Conference Chair: Yu. Gulyaev, Russian Academy of Sciences (RAS), Moscow, Russia  
Conference Co-chair: V. Lukichev, Russian Academy of Sciences, Moscow, Russia  
Conference Co-chair: G. Krasnikov, Russian Academy of Sciences, Moscow, Russia

COMMITTEES

International Advisory Committee

A. Aseev, Rzhanov Institute of Semiconductor Physics of Siberian Branch of RAS, Novosibirsk, Russia
D. Averin, Stony Brook University, New York, USA
M. Baklanov, International Microelectronic Center (IMEC), Leuven, Belgium
F. Balestra, Grenoble Institute of Technology, Grenoble, France
V. Labunov, Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
K. Novoselov, University of Manchester, Manchester, UK
T. Otsuji, Tohoku University, Sendai, Japan
I. Rangelow, University of Ilmenau, Ilmenau, Germany
S. Schulz, Fraunhofer Institute for Electronic Nanosystems, Chemnitz, Germany
R. Suris, Ioffe Institute of RAS, St. Petersburg, Russia
A. Toriumi, University of Tokyo, Tokyo, Japan

Program Committee

Chair: Yu. Gulyaev, Russian Academy of Sciences, Moscow, Russia  
Co-chair: I. Neizvestnyi, Russian Academy of Sciences (Siberian Branch), Novosibirsk, Russia  
Co-chair: V. Lukichev, Russian Academy of Sciences, Moscow, Russia

Members:
Yu. Bogdanov, Institute of Physics and Technology of RAS, Moscow, Russia
Yu. Chaplygin, National Research University of Electronic Technology - MIET, Zelenograd, Russia
M. Chuev, Institute of Physics and Technology of RAS, Moscow, Russia
L. Fedichkin, Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia
F. Komarov, Belarusian State University, Minsk, Belarus
V. Kudrya, Institute of Physics and Technology of RAS, Moscow, Russia
P. Maltsev, V.G. Mokerov UHF Semiconductor Microelectronics Institute of RAS, Moscow, Russia
V. Panchenko, Institute on Laser and Informatics Technologies Problems of RAS, Shatura, Russia
D. Roshchupkin, Institute of Microelectronics Technology and High Purity Materials of RAS, Chernogolovka, Russia
K. Rudenko, Institute of Physics and Technology of RAS, Moscow, Russia
A. Rudy, P.G. Demidov Yaroslavl State University, Yaroslavl, Russia
V. Ryzhii, Tohoku University, Sendai, Japan
N. Salaschenko, Institute for Physics of Microstructures of RAS, Nizhny Novgorod, Russia
A. Sigov, Russian Technological University - MIREA, Moscow, Russia
V. Vyurkov, Institute of Physics and Technology of RAS, Moscow, Russia
Organizing Committee

Chair: V. Lukichev, Russian Academy of Sciences, Moscow, Russia
Co-chair: K. Rudenko, Russian Academy of Sciences, Moscow, Russia

Members:
I. Abramov, Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
I. Amirov, Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia
Yu. Bogdanov, Institute of Physics and Technology of RAS, Moscow, Russia
A. Buharaev, Kazan E.K. Zavoisky Physical-Technical Institute, Kazan, Russia
M. Chuev, Institute of Physics and Technology of RAS, Moscow, Russia
A. Gorbazevitch, P.N. Lebedev Physical Institute of RAS, Moscow, Russia
Eu. Gornev, Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia; АО НИИМЭ, Moscow, Russia
M. Korolev, National Research University of Electronic Technology - MIET, Zelenograd, Russia
O. Pehelyakov, Rzhanov Institute of Semiconductor Physics of Siberian Branch of RAS, Novosibirsk, Russia
V. Popov, Rzhanov Institute of Semiconductor Physics of Siberian Branch of RAS, Novosibirsk, Russia
V. Rubaev, NIX Company, Moscow, Russia

Local Organizing Committee

Vladimir Lukichev – Chair of the Local Organizing Committee
Konstantin Rudenko - Co-chair of the Local Organizing Committee
Yuri Bogdanov - Chair of the Extended Session "Quantum Informatics"
Vladimir Vyurkov – Moderator of the Russia-Japan round table, contacts to the invited speakers
Vladimir Kudrya - Scientific Secretary
Sergey Skalkin – Financial Director
Vladimir Yudenkov - Administrator
Alexey Dianov - PR support

Andrey Chernyavskiy - WEB design
Andrey Miakonkikh – Abstracts publication
Alexander Rogozhin – Technical support
Igor Semenikhin - Visa support
Lidiya Besschastnova - Registration and accommodation
Irina Lukianova - Registration and accommodation
Inna Nikitushkina - Conference fee manager
Irina Novojilova - Conference fee manager
### SECTIONS LOCATION

**Monday, October 1, 2018**

<table>
<thead>
<tr>
<th>TIME</th>
<th>CONFERENCE HALL</th>
<th>AUDITORIUM A</th>
<th>AUDITORIUM B</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.00 – 16.20</td>
<td>Hi-Tech Companies Presentations</td>
<td>------------------</td>
<td>------------------</td>
</tr>
</tbody>
</table>

**Tuesday, October 2, 2018**

8.50. **Conference Hall. WELCOME REMARKS**

<table>
<thead>
<tr>
<th>TIME</th>
<th>CONFERENCE HALL</th>
<th>AUDITORIUM A</th>
<th>AUDITORIUM B</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00 – 11.00</td>
<td>Plenary Session I Emerging Devices</td>
<td>------------------</td>
<td>------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.30 – 13.30</td>
<td>Plenary Session II Quantum Informatics I</td>
<td>------------------</td>
<td>------------------</td>
</tr>
</tbody>
</table>

