

# GENERAL INFORMATION

*NANOMEETING-2019* is an International Conference traditionally held each two years in Minsk, Belarus. The Conference has arisen from the Belarusian-French initiative and purposes to bring together scientists and engineers from around the world, who work in the fast-developing areas of nanoscience, nanotechnology, nanostructure based electronics and optoelectronics. The meeting addresses the latest results achieved in fabrication, study and application of nanosized structures. It will be in May 21 – 24, 2019 at the Belarusian State University of Informatics and Radioelectronics in Minsk.

## Registration

The registration fee is 150 EURO. It is paid in cash in EURO or equivalently in Belarusian rubles during the registration. The fee includes a copy of the Conference Proceedings, admission to all sessions, coffee breaks, and the city sightseeing bus tour.

Attendees are checked-in at the Conference Registration Desk in the lobby of the second floor of the Building № 2 (P. Browka Str. 4) of the Belarusian State University of Informatics and Radioelectronics. It is easily reached from the subway station “Akademiya Nauk” or by bus number 100 (see the city map at the back cover of the Program). The registration starts on May 21 (Tuesday) at 8:30.

## Meeting Activities

The technical program includes invited talks, oral presentations and poster session. A Workshop for young scientists "Nanotechnology Transfer to Market: the Art of Kung Fu" is organized during the Conference.

All presentations will be in English in the Conference Hall (Building № 2, P. Browka Str. 4) of the Belarusian State University of Informatics and Radioelectronics. Oral presentations should be no longer than 30 min for invited speakers and 20 min for others including 3-5 min for questions and short discussion. Audio-video equipment is available for speakers.

The poster session will take place in the lobby nearby the Conference Hall on Wednesday, May 22. Posters may be prepared in any form and will be displayed on poster boards of 1 m × 1.5 m. All posters should be put up on the boards in the morning May 22. That day authors are requested to be present at their posters starting from 17:00. Informal comments and discussion are encouraged during the session.

On May 21 (Tuesday), the Conference participants are invited to the city sightseeing tour just after finishing of the evening session. Conference Banquet is planned to be on May 22 (Wednesday).

For further information contact:

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# GENERAL SCHEDULE

## Tuesday May 21, 2019

8:30 – 13:00	REGISTRATION
9:15 – 11:00	PLENARY SESSION
11:00 – 11:20	<i>Coffee Break</i>
11:20 – 13:00	PHYSICS OF NANOSTRUCTURES
13:00 – 14:30	<i>Free Time for Lunch</i>
14:30 – 16:30	PHYSICS OF NANOSTRUCTURES
16:30 – 16:50	<i>Coffee Break</i>
16:50 – 18:10	PHYSICS OF NANOSTRUCTURES
18:20 – 20:00	<i>City Sightseeing Bus Tour</i>

## Wednesday May 22, 2019

9:00 – 10:50	NANOTECHNOLOGY
10:50 – 11:10	<i>Coffee Break</i>
11:10 – 12:50	NANOTECHNOLOGY
12:50 – 14:00	<i>Free Time for Lunch</i>
14:00 – 15:10	NANOTECHNOLOGY
15:10 – 15:30	<i>Coffee Break</i>
15:30 – 16:50	NANOTECHNOLOGY
17:00 – 18:30	POSTER SESSION
19:00	<i>Conference Banquet</i>

## Thursday May 23, 2019

9:00 – 10:50	NANOTECHNOLOGY
10:50 – 11:10	<i>Coffee Break</i>
11:10 – 12:30	NANOTECHNOLOGY
12:30 – 14:00	<i>Free Time for Lunch</i>
14:00 – 15:20	NANOSTRUCTURE BASED DEVICES
15:20 – 15:40	<i>Coffee Break</i>
15:40 – 17:00	NANOSTRUCTURE BASED DEVICES

## Friday May 24, 2019

9:00 – 11:00	WORKSHOP FOR YOUNG SCIENTISTS "NANOTECHNOLOGY TRANSFER TO MARKET: THE ART OF KUNG FU".
11:00	CLOSING OF THE CONFERENCE

## PROGRAM

**Tuesday May 21, 2019**

### PLENARY SESSION

Chairmen D. B. Migas, C. H. Kam

- 9:15                    **Welcome to Nanomeeting-2019**  
V. A. Bogush (Chairman of the National Organizing Committee, Rector of  
Belarusian State University of Informatics and  
Radioelectronics)  
C. H. Kam (Co-Chairman of the International Organizing Committee, Provost  
of Nanyang Technological University, Singapore)
- 9:30        I-1        SYNTHESIS, ENGINEERING AND APPLICATIONS OF 2D MATERIALS  
invited        B. K. Tay  
                  *Nanyang Technological University, Singapore, Singapore*
- 10:00        I-2        SEMICONDUCTOR NANOSTRUCTURE DESIGN FOR  
invited        THERMOELECTRIC PROPERTY CONTROL  
                  Y. Nakamura  
                  *Osaka University, Osaka, Japan*
- 10:30        I-3        LIGHT EMISSION FROM CARBON NANOSTRUCTURES  
invited        A. L. Rogach  
                  *City University of Hong Kong, Hong Kong*

### *Coffee Break*

### PHYSICS OF NANOSTRUCTURES

Chairman B. K. Tay

- 11:20        I-4        FERROMAGNETIC NANOPARTICLES AS BUILDING BLOCKS OF  
invited        HIGH DIMENSIONAL MAGNETS  
                  J. P. Liu  
                  *University of Texas at Arlington, Arlington, USA*
- 11:50        I-5        TRAPPING CHARGE CARRIERS IN TWO-DIMENSIONAL DIRAC  
invited        SEMIMETALS  
                  M. Portnoi  
                  *University of Exeter, Exeter, United Kingdom*
- 12:20        O-1        INFRARED DIAGNOSTICS OF FREE CHARGE CARRIERS IN SILICON  
                  NANOWIRES  
                  A. I. Efimova<sup>1</sup>, E. A. Lipkova<sup>1</sup>, K. A. Gonchar<sup>1</sup>, A. A. Eliseev<sup>1</sup>,  
                  V. Yu. Timoshenko<sup>1,2,3</sup>  
                  <sup>1</sup>*M. V. Lomonosov Moscow State University, Moscow, Russia*  
                  <sup>2</sup>*Lebedev Physical Institute of the RAS, Moscow, Russia*  
                  <sup>3</sup>*National Research Nuclear University MEPhI, PhysBio Institute, Moscow,*  
                  *Russia*

12:40 O-2 ELECTROSTATIC FORCE MICROSCOPY: A PROMISING DIAGNOSTIC TOOL TO MEASURE INTERPHASE PROPERTIES  
J. Castellon, D. El Khoury, R. Arinero  
*Université de Montpellier, Institut d'Electronique et Systèmes (IES), Montpellier, France*

