

**P.G. Demidov Yaroslavl State University  
Russian Academy of Sciences  
Valiev Institute of Physics and Technology, Yaroslavl Branch  
Center for Collective Use “Diagnostics of Micro- and Nanostructures”**

**IV INTERNATIONAL CONFERENCE  
on  
*MODERN PROBLEMS IN PHYSICS OF SURFACES  
AND NANOSTRUCTURES*  
(ICMPSN-2019)**

**SCIENTIFIC PROGRAM**

**Sunday, August 25<sup>th</sup>, 2019**

**Arrival of the participants. Hotel accommodation**

**Monday, August 26<sup>th</sup>, 2019**

***Conference Hall in main building of  
P.G. Demidov Yaroslavl State University***

**8.00-10.00 Registration of participants**

**10.00-10.05 Opening the conference. Welcome word of the Head of  
Organizing Committee**

**Session 1. Physics of magnetic nanostructures. Spintronics.**

Session Chairman: O.S. Trushin

- |                    |                           |  |
|--------------------|---------------------------|--|
| <b>10.05-10.35</b> | <b>I1-1<br/>(invited)</b> | <b>Spin-based Electronics: Recent Developments and Trends</b><br><u>V. Sverdlov</u><br><i>Christian Doppler Laboratory for Nonvolatile Magnetoresistive Memory and Logic, Institute for Microelectronics, TU Wien, Vienna, Austria</i> |
| <b>10.40-11.10</b> | <b>I1-2<br/>(invited)</b> | <b>Functional GMR multilayers</b><br><u>M. Milyaev</u><br><i>M.N. Miheev Institute of Metal Physics of the Ural Branch of RAS, Ekaterinburg, Russia</i>  |

- 11.15-11.30      O1-1      **Modification of PLD-grown GaAs:Mn layers by pulse excimer laser annealing**  
Yu, Danilov  
*N.I. Lobachevsky State University, N. Novgorod, Russia*
- 11.35-11.50      O1-2      **Problems of quality control at different stages of MTJ fabrication**  
O.S. Trushin  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- 11.55-12.10      O1-3      **Magneto-optical properties of structured surfaces**  
A.V. Prokashnikov  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*

**12.15-14.00 Lunch**

**Session 2. Modeling of thin films and nanostructures**

Session Chairman: A.V. Prokashnikov

- 14.00-14.30      I1-3      **Multiscale Modeling of 2D materials with the Phase Field Crystal Method**  
(invited)      T. Ala-Nissila  
*Quantum Technology Finland Center of Excellence and Department of Applied Physics, Aalto University, Espoo, Finland*
- 14.35-15.05      I1-4      **Bragg-Laue diffraction excitation of a waveguide mode inside a plane periodic array of magnetic microelements**  
(invited)      M.Yu. Barabanenkov  
*Micron, Zelenograd, Russia*
- 15.10-15.25      O1-4      **A Monte-Carlo modeling of surface structure of epitaxial Si layers grown using MBE**  
L.V. Arapkina  
*Prokhorov General Physics Institute of RAS, Moscow, Russia*
- 15.30-15.45      O1-5      **Energetics of domain wall in magnetic nanowire**  
O.S. Trushin  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*

**15.50-16.05 O1-6 Surface halogenation of Si crystallites as an efficient means of slowing down internal Auger and radiative processes**  
V.A. Burdov  
*Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia*

**16.10 – 16.30 Coffee break**

**Session 3. Nanocomposites and other perspective materials for microelectronics and photonics**

Session Chairman: A.A. Popov

**16.30-17.00 I1-5 Memristor and opto-memristor effects in films of non-stoichiometric germanosilicate glasses with nanocrystals and amorphous Ge and GeSi clusters**  
(invited)  
V.A. Volodin  
*Rzhanov Institute of Semiconductor Physics, Russian Academy of Sciences, Novosibirsk, Russia*

**17.05-17.35 I1-6 Perspective directions of non-volatile memory FeRAM and ReRAM based on thin HfO<sub>x</sub> layers and their features**  
(invited)  
O. Orlov  
*SC "Research Institute of Molecular Electronics", Moscow, Zelenograd, , Russia*

**17.40-18.10 I1-7 Deep Silicon Plasma Etching: from Bosch process to Polymer-free Approaches for Different Applications**  
(invited)  
K. Rudenko  
*Valiev Institute of Physics and Technology of RAS, Moscow, Russia*