**Wednesday, October 3, 2018**

<table>
<thead>
<tr>
<th>TIME</th>
<th>CONFERENCE HALL</th>
<th>AUDITORIUM A</th>
<th>AUDITORIUM B</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00 – 11.00</td>
<td>Plenary Session III THz Photonics</td>
<td>------------------</td>
<td>------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>HALL</th>
<th>HALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.20 – 18.40</td>
<td>POSTER SESSION I</td>
<td>EXHIBITION</td>
</tr>
</tbody>
</table>
Thursday, October 4, 2018

<table>
<thead>
<tr>
<th>TIME</th>
<th>CONFERENCE HALL</th>
<th>AUDITORIUM A</th>
<th>AUDITORIUM B</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>HALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.00 – 18.20</td>
<td>POSTER SESSION II</td>
</tr>
</tbody>
</table>

18.30. **Conference Hall.** CLOSING CONFERENCE REMARKS
ICMNE-2018 SCIENTIFIC PROGRAM

Oral Sessions

Monday, October 1, 2018

9.00 Registration & Accommodation
13.00-14.00 Lunch

Conference Hall
Special Session. Presentations of Hi-Tech Companies

Session Chairman: Konstantin Rudenko, Institute of Physics and Technology of RAS, Moscow, Russia

15.00 S1-01 Advanced equipment for manufacturing nanostructures, 2D materials, new semiconductor devices, and other applications. A. Krynin. Technoinfo Limited, Moscow, Russia.

15.20 S1-02 To be announced later.

16.20-16.40 Coffee break

18.00 Welcome Party
19.00 Dinner
8.15 Breakfast
Conference Hall

8.50 WELCOME REMARKS

Yu.V. Gulyaev, Program Committee Chair, Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russia.

V.F. Lukichev, Program Committee Co-Chair, Institute of Physics and Technology of RAS, Moscow, Russia.

Plenary Session I. Emerging Devices

Session Chairman: Vladimir Lukichev, Institute of Physics and Technology of RAS, Moscow, Russia

9.00 L1-01 KEYNOTE: Novelty in vacuum nanoelectronics. Yu.V. Gulyaev. Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russia.


10.30 L1-04 INVITED: Ferroelectric properties of SOS and SOI pseudo-MOSFETs with HfO2 interlayers. V.P. Popov1, M.A. Ilnitskii1, V.I. Vdovin1, V.A. Antonov1, A.V. Miakonkikh2, K.V. Rudenko2. 1. Institute of Semiconductor Physics of Siberian Branch of RAS, Novosibirsk, Russia. 2. Institute of Physics and Technology of RAS, Moscow, Russia.

11.00-11.20 Coffee break

Conference Hall

Plenary Session II. Quantum Informatics I

Session Chairman: Andrey Chernyavskiy, Institute of Physics and Technology of RAS, Moscow, Russia.

11.30 qL1-01 INVITED: Quantum Technologies: State of Art and Perspectives. S.P. Kulik1,2. 1. Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russia. 2. Quantum Technologies Centre, M.V. Lomonosov Moscow State University, Moscow, Russia.

12.00 qL1-02 INVITED: Optimizing heralded single-photon sources based on spontaneous four-wave mixing in a system of coupled microresonators. I.N. Chuprina1,2, N.S. Perminov1,3, A.A. Kalachev1,2. 1. Kazan E.K. Zavoisky Physical-Technical Institute, Kazan Scientific Center, Kazan, Russia. 2. Institute of Physics, Kazan Federal University, Kazan, Russia. 3. Kazan Quantum Center, Kazan National Research Technical University, Kazan, Russia.
12.30 qL1-03 INVITED: Decoherence in a one-dimensional system of interacting nuclear spins: experimental and theoretical investigations. G. Bochkin, E. Fel’dman, S. Vasil’ev. Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia.

13.00 qL1-04 INVITED: Three-body Förster resonances in cold Rydberg atoms and their applications in quantum information. D.B. Tretyakov\textsuperscript{1,2}, I.I. Beterov\textsuperscript{1,2}, E.A. Yakshina\textsuperscript{1,2}, V.M. Entin\textsuperscript{1,2}, I.I. Ryabtsev\textsuperscript{1,2}, P. Cheinet\textsuperscript{1}, P. Pillet\textsuperscript{1}. 1. Institute of Semiconductor Physics of Siberian Branch of RAS, Novosibirsk, Russia. 2. Novosibirsk State University, Novosibirsk, Russia. 3. Laboratoire Aime Cotton, CNRS, Univ. Paris-Sud, ENS Paris-Saclay, Orsay, France.

13.30-14.30 Lunch

Conference Hall

Session 1. 2D Materials for Nanodevices

Session Chairman: Vladimir Vuyrkov, Institute of Physics and Technology of RAS, Moscow, Russia


15.00 O1-02 Simulation of Graphene Field-Effect Transistors and Resonant Tunneling Diodes Based on Carbon Nanomaterials. I. Abramov, V. Labunov, N. Kolomejteva, I. Romanova, I. Shcherbakova. Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus.

15.20 O1-03 Theoretical and experimental graphene’s electron transparency. E. Il’ichev\textsuperscript{1}, V. Khaustov\textsuperscript{1}, A. Kuleshov\textsuperscript{1}, D. Migunov\textsuperscript{1}, R. Nabiev\textsuperscript{1}, G. Petrukhin\textsuperscript{1,2}, E. Teverovskaya\textsuperscript{1}, G. Rychkov\textsuperscript{1}. 1. National Research University of Electronic Technology - MIET, Zelenograd, Russia. 2. LLC “CNEL Devices”, Zelenograd, Russia.