**Free Time for Lunch**

**Tuesday May 21, 2019**

**PHYSICS OF NANOSTRUCTURES**

Chairman A. L. Rogach

- 14:30 I-6 THz COMPONENTS BASED ON GRAPHENE AND CARBON  
invited P. Kuzhir  
*Belarusian State University, Minsk, Belarus*
- 15:00 I-7 HIGHLY EMISSIVE AND SPECIALLY ENGINEERED QUANTUM  
invited DOTS FOR EFFICIENT LUMINESCENT SOLAR CONCENTRATORS  
Hongbo Li  
*Beijing Institute of Technology, China*
- 15:30 O-3 TEMPERATURE DEPENDENCE OF PHOTOLUMINESCENCE FOR  
SPIN-COATED SEMICONDUCTOR QUANTUM DOTS AND QUANTUM  
DOT-DYE NANOASSEMBLIES ON QUARTZ SUBSTRATE  
E. Zenkevich<sup>1</sup>, A. Stupak<sup>2</sup>, C. von Borczyskowski<sup>3</sup>  
<sup>1</sup>*Belarusian National Technical University, Minsk, Belarus*  
<sup>2</sup>*B. I. Stepanov Institute of Physics, NASB, Minsk, Belarus*  
<sup>3</sup>*Institute of Physics, University of Technology Chemnitz, Chemnitz, Germany*
- 15:50 O-4 LUMINESCENCE OF GOLD NANOROD-QUANTUM DOTS  
COMPLEXES  
L. L. Trotsiuk<sup>1</sup>, A. O. Muravitskaya<sup>1</sup>, O. S. Kulakovich<sup>1</sup>, S. V. Gaponenko<sup>1</sup>,  
H. V. Demir<sup>2</sup>  
<sup>1</sup>*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*  
<sup>2</sup>*UNAM–Institute of Materials Science and Nanotechnology, Bilkent  
University, Ankara, Turkey*
- 16:10 O-5 REFRACTIVE INDEX INFLUENCE ON THE QUANTUM DOTS  
FLUORESCENCE NEAR THE GOLD NANORODS  
A. O. Muravitskaya<sup>1</sup>, L. L. Trotsiuk<sup>1</sup>, O. S. Kulakovich<sup>1</sup>, L. I. Gurinovich<sup>1</sup>,  
S. V. Gaponenko<sup>1</sup>, A. V. Antanovich<sup>2</sup>  
<sup>1</sup>*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*  
<sup>2</sup>*Research Institute for Physico-Chemical Problems of Belarusian State  
University, Minsk, Belarus*

**Coffee Break**

- 16:50 O-6 Ca SILICIDE FILMS ON Si(100) AND Si(111) SUBSTRATES:  
STRUCTURE, OPTICAL AND ELECTRICAL PROPERTIES  
N. G. Galkin<sup>1</sup>, K. N. Galkin<sup>1</sup>, A. V. Tupkalo<sup>1</sup>, S. A. Dotsenko<sup>1</sup>, Z. Fogarassi<sup>2</sup>,  
B. Pecze<sup>2</sup>  
<sup>1</sup>*Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*  
<sup>2</sup>*Institute of Technical Physics and Materials Research Centre for Energy  
Research, Hungarian Academy of Sciences, Budapest, Hungary*

- 17:10 O-7 SPIN-DEPENDENT ELECTRONIC TRANSPORT IN IrMn-Co/Pd MULTILAYERED SYSTEMS  
W.-B. Wu<sup>1</sup>, J. Kasiuk<sup>1</sup>, J. Fedotova<sup>1</sup>, T. N. Anh Nguyen<sup>2</sup>, T. H. Thuy Trinh<sup>2</sup>, K. Tung Do<sup>2</sup>, D. Lam Vu<sup>2</sup>, J. Przewoźnik<sup>3</sup>, C. Kapusta<sup>3</sup>, O. Kupreeva<sup>4</sup>  
<sup>1</sup>*Institute for Nuclear Problems, Belarusian State University, Minsk, Belarus*  
<sup>2</sup>*Institute of Materials Science, Vietnam Academy of Science and Technology, Hanoi, Vietnam*  
<sup>3</sup>*AGH University of Science and Technology, Krakow, Poland*  
<sup>4</sup>*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
- 17:30 O-8 ANISOTROPIC TEMPERATURE DEPENDENT INTERACTION OF FERROMAGNETIC NANOPARTICLES EMBEDDED INSIDE CNT  
S. Prischepa<sup>1,2</sup>, A. Danilyuk<sup>1</sup>  
<sup>1</sup>*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*  
<sup>2</sup>*National Research Nuclear University MEPhI, Moscow, Russia*
- 17:50 O-9 NANOPARTICLE-ENHANCED LASER INDUCED BREAKDOWN SPECTROSCOPY USING COPPER-SILVER AND NICKEL-CARBON NANOCOMPOSITES ON ALUMINIUM  
V. V. Kiris, A. V. Butsen, E. A. Ershov-Pavlov, M. I. Nedelko, A. A. Nevar  
*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*

***City Sightseeing Bus Tour***

NANOTECHNOLOGY

Chairman P. Kuzhir

- 9:00 I-8 DIRECT SYNTHESIS OF COLORFUL AND CONDUCTIVE SWNT THIN  
invited FILMS FOR FLEXIBLE ELECTRONICS APPLICATIONS  
E. I. Kauppinen  
*Aalto University, Aalto, Finland*
- 9:30 I-9 MECHANICAL-ELECTRIC POWER CONVERSION BASED ON  
invited CHEMICAL POTENTIAL DIFFERENCE  
Q. Zhang  
*Nanyang Technological University, Singapore, Singapore*
- 10:00 I-10 TRANSITION METAL DICHALCOGENIDES FOR ELECTRO-OPTICAL  
invited APPLICATIONS  
S. Ozcelik  
*Gazi University, Ankara, Turkey*
- 10:30 O-10 FORMATION OF WATER SOLUBLE Au-NANOBIOCOMPOSITE WITH  
DIELECTRIC MATRIX  
G. Aleksandrova, B. Sukhov, B. Trofimov  
*A. E. Favorsky Irkutsk Institute of Chemistry SB RAS, Irkutsk, Russia*

