D. Mansano, 3. Nelson Ordonez 1. University of Sao Paulo, Avenida Luciano Gualberto, TSB, Trav 3, Sao Paulo – SP, Brazil</td>
</tr>
<tr>
<td>pp01.002</td>
<td>Characterization of Metal Oxides Aerosol Nanoparticles Produced by Spark Discharge Method 1. Anna A. Lizunova, 2. Alexey A. Efimov, 3. Victor V. Ivanov 1. Moscow Institute of Physics and Technology, 141700, Dolgoprudnii, Russia 2. LLC RUSNANO Metrology Center, 117036, Moscow, Russia</td>
</tr>
<tr>
<td>pp01.003</td>
<td>Size Effects in Chiral Finite-Length Single-Walled Carbon Nanotubes 1. Andrei V. Tuchin 1. Voronezh State University, 394006, Voronezh, Universitetskaya pl.1, Russia</td>
</tr>
<tr>
<td>pp01.004</td>
<td>Size Effects in Chiral Finite-Length Single-Walled Carbon Nanotubes 1. Andrei V. Tuchin 1. Voronezh State University, 394006, Voronezh, Universitetskaya pl.1, Russia</td>
</tr>
<tr>
<td>pp01.007</td>
<td>Characterization of Metal Oxides Aerosol Nanoparticles Produced by Spark Discharge Method 1. Anna A. Lizunova, 2. Alexey A. Efimov, 3. Victor V. Ivanov 1. Moscow Institute of Physics and Technology, 141700, Dolgoprudnii, Russia 2. LLC RUSNANO Metrology Center, 117036, Moscow, Russia</td>
</tr>
<tr>
<td>pp01.008</td>
<td>Control of Incorporated Nano Particles by Pulsed Plasma CVD In Si, Ge Thin Films 1. Ayana Bhaduri, 2. Partha Chaudhuri 1. Amity School of Applied Sciences, Amity University Haryana, Gurgaon, NCR -122413 India 2. Energy Research Unit, Indian Association for the cultivation of Science, Jadavpur, Kolkata- 700032 India</td>
</tr>
<tr>
<td>pp01.009</td>
<td>Control of Incorporated Nano Particles by Pulsed Plasma CVD In Si, Ge Thin Films 1. Ayana Bhaduri, 2. Partha Chaudhuri 1. Amity School of Applied Sciences, Amity University Haryana, Gurgaon, NCR -122413 India 2. Energy Research Unit, Indian Association for the cultivation of Science, Jadavpur, Kolkata- 700032 India</td>
</tr>
<tr>
<td>pp01.010</td>
<td>Development of Aerosol-Based Technique for Deposition of SiO, Nanoparticles with a Narrow Size Distribution on a Silicon Substrate 1. Semen Cherewinski, 2. Rokas Drevinskis, 3. Martynas Beresna, 4. Andreyy A. Lipovskii, 5. Peter G. Kazansky 1. Institute of Photonics, University of Eastern Finland, P.O.Box 111 Fi-80101 Joensuu, Finland 2. Institute of Physics, Nanotechnology and Telecommunications, St.Petersburg State Polytechnical University, 29 Polytechnicheskaya, 195251 St.-Petersburg, Russia 3. RUSNANO Metrology Center, 10A Prospekt 60-letiya Oktyabrya, Moscow, Russia</td>
</tr>
<tr>
<td>pp01.011</td>
<td>Dichroic Reflectance and Transmittance of Glass-Metal Nanocomposite Modified by Femtosecond Laser Irradiation 1. Semen Cherewinski, 2. Rokas Drevinskis, 3. Martynas Beresna, 4. Andreyy A. Lipovskii, 5. Peter G. Kazansky 1. Institute of Photonics, University of Eastern Finland, P.O.Box 111 Fi-80101 Joensuu, Finland 2. Institute of Physics, Nanotechnology and Telecommunications, St.Petersburg State Polytechnical University, 29 Polytechnicheskaya, 195251 St.-Petersburg, Russia 3. Optoelectronics Research Centre, University of Southampton, SO17 1BJ Southampton, UK 4. Department of Physics and Technology of Nanostructures, St.-Petersburg Academic University, 8/3 Khlopina Str, 194021 St.-Petersburg, Russia</td>
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Effects of Mechanical Treatment on Phase Transformation of γ-Fe₂O₃ Powder
Roman V. Lukashev, Anna F. Alekova, Svetlana K. Korchagina, Fatima Kh. Chibirova
Karpov Institute of Physical Chemistry, 105064, pereulok Obuha, 3-1/2, 6, Moscow, Russia

Fe₃O₄ Nanocolloids with High Heating Efficiency in Magnetic Hyperthermia
Yury V. Kolen’ko, Manuel Bahobre-López, Dmitriy Y. Petrovykh, Jósè Rivas
International Iberian Nanotechnology Laboratory, Av. Mestre José Veiga, 4715-330 Braga, Portugal

Formation and Environmental Significance of PuO₂+x•nH₂O Nanoparticles
Anna Romanchuk, Alexander Egorov, Yan Zubavichus, Stepan Kalmykov
National Research Centre «Kurchatov Institute», Akademika Kurchatova pl. 1., Moscow, Russia

Multifunctionality of the Super Thin Rare-Earth-Doped Gd₂O₃ Nanoparticles
Dragana J. Jovanovic, Tamara V. Gavrilovic, Miroslav D. Dramicanin
Vinča Institute of Nuclear Sciences, University of Belgrade, P.O. Box 522, 11001 Belgrade, Serbia

Preparation and Characterization of a New Clustered Unmodified {C₇₀}ₙ Fullerene Material
Ivan V. Mikheev, Ekaterina S. Khimich, Dmitry S. Volkov, Natalya V. Avramenko, Mikhail A. Proskurnin, Mikhail V. Korobov
Karpov Institute of Physical Chemistry, 105064, Obukha lane, 3-1/12, Russia

Production of Carbide and Hard-Alloy Mixture Nanopowders with Low-Temperature Plasma
Nataliya V. Isaeva, Yuri V. Blagoveshchensky, N. V. Blagoveshchenskaya, Yuri I. Melnik, Andrey V. Samokhin, Nikolay V. Alekseyev, Aleksey G. Astashov, Inessa Pakhilo-Dar’yal
Baykov Institute of Metallurgy and Material Science, Leninskiy prospect, 49, Russia

Simple Hydrothermal Preparation of Porous Materials from a Natural Leucoxene Mineral
Roman V. Lukashev, Alexander N. Maslennikov, Konstantin L. Zanaveskin, Svetlana M. Zanaveskina
Karpov Institute of Physical Chemistry, 105064, pereulok Obuha, 3-1/2, 6, Moscow, Russia

Solution Combustion Synthesis of Highly Porous Nickel: Study of Reaction Mechanism
Sergei Rosliakov, Alexander Rogachev, Alexander Mukasyan
National University of Science and Technology “MISIS”, Leninskiy prospект 4, Moscow, Russia
Institute of Structural Macromodels and Materials Science Russian Academy of Sciences (ISMAN), Chernogolovka, Moscow Region, Acad. Osipyan street 8, Russia
Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, IN, USA

Synthesis and Characterization of Aluminum Nanoparticles with Customized Coatings Manufactured via the Flow-Levitation Method
Nadezda G. Berezhkina, Alexey N. Zhigach, Ilya O. Leipunsky, Mikhail L. Kuskov, Elena S. Afanasenkova, Boris V. Kudrov, Guido W. Lopez
Talrose Institute for Energy Problems of Chemical Physics, Leninskiy prosp., 38, bld.2., Moscow, 119334 Russia
College of Professional Studies, Northeastern University, U.S.A, Boston, MA 02115, U.S.A

Synthesis and Study of Zn Ultrafine Particles, Manufactured via the Flow-Levitation Method
Talrose Institute for Energy Problems of Chemical Physics, Leninskiy prosp., 38, bld.2., Moscow, 119334 Russia
Shubnikov Institute of Crystallography, Leninskiy prospekt, 59, Moscow, 119333 Russia
College of Professional Studies, Northeastern University, Boston, MA 02115, U.S.A

Synthesis of Mg,Al-Layered Double Hydroxides and Their Application in Chemical Analysis
E. V. Bulatova, M. S. Mahanova, E. V. Sevastyanova, Yu. Yu. Petrova
Surgut State University, 1 Lenina St., 628400 Surgut, Russia

The Integrated Approach in Characterization of Dispersity of Nanopowders Produced in Plasma-Chemical Reactor
Mikhail A. Sinaiskiy, Andrey V. Samokhin, Nikolay V. Alexeev, Yury V. Tsvetkov
Baikov IMET RAS, 119991, Leninskiy prospekt, 49, Russia

The Restructure of PrF₃ and LaF₃ Nanoparticles by Microwave Irradiation
Egor Alakshin, Alexander Klochkov, Stella Korablieva, Timur Safin, Kajum Safiullin, Murat Tagirov
Kazan Federal University, Kremlyovskaya 18, Russia

Properties of Hydrosols TiO₂
Marina Soderginova, Dzemma Tarasova, Fatima Chibirova
Karpov Institute of Physical Chemistry, 105064, Obukha lane, 3-1/2, 6, Moscow, Russia

Synthesis and Characterization of Aluminum Nanoparticles with Customized Coatings Manufactured via the Flow-Levitation Method
Nadezda G. Berezhkina, Alexey N. Zhigach, Ilya O. Leipunsky, Mikhail L. Kuskov, Elena S. Afanasenkova, Boris V. Kudrov, Guido W. Lopez
Talrose Institute for Energy Problems of Chemical Physics, Leninskiy prosp., 38, bld.2., Moscow, 119334 Russia
College of Professional Studies, Northeastern University, U.S.A, Boston, MA 02115, U.S.A

Synthesis and Study of Zn Ultrafine Particles, Manufactured via the Flow-Levitation Method
Talrose Institute for Energy Problems of Chemical Physics, Leninskiy prosp., 38, bld.2., Moscow, 119334 Russia
Shubnikov Institute of Crystallography, Leninskiy prospekt, 59, Moscow, 119333 Russia
College of Professional Studies, Northeastern University, Boston, MA 02115, U.S.A
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<td>Influence of Thermal Annealing on the Properties of Zinc Nitride Thin Films Deposited by RF-Magnetron Sputtering</td>
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<td>Ronaldo D. Mansano, Larissa R. Damiani</td>
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<td>University of Sao Paulo, Av. Prof. Luciano Gualberto, 158 - Sao Paulo, Brazil</td>
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<td><strong>pp02.002</strong></td>
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<td>Physics and Applications of Nanostructures and Nanomaterials</td>
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<td>M. S. Ramachandra Rao</td>
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<tr>
<td>Nano Functional Materials Technology Centre, MSRC and Department of Physics, Indian Institute of Technology Madras, Chennai 600036, India</td>
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<td>A New Nanotech Computational Experiment: Data Mining for Modeling, Creation of Knowledge Base, and Presentation</td>
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<td>Victor S. Abrukov, Valery D. Kochakov, Sergey V. Abrukov, Alexander V. Smirnov</td>
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<tr>
<td>Chuvash State University, Moscovsky pr., 15 Cheboksary, 428015, Russia</td>
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<td>A Novel Dual Action Tunable Antimicrobial Silver-Containing Biocomposite</td>
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<td>Tatiana S. Priamushko, Anna Ivanova, Kateryna Loza, Oleg Prymak, Matthias Egplke, Maria A. Surmeneva, Timur Mukhametkaliev, Roman A. Surmenev</td>
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<tr>
<td>National Research Tomsk Polytechnic University, 634034 Tomsk, Lenine prospect, 30, Russia</td>
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<td>Application of Fractal Analysis for Estimation of Morphological and Physical Properties of Nanostuctured Materials</td>
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<td>Anton N. Boyko, Dahir S. Gaev, Sergei P. Timoshenkov</td>
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<tr>
<td>National Research University of Electronic Technology, Bd. 5, Pas. 4806, Zele- nograd, Moscow, 124498 Russia</td>
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<td><strong>pp02.006</strong></td>
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<tr>
<td>Comparative Analysis of Oxidation Rate of Amorphous Alloys Based on Iron and Cobalt with Different Crystallization Ratio</td>
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<td>Aleksandr V. Sutykov, Pavel A. Gamov, Yekaterina V. Sharlay, Anton V. Roshchin</td>
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<tr>
<td>South Ural State University (National Research University), 76, Lenin prospekt, Chelyabinsk, 454080 Russia</td>
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<td><strong>pp02.007</strong></td>
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<td>Current Flow Imaging in Nanoscale Range by Use of Magnetic Force Microscopy</td>
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<td>Maxim A. Osipov, Igor A. Rudnev, Alexey P. Menushchenkov, Alexey I. Podlivaev, Sergey V. Pokrovsky, Arseniy O. Baskakov</td>
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<tr>
<td>National Research Nuclear University MEPhI, Kashirskoe shosse 31, Moscow 115409 Russia</td>
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</tbody>
</table>
**July 14 (Monday)**

### Section 03 – Nanoceramics

**pp02.014**
RF-Magnetron Sputtering Setup for the Formation of Nanostructured Bio-compatible Coatings on Ceramic and Metal Medical Implants

2. Institute of Strength Physics and Materials Science of the Siberian Branch of the Russian Academy of Sciences (ISPMS SB RAS), 634021, Tomsk, pr. Akademicheskii, 2/4, Russia
3. TETA Ltd, 634526, Tomsk, Loskutovo, st. Sovietskaya, 1/2, Russia
4. BMTechnology, 115201, Moscow, 2-nd Kotyakovskii pereulok, 18 of. 224, Russia

**pp02.015**
Synthesis of Co/Pd and Fe/Pd Multilayered Nanorods and Antidots Arrays on Anodic Aluminium Oxide Templates

1. Alexey A. Maximenko, 1 Yevhen A. Zabila, 1 Arkadiusz Zarzycki, 1 Marcin Perzanowski, 1 Michal Krupinski, 1 Malgorzata Kac, 1 Marta Marszalek, 2 Julia A. Fedotova, 1 Momir Milosavljevic
2. The Henryk Niewodniczanski Institute of Nuclear Physics Polish Academy of Sciences, 31-342 Cracow, Poland
3. National Centre for Particle and High Energy Physics of Belarusian State University, 220030 Minsk, Republic of Belarus
4. VINCA Institute of Nuclear Sciences, P.O. Box 522 11001 Belgrade, Serbia

**pp02.016**
Ti1-xAgx Electrodes Deposited on Polymer Based Sensors for Biomedical Applications

1. Sandra Carvalho, 1 Sandra M. Marques, 2 Noora Manninen, 1 Senentxu Lancers-Mendez, 1 Albano Cavaleiro
2. University of Minho, Campus de Azurém, 4800-058 Guimaraes, Portugal
3. University of Coimbra, 3030-788 Coimbra, Portugal

**pp02.017**
The Mass Transfer Methods of Determination the Properties of Nanoheterostructural Formations

1. Arystan Sarsenov, 1 Sataeva Gulzipa, 1 Aganina Gulmur, 1 Orynbasar Zhakan, 1 Alzhano Marden, 1 Kuralbayeva Galiya
2. Eurasian national university, Astana, Kazhymukhan street, 13, Kazakhstan

**pp02.018**
Nanostructuring and Strengthening Ceramic TiN Coatings by Adding in Their Contents Ni

1. Igor V. Blinkov, 1 Dmitry S. Belov, 1 Alexey O. Volkhonskiy, 1 Tatyana F. Petrova, 1 Alena M. Sergacheva, 1 Dmitry I. Ashipov
2. National University of Science and Technology «MISIS», Moscow, Leninsky prospect, 4, Russia

**pp02.019**
About the Use of Metallic Nanoparticles to Produce Optical Iridescent Effects on Ceramics at Renaissance

1. Giuseppina Padeletti, 2 Paola Fermo
2. Institute of Nanomaterials Research of the Italian National Research Counci, 1-PO Box 10, 00016 Monterotondo Staz., Rome, Italy
3. Dipartimento di Chimica, Via Venezian, 21, 20133 Milano, Italy

**pp02.020**
Microstructured Materials Based on Y(Ba1-xBex)2Cu3O7-δ

1. Dair K. Palchaev, 1 Sultanahmed H. Gadjimagomedov, 1 Murtazali H. Rabadano-v, 1 Janyat H. Murliev, 1 Mislmat F. Faradzheva
2. Dagestan state university, Gadjieva street, 43a, Russia

**pp02.021**
Nanostructuring Effects in Perovskite-Related MIEC Oxides Based on Sr(Co,Fe)O3-d

1. Irina V. Belenkaya, 1 Alexander P. Nemudry
2. Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Kutateladze street, 18, Russia

**pp02.022**
Raman Scattering Study of Bi1-xMxFeO3-δ (M=Ca, Sr, Pb) Solid Solutions

1. Vasiliy G. Trotsenko
2. Southern Federal University, 105/42 Bolshaya Sadovaya Str., Rostov-on-Don, 344006, Russia

**pp02.023**
Sol-Gel Synthesis of Porous Powder Y3Al5O12

1. Nikolay P. Simonenko, 1 Elizaveta P. Simonenko, 1 Vladimir G. Sevastyanov, 1
2. Kurnakov Institute of General and Inorganic Chemistry of the Russian Academy of Sciences, 31 Leninsky prospect, Moscow 119991, Russia
### Section 04 – Bulk Metallic Nanomaterials

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<td><strong>pp04.001</strong></td>
<td>High Strength Nanostructured Ti Based Low Alloys Containing Inexpensive Alloying Elements</td>
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1. Vladislav Yu. Zadorozhnyy, 2 Dmitri V. Louzguine-Luzgin, 1 Daria V. Strugova

1. National University of Science and Technology (MISIS), 119049, Moscow, Leninsky prospekt 4, MISiS, Russia
2. WPI Advanced Institute for Materials Research, Tohoku University, Katahira 2-1-1, Aoba-Ku, Sendai 980-8577, Japan

| **pp04.002**        | Evolution of Grain and Second Phase Structures in Mg-6Zn-0.6Zr Alloy Under Multistep Isothermal Forging |

1. Oksana E. Mukhametdinova, 1 Dayan R. Nugmanov, 1 Oleg Sh. Sritidkov, 1 Michail V. Markushev

1. Institute for metals superplasticity problems of Russian academy of sciences (IMSP RAS), Ufa, Khalturin str., 39, Russia

| **pp04.003**        | Formation of Ultrafine-Grained Structure During Abc-Pressing of TiNi-Based Alloy |

1. Oleg A. Kashin, 1 Alexandr I. Lotkov, 1 Viktor N. Grishkov

1. Institute of Strength Physics and Materials Science of Siberian Branch Russian Academy of Sciences; (ISFMS SB RAS), 2/4 Academicheskiy pr., Tomsk, 634021, Russia

| **pp04.004**        | A Novel Nanostructured Aluminium Alloy with High Carbon Content |

1. Roman V. Muradyanov, 1 Ludmila A. Yoshkina, 1 Sergey V. Plaksin, 1 Vyacheslav B. Malkov

1. Institute of High-Temperature Electrochemistry Ural Branch of Russian Academy of Sciences, Akademicheskaya str., 20, Ekaterinburg, 620990 Russia

### Section 05 – Nanocomposites and Hybrid Nanomaterials

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<td>Sinter Ageing of Nanocrystalline Equiatomic Al-Co-Ni-Cu Zn High Entropy Alloy</td>
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1. Sutanuka Mohanty, 1 Nilesh P. Gurao, 1 Krishanu Biswas

1. Indian Institute of Technology Kanpur, Western Lab - 210, Solidification and nanomaterials Lab, Department of Material Science and Engineering, IIT Kanpur, Kanpur - 208016, Uttar Pradesh, India

| **pp05.002**        | ZnO Nanorods-CuO Composite Nanostructures |

1. Khabibula A. Abdullin, 1 Dianyar V. Ismailov, 1 Janar K. Kalkozova, 2 Serik E. Kumekov, 1 Timur E. Nurmamytov, 1 Leya V. Podrezova

1. Institute of High-Temperature Electrochemistry Urals Branch of Russian Academy of Sciences, Akademicheskaya str., 20, Ekaterinburg, 620990 Russia
2. Satpaev Kazakh National Technical University, Almaty, Kazakhstan

| **pp05.003**        | Hybrid Structures Based on Multilayer Graphene and CdSe-ZnS Quantum Dots for Ammonia Vapor Detection |

1. Andrei V. Alafebrov, 1 Yuliia A. Gromova, 1 Victor A. Ermakov, 1 Anatoly V. Fedorov, 1 Alexander V. Baranov, 1 Anna O. Orlova, 1 Alfredo R. Vas, 1 Maria A. Canesqui, 1 Stanislav A. Moshkalev

1. Center for Semiconductor Components - State University of Campinas, State University of Campinas, Campinas, Sao Paulo 13083-870, Brazil
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3. Saint Petersburg National Research University of Information Technologies, Mechanics and Optics, Saint Petersburg, 197101, Russia

| **pp05.004**        | A Chemical Route for Synthesis of Pb-In Alloy Nanoparticles |

1. Manolata Devi Mayanglambam, 1 Krishanu Biswas

1. Indian Institute of Technology, Department of Materials Science and Engineering, Kanpur, India

| **pp05.005**        | Nanocomposites Based on Co, Ni, Mo and W Oxides Obtained by Wet Methods |

1. Klara V. Kotsareva, 1 Elena A. Trusova

1. A.A. Baikov Institute of Metallurgy and Materials Science, RAS, 119991, Leninsky pr. 49, Moscow, Russia

| **pp05.006**        | Growth of CdS Nanoparticles in Silicate Glass |

1. Yuliia V. Kuznetsova, 1 Andrey A. Rempel, 1 Andreas Magerl

1. Institute of Solid State Chemistry, Ural Branch of the Russian Academy of Sciences, Pervomaiskaya 91, 620990 Ekaterinburg, Russia
2. Crystallography and Structural Physics, University of Erlangen-Nuremberg, Staudtstrasse 3, D-91058 Erlangen, Germany
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<td><strong>Microwave-Assisted Hydrothermal Synthesis of Layered Y(_2)(OH(_n))(NO(_3))(_X)(_n)H(_2)O</strong></td>
<td>1 Alexey Yaryntsev, 2 Alexander Baranchikov, 1 Olga Boytsova, 3 Vladimir Ivanov</td>
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<td><strong>Obtaining and Optical Properties of Lamellar GaSe-ZnSe Nanocomposites</strong></td>
<td>1 Dumitru U出让a, 2 Valeriu Cantser, 3 Silvia Evdokiev, 4 Iuliana Caraman, 5 Liviu Leonard</td>
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<td><strong>Bionanocomposites of Cellulose with Silica Prepared through Solubilization and Sol-Gel Transition</strong></td>
<td>1 Oleq N. Khlebnikov, 2 Yury A. Shchipunov</td>
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<td><strong>The Preparation of Nano Fe(_3)O(_4)/Bentonite Composite and Its Adsorptive Study</strong></td>
<td>1 Xiaodan Hu, 2 Zhiwei Zhou, 3 Haiqian Zhang, 4 Xiaohong Zhang</td>
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<td>1 College of Material Science and Technology, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, P.R. China</td>
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<td><strong>Self-Assembly of Nanocomposite Free-Standing Planar Nanocoatings in Colloidal Solution of Magnetite Nanoparticles and Biogenic Polymyes</strong></td>
<td>1 Gennady B. Khomutov, 2 Kirill V. Potapenkov, 3 Yury A. Koksharov</td>
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<td><strong>Properties of PMMA-MWNT and PMMA-C(_6)(_0) Composites as Revealed by NEXAFS Spectroscopy, MS and Quantum Chemistry</strong></td>
<td>1 Maria Brzezinska, 2 Eugen Baitinger, 3 Alexander Pushkarchuk, 4 Alexei Pozdnjakov</td>
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<td><strong>New Hybrid Materials Prepared by MVS</strong></td>
<td>1 Edgar E. Kamitov, 2 Margarita S. Rubina, 4 Dmitri A. Aparshov, 3 Alexander V. Naumkin, 2 Yan V. Zubavichus, 3 Albina A. Gallyamova, 1 Alexander Y. Vasil'kov</td>
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<td><strong>Nanocomposite Films Based on Chitosan and Chitin Nanofibrils</strong></td>
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<td><strong>Composite Systems Based on Cellulose as Carbon Fiber Precursors</strong></td>
<td>1 Igor S. Makarov, 2 Ludmila K. Golova, 3 Ivan Yu. Skvortsov, 4 Valery G. Kulichikhin</td>
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<td>1 A.V. Topchiev Institute of Petrochemical Synthesis, RAS, 119991, Moscow, Leninsky prospekt, 29, Russia</td>
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<td><strong>Composite Capsules with Nanosized Crystalline Particles Doped by Er(^{3+}), Yb(^{3+}) Ions for Biomedical Applications</strong></td>
<td>1 Svjetana A. Antoshkina, 2 Polina A. Ryabochkina, 3 Alexander S. Vane'sev, 4 Sergey N. Us'hashok, 5 Gleb B. Sukhorukov, 6 Natalie Yu. Tabachkova</td>
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<td><strong>Chitosan-Clay Bionanocomposite Films Formed Through Self-Organization</strong></td>
<td>1 Sergey A. Sarin, 2 Sophia A. Kolesnikova, 3 Irima V. Postnova, 4 Yury A. Shchipunov</td>
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<td>2 G.B. Elyakov Pacific Institute of Bioorganic Chemistry, Far East Department, RAS, 690022, 159, Prosp. 100-leta Vladivostoka, Vladivostok, Russia</td>
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<td><strong>Surface Characteristics of Contempory Dental Restorative Resin-Based Nanofilled and Microhybrid Composites – AFM and SEM Study</strong></td>
<td>1 Tijana Lainovic, 2 Larisa Blažić, 3 Marko Vilotić, 4 Dragan Kukuruzović, 5 Damir Kakaš</td>
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### Section 06 – Polymer, Organic and Other Soft Matter Materials

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<th>Collapse of Polyelectrolyte Microgel Induced by Oppositely Charged Surfactants</th>
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<td>1 Artem M. Rumyantsev, 1 Elena Yu. Kramarenko</td>
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<th>Investigation of Dynamic Modulus and Normal Force of Magnetorheological Elastomers with Soft and Hard Magnetic Fillers</th>
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<td>1 Vladislav V. Sorokin, 2 Gennady V. Stepanov, 3 Viktor G. Vasiliev, 4 Elena Yu. Kramarenko, 4 Matthias Mayer,</td>
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<td>1 Andy Nguyen, 1 William N. Payne, 1 James E. Amburgey, 1 Jordan C. Poler</td>
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<td>1 University of North Carolina at Charlotte, 9201 University City Blvd. Charlotte NC 28223 USA</td>
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<td>1 LLC Systems for Microscopy and Analysis, Moscow region, Skolkovo, st. Nova-ya, d.100, building “Ural”, Russia</td>
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<td>Piezoelectric Properties of ZnO Nanowires for Mechanical Energy Harvesting: An Ab-Initio Study</td>
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<td>Giancarlo Cicero, Korir K. Kipronoh, Alessandra Catellani</td>
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<td>Tunable Pore Volume in Pillared Solids</td>
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<td>The Fabrication of Integrated Micro Power Fuel Cells on Silicon Nanochips</td>
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<td>Potential-Deposition Controlled Microstructure of Pd Electrodeposits on Various Gold Supports</td>
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<td><strong>Folate-Targeted Liposomal Delivery of Nucleic Acids: Structure-Activity</strong></td>
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<td><strong>A Potential Nanocarrier Based on Gold Nanoparticle and Dopamine</strong></td>
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<td><strong>Immunogenicity of a Trivalent Human Papillomavirus L1 DNA-Encapsidated,</strong></td>
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<td>Non-Replicable Baculovirus Nanovaccine</td>
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<td>Garcia, 4 Helder J. Ceragioli, 1 Wagner J. Favaro 1 Institute of Chemistry</td>
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<td><strong>Inadequate Changes of the Level And Activity of Extracellular NADPH</strong></td>
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<td>Gyumri Pedagogic University, P. Sevak st. 4, 3126, Gyumri, Armenia</td>
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<tr>
<th>Abstract</th>
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<tr>
<td>Liposomal Nanocontainers for Cisplatin Delivery into Tumors</td>
<td>1 Ilya Kuznetsov, 2 Sergey Shein, 1 Dmitry Bychkov, 1 Nadezhda Grinenko, 1 Natalia Nukolova, 2 Vladimir Chekhonin, 3 Alexander Kabanov</td>
<td>1 Lomonosov Moscow State University, Leninskie Gory, 1/3, Moscow 119991, Russia 2 Serbsky National Research Center for Social and Forensic Psychiatry, Kropotkinsky 23, Moscow, 119991, Russia 3 Center for Nanotechnology in Drug Delivery and Division of Molecular Therapeutics, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7362 USA</td>
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<td>Liposomal Transport Systems Based on Alkylresorcinols with Antioxidant Action</td>
<td>1 Olga K. Davydova, 1 Hike N. Nikryan, 1 Irina A. Gavrish</td>
<td>1 Orenburg State University, Pobody, 13, Russia</td>
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<td>Modification of Biodegradable Polyelectrolyte Shells of Hollow Microcapsules by In Situ Synthesis of Maghemite Nanoparticles</td>
<td>1 Sergey S. Sarchikov, 1 Igor S. Lyubutin, 1 Tatiana V. Bukreeva, 2 Ivan A. Lysenko, 2 Sergey N. Sulyanov, 1 Nikolay Yu. Korotchikov, 1 Svetlana S. Rymantseva, 1 Irina V. Marchenko, 2 Konstantin O. Funtov, 1 Alexander L. Vasilev</td>
<td>1 A.V. Shubnikov Institute of Crystallography RAS, Moscow 119333, Russia 2 NRC “Kurchatov Institute”, Moscow 123182, Russia</td>
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<td>Multifunctional Zeolite-L Nanocarriers for PNA, DNA and Drug Delivery into Living Cells</td>
<td>1 Alessandro Bertucci, 1 Henning Luelf, 2 Dedy Septiadi, 1 Alex Manicardi, 1 Roberto Corradini, 2 Luisa De Cola</td>
<td>1 Department of Chemistry, University of Parma, Parma, Italy, Parco Area delle Scienze 17/A, 43124, Parma, Italy 2 Institut de science et d’ingénierie supramoléculaires, University of Strasbourg, France, 8 Allee Gaspard Monge, 67000, Strasbourg, Italy</td>
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<td>Nanozymes of Antistaphylococcal Endolysins</td>
<td>1 Lyubov Y. Filatova, 1 Dmitry N. Lebedev, 1 Anastasia D. Priyma, 2 David M. Donovan, 1 Juli Foster Frey, 2 Alexander V. Kabanov, 1 Natalia L. Klyachko</td>
<td>1 Lomonosov Moscow State University, Moscow, Leninskie gory, 1, Russia 2 ARS-USDA Beltsville Agricultural Research Center, USA, Beltsville, USA</td>
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<td>Novel Antioxidant Nanozymes for Biomedical Applications</td>
<td>1 Anton D. Aleksashkin, 1 Natalia V. Nukolova, 2 Vladimir P. Chehonin, 1 Natalia L. Klyachko, 3 Alexander V. Kabanov</td>
<td>1 Lomonosov Moscow State University, Moscow, Leninskie gory, 1, Russia 2 The Serbsky State Scientific Center for Social and Forensic Psychiatry, Moscow, Kropotkinsky per. 23, Russia 3 Progov Russian National Research Medical University, Moscow, Ostrovitianov str. 1, Russia 4 University of North Carolina at Chapel Hill, Chapel Hill, 120 Mason Farm Road, USA</td>
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<td>Standardization of Gold Nanoparticles for Drug Delivery</td>
<td>1 Fernanda Leve, 1 Renata Carvalho, 1 Giselle Fontes</td>
<td>1 National Institute of Metrology Quality and Technology, Av Nossa Senhora das Gracas, 50, Brazil</td>
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<td>pp08.013</td>
<td>Synthesis and Antiviral Activity of Water-Soluble Polycarboxylic Derivatives of [60] Fullerene</td>
<td>Ilya I. Voronov, Vyacheslav M. Martynenko, Alexander V. Cherniak, Jan Balzarini, Pavel A. Troshin, IPCP RAS, Semenov Prospect 1, Chernogolovka, Russia, Rega Institute for Medical Research, Minderbroedersstraat 10, B-3000, Leuven, Belgium</td>
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<td>pp08.014</td>
<td>Synthesis, Characterization and Antibacterial Activities of Nitric Oxide-Releasing Polymeric Nanoparticles Against Staphylococcus aureus From Bovine Mastitis</td>
<td>Amedea B. Seabra, Adelia M. Narciso, Elaine CS. Valereto, Viviane F. Cardozo, Renata KT. Kobayashi, IPCP RAS, Semenov Prospect 1, Chernogolovka, Brazil, Rega Institute for Medical Research, Minderbroedersstraat 10, B-3000, Leuven, Belgium</td>
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<td>&quot;API-Carrier&quot; Composite Balls for Pulmonary Drug Delivery</td>
<td>Ekaterina G. Boydanova, Svetlana A. Myz, Anna A. Ogienko, Yuliya E. Kovalenko, Nikolay A. Trofimov, Valery A. Drebushchak, Vladimir V. Boldyrev, REC-008 “Molecular Design and Ecologically Safe Technologies”, Novosibirsk State University, Piragova 2, Novosibirsk, Russia, Institute of Solid State Chemistry and Mechanochemistry SB RAS, Kutateladze 18, Novosibirsk, Russia, Institute of Cytology and Genetics SB RAS, Lavrenteva 10, Novosibirsk, Russia, JSC “Nativa”, Ermolaeovsky Lane, 25, Moscow, Russia</td>
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<td>pp08.016</td>
<td>Biogenic Silver Nanoparticles as a Potential Antitumor Against Prostate Cancer</td>
<td>Nelson Duran, Luis AB. Ferreira, Piscyla D. Marcato, Patrick V. Garcia, Wagner J. Favaro, Marcelo Bispo de Jesus, Institute of Chemistry, Universidade Estadual de Campinas, Campinas, Brazil, IQ-UNICAMP-SP, Brazil, FCF-USP-Riberão Preto, Brazil, USP-SP, Brazil, Depart. Struct. Funct. Biol. UNICAMP-SP, Brazil, IB-UNICAMP, SP, Brazil, Department of Biochemistry, IB-UNICAMP, SP, Brazil</td>
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<td>pp08.017</td>
<td>Comparison of Immunoliposomal Anticancer Drug Delivery Systems for Leukemia and Lymphoma Diseases</td>
<td>Ali Deniz Daloglu, Ayseg Tezcaner, Pinar Elici, Meral Sarper, Fikret Arpaci, Ferit Avcu, Dilek Keskin, Middle East Technical University, Department of Engineering Sciences, Middle East Technical University, Ankara, 06800, Turkey, Center of Excellence in Biomaterials and Tissue Engineering, Middle East Technical University, Universite algıları Mahallesi, Dumlupınar Bulvarı, No:1, 06800 Çankaya Ankara, Turkey, Gulhane Medical Faculty, Cancer and Stemcell Research Center, Turkey, Gulhane Medical Faculty, Department of Hematology, Turkey</td>
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<td>Yu-Kyoung Oh, Wenjun Miao, Gayong Shim, Soo Dong Lee, Choong Mo Kang, Yeon Seong Choe, Seoul National University, Daehak-dong, Kwanak-gu, Seoul 151-742, Republic of Korea, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea</td>
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Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