16.00 O1-05 Laser reduction of graphene oxide thin films for nanoelectronic application. I.A. Komarov\textsuperscript{1}, N.S. Struchkov\textsuperscript{2}, D.D. Levin\textsuperscript{2}, E.E. Danelyan\textsuperscript{1}, M.A. Orlov\textsuperscript{1}, S.N. Sherbin\textsuperscript{1}, V.V. Bogachev\textsuperscript{1}, N.K. Lagodenko\textsuperscript{1}. 1. Bauman Moscow State Technical University, Moscow, Russia. 2. National Research University of Electronic Technology - MIET, Zelenograd, Russia.
Auditorium A
Session 2. Thin Films

Session Chairman: Vladimir Popov, Rzhanov Institute of Semiconductor Physics of Siberian Branch of RAS, Novosibirsk, Russia

14.30 O1-06 Silicon oxides and silicon nitrides: structure, properties and applications in memristors. V.A. Volodin1,2, G.N. Kamaev1, V.N. Kruchinin1, V.A. Gritsenko1,2,3.

1. Rzhanov Institute of Semiconductor Physics of Siberian Branch of RAS, Novosibirsk, Russia. 2. Novosibirsk State University, Novosibirsk, Russia.
3. Novosibirsk State Technical University, Novosibirsk, Russia.

14.50 O1-07 Influence of the vacuum-plasma etching on the electrophysical characteristics of thin ferroelectric PZT films. D.A. Abdullaev1,2, D.S. Seregin2, D.N. Zubov2.

1. Institute of Nanotechnology of Microelectronics of RAS, Moscow, Russia. 2. Russian Technological University - MIREEA, Moscow, Russia.

15.10 O1-08 Electronic and optical properties of MoS2 thin films deposited by magnetron sputtering studying. A.I. Belikov, Z.P. Kyaw, A.I. Semochkin. Bauman Moscow State Technical University, Moscow, Russia.


1. Institute of Nanotechnology of Microelectronics Technology and High Purity Materials of RAS, Chernogolovka, Russia.

15.50 O1-10 Nanocrystalline diamond films heavily doped by boron: structure, optical and electrical properties. V.A. Volodin1,2, S.G. Cherkova1, V. Kumar3, V.A. Sachkov4, V. Morter5, A. Taylor5, Z. Remes5, T.H. Stuchlikov5, J. Stuchlik5. 1. Rzhanov Institute of Semiconductor Physics of Siberian Branch of RAS, Novosibirsk, Russia. 2. Novosibirsk State University, Novosibirsk, Russia. 3. Indian Institute of Information Technology Design & Manufacturing, Kancheepuram Melakottayur, Chennai, Tamil Nadu, India. 4. Omsk Scientific Center of Siberian Branch of RAS, Omsk, Russia. 5. Institute of Physics ASCR, Praha, Czech Republic.

Auditorium B
Session 3. Quantum Informatics II

Session Chairman: Leonid Fedichkin, Institute of Physics and Technology of RAS, Moscow, Russia; Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

14.30 q1-01 Quantum wavelet transforms as alternative to the quantum Fourier transforms for a quantum computing. A.A. Kokin. Institute of Physics and Technology of RAS, Moscow, Russia.

14.50 q1-02 INVITED: Homogeneous atomic ensembles and single-mode field: review of simulation results. A.V. Kulagin1, V.Y. Ladunov1, Y.I. Ozhigov1,2, N.A. Skvorodola1, N.B. Victorova1.

1. Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University, Moscow, Russia. 2. Institute of Physics and Technology of RAS, Moscow, Russia. 3. Russian State University for the Humanities, Institute of Informational Sciences and Secure Technologies, Chair of Fundamental and Applied Mathematics, Moscow, Russia.
15.20 q1-03 INVITED: Secure quantum devices on dark atomic states. **Y.I. Ozhigov**

1. Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University, Moscow, Russia. 2. Institute of Physics and Technology of RAS, Moscow, Russia.

15.50 q1-04 Representation of Boolean functions in terms of quantum computation. **Yu.I. Bogdanov**¹²³, **N.A. Bogdanova**¹², **D.V. Fastovets**¹², **V.F. Lukichev**¹. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. National Research University of Electronic Technology - MIET, Zelenograd, Russia. 3. National Research Nuclear University MEPhI, Moscow, Russia.

16.20-16.40 Coffee break

**Conference Hall**

**Session 4. Advanced Nanoelectronic Technologies**

**Session Chairman:** Konstantin Rudenko, *Institute of Physics and Technology of RAS, Moscow, Russia*


17.40 O1-13 Alternative BEOL approach: gap filling with CSD low-k dielectric. **V. Gvozdev**¹, D. Seregin², P. Kuznetsov¹, A. Valeev¹, K. Vorotilov², O. Gushin¹, G. Krasnikov¹, A. Sigov². 1. JSC Molecular Electronics Research Institute, Zelenograd, Russia. 2. Russian Technological University - MIREA, Moscow, Russia.


18.20 O1-15 Graphoepitaxial growth of Y:ZrO₂ thin films on tilted-axes substrates. **P.B. Mozhaev**¹, J.E. Mozhaeva¹, A.V. Khoryushin², I.M. Kotelyanski³, V.A. Luzanov³, J.B. Hansen², C.S. Jacobsen². 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. Department of Physics, Technical University of Denmark, Kongens Lyngby, Denmark. 3. Institute of Radio Engineering and Electronics of RAS, Moscow, Russia.
Auditorium A
Session 5. Modeling and Simulation of FETs

Session Chairman: Vladimir Vyurkov, Institute of Physics and Technology of RAS, Moscow, Russia


17.00 O1-17  Modeling of the submicron MOSFETs characteristics for UTSi technology. A.S. Adonin\textsuperscript{1}, K.O. Petrosyants\textsuperscript{2}, D.A. Popov\textsuperscript{2}. 1. OJSC Research-and-Production Enterprise “Pulsar”, Moscow, Russia. 2. National Research University Higher School of Economics (Moscow Institute of Electronics and Mathematics), Moscow, Russia.