*Coffee Break*

- 11:10 O-11 PHOTOCURRENT SWITCHING ON ELECTROPHORETIC CdSe QD  
ELECTRODES WITH DIFFERENT LIGANDS  
Y. Aniskevich<sup>1</sup>, M. Malashchonak<sup>2</sup>, A. Antanovich<sup>3</sup>, A. Prudnikau<sup>4</sup>,  
G. Ragoisha<sup>5</sup>, E. Streltsov<sup>6</sup>  
<sup>1</sup>*Research Institute for Physical Chemical Problems, Belarusian State  
University, Minsk, Belarus*  
<sup>2</sup>*Belarusian State University, Minsk, Belarus*  
<sup>3</sup>*Research Institute for Physical Chemical Problems, Belarusian State  
University, Minsk, Belarus*  
<sup>4</sup>*Physical Chemistry, TU Dresden, Dresden, Germany*  
<sup>5</sup>*Research Institute for Physical Chemical Problems, Belarusian State  
University, Minsk, Belarus*  
<sup>6</sup>*Belarusian State University, Minsk, Belarus*
- 11:30 O-12 EFFECT OF SUBSTITUENTS ON TICT RATE IN THIOFLAVIN T  
BASED FLUORESCENT MOLECULAR ROTORS  
V. I. Stsiapura<sup>1</sup>, S. D. Gogoleva<sup>1</sup>, A. A. Maskevich<sup>1</sup>, O. V. Buganov<sup>2</sup>,  
S. A. Tikhomirov<sup>2</sup>, A. A. Lugovski<sup>3</sup>, K. Baruah<sup>4</sup>, B. K. Sarma<sup>4</sup>  
<sup>1</sup>*Yanka Kupala State University, Grodno, Belarus*  
<sup>2</sup>*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*  
<sup>3</sup>*Belarusian State University, Minsk, Belarus*  
<sup>4</sup>*Shiv Nadar University, Dadri, Uttar Pradesh, India*

- 11:50 O-13 LONG-TERM STABILITY OF OPTICAL PROPERTIES OF COLLOIDAL CdSe NANOCRYSTALS IN POLYMER MATRICES  
Yu. M. Azhniuk<sup>1</sup>, V. V. Lopushansky<sup>1</sup>, A. V. Gomonnai<sup>1</sup>, B. V. Lopushanska<sup>2</sup>, A. E. Raevskaya<sup>3</sup>, V. M. Dzhagan<sup>4</sup>, O. L. Stroyuk<sup>4</sup>, D. R. T. Zahn<sup>4</sup>,  
<sup>1</sup>*Institute of Electron Physics, NASU, Uzhhorod, Ukraine*  
<sup>2</sup>*Uzhhorod National University, Uzhhorod, Ukraine*  
<sup>3</sup>*L. Pysarzhevsky Institute of Physical Chemistry, NASU, Kyiv, Ukraine*  
<sup>4</sup>*Chemnitz University of Technology, Chemnitz, Germany*
- 12:10 O-14 NUCLEATION OF GOLD NANOPARTICLES IN A SOLUTION VIA LASER HELD: SIMULATION AND EXPERIMENTS  
S. P. Fisenko<sup>1</sup>, J. A. Bobb<sup>2</sup>, C. J. Rodrigues<sup>2</sup>, M. S. El-Shall<sup>2</sup>, K. M. Tibbetts<sup>2</sup>  
<sup>1</sup>*A. V. Luikov Heat and Mass Transfer Institute, NASB, Minsk, Belarus*  
<sup>2</sup>*Virginia Commonwealth University, Richmond, Virginia, USA*
- 12:30 O-15 TECHNOLOGIES OF 2D NANOSTRUCTURES  
S. Tamulevičius  
*Institute of Materials Science, Kaunas University of Technology, Kaunas, Lithuania*

**Free Time for Lunch**

**Wednesday May 22, 2019**

### NANOTECHNOLOGY

Chairman J.-L. Lazzari

- 14:00 I-11 NANOSTRUCTURES FOR ENHANCEMENT OF SENSING AND  
invited EMISSION  
D. H. Zhang  
*Nanyang Technological University, Singapore, Singapore*
- 14:30 O-16 OPTICAL PROPERTIES OF LATERALLY ORIENTED  
SELF-ASSEMBLED MONOLAYERS OF SILVER NANOPATELETS ON  
CATIONIC POLYMERS  
P. Malakhovsky, M. Artemyev  
*Research Institute for Physical Chemical Problems of the Belarusian State University, Minsk, Belarus*
- 14:50 O-17 NITRO-DERIVATIVES OF SILAPRISMANES AS HIGH-ENERGY  
COMPOUNDS: THEORETICAL STUDY  
M. A. Salem<sup>1,3</sup>, M. A. Gimaldinova<sup>1</sup>, A. I. Kochaev<sup>2</sup>, K. P. Katin<sup>1</sup>,  
R. V. Ryzhuk<sup>1</sup>, N. I. Kargin<sup>1</sup>, M. M. Maslov<sup>1</sup>  
<sup>1</sup>*National Research Nuclear University MEPhI, Moscow, Russia*  
<sup>2</sup>*Ulyanovsk State Technical University, Ulyanovsk, Russia*  
<sup>3</sup>*Zagazig University, Zagazig, Egypt*

**Coffee Break**

- 15:30 O-18 WATER-SOLUBLE CADMIUM SELENIDE QUANTUM DOTS WITH  
CONTROLLED SURFACE CHARGE  
A. Radchanka, M. Artemyev  
*Research Institute for Physical Chemical Problems of the Belarusian State University, Minsk, Belarus*



- 15:50 O-19 LASER ASSISTED FABRICATION OF NANOPARTICLES IN LIQUIDS AND THEIR APPLICATION FOR IMPROVING ANALYTICAL PERFORMANCE OF LIBS  
 N. Tarasenko<sup>1</sup>, V. Kiris<sup>1</sup>, N. Tarasenka<sup>1</sup>, A. Nevar<sup>1</sup>, M. Kuzmanovic<sup>2</sup>,  
 D. P. Rankovic<sup>2</sup>, J. Savovic<sup>2</sup>, M. Trtica<sup>2</sup>  
<sup>1</sup>*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*  
<sup>2</sup>*University of Belgrade, Belgrade, Serbia*
- 16:10 O-20 INFLUENCE OF ION BEAM-ASSISTED DEPOSITION ON THE WETTING PROPERTIES OF Al-1.0 AT.% Cr ALLOY FILMS  
 I. I. Tashlykova-Bushkevich<sup>1</sup>, J. S. Yakovenko<sup>2</sup>, I. A. Bushkevich<sup>3</sup>  
<sup>1</sup>*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*  
<sup>2</sup>*Minsk State Vocational-Technical College of Light Industry and Consumer Services, Minsk, Belarus*  
<sup>3</sup>*Belarusian State University, Minsk, Belarus*
- 16:30 O-21 OPTICAL FEATURES OF THE SILICA SOL-GEL DERIVED GLASSES DOPED WITH COPPER SELENIDE NANOPARTICLES  
 V. S. Gurin<sup>1</sup>, A. A. Alexeenko<sup>2</sup>  
<sup>1</sup>*Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus*  
<sup>2</sup>*Gomel State Technical University, Gomel, Belarus*