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<td>Yury M. Shulga, Victor N. Vasilets, Dmitry P. Kryukhin</td>
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<td>1 Institute of Problems of Chemical Physics, Russian Academy of Sciences, Chernogolovka, Moscow region, 142432 Russia</td>
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<td>pp09.002</td>
<td>Current-Voltage Characteristics of Graphene-Based Nanostructures</td>
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<td>Dmitry G. Kvasnich, Leonid A. Chernozatonskii</td>
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<td>Effect of Alkali and Alkali Earth Element Borates on BN Nanostructures Growth</td>
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<td>National University of Science and Technology “MISiS”, Leninsky prospect 4, 119991, Moscow, Russia</td>
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<td>pp09.005</td>
<td>Features of Sublimation and Condensation of Materials with Fractal Surface Topology</td>
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<td>Andrei L. Kusov, Yury V. Brylkin</td>
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<td>Central Research Institute of Machine Building, Moscow region, Korolov, Pionierskaya St., 1,4, Russia</td>
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<td>1 Departament Physics Siberian State Industrial University, 654007, Novokuznetsk, Kirov Street 42, Russia</td>
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<td>Influence of Nanosilica and a Polycarboxylate Superplasticizer on the Rheological and Electrokinetical Properties of Cement Pastes</td>
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<td>Mechanical Properties Peculiarities of Nanostructured Materials and Coatings Obtained by Nanoindentation</td>
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<td>Yury S. Nechaev, Oleg V. Boiko, Svetlana V. Chirkunova</td>
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<td>Physical Simulation of Metal Forming Processes by Torsional Deformation Combined with Backward Extrusion of Specimen Heads</td>
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<td>Anastasia Kublikova, Alexander Botkin, Samurakov Gregory</td>
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<td>Plasma-Assisted Vapor Deposition Technology, Structure, and Tribological Behavior of Alloyed DLC Nanocomposite Coatings</td>
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<td>Mikhail Khushchay, Elena Marchenko, Mikhail Atamanov, Ivan Levin, Anna Dubravina, Sergei Shalnov</td>
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<td>Interactions of TCAMC Solvent System on Bamboo, Cotton, and Their Blends: The Effect on Tensile Properties</td>
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<td>Muhammet Uzun, Erhan Sancak, Mehmet Akalin, Ismail Usta</td>
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<td>Marmara University, Technology Faculty, Department of Textile Engineering, Department of Textile Education, Marmara University, 34722, Goztepe, Istanbul, Turkey</td>
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**Section 10 – Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics**

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**pp10.001**

Study of Core–Shell SHTC/Polycarbonate Covered with Ultrafine Particles Fabricated by Laser Assisted Sintering

Igor V. Shishkovsky, V. Scherbakov, M. Kuznetsov

1. Lebedev Physical Institute of Russian Academy of Sciences, Samara branch, Novo-Sadovaya st. 221, 443011 Samara, Russia
2. Institute of Structural Macrokinetics and Materials Science (ISMMS), RAS, Chernogolovka 142432, Russia

**pp10.002**

A Low-Temperature Solvent-Free Chemical Strategy for the Direct Synthesis of L1_2 FePt Nanoparticles from Layered Precursor

Elisabetta Agostinelli, Aldo Capobianchi, Xiao C. Hu, George Hadjipanayis, C. Ni

1. ISM - CNR, Area ROMA 1 Via Salaria km 29.300 - Monterotondo Scalo (RM), Italy
2. Department of Materials Science and Engineering, University of Delaware, DE, USA

**pp10.003**

Morphology and Electrophysical Properties of Nanostructures Based on Platinum and Nickel Silicides Formed on Amorphous and Nanocrystalline Silicon


1. Prokhorov General Physics Institute, RAS, 38, Vavilov Str., Moscow, 119991, Russia
2. Belarusian State University, 4, Nezavisimosti avenue, Minsk, 220030, Belarus

**pp10.004**

2 Micrometer in Diameter Quantum Dots Microdisc/Microring Lasers

Denis Karpov, Janne Laukkonen, Juha Tommila, Yuri Svirko, Natalia Kryzhnovskaya, Aleksey Zhukov, Mikhail Maximov, Andrey Lipovskii

1. University of Eastern Finland, Joensuu, Finland
2. Tampere University of Technology, Tampere, Finland
3. St Petersburg Academic University, St Petersburg, Russia

**pp10.005**

Analysis of Quasielastic Light Scattering in Nanodomain Crystal Near Phase Transitions

Svetlana V. Ivanova

1. P.N. Lebedev Physical Institute of RAS, Leninskii pr., 53, Moscow, 119991, Russia

**pp10.006**

Angular Correlation and Independent Particle Model in Two-Dimensional Quantum Dots

Tokuie Sako

1. Nihon University, 7-24-1, Narashinodai, Funabashi 247-8501 Japan

**pp10.007**

Effect of Light Polarization on the Optical Limiting and Nonlinear Light Scattering in Suspensions of Detonation Nanodiamond Clusters

Vitcheslav V. Vanyukov, Gennagy M. Mikheev, Tatyana N. Mogileva, Alexey P. Puzyr, Vladimir V. Bondar, Yuri P. Svirko

1. Institute of Photonics University of Eastern Finland, 80101 Joensuu, Finland
2. Institute of Mechanics Ural Branch of Russian Academy of Sciences, 426067 Izhevsk, Russia
3. Institute of Biophysics Siberian Branch Russian Academy of Sciences, 660036 Krasnoyarsk, Russia

**pp10.008**

Eigenmodes of Chiral Sphere and Their Excitation with Radiation of Chiral Molecule

Ilya V. Zabkov, V. Klimov, Dmitry V. Guzatov, Andrey A. Pavlov

1. Moscow Institute of Physics and Technology, Institutsky Pereulok 9, 141700 Dolgoprudny, Moscow Region, Russia
2. Lebedev Physical Institute, Leninsky Prospect 53, 119991 Moscow, Russia
3. Yanka Kupala State University of Grodno, Ozheshko Street 22, 230023 Grodno, Belarus
4. All-Russia Research Institute of Automation (VNIIA), Sushchevskaja Street 22, 127055 Moscow, Russia

**pp10.009**

First-Principles Calculations of the Atomic and Electronic Structure of Switchable Molecules on Metal Surfaces

Victoria L. Mazalova

1. Southern Federal University, Sorge str.5, Russia

**pp10.100**

Luminescent Characteristics of Ge and GaAs Nanostructures Formed in Porous Aluminum Oxide Matrices

Bishat Valeev, Artemii Beltikov, Dmitry Surnin, Raushania Zakirova, Vladimir Kobziev, Vladimir V. Bondar, Yuri P. Svirko

1. Institute of Physics and Technology, Institutsky Pereulok 9, 141700 Dolgoprudny, Moscow Region, Russia
2. Physical-Technical Institute of UB RAS, Kirova str. 132, Izhevsk, 426000 Russia
3. Udmurt State University, Universitetskaya str. 1, Izhevsk, 426034 Russia

**pp10.111**

Luminescent Nanostructures ZnS_xSe_1-x in a Matrix of Porous Al_2O_3

Andrew Chukavin, Rishat Valeev, Artemii Beltikov

1. Moscow Institute of Physics and Technology, Institutsky Pereulok 9, 141700 Dolgoprudny, Moscow Region, Russia
2. Physical-Technical Institute of the Ural Branch of the Russian Academy of Sciences, 426000, Izhevsk, Russia
3. Bauman Moscow State Technical University, Russia

**pp10.102**

Nanoengineering at Education, Science and Industry

Yury V. Panfilov

1. Bauman Moscow State Technical University, Russia

July 14 (Monday)
July 14 (Monday)

Section 11 – Nanomaterials and Catalysis

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<td>2. Institute of Petrochemical Processes, Baku, Khodjali 30, Baku, Az 1027 Azerbaijan</td>
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<td>4. East Tehran Branch, Islamic Azad University, 5. Department of Chemistry, 6. Faculty of Science, 7. East Tehran Branch, 8. Islamic Azad University, 9. P.O. Box 33955-163, Tehran, Iran</td>
<td></td>
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<tr>
<td>10. Chemistry &amp; Chemical Engineering Research Center of Iran, 11. Chemistry &amp; Chemical Engineering Research Center of Iran, 12. P.O. Box 14335–186, Tehran, Iran</td>
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<tr>
<th>pp11.004</th>
<th>DFT-Modeling of the Water Oxidation Reaction Pathway Catalyzed by Ru-Co-Ordinated Complexes</th>
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<tr>
<td>1. Igor Alperovich, 2. Southern Federal University, 3. S Zorge St, Russia</td>
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<tr>
<th>pp11.005</th>
<th>Hydrocracking of Heavy Petroleum Residues in the Presence of a Nanostructural Halloysite</th>
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<tbody>
<tr>
<td>1. Institute of Petrochemical Processes, Baku, Khodjali 30, Baku, Az 1027 Azerbaijan</td>
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<tr>
<th>pp11.006</th>
<th>Natural Nanotube of Clay for Obtaining of Low Molecular Weight Olefins</th>
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<tr>
<th>pp11.007</th>
<th>Oxygen Storage Capacity of Ceria Nanoparticles: Soft XAS and Theoretical Studies</th>
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<tbody>
<tr>
<td>1. Southern Federal University, 2. Sorge St., 3. Rostov-na-Donu 344090 Russia</td>
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<tr>
<td>4. University of Torino, 5. Via P. Giuria 7, 6. 10125 Turin, 7. Italy</td>
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<td>8. Paul Scherrer Institute, 9. Villigen, 5232, Switzerland</td>
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July 14 (Monday)

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<tr>
<th>pp11.008</th>
<th>Particularities of Ab Initio Cluster X α -Discrete Variation Method (X α-DVM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Elmira I. Yuryeva, 2. The Ural State College named after Ivan I. Polzunov, 3. Linena Ave. 28, 620014, Ekaterinburg, Russia</td>
<td></td>
</tr>
<tr>
<td>4. Ural Technical Center of Communications and Information Technology (Branch) SEI HPE Siberian State University of Telecommunications and Information Sciences, 5. Repina st., 15, 620000, Ekaterinburg, Russia</td>
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<tr>
<th>pp11.009</th>
<th>Reacting Ammonia with Organoboron Nanoparticles</th>
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<tbody>
<tr>
<td>6. Semenov Institute of Chemical Physics Russian Academy of Sciences, 7. 119991 Moscow, Kosygin str.4, Russia</td>
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<thead>
<tr>
<th>pp11.010</th>
<th>Reactivity of Al-Bi (n=2–15) Clusters towards H2O: Density-Functional Theory Investigations</th>
</tr>
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<tr>
<td>4. Nanjing University of Science and Technology, 5. 200 Xiaolingwei St. Nanjing University of Science and Technology, 6. Nanjing, 210094, China</td>
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<tr>
<td>7. Huaiyin Normal University, 8. Haiyin Normal University, 9. Huaian 223300, China</td>
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<tr>
<th>pp11.012</th>
<th>Study of Silicon Etching Using Platinum Thin Films as Catalyst</th>
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<tr>
<td>1. Olga Pyatilova</td>
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<tr>
<th>pp11.013</th>
<th>Synthesis of Nanoporous Silica using Gums as Versatile Biopolymer</th>
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<tbody>
<tr>
<td>1. Maryam Afsahpour, 2. Erfan Khamond</td>
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<tr>
<td>3. chemistry and chemical engineering research center of iran, 4. Danesh Ave., 5. Pajoheh Blvd, 6. 17 Km Tehran-Karaj Highway, Iran</td>
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<tr>
<th>pp11.014</th>
<th>Titanate Nanofibers Decorated with Nanocrystalline Bismuth Sulphide Sheets: New Materials for Sensor Applications</th>
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<tr>
<th>pp11.015</th>
<th>Vertical Channel Multidimensional Nanomembrane (VCMN) for Fraction Separation, Photocatalytic, and Thermocatalytic Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Andrei V. Pakoulev, 2. Igor Yaroslavsky, 3. Vladimir Burtman</td>
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<td>4. University of Wisconsin-Madison, 5. 1101 University Avenue, 6. Madison, Wisconsin, 7. 53705, USA</td>
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<tr>
<td>8. Clymene Petroleum, 9. P.O. Box 902172 Sandy, UT, 10. 84090, USA</td>
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<tr>
<td>11. University of Utah, 12. 115 South 1460 East Room 383 Salt Lake City, 13. Utah 84112, USA</td>
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July 15 (Tuesday)

Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

12:00 PM – 2:00 PM Poster session

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<tr>
<th>Poster Session</th>
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<th>Authors</th>
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| pp01.027       | Influence of Acetylacetone on the Morphology of MoO₃ Rods Obtained by Modified Sol-Gel Synthesis | Klara V. Kotsareva, Elena A. Trusova, Galina N. Bondarenko
1. A.A. Baikov Institute of Metallurgy and Materials Science, RAS, 119991, Leninsky pr. 49, Moscow, Russia
2. A.V. Topchiev Institute of Petrochemical Synthesis of RAS, 119991, Leninsky pr. 29, Moscow, Russia |
| pp01.028       | Synthesis and PM6 Semiempirical Studies of Self-Assembled Ni, Pd And Pt Supramolecular Polygons | Alvaro Duarte-Ruiz, Paulo Torres, Felix Moncada
1. Universidad Nacional de Colombia, Cr 30 No 45-03, Colombia |
| pp01.029       | Application of Ionene-Stabilized Silver Nanoparticles for the Determination of Anions | Ekaterina A. Terenteva, Victoriya V. Arkhipova, Vladimir V. Apyari, Stanislava G. Dmitrienko
1. Lomonosov Moscow State University, Leninskiye gori, 1, Russia |
| pp01.030       | Fine Tuning the Electronic Properties of Single-Walled Carbon Nanotubes by Filling Their Channels | Marianna V. Khramtsova
1. University of Vienna, Faculty of Physics, 1090 Strudlhofgasse 4, Vienna, Austria |
| pp01.031       | High Resolution XANES Spectroscopy for Studying U-magnetite Nanoparticles | Yuila Podkorytnia, Ivan Pidchenko, Tonya Vitova, Alexander Soldatov
1. Southern Federal University, 344090, Rostov-on-Don, Russia
2. Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1 D-76344 Eggenstein-Leopoldshafen, Germany |
| pp01.032       | High-Frequency EPR and ENDOR as Powerful Tools for Characterization of Nano-Hydroxyapatites | Sergey B. Orlovska, Marat R. Gafurov, Georgiy V. Mamin, Timur B. Biktashev, Boris V. Yavkin
1. Kazan Federal University, Kremlievskaya 18, 420008 Kazan, Russia |

July 15 (Tuesday)

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<tr>
<th>Poster Session</th>
<th>Title</th>
<th>Authors</th>
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</table>
| pp01.033       | Interaction Between Defects in the Spherical Hexagonal Order         | Darya Roshal
1. Southern Federal University, Physics Department, 5 Zorge str., Rostov-on-Don, 344090 Russia |
| pp01.034       | Intermolecular Fullerene C₆ Interaction and Fullerite Structures     | Julia V. Novakovsky, Alexander V. Vorontsov, Elizaveta A. Shilyaeva
1. Lomonosov Moscow State University, Department of Chemistry, Leninskiye gori 1/2, Moscow, 119991 Russia |
| pp01.035       | Inverse Opal-Based Three-Dimensional Periodic Nanostructures          | Gennadi A. Emelchenko, Vladimir M. Masalov, Andrey A. Zhokhov, Nadezhda S. Sukhinina, Igor I. Khodos
1. Institute of Solid State Physics RAS, Chernogolovka, Moscow district, ac. Ossipyan, 2, 142432 Russia
2. Institute of Microelectronics Technology and High Purity Materials RAS, Chernogolovka, Moscow district, ac. Ossipyan, 6, 142432 Russia |
| pp01.036       | Ionene-Stabilized Gold Nanoparticles: Preparation, Characterization and Prospects of the Analytical Application | Viktoriya V. Arkhipova, Vladimir V. Apyari, Stanislava G. Dmitrienko
1. Lomonosov Moscow State University, Leninskiye gori, 1, Russia |
| pp01.037       | Iron-Containing Nanoparticles within Carbon Nanotubes: Mössbauer spectroscopy approach | Alexey V. Sobaiev
1. Moscow State University, 119991, Moscow, Leninskiye Gory, b. 1-10 |
| pp01.038       | Local Structure of Nanocrystalline & Far-From-Equilibrium Complex Oxides | Vladimir Sepelak
1. Institute of Nanotechnology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany
2. Slovak Academy of Sciences, Watsonova 45, 04001 Kosice, Slovakia |
| pp01.039       | Maskless and Patternable Silver Nanowire Networks by Spray-Printing | Chings-Chang Lin, Ya-Lin Lin, Wen-Hsien Sun, Yuan-Chen Lin, Jing-Wen Tang, Jing-Heng Tien, Fu-Hsiang Ko
1. Graduate Program for Nanotechnology, Department of Materials Science and Engineering, National Chiao Tung University, Taiwan, EF 324, 1001 University Road, Hsinchu, Taiwan 300, ROC
2. Material and Chemical Research Laboratories, Industrial technology Research Institute, Hsinchu, Taiwan, 195, Sec. 4, Chung Hsing Rd., Chutung, Hsinchu, Taiwan 31040, ROC |
1. Surgut State University, 1 Lenina St., 628400 Surgut, Russia |
July 15 (Tuesday)

Morphology and Luminescent Properties of Oleic Capped CdSe Nanocrystals Heavily Ag-Doped During the Synthesis
Sergey G. Dorofeev, 1 Sergei S. Bubeno,1 Pavel A. Kotin,1 Tatiana A. Kuznetsova 1
Lomonosov Moscow State University, Chemistry Department, Moscow, Russia

NMR of Water Colloidal Solutions of Nanosized Crystalline Particles LaF₃:Gd³⁺
Egor Alakhshin, 1 Vladimir Skirda,1 Alexander Klochkov, 1 Stella Korableva, 1 Bulat Munavirov, 1 Timur Safin, 1 Kajum Safiullin, 1 Murat Tagirov
Kazan Federal University, Kremlyovskaya 18, Russia

Phase Transitions in Nano-Structured Fullerite at Termobaric Effects
Polina A. Borisova, 1 Mikhail S. Blanter, 1 Vadam V. Brazhkin, 1 Viktor P. Glazkov, 1
Viktor A. Somenkov, 1 Vladimir P. Filonenko
National Research Centre "Kurchatov Institute" of Instrumental Engineering and Information Science, 20 Strominka st,1, Akademika Kurchatova pl, Moscow, 123182, n/a, Russia; Russian, Moscow, 107996, n/a, Russia
Moscow State University of Instrumental Engineering and Information Science, 20 Strominka str, Moscow, 107996, n/a, Russia
Institute for High Pressure Physics, 142190 Troitsk, Moscow region, Russia

Photovoltaic Effects Enhanced by Self-Assembled Co Nanoparticles in Co-Doped Amorphous Carbon/Silicon Heterostructures
Yucheng Jiang, 1 Ju Gao
The University of Hong Kong, Pokfulam Road, Hong Kong

Yucheng Jiang, 1 Ju Gao
The University of Hong Kong, Pokfulam Road, Hong Kong

Preparation and Assembly of Monodisperse Core-Shell-Shell Metallodielectric Particles for the Fabrication of Perfect Absorbers
Alexey Petrov, 2 Pavel N. Dyachenko, 1 Tim Hadler, 2 Alexander Yu. Petrov, 2
Manfred Eich, 1 Horst Weller, 1 Tobias Vossmeier
University of Hamburg, Institute of Physical Chemistry, Grindelallee 117; D-21073 Hamburg, Germany
Institute of Optical and Electronic Materials, Hamburg University of Technology, Eilendorfer Straße 38; D-21073 Hamburg, Germany

Spectroscopic Investigations on CdSe/CdS Nanoparticles
Alexey V. Lukashin, 1 Tatiana Yu. Sachkova, 1 Andrei A. Eliseev, 2 Tobias Yochum
Lomonosov Moscow State University, Moscow, Leninskie Gory, 1, Russia
CAN GmbH, Hamburg, Grindelallee 117, Germany

Structure Features and Energetic Peculiarities of Diverse Carbon-Based Particles: Nonempirical Insight
Yulia V. Novakovskaya
Lomonosov Moscow State University, Department of Chemistry, Leninskie gory 1/3, Moscow, 119991 Russia

Structure, Composition and Optical Properties of the Fullerene Based Thin Film Before and After Gamma Ray and X-Ray Radiation
Nikolai Romanov, 1 Marina Elistratova, 1 Erkki Lahderanta, 1 Irina Zakharova
Svetlana-Semiconductors, 27 Engels Av., Saint-Petersburg 194156 Russia
St. Petersburg State Polytechnic University, 195251, St. Petersburg, Russia
Lappeenranta University of Technology, S3850, Lappeenranta, Finland

Study of Aging the La Zr O Hydrogels, Obtained by the Ion-Exchange Method
Elena A. Bovina, 1 Djemima V. Tarasova, 1 Fatima Kh. Chibirova
Karpov Institute of Physical Chemistry, Obukha lane, 3-1/2, Russia

Synthesis of Silver and Gold Nanoparticles in Reverse Micelles: The Growth Kinetics and Mechanism, Particle Characterization
Anastasija Sergievskaya, 1 Vladimir Tatarchuk
Institute of Inorganic Chemistry Russian Academy of Sciences Siberian Branch, 630090 Ac. Lavrentyev pr, 3, Novosibirsk, Russia

Tunneling Resonant Electron-Vibration Spectroscopy of Polyoxometalates
Dalidchik Feodor, 1 Boris Budanov, 1 Sergey Kovalyevskiy, 1 Evgeny Balashov
Institute of Chemical Physics, Russian Academy of Sciences, Moscow, Kosygina str, 4, Moscow, Russia

Unusual Metallic Nanoclusters in Ordered Spinel
Valery M. Talanov, 1 Vladimir B. Shirokov, 1 Mikhail V. Talanov
Platov South-Russian State Polytechnic University, Provescheniya 132, Novocherkassk, Russia
South Scientific Center, Russian Academy of Sciences, Rostov-on-Don, Russia
Research Institute of Physics, Southern Federal University, Rostov-on-Don, Russia

Reciprocal Space Reconstruction for Structural Analysis of Organized Mesoscopic Systems
Artem A. Eliseev, 1 Kirill S. Napolski, 2 Dmitri Chernyshov, 1 Aleksei V. Lukashin, 1 Andrei A. Eliseev
Department of Materials Science, Lomonosov Moscow State University, 119992, Moscow, Lenin Hills, Russia
SNBL ESRF, Grenoble France

Detonation Synthesis Control as a Means of Formation of Nanodiamonds with Predictable Colloid and Chemical Characteristics
Alekandr P. Volnyakovskii, 1 Aleksandr P. Volnyakovskii, 2 Aleksii G. Pozrnyakov
Federal State Unitary Enterprise Scientific Research Institute for Synthetic Rubber, St. Petersburg, Gapsalskaya street, 1, 198035 Russia
A.F. Ioffe Physico-Technical Institute, S-Petersburg, Polytechnical str, 26, 194021 Russia
Institute of Problems of Mechanical Engineering, S-Petersburg, Bolshoi pr V/O, 61, 199178 Russia
St. Petersburg State Technological Institute (technical university), S-Petersburg, Moskovskii pr, 26, 190013 Russia
July 15 (Tuesday)

Section 02 – Thin Films and Heterostructures, 2D and 3D Nanofabrication

12:00 PM – 2:00 PM

Poster session

**pp02.018** Bilayer Composite with High Conductivity Based on Thin Film of Polyaniline and Films of Metals
1 Victor Fe. Ivanov, 1 Oxana L. Gribkova, 1 Anatoly V. Vannikov
1 A.N. Frumkin Institute of Physical Chemistry and Electrochemistry RAS, Moscow, Leninski pr., 31, Russia

**pp02.019** Characterization of CdS-Doped Glass Films Obtained by Pulsed Laser Deposition Method (PLD)
1 Ionut D. Feraru, 1 Raluca C. Iordanescu, 1 Mihaia Elisa, 1 Cristina Vasiliiu, 2 Stefania Stoleru, 2 Adrian Volceanov, 1 Mihaela Filipescu, 1 Alexandre Peretz
1 National R&D Institute for Optoelectronics – INOE 2000, 409 Atomistilor Str., Magurele RO-077125, Romania
2 Faculty of Applied Chemistry and Materials Science, 1 Polizu Str., Bucharest, Romania

**pp02.020** Condition of the NiTi Surface Layer Structure Formed After Its Electron-Beam Melting
1 Alexey A. Neiman, 1 Ludmila L. Meisner, 2 Victor O. Semin
1 Institute of Strength Physics and Materials Science SB RAS, pr. Akademichesky 2/4, Tomsk, Russia
2 National Research Tomsk State University, pr. Lenina 36, Tomsk, Russia

**pp02.021** Controlled Thermal Processing and In Situ Characterization of Single Phase CZTS Thin Films
1 Nicolas C. Anastasiadis, 1 Kyriakos N. Christoforou, 2 Vasiliios Paleakis, 3 Chris S. Ferekides
1 Cyprus University of Technology, Department of Mechanical Engineering and Materials Science and Engineering, 30 Archbishop Kyprianou Str., 3036 Limassol, Cyprus
2 University of South Florida, Department of Electrical Engineering, Mail Point: EN8118 4202 East Fowler Ave Tampa, FL 33620, USA

**pp02.022** Deposition of Silicon Carbonitride (SiC:N) Films Using Phenyl-Containing Organosilicon Precursor by PECVD Technique
1 Evgeniya Ermakova, 1 Yuri Rumyantsev, 1 Marina Kosinova
1 Nikolaev Institute of Inorganic Chemistry SB RAS, 3, Acad. Lavrentiev Ave., Novosibirsk, 630090 Russia

*Design of Nanostructured Oxide Films for 3D Electron Multipliers by MOCVD*
1 Evgenia S. Vikulova, 1 Keniya V. Zherikova, 1 Sergey V. Zabulaev, 1 Igor P. Igumenov
1 Nikolaev Institute of Inorganic Chemistry, Siberian Branch of the Russian Academy of Sciences, Nikolaev Institute of Inorganic Chemistry SB RAS, Acad. Lavrentiev Ave., 3, Novosibirsk, 630090, Russia

*Doping Influence on Photoelectronic Properties of Titanium Dioxide*
1 Anton A. Minnekhano, 1 German V. Trusov, 1 Alexey B. Tarasov, 1 Elizaveta A. Konstantinova
1 Department of Physics, Lomonosov Moscow State University, 119991, Moscow, Russia
2 Department of Chemistry, Lomonosov Moscow State University, 119991, Moscow, Russia
3 Institute of Problems of Chemical Physics RAS, 142432, Chernogolovka, Russia

*Formation Features of Nanostructural Multicomponent Al-Cr-Si-Ti-Cu-N Coatings*
1 Valeriy B. Beregovskaya, 1 Alexandr D. Korotaev, 1 Ivan A. Ditenberg, 1 Konstantin I. Denisov, 1 Yuri P. Pinjin, 2 Dmitri P. Borisov, 2 Alexander N. Tyumentsev
1 National Research Tomsk State University, Tomsk, Russia
2 Siberian Physical-Technical Institute, Tomsk, Russia
3 Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia

*Growth of Thin Nanostructured Zinc Oxide Films by Chemical Displacement of Aluminium*
1 Eugene Chubenko, 1 Vitaly Bondarenko, 1 Alexey Klyshko, 2 Marco Balucani
1 Belarusian State University of Informatics and Radioelectronics, 220013 P.Brovka str. 6, Minsk, Belarus
2 Rome University “La Sapienza”, 00184 via Eudossiana 18, Rome, Italy

*Molecular Dynamic Simulation of Interface Formation in Ag/Cu Bilayers*
1 Anton M. Igoshkin, 1 Igor F. Golovnev, 1 Vasily M. Fomin
1 Khristianovich Institute of Theoretical and Applied Mechanics, Novosibirsk, institutskaya ulitsa, 4, 1, Russia

*Morphology, Structure and Element Composition of Nitrides of High-Entropy (TiZrAlYNb)N and (TiZrHfVNbTa)N Alloys*
1 Alexander D. Pogrebniak, 1 Oleg V. Sobol, 2 Vyacheslav M. Beresnev, 3 Anatoly A. Andreyev, 3 Yoshihiko Takeda, 4 Gregory Abadias, 4 Oleksandr V. Bondar, 4 Ivan A. Yakushchenko
1 National Technical University “Kharkiv polytechnical institute”, 21 Frunze Str., 61002, Kharkiv, Ukraine
2 Sumy State University, 2, Rymsky Korsakov Str., 40007 Sumy, Ukraine
3 National University of Karazin, Suvobod sq., 4, 61022 Kharkiv, Ukraine
4 National Science Center “Kharkiv Institute of Physics & Technology”, Akademicheskaia Str., 61108 Kharkiv, Ukraine
5 Institut P’, University of Poitiers, Chasseneuil-Futuroscope, 86961, France
6 National Institute for Material Science, Ibaraki 305-0047, Tsukuba, Japan
Nanocrystalline Smooth Yttria and Alumina Thin Films on Metal Substrates as Alternative to Electrochemical Polishing Process

Irina Martynova, Dmitry Tsymbarenko, Vadim Amelichev, Anton Kamenev, Alexander Molodyk, Sergey Samoilenkov, Sergey Lee, Valery Petyrkin, Natalia Kuzmina, Andrey Kaul

Lomonosov Moscow State University, Leninskie Gory, Moscow, 119991 Russian Federation
SuperOx, 20-2, Nauchnyi proezd, Moscow, 117246 Russian Federation
SuperOx Japan LLC, Sagamihara Incubation Center (SIC-3), 1880-2 Kamimizo, Sagamihara, Kanagawa, 252-0243 Japan