17.20 O1-18  A linear “extrinsic” compact model for short-channel MOSFET drain current asymptotic dependence on drain bias in saturation regime. V. Turin\textsuperscript{1}, R. Shkarlat\textsuperscript{1,2}, V. Poyarkov\textsuperscript{2}, O. Kshensky\textsuperscript{2}, G. Zebrev\textsuperscript{3}, B. Iñiguez\textsuperscript{4}, M. Shur\textsuperscript{5}. 1. Orel State University named after I.S Turgenev, Orel, Russia. 2. JSC “Bolkhov Plant of Semiconductor Devices”, Bolkhov, Russia. 3. National Research Nuclear University MEPHI, Moscow, Russia. 4. Rovira i Virgili University, Tarragona, Spain. 5. Rensselaer Polytechnic Institute, Troy, USA.

17.40 O1-19  A linear “extrinsic” compact model for OFET drain current in saturation regime with nonzero differential conductance. V. Turin\textsuperscript{1}, B. Rakhmatov\textsuperscript{1}, C.-H. Kim\textsuperscript{2}. 1. Orel State University named after I.S. Turgenev, Orel, Russia. 2. Gachon University, Seongnam, Republic of Korea.


Auditorium B
Session 6. Quantum Informatics III

Session Chairman: Yuri Ozhigov, Faculty of Computational Mathematics and Cybernetics, M.V. Lomonosov Moscow State University, Moscow, Russia; Institute of Physics and Technology of RAS, Moscow, Russia.

16.40 q1-05  Jumps of optimal measurement angle and fractures on the curves of quantum correlation functions in two-qubit systems. M.A. Yurischev. Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia.

17.00 q1-06  MQ-coherence matrix transfer and remote block-scaled states creation. G.A. Bochkin, E.B. Feldman, A.I. Zenchuk. Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia.

17.20 q1-07  An investigation of entanglement in trimer clusters. E. Fel’dman, E. Kuznetsova. Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia.

17.40 q1-08  The multiple quantum coherence transfer and quantum correlations in NMR experiments in solids. G. Bochkin, A. Fedorova, E. Fel’dman, A. Zenchuk. Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia.
Quantum information processing with macroscopic BEC qubits. A.N. Pyrkov¹, T. Byrnes²³. 1. Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia. 2. New York University Shanghai, Shanghai, China. 3. Department of Physics, New York University, New York, USA.

19.00 Dinner

Wednesday, October 3, 2018

8.15 Breakfast

Conference Hall
Plenary Session III. THz Photonics

Session Chairman: Vladimir Vyurkov, Institute of Physics and Technology of RAS, Moscow, Russia

9.00 L2-01 INVITED: Graphene-based 2D heterostructures for terahertz photonic and plasmonic light-sources applications. D. Yadav¹, T. Watanabe¹, S. Boubanga-Tombet¹, A. Satou¹, V. Ryzhii¹²³, M. Ryzhii³, A.A. Dubinov², W. Knap³, V.V. Popov⁴, T. Otsuji¹. 1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan. 2. V.G. Mokerov Institute of Ultra High Frequency Semiconductor Electronics of RAS, Moscow, Russia. 3. Department of Computer Science and Engineering, University of Aizu, Aizu-Wakamatsu, Japan. 4. Institute for Physics of Microstructures, Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia. 5. Laboratory Charles Coulomb, University of Montpellier and CNRS, Montpellier, France. 6. Saratov Branch of the Kotelnikov Institute of Radio Engineering and Electronics of RAS, Saratov, Russia.

9.30 L2-02 INVITED: Graphene-phosphorene hybrid structures and their applications. V. Ryzhii¹²³⁴, T. Otsuji¹, M. Ryzhii³, V. Leiman¹, D. Ponomarev²⁴, P.P. Maltsev⁵, D. Svintsov¹, V. Mitin⁶, M.S. Shur⁷. 1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan. 2. V.G. Mokerov Institute of Ultra High Semiconductor Electronics of RAS, Moscow, Russia. 3. Center of Photonics and Infrared Engineering, Bauman Moscow State Technical University, Moscow. 4. Center of Photonics and Two-Dimensional Materials, Moscow Institute of Physics and Technology (State University), Russia. 5. Department of Computer Science and Engineering, University of Aizu, Aizu-Wakamatsu, Japan. 6. Department of Electrical Engineering, University at Buffalo, Buffalo, USA. 7. Department of Electrical, Computer, and Systems Engineering, Rensselaer Polytechnic Institute, Troy, USA.

10.00 L2-03 INVITED: Photonic Double-Mixing by InGaAs-HEMTs for Optical to MMW/THz Carrier Frequency Down-Conversion. A. Satou¹³, Y. Omori¹³, S. Manabe¹³, T. Hosotani¹³, T. Suemitsu²³, T. Otsuji¹³. 1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan. 2. Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan. 3. Research Organization of Electrical Communication, Tohoku University, Sendai, Japan.