**18.15-18.30 O1-7 Layer metal nanowires: synthesis, investigation and possible applications**  
D. Zagorskiy  
*Center of Crystallography and Photonics of RAS, Moscow, Russia,*

**18.35-18.50 O1-8 In-void segregated Ag - SnO<sub>2</sub> nano-composite for plasmonic gas sensor**  
P.I. Gaiduk  
*Department of Physical Electronics and Nanotechnology, Belarusian State University, Minsk, Belarus*

**19.00 –19.30 Welcome party**

**Tuesday, August 27<sup>th</sup>, 2019**

***Conference Hall in main building of  
P.G. Demidov Yaroslavl State University***

**Session 4. Graphene and carbon nanostructures**

Session Chairman: N.G. Savinsky

- 9.00-9.15 O2-1 Unsaturated positive magnetoresistance in twisted multilayer graphene**  
O.V. Kononenko  
*Institute of Microelectronics Technology and High Purity Materials of RA S, Chernogolovka, Russia*
- 9.20-9.35 O2-2 Experimental observation of the intermediate phases of the graphite-diamond transition**  
A.S. Rudy  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- 9.40-9.55 O2-3 Unusual properties of polytetrafluoroethylene films filled with graphite nanoplatelets**  
Y.M. Shulga  
*Institute of Problems of Chemical Physics RAS Chernogolovka, Russia*
- 10.00-10.15 O2-4 Composition materials on the base of nano- and microcarbon materials and biocompatible calcium phosphates**  
N. Zakharov  
*Kurnakov Institute of General and Inorganic Chemistry of RAS, Moscow, Russia*
- 10.20-10.35 O2-5 Techniques of syntethesis of reduced graphene oxide -LiNi<sub>0,33</sub>Mn<sub>0,33</sub>Co<sub>0,33</sub>O<sub>2</sub> composites as cathode materials for lithium-ion rechargeable battery**  
D. Kornilov  
*Limited Liability Company «AkKo Lab», Moscow, Russia*
- 10.40-10.55 O2-6 Heat transfer enhancement by graphene nanofluids**  
N. Savinski  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*

**11.00-11.20 Coffee break**

## **Session 5. Liquid crystals and wetting phenomena**

Session Chairman: I.I. Amirov

- 11.20-11.35**    **O2-7**    **Influence of surface ordering of smectic films on their stability and layer-by-layer phase transitions**  
P.V. Dolganov  
*Institute of Solid State Physics, RAS,  
Chernogolovka, , Russia*
- 11.40-11.55**    **O2-8**    **Point topological defects in two-dimensional smectic nanofilms**  
P.V. Dolganov  
*Institute of Solid State Physics, RAS,  
Chernogolovka, , Russia*
- 12.00-12.15**    **O2-9**    **Studies on the formation conditions of surface gaseous nano- and microstructures and their effect on the wetting properties of the surface**  
A. Karacharov  
*Institute of Chemistry and Chemical Technology of the Siberian Branch of the RAS, Krasnoyarsk, Russia*
- 12.20-12.35**    **O2-10**    **Formation onto the track-etched membrane surface of a polymer double-layer coating with superhydrophobic properties**  
L.I. Kravets  
*Joint Institute for Nuclear Research, Flerov Laboratory of Nuclear Reactions, Dubna, Russia*
- 12.40-12.55**    **O2-11**    **On the effect of gas nanostructures and surface topography on the wettability of materials**  
M. Likhatski  
*Institute of Chemistry and Chemical Technology of the Siberian Branch of RAS, Krasnoyarsk, Russia*

**13.00-14.30 Lunch**

## **Session 6. Optical and electrical properties of thin films and nanostructures**

Session Chairman: A.B. Churilov

- 14.30-14.45 O2-12 Application of spectroscopic ellipsometry to study the initial stages of ALD**  
A. Miakonkikh  
*Valiev Institute of Physics and Technology of RAS, Moscow, Russia*
- 14.50-15.05 O2-13 Measurement of optical coefficients of ultrathin copper films in the microwave range**  
V. Andreev  
*M.V. Lomonosov Moscow State University, Moscow, Russia*
- 15.10-15.25 O2-14 Conductivity of ultrathin silver films**  
K. Tsysar  
*M.V. Lomonosov Moscow State University, Moscow, Russia*
- 15.30-15.45 O2-15 Investigation of the quiresonance effect in the amorphous silicon nanowire polarizer**  
I.M. Akhmedzhanov  
*Prokhorov General Physics Institute of the Russian Academy of Sciences, Moscow, Russia*
- 15.50-16.05 O2-16 Оптические свойства тонких пленок сплавов кремния**  
Б.А. Наджафов  
*Институт Радиационных Проблем НАН Азербайджана, Баку, Азербайджан*

