

# Fundamental and Applied NanoElectroMagnetics

## FANEM' 12

25th anniversary of the Research Institute for Nuclear Problems BSU

2nd Call for Papers

Belarusian State University, Minsk, Belarus, May 22-25, 2012

EU FP7 Project № 266529 BY-NanoERA, ISTC project B-1708

Ongoing rapid progress in the synthesis of different nanostructures and their fascinating physical and chemical properties not associated with bulk materials, have motivated a significant and potentially long-lasting increase of human resources and financial investments into this research field all over the world. No other area of materials research combines the exciting progress in fundamental research with the immediate promise of its realization in new devices & products that have both high societal impact and high commercial potential. The potential of nano-sized elements and nano-structured materials for electromagnetic fields manipulation and processing motivates recent invention of a new research discipline - nanoelectromagnetics. This conference aims to provide a forum for scientists specializing in different areas of the nanoparticles and nanostructured materials synthesis and applications to interact with their counterparts working in the areas of electromagnetic theory and applied electromagnetics. We expect fruitful discussions to both stimulate the development of nanoelectromagnetics and introduce the language and the problems of the present-day electromagnetics and photonics to the nano-materials research community. The conference thus has a very wide scope that encompasses various aspects of general theory, modeling, design, synthesis, characterization, applications ranging from commercial thin-film coatings to metamaterials to circuit components and nanodevices.

Original unpublished contributions are invited for oral and poster presentation. All abstracts will be reviewed for novelty, scientific and technological utility, and vision. Topics of interest include, but are not limited to, the following:

- electromagnetic effects in nanostructures: simulation and experiment
- carbon nanotubes, graphene and other nanocarbon forms in electromagnetics
- nano-cavities, -antennas, and -transmission lines
- optical nonlinearity on nano-scale
- nano-structured composite materials and thin films: synthesis and physical chemical properties
- nano-structured composite materials for electromagnetic shielding and ionization radiation protection
- ordered nanostructures and metamaterials for electromagnetic fields manipulation and processing
- biomedical applications of metallic nanoparticles and nanocarbons
- quantum light processing and single-photon devices

### INVITED SPEAKERS:

MIKHAIL ARTEMIEV  
Institute of Physical Chemical Problems, BSU, Belarus

PETER BELOBROV  
Siberian Federal University & Institute of Biophysics SB RAS, Russia

NIKOLAI GAPONIK  
Physikalische Chemie Technische Universität Dresden, Germany

GEORGE HANSON  
University of Wisconsin-Milwaukee, USA

PAWAN KUMAR KHANNA  
Applied Chemistry and Nanoscience, India

ANTONIO MAFFUCCI  
Università degli Studi di Cassino, Italy

MIKHAIL PORTNOI  
School of Physics University of Exeter, United Kingdom

IVAN SHELYKH  
Science Institute, University of Iceland, Iceland

**A special tutorial "Emerging Nanoscientific Developments" will be presented by key lecturers, and corresponding certificate will be given to MS and PhD students attended:**

AXEL HOFFMANN  
Institut für Festkörperphysik, TU Berlin, Germany  
**Towards Single Photon Sources at Room Temperatures for Quantum Cryptography Application**

YURI KIVSHAR  
Nonlinear Physics Centre, Australian National University, Australia  
**Tunable metamaterials and plasmonic structures**

AKHLESH LAKHTAKIA  
Pennsylvania State University, University Park, USA  
**Surface Multiplasmonics**

PHILIPPE LAMBIN  
University of Namur, Belgium  
**Elasticity at the nanoscopic scale**

OLGA SHENDEROVA  
International Technological Center, Raleigh, USA  
**Nanodiamond and Carbon Onion Composites: Optical and Electronic Applications**

GREGORY SLEPYAN  
Institute for Nuclear Problems, Belarus State University, Belarus  
**Concept of photonic density of states in nanoelectromagnetics: theory and applications**

CHRISTIAN THOMSEN  
Institut für Festkörperphysik, TU Berlin, Germany  
**Plasmonic effects in semiconductor nanostructures**

VALERY TUCHIN  
University Of Oulu, Finland  
**Local subcellular thermal effects at interaction of laser beams with plasmonic nanoparticles**

GINTARAS VALUSIS  
Center for Physical Sciences and Technology, Lithuania  
**Solid state based room temperature terahertz imaging systems**



**The working language**

**English**

**Registration Due Date**

**March 16, 2012**

**Abstract Due Date**

**March 16, 2012**

**Registration fee:**

**Full Registration € 120**

**Student/young scientist € 30**

**Companion € 70**

**Visa Requirements** Contact the Conference Secretariat for special letters of invitation

**Proceedings:**

A special issue "Fundamental and Applied Nanoelectromagnetics" is planned for publication in Journal of Nanophotonics, <http://spie.org/x3650.xml>.

Instructions and templates to prepare your manuscript are available at <http://spie.org/x3658.xml>.

Please submit your manuscript through <http://jnp.peerx-press.org/cgi-bin/main.plex/>.

**Manuscript Due Date**

**July 1, 2012**

**Conference Chairs:**

Oleg	IVASHKEVICH	Belarusian State University, Minsk, Belarus;
Sergey	MAKSIMENKO	Research Institute for Nuclear Problems BSU, 11 Bobruiskaya Str., 220030, Minsk, Belarus tel.: +375 17 226 42 23; fax: +375 17 226 51 24; e-mail: <a href="mailto:sergey.maksimenko@gmail.com">sergey.maksimenko@gmail.com</a>

**Scientific Secretary:**

Ekaterina	KOROLYOVA	Scientific and Technological Park BNTU "Polytechnic", 63 Nezavisimosti Ave., 220013, Minsk, Belarus tel./fax: +375 17 292 83 42; e-mail: <a href="mailto:k.koroleva@icm.by">k.koroleva@icm.by</a>
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**International Committee:**

Stefano	BELLUCCI	National Institute of Nuclear Physics, Italy
Victor	BORISENKO	Belarusian State University of Informatics & Radioelectronics, Belarus
Pavel	D'YACHKOV	Institute of General and Inorganic Chemistry RAS, Russia
Sergey	GAPONENKO	Institute of Physics NAS Belarus, Belarus
Axel	HOFFMANN	Institut für Festkörperphysik, Germany
Maria	KAFESAKI	Institute of Electronic Structure and Laser, Crete
Oleg	KIBIS	Novosibirsk State Technical University, Russia
Sergei	KILIN	Institute of Physics NAS Belarus, Belarus
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Polina	KUZHIR	Research Institute for Nuclear Problems BSU, Belarus
Vladimir	KUZNETSOV	Institute of Catalysis SB RAS, Russia
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Yuri	SVIRKO	University of Eastern Finland, Finland
Christian	THOMSEN	Institut für Festkörperphysik, Germany
Gintaras	VALUSIS	State research Center for Physical Sciences and Technology, Lithuania
Qun	WU	Harbin Institute of Technology, China



For more information see  
[www.nano.bsu.by](http://www.nano.bsu.by)