#### **POSTER SESSION**

17:00-18:30 – the lobby nearby the Conference Hall

#### ***Conference Banquet***

NANOTECHNOLOGY

Chairman Y. Nakamura

- 9:00 I-12 IN-SITU FABRICATED PEROVSKITE QUANTUM DOTS FOR  
invited PHOTONIC AND OPTOELECTRONIC APPLICATIONS  
H. Zhong  
*Beijing Institute of Technology, China*
- 9:30 I-13 VISUALIZATION OF LASER INDUCED TEMPERATURE FIELDS IN  
invited GRAPHENE BY RAMAN SPECTROSCOPY: NEW APPROACH FOR  
THERMAL CONDUCTIVITY EVALUATION OF 2D MATERIALS  
I. V. Komissarov  
*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
- 10:00 I-14 ORDERED TRANSPARENT CONDUCTING OXIDE NANOWIRES  
invited M. Zervos  
*University of Cyprus, Nicosia, Cyprus*
- 10:30 O-22 CHARACTERISTICS OF CZTSSe THIN FILMS PREPARED BY  
SELENIZATION OF SPUTTERED Cu, Sn AND ZnS LAYERS  
N. Akçay<sup>1,2</sup>, S. Ozcelik<sup>2</sup>, E. Zaretskaya<sup>3</sup>, R. Juskenas<sup>4</sup>  
<sup>1</sup>*Baskent University, Ankara, Turkey*  
<sup>2</sup>*Gazi University, Ankara, Turkey*  
<sup>3</sup>*State Scientific and Production Association «Scientific-Practical Materials Research Centre of NASB», Minsk, Belarus*  
<sup>4</sup>*State Research Institute Center for Physical Sciences and Technology, Vilnius, Lithuania*

**Coffee Break**

- 11:10 O-23 SILICENE NANOSTRUCTURES GROWN ON GRAPHENE COVERED  
SiC (0001) SUBSTRATE  
I. Berbezier<sup>1</sup>, A. Michon<sup>2</sup>, P. Castrucci<sup>3</sup>, M. Scarselli<sup>3</sup>, M. Salvato<sup>3</sup>,  
M. Scagliotti<sup>3</sup>, M. De Crescenzi<sup>3</sup>  
<sup>1</sup>*CNRS, Aix-Marseille Université, IM2NP, Marseille, France*  
<sup>2</sup>*Centre de Recherche pour l'Hétéro-Epitaxie et ses Applications (CRHEA), CNRS, Valbonne, France*  
<sup>3</sup>*Università di Roma "Tor Vergata", Roma, Italy*
- 11:30 O-24 MODIFICATION OF ELECTRIC TRANSPORT PROPERTIES OF CVD  
GRAPHENE BY ELECTROCHEMICAL DEPOSITION OF COBALT  
NANOPARTICLES  
V. Bayev<sup>1</sup>, J. Fedotova<sup>1</sup>, U. Humennik<sup>1</sup>, S. Vorobyova<sup>2</sup>, A. Konakow<sup>2</sup>,  
A. Fedotov<sup>3</sup>, I. Svito<sup>3</sup>, M. Rybin<sup>4</sup>, E. Obratsova<sup>4</sup>  
<sup>1</sup>*Institute for Nuclear Problems, Belarusian State University, Minsk, Belarus*  
<sup>2</sup>*Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus*  
<sup>3</sup>*Belarusian State University, Minsk, Belarus*  
<sup>4</sup>*A. M. Prokhorov General Physics Institute, Moscow, Russia*

- 11:50 O-25 STUDY OF DILUTED MELDONIUM SOLUTIONS BY SURFACE ENHANCED RAMAN SCATTERING SPECTROSCOPY  
N. Khinevich<sup>1</sup>, S. Zavatski<sup>1</sup>, H. Bandarenka<sup>1</sup>, V. Belyatsky<sup>2</sup>, E. Galyuk<sup>2</sup>, O. Ryneiskaya<sup>2</sup>  
<sup>1</sup>Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus  
<sup>2</sup>Belarusian State Medical University, Minsk, Belarus
- 12:10 O-26 SYNTHESIS OF GRAPHITIC CARBON NITRIDE IN POROUS SILICA GLASS  
E. B. Chubenko<sup>1</sup>, A. V. Baglov<sup>1</sup>, E. S. Lisimova<sup>1</sup>, V. E. Borisenko<sup>1,2</sup>  
<sup>1</sup>Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus  
<sup>2</sup>National Research Nuclear University MEPhI, Moscow, Russia

**Free Time for Lunch**

**Thursday May 23, 2019**

**NANOSTRUCTURE BASED DEVICES**

Chairman I. V. Komissarov

- 14:00 I-15 ATOMISTIC SIMULATIONS OF PHASE CHANGE MATERIALS FOR ELECTRONIC MEMORIES  
invited M. Bernasconi  
*University of Milano-Bicocca, Milan, Italy*
- 14:30 I-16 SPIN-ORBIT TORQUE SWITCHING IN HEAVY METAL/FERROMAGNET JUNCTIONS FOR MAGNETIC MEMORY DEVICES  
invited Y. K. Kim  
*Korea University, Seoul, Korea*
- 15:00 O-27 SILICON p<sup>+</sup>-p<sup>-</sup>-n DIODES WITH EMBEDDED  $\beta$ -FeSi<sub>2</sub> AND CrSi<sub>2</sub> NANOCRYSTALS: MORPHOLOGY, CRYSTAL STRUCTURE AND PHOTOELECTRIC PROPERTIES  
N. G. Galkin<sup>1</sup>, D. L. Goroshko<sup>1</sup>, E. A. Chusovitin<sup>1</sup>, A. V. Shevlyagin<sup>1</sup>, K. N. Galkin<sup>1</sup>, A. K. Gutakovskii<sup>2</sup>  
<sup>1</sup>Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia  
<sup>2</sup>Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia

**Coffee Break**

- 15:40 O-28 ANALYTIC MODELING THE *J-V* CHARACTERISTICS OF QUANTUM DOT BASED PHOTOVOLTAIC CELLS  
A. Yu. Saunina<sup>1</sup>, V. R. Nikitenko<sup>1</sup>, A. A. Chistyakov<sup>1</sup>, M. A. Zvaizgne<sup>1</sup>, A. R. Tameev<sup>2</sup>, A. E. Aleksandrov<sup>2</sup>  
<sup>1</sup>National Research Nuclear University MEPhI, Moscow, Russia  
<sup>2</sup>A. N. Frumkin Institute of Physical Chemistry and Electrochemistry, RAS, Moscow, Russia