**16.00 18.00 POSTER SESSION I**

**18.00-20.00 Yaroslavl downtown sightseeing tour**

**Wednesday, August 28<sup>th</sup>, 2019**

*Conference Hall in main building of  
P.G. Demidov Yaroslavl State University*

**Session 7. Perspective technological processes in micro and  
nanoelectronics**

Session Chairman: O.S. Trushin

- 9.00-9.30**      **I3-1**      **Ion beam lithography: from “forgotten”  
(invited) technology to sub-10nm stereolithography**  
S.I. Zaitsev  
*Institute of Problems of Microelectronics  
Technology and High-Purity Materials RAS,  
Chernogolovka, Russia*
- 9.35-9.50**      **O3-1**      **X-ray topographic and diffraction studies of Al  
and Ga termomigrated Si layers**  
A. Lomov  
*Valiev Institute of Physics and Technology of RAS,  
Moscow, Russia*
- 9.55-10.10**      **O3-2**      **Processes of the platinum silicides formation at  
low-temperature annealing on the surface of  
poly-Si**  
K. V. Chizh  
*A.M. Prokhorov General Physics Institute of RAS,  
Moscow, Russia*
- 10.15-10.30**      **O3-3**      **Influence of deposition time on the synthesis of  
indium catalyzed silicon oxide nanowires**  
A. Zamchiy  
*Kutateladze Institute of Thermophysics SB RAS,  
Novosibirsk, Russia*
- 10.35-10.50**      **O3-4**      **Electrical characterization of Si thin films near  
heterointerfaces**  
E. Zaytseva  
*Rzhanov Institute of Semiconductor Physics,  
Siberian Branch of Russian Academy of Sciences,  
Novosibirsk, Russia*
- 10.55-11.10**      **O3-5**      **Diffusion of hydrogen atoms in Si films grown by  
molecular beam deposition on Si<sub>3</sub>N<sub>4</sub> and SiO<sub>2</sub>  
substrates**  
K. V. Chizh  
*Prokhorov General Physics Institute of the Russian  
Academy of Sciences, Moscow, Russia*

**11.15-11.30 O3-6 Nanoscale patterning Si, SiO<sub>2</sub> surface using edge lithography method**  
I.I. Amirov  
*Valiev Institute of Physics and Technology of RAS,  
Yaroslavl Branch, Yaroslavl, Russia*

**11.30-11.40 Coffee break**

### **Session 8 Ion to surface interactions**

Session Chairman: V.I. Bachurin

**11.40-12.10 I3-2 Principle opportunity of the waveguide-resonance phenomenon assistance to cold nuclear fusion process**  
(invited)

V. Egorov

*Institute of Microelectronics Technology, Russian Academy of Sciences, Chernogolovka, Russia*

**12.15-12.30 O3-7 Features of low-energy high dose ion implantation of semiconductors**

Yu. Kudriavtsev

*Departamento Ingenieria Electrica – SEES, Cinvestav-IPN, Mexico DF, Mexico*

**12.35 -12.50 O3-8 Low-temperature plasma modification of polymers: surface charging, changing of wettability and nanostructuring**

M. Yablokov

*Enikolopov Institute of Synthetic Polymer Materials, Russian Academy of Sciences, Moscow, Russia*

**12.55-13.10 O3-9 Ion-plasma treatment of textured Pt films**

R.V. Selyukov

*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*

**13-15-13.30 O3-10 Evolution of profile silicon nanostructures during sputtering in argon plasma**

A. Shumilov

*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*

**13.30-14.30 Lunch**

## **Session 9 MEMS**

Session Chairman: I.V. Uvarov

- 14.30-15.00**    **I3-3**    **Influence of the dispersion forces on elements of MEMS**  
V.B. Svetovoy  
*University of Groningen, Groningen, The Netherlands*
- 15.25-15.40**    **O3-11**    **Design of a MEMS switch for improved lifetime and contact resistance**  
N.V. Marukhin  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- 15.45-16.00**    **O3-12**    **Choosing an optimal electrode shape for the fast electrochemical actuator**  
P.S. Shlepakov  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- 16.05-16.20**    **O3-13**    **Mechanism of influence of ion bombardment in Ar plasma on residual stress in thin Cr films**  
A. Babushkin  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*