Performances of Gas Sensor Based on Low-Temperature Co-Fired Ceramics and SnO₂ Nano Film

Akhil Chandran Mukkattu Kuniyil, Vladimir V. Srdic, Branimir Bajac, Goran M. Stojanovic

Department for Microelectronic, Faculty of Technical Sciences, University of Novi Sad, Trg Dositeja Obradovica 5, Serbia
Department of Materials Engineering, Faculty of Technology, University of Novi Sad, Trg Dositeja Obradovica 5, Serbia

Research Tribology Properties Nanostructure Diffusion Layers of Metal Coverings

Margarita A. Skotnikova, Svetlana A. Shasherina, Nikolay A. Krylov, Galina V. Tsvetkova, Nikolay V. Bezenkin

St. Petersburg State Polytechnical University, 195251 St. Petersburg Politekhnicheskaya St., 29, Russia

Study of Multiferroic GdMnO₃ Thin Film: An Exciting Magnetic Behavior

Puneet Negi, H. M. Agrawal, Hemaunt Kumar, R. C. Sinvastava

Department of Physics, G. B. Pant University of Ag. & Tech. Pantnagar, Uttarakhand, Pin- 263145 India

Synthesis and Investigation of DNG/AM Nanocomposite Coatings on Basis of Amorphous Carbon

Alexander V. Andreev, Igor Y. Litovchenko, Alexander D. Korotaev, Dmitry P. Borisov

Tomsk State University, Lenina Street 36, Russia
Institute of strength physics and material science, Academic Avenue 2/4, Russia

Synthesis and Investigation of DNG/AM Nanocomposite Coatings on Basis of Amorphous Carbon

Alexander V. Andreev, Igor Y. Litovchenko, Alexander D. Korotaev, Dmitry P. Borisov

Tomsk State University, Lenina Street 36, Russia
Institute of strength physics and material science, Academic Avenue 2/4, Russia

Particle Size Dependent Properties of Cobalt Ferrite Nanoparticles Synthesized by Starch Assisted Sol-Gel Combustion Method

Raghvendra S. Yadav, Jaromir Havlica

Materials Research Centre, Brno University of Technology, Purkyňova 464/118, CZ-612 00 Brno, Czech Republic

Ultrafine Hexagonal Cobalt and Nickel Hydroxide Nanoplates Synthesized by Hydrothermal Method and Its Topotatic Conversion to Nickel Cobalt Oxide

Italo O. Mazali, Nathila M. Carneiro

Institute of Chemistry, Campinas State University, P.O.Box 6154, Sao Paulo, Brazil

Direct Synthesis of Hematite Microspheres by Solution Combustion in Ultrasonic-Generated Aqueous Aerosols

Alexey Tarasov, German Trusov, Eugeny Goodilin, Alexandr Mukasyan

Institute of Problems of Chemical Physics RAS, Academician Semenov avenue 1, Chernogolovka, 142432, Russia
National University of Science and Technology, Leninsky av. 4, Moscow, 117049, Russia
Department of Chemistry, Lomonosov Moscow State University, Lenin Hills, Moscow, 119992, Russia

Synthesis of Nanocrystalline Tin Oxide by Flame Spray Pyrolysis Using Sulphate precursors

Rahul L. Dcunha, Silvister MJ. Raju, Subramshu S. Bhattacharya

Indian Institute of Technology Madras, Nano Functional Materials Technology Centre (NFMT) Department of Metallurgical & Materials Engineering, IIT Madras, Chennai - 600036, India

Fragmentation of Coarse Grained Nonstoichiometric Transition Metal Monoxides MOₓ Down to Nanoparticles

Albinsa A. Valiêva, Andrey A. Rempel, Hartmut Schrottner

Institute of Solid State Chemistry, Ural Branch of the Russian Academy of Sciences, Pervomaiskaya 91, Ekaterinburg 620990, Russia
Ural Federal University named after First President of Russia B.N. Yeltsin, Mira 19, Ekaterinburg 620002, Russia
Institute for Electron Microscopy and Nanoanalysis, Graz University of Technology, Steyrergasse 17/III, Graz A-8010, Austria

Local Atomic and Electronic Structure of Nanostructured Relaxor Ferroelectric Ceramics

Galina Sukharina, Alexander Guda, Nikolay Smolentsev, Kamaludin Abdulvakhidov, Alexander Soldatov

Southern Federal University, 344000, Rostov on Don, Sorge,5, Russia

July 15 (Tuesday)
### Transport Properties of Anodic Alumina Membranes in Liquid Media

Dmitrii I. Petukhov, Dmitrii A. Buldakov, Alexey A. Tishkin, Andrey A. Eliseev

Lomonosov Moscow State University, Moscow, Leninskie hills, Russia

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### Radiation-Thermal Synthesis of Ferrite Ceramics with an Intense Beam of Relativistic Electrons from Nano-Precursors

Uliana V. Ancharova, Mikhail A. Mikhailenko, Boris P. Tolochko, Nikolai Z. Lyakhov, Eugene A. Shitarkiev, Alexey Yu. Vlasov, Mikhail V. Korobeinikov

Institute of Solid State Chemistry and Mechanochemistry SB RAS, Kutateladze 18, 630128 Novosibirsk, Russia

Budker Institute of Nuclear Physics, Lavrentiev ave. 11, 630090 Novosibirsk, Russia

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### July 15 (Tuesday)

#### Section 04 – Bulk Metallic Nanomaterials

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<th>Poster session</th>
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<tr>
<td><strong>pp04.005</strong></td>
<td><strong>Microwaves Assisted Synthesis and Structural Characterization of Bimetallic Fe-Au Nanostructures</strong></td>
</tr>
<tr>
<td>Nancy Castillo, Amado F. García-Ruiz, Rodrigo Esparza</td>
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<tr>
<td>UPIICSA-COFAA, Instituto Politécnico Nacional (IPN), Te 950, Col. Granjas-México, Iztacalco, C. P. 08400 México, D. F. Mexico</td>
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<tr>
<td><strong>pp04.006</strong></td>
<td><strong>Behavior of Symmetrical Tilt Grain Boundaries in BCC And FCC Metals Under Shear Loading</strong></td>
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<td>Anton Nikonov, Andrey Dmitriev</td>
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<td>Institute of Strength Physics and Materials Science SB RAS, pr. Akademicheskii 2/4, Tomsk, 634058 Russia</td>
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<td><strong>pp04.007</strong></td>
<td><strong>Hysteresis Properties Rapidly Quenched Nd-Fe-B Alloys Under Severe Plastic Deformation</strong></td>
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<td>Irina S. Tereshina, Ivan A. Pelevin, Evgeniya A. Tereshina, Gennady S. Burbhanov, Andrzej Zaleski, Sergey V. Dobatkin</td>
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<tr>
<td>Lomonosov Moscow State University, 119991 Moscow, Russia</td>
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<td>Baikov Institute of Metallurgy and Material Science RAS, 119991 Moscow, Russia</td>
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<tr>
<td>Institute of Physics ASCR, 18221 Prague, Czech Republic</td>
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<td>Institute of Low Temperature and Structure Research PAS, 50-950 Wroclaw, Poland</td>
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<td><strong>pp04.008</strong></td>
<td><strong>Mechanical Behavior of Ultrafine-Grained (UFG) Ti-Based Alloy with Protective Coating</strong></td>
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<td>Roman Valiev, Konstantin Selivanov</td>
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<td>Ufa State Aviation Technical University, K. Marx Street 12, Ufa, The Republic of Bashkortostan 450000 Russian Federation</td>
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<td><strong>Revisiting the Magnetic Properties of fcc-Fe Nanoparticles in Cu-Al Matrices</strong></td>
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<td>Waldemar A. Macedo, Luis E. Fernandez-Outon, Jose D. Ardisson</td>
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<td>Centro de Desenvolvimento da Tecnologia Nuclear, 31270 Belo Horizonte, MG, Brazil</td>
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<td><strong>Microstructure and Mechanisms of Hardening of UFG Al-Mg-Si Alloys Prepared by Severe Plastic Deformation</strong></td>
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<td>Aydar M. Mavlyutov, Maksim Yu. Murashkin, Nariman A. Enikeev, Vil D. Sitdikov</td>
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<td>Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, K. Marx st., 12, 450000 Ufa, Russia</td>
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#### Section 05 – Nanocomposites and Hybrid Nanomaterials

**12:00 PM – 2:00 PM**

**Poster session**

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<td>Aleksei O. Pozdnyakov, Alexandr A. Bogdanov, Alexandr P. Voznyakovskii, A.F. Ioffe Physico Technical Institute, Polytechnicheskaya 26, 194021 Russia</td>
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Production of Antifriction Composite Coatings Reinforced with Carbon Nanotubes
1 Roman S. Mikhnev, 1 Nikolay V. Kobernik
2 Bauman Moscow State Technical University, 1000505, Moscow, 2-ya Bauman-
skaya, 5, Russia

Silver Nanoparticles Decorated Polyoxometalate Nanocomposite as an Ultra-
high Capacity Anode Material for Lithium Ion Battery
1 Asim Olgun, 1 Mehmet L. Yola, 1 Tanju Eren, 1 Aliper T. Colak, 1 Necip Atar
2 Dumlupinar University, Dumlupinar University, Faculty of Arts and Sciences,
Department of Chemistry, Kütahya, Turkey
3 Simon University, Simon University, Faculty of Engineering, Department of
Metallurgical and Materials Engineering, Simon, Turkey

Preparation, Structure and Tribological Properties of Composite Material on the
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1 Mikhail B. Tsetlin, 1 Alexey A. Teplov, 1 Eugeni K. Golubev, 1 Sergey I. Belousov,
2 Sergey N. Chvalun, 1 Sergey V. Krasheninnikov, 1 Alexandre L. Vasiliev, 1 Mikhail
Yu. Presniakov
2 National research centre «Kurchatov institute», Akademika Kurchatova pl, 1
Moscow, 123182 Russia

Polyethylene-Based Nanocomposites with Carbon Reinforcements: Atomistic and
Coarse-Grained Approaches
1 Nikita Orekhov, 1 Vladimir Stegalov
2 Moscow Institute of Physics and Technology, 9 Institutskiy per., Dolgoprudny,
Moscow Region, Russia
3 Joint Institute for High Temperatures of the Russian Academy of Sciences
(JIHT RAS), Izhorskaya st. 13 Bd.2, Moscow, Russia

Nanofiller’s Influence on Spinning Process and Kinetics of PAN-Fibers Cyclization
1 Ivan Yu. Skvortsov, 1 Igor S. Makarov, 1 Pavel V. Zatonskikh, 1 Galina N. Bonda-
renko, 2 Anna K. Berkovich, 2 Galina S. Chebotaeva
2 A.V.Topchiev Institute of Petrochemical Synthesis, RAS, 29, Leninsky prospekt,
Moscow, 119991 Russia
3 Chemistry department, Lomonosov Moscow State University University,
Moscow, 119991 Russia

Modification of Conductivity, Superhydrophilicity and Photocatalytic Activity of
TIO, Thin Films Through Carbon Nanotubes Doping
1 Geraldine LM. Leonard, 1 Simon Remy, 1 Charline M. Malengreaux, 1 Benoit Heinrichs
2 University of Liege, Laboratoire de Génie Chimique, B6a, alle du six aout,
B-4000 Liege, Belgium

Heterophase Synthesis of Fe3O4 Organosol for Nanocomposites Promising in
Optoelectronics
1 Anton I. Nechaev, 1 Viktor A. Valtsifer, 1 Vladimir N. Strelnikov, 2 Valentia A.
Milichko, 1 Vladimir P. Dzyuba, 2 Yuriu N. Kulchi
2 Institute of Technical Chemistry Ural Branch RAS, 3, Academician Korolev
street, Perm, Russia
3 Institute of Automation and Control Processes Far Easter Branch RAS, 5, Radio
street, Vladivostok, Russia

Enhanced Reactivity of Micro Boron through Adding Aluminum and Magnesium
1 Yi Cheng, 1 Hongtao Yang, 1 Yanchun Li, 1 Baoyun Zhang
2 Nanjing University of Science and Technology, Nanjing, 210094, P.R.China

A High Performance Nanostructured Concretes. A New Point of View
1 Andrey N. Ponomarev
2 St.Petersburg State Polytechnical University, Vice-President of Russian Nano-
technology Society, 190020,St.Petersburg, Cielokovskogo, 11, Russia

Synthesis and Investigation in Magnetic Characteristics of Mesoporous Sili-
cate Structures NiO-MCM-41 and Fe2O3-MCM-41
1 Anton I. Nechaev, 1 Natalia B. Kondrashova, 2 Viktor A. Valtsifer, 2 V.V. Mitrofan-
ov, 1 A. Uporov
2 Institute of Technical Chemistry Ural Branch RAS, 3, Academician Korolev
street, Perm, Russia
3 Institute of Metallurgy Ural Branch RAS, 18, S. Kovalyovskoi, Yekaterin-
bur, Russia

The Formation of Bimetallic Nanoparticles in the Irradiated IPEC Complexes
Containing Au-Cu and Ag-Cu Ions
1 Dmitriy Kimnov, 2 Sergey Belopushkin, 2 Sergey Zezin, 1 Elena Zezina
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3 The Institute of Synthetic Polymeric Materials, Profsoyuznaya st. 70 117393
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4 Moscow State University, Faculty of Chemistry, 119991,Moscow 1, GSP-1, 1-3
Leninskiye Gory, Russia

The Structure and Magnetic Properties of Nanocomposites Fe-Co/Co Based on
IR Pyrolized Polyacrylonitrile
1 Mikhail I. Ivanov, 1 Mikhail N. Efimov, 2 Dmitriy G. Muratov, 1 Lev M. Zemtsov,
2 Elfia L. Dadziga, 2 Galina P. Karpacheva
2 Russian Academy of Sciences, Moscow, 119991 Russia
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2 Nanjing University of Science and Technology, Nanjing, 210094, P.R.China
### July 15 (Tuesday)

#### Section 06 – Polymer, Organic and Other Soft Matter Materials

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Nanostructure and Geometry-Optimization Study of a New 4, 4'-Bithiazole Compounds

- Akram Hosseinian, 1 Amin Ghodousian, 1 Hamid Reza Rahimipour
- Department of Engineering Science, College of Engineering, University of Tehran, P.O. Box 11155-4463 Iran

**pp06.009**

Electro-Optical Properties of New Electrochromic Copolymers Based on 3,4-etylenedioxythiophene and Spiro Bipropyleneoxythiophene

- Lutfiye Canan Pekel, 1 Baris Karabay, 1 Atilla Cihaner
- Atilim University, Ankara, Turkey

**pp06.010**

Langmuir and Langmuir-Blodgett Monolayers of Linear Dicyanovinyl Derivatives of Oligothiophene Disiloxanes

- D.S. Anisimov, 1 A.S. Sizov, 2 Yu.N. Luponosov, 1 V.V. Bruevich, 1 E.Y. Agina, 1 D.Yu. Paraschuk, 2 S.A. Ponomarenko
- 1 Faculty of Physics and International Laser Center, M. V. Lomonosov Moscow State University, 119991 Moscow, 1-2 Leninskiye Gory, Russia
- 2 ISPM RAS, 117393 Moscow, Profsoyuznaya st. 70, Russia

**pp06.011**

Large-Area Molecularly-Smooth Vapor and Solution Grown Organic Semiconducting Crystals

- Vladimir V. Sobornov, 1 Dmitry Yu. Paraschuk, 1 Vladimir V. Bruevich
- Lomonosov Moscow State University, Lomonosov Moscow State University, GSP-1, Leninskiye Gory, Moscow, 119991, Russian Federation

**pp06.012**

New Reactive Nanostructured Luminophores for Functional Organosiloxane Polymers

- Maxim S. Skorotetsky, 1 Oleg V. Borschchev, 1 Nikolay M. Surin, 1 Yelena A. Tatari- novova, 1 Sergey A. Ponomarenko
- Enikolopov Institute of Synthetic Polymeric Materials (ISPM RAS), Profsoyuznaya st. 70, 117393 Moscow, Russia

**pp06.013**

Optoelectronic Properties of Ambipolar Poly(2,5-dithienylpyrrrole) Derivatives

- Pinar Camurlu, 1 Nese Karagoren Guven
- Akdeniz University Department of Chemistry, 07058 Antalya, Turkey

**pp06.014**

Poly(pyridinium triflate) / Poly(styrene sulfonate) Complex: Preparation, Characterization and Electrochromic Properties

- Mikhail M. Petrov, 1 Roman D. Pichugov, 1 Elena E. Makhneva
- Department of Physics, Lomonosov Moscow State University, Leninskiye Gory 1, 119991 Moscow, Russia

**pp06.015**

Self-Assembly Method of Surface Modification for Deposition of Active Layer of Organic Field Effect Transistors

- Anastasia V. Glushkova, 1 Oleg V. Borschev, 1 Valery A. Postnikov, 1 Vladimir V. Sobornov, 1 Vladimir V. Bruevich, 1 Sergey A. Ponomarenko, 1 Dmitriy Yu. Paraschuk
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- 3 Donetsk National Academy of Engineering and Architecture, 86123, Donetsk region, Makeyevka, Derzhavin str., 2, Ukraine

**pp06.016**

Towards Air-Stable n-Chanel OFETs via Chemical Design of Indigo-Based Semiconductors

- Irina V. Klimovich, 1 Lidiya I. Leshanskaya, 1 Denis V. Anokhin, 1 Dmitry V. Novikov, 1 Sergey I. Troyanov, 1 Nadezhda N. Dremova, 1 Pavel A. Troshin
- 1 Institute of Problems of Chemical Physics, Chernogolovka, Semenov Prospect 1, Russia
- 2 M.V.Lomonosov Moscow State University, Moscow, Leninskiy gory, Russia

**pp06.017**


- Lidiya I. Leshanskaya, 1 Denis V. Anokhin, 1 Evgeniy V. Shegov, 1 Nadezhda N. Dremova, 1 Diana K. Susarova, 1 Pavel A. Troshin
- 1 IPCP RAS, Academician Semenov av. 1, Chernogolovka, Moscow region, 142432, Russia
### Section 07 – Nanomaterials for Energy

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- Anton Gavrilov, Dmitrii Petukhov, Bulat Churagulov
- Lomonosov Moscow State University, GSP-1, Leninskie Gory, Moscow, 119991, Russian Federation

**pp07.012** Fluorine-Modified Titanium Dioxide Nanomaterials for Molecular Photovoltaics
- Alexey Sadovnikov, Alexander Baranchikov, Olga Boytsova, Vladimir Ivanov, Sergey Kozyukhin, Vitaly Grinberg, Victor Emets
- Institute of General and Inorganic Chemistry, Moscow 119991, Russia
- Frumkin Institute of Physical Chemistry and Electrochemistry, Moscow 119991, Russia

**pp07.013** A Precise Technique for Estimation of the Open Circuit Voltage of Organic Bulk Heterojunction Solar Cells
- Dmitry V. Novikov, Alexander V. Mukhachev, Alexander V. Akkuratov, Diana K. Susarova, Olga A. Mukhacheva, Pavel A. Troshin
- IPCP RAS, Academician Semenov avenue 1, Chernogolovka, Moscow region, 142432, Russian Federation
- INEPCP (Branch) RAS, Academician Semenov avenue 1, Chernogolovka, Moscow region, 142432, Russian Federation

**pp07.014** Bandgap Engineering by Decoration of ZnO Nanoparticles
- Kirill V. Vokhmintsev, Elena A. Trusova, Alexey N. Kirichenko
- A.A. Baikov Institute of Metallurgy and Materials Science, RAS, 119991, Leninsky pr. 49, Moscow, Russia
- Technical Institute for Superhard and Novel Carbon Materials, 7a Centralnaya street, Troitsk, Moscow, 142190 Russia

**pp07.015** Characterization and Photochemical Performance of the SnO Nanocomposite Photoanode for Dye-Sensitized Solar Cell
- Ming Hung, Ripon Bhattacharjee
- Department of Chemical Engineering and Materials Science, Yuan Ze University, No. 153, Yuan-Tung Road, Chungli, Taoyuan 320, Taiwan

**pp07.016** Dicyanovinyl-Substituted Oligothiophene Acceptors for Organic Solar Cells
- Vasily A. Trukhanov, Marina M. Koroleva, Arthur L. Mannakov, Ilya V. Golovnin, Aleksandr N. Solodukhin, Yuriy N. Luponosov, Sergey A. Ponomarenko, Dmitrii Y. Parashchuk
- Lomonosov Moscow State University, Leninskie Gory 1, 119991 Moscow, Russia
- N.S. Enikolopov Institute of Synthetic Polymer Materials of RAS, Profsoyuznaya st. 70, 117395 Moscow, Russia

**pp07.017** Dye-Sensitized Solar Cells Incorporating Plasmonic Core-Shell Nanoparticles: Requirements for Chemical and Thermal Stability
- Bjorn Tornsgren, Kent Akiitsu, Anne Yilnen, Simon Sanden, Takaya Kubo, Hiroshi Segawa, Ronald Osterbacka, Jan-Henrik Smatt
- Laboratory of Physical Chemistry and Center of Excellence for Functional Materials, Abo Akademi University, Porthansgatan 3-5, 20500 Turku, Finland
- Research Center for Advanced Science and Technology, The University of Tokyo, 4-6-1, Komaba, Meguro-ku, Tokyo 153-8904, Japan
- Physics and Center of Excellence for Functional Materials, Abo Akademi University, Porthansgatan 3-5, 20500 Turku, Finland

**pp07.018** Effect of the Fullerene Component on the Performance of Bulk Heterojunction Organic Solar Cells Based on the PPV-PPE Copolymers
- Olga A. Mukhacheva, Andrey E. Goryachev, Daniel A. M. Egbe, Nyazdy Serdar Sabiciftci, Pavel A. Troshin
- IPCP RAS, Semenov Prospect 1, Chernogolovka, Moscow region, 142432, Russia

**pp07.019** Efficient Organic Solar Cells Based on Novel Statistical Copolymers Comprising Carbazole, Fluorene, Thiophene and Benzo[1,2-c:4,5-c']Dithiophene Units
- Diana K. Susarova, Alexander V. Akkuratov, Dmitry V. Novikov, Pavel A. Troshin
- IPCP RAS, Institute for Problems of Chemical Physics of Russian Academy of Sciences, Semenov Prospect 1, Chernogolovka, Moscow region, 142432, Russia

**pp07.020** Efficient Standard and Inverted Photovoltaic Cells Using Novel Charge-Selective Buffer Layer Materials
- Diana K. Susarova, Olga A. Mukhacheva, Lubov A. Frolova, Dmitry V. Novikov, Ekaterina A. Khakina, Pavel A. Troshin
- Institute for Problems of Chemical Physics of Russian Academy of Sciences, Semenov Prospect 1, Chernogolovka, Moscow region, 142432, Russia

**pp07.021** Hierarchically Assembled Microspheres Consisting of Nanosheets of Highly Exposed (001) Facets TiO2 for Dye-Sensitized Solar Cells
- Jia-De Peng, Chi-Ta Lee, Hsi-Hsin Lin, Pei-Chieh Shih, Chuan-Ming Tseng, Kuo-Chuan Hsu
- National Taiwan University, Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan
- Academia Sinica, Institute of Physics, Academia Sinica, Taipei 11529, Taiwan

**pp07.022** High LUMO Level Fullerene Monocycloadducts as Electron-Acceptors for Organic Solar Cells
- Alexander V. Mukhachev, Dmitry V. Novikov, Olga A. Mukhacheva, Diana K. Susarova, Fedor A. Prudnov, Andrey E. Goryachev, Pavel A. Troshin
- The Institute of Problems of Chemical Physics of the Russian Academy of Sciences, Academician Semenov avenue 1, Chernogolovka, Moscow region, 142432, Russian Federation
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<td>Influence of a Co-Doping on a Phosphorus and Gallium Diffusion in Germanium in In$_{1-x}$Ga$<em>x$As/In$</em>{1-x}$Ga$_x$P/Ge Heterostructures</td>
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<td>National University of Science and Technology MITSiS, Moscow, Leninsky Prospekt 4, Russia</td>
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<td>Vitaliy S. Kochurov, Mukhamed L. Keshtov, Ganesh-Datt Sharma, Fang-Chung Chen, Alexei R. Khokhlov</td>
<td>Faculty of Physics, M.V.Lomonosov Moscow State University, Leninskiye Gory, Moscow, 119991 Russia</td>
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<td>Novel Star-Shaped Oligomer for Organic Photovoltaics</td>
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<td>N. S. Enikolopov Institute of Synthetic Polymer Materials of the RAS, Profsoyuznaya st. 70, Moscow, Russia</td>
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<td>Phosphotungstic Acid Modified TiO$_2$ Nanosheets as a Semiconductor Film for Enhanced Performance of Dye-Sensitized Solar Cells</td>
<td>Jia-De Peng, Hsi-Hsin Lin, Chi-Ta Lee, Kuo-Chuan Ho</td>
<td>National Taiwan University, Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan</td>
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<td>Dmitry Yu. Godovsky, Yulianna E. Roginskaya, Natalia V. Golubko, Anastasia E. Ozmnova, Dmitri Yu. Parashuk</td>
<td>Karpov Institute of Physical Chemistry, Vorontsovo pole str.5, Moscow, Russia</td>
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<td>Elizaveta Feldman, Vladimir Bruevich, Artur Mannanov, Vasily Trukhanov, Dmitriy Yu. Parashuk</td>
<td>Moscow State University, Leninskiye Gory 1, Moscow, Russia</td>
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July 15 (Tuesday)

Section 08 – Biological and Biomedical Nanomaterials

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<td>Igor V. Shishkovsky, Vladimir Scherbakov, Yuri G. Morozov</td>
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<td>1 Lebedev Physical Institute of Russian Academy of Sciences, Novo-Sadovaja st., 221, 143011 Samara, Russia</td>
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<td>2 Institute of Structural Macrokinetics and Materials Science (ISMMS), RAS, Chernogolovka 142432, Russia</td>
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<td><strong>pp08.021</strong></td>
<td>The Study of Physico-Chemical Properties of the Nanodiamond Materials and Their Interaction with Different Viruses</td>
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<td>Alexandra Isakova, Marina Ivanova, Elena Burtsvea, Nikolay Nosik, Boris Spitsyn, Valeriy Ivanova</td>
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<td>1 A.N. Frumkin Institute of Physical Chemistry and Electrochemistry, RAS, 119071 Moscow, Leninsky prospect, 31, Russia</td>
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<td>2 D.I. Ivanovsky Institute of Virology, Ministry of Health of the Russian Federation, 123098 Moscow, Gamaley st., 16, Russia</td>
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<td><strong>pp08.022</strong></td>
<td>Synthesis and Toxicological Study of Copper Nanoparticles</td>
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<td>Alexey N. Zhigach, Ilya G. Leipunsky, Mikhail K. Kuskov, Elena S. Afanasenkova, Nadezda G. Berezina, Olga A. Bogoslovskaja, Alla A. Rakhmetova, Irina P. Okhlovskaya, Natalya N. Gluschenko</td>
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<td>1 Institute for Energy Problems of Chemical Physics, 119334 Moscow, Vavilov str., 38, Russian Federation</td>
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<td><strong>pp08.023</strong></td>
<td>A Comparative Evaluation of Antibacterial Property of Silver Nanoparticles and Silver Embedded Composites</td>
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<td>Ilgım Gökçürk, Kadri Erol, Mustafa Kacakulak, Abdullah Ceylan, Lokman Uzun</td>
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<td>1 Division of Nanotechnology and Nanomedicine, Hacettepe University, 06800 Beytepe, Ankara, Turkey</td>
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<td>2 Department of Chemistry, Hacettepe University, 06800 Beytepe, Ankara, Turkey</td>
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<td>3 Department of Biomedical Engineering, Baskent University, 06810, Ankara, Turkey</td>
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<td>4 Department of Physics Engineering, Hacettepe University, 06800 Beytepe, Ankara, Turkey</td>
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<td><strong>pp08.024</strong></td>
<td>Anti-Inflammatory Effect of Some New Biomaterials Based on Gold Nanoparticles and Polyphenols from Cornus Sanguinea L. Fruits</td>
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<td>Bianca E. Moldovan, Luminita C. David, Liliana Olenic, Adriana Vulcu, Adriana G. Filip</td>
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<td>1 Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University, Cluj-Napoca, Romania, Arany Janos 11, Cluj-Napoca, Romania</td>
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<td></td>
<td>2 National Institute for Research and Development for Isotopic and Molecular Technologies, Cluj-Napoca, Romania</td>
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<td>3 Faculty of Medicine, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-napoca, Romania</td>
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July 15 (Tuesday)

| **pp08.025**        | Biofabrication of Silver Sulfide Nanoparticles by the Metal-Reducing Bacterium Shewanella Oneidensis MR-1 |
|                     | Anastasia S. Shebanova, Tatyan A. Voeikova, Alexander V. Egorov, Lidiya K. Emelyanova, Irina N. Krestyanova, Lyudmila M. Novikova, Konstantin V. Shayan, Mikhail P. Krichinchnov, Vladimir G. Dedubov |
|                     | 1 Lomonosov Moscow State University, 119234, Leninskie Gori, 1, Moscow, Russia |
|                     | 2 State Research Institute of Genetics & Selection of Microorganisms, 117545, 1 First Dorozhny proezd, 1, Moscow, Russia |
|                     | 3 N.N. Semenov Institute of Chemical Physics of the Russian Academy of Sciences, 119991, Ul. Kosygina, 4, Moscow, Russia |
| **pp08.026**        | Carbon Nanomaterials as Anti-Oxidizing Agents: Optical Spectroscopy and DFT Study |
|                     | Mikhail A. Soldatov, Igor V. Alperovich, Eugenia V. Frazhnova, Yuliya O. Smirnova, Alexander V. Soldatov |
|                     | 1 Southern Federal University, Research Center for Nanoscale Structure of Matter, Zorge str. 5, Rostov-on-Don, Russia |
|                     | 2 Southern Federal University, Research Institute of Biology, Stachki av. 194/1, Rostov-on-Don, Russia |
|                     | 3 Purdue University, Department of Physics, 525 Northwestern Avenue, West Lafayette, Indiana, 47907, United States |
| **pp08.027**        | Carbon Quantum Dots as Imaging Agent in the Study of Cells |
|                     | Artem S. Minin, Anatoly E. Yermakov, Ilya V. Byzov, Mikhail A. Uimin, Artem A. Minin, Maria V. Ulitko, Leonid T. Smoluk |
|                     | 1 Ural Federal University named after the first President of Russia B.N. Yeltsin, 620002, Ekaterinburg, Mira street 19, Russia |
|                     | 2 Institute of Metal Physics, Ural Division of the Russian Academy of Sciences, 620219, Ekaterinburg, Sofia Kovalevskaya str., 18, Russia |
|                     | 3 Institute of Immunology and Physiology, Ural Division of the Russian Academy of Sciences, 620219, Ekaterinburg, Pervomayskaya 106, Russia |
| **pp08.028**        | Cyto-Genotoxical Evaluations of S-nitrosated Superaramagnetic Iron Oxide Nanoparticles: A Promising Anti-Cancer Agent |
|                     | Amedea B. Seabra, Ana Carolina F. Ferrari, Paula S. Haddad, Leandro O. Feitosa, Renata da L. Lima |
| **pp08.029**        | Innovative Biocompatible and Antibacterial Fabrics with Healing Properties |
|                     | Daniela Ferro, Gabriella Di Carlo, Sergey M. Barinov, Vladimir Komlev, Gabriel M. Ingo, Giuseppina Padeletti, Cristina Failla |
|                     | 1 CNR-ISMN, Via dei taurini 19, 00185 Roma, Italy |
|                     | 2 RAS Baikov Inst, Lensky prospect 49, 119991, Moscow, Russia |
|                     | 3 Experimental Immunology Laboratory, IDHRCS, via Monti di Creta 104, 00167, Rome, Italy |
| **pp08.030**        | Investigation of Phase Transitions Associated with Shape Instabilities of Tubular Lipid Membranes |
|                     | Ivan V. Golushko |
|                     | 1 South Federal University, Zorge 5, Rostov-on-Don, 344090, Russia |
| **pp08.031**        | New Approach to Visualization of Fluorescent Carbon Biomarkers Using Artificial Neural Networks |
|                     | Alexey M. Vervald, Sergey A. Burikov, Sergey A. Dolenko, Kirill A. Laptinskiy, Igor V. Lasov, Tatiana A. Dolenko |
|                     | 1 Lomonosov Moscow State University, GSP-1, Leninskie Gory, Moscow, 119991, Russian Federation |
|                     | 2 Prokhorov General Physics Institute, Russian Academy of Sciences, 119991, Moscow, Vavilov Str., 38, Russia Federal |
July 15 (Tuesday)

Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

12:00 PM – 2:00 PM

Poster session

**pp09.014**

Nanointerdentation Properties of Heat Treated 7075 Aluminum Alloy Disc

1 Yunche Wang, 2 Sergei Alexandrov, 3 Sergey Auzkovich

National Cheng Kung University, 1 University Road, Tainan, 70101 Taiwan

1 A.Yu. Ishlinski Institute for Problems in Mechanics, Russian Academy of Sciences, 119526 Moscow, Russia

2 Scientific Educational Center "Materials", Don State Technical University, 344000 Rostov-on-Don, Russia

**pp09.015**

Development of Metal Matrix Composites with Non-Agglomerated Nanodiamond Reinforcing Particles for Different Applications

1 Vladimir A. Popov

1 NUST «MISIS», Leninsky prospect, 4, Moscow, 119049, Russia

**pp09.016**

Graded Nano- and Micro-Crystalline Composite CVD Diamond Coatings for Tribological and Machining Applications

1 Ravikumar Dumpala, 1 Ramamoorthy B, 3 M.S. Ramachandra Rao

1 Manufacturing Engineering Section, Department of Mechanical Engineering, Indian Institute of Technology Madras, Chennai 600036, India

2 Nano Functional Materials Technology Centre, MSRC and Department of Physics, Indian Institute of Technology Madras, Chennai 600036, India

**pp09.017**

Preparation of Optical Quality Films from Graphene-Carboxymethylcellulose Polymer Composite and Application for erbium Doped Fiber Laser Mode Locking

1 Anotoly S. Lobach, 1 Dmitry V. Khudyakov, 1 Natalya G. Spitsina, 2 Valery A. Kazakov, 2 Sergei K. Sigalaev, 1 Chengbo Mou, 1 Raz Afr, 2 Sergei K. Turitsyn, 3 Aleksey G. Rozhin

1 Institute of Problems of Chemical Physics RAS, Ac. Semenov Av. 1, Chernogolovka, Moscow Region 142432, Russia

2 Keldysh Research Center, Onzhezhskaya 8, Moscow 125438, Russia

3 Aston Institute of Photonic Technologies, Aston University, Aston Triangle, Birmingham, B4 7ET United Kingdom

**pp09.018**

Prismatic Misfit Dislocation Loops in Hollow Core-Shell Nanoparticles

1 M.Y. Gutkin, 2 A.E. Romanov, 3 A.L. Kolesnikova, 4 S.A. Kratsnitsky

1 Institute of Problems of Mechanical Engineering, Russian Academy of Sciences, Bolshoj 61, Vasil. Ostrov, St. Petersburg, 199178, Russia

2 Department of Mechanics and Control Processes, St. Petersburg State Polytechnical University, Polytekhnicheskaya 29, St. Petersburg, 195215, Russia

3 Scientific Educational Center "Materials", Don State Technical University, 344000 Rostov-on-Don, Russia

4 Ioffe Physical Technical Institute, Russian Academy of Sciences, Polytekhnicheskaya 26, St. Petersburg, 194021, Russia

5 Togliatti State University, Belorussskaya 14, Togliatti, 445667, Russia
**July 15 (Tuesday)**

**Section 10 – Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics**

<table>
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<tr>
<th>Time</th>
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<td>12:00 PM – 2:00 PM</td>
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**pp10.013**
**Strains in Ge/Si Heterostructures with Ge Quantum Dots: An Investigation by Means of High Resolution TEM**
1 Mikhail S. Storozhevykh, 1 Larisa V. Arapkina, 1 Vladimir A. Yuryev
1 A. M. Prokhorov General Physics Institute, RAS, 119991, Moscow, Vavilov Str., 38, Russia

**pp10.014**
**A Study on Si and P Doped h-BN Sheet**
1 Hatice Kokten, 1 Sakir Erkoc
1 Department of Physics, Middle East Technical University, 06531 Ankara, Turkey

**pp10.015**
**Application of Asymptotic Methods in Modeling of the Wave Functions of the Carriers in Si/SiGe Heterostructures**
1 Andrey O. Orlov, 1 Natalia T. Levashova
1 Lomonosov Moscow State University, MSU, Faculty of Physics, 119991, Moscow, GSP-1, 1-2 Leninskyiye Gory, Russia

**pp10.016**
**Determination of the 3D Local Atomic and Electronic Structure of Nanostructured Materials by Combining X-Ray Absorption and Emission Spectroscopies and Computer Modelling**
1 Alexander V. Soldatov
2 Southern federal university of Russia, 5 Sorge, Rostov-on-Don, 344090 Russia

**pp10.017**
**Development of Superconducting Quantum Arrays**
1 Nikolay V. Kolotinskiy, 1 Victor K. Kornev, 2 Alexey V. Sharafiev, 3 Oleg A. Mukhanov
1 Department of Physics, Lomonosov Moscow State University, Leninskie Gory 1, Moscow, 119991, Russia
2 Skobeltsyn Institute of Nuclear Physics, Lomonosov Moscow State University, Leninskie Gory 1, Moscow, 119991, Russia
3 Hypres, Inc, 175 Clearbrook Road, Elmsford, NY, 10523, USA

**pp10.018**
**Electron Microscopy Study of Supercritical Fluids Electrodeposition of Mesoporous Silica Templates**
1 Reza J. Kashtiban, 1 Richard Beanland, 1 Jeremy Sloan, 1 Charlie Cummings, 2 Calum Robertson, 1 Pete Richardson, 2 Andrew L. Hector, 2 P N. Bartlett, 2 David C. Smith
1 The University of Warwick, Coventry, UK
2 The University of Southampton, Southampton, UK

**pp10.019**
**Electrostatically-Formed Nanowires as Gas Sensing Devices**
1 Alex Henning, 1 Nandhini Swaminathan, 1 Andrey Godkin, 1 Iddo Amit, 1 Yossi Rosenwaks
1 Tel Aviv University, School of Electrical Engineering, Ramat Aviv, 69978, Israel
### July 15 (Tuesday)

**Section 11 – Nanomaterials and Catalysis**

<table>
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<tr>
<th>Time</th>
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| 12:00 PM – 2:00 PM | **Evaluation of Plasma Technique Deposition Parameters in the Platinum Nanoparticles Obtention**  
1 Nelson Ordonez, 2 Adir J. Moreira, 1 Ronaldo D. Mansano  
1 University of Sao Paulo, Avenida Professor Luciano Gualberto, 158, Trav. 3, Sao Paulo, SP, Brazil |
| pp11.017 | **Theoretical Investigation of Supported Gold Nanoparticles**  
1 Giancarlo Cicero, 2 Federico Raffone  
1 Politecnico di Torino - DISAT, I-10129 Torino, Italy  
2 CNR-IMEM, I-431100 Parma, Italy |
| pp11.018 | **Cul Nanoparticles Catalyzed Highly Efficient and Reusable Method for the Synthesis of Pyrimido[b]quinolineltriones in Aqueous Media**  
1 Shahraz Abdolmohammadi, 2 Akram Hosseinian, 3 Maryam Afsharpour  
1 East Tehran Branch, Islamic Azad University, Department of Chemistry, Faculty of Science, East Tehran Branch, Islamic Azad University, PO. Box 33955-163, Tehran, Iran  
2 University of Tehran, Department of Engineering Science, College of Engineering, University of Tehran, PO. Box 11365–4563, Tehran, Iran  
3 Chemistry& Chemical Engineering Research Center of Iran, Chemistry& Chemical Engineering Research Center of Iran, PO Box 14335-186, Tehran, Iran |
| pp11.019 | **Gold Nanoparticles as Highly Active Catalyst in H$_2$-D$_2$ Hydrogen Isotope Exchange Reaction**  
1 Alexander A. Odintsov, 2 Mikhail O. Sergeev, 3 Tihara A. Revina, 4 Olga A. Boeva  
1 Mendeleeev University of Chemical Technology of Russia, 9, Miusskaya sq., Moscow, Russia  
2 Russian academy of sciences A.N. Frumkin Institute of Physical chemistry and Electrochemistry RAS (IPCE RAS), 31, Leninsky prospect, Moscow, 199071 Russia |
| pp11.020 | **Hydride Phase Formation in Palladium Nanoparticles Studied by In Situ XANES, EXAFS and XRD**  
1 Aram L. Bugaev, 2 Alexander A. Guda, 3 Kirill A. Lomachenko, 4 Vasilyy V. Srabonyan, 5 Lusegen A. Bugaev, 1 Alexander V. Soldatov, 1 Vladimir P. Dmitriev, 1 Carlo Lamberti, 2, 3 Jeroen A. van Bokhoven  
1 Department of Physics, Southern Federal University, Zorge street, 5, 344090, Rostov-on-Don, Russia  
2 Department of Chemistry, Turin University, Via P. Giuria 7, 10125 Turin, Italy  
3 Institute for Chemical and Bioengineering, ETH Zurich, HCI E127 8093 Zurich, Switzerland  
4 Laboratory for Catalysis and Sustainable Chemistry, Paul Scherrer Institute, Villigen, Switzerland  
5 Swiss-Norwegian Beamline at European Synchrotron Radiation Facility, Polygone Scientifique Louis Néel, 6 rue Jules Horowitz, 38000 Grenoble, France |

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**Enhancement of the Electrical Conductivity of the Solder Alloy According to the Addition of Sulfur**  
1 Sangsun Yang, 1 Sang Hoon Kim, 1 Dong-Yed Yang, 1 Tae-Soo Lim, 1 Yong-Jin Kim  
1 Korea Institute of Materials Science, 797 Changwon-daero, Seongsan-gu, Changwon-si, Gyeongsangnam-do 642-831, Republic of Korea

**Formation and Research of Large-Aspect-Ratio Quantum InSb Nanowire Arrays**  
1 Ilya A. Obukhov, 2 Gennadii G. Gorokh, 3 Anna I. Zakhelebaeva, 3 Andrey A. Lozovenko  
1 System Recourses Ltd, Milkovo 1, Leninsky district, Moscow region, 142717, Russia  
2 Belarusian State University of Informatics and Radioelectronic, Brovka Str. 6, Minsk, 220013, Belarus

**Nanoscale Tin Oxide of Different Morphology: Synthesis and Properties**  
1 Denis V. Nazarov, 1 Olga M. Osmolowskaya, 1 Vladimir M. Smirnov, 1 Mikhail G. Osmolowsky, 2 Natalia P. Bobrysheva  
1 Saint-Petersburg State University, Saint-Petersburg, Petrodvorets, Universitetetskii pr. 26, Russia

**Nanostructured Thin Films of Multicomponent Semiconductor Oxides Made by Pulsed Laser Deposition**  
1 Ivan E. Demin, 1 Aleksander G. Kozlov, 1 Polina S. Pavlova, 1 Gennadii M. Seryopyan  
1 Omsk F. M. Dostoyevsky State University, Omsk, Prospect Mira, building SSA, Russia

**New Approach to the Fabrication of Highly Fluorescent Planar Materials with Plasmonic Nanostructures**  
1 Nikita A. Toropov, 1 Tigran A. Vartanyan  
1 St.Petersburg Nat'l Research Univ of IT, Mechanics and Optics, 197101, Saint Petersburg, Kronverkskiy pr., 49, Russia

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**Evaluation of Plasma Technique Deposition Parameters in the Platinum Nanoparticles Obtention**  
1 Nelson Ordonez, 2 Adir J. Moreira, 1 Ronaldo D. Mansano  
1 University of Sao Paulo, Avenida Professor Luciano Gualberto, 158, Trav. 3, Sao Paulo, SP, Brazil

**Theoretical Investigation of Supported Gold Nanoparticles**  
1 Giancarlo Cicero, 2 Federico Raffone  
1 Politecnico di Torino - DISAT, I-10129 Torino, Italy  
2 CNR-IMEM, I-431100 Parma, Italy

**Cul Nanoparticles Catalyzed Highly Efficient and Reusable Method for the Synthesis of Pyrimido[b]quinolineltriones in Aqueous Media**  
1 Shahraz Abdolmohammadi, 2 Akram Hosseinian, 3 Maryam Afsharpour  
1 East Tehran Branch, Islamic Azad University, Department of Chemistry, Faculty of Science, East Tehran Branch, Islamic Azad University, PO. Box 33955-163, Tehran, Iran  
2 University of Tehran, Department of Engineering Science, College of Engineering, University of Tehran, PO. Box 11365–4563, Tehran, Iran  
3 Chemistry& Chemical Engineering Research Center of Iran, Chemistry& Chemical Engineering Research Center of Iran, PO Box 14335-186, Tehran, Iran

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1 Alexander A. Odintsov, 1 Mikhail O. Sergeev, 3 Tihara A. Revina, 4 Olga A. Boeva  
1 Mendeleeev University of Chemical Technology of Russia, 9, Miusskaya sq., Moscow, Russia  
2 Russian academy of sciences A.N. Frumkin Institute of Physical chemistry and Electrochemistry RAS (IPCE RAS), 31, Leninsky prospect, Moscow, 199071 Russia

**Hydride Phase Formation in Palladium Nanoparticles Studied by In Situ XANES, EXAFS and XRD**  
1 Aram L. Bugaev, 2 Alexander A. Guda, 3 Kirill A. Lomachenko, 4 Vasilyy V. Srabonyan, 5 Lusegen A. Bugaev, 1 Alexander V. Soldatov, 1 Vladimir P. Dmitriev, 1 Carlo Lamberti, 2, 3 Jeroen A. van Bokhoven  
1 Department of Physics, Southern Federal University, Zorge street, 5, 344090, Rostov-on-Don, Russia  
2 Department of Chemistry, Turin University, Via P. Giuria 7, 10125 Turin, Italy  
3 Institute for Chemical and Bioengineering, ETH Zurich, HCI E127 8093 Zurich, Switzerland  
4 Laboratory for Catalysis and Sustainable Chemistry, Paul Scherrer Institute, Villigen, Switzerland  
5 Swiss-Norwegian Beamline at European Synchrotron Radiation Facility, Polygone Scientifique Louis Néel, 6 rue Jules Horowitz, 38000 Grenoble, France
Hydrogenation Reaction Catalysts on the Base of Palladium and Carbon Nanomaterials
Pavel Kalmakov, Natal’ya Magdalina, Mikhail Klyuev
Ivanovo State University, Ivanovo, Ermak str., 39, Russia

Investigation of Synthesis Conditions, Properties and Functionalization of Metal Organic Framework MOF-5
Vera V. Butova, Alexander A. Guda, Alexander V. Soldatov, Carlo Lamberti
South Federal University, Zorge street, 5, Physical Department, 344090, Rostov-on-Don, Russia
Department of Chemistry, Turin University, Via P. Giuria 7, 10125 Turin, Italy

Local Distortions around Ce$^{4+}$ Ions Formed in CeO$_2$ Nanoparticles Under CO Atmosphere
Alexander A. Guda, Mikhail A. Soldatov, Nikolay Smolentsev, Grigory Smolentsev, Jeroen A. van Bokhoven, Alexander V. Soldatov, Olga V. Safonova
Southern Federal University, Rostov-on-Don, 344090, Russia
Paul Schener Institute, Villigen, 5232, Switzerland
ETH Zurich, Zurich, 8093, Switzerland

Metal-Carbon Nanocomposites as Effective Catalysts of Hydrogenation Reactions
Mikhail A. Uymin, Anatoly Ye. Yermakov, Vladislav V. Maikov, Nina N. Schegoleva
Institute of Metal Physics UD RAS, S.Kovalevskaya st.18, Ekaterinburg 620990 Russia

Molybdenum Oxide Catalyst Based on Amino Functionalized Carbon Nanotube
Maryam Afsharpour, Zahra Dini
Chemistry and chemical engineering research center of Iran, Dansh Ave., Pajohesh Blvd., 17 Km Tehran-Karaj Highway, Iran

Monodisperse CuPd Alloy Nanoparticles Supported on Graphene as Highly Efficient Catalysts for the Sonogashira Cross-Coupling Reactions
Sumeyra Diyarbakir, Hasan Can, Ønder Metin
Ataturk University, Department of Chemistry, Faculty of Science, Ataturk University, 25240 Erzurum, Turkey

Nanostructured Pd/CeSnO$_x$ Catalysts of the Low-Temperature CO Oxidation Prepared by Plasma-Arc Synthesis
Boreskov Institute of Catalysis, S, Prospekt Lavrentieva, Novosibirsk 630090, Russia
Novosibirsk State University, 2, Pirogova Street, Novosibirsk 630090, Russia
Kutateladze Institute of Thermophysics, 1, Prospekt Lavrentieva, Novosibirsk 630090, Russia

Quantum-Chemical Investigation of Catalytic Properties of Silver and Gold-Silver Clusters in Propylene Epoxidation
Yulia G. Polynskaya, Daria A. Pichugina, Nikolay E. Kuz'menko
Lomonosov Moscow State University, Chemistry Department, Leninskie gory 1, building 3, Moscow, Russian Federation

The Oxidation of Petroleum Hydrocarbons in the Presence of Carbon Nanocatalysts Containing Inclusions of Transition Metals
The institute of petrochemical processes, Baku, Azerbaijan, Baku, Xocaly30, Azerbaijan

Gold and Nitrogen Co-Doped TiO$_2$ Nanoparticles Synthesized by Laser Pyrolysis, Application in Photocatalysis
Sarah Bouhadoun, C. Guillard, Nathalie C. Herlin Boime
CEA SACLAY, gif sur yvette, 91191 France
IrceLyon, avenue Albert Einstein 69626, Villeurbanne, France
Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

12:00 PM – 2:00 PM Poster session

**pp01.056**
Influence of Shape and Size of Magnetite Nanoparticles on Their Magnetic Properties
1 Polina G. Rudakovskaya, 2 Sergei V. Salihov, 1 Alexander G. Majouga, 1 Maria V. Efremova, 1 Igor V. Schetinin
1 Lomonosov Moscow State University, 119991, Moscow, Leninskie gori, 1, 3, Russia
2 National University of Science and Technology «MISIS», 119049, Moscow, Leninsky prospect, 4, Russia

**pp01.057**
Deposition of Thin Films of Multilayer Graphene by Modified Langmuir-Blodgett Method
1, 2 Andrei V. Alaferdov, 1 Sergei M. Balashov, 1 Maria A. Canesqui, 1 Sergio Parada, 1 Stanislav A. Moshkalev
1 Center for Semiconductor Components, University of Campinas, 13083-870, Campinas, SP, Brazil
2 Lobachevsky State University of Nizhni Novgorod, Nizhni Novgorod, Gagarine Av. 23/3, 603950, Russia
3 Center for Information Technology Renato Archer, 13069-901, Campinas, SP, Brazil

**pp01.058**
Quantum Plexcitons from First-Principles Green’s-function Approach in Organic PIC-molecule Adsorbed on Silver Nanoparticle
1 Evelina Domashevskaya, 2 Oleg Farberovich, 1 Nikolay Matveev
1 Voronezh State University, Voronezh 394087 Russia
2 Raymond and Beverly Sackler Faculty of Exact Sciences, School of Physics and Astronomy, Tel-Aviv University, Tel-Aviv 69978 Israel
3 Voronezh State Academy of Farestry and Technologies, Voronezh 394087 Russia

**pp01.059**
Carbon Nanostructures from the Liquid Carbon
1 Andrey Basharin, 1 Ivan Lysenko
1 Joint Institute for High Temperatures RAS, 125412, Izhorskaya st. 13 Bd.2, Moscow, Russia

**pp01.060**
Facile Preparation of Nitrogen-Doped Nanostructured Titania Microspheres by a New Method of Thermally Assisted Reactions in Aqueous Sprays
1 Alexey Tarasov, 2 German Trusov, 1 Anton Minnekhinov, 3 Dmitry Gil, 1 Elisaveta Konstantinova, 1 Yury Dobrovolsky
1 Institute of Problems of Chemical Physics RAS, Academician Semenov avenue 1, Chernogolovka, 142432, Russia
2 Department of Chemistry, Lomonosov Moscow State University, Lenin Hills, Moscow, 119992, Russia
3 Department of Physics, Lomonosov Moscow State University, Lenin Hills, Moscow, 119992, Russia
4 Kurnakov Institute of General and Inorganic Chemistry RAS, Lenskiniy prospect 31, Moscow 119991, Russia

**pp01.061**
Silver and Gold Nanoparticles in the Optical Methods of Assaying Cationic Polyelectrolytes
1 Anastasia A. Artemyeva, 1 Andrey V. Sharov, 1 Tatiana O. Samarina, 1 Mikhail K. Beklemishev
1 Department of Chemistry, Lomonosov Moscow State University, Leninskiy Gory 1, bldg. 3, Moscow 119991, Russia

**pp01.062**
Flow-Levitation Method – A Flexible Mean for Synthesis of Metal-Based Nanoparticles
1 Alexey N. Zhigach, 1 Ilya O. Leipunsky, 1 Mikhail L. Kuskov, 1 Nadezhda G. Berezkina, 1 Elena S. Afanasenkova
1 Talrose Institute for Energy Problems of Chemical Physics, 119334 Moscow, Leninsky prosp., 38, Bld.2, Russia

**pp01.063**
CVD-Grown Monocrystalline Diamond Needles
1 Feruza T. Tuyakova, 2 Ekaterina A. Obraztsova, 1 Alexander N. Obraztsov
1 Moscow State Technical University of Radio Engineering, Electronics and Automation, Prospekt Vernadskogo 78, Moscow, Russia
2 Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry of the Russian Academy of Sciences, Russian Federation, 117997, Moscow, GSP-7, Ul. Mikulko-Maklaya, 16/10, Russia
3 Moscow State University, Physics department, Leninskiy Gory, Moscow 119991 Russia

**pp01.064**
Dielectrophoretic Self-Assembly of Metal Nanorods
1 Ching-Chang Lin, 1 Wen-Hsien Sun, 2 Ya-Lin Lin, 2 Yuan-Che Lin, 2 Jing-Wen Tang, 2 Jing-Heng Tien, 1 Fu-Hsiang Ko
1 Graduate Program for Nanotechnology, Department of Materials Science and Engineering, National Chiao Tung University, Taiwan, EF324, 1001 University Road, Hsinchu, Taiwan 300, ROC
2 Material and Chemical Research Laboratories, Industrial technology Research Institute, Hsinchu, Taiwan, 195, Sec. 4, Chung Hsing Rd., Chutung, Hsinchu, Taiwan 31040, ROC
July 16 (Wednesday)

**pp01.065**

**Diffusion Model of Quantum Rings Self-Assembly by Droplet Epitaxy**

1 Yuriy D. Sibirmovsky, 2 Ivan S. Vasilenkov, 3 Alexandr N. Vinichenko, 4 Igor S. Eremin, 5 Denis M. Zhitunov, 6 Nickolay I. Kargin, 7 Mikhail N. Strikhonov

1 National Research Nuclear University MEPhI, 115409, Kashirskoe shosse, 31, Moscow, Russia
2 Lomonosov Moscow State University, 119991, Leninskiye Gory, 1, bldg. 51, room 252-A, Moscow, Russia

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**pp01.066**

**Formation and Evolution of Nanoclusters in Cluster Aggregation Source**

1 Mikhail V. Durka, 2 Anatoly A. Turkin, 3 David I. Vainchtein, 4 Jeff T. De Hosson

1 Department of Applied Physics, Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747AG Groningen, The Netherlands
2 National Science Center, «Kharkiv Institute of Physics & Technology», Akademichna str. 1, UA-61108 Kharkiv, Ukraine

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**pp01.067**

**Formation of Multicomponent Nanoparticles by Electrical Explosion of Wires**

1 Aleksander S. Lozhkomoev, 2 Vladimir V. Domashenko, 3 Aleksander V. Pervikov, 4 Mariam L. Lerner, 5 Elena A. Glazkova, 6 Natalia V. Svarovskaya, 7 Olga V. Bakina

1 Institute of Strength Physics and Materials Science of the Siberian Branch of the Russian Academy of Sciences, 2/4, pr. Akademicheskii, Tomsk, 634021, Russia

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**pp01.068**

**Formation of Silver Clusters on a Non-Heated Amorphous Carbon Substrate Using Vacuum Evaporation**

1 Andrey Savitskiy, 2 Dmitry Gromov, 3 Lidia Pavlova, 4 Sergey Dubkov, 5 Alexey Trifonov, 6 Egor Lebedev

1 National Research University of Electronic Technology, Bld. 5, Pas. 4806, Zele
nograd, Moscow 124498 Russia

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**pp01.069**

**Nanowhiskers: Fabrication Technique, Structural Features and Properties**

1 Andrey V. Kozlov, 2 Anastasia N. Abramova, 3 Maksim V. Dorogov, 4 Sergey Vlasov, 5 Ilmar Kink, 6 Anatoly A. Vikarchuk, 7, 8 Alexey E. Romanov

1 Togliatti State University, 14, Belorussskaya St., Togliatti, Russian Federation, 445667
2 Ioffe Physical-Technical Institute, 26, Polytekhnicheskaya, St Petersburg, Russian Federation, 194021
3 University of Tartu, Ülikooli 18, Tartu, Estonia, 50090

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**pp01.070**

**Functionalized Surfaces of Nanodiamonds Formed in the Presence of Water**

1 Alexander V. Vorontsov, 2 Yulia V. Novakovskaya

1 Lomonosov Moscow State University, Leninskiye Gory 1 bld. 3, Russia
2 Lomonosov Moscow State University, 119991, Leninskiye Gory, 1, bldg. 51, room 252-A, Moscow, Russia

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**pp01.071**

**Hot Nanodiamonds: IR Emissivity, Reflectance and Self-Organisation**

1 Andrei A. Zigunov, 2 Alessandro Maturilli, 3 Inna I. Kulakova, 4 J Helbert

1 Frumkin Institute of physical chemistry and electrochemistry RAS, Leninsky pr. 31, korp. 4, Moscow 119071, Russia
2 Institute for Planetary Research, DLR, Berlin, Germany
3 Moscow State University, Russia
4 Moscow, Russia

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**pp01.072**

**Infrared Absorption Studies of Dynamic Synthesis Nanodiamonds after Chemical Modification**

1 Nikolai Romanov, 2 Vladimir Osipov, 3 Alexander Vull, 4 Jean Boudou

1 Skobeltsyn Institute of Nuclear Physics, M.V. Lomonosov Moscow State University, Leninskiye Gory, 1/2, 119991 Moscow, Russia
2 Lebedev Physical Institute RAS, Prospekt 53, 119991 Moscow, Russia
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4 Laboratoire Aime Cotton – CNRS UPR 3321, Centre Universitaire Orsay, Orsay Cedex, France

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**pp01.073**

**Monitoring of Aqueous fullerene and Nanodiamond Dispersions Using Photothermal and Photoacoustic Spectroscopy**

1 Ivan V. Mikheev, 2 Dmitry S. Volkov, 3 Mikhail A. Prosukhun, 4 Mikhail V. Korobov

1 Lomonosov Moscow State University, Leninskiye gory 1-3 , Russia

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**pp01.074**

**Self-Assembled Structures in Nanodiamond Layer by Spray Technique**

1 Grazia Cicala, 2 Giuseppe Perna, 3 Domenico Marzulli, 4 Domenico Melisi, 5 Giuseppe De Pascalii, 6 Antonio Valentini, 7 Giorgio S. Sensesi, 8 Alessandro Massaro, 9 Luciano Velardi, 10 Vito Capozzi

1 CNR-IMP Bari, Via Amendola 122/D, 70126 Bari, Italy
2 Italian Institute of Technology (IIT), Arnesano (Lecce), Italy
3 Department of Physics, University of Bari “A. Moro”, Via Orabona 4, 70126 Bari, Italy
4 CNR-IBBE UOS Bari, Via Orabona 4, 70126 Bari, Italy
5 Dipartimento di Scienze Biomediche, Università degli Studi di Foggia, Viale Pinto, 71100 Foggia, Italy

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**pp01.075**

**Self-Organization Particle on Carbon Nanowalls and Surface-Enhanced Raman Scattering**

1 Stanislav A. Evlashin, 2 Nikolay V. Suetin, 3 Michail Y. Tsvetkov, 4 Kirill V. Mironovich, 5 Andrey A. Pilevsky, 6 Alexander T. Rakhimov

1 Skobeltsyn Institute of Nuclear Physics, M.V. Lomonosov Moscow State University, Leninskiye Gory, 1/2, 119991 Moscow, Russia
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6 Russian Foundation for Basic Research, 119991 Moscow, Russia
7 The Russian Academy of Sciences, 119477 Moscow, Russia
8 Department of Physics, University of Bari “A. Moro”, Via Orabona 4, 70126 Bari, Italy

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**pp01.076**

**Simultaneous Deposition of Diamond Like Carbon (DLC) and Nano Crystalline Diamond (NCD) Embedded Polymer Like Carbon (PLC) by Plasma CVD**

1 Ayana Bhaduri, 2 Partha Chaudhuri

1 Amity School of Applied Science, Amity University Haryana, Gurgaon, NCR-122413, India
2 Energy Research Unit, Indian Association for Cultivation of Science, Jadavpur, Kolkata, India

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**pp01.077**

**Single-Crystal Diamond Microneedles Shaped at Growth Stage**

1 Andrei M. Alexeev, 2 Rinat R. Ismagilov, 3 Alexander N. Obraztsov

1 Lomonosov Moscow State University, Department of Physics, Leninskiye Gory, Moscow 119991 Russia
2 National Research Nuclear University MEPhI, 115409, Kashirskoe shosse, 31, Moscow, Russia
3 Lappeenranta University of Technology, 53850, Lappeenranta, Finland
4 Laboratoire Aime Cotton – CNRS UPR 3321, Centre Universitaire Orsay, Orsay Cedex, France
Stable Colloids of Strontium Hexaferrite Hard Magnetic Particles
1 Evgeny O. Anokhin, 1 Lev A. Trusov, 1 Alexander V. Vasilyev, 1 Pavel E. Kazin
Lomonosov Moscow State University, Moscow, Russia

Study of Interactions Between Nanodiamonds and Biomacromolecules and Ions in Water with Optical Spectroscopy
1 Kirill A. Laptinskiy, 1 Sergey A. Burikov, 1 Tatiana V. Laptinskaya, 2 Jessica M. Rosenholm, 3 Olga A. Shenderova, 4 Igor I. Vlasov, 1 Tatiana A. Dolenko
1 Lomonosov Moscow State University, Physical Department, 1/2, Leninskie gory, 119991 Moscow, Russia
2 Abo Akadmi University, Center of Functional Materials, Laboratory of Physical Chemistry, Department of Natural Sciences, 20500 Turku, Finland
3 International Technology Center, Raleigh, 27617 North Carolina, United States
4 General Physics Institute, Russian Academy of Sciences, 119991 Moscow, Russia

Tritium Labeled Detonation Nanodiamonds Uptake by Wheat Seedlings in the Presence of Humic Substances of Different Origin
1 Ivan Yu. Myasnikov, 1 Maria G. Chernysheva, 1 Viktor I. Korobkov, 1 Natalia A. Kulikova, 1 Gennadii A. Badun
1 Lomonosov Moscow State University, 119991 Moscow Russia

Tritium Labeling Carbon Based Nanomaterials
1 Gennadii A. Badun, 1 Maria G. Chernysheva, 2 Vladimir N. Aldobaev, 2 Larisa A. Eremenko
1 Lomonosov Moscow State University, Chemistry Department, Moscow State University, Moscow 119991 Russia
2 Federal State-Financed Institution «Research Center For Toxicology And Hygienic Regulation Of Biopreparations Of Federal Medico-Biological Agency», 102A, Lenin str., Serpukhov, Moscow region 142253 Russia

Typical Surface Sites of Nanodiamonds
1 Yulia V. Novakovskaya
1 Lomonosov Moscow State University, Department of Chemistry, Leninskie gory 1/3, Moscow, 119991 Russia

Nanodiamond for High-Performance Liquid Chromatography
1 Olga N. Fedyanina, 1 Pavel N. Nesterenko
1 Chemistry Department, Lomonosov Moscow State University, Russia

Controlled Self-Organisation for Functional Nanomaterials
1 Andrei A. Eliseev, 1 Alexey V. Lukashin, 1 Kirill S. Napolskiy
1 Lomonosov Moscow State University, Moscow, Russia

Preparation of Single and Few Layers Graphene by Electrochemical Method
1 Pitamber Mahanandia
1 National Institute of Technology Rourkela, Department of Physics, India