- 16:00 O-29 2D CARBON MATERIAL/SILICON HETEROJUNCTIONS FOR FAST RESPONSE SELF-POWERED PHOTODETECTOR  
M. Scagliotti<sup>1</sup>, M. Salvato<sup>1</sup>, M. De Crescenzi<sup>1</sup>, P. Castrucci<sup>1</sup>, N. G. Kovalchuk<sup>2</sup>, I. V. Komissarov<sup>2</sup>, S. L. Prischepa<sup>2</sup>, D. Catone<sup>3</sup>, L. Di Mario<sup>3</sup>, M. Boscardin<sup>4</sup>, M. Crivellari<sup>4</sup>  
<sup>1</sup>*Dipartimento di Fisica, Università di Roma "Tor Vergata", Roma, Italy*  
<sup>2</sup>*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*  
<sup>3</sup>*Istituto di Struttura della Materia (ISM), CNR, Division of Ultrafast Processes in Materials (FLASHit), Rome, Italy*  
<sup>4</sup>*Micro-nano Characterization and Fabrication Facility, Fondazione Bruno Kessler (FBK), Povo-Trento, Italy*
- 16:20 O-30 EFFECT OF GRAPHENE COATING ON SERS PERFORMANCE OF PLASMONIC NANOSTRUCTURES BASED ON SILVERED POROUS SILICON  
A. Panarin<sup>1</sup>, P. Mojzes<sup>2</sup>, B. Ranishenka<sup>3</sup>, S. Terekhov<sup>4</sup>  
<sup>1</sup>*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*  
<sup>2</sup>*Charles University, Prague, Czech Republic*  
<sup>3</sup>*Institute of Physical Organic Chemistry NASB, Minsk, Belarus*  
<sup>4</sup>*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*
- 16:40 O-31 3-D SILICON PHOTONIC STRUCTURES BASED ON AVALANCHE LED WITH INTERCONNECTIONS THROUGH OPTICAL INTERPOSER  
S. K. Lazarouk<sup>1,2</sup>, A. A. Leshok<sup>1</sup>, T. A. Kozlova<sup>1</sup>, A. V. Dolbik<sup>1</sup>, Le Dinh Vi<sup>1</sup>, V. K. Ilkov<sup>3</sup>, V. A. Labunov<sup>1,2</sup>  
<sup>1</sup>*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*  
<sup>2</sup>*National Research Nuclear University MEPhI, Moscow, Russia*  
<sup>3</sup>*Russian Technological University, Moscow, Russia*

**Friday May 24, 2019**

**Workshop for young scientists**

**"Nanotechnology Transfer to Market: the Art of Kung Fu".**

Moderator H. Bandarenka

9:00 – 11:00

11:00

**Closing of the Conference**

## POSTERS

- P-1 THE DEVIATIONS OF HIGH FREQUENCY CONDUCTIVITY OF DISORDERED GRANULAR SYSTEMS FROM UNIVERSALITY  
M. A. Ormont, I. P. Zvyagin  
*M. V. Lomonosov Moscow State University, Moscow, Russia*
- P-2 CONCENTRATION AND MOBILITY OF ELECTRONS IN  $n$ -GaAs/AlGaAs:Si NANOSTRUCTURES UNDER UNIAXIAL COMPRESSION IN THE DARK AND AFTER ILLUMINATION  
E. V. Bogdanov, N. Ya. Minina  
*M. V. Lomonosov Moscow State University, Moscow, Russia*
- P-3 PROPERTIES OF  $\text{TiO}_2/\text{TiO}_x$  ACTIVE LAYERS AND FABRICATION RESISTIVE SWITCHING DEVICE  
A. Bibilashvili<sup>1,2</sup>, Z. Kushitashvili<sup>2</sup>  
<sup>1</sup>*Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia*  
<sup>2</sup>*LEPL Institute of Micro and Nanoelectronics, Tbilisi, Georgia*
- P-4 SPIN-ORBIT INTERACTIONS IN SEMICONDUCTOR QUANTUM RING IN THE PRESENCE OF MAGNETIC FIELD  
A. V. Baran, V. V. Kudryashov  
*Institute of Physics, NASB, Minsk, Belarus*
- P-5 PREPARATION AND MORPHOLOGY OF CdZnS THIN FILMS  
S. I. Sadovnikov  
*Institute of Solid State Chemistry, Ural Division RAS, Ekaterinburg, Russia*
- P-6 THERMAL EXPANSION OF NANOSTRUCTURED SOLID SOLUTIONS OF LEAD AND SILVER SULFIDES  
S. I. Sadovnikov  
*Institute of Solid State Chemistry, Ural Division RAS, Ekaterinburg, Russia*
- P-7 TRANSFORMATION OF EVANESCENT BESSEL LIGHT BEAMS INTO PROPAGATING QUASI-NONDIFFRACTING BEAMS IN EPSILON-NEAR-ZERO HYPERBOLIC METAMATERIALS  
S. Kurilkina, V. Belyi, N. Kazak  
*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*
- P-8 PHOTOCONDUCTIVITY RESONANCE TUNNELING SPECTROSCOPY OF THE ELECTRON STATES IN THE InAs/GaAs QUANTUM DOT HETEROSTRUCTURES  
N. L. Ivina<sup>1</sup>, M. L. Orlov<sup>1</sup>, N. S. Volkova<sup>2</sup>  
<sup>1</sup>*The Russian Presidential Academy of National Economy and Public Administration, Nizhny Novgorod, Russia*  
<sup>2</sup>*Nizhny Novgorod Lobachevski State University, Nizhny Novgorod, Russia*
- P-9 CALCULATION OF NEAR ZONE ELECTROMAGNETIC FIELD RADIATED FROM SUB-WAVELENGTH NANOAPERTURE TO A PLANE DIELECTRIC  
V. M. Serdyuk<sup>1</sup>, J. A. Titovitsky<sup>1</sup>, S. V. Von Gratovskiy<sup>2</sup>, V. V. Koledov<sup>2</sup>  
<sup>1</sup>*Institute of Applied Physical Problems, Belarusian State University, Minsk, Belarus*  
<sup>2</sup>*Kotel'nikov Institute of Radioengineering and Electronics RAS, Moscow, Russia*
- P-10 SPATIAL ORDER AND ABSORPTION OF LIGHT BY MONOLAYER OF SILICON NANO- AND SUBMICROMETER-SIZED PARTICLES  
V. A. Loiko, A. A. Miskevich, N. A. Loiko  
*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*