### **16.00-17.30 POSTER SESSION II**

**17.30-19.00**

*River cruise on Volga*

**19.30 22.00 Conference dinner**

**Thursday, August 29<sup>th</sup>, 2019**

**Departure of participants**

## **POSTER SESSIONS**

**Tuesday, August 27<sup>th</sup>, 2019**

*Corridor of the 3d floor in main building of  
P.G. Demidov Yaroslavl State University*

### **16.00-18.00 POSTER SESSION I**

- P2-1 Study of memristor effect in nanocrystalline hafnium oxide thin films for neuromorphic systems application**  
V. Smirnov  
*Southern federal university, Institute of Nanotechnologies, Electronics and Equipment Engineering, Taganrog, Russia*
- P2-2 Influence of electrodes material on electroforming and functioning of the open metal-SiO<sub>2</sub>-metal sandwich structure**  
S. E. Kudryavtsev  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P2-3 Schottky diode effect in MDP memristors in the conducting state**  
Popov A.A  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P2-4 Effect of ion implantation and annealing on characteristics of memristive structures based on silicon dioxide**  
Shuyski R.A  
*Lobachevsky State University, Nizhniy Novgorod, Russia*
- P2-5 Effect of ion irradiation and annealing on quantitative composition of SiO<sub>2</sub>-based memristive structures**  
Okulich E.V  
*Lobachevsky State University, Nizhniy Novgorod, Russia*
- P2-6 Computer simulation of structural rearrangement of amorphous silicon dioxide under strong supersaturation with oxygen vacancies**  
Okulich V.I.  
*Nizhniy Novgorod branch of the Russian Presidential Academy of National Economy and Public Administration, Nizhniy Novgorod, Russia*

- P2-7 The change of the forming voltage of Al<sub>2</sub>O<sub>3</sub>/HfO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> memristor structure after implantation and annealing**  
O. Permyakova  
*Valiev Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*
- P2-8 Application of laser reflectometry for study of adsorption of gases on porous low-k dielectrics during cryo etching**  
A. Miakonkikh  
*Valiev Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*
- P2-9 Approaches to atomic layer etching of dielectrics in conventional plasma etching tool**  
V. Kuzmenko  
*Valiev Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*
- P2-10 GeSn/Ge/Si(100) heterostructures grown by hot wire CVD**  
S. Denisov  
*Lobachevskii State University of Nizhnii Novgorod, Nizhnii Novgorod, Russia*
- P2-11 Surface mobility of electrons near SiO<sub>2</sub> – Si interfaces of electrons SOI double gates MOS transistors with weakly doped built – in channel**  
A. Leonov  
*Institute of Microelectronics Technology and High Purity Materials, RA S, Chernogolovka, Russia*
- P2-12 Modeling of plasmonic interaction in periodic silicon-based multilayer structures**  
A. Mukhammad  
*Belarusian State University, Minsk, Belarus*
- P2-13 Effect of laser annealing on diode heterostructures with a ferromagnetic GaMnAs layer**  
O. Vikhrova  
*N.I. Lobachevsky State University, Nizhny Novgorod, Russia*
- P2-14 Micromagnetic and magneto-optical properties of CoPt (CoPd) films grown by electron-beam evaporation**  
A. Zdoroveishchev  
*Physico-Technical Research Institute, N.I. Lobachevsky State University, Nizhny Novgorod, Russia*