10.30 L2-04 INVITED: Graphene plasmonics for resonant voltage-tunable terahertz detectors. D. Svintsov¹, D. Bandurin², I. Gayduchenko³, G. Fedorov¹, A. Geim², G. Goltsman³. 1. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 2. School of Physics and Astronomy, University of Manchester, Manchester, UK. 3. Moscow State Pedagogical University, Moscow, Russia.
Session Chairman: Konstantin Rudenko, Institute of Physics and Technology of RAS, Moscow, Russia

11.20 O2-01 INVITED: Maskless nanolithography on the basis of microfocus X-ray tubes: conversion of electron energy into the BeKα line. N.I. Chkhalo¹, A.Ya. Lopatin¹, A.E. Pestov¹, N.N. Salashchenko¹, G.D. Demin², N.A. Dyuzhev², M.A. Makhiboroda². 1. Institute for Physics of Microstructures of RAS, Nizhny Novgorod, Russia. 2. National University Research Institute of Electronic Technology – MIET, Zelenograd, Russia.

11.50 O2-02 Cellular automata method for directed self-assembly modelling. E. Gornev¹,², M. Litavrin¹,², I. Matyushkin¹, O. Gushin¹. 1. JSC Molecular Electronics Research Institute, Zelenograd, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

12.10 O2-03 E-beam lithography of dense 10 nm line/space pattern using the HSQ mask. A.A. Tatarintsev¹, A.V. Miakonkikh¹, K.V. Rudenko¹, A. Shishlyannikov². 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. JSC Molecular Electronics Research Institute, Zelenograd, Russia.

12.30 O2-04 Simulation of hybrid e-beam lithography: experimental evidence. A. Rogozhin¹,², F. Sidorov¹,², M. Bruk¹,³, E. Zhikharev¹. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 3. L.Ya. Karpov Institute of Physical Chemistry, Moscow, Russia.

12.50 O2-05 Simulation algorithm of PMMA depolymerization in dry e-beam etching of resist. A. Rogozhin¹, F. Sidorov¹,², M. Bruk¹, E. Zhikharev¹. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

Auditorium A
Session 8. Spintronics Devices

Session Chairman: Oleg Trushin, Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia

11.20 O2-06 Diffraction model of the electronic transport in rough normal metal and ferromagnetic nanowires. G.M. Mikhailov¹, L.A. Fomin¹, A.E. Rassadin². 1. Institute of Microelectronic Technology and High Purity Materials of RAS, Chernogolovka, Russia. 2. Member of the Board of Nizhny Novgorod Mathematical Society, Nizhny Novgorod, Russia.

11.40 O2-07 Static and dynamic spin-torque-diode sensitivity induced by the thermoelectric charge and spin currents in magnetic tunnel junctions. G.D. Demin¹,², A.F. Popkov¹,². 1. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 2. National Research University of Electronic Technology - MIET, Zelenograd, Russia.
12.00  O2-08  Quantization and thermal effects during the scalability of magnetic-nanobridge-based STT-MRAM towards sub-20-nm technology nodes. A.V. Popov¹, G.D. Demin¹,², A.F. Popkov¹,². 1. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 2. National Research University of Electronic Technology - MIET, Zelenograd, Russia.

12.20  O2-09  Quality control of multilayer spin-tunnel structure using combination of methods. O.S. Trushin¹, S.V. Vasiliev¹, S.G. Simakin¹, A.N. Pestova². 1. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia. 2. P.G. Demidov Yaroslavl State University, Yaroslavl, Russia.

**Auditorium B**

**Session 9. Quantum Informatics IV**

**Session Chairmen: Alexey Kalachev**, Zavoisky Physical-Technical Institute, Kazan Scientific Center, Kazan, Russia; Institute of Physics, Kazan Federal University, Kazan, Russia.

11.20  q2-01  INVITED: Photon echo schemes for quantum memory in optical and microwave resonators reasons. S.A. Moiseev. Kazan Quantum Center, Kazan National Research Technical University, Kazan, Russia.


12.10  q2-03  Quantum computer based on triangular atom-photon molecule. S.N. Andrianov¹, F.M. Ablayev², S.A. Moiseev³, A.V. Vasiliev². 1. Institute of Applied Research of Tatarstan Republic Academy of Sciences, Kazan, Russia. 2. Kazan Federal University, Kazan, Russia. 3. Quantum Center of Kazan National Research Technical University, Kazan, Russia.

12.30  q2-04  The photon concentrator and source on the quantum well/dot cascade nanostructure in optical microcavity for charge qubit control. A.V. Tsukanov, I.Yu. Kateev. Institute of Physics and Technology of RAS, Russia.

12.50  q2-05  Multiphoton subtracted thermal states: description, preparation, measurement and utilization. K.G. Katamadze¹,²,³,⁴, G.V. Avosopants¹,²,³, B.I. Bantysh¹,⁵, Yu.I. Bogdanov¹,³,⁴, S.P. Kulik²,³. 1 Institute of Physics and Technology of RAS, Moscow, Russia. 2. Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russia. 3. Quantum Technology Centre, M.V. Lomonosov Moscow State University, Moscow, Russia. 4. National Research Nuclear University MEPhI, Moscow, Russia. 5. National Research University of Electronic Technology - MIET, Zelenograd, Russia.

13.10-14.10 Lunch
Conference Hall
Session 10. Beyond CMOS

Session Chairman: Konstantin Rudenko, Institute of Physics and Technology of RAS, Moscow, Russia

14.10 O2-10 Field-effect transistors for ULSI. A. Krivospitsky\textsuperscript{1}, A. Miakonkikh\textsuperscript{1,2}, V. Vyurkov\textsuperscript{1,2}, D. Svintsov\textsuperscript{1,2}, Yu. Semin\textsuperscript{1}, K. Rudenko\textsuperscript{1,2}, V. Lukichev\textsuperscript{1,2}. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

14.30 O2-11 Quantum interference molecular inverter. A.A. Gorbatsevich\textsuperscript{1,2,3}, G.Ya. Krasnikov\textsuperscript{1}, N.M. Shubin\textsuperscript{1,2,3}. 1. P.N. Lebedev Physical Institute of RAS, Moscow, Russia. 2. National Research University of Electronic Technology - MIET, Zelenograd, Russia. 3. JSC Molecular Electronics Research Institute, Zelenograd, Russia.