- P-11 DEPENDENCE OF A SURFACE PLASMON RESONANCE BAND ON CONCENTRATION OF COPPER NANOPARTICLES IN TRANSPARENT AND CARBON-BEARING MATRICES  
R. A. Dynich<sup>1</sup>, A. D. Zamkovetz<sup>1</sup>, A. N. Ponyavina<sup>1</sup>, E. M. Shpilevsky<sup>2</sup>  
<sup>1</sup>*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*  
<sup>2</sup>*A. V. Luikov Heat-Mass Transfer Institute NASB, Minsk, Belarus*
- P-12 NANOSTRUCTURING OF THE CIGS FILMS SURFACE BY THE PLASMA TREATMENT WITH LOW ION ENERGY  
S. P. Zimin<sup>1</sup>, L. A. Mazaletskiy<sup>1</sup>, I. I. Amirov<sup>2</sup>, E. S. Gorlachev<sup>2</sup>, V. F. Gremenok<sup>3</sup>, V. V. Khoroshko<sup>4</sup>  
<sup>1</sup>*Yaroslavl State University, Yaroslavl, Russia*  
<sup>2</sup>*Yaroslavl Branch of the Institute of Physics and Technology RAS, Yaroslavl, Russia*  
<sup>3</sup>*Scientific-Practical Materials Research Center NASB, Minsk, Belarus*  
<sup>4</sup>*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
- P-13 EFFECT OF Al DOPING ON THE STRUCTURAL, ELECTRICAL, GAS SENSING PROPERTIES OF ZnO NANORODS SYNTHESIZED BY HYDROTHERMAL GROWTH  
V. Srivastava, S. B. Eadi, S.-K. Hong  
*Chungnam National University, Daejeon, Korea*
- P-14 ONE-STEP ROUTE TO GROW ZnO HEXANGULAR TUBE STRUCTURES  
S. B. Eadi, S.-K. Hong  
*Chungnam National University, Daejeon, Korea*
- P-15 MODELLING OF ELECTRON TRANSFER IN GRAPHENE ON SiC SUBSTRATE  
V. V. Muravev, V. N. Mishchenka  
*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
- P-16 DIELECTRIC PROPERTIES OF EPOXY RESIN COMPOSITES BASED ON MAGNETIC NANOPARTICLES  
D. Meisak<sup>1</sup>, J. Macutkevic<sup>1</sup>, J. Banys<sup>1</sup>, D. Bychanok<sup>2</sup>, P. Kuzhir<sup>2</sup>  
<sup>1</sup>*Vilnius University, Vilnius, Lithuania*  
<sup>2</sup>*Institute for Nuclear Problems, Belarus State University, Minsk, Belarus*
- P-17 DEPOSITION OF GOLD NANOSTRUCTURES INTO POROUS SiO<sub>2</sub>/Si TEMPLATES FROM THE ELECTROLYTE BASED ON Au(I) SULFITE COMPLEX  
V. D. Bundyukova<sup>1</sup>, D. V. Yakimchuk<sup>1</sup>, D. I. Shlimas<sup>2,3</sup>, S. A. Khubezhov<sup>2,4</sup>  
<sup>1</sup>*Scientific-Practical Materials Research Center NASB, Minsk, Belarus*  
<sup>2</sup>*L. N. Gumilyov Eurasian National University, Astana, Kazakhstan*  
<sup>3</sup>*Laboratory of Solid State Physics, Institute of Nuclear Physics, Astana, Kazakhstan*  
<sup>4</sup>*North-Ossetian State University, Vladikavkaz, Russia*
- P-18 FORMATION OF METALLIC DROPLETS ON THE SURFACE OF INDIUM SULPHIDE FILMS DURING ARGON PLASMA TREATMENT  
S. P. Zimin<sup>1</sup>, A. S. Pipkova<sup>1</sup>, L. A. Mazaletskiy<sup>1</sup>, I. I. Amirov<sup>2</sup>, E. S. Gorlachev<sup>2</sup>, S. V. Vasilev<sup>2</sup>, V. V. Khoroshko<sup>3</sup>, V. F. Gremenok<sup>4</sup>, A. N. Pyatlitskiy<sup>5</sup>  
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<sup>4</sup>*Scientific-Practical Materials Research Center NASB, Minsk, Belarus*  
<sup>5</sup>*JSC "INTEGRAL" Holding Managing Company, Minsk, Belarus*
- P-19 FIELD EMISSION IN SILICON VACUUM NANOSTRUCTURE  
A. G. Trafimenko, D. A. Podryabinkin, A. L. Danilyuk  
*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*

- P-20 MECHANOCHEMICAL SYNTHESIS OF INTERMETALLIC COMPOUNDS IN THE GALLIUM–IRIDIUM SYSTEM  
P. Vitiyaz<sup>1</sup>, N. Lyakhov<sup>2</sup>, T. Grigoreva<sup>2</sup>, E. Pavlov<sup>3</sup>  
<sup>1</sup>*The Presidium of NASB, Minsk, Belarus*  
<sup>2</sup>*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Russia*  
<sup>3</sup>*OJSC V. N. Gulidov Krasnoyarsk Plant of Nonferrous Metals, Krasnoyarsk, Russia*
- P-21 MAGNETOOPTICAL AND MICROMAGNETIC PROPERTIES OF FERROMAGNET/HEAVY METAL THIN FILM STRUCTURES  
A. V. Zdoroveyshchev, O. V. Vikhrova, P. B. Demina, M. V. Dorokhin, A. V. Kudrin, A. G. Temiryazev, M. P. Temiryazeva  
*University of Nizhny Novgorod, Nizhny Novgorod, Russia*
- P-22 OPTICAL CHARACTERISTICS OF POROUS ALUMINA MODIFIED BY CHROMIUM OXIDE  
N. I. Mukhurov, I. V. Gasenkova, S. P. Zhvayvi, E. E. Kolesnik  
*State Research and Production Association "Optic, Optoelectronic and Laser Techniques", Minsk, Belarus*
- P-23 NON-POROUS NITROGEN AND RUTHENIUM CO-DOPED TITANIA FILMS FOR PHOTOCATALYSIS  
O. Linnik<sup>1</sup>, L. Khoroshko<sup>2</sup>  
<sup>1</sup>*Chuiko Institute of Surface Chemistry NAS of Ukraine, Kyiv, Ukraine*  
<sup>2</sup>*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
- P-24 TWO-COMPONENT ANALYSIS OF PHOTOLUMINESCENCE BANDS FOR SEMICONDUCTOR QUANTUM DOTS IN SOLUTIONS  
E. Zenkevich<sup>1</sup>, A. Stupak<sup>2</sup>, C. von Borczyskowski<sup>3</sup>  
<sup>1</sup>*Belarusian National Technical University, Minsk, Belarus*  
<sup>2</sup>*B. I. Stepanov Institute of Physics, NASB, Minsk, Belarus*  
<sup>3</sup>*Institute of Physics, University of Technology Chemnitz, Chemnitz, Germany*
- P-25 CRYSTALLIZATION BEHAVIOR OF PURE N-ALKANE (N-NONADECANE) IN A FORM OF NANOEMULSION  
V. N. Kuryakov<sup>1</sup>, D. D. Ivanova<sup>2</sup>  
<sup>1</sup>*Oil and Gas Research Institute of RAS (OGRI RAS), Moscow, Russia*  
<sup>2</sup>*D. Mendeleev University of Chemical Technology of Russia, Moscow, Russia*
- P-26 BOND ENERGY IN NANOSTRUCTURED WATER  
S. A. Volchek, V. A. Petrovich, S. V. Granko, V. Yu. Serenkov, V. A. Yakovtseva  
*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
- P-27 TRIBOLOGICAL PROPERTIES OF COMPOSITE LANGMUIR-BLODGETT COATINGS OF OLEIC ACID WITH MOLYBDENUM DISULFIDE NANOPARTICLES  
A. E. Salamianski, V. E. Agabekov  
*Institute of Chemistry of New Materials NASB, Minsk, Belarus*
- P-28 GOLD NANOPARTICLES FOR SURFACE-ENHANCED RAMAN SPECTROSCOPY  
A. S. Matsukovich<sup>1</sup>, E. V. Shabunya-Klyachkovskaya<sup>1</sup>, M. Sawczak<sup>2</sup>, K. Grochowska<sup>2</sup>, D. Maskowicz<sup>2</sup>, G. Śliwiński<sup>2</sup>  
<sup>1</sup>*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*  
<sup>2</sup>*The Szwalski Institute IMP PAN, Gdańsk, Poland*