DHFET with Quantum Well Channel Based on Low Dislocation GaN
1 Stanislav Petrov, 1 Alexey Aleyev, 1 Victor Mamanov, 2 Dmitry Krasovitsky, 2 Victor Chaly
1 SemiTEq JSC, St-Petersburg, Engelsa av. 27, Russia
2 Svetlana-Rost JSC, St-Petersburg, Engelsa av. 27, Russia

Effect of Selenic Acid Concentration on the Porous Alumina Oxide Morphology
1 Yulia Nazarkina, 1 Sergei Gavrilov, 2 Herman Teryn, 2 Jon Ustarroz, 2 Manuela Petrova
1 National Research University of Electronic Technology (MIET), Bld. 5, Pas. 4806, Zelenograd, Moscow, 124498 Russia
2 Vrije Universiteit Brussel, Pleinlaan 2, 1050, Brussels, Belgium

Electron Beam Micro- and Nanofabrication and Structure of Fine Crystalline Spots in Thin Amorphous Films
1 Y. Y. Kolosov, 1 L. M. Veretennikov, 1 C. L. Schwamm, 1 N. A. Serov
1 Orl Federal University, Ekaterinburg, Russia

Enhancement of Extraordinary Optical Transmission of Subwavelength Nanogratings by Thin Film Coating
1 Yulia Draginda, 1 Maxim V. Gorkunov, 1 Sergei P. Palto, 1 Artur R. Geivandov, 1 Vladimir V. Artemov
1 Shubnikov Institute of Crystallography RAS, Leninsky pr.59, Moscow 119333 Russia

Fabrication of HgTe-Based Rolled-Up Microtubes and Corrugations with 2D Electron-Hole System
1 Sergey Mutilin, 1 Regina Soots, 1 Alexander Vorob'ev, 1 Danil Ikusov, 1 Nikolay Mikhailov, 1 Victor Prinz
1 Institute of Semiconductor Physics, pr. Lavrentieva 13, Novosibirsk, 630090 Russia

Fabrication of Self-Assembled Peptide Nanofiber Templated TiO2 Nanonetworks by ALD and Their Application in DSSCs
1 Ruslan Garifullin, 1 Hamit Eren, 1 Gamze Ulusoy, 1 Ali K. Okyay, 1 Mustafa O. Guler, 1 Necmi Biyikli
1 Institute of Materials Science and Nanotechnology, National Nanotechnology Research Center (UNAM), Bilkent University, Ankara 06800, Turkey

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PP02.038

PP02.039
pp02.040

Generation of Gas-Metal Plasma in Arc Low-Pressure Discharges for Deposition of Multicomponent Functional Coatings

1 Olga V. Krysina, 1 Vladimir V. Shugurov, 1 Nikolay N. Koval, 1 Ilya V. Lopatin, 1 Alexander A. Kalushevich, 1 Sergey S. Kovalskyy

1 Institute of high current electronics SB RAS, 634055, Tomsk, Akademicheskaya ave., 2/3, Russia

pp02.041

Features of Structural-Phase Conditions of TiNi Surface Layers Formed by Electron Beams

1 Ludmila L. Meisner, 1 Marina G. Ostapenko, 1 Ekaterina Yu. Gudimova, 2 Margarita A. Zakharyova

1 Institute of Strength Physics and Materials Science SB RAS, pr-t Akademicheskij, Tomsk, 634021, Russia
2 National Research Tomsk Polytechnic University, pr-t Lenina, Tomsk, 634050, Russia

pp02.042

Polymer-Protected Planar Nanoelectrodes Creation

1 Aleksandr A. Parshintsev, 1 Evgeniy S. Soldatov

1 Faculty of Physics, M.V. Lomonosov Moscow State University, Leninskie Gory, Moscow 119991, Russia

pp02.043

Solid Lubricant Thin Films Based on Heterotribological Materials Compositions and PVD-Technologies

1 Andrey Iv. Belikov

1 Bauman Moscow State Technical University, 2-nd Baumanskaya str., 5, 105005, Moscow, Russia

pp02.044

Solution-Deposited Biaxially Textured Oxide Films La2Zr2O7 and La2Hf2O7 for 2G HTSC Tapes

1 Andrey Kharchenko, 1 Alexandr Schukin, 1 Vsevolod Chepikov, 1 Andrey Grigoriev, 1 Andrey Kaul

1 Lomonosov Moscow State University, 119991, Leninskiye Gory, Chemistry Department, Russia

pp02.045

Structural Phase Transition and Interface Reconstruction in La2/3Ca1/3MnO3/BaTiO3 Superlattices

1 Oleg I. Lebedev, 2 Stuart Turner, 3 Jo Verbeek, 3 Vasily Mosihnya

1 CRISMAT, CNRS-ENSICAEN, 68d Marechal Juin, 14050 Caen, France
2 EMAT, University of Antwerp, Groenenborgerlaan 171, 2020 Antwerp, Belgium
3 Erstes Physikalisches Institut, Universitat Göttingen, Friedrich-Hund-Platz 1, 37077 Göttingen, Germany

pp02.046

Thermal Crystallization and Oxidation of Amorphous Ge Thin Films

1 Luis De Los Santos Valladares, 1 Justin Llando, 1 S Holmes, 2 Oswaldo Avalos Quizpe, 1 Crispin HW. Barnes, 1 Angel Bustamante Dominguez

1 University of Cambridge, Cavendish Laboratory, Department of Physics, J.J. Thomson Ave., Cambridge CB3 OHE, UK

July 16 (Wednesday)

Section 03 – Nanoceramics

12:00 PM – 2:00 PM

Poster session

pp03.015

Electrophysical Properties of B-Site Substituted Oxides and Composites Lanthanum Nickelates

1 Tatiana Chupakhina, 2 Victor Gavryliuchenko, 2 Yurii Kabirov, 2 Alexander Bogatin, 3 Anatoly Klenushkin, 3 Tatiana Gavryliuchenko

1 Southern Federal university, Chemistry department, 7 Zorge st. Rostov-on-Don, Russia
2 Institute of solid state chemistry, 91 Pervomaiskaya st. Ekaterinburg, Russia
3 Southern Federal university, Faculty of Physics, 5 Zorge st. Rostov-on-Don, Russia

pp03.016

Synthesis of Nanocrystalline Alpha-Alumina (α-Al2O3) Through Pulsed Electric Current Heating

1 Bobu M. Jolly, 1 Darshan H. Bheda, 1 Subramshy S. Bhattacharya

1 Indian Institute of Technology Madras, Nano Functional Materials Technology Centre (NFMT), Department of Metallurgical & Materials Engineering, IIT Madras, Chennai - 600036, India

pp03.017

Baddeleyite-Based Zirconia Nanoceramic Powders

1 Andrey Zhigachev

1 G.R. Derzhavin Tambov State University, Tambov, Internatsionalnaya str., b. 33, Russia

pp03.018

Bioresorbable Ceramics Containing Phase of the Magnesium Pyrophosphate

1 Gilyana Kazakova, 1 Tatiana Safronova, 1 Valery Putlayev

1 Lomonosov Moscow State University, GSP-1, 1-73 Leninskiye Gory, Laboratory Building B, Russia

pp03.019

Development of Materials and Materials-Based Tissue-Engineering Constructions for Bone and Cartilage Defects Replacement: A View of Biologist

1 Natalia S. Sergeeva, 2 Sergey M. Barinov, 1 Igor V. Reshetov, 1 Valery V. Teplyakov, 1 Irina K. Sviridova, 2 Vladimir S. Komlev, 3 Vladimir K. Popov

1 FSBI Moscow Hertzen Research Oncological Institute of RF Ministry of Health, 2nd Botkinsky pass., 3, Moscow, 125284 Russia
2 A.A. Bajkov Institute of metallurgy and materials science of RAS, 42, Leninskiye Gory, Laboratory Building B, Russia
3 Pirogov Russian National Research Medical University of RF Ministry of Health, Ostrovitianov str. 1, Moscow, 117997 Russia
Improvement of Osseointegration of Titanium Dental Implants Using 5×SBF
Elena S. Klimashina, Dmitry K. Udin, Alexey v. Garshnev, Valery I. Putlayev, I. L. Tsiklin, V. A. Vaylert
M.V. Lomonosov Moscow State University, MSU, Faculty of Chemistry, 119991, Moscow, GSP-3, Leninskiye Gory, Russia
M.F. Vladimirsky Moscow Regional Research Clinical Institute, MONIKI, 129110, Moscow, Schelepkina street, 61/2, Russia
S.P. Botkin City Clinical Hospital, 125284, Moscow, Vtoroy Botkinsky driveway, S, Russia
Maltese St. Johannes Hospital of Duisburg, 47198, Duisburg, Johannistrasse, 21, Germany

Low Temperature Combustion Joining of Carbon/Carbon Composites
Andrey Nepapushev, Ya-Cheng Lin, Alexander Rogachev, Alexander Mukasyan
National University of Science and Technology, Moscow, 119049, Russia
University of Notre Dame, Notre Dame, IN, 46556, USA
Institute of Structural Macrokinetics and Materials Science Russian Academy of Sciences, Chernogolovka, Moscow Region, 142432, Russia

Combination Method for Consolidation of SiC via Spark Plasma Sintering and Self-Propagating High Temperature Synthesis
Dmitry Moskovskikh, Alexander Rogachev, Alexander Mukasyan
National University of Science and Technology “MISIS”, Moscow 119049, Russia
Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, IN, 46556, USA
Institute of Structural Macrokinetics and Materials Science Russian Academy of Sciences (ISMAN), Chernogolovka 142432 Moscow Region, Russia

Ultradispersed Powder Mixture for Fine-Grained Ceramics
Elena A. Trusova, Anton S. Kaygorodov, Anastasia A. Khrushcheva
A.A. Baikov Institute of Metallurgy and Material Science RAS, 119991 Leninsky pr. 49, Moscow, Russia
Institute of Electrophysics, Ural Branch, RAS, 620016 ul. Amundsena, 106, Yekaterinburg, Russia

Ultrafine Grained Ceramics Based on Nanosized Powders, Synthesized from Calcium Acetate and Ammonium Hydrophosphate
Tatiana V. Safrova, Valery I. Putlayev, Gilyana K. Kazakova, Pavel V. Evdokimov
Lomonosov Moscow State University, 119991, Moscow, Leninskaya Gory, d.1, Russia

Functional Thin Oxide Films on the Basalt Fiber
Viacheslav A. Rybin
Institute of Solid State Chemistry and Mechanochemistry of the Siberian Branch of the Russian Academy of Sciences, 630128, Novosibirsk, Str. Katalatadze 18, Russia

Nano-TiCN-Based Cermets for Tool Applications
Julia Zavadakaja, Oleg Semenov, Dimitrii Fedorov
Virial Ltd., Engelsa 27 (Bldg.143A), 194156, P.O.Box 52, Saint-Petersburg, Russia

Synthesis and Consolidation of Nanocrystalline Ti20Fe20Co20Ni20Cu20 High Entropy Alloy
Sutanuka Mohanty, Niles P. Gurao, Krishanu Biswas
Indian Institute of Technology Kanpur, Western Lab - 210, Solidification and nanomaterials Lab, Department of Material Science and Engineering, IIT Kanpur, Kanpur - 208016, Uttar Pradesh, India

Synthesis and Structural Characterization of Al-Exfoliated BN Nanosheets Composites Prepared by High Energy Ball Milling
Dmitry Y. Park, Viktor V. Aksenennkov, Rustem H. Bagramov, Vladimir D. Blank, Alex N. Kirchenko, Gennady I. Pivovarov, Evgenii V. Tyatyan
Moscow Institute of Physics and Technology, 9 Institutskii per., Dolgoprudny, Moscow Region, 141700 Russian Federation
FSBI TISNCM, 7a Centralnaya street, Troitsk, Moscow, 142190 Russian Federation

Synthesis, Phase Composition and Magnetic Properties of Iron Nanowires Obtained in Track Pores of the Polymer Membranes
Kirill V. Frolov, Dmitrii L. Zagorski, Igor S. Lyubutin, Victor V. Korotkov, Sergey A. Bedin, Vladimir V. Artemov, Boris V. Mchedlishvili
Shubnikov Institute of Crystallography Russian Academy of Sciences, 119333, Moscow, Russia
D. Mendeleyev University of Chemical Technology, 125047, Moscow, Russia
Moscow State Pedagogical University, 119991, Moscow, Russia

The Elastic Modulus of Nanostructured VT6 (Ti – 6Al – 4V) Titanium Alloy
Evgeniy Trofimov
Institute for Metals Superplasticity Problems of Russian Academy of Sciences, 39, Khal’turin Str., Lufa, 450001 Russia

On Methods of Measuring Elastic Moduli in Bulk Nanostructured Materials Produced by Severe Plastic Deformation
Darya K. Magomedova
Saint-Petersburg State University, Universitetskiy pr., 28, Russia

Spatial Inhomogeneity of Crystal-Amorphous Transition Under Severe Plastic Deformation in Bridgman Cell
Alexey A. Veligzhanin, Yan V. Zubavichus, Dmitry I. Frey, Alfred A. Chemeryshov, Roman V. Sundeev, Anna V. Shalimova
NRC Kurchatov Institute, Kurchatov sq. 1, Moscow, 123182, Russia
Moscow Institute of Physics and Technology, 9 Institutskii per., Dolgoprudny, Moscow Region, 141700, Russia
I. P. Bardin Central Research Institute of Ferrous Metallurgy, 2nd Baumanskaya st, 9/23, Moscow, 105005, Russia
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Affiliations</th>
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<tr>
<td>05.040</td>
<td>Deep-Blue Electroluminescence Assisted by FRET in a Polymer-Layered Silicate Nanocomposite Containing Oligofluorene Side-Chains</td>
<td>Francesco Galeotti, Francesco Meinardi, Wojciech Mróz, Giovanni Ricci, William Porzio, Sajjad Hoseinkhani, Fabio Bertini, Giuseppe Leone, Umberto Giovanella, Chiara Botta</td>
<td>ISMAC-CNR, via E. Bassini 15, 20133 Milano, Italy; University of Milano Bicocca, via Cozzi 55, 20125 Milano, Italy</td>
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<tr>
<td>05.041</td>
<td>Investigation of the Usability of the Nano Hybrid Coating Nonwovens in the Outdoor Textiles</td>
<td>Nigar N. Merdan, Dilara D. Kocak, Filiz F. Akin, Mehmet M. Akalin, Seyda S. Canbolat</td>
<td>Istanbul Commerce University, Kucukyali, Istanbul, Turkey; Marmara University, Goztepe, Istanbul, Turkey; Abant Izzet Baysal University, Bolu, Turkey</td>
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<tr>
<td>05.042</td>
<td>Experimental Study of Durability of Polymer Nanocomposites to Atomic Oxygen Impact</td>
<td>Lev S. Novikov, Nikolai G. Chechenin, Vladimir N. Chernik, Ekaterina N. Voronina, Ekaterina A. Vorobyeva, Maria S. Samokhina, Natalia P. Chirskaya, Dmitriy V. Petrov, Konstantin B. Vernigorov, Alexander Yu. Alent’ev, Aziz M. Muzafarov</td>
<td>Lomonosov Moscow State University, Skobeltsyn Institute of Nuclear Physics, Leninskie Gory, Moscow, 119991, Russia; Lomonosov Moscow State University, Department of Chemistry, Leninskie Gory, Moscow, 119991, Russia; Topchiev Institute of Petrochemical Synthesis, RAS, 29 Leninsky prospect, Moscow, 119991, Russia; Enikolopov Institute of Synthetic Polymeric Materials, RAS, 70 Profsoyuznaya st., Moscow, 117393, Russia</td>
</tr>
<tr>
<td>05.043</td>
<td>Nanostructured Aluminum-Matrix Composites</td>
<td>Victor N. Gulbin, Nikolay S. Kolpakov, Victor V. Polivkin, Victor V. Tcherdyntsev</td>
<td>OJSC “EMC of “Vega” Concern, 125190 Russia; National Research &amp; Technology University “MISA”, 119049 Russia</td>
</tr>
<tr>
<td>05.044</td>
<td>Nanoporous Alumina Film for Humidity Detection</td>
<td>Alexey Klimenko, Alexey Lukashin, Olga Boytsova</td>
<td>Lomonosov Moscow State University, Moscow 119991, Russia; Institute of General and Inorganic Chemistry, Moscow 119991, Russia</td>
</tr>
</tbody>
</table>
**Possibility of Identification of Non-Agglomerated Nanodiamond Particles Inside Aluminum Matrix by Synchrotron Radiation**

Vladimir A. Popov, 2 Daniel M. Többens, 1 Alexey S. Prosviryakov

1 NUST “MISIS”, Leninsky prospect, 4, 119049 Moscow, Russia
2 Helmholtz-Zentrum Berlin for Materials and Energy, Albert-Einstein-Str. 15, 12489 Berlin, Germany

**The Analyses of Optical Properties and Structure of GaTe - CdTe Nanocomposite**

Iuliana Caraman, 1 Nicolae Spalatu, 2 Dumitru Untila, 1 Igor Evtodye, 1 Valeriu Cantser, 1 Efimia Luchian

1 Moldova State University, A. Mateevici, 60, MD-2009 Kishinev, Republic of Moldova
2 Vasile Alecsandri University of Bacau, Calea Marasesti 157, Bacau, 600115, Romania
3 Institute of the Electronic Engineering and Nanotechnologies, Academy of Sciences of Moldova, Academiei, 3/3, MD-2028, Kishinev, Republic of Moldova

**SWCNT-Based Nanomodifier for Epoxy Binder: Is Shear Lag Model Enough to Describe Properly Stiff and Strengthening Effect in Nanocomposite?**

1 Anatoly V. Krestinin, 2 Galina I. Zvereva

1 Institute of Problems of Chemical Physics RAS, prospect acad. Semenova, 1, Chernogolovka, Moscow Region, Russia
2 Carbon Chg, Ltd, prospect acad. Semenova, 1, Chernogolovka, Moscow Region, Russia

**Decoration of WS2 Nanotubes and MoS2 Nano-Onions with Gold Nanoparticles**

1 Alexander Yu. Polyakov, 2 Lena Yadgarov, 1 Vasily A. Lebedev, 1 Eugene A. Goodlin, 2 Reshef Tenne

1 Lomonosov Moscow State University, Leninskie Gory 1-73, Moscow 119991, Russia
2 Weizmann Institute of Science, Department of Materials and Interfaces, Rehovot 76100, Israel

**Conductive Fluoropolymer Composites with Ultralow Content of Graphene-Like Fillers**

1 Maksim V. Gudkov, 1 Valery P. Melnikov

1 Semenov Institute of Chemical Physics, Kosygina, 4, Russia

**Tribopolymer Nanocomposites Formation by Using of Coordination Compounds with Transition Metals**

1 Anatoliy G. Ponomarenko, 1 Anatoliy S. Burlov, 1 Boiko V. Mikhail, 1 Tatiana A. Shirayeva, 1 Svetlana B. Zaichenko, 1 Anna G. Kalmykova

1 IPOC SFU, av. Stachky 194/2 Rostov-on-Don, Russia
2 Rostov State Transport University, Narodnogo Opolcheniya sq., Rostov-on-Don, 344038 Russia

**Poly(Alkyl Methacrylate) Nanocomposites with Alkyl Ester Functionalized Multiwall Carbon Nanotubes**

1 Fabio Faraguna, 1 Ante Jukic, 1 Elvira Vidovic

1 University of Zagreb, Faculty of Chemical Engineering and Technology, Marulićev trg 19, 10000 Zagreb, Croatia

**Effect of Plasticizers on Behavior of Chitosan/Chitin Nanofibrils Composite**

1 Ivan Kelnar, 1 Pierfrancesco Morganti, 1 Francesco Carezzi, 1 Galina Tishchenko, 1 Jana Kovarova, 1 Eva Pavlova
2 Institute of Macromolecular Chemistry ASCR, Heyrovsky Sq. 2, 16206 Prague 6, Czech Republic
3 MAVI SUD S.r.l, Viale del Industria 1, 04011 Aprilia (LT) Italy
JULY 16 (Wednesday)

SECTION 06 – POLYMER, ORGANIC AND OTHER SOFT MATTER MATERIALS

12:00 PM – 2:00 PM Poster session

**pp06.018**
Design of Low Bandgap Conjugated Polymers for Bulk Heterojunction Organic Solar Cells
1 Alexander Akkuratov, 1 Diana Susarova, 1 Dmitry Novikov, 1 Ekaterina Khakina, 1 Pavel Troshin
1 The Institute of Problems of Chemical Physics of the Russian Academy of Sciences (IPCP RAS), Semenov Prospect 1, Chernogolovka, Moscow region, Russia

**pp06.019**
Effect of Molecular Architecture of Azobenzene-Containing LC Copolymers on Photoinduced Orientation Processes
1 Miron Bugakov, 1 Natalia Boiko, 1 Valery Shibaev
1 Lomonosov Moscow State University, Leninskie gory, 119991, Moscow, Russia

**pp06.020**
Functionalization of ‘Clickable’ Electrospun Nanofibers
1 Ozlem I. Kalaoglu-Altan, 1 Rana Sanyal, 1 Amitav Sanyal
1 Bogazici University, Department of Chemistry, Bebek, Istanbul, Turkey

**pp06.021**
Low Bandgap Copolymers Based on Cyclopentadithiophene for Organic Photovoltaics
1 Fedor V. Drozdov, 1 Surin M. Nikolay, 2 Trukhanov A. Vasily, 2 Paraschuk Yu. Dmitry, 1 Ponomarenko A. Sergey
1 ISPm RAS, Profsyuznaynaya str, 70, Russia
2 MSU, Phaculty of physics, Leninskie Gory, 1, Russia

**pp06.022**
Novel Low Band Gap Conjugated Polymers for Organic Solar Cells
1 Illya E. Kusnetsov, 1 Diana K. Susarova, 1 Dmitry V. Novikov, 1 Alexander A. Akkuratov, 1 Pavel A. Troshin
1 IPCP RAS, Semenov Prospect 1, Chernogolovka, Moscow region, Russia

**pp06.023**
Synthesis and Characterization of CdS Nanocrystals Produced by Using a Novel Stabilizer
1 Yasemin Samay, 1 Cansel Tuncer, 1 Vural Butun, 1 M. Celaleddin Baykul
1 Bilecik Seyh Edebali University, The Program of Chemistry, Vocational School of Higher Education, 11210, Bilecik, Turkey
2 Eskisehir Osmangazi University, Department of Chemistry, University of Arts and Science, 26480, Eskisehir, Turkey
3 Eskisehir Osmangazi University, Department of Physics, Faculty of Arts and Science, 26480, Eskisehir, Turkey

**pp06.024**
Self-Assembly and Conformational Effects in Aniline Oligomers
1 Olga E. Bogomolova, 1 Vladimir G. Sergeyev
1 Lomonosov Moscow State University, Faculty of Chemistry, 1, Leninskie Gory, Moscow, 119991, Russia

JULY 16 (Wednesday)

SECTION 07 – NANOMATERIALS FOR ENERGY

12:00 PM – 2:00 PM Poster session

**pp07.034**
The Enhanced Electrochemical Performances of Li4Ti5O12 by Atomically Controlled Surface Layer
1 Jae Hyun Kim, 1 Jung Soo Park, 1 Seong-Ho Baek
1 DGIST, 333, Techno Junang Daero, Hyeonpung-Myeon, Dalseong-Gun, Daegu, Korea

**pp07.035**
Graphene Oxide Films as Separators of Polyaniiline-Based Supercapacitors
1 Yury M. Shulga, 1 Sergey A. Baskakov, 1 Vyacheslav A. Smirnov, 2 Nataliya Y. Shulga, 1 K G. Belay, 1 Gennady L. Gutev
1 Institute of Problems of Chemical Physics, Russian Academy of Sciences, 142432 Chernogolovka, Moscow Region, Russia
2 Moscow Steel and Alloys Institute, Moscow Steel and Alloys Institute, 117936 Moscow, Leninsky pr. 4, Russia
3 Department of Physics, Florida A&M University, Tallahassee, Florida 32307, USA

**pp07.036**
Modelling Hydrogen Storage in Aromatic Carbon Ring based Molecular Materials with Alkali or Alkali-Earth Metals
1 Alexander V. Nikolaev, 1 Igor V. Bodrenko, 1 Evgenij V. Tkalya, 1 Alexander V. Avdeenkov, 1 Michael D. Taran, 1 Dmitri Bessarabov
1 Skobeltsyn Institute of Nuclear Physics, Lomonosov Moscow State University, Leninskie gory 1/2, RU-119234 Moscow, Russia
2 National Nanotechnology Laboratory (NNL), Istituto Nanoscienze–CNR, Via per Arnesano 16, I-73100 Lecce, Italy
3 SSC Institute of Physics and Power Engineering, Bondarenko sq.1, Kaluga region, RU-249033 Obninsk, Russia
4 National Institute for Theoretical Physics, Stellenbosch Institute of Advanced Study, Private Bag X1, Matieland 7602, South Africa
5 Troitsk Institute of Innovative and Thermonuclear Research, Poushkovykh 12, Troitsk RU-142190, Russia
6 DST Hydrogen Infrastructure Center of Competence (HySA Infrastructure), North-West University, Faculty of Natural Sciences, Private Bag X6001, Potchefstroom, 2520 South Africa

**pp07.037**
Synthesis and Hydrogen Storage Ability of Nanocrystalline TiFe Intermetallic Compound with Polymer Protective Coating
1 Dana V. Strogova, 1 Mikhal Yu. Zadorozhny, 1 Semen N. Klyamkin, 1 Leonid K. Olifirov, 1 Gennady S. Miklovorov, 1 Sergey D. Kaloshkin, 1 Vladislav Yu. Zadorozhny
1 National University of Science and Technology (MISIS), 119049, Moscow, Leninsky prospekt 4, MISiS, Russia
2 Department of Chemistry Lomonosov Moscow State University, Leninskie Gory, 1/3 119991 Moscow Russia
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<td>Carbon Nanotube - Metal Oxide Nanoplate Supercapacitor Composite Materials</td>
<td>Dylan Brokow, James Mitchell, Jordan C. Poley</td>
<td>University of North Carolina at Charlotte, NC 28223 USA</td>
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<td>pp07.039</td>
<td>Understanding Graphene Electrochemistry and Emerging Concepts for Future Mass-Production</td>
<td>Dale Brownson, Craig Banks</td>
<td>Manchester Metropolitan University (MMU), Manchester, M1 SGD UK</td>
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<td>pp07.040</td>
<td>Study of Lithium Peroxide Crystal Clusters Formation at Cathode in Li-O2 Cell</td>
<td>Tatiana K. Zhakharchenko, Anna Ya. Kozmenkova, Daniil M. Itkis</td>
<td>Department of Materials Science, Moscow State University, Leninsk gory, Moscow 119991, Russia</td>
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<td>Substitution and Size Effects on the Structure and Electrochemistry of 5 V Spinel Cathode Materials LiNi$<em>{1/3}$Mn$</em>{1/3}$M$_{1/3}$O$_2$</td>
<td>Nina V. Kosova, Evgeniya T. Devyatkina, Olga A. Podgornova, Ivan A. Bobrikov, Ivan D. Karpov, Anatoly M. Balagurov</td>
<td>Institute of Solid State Chemistry and Mechanochemistry SB RAS, 18 Kutateladze, Novosibirsk 630128 Russia</td>
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<td>pp07.042</td>
<td>Structural Changes in Cathode Material Li-Fe-V Composite During Charge/Discharge Cycles</td>
<td>Victor V. Shapovalov, Alexander A. Guda, Alexander V. Soldatov, Alexander Pohl, M Fichtner</td>
<td>Southern Federal University, Rostov-on-Don, Russia, Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany, Helmholtz Institute Ulm, Ulm, Germany</td>
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<td>pp07.043</td>
<td>Resorcinol-Formaldehyde Carbon Xerogels as Lithium-Ion Battery Anodes: Synthesis, Grinding, Coating on Current Collector and Electrochemical Characterization</td>
<td>Marie-Laure C. Piedboeuf, Alexandre F. Leonard, Jean-Paul Pirard, Nathalie Job</td>
<td>University of Liege, Laboratoire de Genie Chimique Bat B6a Allee de la chimie 3 4000 Liege, Belgium</td>
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<td>pp07.044</td>
<td>Laser Pyrolysis for the One Step Synthesis of Core-Shell Silicon/Carbon Nanoparticles: Interest as Anode Material in Li-Ion Batteries</td>
<td>Julien Source, Axelle Quinsac, Yann Leconte, Olivier Sublemontier, Nathalie Herlin, Cecile Reynaud, Cedric Haon, Willy Porcher, Severine Jouanneau</td>
<td>CEA Saclay, DSM/IRAMIS/NIMBE/LEDNA bldg 522, 91191, Gif sur Yvette, France, CEA Grenoble, DRT/LITEN/DEHT/SCGE/LCB bldg C2, 38000, Grenoble, France</td>
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<td>pp07.045</td>
<td>Electrochemical Oxygen Reduction on Different Graphite Planes</td>
<td>Alina I. Belova, Alexander V. Gavrikov, Daniil M. Itkis</td>
<td>Lomonosov Moscow State University, Moscow, Leninsky Gory 1, Russia</td>
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<td>pp07.046</td>
<td>Effect of Fe and V Doping on Electrochemistry of Nanostructured LiCoPO$_4$ - High-Voltage Cathode Material</td>
<td>Olga A. Podgornova, Nina V. Kosova</td>
<td>Institute of Solid State Chemistry and Mechanochemistry SB RAS, 18 Kutateladze, Novosibirsk 630128 Russia</td>
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<tr>
<td>pp07.047</td>
<td>Effect of Surfactant on the Electrochemical Properties of Nano-LiMn$_2$O$_4$ Cathode Material for Lithium-Ion Battery</td>
<td>Ming Hung, Hsiang-Ju Su, Yung-Chin Yang</td>
<td>Department of Chemical Engineering and Materials Science, Yuan Ze University, No. 135, Yuan-Tung Road, Chungli, Taoyuan 320 Taiwan, Institute of materials science and engineering, National Taipei University of Technology, 1, Sec. 3, Zhongxiao E. Rd., Taipei 10608 Taiwan</td>
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<td>pp07.048</td>
<td>Design of Heterometallic Single-Source Precursors for the Low-Temperature Preparation of LiCoO$_2$, Cathode Material</td>
<td>Haixiang Han, Zheng Wei, Alexander S. Filatov, Evgeny V. Dikarev</td>
<td>State University of New York at Albany, Department of Chemistry, 1400 Washington Avenue, Albany, NY 12222 USA</td>
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<td>pp07.049</td>
<td>(Li,Na)$_2$MPO$_4$F (M = Mn, Fe, Co) as High-Energy Cathode Materials for Rechargeable Batteries</td>
<td>Stanislav S. Fedotov, Nellie R. Khasanova, Sergey M. Kuzovchikov, Oleg A. Drozhzhin, Evgeny V. Antipov</td>
<td>Moscow State University, 1, Leninskie Gory, Moscow, Russia</td>
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<td>pp07.050</td>
<td>Metallic Catalyst Nano-Particles with Fluoropolymer Surrounding Produced by Self-Organization of Diblock Copolymer with Perfluorinated Block in SC CO$_2$, Solution</td>
<td>Igor V. Elmanovich, Dmitry O. Kolomytkin, Marat O. Gallyamov</td>
<td>A.N.Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences (INEOS RAS), Moscow, Vavilova, 28 Russia, Faculty of Physics M.V. Lomonosov Moscow State University, Moscow, Leninskie Gory, 1 Russia</td>
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## Section 08 – Biological and Biomedical Nanomaterials

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#### pp08.040
Novel Multiparameter Sensors for Influenza Virus Determination

1. Alexandra Isakova, 1 Valeriya Ivanova, 1 Oleg Rightman, 1 Victor Ivanov, 2 Elena Burceva, 1 Anatoly Yannikov
2. A.N.Frumkin Institute of Physical Chemistry and Electrochemistry, Moscow, Russia
3. D.I. Ivanovsky Institute of Virology, Ministry of Health of the Russian Federation, Moscow, Russia

#### pp08.041
CNT-BSA and CNT-DNA Complexes Distribution and Influence on Mitochondrion in C6 Glioma Cells

1. Elena N. Golubeva, 1 Tatiana A. Kulahava, 1 Alesia G. Padubiskaia, 1 Mikhail V. Shuba
2. Belarusian State University, 4, Nezavisimosti avenue, Minsk, Republic of Belarus