14.50 O2-12 Development of a molecular single-electron transistor with a single-atom charge center. V. Gaidamachenko\textsuperscript{1}, E. Morozova\textsuperscript{1}, S. Dagesyan\textsuperscript{1,2}, E. Soldatov\textsuperscript{1,2}, E. Beloglazkina\textsuperscript{1}. 1. M.V. Lomonosov Moscow State University, Moscow, Russia. 2. The Center for Quantum Technologies of M.V. Lomonosov Moscow State University, Moscow, Russia.

15.10 O2-13 Simulation of single-electron transistor based on the molecule with single-atom charge center. A.A. Parshintsev, V.V. Shorokhov, E.S. Soldatov. Quantum Technology Centre, Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow; Russia.

Auditorium A
Session 11. Solid-State THz Electronics

Session Chairman: Victor Ryzhii, Tohoku University, Sendai, Japan

14.10 O2-14 INVITED: Transit-time transistors for terahertz generation. V. Vyurkov\textsuperscript{1,2}, D. Svintsov\textsuperscript{1,2}, M. Rudenko\textsuperscript{1}, A. Borzdov\textsuperscript{1}, V. Borzdov\textsuperscript{3}, K. Rudenko\textsuperscript{1,2}, V. Lukichev\textsuperscript{1,2}. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 3. Belarusian State University, Minsk, Belarus.

14.35 O2-15 INVITED: Polaron in Resonant-Tunneling Diodes and Their Possible Application in Terahertz Emission. V.G. Popov\textsuperscript{1}, V.G. Krishtop\textsuperscript{1}, T.I. Ahmedov\textsuperscript{1}, S.G. Chigarev\textsuperscript{2}, M. Henini\textsuperscript{1}. 1. Institute of Microelectronics Technology and High Purity Materials of RAS, Chernogolovka, Russia. 2. Fryazino Branch of the Kotelnikov Institute of Radioengineering and Electronics of RAS, Fryazino, Russia. 3. School of Physics and Astronomy of Nottingham University, Nottingham, UK.

15.00 O2-16 Plasmonic terahertz emitters with high-aspect ratio metal gratings. A. Yachmenev\textsuperscript{1,2}, D. Lavrukhin\textsuperscript{1,2}, I. Gliński\textsuperscript{1}, R. Khabibullin\textsuperscript{1,3}, R. Galiev\textsuperscript{1}, A. Pavlov\textsuperscript{1}, Yu. Goncharov\textsuperscript{4}, I. Spektor\textsuperscript{4}, M. Ryzhii\textsuperscript{3}, T. Otsuji\textsuperscript{6}, K. Zaytsev\textsuperscript{2,4}, D. Ponomarev\textsuperscript{1,2,3}. 1. V.G. Mokerov Institute of UHF Semiconductor Electronics of RAS, Moscow, Russia. 2. Bauman Moscow State Technical University, Moscow, Russia. 3. Center for Photonics and 2D Materials, Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 4. A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia. 5. University of Aizu, Aizu-Wakamatsu, Japan. 6. Research Institute of Electrical Communication, Tohoku University, Japan.
15.20  O2-17  Silver-based double metal waveguide for terahertz quantum cascade laser. R.A. Khabibullin¹²,³, N.V. Shchavruk¹², D.S. Ponomarev¹²,³, D.V. Ushakov⁴, A.A. Afonenko⁵, O.Yu. Volkov⁵, V.V. Pavlovsky⁵, A.A. Dubinov¹. ¹ V.G. Mokerov Institute of UHF Semiconductor Electronics of RAS, Moscow, Russia. ² Institute for Physics of Microstructures of RAS, Nizhny Novgorod, Russia. ³ Center for Photonics and 2D Materials, Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. ⁴ Belarusian State University, Minsk, Belarus. ⁵ Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russia.

15.40  O2-18  Silicon hot-electron bolometer for terahertz radiation. V. Smirnov¹, D. Kibalov¹, V. Vyurkov²³, M. Rudenko², A. Miankonkikh²³, A. Rogozhin²¹, K. Rudenko²³, V. Lukichev²³. ¹ Quantum Silicon, Ltd., Moscow, Russia. ² Institute of Physics and Technology of RAS, Moscow, Russia. ³ Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

Auditorium B
Session 12. Quantum Informatics V

Session Chairman: Farid Ablayev, Kazan Federal University, Kazan, Russia.

14.10  q2-06  Quantum algorithms implementation on noisy quantum computers: from digital modeling of spin dynamics to quantum machine learning. A.A. Zhukov¹², E.O. Kitenko³⁴, D.V. Babukhin¹⁵, A.A. Elistratov¹, S.V. Remizov¹⁶, W.V. Pogosov¹⁷, Yu.E. Lozovik¹⁸. ¹ Dukhov Research Institute of Automatics (VNIIA), Moscow, Russia. ² National Research Nuclear University MEPhI, Moscow, Russia. ³ Steklov Mathematical Institute of RAS, Moscow, Russia. ⁴ Russian Quantum Center, Skolkovo, Russia. ⁵ Department of Physics, M.V. Lomonosov Moscow State University, Moscow, Russia. ⁶ Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russia. ⁷ Institute for Theoretical and Applied Electrodynamics of RAS, Moscow, Russia. ⁸ Institute of Spectroscopy of RAS, Moscow, Russia.