- P-29 CHARACTERIZATION OF MESOPOROUS SILICON USING DSC THERMOPOROMETRY  
Y. Shilyaeva, O. Volovlikova, K. Poyarkov, S. Yuditskaya, S. Gavrilov  
*Institute of Advanced Materials and Technologies  
National Research University of Electronic Technology, Zelenograd, Moscow, Russia*
- P-30 OPTICAL TRANSMISSION AND REFLECTION OF NANOSTRUCTURED Cu(In,Ga)Se<sub>2</sub> THIN FILMS IRRADIATED WITH HYDROGEN IONS  
A. Mudryi<sup>1</sup>, O. Borodavchenko<sup>1</sup>, V. Zhivulko<sup>1</sup>, M. Yakushev<sup>2</sup>, M. Sulimov<sup>2</sup>  
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<sup>2</sup>*M. N. Miheev Institute of Metal Physics of the Ural Branch RAS, Ekaterinburg, Russia*
- P-31 RADIATIVE RECOMBINATION IN THE Cu(In,Ga)Se<sub>2</sub> THIN FILMS IRRADIATED WITH HYDROGEN IONS  
O. Borodavchenko<sup>1</sup>, V. Zhivulko<sup>1</sup>, M. Yakushev<sup>2</sup>, M. Sulimov<sup>2</sup>  
<sup>1</sup>*Scientific-Practical Material Research Centre NASB, Minsk, Belarus*  
<sup>2</sup>*M. N. Miheev Institute of Metal Physics of the Ural Branch RAS, Ekaterinburg, Russia*
- P-32 A MODEL OF ELECTRON TUNNELING TO THE SURFACE STATES IN TiO<sub>2</sub> WITH APPLICATION TO PHOTOCATALYSIS  
T. Sidorova  
*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
- P-33 SYNTHESIS AND PROPERTIES OF RGO-Fe<sub>3</sub>O<sub>4</sub> HYBRID NANOMATERIAL AND ITS POLYMER COMPOSITE  
A. Kukhta<sup>1</sup>, N. Jalagonia<sup>2</sup>, T. Kuchukhidze<sup>2</sup>, T. Archuadze<sup>2</sup>, E. Sanaia<sup>2</sup>, G. Bokuchava<sup>2</sup>, V. Mikelashvili<sup>3</sup>  
<sup>1</sup>*Institute for Nuclear Problems of Belarusian State University, Minsk, Belarus*  
<sup>2</sup>*Ilia Vekua Sukhumi Institute of Physics and Technology, Tbilisi, Georgia*  
<sup>3</sup>*Vladimir Chavchanidze Institute of Cybernetics, Georgian Technical University, Tbilisi, Georgia*
- P-34 PHOTOPHYSICAL PROPERTIES OF THE POLY-N-EPOXYPROPYLCARBAZOLE NANOCOMPOSITE WITH A Ni COMPLEX  
A. Kukhta<sup>1</sup>, N. Davidenko<sup>2</sup>, I. Davidenko<sup>2</sup>, E. Mokrinskaya<sup>2</sup>, N. Chuprin<sup>2</sup>, L. Tonkopieva<sup>2</sup>  
<sup>1</sup>*Institute for Nuclear Problems, Belarusian State University, Minsk, Belarus*  
<sup>2</sup>*Kiev Taras Shevchenko National University, Kiev, Ukraine*
- P-35 INFLUENCE OF CHITOSAN/DEXTRAN SULFATE LAYER-BY-LAYER SHELL ON COLLOIDAL PROPERTIES OF SILVER NANOPARTICLES  
K. Livanovich, T. Shutava  
*Institute of Chemistry of New Materials, NASB, Minsk, Belarus*
- P-36 FIRST-PRINCIPLES STUDY OF STRUCTURAL AND ELECTRONIC PROPERTIES OF MoS<sub>1.5</sub>Se<sub>0.5</sub> ALLOY  
J. Gusakova<sup>1</sup>, B. K. Tay<sup>2</sup>, V. Gusakov<sup>3</sup>  
<sup>1</sup>*Novitas Center, Nanyang Technological University, Singapore, Singapore*  
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<sup>3</sup>*Scientific-Practical Materials Research Center of NASB, Minsk, Belarus*
- P-37 STUDY OF SAFETY OF SiO<sub>2</sub>(Ag)/Si SYSTEM BY CYTOFLUOROMETRIC METHOD OF ANALYSIS OF REACTIVE OXYGEN SPECIES AND CELL DEATH IN CULTURE  
M. V. Anisovich<sup>1</sup>, A. E. Shumskaya<sup>2</sup>, V. D. Bundyukova<sup>2</sup>, D. V. Yakimchuk<sup>2</sup>, E. Yu. Kaniukov<sup>2</sup>  
<sup>1</sup>*Republican Unitary Enterprise «Scientific Practical Centre of Hygiene», Minsk, Belarus*  
<sup>2</sup>*Scientific-Practical Materials Research Center of NASB, Minsk, Belarus*