#### pp08.042
Common Dogwood Berries Extract Mediated Green Synthesis of Silver Nanoparticles and Evaluation of Their Anticancer Activity

1. Luminita C. David, 1 Bianca E. Moldovan, 2 Liliana Olenic, 2 Adriana Vulcu, 1 Maria Perde-Schepler
2. Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University, Cluj-Napoca, Romania
3. National Institute for Research and Development for Isotopic and Molecular Technologies, Cluj-Napoca, Romania
4. "I. Chiricuta" Oncologic Institute, Cluj-napoca, Romania

#### pp08.043
Label-Free Gold Nanoparticle Biosensor for Protein-Conjugated Acrolein

1. Chen Wei-Hung, 1 Lin Kuan-Jiuh, 1 Lee Chung-Cheng
2. National Chung-Hsing University, No. 250, Kuo-Kuang Road, Taichung 402, Taiwan

#### pp08.044
Modulatory Effects of Nanostructures Based on Gold Nanoparticles and Natural Extracts in Experimental Inflammation in Rats

1. Adriana G. Filip, 1 Simona Clichici, 2 Pompei Bolf, 1 Adriana Muresan, 1 Ioana Baldea, 1 Diana Olteanu, 1 Luminita David, 1 Liliana Olenic
2. University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania
3. National Institute for Research and Development for Isotopic and Molecular Technologies, Cluj-Napoca, Romania
4. National Institute of Research for Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania

#### pp08.045
New Way to Prepare Aqueous Dispersion of Fullerene for Biomedical Applications

1. Daria D. Purgina, 1 Elena N. Bashkatova, 1 Musa R. Khaitov, 1 Sergey M. Andreev
2. NRC Institute of Immunology, Kashirskoye shosse 24-2, Moscow, Russia
3. D.A. Frumkin Institute of Physical Chemistry and Electrochemistry, Moscow, Russia

July 16 (Wednesday)

**Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering**

**12:00 PM – 2:00 PM Poster session**

**pp09.023**

**Nanostructured Carbon Materials Growth Directly on Stainless Steel Substrates**

1. Ronaldo D. Mansano, 2. Ana P. Mousinho
1. University of São Paulo, Avenida Professor Luciano Gualberto, 158, trav 3, São Paulo, Brazil

**pp09.024**

**Pulsed Laser Deposition of PZT/Diamond Heterostructures for High Frequency Saw Device Applications**

1. Nano Functional Materials Technology Centre, MSRC and Department of Physics, Indian Institute of Technology Madras, Chennai 600036, India
2. Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras, Chennai 600036, India

**pp09.025**

**Development of Technology Elements and Evaluation of Processing Parameters of Multi-ECAP-Form**

1. Elvira Fakhretdinova, 2. Georgiy Raab
1. Ufa State Aviation Technical University, Ufa, Russia

**pp09.026**

**Dynamics of Edge Dislocations in Disclination Stress Fields Under Shock Compression of Metals and Alloys**

1. Egor Rzhavtsev, 2. Michail Gutkin
1. Saint-Petersburg State Polytechnical University, Saint-Petersburg, Russia
2. Saint-Petersburg National Research University of Information Technologies, Mechanics and Optics, Saint-Petersburg, Russia
3. Institute of Problems in Mechanical Engineering RAS, Saint-Petersburg, Russia

**pp09.027**

**Fatigue Life Increase of Stainless Steel After Electron Beam Treatment**

1. Department Physics Siberian State Industrial University, 654007, Korovkina Street 42, Russia
2. Institute of high–current electronics SB RAS, 634055, Tomsk, Akademicheskii 2/3, Russia

**pp09.028**

**Functional Properties of Nanostructured Ni-Ti Shape Memory Alloy**

1. Kotel’nikov Institute of Radio Engineering and Electronics of Russian academy of sciences, Mokhovaya 11-7, Moscow, 125009, Russia
2. ISC “Nano-dent” ltd, Kasatkina st. 3-3, Moscow, 129301, Russia
3. «Matek-Sma Ltd.», Kar’er st. 2A-1-313, Moscow, 117449, Russia
4. Ufa State Aviation Technical University, K. Marx Street 12, Ufa, The Republic of Bashkortostan, 450000, Russia

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**pp08.055**

**Chlorofullerene C₆₀Cl₆: A Versatile Precursor for Synthesis of Water-Soluble [60]Fullerene Derivatives for Biomedicine Applications**

1. Institute for Problems of Chemical Physics of Russian Academy of Sciences, Semenov ave 1, Chernogolovka, Moscow region, 142432, Russia
2. A. N. Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences, 1 Vavylova St. 28, 8-334, Moscow, 119991, Russia
3. Department of Chemistry, Moscow State University, Leninskie gory, Moscow, 119991, Russia

**pp08.056**

**Characterization of Hollow Hematite Sub-Micron Spheres Prepared by Sol-Gel**

1. TECSUP - UNMSM, Av. Cascanueces 2221 Sta. Anita, Lima 43, Perú
2. University of Cambridge, Cambridge, CB3 0HE, United Kingdom
3. Universidade de Brasilia, Brasilia, DF 70910-900, Brasil
4. Elettra Sincrotrone, Strada Statale 14 - km 163, 5 in Area Science Park, 34149 Basovizza, Trieste, Italy
5. Universidade Federal de Pernambuco, Universidade Federal de Pernambuco 50670-901, Recife, Brazil

**pp08.057**

**In Vitro Effects of Silver Nanoparticles Synthesized with a Polyphenols Rich Extract from Cornelian Cherry (Cornus Mas) Fruits**

1. Ion Chiricuta Oncology Institute Cluj-Napoca, 34-36, Republicii street, 400015, Cluj-Napoca, Romania
2. Babes-Bolyai University Cluj-Napoca, 1, Mihail Kogalniceanu street, 400084, Cluj-Napoca, Romania
3. National Institute for Research and Development of Isotopic and Molecular Technologies, 65-103, Donath street, 400293 Cluj-Napoca, Romania
Nano Structure-Phase States and Fatigue Life Increase of Rail Steel After Electron Beam Treatment
1 Victor E. Gromov, 2 Yuriy F. Ivanov, 3 Konstantin V. Volkov, 3 Konstantin V. Morozov, 1 Sergei V. Konovalov, 1 Krestina V. Alsaraeva
1 Department of High Current Electronics, SB, RAS, 634055, Tomsk, Akademicheskii 2/3, Russia
2 EVRAZ Consolidated West Siberian Metallurgical Plant, 654043, Novokuznetsk, Kosmichesko av., 16, Russia

Pressure Welding of Nickel-Based Alloy Using Nanocrystalline Interlayer
1 Elvina Valitova, 1 Minaul Mukhametrahimov, 1 Ramil Lutfullin, 1 Vener Valitova
Institute for Metals Superplasticity Problems of Russian Academy of Sciences, 39, Khalturin Street, Ufa 450001, Russia

Thermomechanical Steel Strengthening due to the Nanosize Structure Formation
1 Victor E. Gromov, 2 Yuriy F. Ivanov, 1 Sergey V. Konovalov, 1 Krestina V. Alsaraeva
1 Department of High Current Electronics, SB, RAS, 634055, Tomsk, Akademicheskii 2/3, Russia

Sensitization to the VIS Region of Nano-Structures Based on TiO2 and ZnO
1 Andrey A. Lisachenko
St. Petersburg State University, V.A.Fock Institute of Physics, Ulyanovskaya 1, Saint-Petersburg, 198504 Russia

Synthesis and Characterization of PLD CoFe Thin Films as a Function of Composition and Deposition Conditions
1 Elisabetta Agostinelli, 1 Ksenia Chichay, 2 Davide Peddis, 3 Paolo Mengucci, 1 Sara Laureti
1 ISM - CNR, AREA Roma1-Via Salaria km 29.300-00015 Monterotondo Scalo (Roma) Italy
2 Immanuel Kant Baltic Federal University, Kaliningrad, Russia
3 Dipartimento SIMAU, Università Politecnica delle Marche, 60131 Ancona, Italy

Multilayer Ge/Si Heterostructures with Chains of Ge Quantum Dot
1 M. S. Storozhevykh, 2 S. S. Gizha, 2 V. M. Senkov, 1 O. V. Uvarov, 1 V. A. Chapnin, 1 V. A. Chizh, 1 V. A. Yuryev, 2 I. V. Pirshin
1 A. M. Prokhorov General Physics Institute, RAS, 38 Vavilov Street, Moscow, 119991, Russia
2 P. N. Lebedev Physical Institute, RAS, 53 Leninsky Prospect, Moscow, 119991, Russia

An Optical Remagnetization of Nanostructured Transition Metal Silicides
1 Andrei V. Tuchin, 1 Grigory I. Glushkov
Voronezh State University, 394006, Voronezh, Universitetskaya pl.1, Russia

The Study of the Structural Parameters of Chromium Dioxide Nanoparticles
1 Dmitry I. Arkhipov, 1 Ella L. Dzidziguri, 2 Mikhail G. Osmolowsky, 2 Olga M. Osmolowskaya
1 National University of Science and Technology “MISIS”, 119049, Moscow, Leninskiy prospekt 4, Russia
2 Saint Petersburg State University Faculty of Chemistry, 198504, Saint-Petersburg, Petrodvorets, Universitetskii pr. 26, Russia

High Sensitivity Gas Sensor using Buckypapers of Carbon Nanotubes
1 G. Eduardo Sandoval-Romero, 1 Asur Guadarrama-Santana, 1 Elena V. Basiuk, 1 Augusto Garcia-Valenzuela
1 Centro de Ciencias Aplicadas y Desarrollo Tecnologico, Universidad Nacional Autonoma de Mexico, Circuito Exterior S/N, Ciudad Universitaria, A.P.70-186, C.P. 04510, Mexico D.F., Mexico

Parameters of Memristive Effect in Ti/TiO2/Au Nanostructures
1 Ilya A. Weinstein, 1 Aleksander S. Vokhmintsev, 1 Robert V. Kamalov, 1 Irina B. Dorosheva
1 Ural Federal University, Mira street, 19, Ekaterinburg, 620002 Russia
### Section 11 – Nanomaterials and Catalysis

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2. Lomonosov Moscow State University, GSP-1, Leninskie Gory, Moscow, 119991, Russian Federation |
| pp11.032 | Preparation of Polyelectrolyte Multilayer Nanocatalysts  
2. Al-Farabi Kazakh National University, Almaty, Kazakhstan  
3. Department of Chemistry, Saint Louis University, St. Louis, MO 63103, USA |
| pp11.033 | Investigation of the Properties of Alginate/Poly (Vinyl Alcohol) Nano Fibers  
1. Marmara University, Goztepe, Istanbul, Turkey  
2. Istanbul Commerce University, Kucukyali, Istanbul, Turkey |
| pp11.034 | Preparation and Characterization of Al2O3-TiO2 Photoinduced Sorbent-Catalysts  
1. Irene I. Lebedeva, 1. Irene I. Sizenova, 1. Dmitry M. Kiselkov, 1. Victor V. Valsiifer  
1. Institute of Technical Chemistry Ural branch of the RAS, Perm, Akademika Koroleva, 3, Russia |
| pp11.035 | Synthesis of Fe/Fe3O4 Core-Shell Iron Nanocubes from Iron–Arene Sandwich Complexes  
1. Alvaro Duarte-Ruiz, 2. Alex Wei, 2. Ahn Nguyen  
1. Universidad Nacional de Colombia, Kr30 No 45-03, Colombia  
2. Purdue University, West Lafayette IN, USA |
| pp11.036 | Ethanol Gas Sensing Mechanism of ZnO Nanowires  
1. Politecnico di Torino – DISAT, I-10129 Torino, Italy  
2. CNR-IMEM, I-431100 Parma, Italy  
3. CNR-NANO, Istituto Nanoscienze, Centro S3, I-41125 Modena, Italy |
| pp11.037 | A Simple Kinetic Modelling of Charge Carrier Recombination in UV-Illuminated Aqueous Suspensions of Nanosized Titanium Dioxide  
1. Lomonosov Moscow State University, Department of Chemistry, I-3 Leninskie Gory, Moscow 119991, Russia  
2. Karlsruhe Institute of Technology, Engler-Bunte Institute, 1 Engle-Bunte Ring, Karlsruhe 76134, Germany |
1. Yuchun Wu, 1. Lung-Shen Ju  
1. National Cheng-Kung University, Department of Resources Engineering, Taiwan |
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<td>Highly Dispersed Fe₂O₃ Nanoparticles for P-Nitrophenol Degradation by Photo-Fenton Effect</td>
<td>Julien G. Mahy, Ludivine Tasseroul, Anthony Zubiaur, Jeremy Geens, Magali Bribois, Raphael P. Hermann, Benoit Heinrichs, Stephanie D. Lambert</td>
<td>Laboratory of Chemical Engineering, University of Liege, Belgium</td>
<td>Liege, Belgium</td>
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<td>pp11.040</td>
<td>Hydrogen Production via Methanol Steam Reforming Reaction on Bimetallic Nanocatalysts</td>
<td>Aleksandra A. Lytkina, Andrey B. Yaroslavtsev, Natalia A. Zhilyaeva, Natalia V. Orekhova, Margarita M. Ermilova</td>
<td>A.V. Topchiev Institute of Petrochemical Synthesis, University of Liege</td>
<td>Moscow, Russia</td>
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<td>pp11.042</td>
<td>Nanosized Ferromagnetic Particles Dispersed in Polycoujugated Polymeric Materials: Peculiarities of Formation and Catalytic Properties</td>
<td>Mayya V. Kulikova, Mikhail I. Ivantsov, Galina P. Karpacheva, Salambek N. Khadzhiev</td>
<td>A.V. Topchiev Institute of Petrochemical Synthesis, Moscow</td>
<td>Moscow, Russia</td>
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<td>pp11.043</td>
<td>Photocatalytic Degradation of the Pharmaceutical Anti-Inflammatory Drug Diclofenac Sodium over Anatase-Brookite Heterojunction</td>
<td>Said M. El-Sheikh, Tamer Kheder, Geshan Zhang, Adel A. Ismail, Kevin O'Shea, Dionysios D. Dionysiou</td>
<td>University of Cincinnati, Miami, FL</td>
<td>Miami, USA</td>
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<td>pp11.044</td>
<td>Production of Doped Nanostructured TiO₂ for Photo Catalysis Applications</td>
<td>Yana Ruzmanova</td>
<td>University of Rome «La Sapienza», Rome, Italy</td>
<td>Rome, Italy</td>
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<td>pp11.045</td>
<td>Remote TiO₂-Photocatalysis with Use of Nanoporous Silica Carrier</td>
<td>Aleksandr O. Kondrakov, Alexey N. Ignatev, Fritz H. Frimmel, Alexander I. Revelsky, Harald Horn, Stefan Braese</td>
<td>Institute of Chemistry, Saint Petersburg State University, Saint Petersburg, Russia</td>
<td>Saint Petersburg, Russia</td>
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**July 16 (Wednesday)**

- **Topochemical Conversions of Protonic Forms of Layered Perovskite-Like Titanates for Synthesis of Nanostructured Materials**
  - Liliia D. Abdulaeva, Alexander N. Bugrov, Irina A. Zvereva
  - Institute of Chemistry, Saint Petersburg State University, 26 Universitetskaya pr., 198504, Petrodvorets, Saint Petersburg, Russia
  - DOI: 10.1122/3.000008

- **Template Synthesis of Nanosized Titania on Polysaccharides Matrixes**
  - Anna V. Skatova, Irina V. Postnova, Yuri A. Shchipunov
  - Institute of Chemistry, Far East Department, Russian Academy of Sciences, 690022 Vladivostok, pr. 100 let Vladivostoku, 159, Russia
  - DOI: 10.1122/3.000009
## Section 01 – Formation, Shaping and Self-assembly of Inorganic Nanoparticles; Carbon Nanomaterials

### 12:00 PM – 2:00 PM
**Poster session**

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<th>Title</th>
<th>Authors</th>
<th>Affiliations</th>
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<tr>
<td>pp01.086</td>
<td>Features of Synthesis of Bi Nanoclusters in an Amorphous Hydrogenated Carbon Matrix by RF Method</td>
<td>Alexander P. Ryaguzov, 1 Nazim R. Guseinov, 2 Nurlan K. Manabaev, 1 Timur E. Nurmamytov</td>
<td>1 National Nanotechnology Open Type Al-Farabi KazNU, Almaty, Al Farabi 71, Physical and Technical faculty, Kazakhstan 2 Al Farabi Kazakhstan National University, Almaty, Kazakhstan</td>
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<tr>
<td>pp01.087</td>
<td>Electron Capture β Decay of 8Be Encapsulated in Fullerenes (C60 and C70)</td>
<td>Alexander V. Nikolaev, 1 Evgeniy V. Tkalya, 2 Alexander V. Avdeenkov, 1 Anton V. Bilibikov, 3 Igor V. Bodrenko</td>
<td>1 Skobeltsyn Institute of Nuclear Physics, Lomonosov Moscow State University, Leninskie gory 1/2, RU-119234 Moscow, Russia 2 SSC Institute of Physics and Power Engineering, Bondarenko sq.1, Kaluga region, RU-249033 Obninsk, Russia 3 National Nanotechnology Laboratory (NLL), Istituto Nanoscienze–CNR, Via per Arnesano 16, I-73100 Lecce, Italy</td>
</tr>
<tr>
<td>pp01.088</td>
<td>The Functional Composites Obtained with Use Carbon Nanomaterials</td>
<td>Victor N. Gulbin, 1 Nikolay S. Kolpakov, 2 Victor V. Polivkin</td>
<td>OJSC «EMC of «Vega» Concern, 125190 Russia</td>
</tr>
<tr>
<td>pp01.089</td>
<td>Growth and Characterization of Diamond Particles, Diamond Films andCNT-Diamond Composite Films Deposited Simultaneously by Hot Filament CVD</td>
<td>C R. Kumaran, 1 Maneesh Chandran, 1 Krishna M. Surendra, 1 Subramshu S. Bhattacharya, 1 M S. Ramachandra Rao</td>
<td>1 Indian Institute of Technology Madras, Nano Functional Materials Technology Centre (NFMTIC) Department of Physics and Department of Metallurgical &amp; Materials Engineering, IIT Madras, Chennai - 600036, India</td>
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**July 17 (Thursday)**

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<tr>
<td>pp01.090</td>
<td>Surface Modification of Detonation Synthesis Nanodiamond</td>
<td>Alexandra Isakova, 1 Nina Skorik, 1 Boris Spitsyn, 1 Olga Omelchenko</td>
<td>1 A.N.Frumkin Institute of physical chemistry and electrochemistry RAS, 119071 Moscow, Leninsky prospect, 31, Russia 2 Tomsk State University, 634050 Tomsk, Lenin Prospekt, 36, Russia</td>
</tr>
<tr>
<td>pp01.091</td>
<td>Synthesis and Characterization of Nanoparticles of Ti-O and Ti-N Systems Manufactured via the Flow-Levitation Method</td>
<td>Alexey N. Zhigach, 1 Ilya Leipursky, 1 Michael L. Kuskov, 1 Elena S. Afanasenkova, 1 Nadezda G. Berezina, 1 Vladimir V. Artemov</td>
<td>1 Talrose Institute for Energy Problems of Chemical Physics, 119334 Moscow, Leninsky prosp, 38, bld.2, Russia</td>
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<tr>
<td>pp01.092</td>
<td>Few-Layer Graphene Under an Applied Pressure up to 50GPa</td>
<td>Andrei V. Tuchin, 1 Anna M. Bokova</td>
<td>1 Voronezh State University, 394046, Voronezh, Universitetskaya pl.1, Russia</td>
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<td>pp01.093</td>
<td>The Electronic Structure and Vibrational Spectrum of the Fullerene C60 Excited by the Electric Field</td>
<td>Andrei V. Tuchin</td>
<td>1 Voronezh State University, 394046, Voronezh, Universitetskaya pl.1, Russia</td>
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<tr>
<td>pp01.094</td>
<td>A Novel Electrochemical Method of Boron Doped Graphene Synthesis in Molten Salt Electrolyte</td>
<td>Ludmila A. Yolshina, 1 Varvara A. Yolshina, 1 Emma G. Vokotrub, 1 Vyacheslav B. Malkov</td>
<td>1 Institute of High-Temperature Electrochemistry Ural branch of Russian Academy of Sciences, 620990 Ekaterinburg Akademicheskaya str., 20, Russia 2 Ural Federal University named by B.N.Yeltsin, 620002 Ekaterinburg Mira str, 19, Russia</td>
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<tr>
<td>pp01.095</td>
<td>Atomic and Electronic Structure of Graphene on SiC(001)/Si(001) Wafers</td>
<td>Alexander Chaika, 1 Olga Molodtsova, 1 Alexei Zakharov, 1 Dmitry Marchenko, 1 Jaime Sánchez-Barriga, 1 Andrei Varykhalov, 1 Marc Portail, 1 Marc Zielinski, 1 Igor Shvets, 1 Victor Aristov</td>
<td>1 Institute of Solid State Physics RAS, Chernogolovka, Moscow district 142432, Russia 2 CRANN, School of Physics, Trinity College, Dublin 2, Ireland 3 HASYLAB at DESY, D-22607 Hamburg, Germany 4 MAX-lab, Lund University, Box 118, 22100 Lund, Sweden 5 Helmholtz-Zentrum Berlin für Materialien und Energie, D-12489 Berlin, Germany 6 Freie Universität Berlin, D-14195 Berlin, Germany 7 CNRS-CRHEA, Rue Bernard Gregory, 06560 Valbonne, France 8 NOVASIC, Savoie Technolac, Arche Bat 4, BP 273, 73375 Le Bourget Du Lac Cedex, France</td>
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<td>pp01.096</td>
<td>Atomic Resolution of Nanocrystalline Ge and SbTe Encapsulated Inside Carbon Nanotubes</td>
<td>Samuel R. Marks, 1 Reza Kashtiban, 1 Jeremy Sloan</td>
<td>1 University of Warwick, Coventry, CV4 7AL, UK</td>
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<td>pp01.097</td>
<td>Comparative Study of the Removal of Cadmium (II) from Water by Using Regular and Modified Carbon Nanofibers</td>
<td>Ihsan Ullah</td>
<td>1 Department of Chemical Engineering King Fahd University of Petroleum &amp; Minerals, Dhahran 31261, Saudi Arabia</td>
</tr>
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</table>
Continuum Model of SWNT Based on the Generalized Theory of Adhesion Interactions
Sergey A. Lurie, Petr A. Belov, Victor A. Eremeyev
Institute of Applied Mechanics of RAS, Leningradskii pr. 7, 125040, Moscow, Russia
Bauman University, Research and Education Center, 5-nd Baumanskaya str., 105005, Moscow, Russia
Otto-von-Guericke-University Magdeburg, Universitatplatz 2, 39106 Magdeburg, Germany

Direct Chemical Vapor Deposition of Graphene on Alumina Nanofibers
Irina Hussainova, Roman Ivanov
Tallinn University of Technology, Ehitajate 5, Tallinn, Estonia

Epitaxial Graphene on Silicon: Reconstruction of the Substrate Surface by Silicon Carbide at Magnetron Sputtering
Shikhsagan M. Ramazanov, Dinara S. Dillaeva, Guseyn M. Ramazanov, Nariman M. Alikhanov, Ruslan M. Emini, Marat E. Iskakhov
SICLAB LLC, Makhakhchala, Dagestan, 367000 Russia
Bmo University of Technology, Brno, 616 00 Czech Republic
Dagestan State University, Makhakhchala, Dagestan, 367000 Russia

Graphene Synthesis by Chemical Interaction of Carbides with Molten Aluminium in Alkali Chloride Melts
Varvara A. Yolshina, Ludmila A. Yolshina, Emma G. Vovkotrub
Ural Federal University named after B.N.Yeltsin, Mira str., 19, Ekaterinburg, 620002 Russia
Institute of High-Temperature Electrochemistry Ural's Branch of Russian Academy of Sciences, Akademicheskaya str., 20, Ekaterinburg, 620990 Russia

Heating Graphene on Single Crystal Copper and Its Dependence on the Substrate Orientation: A Raman Spectroscopy Study
Sara D. Costa, Johan Ek Weis, Otakar Frank, Martin Kalbac
J. Heyrovsky Institute of Physical Chemistry, Dolejskova 3, CZ-18223 Prague 8, Czech Republic

Hydrogen Adsorption in Graphene Nanostructures and Uncatalytic Hydrogenation of Decene-1 Using This Hydrogen
Anatoly P. Soldatov
Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Leninsky av., 29, Russia

In situ Investigation of the Active Component Formation of Fe-Co Catalyst During MWCNT Growth
Dmitry V. Krasnikov, Vladimir L. Kuznetsov, Alexander N. Shmakov, Arcady V. Ilchenko, Andrey S. Andreev, Oga B. Lapina
Novosibirsk State university, Novosibirsk, Russia
Bioreskov Institute of Catalysis, Novosibirsk, Russia

Morphology and Magnetic Properties of (Mg,Ni)3Si2O5(OH)4 Nanorolls
Andrei A. Krasilin, Anastasiya M. Suprun, Vladimir N. Nevedomsky, Anna S. Semenova
Ioffe Physical Technical Institute, 26 Polytekhnicheskaya st., St. Petersburg, 194021, Russia
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Institute of Solid State Chemistry, Ural’s Branch of the Russian Academy of Sciences, 91 Pervomaiskaya st., Ekaterinburg, 620990, Russia

Morphology Engineering of Zeolites with Graphene
Paul Gebhardt, Sebastian W. Pattinson, David J. Cooke, James Elliott, Dominik Eder
Westfaelische Wilhelms-Universitaet Muenster, Corrensstr. 28, 48149 Muenster, Germany
Department of Materials Science and Metallurgy, University of Cambridge, UK
Department of Chemical and Biological Sciences, University of Huddersfield, UK

Nanocrystalline Fe-Clusters Imbedded in Vertically Aligned Carbon Nanotubes: Location and Properties
Nikolay G. Chechenin, Pavel N. Chernykh, Ekaterina A. Vorobyeva, Mikhail V. Oudka, David J. Vainshtein, Jeff Th. De Hosson
Lomonosov Moscow State University Skobeltsyn Institute of Nuclear Physics, Leninskiye Gory 1/2, 119234, Russian Federation
Department of Applied Physics, Materials Innovation Institute (M2i), University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands

Large-Scale Synthesis of Nanoporous Carbide-Derived Carbons
Alexei G. Gogotsi, Yury G. Gogotsi
Materials Research Centre, Kiev, 03680, Ukraine
A.J. Drexel Nanotechnology Institute, Department of Material Science and Engineering Drexel University, Philadelphia, PA 19104, USA
July 17 (Thursday)

Section 02 – Thin Films and Heterostructures, 2D and 3D Nanofabrication

12:00 PM – 2:00 PM

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<tr>
<td>1 Nancy Castillo, 2 Emma Luna, 3 Miguel Galván-Arellano, 4 Amado F. Garcia-Ruiz, 5 Agustín Conde</td>
</tr>
<tr>
<td>1 UPICS-KOFAA, Instituto Politécnico Nacional (IPN), Té 950, Col. Granjas-México, México, C.P. 08400 México D.F, México</td>
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<td>2 Física, Centro de Investigación y Estudios Avanzados del IPN (CINVESTAV-IPN), C. P. 07360 México D.F, México</td>
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<tr>
<td>3 Universidad de Castilla-La Mancha, Dr.走向 de la Ciudad Universitaria, 13071 Ciudad Real, España</td>
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<td>4 Instituto Politécnico Nacional (IPN), C. P. 07360 México D.F, México</td>
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<td>5 Instituto de Energía Solar, Universidad de Castilla-La Mancha, P.O. Box 85, 13071 Ciudad Real, España</td>
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<tr>
<td>1 Andrey A. Lisachenko, 2 Viktor V. Titov, 3 Igor A. Kasatkin, 4 Lev L. Basov, 5 Oleksandr L. Stroyuk, 6 Stephan Y. Kuchmy</td>
</tr>
<tr>
<td>1 St. Petersburg State University, V.A.Fock Institute of Physics, Ulyanovskaya 1, St-Petersburg, Russia</td>
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<td>2 L.V.Pysarzhevsky Institute of Physical Chemistry, National Academy of Sciences of Ukraine, 31 Nauky av., 03028, Kyiv, Ukraine</td>
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<tr>
<td>1 Irene I. Lebedeva, 2 Victor V. Valtisler</td>
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<tr>
<td>1 Institute of Tecnical Chemistry Ural branch of the RAS, 614013, Perm, Akademika Koroleva, 3, Russia</td>
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<tr>
<td>1 Larisa V. Arapkina, 2 Mikhail S. Storozhevskiy, 3 Kirill V. Chizh, 4 Valery A. Chapnin, 5 Vladimir A. Yuryev</td>
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<tr>
<td>1 A.M.Prokhorov General Physics Institute of RAS, 38 Vavilov str., Moscow, Russia</td>
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<tr>
<td>1 Dorin Spoia, 2 Silvia Evtodiev, 3 Adrian Dafinei, 4 Petru Ketrush, 5 Dumitrul Untila, 6 Irina Rotaru</td>
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<tr>
<td>1 Moldova State University, A. Mateevici, 60, MD-2009 Kishinev, Republic of Moldova</td>
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<tr>
<td>2 University of Bucharest, Atomistilor, 405, RO-077125, Bucharest-Magurele, Romania</td>
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<tr>
<td>1 Anastasia G. Ryabishchenkova, 2 Mikhail M. Otrokov, 3 Vladimir M. Kuznetsov</td>
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<tr>
<td>1 Tomsk State University, Tomsk, prospect Lenina, 36, Russia</td>
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Synthesis, Properties and Potential Application of Carbon Nanoscrolls with Polygonal Cross-Section

1 Andrei M. Alexeev, 1 Rinat R. Ismagilov, 1 Sergei A. Malykhin, 1 Alexander N. Obraztsov
2 Lomonosov Moscow State University, Department of Physics, Leninskie Gory, Moscow 119991 Russia

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The Carbon Nanomaterials Manufacture at High-Frequency Induction Plasma Torch

1 Artur V. Krasilnikov, 1 Georgiy N. Zalozin, 1 Nikoly F. Rudin
Central Institute of Machine Building, 141070, Pioneer st., 4, Korolev, Moscow region, Russia

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Theoretical Study of Addition Motifs in Stepwise Functionalization of Graphene

1 Olga N. Maskaleva, 1 Aleksandra A. Brunovlenskaya-Bogoyavlenskaya, 2 Ruslan R. Gazizov, 1 Nyia L. Toffe, 1 Alexey A. Gotyunkov, 1 Evgeny V. Skokan
2 Lomonosov Moscow State University, Leninskie Gory, 1, Russia

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Time and Energy Dependent Wave Packet Dynamical Simulations for Carbon Nanostructures

1 Geza I. Mark, 1 Peter Vancso, 2 Dmitrii Kvasshnin, 3 Victor A. Demin, 3 Leonid A. Chemnitzonski, 1 Philippe Lambin, 1 Chanyong Hwang, 3 Laszlo P. Biro
1 Institute of Technical Physics and Materials Science, Research Centre for Natural Sciences, PO Box 49, H-1525 Budapest, Hungary
2 Department of Physics of Matter and Radiation, University of Namur (FUNDP), 61, Rue de Bruxelles, B-5000 Namur, Belgium
3 Korea Creative Content Agency, 1 Loebangno, Yuseong-gu, Daejeon 34144, South Korea

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Transport and Magneto-Optical Properties of Bilayer Graphene in External Fields within Two- And Four-Band QFT Approximation

1 Alexander A. Reshetnyak, 2 Valery P. Gusynin, 2 Sergey G. Sharapov
Institute of Strength Physics and Materials Science of Siberian Branch Russian Academy of Sciences, (ISPMS SB RAS), Tomsk, 2/4, pr. Akademicheskii, Tomsk, 634021, Russia
2 Bogolyubov Institute for Theoretical Physics, National Academy of Science of Ukraine, 14-b, Metrologicheskaya Street, Kiev, 03680, Ukraine

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Variation of Composition and Structure over the Height in Arrays of Vertically Aligned CNT

1 Alexey V. Makunin, 1 Kirill A. Bukunov, 1 Ekaterina A. Vorobyeva, 2 Denis A. Pankratov, 1 Dmitry V. Petrov, 2 Nikolay G. Chechenin
1 Lomonosov Moscow State University Skobeltsyn Scientific Institute of Nuclear Physics, 12, Leninskie gory, GSP-1, Moscow 119991, Russian Federation
2 Lomonosov Moscow State University Chemical Faculty of MSU, 1(3), Leninskie gory, GSP-1, Moscow 119991, Russian Federation
Growth of 3C-SiC Thin Films on Silicon Substrate by Pulsed Laser Deposition