- P2-15 Photoluminescence in IR-range from silicon irradiated with swift heavy ions**  
Volodin V.A  
*A.V. Rzhanov Institute of Semiconductor Physics, RAS, Novosibirsk, Russia,*
- P2-16 Nucleation and growth of the nanocrystals of Si and solid solution SiGe on dielectric substrates**  
G. Kamaev  
*A.V. Rzhanov Institute of Semiconductor Physics, RAS, Novosibirsk, Russia,*
- P2-17 Strain relaxation and intermixing in Ge/Si heterostructures with arrays of low-temperature quantum dot**  
M. S. Storozhevykh  
*Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russia*
- P2-18 Crystallization of Si layer and Ge/Si multi-nanolayers using femtosecond infrared laser annealing**  
G.K. Krivyakin  
*A.V. Rzhanov Institute of Semiconductor Physics, RAS, Novosibirsk, Russia*
- P2-19 Effect of stoichiometric coefficient on solid-phase crystallization of silicon suboxide thin films**  
A. Zamchiy  
*Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia*
- P2-20 Determination of oxygen concentration in amorphous silicon suboxide thin films by FTIR, RBS, and WDS methods**  
I. Merkulova  
*Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia*
- P2-21 On the relation of cross-hatch pattern surface morphology and extended defects in buffer layers of (Ga,Mn)As/(In,Ga)As/GaAs ferromagnetic structures**  
O.A. Soltanovich  
*Institute of Microelectronics Technology Russian Academy of Sciences, Chernogolovka, Russia*
- P2-22 Monte Carlo simulation of electron transport in MOSFETs flash memory cells**  
O. Zhevnyak  
*Belarussian State University, Minsk, Belarus*

- P2-23 Features of the effect of the substrate morphology on the nucleation processes of In/GaAs nanostructures during droplet epitaxy**  
N. Chernenko  
*Research and Education Center “Nanotechnologies”, Southern Federal University, Taganrog, Russia*
- P2-24 DC-and AC-hopping conductivity in layered gallium monosulfide**  
S. Mustafaeva  
*Institute of Physics, National Academy of Sciences, Baku, Azerbaijan*
- P2-25 Low energy ion-plasma sputtering of cobalt and silicon. Experiment and modeling**  
M. Izyumov  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P2-26 Fabrication of silicon structures for 3D All-Solid-State Lithium-Ion batteries using plasma etching**  
S. Kurbatov  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P2-27 Dynamics of magnetization switching of spin-valve structure**  
O.S. Trushin  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P2-28 Long-term stability of amorphous Gd-Co films with perpendicular magnetic anisotropy**  
V.F. Bochkarev  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P2-29 Obtaining and applications of homogeneous magnetic nanowires**  
D. Zagorskiy  
*Center of Crystallography and Photonics of RAS, Moscow, Russia*

**Wednesday, August 28<sup>th</sup>, 2019**

***Corridor of the 3d floor in main building of  
P.G. Demidov Yaroslavl State University***

**16.00-17.30 POSTER SESSION II**

- P3-1 The nano - structured granular composites as an electromagnetic wave absorber to protect microelectronics devices**  
N. Savinski  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P3-2 Highly ordered porous alumina membranes for ferromagnetic nanowires fabrication**  
N. Savinski  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P3-3 Optical properties and conductivity of carbon nanotube networks obtained by deposition on a substrate in the presence of solvent vapor**  
V. M. Efimov  
*Institute of Semiconductor Physics, Russian Academy of Sciences, Novosibirsk, Russia*
- P3-4 Morphology of the polytetrafluoroethylene-like coatings deposited onto the track-etched membrane surface in vacuum**  
L.I. Kravets.  
*Joint Institute for Nuclear Research, Flerov Laboratory of Nuclear Reactions, Dubna, Russia*
- P3-5 Estimation of the share of metal nanotube short-circuits in the sensor structures**  
V. M. Efimov  
*Institute of Semiconductor Physics, Russian Academy of Sciences, Novosibirsk, Russia*
- P3-6 Gradient structure of polypropylene composites filled with carbon black**  
Yablokov M.Yu  
*Enikolopov Institute of Synthetic Polymer Materials, Russian Academy of Sciences, Moscow, Russia*