14.30  q2-07  Two-Way Quantum and Classical Machines with Small Memory for Online Minimization Problems. K. Khadiev¹²³, A. Khadieva²⁴. ¹ Smart Quantum Technologies, Ltd, Kazan, Russia. ² Kazan Federal University, Kazan, Russia. ³ Center for Quantum Computer Science, Faculty of Computing, University of Latvia, Riga. ⁴ University of Latvia, Riga, Latvia.

14.50  q2-08  Applications of Machine Learning for Noisy Intermediate-Scale Quantum Devices. Y. Kharkov¹², A. Karazeev¹³, E. Kitenko¹⁴, A. Fedorov¹. ¹ Russian Quantum Center, Skolkovo, Russia. ² University of New South Wales, Sydney, Australia. ³ Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. ⁴ Steklov Mathematical Institute of RAS, Moscow, Russia.

15.10  q2-09  Machine learning methods in quantum computing theory. D.V. Fastovets¹², Yu.I. Bogdanov¹²³, V.F. Lukichev¹. ¹ Institute of Physics and Technology of RAS, Moscow, Russia. ² National Research University of Electronic Technology - MIET, Zelenograd, Russia. ³ National Research Nuclear University MEPhI, Moscow, Russia.

16.00-16.20 Coffee break
16.20-18.40 POSTER SESSION I

19.00 Dinner

Thursday, October 4, 2018

08.15 Breakfast

Conference Hall
Session 13. Superconducting Devices

Session Chairman: Vladimir Lukichev, Institute of Physics and Technology of RAS, Moscow, Russia

9.00 O3-01 Bi-SQUID design requirements. N. Kolotinskiy\textsuperscript{1}, V. Kornev\textsuperscript{1}, D. Bazulin\textsuperscript{1}, O. Mukhanov\textsuperscript{2}. 1. Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russia. 2. Hypres, Inc., Elmsford, NY, USA.

9.20 O3-02 Relaxation of the coherent excited states of a superconductor to a normal metal or superconducting reservoir. I.A. Devyatov\textsuperscript{1,2}, A.V. Semenov\textsuperscript{2,3}. 1. M.V. Lomonosov Moscow State University, Scobeltsyn Institute of Nuclear Physics, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 3. Moscow State Pedagogical University, Moscow, Russia.


10.00 O3-04 Quantum magnetic-resistive $hc/2em$ periodic oscillations in a superconducting thin-film aluminum ring. V.I. Kuznetsov. Institute of Microelectronics Technology and High Purity Materials of RAS, Chernogolovka, Russia.

10.20 O3-05 Fundamental difference between the Aharonov-Bohm effects observed in micro- and nano-structures and in the two-slit interference experiment. A.V. Nikulov. Institute of Microelectronics Technology and High Purity Materials of RAS, Chernogolovka, Russia.

Auditorium A
Session 14. MEMS Devices

Session Chairman: Il'dar Amirov, Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia

9.00 O3-06 A low actuation voltage MEMS switch with protection against stiction. I.V. Uvarov, A.N. Kupriyanov. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.


A novel approach to model high-speed microelectronic switch on the basis of hydrodynamic approximation. E. Ryndin, A. Al-Saman. Southern Federal University, Taganrog, Russia.

Improving the selectivity of carbon nanotube-based gas sensors to ammonia and nitrogen dioxide via UV irradiation. N. Nekrasov¹, V. Nevolin¹, F. Fedorov², A. Nasibulin², I. Bobrinetskii¹. 1. National Research University of Electronic Technology - MIET, Zelenograd, Russia. 2. Skolkovo Institute of Science and Technology, Skolkovo, Russia.

Auditorium B
Session 15. Quantum Informatics VI

Session Chairman: Eduard Fel’dman, Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia.


Hitting time for quantum walks of identical particles. A.A. Melnikov¹, L.E. Fedichkin¹,²,³. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. NIX, Moscow, Russia. 3. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

Exponential bound on heating rate in periodically driven spin systems. V.E. Zobov¹, M.M. Kucherov². 1. Kirensky Institute of Physics, Federal Research Center KSC of Siberian Branch of RAS, Krasnoyarsk, Russia. 2. Institute of Space and Information Technologies, Siberian Federal University, Krasnoyarsk, Russia.

On the fidelity of quantum gates under T1 and T2 relaxation. A.Yu. Chernyavskiy. Institute of Physics and Technology of RAS, Moscow, Russia.

Quantum dynamics induced by selective measurements. S.N. Filippov. Institute of Physics and Technology of RAS, Moscow, Russia; Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

10.40-11.00 Coffee break
Session Chairman: Ildar Amirov, Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia


11.30 O3-12 Model-based approach for optimization of plasma etching processes in non-oxygenated fluorocarbon plasmas. A. Efremov, D. Murin, K.-H. Kwon. 1. Ivanovo State University of Chemistry & Technology, Ivanovo, Russia. 2. Korea University, Sejong, South Korea.

11.50 O3-13 Effect of terminal methyl group concentration on plasma resistance of spin-on low-k dielectric films. A. Rezvanov, A. Miakonkikh, A. Vishnevskiy, D. Seregin, U. Baislamova, K. Vorotilov, K. Rudenko, M. Baklanov. 1. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 2. JSC Molecular Electronics Research Institute, Zelenograd, Russia. 3. Institute of Physics and Technology of RAS, Moscow, Russia. 4. Russian Technological University - MIREA, Moscow, Russia. 5. North China University of Technology, Beijing, China.