Elena P. Pavlova, Sergey M. Ryndya, Aleksandr S. Gusev, Nikolay I. Kargin
National Research Nuclear University MEPhI, Kashirskoe sh. 31, Moscow, 115409 Russia

Hard TiCrBN Thin Films Produced by Magnetron Sputtering and Pulsed Arc Evaporation of Ceramic SHS-Targets

Philipp V. Kiryukhantsev-Korneev, Konstantin A. Kuptsov, Alexander N. Sheveiko, Evgeny A. Levashov, Dmitriy V. Shhtansky
National University of Science and Technology «MISIS», Leninsky pr., 4, Moscow 119049, Russia

Nanocrystalline Structure Formation of Superhard Coatings Deposited by Vacuum-Arc Plasma-Assisted Method

Olga V. Krysina, Nikolay N. Koval, Yuriy F. Ivanov, Nikolay A. Timchenko, Stephen Doyle, Taras Slobodskyi, Nikolay A. Shmakov, Yan V. Zubavichus, Ruslan M. Galimov
Institute of high current electronics SB RAS, 634055, Tomsk, Akademichesky ave 2/3, Russia
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Karlsruhe institute of technology, ANKA Synchrotron Radiation Facility, Hermann-von-Helmoltz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany
University of Hamburg, Institute of Applied Physics, JungiusstraBe 11, 20 355 Hamburg, Germany

Resistive Switching and Diode Properties of Mesoscopic Structures Based on Niobium Oxide

Ivan Yu. Borisenko, Nataliya A. Tulina, Anna N. Rassolenko, Andrey A. Ivanov, Ivan M. Shmytko
Institute of Microelectronics Technology and High Purity Materials RAS, 6, Academician Ossipyan str, Chernogolovka, Moscow Region, 142432, Russia
Institute of Solid State Physics RAS, Chernogolovka, Moscow District, 2 Academician Ossipyan str., 142432 Russia
National Research Nuclear University "MEPhI", Kashirskoye shosse 31, Moscow, 115409, Russia

Reversible UV Induced Metal-Semiconductor Transition in In$_2$O$_3$ Thin Films Prepared by Autowave Oxidation

Igor A. Tambasov, Victor G. Maygkov, Anton S. Tarasov, Alexander A. Ivanenko
Kirensky Institute of Physics, Siberian Branch of the Russian Academy of Sciences, Akademgorodok 50, 660036 Krasnoyarsk, Russia

Synthesis, Phase and Structural States and Magnetic Properties of Fe-Zr-N and Fe-Ti-B Films

Elena N. Sheftel, Philipp V. Kiryukhantsev-Korneev, Pavel A. Trukhanov, Valentyn A. Tedzhetov, Eugene V. Harin, Anna S. Semisalova, Galina Sh. Usmanova, Evgeniy A. Levashov
Baikov Institute of Metallurgy and Material Science RAS, Leninskiy pr. 49, Moscow 119911, Russia
National University of Science and Technology "MISIS", Leninsky pr., 4, Moscow 119049, Russia
Lomonosov Moscow State University, Leninskiy Gory, 1, Moscow, Russia

The Effect of Ion Irradiation on the Structure and Properties of Vacuum-Arc Nitride Coatings

Anatoly A. Andreyev, Oleg V. Sobol, Viktor N. Voyeyevdin, Viktor F. Gorban', Vyacheslav A. Stolbovoy, Gennady N. Kartmazov, Vladimir V. Levenets, Daria V. Lysan
National Technical University "Kharkiv Polytechnic Institute", 21 Frunze Str., 61002, Kharkiv, Ukraine
National Science Center "Kharkiv Institute of Physics & Technology", Akademicheskaya St., 61108 Kharkiv, Ukraine
Institute for Problems of Materials, 3, Krzhizhanovskiy St., 303680, Kyiv, Ukraine

Vis Sensitization of TiO$_2$ Nano-Films Deposited by ALD onto p-Si(100)

Victor V. Titov, Victor E. Drozd, Lev L. Basov, Andrey A. Lisachenko
Saint-Petersburg State University, Physics department, Saint-Petersburg, Peterhof, Ulyanovskaya 1, Russia
Saint-Petersburg State University, Chemical department, Saint-Petersburg, Peterhof, Universitetskii pr. 26, Russia
### Section 03 – Nanoceramics

#### pp03.027
Mechanochemical Synthesis of the Nanostructured Metallic, Ceramic and Salt Coatings on Different Metallic Surfaces
Renata S. Hasenova, 1 Daria V. Strugova, 1 Vladislav Yu. Zadorozhnyy, 1 Ekaterina V. Kavetser, 1 Yuliya V. Borisova, 1 Yevgeny V. Shlelev, 1 Sergey D. Kaloshkin
1 National University of Science and Technology (MISIS), 119049, Moscow, Russia

#### pp03.028
Effect of the Surface Treatment of Titanium on the Texture, Mechanical and Physicochemical Properties of the Rf-Magnetron Sputtered Silver-Doped Hydroxyapatite Coatings
Tatiana S. Priamushko, 1 Irina Grubova, 1 Roman Surmenev, 1 Maria Surmeneva, 1 Anna Ivanova, 2 Sergey Kravchuk, 3 Oleg Prymak, 1 Matthias Epple
1 National Research Tomsk Polytechnic University, 634050, Tomsk, Lenin Avenue, 30, Russia
2 Technological Institute for Superhard and Novel Carbon Materials, Central Street 7а, 142190 Troitsk, Russia
3 Duisburg-Essen (CeNIDE), University of Duisburg-Essen, 45117 Essen, Germany

#### pp03.029
Features of Yttrium Aluminate Synthesis for Optical Ceramics
Vladimir M. Smirnov, 1 Dar’ya Tolstikova, 1 Michail D. Michailov
1 St-Petersburg state university, St-Petersburg, Universitetskii pr, 26, Russia

#### pp03.030
Preparation of Calcia Partially Stabilized Zirconia Ceramics Using Natural Baddeleyite
Andrey Zhigachev
G.I. Derzhavin Tambov State University, Tambov, Internatsionalnaya str., b. 33, Russia

#### pp03.031
Self-Propagating High-Temperature Synthesis of Zirconium Diboride Nanoparticles
Hasan E. Camurlu, 2 Filippo Maqlia
1 Akdeniz University, Makine Muh. Bol, Kampus, Antalya, Turkey
2 University of Pavia, Department of Physical Chemistry, V.le Taramelli 16, 26100 Pavia, Italy

#### pp03.032
Synthesis of AlN Nanoparticles with Microwave-Assisted Organometallic Route
Dongsoo Kim, 1 Jongbin Ahn, 1 Chuljin Choi
1 Korea Institute of Materials Science, 797 Changwondaero, Seongsan-gu, Changwon, Gyeongnam, 642-831, South Korea

#### pp03.033
Synthesis of Two-Component Dense Xerogels Based on SiO\textsubscript{x}, γ - Al\textsubscript{2}O\textsubscript{3}, ZrO\textsubscript{2}, and Cr\textsubscript{2}O\textsubscript{3} Sol
Anna V. Volkova, 1 Evgenia V. Golikova, 1 Lyudmila E. Ermakova
1 Saint-Petersburg state university, 198504, Saint-Petersburg, Petrodvoretc, Universitetskii pr., 26, Russia

#### pp03.034
Thermal Transformation of Nanometallocarbosilanes
Galina Shcherbakova, 1 Pavel Storozhenko, 1 Maria Blokhina, 1 Dmitrii Sidorov, 1 Valentina Khramkova, 1 Denis Sidorov, 2 Gleb Yurkov
1 SSC GNICHTEOS, 38 shosse Entuziastov Moscow 105118 Russia
2 A.A. Baikov Institute for Metallurgy and Material Science RAS, 49 Leninskiy prospekt Moscow 119991 Russia

### Section 04 – Bulk Metallic Nanomaterials

#### pp04.021
Synthesis of Lead (II) Oxide Nano-Structures from Thermolyses of a New Lead (II) Coordination Polymer
Akram Hosseini, 1 Hedayat Hedayat Haddadi, 1 Ali Ali Akbar Ashkarran
1 Department of Engineering Science, College of Engineering, University of Tehran, P.O. Box 11155-4463 Iran
2 Department of Chemistry, Faculty of Sciences, Shahrekord University, P.O. Box 115, Shahrekord, Iran
3 Department of Physics, Faculty of Basic Sciences, University of Mazandaran, Babolsar, Iran

#### pp04.022
Indentation Properties of Cu-Zr-Al Metallic-Glass at Elevated Temperatures via Molecular Dynamics Simulation
Vunche Wang, 1 Chunyi Wu
1 National Cheng Kung University, 1 University Road, Tainan 70101 Taiwan

#### pp04.023
Annealing Behavior of Al-Mg-Sc-Zr Alloy Processed by Warm ECAP and Subsequent Cold Rolling
Stanislav Krymskiy, 1 Michael V. Markushev, 1 Oksana E. Mukhametdinova, 1 Rafis R. Ilyasov, 2 Oleg Sh. Sitridkov, 1 Michael V. Markushev, 2 S.V.S. Narayana Murty, 1 M.J.N.V. Prasad, 1 Bhagwati P. Kashyap
1 Institute for Metals Superplasticity Problems RAS, Khalturin St. 39, Ufa, 450001, Russia
2 Vikram Sarabhai Space Center, Trivandrum – 695022, Kerala, India
3 Indian Institute of Technology - Bombay, Powai, Mumbai-400076, India

#### pp04.024
Evolution of Grain Structure and Nanoprecipitates in Severely Deformed Al-Mg-Sc-Zr Alloy During Annealing
Stanislav Krymskiy, 1 Michael V. Markushev, 1 Oksana E. Mukhametdinova, 1 Oleg Sh. Sitridkov, 1 S.V.S. Narayana Murty, 1 M.J.N.V. Prasad, 1 Bhagwati P. Kashyap
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2 Vikram Sarabhai Space Center, Trivandrum – 695022, Kerala, India
3 Indian Institute of Technology - Bombay, Powai, Mumbai-400076, India
Section 05 – Nanocomposites and Hybrid Nanomaterials

12:00 PM – 2:00 PM Poster session

**pp05.054**

**Synthesis and Physicochemical Characterization of Core-Shell Fe₃O₄@Au Nanoparticles**

1 Polina G. Rudakovskaya, 1 Alexander G. Majouga, 2 Sergey V. Salihov, 1 Maria V. Efremova, 2 Igor V. Schetinin, 1 Alexander V. Barulin, 1 Olga M. Metelkina

1 Lomonosov Moscow State University, Leninskie Gory 1, 3, Russia
2 National University of Science and Technology «MISIS», Leninskiy prospect, 4, Russia

**pp05.055**

**Tuning the Shape and Size of Hybrid Gold Nanoparticles by Porphyrins Using Seed-Mediated Synthesis**

1 Jolanda Spadavecchia, 1 Sandra Casale, 1 Jessem Landoulsi, 1 Claire-Marie Pradier

1 CNRS, UMR 7197, Laboratoire de Réactivité de Surface, F-75005, Paris, 3 rue Galilee site Raphael 94200 Ivry sur Seine, France

**pp05.056**

**Chitosan Bionanocomposites with Clay Nanoparticles Prepared by Novel Technique**

1 Vladimir E. Silant’ev, 2 Irina V. Postnova, 1 Yury A. Shchipunov

1 Institute of Chemistry, Far East Department Russian Academy of Sciences, Ave. 100-letiya of Vladivostok, 159, 690022, Vladivostok, Russia
2 Far Eastern Federal University, the School of Natural Sciences, Vladivostok, Russia

**pp05.057**

**Photocatalytic and Gas Sensing Properties of ZnO/TiO₂ and TiO₂/ZnO Nanofibers Prepared by Electrospinning and ALD**

1 Stefan L. Boyadjiev, 2 Péter Bárdos, 2 Zsombor Nagy, 2 Zsófia Baji, 1 Imre M. Szilágyi

1 Budapest University of Technology and Economics, Department of Inorganic and Analytical Chemistry, Technical Analytical Chemistry Research Group of the Hungarian Academy of Sciences, H-1111 Budapest, Műegyetem rakpart 3, Hungary
2 Budapest University of Technology and Economics, Department of Organic Chemistry and Technology, H-1111 Budapest, Budafoki ut 8, Hungary

**pp05.058**

**Photocatalytic Activity of Titania-Based Nanocomposites with Metals (Cu, Ag) and Semiconductors (CuO, WO₃)**

1 Vasily A. Lebedev, 1 Daniil A. Kozlov, 2 Vladislav V. Sudin, 1 Irina V. Kolesnik, 1, 2 Alexei V. Garshev

1 Lomonosov Moscow State University, Department of Materials Science, Moscow, Russia
2 Baikov Institute of Metallurgy and Materials Science of the Russian Academy of Sciences, Moscow, Russia

**July 17 (Thursday)**

**Passivation and Treatment of InP Quantum Dots**

1 Natalia E. Mordvinova, 1 Alexander A. Vinokurov, 1 Sergey G. Dorofeev

1 Lomonosov Moscow State University, Leninskie Gory 1, Russia

**In Situ Characterization of Optically-Active Nanocomposite Using Small Angle X-Ray Scattering Technique**

1 Anna N. Galkina, 1 Sergey S. Voznesenskiy, 1 Alexander A. Sergeev, 1 Yurii N. Kulchin, 2 Irina V. Postnova, 2 Yurii A. Schchipunov

1 Institute of Automation and Control Processes Far Eastern Branch of RAS, 690041, 5, Radio st. Vladivostok, Russia
2 Institute of Chemistry Far Eastern Branch of the Russian Academy of Sciences, 690022, 159, Prosp. 100-Letiya Vladivostoka, Vladivostok, Russia

**Functional Properties of Nanostructured Blankets TiNiCu Formed by Complex Processing**

1 Etibar Balayev, 1 Piter Rusinov, 1 Zheshina Blednova

1 Kuban state university of technology, Krasnodar, Moskovskaya, 2, Russia

**Facile Formation of Ga-Cu and Ga-Au Intermetallic Compounds Using Ultrasonic Energy**

1 Vijay B. Kumar, 2, 3 Ze’ev Porat, 1 Aharon Gedanken

1 Institute of nanotechnology and advanced materials, Department of Chemistry, Bar-Ilan University, Ramat-Gan 52900, Israel
2 Division of Chemistry, Nuclear Research Center-Negev, P.O.Box 9001, Be’er-Sheva 84190, Israel
3 Institutes of Applied Research, Ben-Gurion University of the Negev, Be’er-Sheva 841051, Israel
July 17 (Thursday)

Section 06 – Polymer, Organic and Other Soft Matter Materials

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<tr>
<td>pp06.025</td>
<td>Liposome-Templated Biocompatible Nanomaterials with Nanometer-Thin Walls: Synthetic Approach and Creation of Functional Nanodevices</td>
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<td>1 Sergey A. Dergunov, 2 Maxim A. Dergunov, 1 Maryya D. Kim, 1 Eugene Pinkhassik</td>
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<td>1 Department of Chemistry, Saint Louis University, St Louis, MO 63103, USA</td>
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<td>2 Al-Farabi Kazakh National University, Almaty, Kazakhstan</td>
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| pp06.026 | Modification of CdSe/CdZnS/ZnS Quantum Dots by Polyelectrolytes and Quenching of Their Fluorescence by Antimicrobial Agents in Solution and on Silica Support |
| Tatiana Samarin, 1 Alexandra Turkova, 1 Alexander Bodrov, 1 Mikhail Beklemishev |
| 1 Department of Chemistry, Lomonosov Moscow State University, Len inskie Gory 1, bldg. 3, Moscow 119991, Russia |

| pp06.027 | High Strength Cellulose Aerogel Filaments |
| Bjorn Schulz, 1 Maria Schestakov, 1 Ilknur Karadagli, 2 Barbara Milow, 1 Gunnar Seide, 1 Thomas Gries, 1 Lorenz Ratke |
| 1 Lehrstuhl für Textilmaschinenbau und Institut für Textiltechnik (ITA) der RWTH Aachen University, Otto-Blumenthal-Str. 1, 52074 Aachen, Germany |
| 2 Institut für Werkstoffforschung, Deutsches Zentrum für Luft und Raumfahrt, Linder Höhe, 51147 Köln, Germany |

| pp06.028 | Influence of Regeneration Fluids on Structure and Properties of Cellulose Aerogels |
| Maria Schestakov, 1 Ilknur Karadagli, 1 Lorenz Ratke |
| 1 German Aerospace Center – Institute of Materials Research, Linder Hoehe, S1147 Cologne, Germany |

| pp06.029 | Study of Nanostructured Materials Based on Silicon Oxide (SiO2) |
| Gulzipa E. Satayeva |
| 1 Eurasian National University, Munaitpasov street 5, Astana, Kazakhstan |

| pp06.030 | Multi-Responsive Dispersion of Multi-Walled Carbon Nanotubes Modified with Poly(N-vinylcaprolactam) |
| Igor V. Strokov, 1 Elena M. Makhaeva |
| 1 Department of Physics, Lomonosov Moscow State University, Leninskiye Gory 1, 119991 Moscow, Russia |

| pp06.031 | Synthesis of Noble Metal Nanoparticles Using Grafted Chitosan. Obtaining Nanostructured Films |
| Angel Leiva, 1 Sebastian Bonnard, 1 Maximiliano Pino, 1 Deodato Radic |
| 1 Pontificia Universidad Catolica de Chile, Vicuna Mackenna 4860, Macul, Santiago, Chile |

July 17 (Thursday)

Section 07 – Nanomaterials for Energy

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<tr>
<td>pp07.051</td>
<td>Controlled Synthesis of Bi1-xSbx Free Alloy Nano-particles via Solvothermal Route</td>
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<td>Manolata Devi Mayanglambam, 1 Krishanu Biswas</td>
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<tr>
<td>1 Department of Materials Science and Engineering, Indian Institute of Technology Kanpur, Kanpur-208016, India</td>
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| pp07.052 | Structured Composites Based on Ferrites as Cathode Materials for Lithium Batteries |
| Anatoly Klenushkin, 1 Boris Medvedev, 1 Yuriy Kabirov |
| 1 Southern Federal university, 7 Zorge st. Rostov-on-Don, Russia |

| pp07.053 | High-Aligned Carbon Nanotubes Forest to Enhance the Quality of Membranes for Fuel Cells |
| Ronaldo D. Mansano, 1 Ana P. Mousinho, 1 Nelson Ondonez |
| 1 University of So Paulo, Avenida Luciano Gualberto, 158, trav. 3, Sao Paulo, Brazil |

| pp07.054 | Sonochemical Synthesis and Characterization of FeCo Nanoparticles |
| Elisabetta Agostinelli, 1 Elvira M. Bauer, 1 Davide Peddis, 1 Xiaocao Hu, 1 George Hadjipanayis |
| 1 ISM - CNR, Area Roma 1, via Salaria km 29.300 Monterotondo Scalo (RM) Italy |
| 2 Department of Physics and Astronomy, University of Delaware, Newark, U.S.A |

| pp07.055 | Electrical Properties of Nanostructured Thermoelectric Materials Modified by Carbon Nanoclusters |
| Danila Ovsyannikov, 1 Mikhail Popov, 1 Sergey Buga, 1 Sergey Tarelkin, 1 Evgeniy Tatyatin, 1 Aleksiy Kirichenko, 1 Roman Lomskin, 1 Vladimir Blank |
| 1 Federal State Bugetary Institution “Technological Institute for Superhard and Novel Carbon Materials, Moscow, Troitsk, Centralnaya 7a, Russia |

| pp07.056 | In Situ Synthesis of Oriented, Single Crystalline La-Doped TiO2 Nanorod Arrays for Enhanced Photoelectrochemical Activity |
| Subha Sadhu, 1 Pankaj Poddar |
| 1 National Chemical Laboratory, Pune- 411008 India |

| pp07.057 | Interaction of Thermal and Solar Radiation with Dense Ensembles of Disordered Nanoparticles |
| Andrei V. Galaktionov, 1 Joint Institute for High Temperatures of the Russian Academy of Sciences, Izhorskaya st. 13 Bd.2, Moscow, 125412 Russia |
**July 17 (Thursday)**

**pp07.058**

**Intercalation of Organic Molecules in 2D Copper Nitroprusside**

1 Arely A. Cano, 2 Joelis J. Rodriguez, 1 Osiry O. Hernandez, 1 Adela A. Lemus, 1 Edilso E. Reguera

1 Center of Applied Science and Technology of IPN, CICATA-Unidad Legaria, Mexico
2 Institute of Materials Science and Technology, 10400 Havana University, Havana, Cuba

**pp07.059**

**Interface Engineering in Nanocarbon – Ta2O5 Hybrid Photocatalysts**

1 Alexey S. Cherevan, 1 Paul Gebhardt, 1 Cameron J. Shearer, 2 Michinori Matsukawa, 2 Kazunari Domen, 1 Dominik Eder

1 Institute of Physical Chemistry and Graduate School of Chemistry, Westfälische Wilhelms-Universität, Corrensstrasse 28/30, Münster, 48149, Germany
2 Department of Chemical System Engineering, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656, Japan

**pp07.060**

**Liquid Metal Technology for Synthesis of Nanostructured Materials for Example Alumina Airgel, Properties of Materials and Applications Areas**

1 Radomir Sh. Askhadullin, 1 Petr N. Martinov, 1 Alexander A. Osipov, 1 Sergey E. Kharchuk

1 FSUE «SSC RF – IPPE», Obninsk, Russia

**pp07.061**

**Nanocrystalline Beryllium: Preparation and Application in New Energy**

1 Dmitry Brilev, 1 Alexey Zabrodin, 1 Yury Tuzov, 1 Igor Kuprianov

1 JSC «VNIINM», Moscow, Rogova st., 5, Russia

**pp07.062**

**Observation of Large Magnetocaloric Effect and Giant Magnetoresistance in Nanocrystalline Manganites Near Room Temperature**

1 Kanikrishnan Sethupathi, 1 Rabindra N. Mahato, 1 Venkataraman Sankaranarayanan

1 Indian Institute of Technology, Department of Physics, India

**pp07.063**

**Photoactivity of Nanotubular TiO2, Doped with D-Elements**

1 Mislimat P. Faradzheva, 1 Nabi S. Shabanov, 1 Murtazali H. Rabadanov, 1 Maraslav M. Hamidov

1 Dagestan state university, Gadzhieva street, 43-a, Makhachkala, Russia

**pp07.064**

**Photocatalytic Activity of Layered Niobates for Hydrogen Evolution in Water Solution**

1 Alena A. Burovikhina, 1 Ivan A. Rodionov, 1 Mikhail V. Chislov, 1 Dmitriy A. Porotnikov, 1 Irina A. Zvereva

1 Institute of Chemistry, Saint Petersburg State University, 198504, Saint-Petersburg, Petrodvorets, Universitetskii pr. 26, Russia

**pp07.065**

**Processes of Structure Formation and Thermoelectric Properties of the Semiconductor Systems Pb(Sn)-Sb(Bi)-Te**

1 Lyubomyr Nykyryuk, 1 Dmytro Freik, 1 Rasit Abiska, 1 Lyubov Mezhylowskaya

1 Vasyl Stefanyak Preparpathian National University, 57, Shevchenko Str., Ivan Frankivsk, 76018, Ukraine
2 Gazi University, Ankara, Teknikokullar 06500, Turkey

**July 17 (Thursday)**

**pp07.066**

**Structural and Electrochemical Properties of Novel Mesoporous Titania Nanopowders Showing an Enhanced Photocatalytic Activity**

1 Elisabetta Masolo, 1 Gabriele Mulas, 1 Sebastiano Garroni, 3 Krzysztof Gugula, 3 Iris Herrmann-Geppert, 3 Thomas Klassen, 3 Maria Dolors Baró, 3 Mauricio Schiada, 1 Stefano Enzo, 1 Emma Rossinyol, 1 Agnieszka Rzeszutek, 1 Manuela Meloni, 1 Maria I. Pilo

1 University of Sassari, Department of Chemistry and Pharmacy, Via Vienna 2, 07100, Sassari, Italy
2 Universitat Autónoma de Barcelona, Departament de Fisica, E-08193 Bellaterra, Spain
3 Helmholtz-Zentrum Geesthacht, Institute of Materials Research, Max-Planck-Str. 1, 21502 Geesthacht, Germany
4 Fachhochschule Münster, Fachbereich Chemieingenieurwesen, Stegerwaldstrasse 99 - GRIPS/M10 48965 Steinfurt, Germany

**pp07.067**

**Structure and Thermoelectric Properties of InSb Nanowires**

1 Oleg N. Uryupin, 1 Yury V. Ivanov, 1 Alexander A. Shabaldin, 1 Alexander V. Fokin

1 Tofie Institute, Politiekhinkheskaya, 26, St. Petersburg 194021 Russia

**pp07.068**

**The Heat Capacity of Nanotube Bundles with 1D Xenon Chains. Spatial Redistribution of the Xe Atoms**

1 Maksym S. Barabashko, 1 Mikhail I. Bagatski, 1 Vladimir V. Sumarokov

1 B.Verkin Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine, 47 Lenin Ave., Kharkov 61103, Ukraine

**pp07.069**

**The Study of Anodic Aluminum Alloy 6061-T6 for Selective Solar Thermal Absorber**

1 Tsung-Chieh Cheng, 1 Chu-Chiang Chou

1 Department of Mechanical Engineering, National Kaohsiung University of Applied Sciences, No.415, Jiangong Rd., Sanmin Dist., Kaohsiung City 807, Taiwan
Section 08 – Biological and Biomedical Nanomaterials

12:00 PM – 2:00 PM Poster session

pp08.058
Infrared and Photoluminescence Characteristics of Nanocrystalline Carbonate Substituted Hydroxyapatite
1 D. L. Goloshchapov, 1 D. A. Minakov, 1 P. V. Seredin, 1 Evelina Domashevskaya
1 Voronezh State University, Voronezh, Universitetskaya 1, 394006, Russia

pp08.059
Composite Nanobiomaterials for Biological Tissue Joining
1 Levan P. Ichkitidze, 1 Alexander Yr. Gerasimenko, 1 Sergey V. Selischchev
1 National Research University of Electronic Technology “MIET”, MIET, Zelenograd, Moscow, 124498 Russia, MIET, 124498 Zelenograd, Moscow, Russian Federation

pp08.060
Optical Properties and Hemocompatibility of Stabilized Zno Nanoparticles, Perspective for UV-Protection in Sunscreens
1 Svetlana I. Senatova, 1 Denis V. Kuznetsov, 1 Dmitry I. Arkhipov
1 National University of Science and Technology “MISIS”, 119049, Moscow, Leninsky prospekt 4, Russia

pp08.061
A Study on Nonwoven Composite Structures for Wound Dressing Applications
1 Muhammet Uzun, 1 Mustafa S. Ozen, 1 Erhan Sancak, 1 Mehmet Akalin, 1 Subhash C. Anand
1 Marmara University, Technology Faculty, Department of Textile Engineering, Marmara University, Goztepe, Turkey

pp08.062
Aptamer-Anchored Reduced Graphene Oxide as Nanodetector
1 Yu Kyung Ob, 1 Yuna Shon, 1 Jaiwoo Lee, 1 Young Bong Kim
1 College of Pharmacy and Research Institute of Pharmaceutical Sciences, Seoul National University, Seoul 151-742, Republic of Korea
2 Department of of Molecular Medicine and Biopharmaceutical Sciences, Graduate School of Convergence Science, Seoul National University, Daehak-dong, Gwanak-gu, Seoul, Republic of Korea
3 Department of Bio-industrial Technologies, College of Animal Biosciences and Technology, Konkuk University, Seoul 143-701, Republic of Korea

pp08.063
Atomic Structure of Metal Active Center in Metalloproteins: X-ray Nanodiagnostics and Computer Modeling
1 Mariya A. Kremennaya, 1 M. A. Soldatov
1 Research Center for Nanoscale Structure of Matter, Southern Federal University, Sorge 5, Rostov-on-Don 344090 Russia

pp08.064
Biodistribution Peculiarities of Detonation Nanodiamond
1 Ruslan Yu. Yakovlev, 1 Nikolay B. Leonidov, 2 Georgii V. Lischkin
1 Pavlov Ryazan State Medical University, Ryazan, Vysokovoltlnaya 9, Russia
2 Lomonosov Moscow State University, Moscow, Leninskiy gory 1 k. 3, Russia

pp08.065
Cellulose Acetate Based Electrospun Scaffolds with Aligned Three-dimensional Micro- and Nano-fibrous Structure for Bone Tissue Engineering
1 Deniz H. Atila, 1, 2 Ayse Tetzcaner, 1, 2 Dilek Keskin
1 Middle East Technical University, Middle East Technical University, Universitecher Malahlesi, Dumlupinar Bulvari, No:1, 06800 Cankaya Ankara, Turkey
2 Center of Excellence in Biomaterials and Tissue Engineering, Middle East Technical University, Universitecher Malahlesi, Dumlupinar Bulvari, No:1, 06800 Cankaya Ankara, Turkey

pp08.066
Nanobiomaterials for Biological Tissue Joining
1 Levan P. Ichkitidze, 1 Alexander Yr. Gerasimenko, 1 Sergey V. Selischchev
1 National Research University of Electronic Technology “MIET”, MIET, Zelenograd, Moscow, 124498 Russia, MIET, 124498 Zelenograd, Moscow, Russian Federation

pp08.067
Cellulose Acetate Based Electrospun Scaffolds with Aligned Three-dimensional Micro- and Nano-fibrous Structure for Bone Tissue Engineering
1 Deniz H. Atila, 1, 2 Ayse Tetzcaner, 1, 2 Dilek Keskin
1 Middle East Technical University, Middle East Technical University, Universitecher Malahlesi, Dumlupinar Bulvari, No:1, 06800 Cankaya Ankara, Turkey
2 Center of Excellence in Biomaterials and Tissue Engineering, Middle East Technical University, Universitecher Malahlesi, Dumlupinar Bulvari, No:1, 06800 Cankaya Ankara, Turkey

pp08.068
SPIO–Phthaloxyanine Magneto-Optical Nanomaterials Built Step-By-Step Towards Bimodal Imaging
1 Julien Boudon, 1 Yann Bernhard, 2 Richard A. Decreau, 1 Nadhir Yousfi, 1 Johanna Chiüba, 1 Jeremy Paris, 1 Nadine Millot
1 Laboratoire ICB UMR 6303 CNRS-Universite de Bourgogne, 9 Av. A. Savary, BP 47 870, F-21078 DIJON Cedex, France
2 Institut de Chimie Moléculaire de l’Université de Bourgogne, UMR 6302 CNRS/Université de Bourgogne, BP 47870, 21078 Dijon cedex, France
3 INSERM, UMR 866, Lipides, Nutrition, Cancer, BP 27877, 21078 Dijon cedex, France

pp08.069
Stable Conjugates of CdTe Quantum Dots with Oligo- and Poly nucleotides
1 Anna I. Ponomarenko, 1 Igor A. Prokhoretsenkov, 2 Ekaterina A. Obraztsova, 2 Dmitry V. Klinov, 1 Timofey S. Zatsepin, 2 Andrey A. Formanovski, 1 Eugene A. Goodlin, 1 Vladimir A. Korsun
1 Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Miklukho-Maklaya 16/10, Russia
2 Lomonosov Moscow State University, Leninskiy gory 1, Russia
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<td>pp08.070</td>
<td>Study of Chitosan-Based Composites Mechanical Properties: Coarse-Grained Molecular Dynamics Simulation</td>
<td>Dmitry V. Ukrainskiy, Elena L. Kossovich, Irina V. Kirillova, Leonid Yu. Kossovich, Anastasiya A. Golyadkina, Asel V. Polienko</td>
<td>Saratov State University, 83, Astrakhanskaya street, Saratov, Russia</td>
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<td>pp08.071</td>
<td>Study of Interaction of Bacterial Cells with Carbon Based Nanomaterials Using Atomic Force Microscopy</td>
<td>Hike N. Nikiyan, Olga K. Davydova, Dmitry G. Deryabin</td>
<td>Orenburg State University, Pobedy, 13, Russia</td>
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<td>pp08.072</td>
<td>Gold Nanoparticles for Glycated Proteins SERS Quantification</td>
<td>Natalia Nechaeva, Igor Budashov, Ilya Kurochkin</td>
<td>Lomonosov Moscow State University, Leninskie gory, 1, build. 73, room 526, 119899 Russia</td>
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<td>pp08.073</td>
<td>Effect of Super-Low Frequency AC Magnetic Field on Enzyme Loaded Magnetic Nanoparticles Clusters</td>
<td>Ksenia Vasova, Hemant Vishwasrao, Maxim Abakumov, Marina Sokolsky, Yuri Golovin, Nataliya Kvyachko, Alexander Kabanov</td>
<td>Lomonosov Moscow State University, Moscow, Russia</td>
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<td>University of Nebraska Medical Center, Omaha, USA</td>
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<td>pp08.074</td>
<td>EDTA Stabilized Cadmium Sulfide Nanoparticles for Biomedical Visualization</td>
<td>Svetlana V. Rempel, Julia V. Kuznetsova, Nina N. Aleksandrova</td>
<td>Institute of Solid State Chemistry, Ural Branch, Russian Academy of Science, Pervomaiskaya 91, Ekaterinburg 620990, Russia</td>
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<td>Ural Federal University named after the first president of Russia B.N. Yeltsin, Mira 19, Ekaterinburg 620002, Russia</td>
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<td>FGU Ekaterinburg III virus infections, Rospotrebnadzor, Letnaya 23, Ekaterinburg 620030, Russia</td>
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<td>pp08.075</td>
<td>Core-Shell Nanoparticles for Enhancement of Optical Coherence Tomography Signal</td>
<td>Jana Drbohlavova, Marian Marik, Jaromir Hubalek, Radim Kolar</td>
<td>Brno University of Technology, Central European Institute of Technology, Technicka 3058/10, 616 00 Brno, Czech Republic</td>
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<td>International Clinical Research Center, Center of Biomedical Engineering, St. Anne's University Hospital, Pekarska 53, 656 91 Brno, Czech Republic</td>
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<td>pp08.076</td>
<td>Formulation and Characterization of Sustained Release Tetrahydrocurcumin Self-Micromulsifying Tablets</td>
<td>Namfa Sermkaew, Ruedeekorn Wittawanapatee</td>
<td>Prince of Songkla University, Hat Yai, Songkhla, 90112, Thailand</td>
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### Section 09 – Nanomaterials: Mechanics and Applications in Mechanical Engineering