- P3-7 Features of electrophoretic deposition of Al-CuO and Al-Ni-CuO nanosized thermite materials**  
L. Sorokina  
*National Research University of Electronic Technology, Moscow, Russia*
- P3-8 Investigation of the influence of focused ion beam milling parameters on the formation of micro and nanostructure profiles**  
A. Kotosonova  
*Southern Federal University, Institute of Nanotechnologies, Electronics and Equipment Engineering, Taganrog, Russia*
- P3-9 Development of thermal sensors by implantation ions P<sup>+</sup> and B<sup>+</sup> in different sides of Si(111)**  
A. Rysbaev  
*Tashkent State Technical University, Tashkent, Uzbekistan*
- P3-10 Optical properties of indium sulphide films after argon plasma treatment**  
V.F. Gremenok  
*Scientific-Practical Materials Research Center of the National Academy of Sciences of Belarus, Minsk, Belarus*
- P3-11 Modeling of wavelet transformation algorithms with application to the processing of experimental data**  
S. Moscovskiy  
*P.G. Demidov Yaroslavl State University, Yaroslavl, Russia*
- P3-12 Effect of longitudinal bistability on transfer characteristic of a silicon wafer heated in a lamp-based reactor**  
Ovcharov V.V.,  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P3-13 Synergistic aspects of the thermal evolution of Si(001)/P<sup>+</sup>/O<sub>2</sub><sup>+</sup> defect subsystem induced by preliminary non-isothermal annealing**  
Yu. Denisenko  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P3-14 Nanoscale formation of hydrated portland cement structure**  
A. Guryanov  
*Samara State Technical University, Samara, Russia*

- P3-15 Investigation of wetting layer in In/GaAs system by X-ray photoelectron spectroscopy**  
M.M. Eremenko  
*Research and Education Center “Nanotechnologies”,  
 Southern Federal University, Taganrog, Russia*
- P3-16 Silicene sensitivity to topological defects**  
N.N. Konobeeva  
*Volgograd State University, Volgograd, Russia*
- P3-17 The Study of the Evolution of Radiation Defect Profiles during Thermal Annealing by the Rutherford Backscattering Spectroscopy**  
E. Parshin  
*Valiev Institute of Physics and Technology of RAS,  
 Yaroslavl Branch, Yaroslavl, Russia*
- P3-18 Application of Mössbauer spectroscopy to study the dynamic, structural and mechanical properties of nanofilms of frozen water on the clay surface**  
A. A. Zalutskii  
*Yaroslavl Technical State University, Yaroslavl, Russia*
- P3-19 Interaction of Electromagnetic  $H$ -waves with the thin Metal Film in the case of an Anisotropic Fermi Surface, Located on a Dielectric Substrate**  
D. N. Romanov  
*P. G. Demidov Yaroslavl State University, Yaroslavl,  
 Russia*
- P3-20 Phase transitions on the internal interfaces**  
V. Sursaeva  
*Institute of Solid State Physics, Russian Academy of  
 Sciences, Chernogolovka, Russia*
- P3-21 Phase transitions at grain boundaries as a cause of temperature hysteresis of grain boundary mobility and shape**  
V. Sursaeva  
*Institute of Solid State Physics, Russian Academy of  
 Sciences, Chernogolovka, Russia*
- P3-22 Sensitivity of the micromachined ring resonator to the point mass perturbation: experimental estimation**  
O.V. Morozov  
*Valiev Institute of Physics and Technology of RAS,  
 Yaroslavl Branch, Yaroslavl, Russia*

- P3-23 Laser interference reflectometry as a method for monitoring DRIE of silicon: useful features of the measurement signal**  
O.V. Morozov  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P3-24 Разложения воды на поверхности нано-Al<sub>2</sub>O<sub>3</sub> под действием  $\gamma$ -излучения**  
Т.Н.Агаев  
*Институт Радиационных Проблем НАН Азербайджана, Баку, Азербайджан*
- P3-25 Получение тонких пленок сплавов кремния**  
Б.А. Наджафов  
*Институт Радиационных Проблем НАН Азербайджана, Баку, Азербайджан*
- P3-26 SIMS investigations of fundamental properties of clusters**  
S.E.Maksimov  
*Arifov Institute of ion-plasma and laser technologies, Academy of Sciences of the Republic of Uzbekistan, Tashkent, Uzbekistan*
- P3-27 Template synthesis of the SERS-active substrates**  
E. Kozhina  
*Moscow state pedagogical university, Moscow, Russia*
- P3-28 Quartz glass simulation in a lamp-based chamber under a semiconductor heat treatment process**  
V.P. Prigara  
*Valiev Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia*
- P3-29 Rapid thermal annealing of DLC films on diamond**  
A. Okhapkin  
*Institute for Physics of Microstructures, Russian Academy of Sciences, Nizhny Novgorod, Russia*
- P3-30 SIMS study of the surface layer of silicon, irradiated by gallium ion beam**  
E. Kozlov  
*P.G. Demidov Yaroslavl State University, Yaroslavl, Russia*