- P-38 NEUTRAL SILICON-VACANCY COLOR CENTER IN DIAMOND: CLUSTER SIMULATION OF SPATIAL AND HYPERFINE CHARACTERISTICS  
A. L. Pushkarchuk<sup>1</sup>, S. A. Kuten<sup>2</sup>, V. A. Pushkarchuk<sup>3</sup>, A. P. Nizovtsev<sup>4</sup>, S. Ya. Kilin<sup>4</sup>  
<sup>1</sup>*Institute of Physical-Organic Chemistry, NASB, Minsk, Belarus*  
<sup>2</sup>*Institute for Nuclear Problems, Belarusian State University, Minsk, Belarus*  
<sup>3</sup>*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*  
<sup>4</sup>*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*
- P-39 THE CHANGES IN PARTICLE DISTRIBUTION OVER THE POLYMER SURFACE UNDER THE DIELECTRIC BARRIER DISCHARGE PLASMA  
V. A. Lapitskaya<sup>1</sup>, T. A. Kuznetsova<sup>1</sup>, G. B. Melnikova<sup>1</sup>, S. A. Chizhik<sup>1</sup>, D. A. Kotov<sup>2</sup>  
<sup>1</sup>*A. V. Luikov Heat and Mass Transfer Institute of NAS Belarus, Minsk, Belarus*  
<sup>2</sup>*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
- P-40 STRUCTURE OF TANTALUM AND TANTALUM OXIDE COATINGS ON STEEL AND GLASS SURFACES  
G. B. Melnikova<sup>1</sup>, A. S. Petrovskaya<sup>1</sup>, T. A. Kuznetsova<sup>1</sup>, S. A. Chizhik<sup>1</sup>, A. Zykova<sup>2,3</sup>, V. Safonov<sup>2,3</sup>, S. Yakovin<sup>3</sup>  
<sup>1</sup>*A. V. Luikov Heat and Mass Transfer Institute NASB, Minsk, Belarus*  
<sup>2</sup>*National Science Centre „Kharkov Institute of Physics and Technology“, Kharkov, Ukraine*  
<sup>3</sup>*Kharkov National University, Kharkov, Ukraine*
- P-41 STRUCTURE AND UP-CONVERSION LUMINESCENCE OF Er<sup>3+</sup>/Yb<sup>3+</sup> CO-DOPED LANTHANUM ZIRCONATE CERAMICS  
E. Trusova<sup>1</sup>, R. Klement<sup>2</sup>, Y. Tratsiak<sup>3</sup>, L. Bača<sup>4</sup>, P. Veteška<sup>4</sup>, M. Janek<sup>4</sup>  
<sup>1</sup>*Belarusian State Technological University, Minsk, Belarus*  
<sup>2</sup>*Alexander Dubček University of Trenčín, Trenčín, Slovakia*  
<sup>3</sup>*Research Institute for Physical Chemical Problems, Belarusian State University, Minsk, Belarus*  
<sup>4</sup>*Slovak University of Technology in Bratislava, Bratislava, Slovakia*
- P-42 PREPARATION OF GERMANIUM-TIN ALLOY NANOPARTICLES BY LASER-ASSISTED TECHNIQUES IN LIQUID  
N. Tarasenko<sup>1</sup>, N. Tarasenko<sup>1</sup>, V. Pankov<sup>2</sup>  
<sup>1</sup>*B. I. Stepanov Institute of Physics NASB, Minsk, Belarus*  
<sup>2</sup>*Belarusian State University, Minsk, Belarus*
- P-43 ZINC OXIDE NANOSTRUCTURES DOPED WITH TRANSITION METALS: FABRICATION AND PROPERTIES  
E. Chubenko<sup>1</sup>, I. Gerasimenko<sup>1</sup>, V. Bondarenko<sup>1</sup>, D. Zhigulin<sup>2</sup>  
<sup>1</sup>*Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*  
<sup>2</sup>*JSC "INTEGRAL", R&D company "Belmicrosystems", Minsk, Belarus*
- P-44 STRUCTURE SIMULATION OF CISPLATIN COMPLEXES WITH SINGLE-WALLED CARBON NANOTUBES AND FULLERENOL  
A. L. Pushkarchuk<sup>1</sup>, T. V. Bezyazychnaya<sup>1</sup>, V. I. Potkin<sup>1</sup>, E. A. Dikusar<sup>1</sup>, A. G. Soldatov<sup>2</sup>, A. A. Khrutchinsky<sup>3</sup>, L. F. Babichev<sup>4</sup>  
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<sup>3</sup>*Institute for Nuclear Problems, BSU, Minsk, Belarus*  
<sup>4</sup>*Joint Institute for Power and Nuclear Research – Sosny NASB, Minsk, Belarus*

- P-45 SPIN PROPERTIES OF GERMANIUM-VACANCY CENTERS IN BULK AND NEAR-SURFACE REGIONS OF DIAMOND  
V. A. Pushkarchuk<sup>1</sup>, S. A. Kuten<sup>2</sup>, A. P. Nizovtsev<sup>3</sup>, S. Ya. Kilin<sup>3</sup>  
<sup>1</sup>Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus  
<sup>2</sup>Institute for Nuclear Problems, Belarusian State University, Minsk, Belarus  
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- P-46 SOL-GEL FABRICATION AND LUMINESCENCE PROPERTIES OF MULTILAYER Eu-DOPED BaTiO<sub>3</sub>/SiO<sub>2</sub> XEROGEL NANOSTRUCTURES  
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- P-47 THE CHANGES OF SURFACE POTENTIAL AND BUILT-IN CHARGE IN ALUMINA FILMS AFTER THE ANODIZATION PROCESS  
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- P-48 LUMINESCENCE OF POROUS NANOSTRUCTURED STRONTIUM TITANATE FILMS DOPED WITH Eu<sup>3+</sup> IONS  
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- P-49 NANOCRYSTALLINE FEATURES OF STRUCTURE AND LUMINESCENT PROPERTIES OF (Y<sub>1-x</sub>La<sub>x</sub>)<sub>3</sub>(Al<sub>1-y</sub>Ga<sub>y</sub>)<sub>5</sub>O<sub>12</sub>:Ce<sup>3+</sup> GARNETS  
Yu. V. Bokshits<sup>1</sup>, G. P. Shevchenko<sup>1</sup>, E. V. Tratsiak<sup>1</sup>, S. E. Kichanov<sup>2</sup>  
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- P-50 EXTREME HEATING OF ALUMINA BARRIER LAYER DURING HIGH ELECTRIC FIELD ANODIZATION OF ALUMINUM  
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- P-51 PHOTOCURRENT HYSTERESIS OF SOL-GEL DERIVED STRONTIUM TITANATE FILMS ON SILICON  
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- P-52 EVOLUTION OF CAVITATION ACTIVITY DURING ULTRASONIC NANOSTRUCTURING OF MAGNESIUM  
N. Brezhneva<sup>1,2</sup>, N. V. Dezhkunov<sup>3</sup>, S. O. Mazheika<sup>1</sup>, A. Nenashkina<sup>2</sup>, E. V. Skorob<sup>2</sup>  
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- P-54 POROUS SILICON FOR ACCUMULATION AND GENERATION OF HYDROGEN  
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A. Yu. Alekseev<sup>1</sup>, A. G. Chernykh<sup>1</sup>, A. B. Filonov<sup>1</sup>, D. B. Migas<sup>1,2</sup>, N. V. Skorodumova<sup>3,4</sup>  
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- P-57 ELECTRONIC PROPERTIES OF WS<sub>2</sub>/WSe<sub>2</sub> HETEROSTRUCTURE CONTAINING Te IMPURITY: THE ROLE OF SUBSTITUTING POSITION  
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- P-60 FABRICATION OF IRON NANOTUBES IN THE PORES OF ION-TRACK MATRICES  
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