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#### pp09.032

**A Numerical Result of the Strain Rate Intensity Factor in Compression Between Rigid Plates**


1. Institute of Mechanics, Vietnam Academy of Technology and Science, 264 Doi Can- Ba Dinh- Hanoi, Vietnam
2. Ishlinsky Institute for Problems in Mechanics, Russian Academy of Sciences, Pr. Vernadskogo, 101-1 Moscow, 119526, Russia

#### pp09.033

**Analysis of Elastoplastic Flows Around Defect with Elliptic Form by the Splitting Method**

1. Alibay Iskakbayev, 2. Ainur Iskakbayeva

1. al-Faraby Kazakh State University, 050040, Almaty, al-Faraby avenue 71, Kazakhstan
2. Joldasbekov Institute of Mechanics and Engineering, 050100, Almaty, Pushkin st. 125, Kazakhstan
3. Caspian Social University, Seifulin St. 521, Kazakhstan

#### pp09.034

**Conflicting Axial Buckling Strains from Two Criteria to Detect Instability in Single-Walled Carbon Nanotubes**


1. Indian Institute of Technology Kanpur, Kanpur, U.P. 208016, India
2. Virginia Polytechnic Institute and State University, Blacksburg, VA 24061, USA

#### pp09.035

**Cubic and Hexagonal Auxetics**

1. Dmitry S. Lisovenko

1. A.Yu. Ishlinsky Institute for Problems in Mechanics RAS, prospect Vernadskogo 101, b1, Moscow, 119526, Russia

#### pp09.036

**Discrete-Continuum Modeling of Layered Structures at Nano-Scale**

1. Alexander Chentsov, 2. Konstantin Ustinov

1. IPMech RAS, 119526, Moscow, Prosp. Vernadskogo 101-1, Russia

#### pp09.037

**Electromagnetic Shielding and Mechanical Properties of Reinforced Composites with Mono and Bi-Axial Fabrics**


1. Technology Faculty, Department of Textile Engineering, Marmara University, Goztepe, Turkey
2. Department of Textile Education, Marmara University, Goztepe, Turkey

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**July 17 (Thursday)**

### Misfit Stress Relaxation via Generation of Rectangular Prismatic Dislocation Loops in Composite Nanostructures


1. St. Petersburg State Polytechnical University, ul. Polytekhchnicheskaya 29, St. Petersburg, 195251 Russia
2. ITMO University, Kronverkskii pr. 49, St. Petersburg, 197101 Russia
3. Institute of Problems in Mechanical Engineering, Russian Academy of Sciences, Bolshoi pr. 61, St. Petersburg, 199178 Russia

#### pp09.038

### Study of Deformation, Friction and Wear Mechanisms and Kinetics in Homogeneous and Heterogeneous Solid Bodies at Nanoscale by Micro And Nanoindentation Methods


1. G. R. Derzhavin Tambov State University, Tambov, Russia

#### pp09.039

### Determination of Thermodynamic Characteristics of Graphene Hydrides


1. Bardin Institute for Ferrous Metallurgy, 2-nd Baumanskaya St., 9/23, Moscow 105005, Russia
2. Peoples’ Friendship University, Miklukho-Maklaya, 6, Moscow 117198, Russia
3. Nanotechnology Research and Application Center, Sabanci University, Istanbul 34956, Turkey
4. Energy Institute, Istanbul Technical University, Istanbul 34469, Turkey
5. Faculty of Engineering and Natural Sciences, Sabanci University, Istanbul 34956, Turkey
6. International Association for Hydrogen Energy, 5794 SW 40 St. #303, Miami, FL 33155, USA

#### pp09.040
Section 10 – Nanomaterials for Information Technologies, Nanoelectronics and Nanophotonics

12:00 PM – 2:00 PM  Poster session

**pp10.036**
Chemical Vapor Deposition of Diamond Thin Films on Sapphire Substrates
1 Maneesh Chandran, 2 S. S. Bhattacharya, 3 M.S. Ramachandra Rao
1 Nano Functional Materials Technology Centre, MSRC and Department of Physics, Indian Institute of Technology Madras, Chennai 600036, India
2 Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras, Chennai 600036, India

**pp10.037**
Graphene in Impedimetric Electroanalysis
1 Edward P. Randviir, 2 Craig E. Banks
1 Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester, M1 5GD, UK

**pp10.038**
Phonon-Mediated Interlayer Conductance in Twisted Graphene Bilayers
1 Vasili Perebeinos
2 Skolkovo Institute of Science and Technology, 100 Novaya st., Skolkovo, Moscow Region, 143025 Russia

**pp10.039**
Regulation of Vanadium Dioxide Morphology by Surfactants and Nucleus Assisted Hydrothermal Route
1 Iuliia V. Petukhova, 2 Olga M. Osmolowskaya, 1 Mikhail G. Osmolowsky
1 Saint-Petersburg State University, Universitetskii pr. 26, Petergof, St. Petersburg, 198504 Russia

**pp10.040**
Synthesis and Magnetic Properties of the Chromium-Doped Iron Sulfide Fe1-xCr2S Single Crystalline Nanodisks with a NiAs-Like Structure
1 Igor S. Lyubutin, 2 Chun-Rong Lin, 1 Sergey S. Starchikov, 1 Konstantin O. Funtov, 2 Yaw-Teng Tseng
1 Shubnikov Institute of Crystallography RAS, Leninsky av. 59, Moscow 119333, Russia
2 Department of Applied Physics, National Pingtung University of Education, Pingtung County 90003, Taiwan

**pp10.041**
Theoretical Study of the Emergence of Spin-Filter State in One-Dimensional Pt-Fe Bimetallic Nanowires
1 Ekaterina M. Smelova, 2 Kseniya M. Tysyar, 1 Alexander M. Saletsky
1 Lomonosov Moscow State University, Faculty of Physics, M.V.Lomonosov Moscow State University, Leninskie Gory,1, Moscow 119991, Russia

**pp10.042**
Third-Harmonic Generation Microscopy of Plasmonic Metaatoms
1 Anna N. Fedotova, 2 Alexander S. Shorokhov, 3 Maxim R. Scherbakov, 1 Alexander A. Ezov, 1 Kristof Lodewijks, 1 Alexander Dmitriev, 1 Andrey A. Fedyanin
1 Faculty of Physics, Lomonosov Moscow State University, Moscow, 119991, Russia
2 Department of Applied Physics, Chalmers University of Technology, 41296, Göteborg, Sweden

**pp10.043**
Third-Harmonic Spectroscopy of Electric and Magnetic Resonances in Silicon Nanodisks
1 Maxim R. Scherbakov, 2 Dragomir N. Neshev, 1 Alexander S. Shorokhov, 2 Isabelle Staude, 1 Elizaveta V. Melik-Gaykazyan, 2 Ben Hopkins, 3 Jason Dominguez, 2 Andrey Miroshnichenko, 2 Igal Brener, 1 Andrey A. Fedyanin, 2 Yuri S. Kivshar
1 Faculty of Physics, Lomonosov Moscow State University, Moscow, 119991, Russia
2 Nonlinear Physics Centre, Research School of Physics and Engineering, The Australian National University, Canberra, ACT 2602, Australia
3 Center for Integrated Nanotechnologies, Sandia National Laboratory, Albuquerque, New Mexico 87185, United States

**pp10.044**
Unique Magnetic Properties of Bimetallic Nanowires for Application in Spintronic and Nanoelectronics
1 Kseniya M. Tysyar
1 Lomonosov Moscow State University, Faculty of Physics, Leninskie Gory, Moscow 119991 Russia
Conference venue

The green campus of Moscow University is located in the famous district of Moscow «Yugo-Zapadniy» (South-West area) and can be reached easily by taxi, metro, busses. The Main Building of MSU is visible from almost any point around and is located near the metro station «Universitet» («University») which belongs to a historic «red line» of the metro transportation system crossing Moscow from beneath. It will take a couple of bus stops or 10 - 15 mins by feet down to the Lomonosovski avenue to reach one of the well-known symbols of Moscow, a landmark of the Main Building of MSU. Lomonosov Moscow State University is the oldest, the largest university in Russia and one of the biggest universities in Europe. The university owns over 1,000 buildings and structures, 22,000 of employees teach or supervise about 49,000 Russian and foreign students or PhD fellows. Founded in the 18th century, the University has been constantly growing. Moscow University has received the status of a self-governing institution of higher education in Russia. Nowadays the University retains its role of a major center of learning and research as well as an important cultural center. Its academics and students follow the long-standing traditions of the highest academic standards and democratic ideas. It offers training in almost all branches of modern science and humanities. There have been 11 Nobel Prize winners among its professors and alumni. Besides its 39 faculties, Moscow University comprises 15 research institutes, 4 museums, 6 local branches in Russia and abroad, the Science Park, the Botanical Gardens, the Library, the University Publishing House, a recreational centre and a school for talented children. The university has well-established contacts with the most distinguished universities in the World, exchanging students and lecturers with the leading international institutions.

In the MSU Campus, main events of NANO 2014 will proceed in the newly designed Lomonosov Building (Moscow, Lomonosovsky Avenue 27 building 1). All the buildings, lunch points, dinner restaurants, local museums, green parks are within a walking distance and compose a part of the Campus situated at a nice elevated point of Moscow - Lenin Hills. This area is known as a «must - to - see» point in most of sightseeing tours, it is also a favorite photo session place of wedding cortege of Moscow people and a chill out area of students. The MSU Campus is beautiful and safe in day time and is mysteriously illuminated tonight.

Starting from the university campus by taxi or metro, you need only a half of hour to reach the historical and geographic center of Moscow where you could find many points of interests and sightseeing in Moscow. If this is your first visit to Moscow, we recommend to start with Kremlin, The Red and Arbat squares, Bolshoy the Theater, the Big Stone Bridge there, Cathedral of Christ the Savior, the Picturesque Bridge, Novodevichy Convent, Peter the Great Monument, Tretyakov Gallery, Pushkin State Museum of Fine Arts, All - Russia Exhibition Center, Vorobyovy Gory Park, Tsaritsyno, Kolomenskoye, also the Moscow metro represents a unique historical and architectural sign of Moscow.
Transportation and transfers

The comfortable buses will be offered for free transfer of our participants to the conference site from their hotels before the beginning of morning sessions and back in the evening. The shuttle schedule will be available at the reception.

Moscow river boat trip and other excursions

All excursions are provided by the «CTO Events» Agency Ltd.

Moscow River boat tour for registered participants

<table>
<thead>
<tr>
<th>Duration</th>
<th>4,5 hours</th>
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</thead>
<tbody>
<tr>
<td>Time</td>
<td>7:00 PM – 11:30 PM</td>
</tr>
<tr>
<td>Starting point</td>
<td>Lomonosov Building of MSU</td>
</tr>
<tr>
<td>Date</td>
<td>July 13, 2014</td>
</tr>
</tbody>
</table>

A free round trip along the Moscow (Moskva) River will be available for all the registered participants. Comfortable yachts and late evening time will give a great chance to enjoy the magnetism of illuminated Moscow night and to talk with your colleagues in person. In a short time you will survey many of the architectural sightseeing points of the city. You will see Novospassky Monastery and beautiful buildings of Zamoskvorechye, Kremlin and the Cathedral of Christ the Savior, the grandiose monument to Peter the Great. You will sail under the bridges connect the right and left banks of the river.

Bus Tour around Moscow

<table>
<thead>
<tr>
<th>Duration</th>
<th>3 hours</th>
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<tbody>
<tr>
<td>Time</td>
<td>10:00 AM - 1:00 PM</td>
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<tr>
<td>Starting point</td>
<td>Lomonosov Building of MSU</td>
</tr>
<tr>
<td>Date</td>
<td>July 13, 2014</td>
</tr>
</tbody>
</table>

This excursion is to get you acquainted with the city of Moscow and its most important and beautiful sights. You certainly won’t miss the city center – Red Square the Lenin Mausoleum, and Tverskaya Street. Then you will go to the Lenin’s Hills, which is considered to be the highest point of Moscow where you will enjoy a great panorama of the city. Continuing the city tour, you will pass along the Kutuzov Street and visit the Victory Park with its fountains and churches.
NANO 2014
Useful Information

The Kremlin and Armory Chamber

<table>
<thead>
<tr>
<th>Duration</th>
<th>3 hours</th>
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<tbody>
<tr>
<td>Time</td>
<td>10:00 AM - 1:00 PM</td>
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<tr>
<td>Starting point</td>
<td>Lomonosov Building of MSU</td>
</tr>
<tr>
<td>Date</td>
<td>13 July, 2014</td>
</tr>
</tbody>
</table>

The Kremlin is the symbol of Russia and the main tourist attraction of Moscow. Once the residence of Tsars and Patriarchs, today it is one of the biggest architectural ensembles in the world, which is included into the UNESCO list. During this excursion you will see the chambers and cathedrals inside the fortress. You will visit some of the churches in the area of Kremlin, walk by the Tsar Bell and the Tsar Cannon and see the unique and priceless collections of the Armory Chamber.

Excursion to State Tretyakov Gallery

<table>
<thead>
<tr>
<th>Duration</th>
<th>3 hours</th>
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<tbody>
<tr>
<td>Time</td>
<td>10:00 AM - 1:00 PM</td>
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<tr>
<td>Starting point</td>
<td>Lomonosov Building of MSU</td>
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<tr>
<td>Date</td>
<td>13 July, 2014</td>
</tr>
</tbody>
</table>

The State Tretyakov Gallery is the national treasury of Russian’s fine art and one of the greatest museums in the world. It is located in one of the oldest districts of Moscow – Zamoskvorechye, not far from the Kremlin. The Gallery’s collection consists entirely of Russian art. Contributions were made by artists themselves or people connected to the history of Russian Art. The collection contains more than 150 000 works, including: paintings, sculptures and graphics, created throughout the centuries by successive generations of Russian artists.

Boat tour around Moscow

<table>
<thead>
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<th>Duration</th>
<th>4.5 hours</th>
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</thead>
<tbody>
<tr>
<td>Time</td>
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<tr>
<td>Starting point</td>
<td>Lomonosov Building of MSU</td>
</tr>
<tr>
<td>Date</td>
<td>July 15, 2014</td>
</tr>
</tbody>
</table>

We invite you to buy a day-time trip along the Moscow River on the snow-white yacht of a premium-class with restaurant service. It’s great chance to mingle with the conference attendees and have a relaxing diner in a nice atmosphere enjoying spectacular views of Moscow.

You have an exciting opportunity to admire the ancient Moscow bridges decorated in thousands of color lights. There are 12 bridges along the route. From the water, fans of photos can make remarkable pictures of unique quays, the Kremlin, the Cathedral of Christ the Savior, world famous monuments. Onboard the service of a professional photographer is available. Travel by the most picturesque part of the city will give a lot of pleasure and nice memories for a lifetime! Trip on the river, sitting by a restaurant with a cozy table will take away any stress, and pleasant music, an excellent European cuisine will become part of a great experience.
Welcome party

The welcome party will take place on July 14 (Tuesday), starting from 5:30 PM, in the sector D of Lomonosov building. All the participants are cordially welcome.

Conference banquet

The conference banquet will take place on July 17 (Thursday), starting from 7:30 PM, in the Lomonosov building. The detailed banquet information including prices will be available at the reception.

Poster guidelines

The format of poster presentation is A0 paper size in a portrait orientation (dimensions of poster are 841 × 1189 mm). Double sided scotch will be provided to mount the posters.

Important tips

Congress Badges: All participants and accompanying persons should wear the Congress’ identification badge in a visible place.

Time: Moscow time is four hours ahead of Greenwich Mean Time (UTS / GMT+4).

Presentation Equipment: All meeting halls for oral sessions are equipped with multimedia projectors and computers.

Internet Availability: Free Wi-Fi access will be provided in the Lomonosov Building.

Electric Current: The standard in Moscow is 220 Volts.

Liability and Insurance: The participants are kindly advised to carry out their own insurance arrangements during their stay in Moscow. In case of emergency please call first of all hot line of the conference (see below).

Moscow Emergency Service’s phone: 103.

Banks & Currency: Please be advised that, although it is possible to exchange your money into Rubles as a local currency in many places, only large banks offer this procedure comfortable and safely. Most banks are open Monday through Saturday from 10:00 AM to 7:00 PM. In order to exchange cash or travellers’ cheques you need to have your passport. In addition most of hotels have exchange offices on their front desks.

Credit Cards: Visa, Master Card and other well known credit cards are also accepted by the majority of shops, rent-a-car companies and hotels.

Registration desk working hours

<table>
<thead>
<tr>
<th>Day</th>
<th>Working Hours</th>
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</thead>
<tbody>
<tr>
<td>Sunday, July 13</td>
<td>2:00 PM – 7:00 PM</td>
</tr>
<tr>
<td>Monday, July 14</td>
<td>9:00 AM – 7:00 PM</td>
</tr>
<tr>
<td>Tuesday, July 15</td>
<td>9:00 AM – 7:00 PM</td>
</tr>
<tr>
<td>Wednesday, July 16</td>
<td>9:00 AM – 7:00 PM</td>
</tr>
<tr>
<td>Thursday, July 17</td>
<td>9:00 AM – 7:00 PM</td>
</tr>
<tr>
<td>Friday, July 18</td>
<td>9:00 AM – 12:00 PM</td>
</tr>
</tbody>
</table>

Contacts

General Questions, Hotline: +7 495 939 55 57, +7 495 939 43 45, +7 905 722 37 49
Accommodation, Exhibition: Ms. Tatyana Ganina +7 903 734 24 63
Financial Questions: Mrs. Olga Bogomolova +7 903 734 26 25
Transfers: Ms. Regina Krivobok +7 903 734 25 73
Cultural Program: Ms. Irina Arzumanyan +7 903 734 29 70
NANO 2014
Exhibition

Exhibition working hours

<table>
<thead>
<tr>
<th>Day</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Monday, July 14</td>
<td>10:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Tuesday, July 15</td>
<td>10:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Wednesday, July 16</td>
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<tr>
<td>Thursday, July 17</td>
<td>10:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Friday, July 18</td>
<td>10:00 AM – 3:00 PM</td>
</tr>
</tbody>
</table>

Exhibition Floor Plan

Mirror hall inside Lomonosov Building
A1, B1
The Ministry of education and science of Russia is a federal body of executive power, which carries out functions on elaborating state policy and normative-lawful regulation in the sphere of education, scientific, scientific-technical and innovative activity, nanotechnologies, intellectual property, and also in the sphere of upbringing, social support and social protection of schoolchildren and pupils of educational institutions.

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A3
Company Profile
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Web: http://www.tsiinc.de
In Russia: e-mail: info.tsirussia@gmail.com
Tel: 921 7408614
Fax: (812) 3292688

A5
Engineering Research and Production Center “Instruments of non-destructive control” Moscow State Technical University for Radioengineering, Electronics and Automation MIREA (ERPC “INC” MSTU MIREA).
Center conducts development of devices and methods for industrial diagnostics.

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Microsystemy LLC offers you most advanced lithography and inspection systems, microscope-based equipment for industry, sciences, medicine and forensics. We help you to get hardware matching to your tasks and objectives. We mount it, put into operation, while your personnel get basic operation and maintenance training. We also provide follow-up maintenance. Our mission - to supply Russian customers with most advanced technologies in modern microscopy and lithography. We consolidate expertise of professionals skilled in Olympus, Crestec, Keyence, Hund, Leica, Carl Zeiss, and other brands equipment.

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B4
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• Stylus and Optical Metrology
• Elemental Analysis

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Contacts:
Evgeny Norman
evgeny.norman@ametek.com
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The satellite symposium «Polymers as a Basis for Advanced Materials» is organized in the framework of agreement between Far-East Department of Russian Academy and National Science Council of Taiwan on scientific cooperation in view of the relative closeness of Vladivostok to Taiwan. Symposia are usually convened in either Russian Far East or Taiwan under their aegis. In this year their geography is extended into the European part of Russia to involve more scientists and increase the scientific level. The reason is that the polymer community in Far-East Department of Russian Academy of Sciences is not numerous. The small delegation from Taiwan represents a good sampling from Taiwan’s top universities/research institutes. The symposium serves to bring leading scientists in both polymer science and materials together for a close encounter to develop mutual understanding on what the scientists on the other side are interested in and capable of doing. Only with this understanding developed may complementary and efficient teams of collaboration be built.

The organization of this symposium during the XII International Conference on Nanostructured Materials (NANO 2014) has an additional important aspect. Its program is reconciled with that of the NANO 2014. It gives a good opportunity for the participants to attend the main events and lectures at the conference devoted to various subjects of nanotechnology which are interesting for them. They can also communicate with colleagues from various countries and establish new collaborative links.

**Co-chairs**
- Professor Alexei Khokhlov, Lomonosov Moscow State University (Russia)
- Professor Yury Shchipunov, Institute of Chemistry, Far East Department of the Russian Academy of Sciences (Russia)
- Professor An-Chuhg Su, National Tsing Hua University (Taiwan)

**Co-organizers**
- Organizing Committee of NANO 2014
- Institute of Chemistry, Far East Department, Russian Academy of Sciences

**Participants**
- Professor Vyacheslav Bouznik, Federal State Unitary Enterprise, All-Russian Scientific Research Institute of Aviation Materials, Moscow & Institute of Chemistry, FEB, Russian Academy of Sciences (Vladivostok, Russia)
- Professor Jun-Tai Chen, National Chiao Tung University (Taiwan)
- Professor Sergei Gnedenkov, Institute of Chemistry, FEB, Russian Academy of Sciences (Vladivostok, Russia)
- Professor Masaki Horie, National Tsing Hua University (Taiwan)
- Professor Shan-Hui Hsu, National Taiwan University (Taiwan)
- Professor U-Ser Jeng, National Synchrotron Radiation Research Center (Taiwan)
- Professor Sergei Khatipov, NIFKHI im. L.Ya. Karpova (Moscow, Russia)
- Professor Gennadii Khomutov, Lomonosov Moscow State University (Moscow, Russia)
- Professor Alexei Khokhlov, Lomonosov Moscow State University, State Institute of Chemistry and Technology of Elementoorganic Compounds (Moscow, Russia)
- Professor Dmitry Paraschuk, Lomonosov Moscow State University (Moscow, Russia)
- Professor Irina Perminova, Lomonosov Moscow State University (Moscow, Russia)
- Professor Sergei Ponomarenko, Enikolopov Institute of Synthetic Polymeric Materials, Russian Academy of Sciences (Moscow, Russia)
- Professor Nataliya Prorokova, Institute of Chemistry of Solutions, Russian Academy of Sciences (Ivanovo, Russia)
- Professor Pavel Troshin, Institute for Problems of Chemical Physics, Russian Academy of Sciences (Chernogolovka, Russia)
- Professor Yury Shchipunov, Institute of Chemistry, FEB, Russian Academy of Sciences (Vladivostok, Russia)
- Professor An-Chung Su, National Tsing Hua University (Taiwan)
- Professor Sergey Tsyganov, Russian Foundation for Basic Research (Moscow, Russia)
### Symposium Program Overview

#### July 17 (Thursday)

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<td>2:45 PM – 4:00 PM</td>
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<td>C2</td>
<td>Nucleation of Polymer Crystals An-Chung Su</td>
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<td>4:00 PM – 4:10 PM</td>
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<td>4:10 PM – 5:00 PM</td>
<td>Lectures Chairmen: Professor Shan-Hui Hsu</td>
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<td>Nanostructural Composite Protective Coatings at the Surface of Metals and Alloys Sergei Gnedenkov</td>
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<td>5:20 PM – 6:35 PM</td>
<td>Lectures Chairmen: Irina Perminova</td>
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<td>Facile Synthesis Methods for Low-Bandgap Conjugated Polymers and Their Photovoltaic Characteristics Masaki Horie</td>
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<td>6:35 PM – 6:45 PM</td>
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<td>6:45 PM – 7:30 PM</td>
<td>Lectures Chairmen: Sergei Ponomarenko</td>
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<td>Ordering of Semiconducting Polymers by an Additive Dmitry Paraschuk</td>
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<td>7:30 PM – 9:30 PM</td>
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<td>Lectures Chairmen: Professor An-Chung Su</td>
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<td>Magneto-Controlled Elastomers Capable to Change Their Shape, Size and Viscoelasticity in External Magnetic Fields Alexei Khokhlov</td>
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<td>9:40 AM – 10:05 AM</td>
<td>Simultaneous Small/Wide-Angle X-Ray Scattering for Structural/Kinetic Characterization of Nanomaterials and Soft Matter U-Ser Jeng</td>
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<td>Biogenic Polyamines as a Basis for Advanced Nanomaterials Gennadi Khomutov</td>
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<tr>
<td>10:05 AM – 10:30 AM</td>
<td>Biogenic Polyamines as a Basis for Advanced Nanomaterials Gennadi Khomutov</td>
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<td>Humic Microligands in Synthesis and Stabilization of Nanoparticles Irina Perminova</td>
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<tr>
<td>10:30 AM – 11:05 AM</td>
<td>Humic Microligands in Synthesis and Stabilization of Nanoparticles Irina Perminova</td>
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<tr>
<td>11:05 AM – 12:20 PM</td>
<td>Lectures Chairmen: Vyacheslav Bouznik</td>
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<td>Green, Water-Based Synthesis and 3D Printing of Biodegradable Nanoelectomers for Biomedical Applications Shan-Hui Hsu</td>
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<tr>
<td>11:05 AM – 11:30 AM</td>
<td>Green, Water-Based Synthesis and 3D Printing of Biodegradable Nanoelectomers for Biomedical Applications Shan-Hui Hsu</td>
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<td>New Ways to Surface and Bulk Modification of Synthetic Fiber Materials Nataliya Prorokova</td>
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<td>12:20 PM – 12:30 PM</td>
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MINISTRY
OF EDUCATION AND
SCIENCE OF THE
RUSSIAN FEDERATION

The Ministry of Education and Science of Russia

Head: Minister of Education and Science of Russian Federation Dmitry Livanov
Director of the Department of Science and Technologies: Sergey Salikhov

The Ministry of education and science of Russia is a federal body of executive power, which carries out functions on elaborating state policy and normative-lawful regulation in the sphere of education, scientific, scientific-technical and innovative activity, nanotechnologies, intellectual property, and also in the sphere of upbringing, social support and social protection of schoolchildren and pupils of educational institutions.

The Ministry of education and science of the Russian Federation was established on March, 9, 2004. Aims of the Ministry of education and science of Russia are defined, starting from importance and necessity of satisfying the needs of population in education, of providing with accessibility of a qualitative education, of filling economics with qualified personnel, integration of education and scientific-technical achievements, reforming scientific sphere and stimulating innovative activity as key sources of stable economic growth and increase of prosperity in society.

The NANO 2014 conference is funded by the Ministry of education and science of Russia in the framework of the Federal Program on Research and Development of Science and Technology in 2014 – 2020.

DEPARTMENT OF SCIENCE,
INDUSTRIAL POLICY
AND ENTREPRENEURSHIP
OF MOSCOW

Department of Science, Industrial Policy and Entrepreneurship

Head: Alexey Komissarov, Moscow Government Minister

The Department of Science, Industrial Policy and Entrepreneurship is an executive body of the city of Moscow.

The Department shapes and implements policy on industry, science, innovation, promoting and supporting entrepreneurship, improving the investment climate, attracting and supporting investment in the abovementioned fields, the development and use of Moscow's industrial zones, and the provision of government services.

Main goals:

- Reducing administrative barriers
- Stimulating business activity
- Supporting small and medium-sized business
- Supporting the image of businesses and scientific and industrial organizations
- Fostering a competitive environment
- Improving infrastructure
- Optimizing human resources

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Fund for Infrastructure and Educational Programs (part of RUSNANO Group)
A non-profit organization that promotes the creation of infrastructure for the Russian nanotechnology industry and is part of the «innovation lift» system of Russian development institutions. The Fund is financed by the Russian federal budget.

The Fund works in seven main areas:

(1) Development of technology infrastructure.
(2) Building human resources for the nanoindustry:
(3) Development of the market for innovative products.
(4) Standardization, certification and safety assessment of nanotechnology products.
(5) Metrological support for the nanoindustry.
(6) Improvement of legislation in the innovation sphere.
(7) Popularization of nanotechnologies.

The Foundation Strategy in the period up to 2020:

- 16 nanocenters, 450 small innovation companies;
- 12 engineering companies;
- 150 educational programs for the training of at least 10,000 professionals;
- Helping to achieve a sales target of RUB 1.3 trillion for Russian nanotechnology products and high-tech materials;
- Design and submission to Rosstandart of 250 national standards and 600 documents (certificates, expert opinions) on quality and safety compliance of nanoindustry products;
- 220 developed and certified methods of measurement and standard samples of nanomaterials.

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Decisions on whether to support or decline projects are made by the scientific community itself represented by the most respected and active scientists — members of the RFBR expert panels. The Foundation operates in accordance with the Constitution of the Russian Federation, federal laws, decrees and orders of the President of the Russian Federation, decrees and orders of the Government of the Russian Federation, and the Charter of RFBR.

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- Openness — announcements of competitions and their results, the Foundation’s decisions on financing projects and events, and other materials are published both in paper editions and online;
- Independence – RFBR grants are allocated on a competitive basis after a multi-stage transparent independent assessment of the projects.
- Creative freedom – the participants of RFBR competitions are given the freedom of choice of research subjects and themes in all major areas of natural sciences and humanities, the freedom in choosing methods of conducting fundamental research and of organizing research groups.

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The International Centre for Diffraction Data (ICDD) is a non-profit scientific organization dedicated to collecting, editing, publishing, and distributing powder diffraction data for the identification of crystalline materials. The membership of the ICDD consists of worldwide representation from academe, government, and industry.

ICDD continues to develop tools and support the education required for materials analyses of tomorrow. ICDD is the world center for quality diffraction and related data to meet the needs of the technical community. ICDD promotes the application of materials characterization methods in science and technology by providing forums for the exchange of ideas and information.

Approximately 300 scientists from around the world comprise the active membership from which the organization draws its Board of Directors, committees, and subcommittees. The members, who are volunteers, are actively engaged in developments in the field of X-ray powder diffraction and related disciplines. Membership consists of scientists from various affiliations - educational, governmental, and industrial. Semi-annual meetings of the members provide a forum for the exchange of ideas and information pertinent to the scientific community and to organize, plan, and review policies and procedures within the ICDD organization. A paid scientific and administrative staff, located at the Newtown Square, Pennsylvania Headquarters, is responsible for the production and distribution of the various databases offered by the ICDD.
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