12.30 O3-15 Effect of Ar ion-plasma treatment on residual stress in thin Cr films. A. Babushkin, R. Selyukov, I. Amirov. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.

Auditiorium A

Session Chairman: Andrey Miakonkikh, Institute of Physics and Technology of RAS, Moscow, Russia

11.00 O3-16 Interprocess quality control of critical dimensions in MEMS manufacturing. N. Izrailev, A. Kazachkov, I. Rod, A. Isachenko, D. Shamiryan. 1. LLC Mapper, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

11.20 O3-17 The opportunities of Rutherford backscattering spectroscopy for analysis of multilayer nanometer thin film structures. V. Bachurin, A. Churilov, N. Melesov, E. Parshin, A. Rudy, O. Trushin. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.

11.40 O3-18 Fast local IC delayering using high energy BIB. E. Kelm, D. Zubov, S. Sokolov, R. Milovanov. Institute of Nanotechnology of Microelectronics of RAS, Moscow, Russia.

12.00 O3-19 Local IC delayering using FIB technology. R. Milovanov, D. Abdullaev, S. Sokolov, E. Kelm. 1. Institute of Nanotechnology of Microelectronics of RAS, Moscow, Russia. 2. Russian Technological University - MIREA, Moscow, Russia.
Auditorium B
Session 18. Quantum Informatics VII

Session Chairman: Sergey Moiseev, Kazan Quantum Center, Kazan National Research Technical University, Kazan, Russia.

11.00 q3-06 Quantum tomography based on principles of completeness, adequacy and fidelity. Yu.I. Bogdanov¹,²,³, N.A. Bogdanova¹,², B.I. Bantysh¹,², D.V. Fastovets¹,², V.F. Lukichev¹. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. National Research University of Electronic Technology - MIET, Zelenograd, Russia. 3. National Research Nuclear University MEPhI, Moscow, Russia.

11.20 q3-07 Adaptive quantum tomography of high-dimensional bipartite systems. G.I. Struchalin, E.V. Kovalkov, S.S. Straupe, S.P. Kulik. Faculty of Physics, M.V. Lomonosov Moscow State University and Quantum Technologies Centre, M.V. Lomonosov Moscow State University, Moscow, Russia.

11.40 q3-08 High-fidelity quantum tomography with imperfect measurements. B.I. Bantysh¹,², D.V. Fastovets¹,², Yu.I. Bogdanov¹,²,³. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. National Research University of Electronic Technology - MIET, Zelenograd, Russia. 3. National Research Nuclear University MEPhI, Moscow, Russia.

12.00 q3-09 Precision guaranteed quantum process tomography. E. Kiktenko¹,², D. Norkin¹,³, D. Kublikova³, A. Karazeev¹,³, A. Fedorov¹. 1. Russian Quantum Center, Skolkovo, Russia. 2. Steklov Mathematical Institute of RAS, Moscow, Russia. 3. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

13.00-14.00 Lunch

Conference Hall
Session 19. 30th Anniversary of the Institute of Physics and Technology of Russian Academy of Sciences

Session Chairman: Vladimir Lukichev, Institute of Physics and Technology of Russian Academy of Sciences, Moscow, Russia

14.00 - 15.40

16.00 - 18.20
Auditorium A
Session 20. Metrology and Characterization II

Session Chairman: Andrey Miakonkikh, Institute of Physics and Technology of RAS, Moscow, Russia

14.00  O3-20  INVITED: Excitation spectra and magnetic dynamics of antiferromagnetic and ferrimagnetic nanoparticles revealed in Mössbauer spectroscopy. M.A. Chuev. Institute of Physics and Technology of RAS, Moscow, Russia.

14.20  O3-21  Determination of Al content in Al/Si thermomigration fabricated structures by X-ray diffraction. A. Lomov¹, A.Yu. Belov², B. Seredin¹, A. Tatarintsev¹, S. Simakin⁴. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. FSRC “Crystallography and Photonics” of RAS, Moscow. 3. Platov South Russian State Polytechnic University, Novocherkassk, Russia. 4. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.

14.40  O3-22  The depth distributions of crystalline structure parameters in thin textured films and the method of their determination. R. Selyukov, V. Naumov. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.

15.00  O3-23  Investigation of ALD initial stage and precursor kinetic by spectroscopic ellipsometry. I. Clemente¹², A. Miakonkikh¹². 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

15.20  O3-24  Optical emission spectrum of BF₃ plasma: Identification of lines and bands belonging to boron-contained species. V.P. Kudrya. Institute of Physics and Technology of RAS, Moscow, Russia.

Auditorium B
Session 21. Integrated Photonic Devices

Session Chairmen: Eugeny Ryndin, Southern Federal University, Taganrog, Russia


14.20  O3-26  Vacuum photoemission diode and triode based on ultraviolet detector. E. Il’ichev¹, V. Khaustov¹, A. Kuleshov¹, R. Nabiev¹, G. Petrukhin¹², E. Teverovskaya¹, G. Rychkov¹. 1. National Research University of Electronic Technology - MIET, Zelenograd, Russia. 2. LLC “CNEL Devices”, Zelenograd, Russia.

14.40  O3-27  Theory and numerical modeling of nanoresonators, discrete waveguides, and modulators of planar radio-photonoic assemblies. M. Barabanenkov¹², A. Italyantsëv¹, M. Makarov¹, A. Sapecëgin²³, R. Minnullin³. 1. JSC Molecular Electronics Research Institute, Zelenograd, Russia. 2. Institute of Microelectronics Technology and High Purity Materials of RAS, Chernogolovka, Russia. 3. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

15.20  O3-29  Study of complex reflectivity of ultrathin metal films at frequencies 9-11 GHz. **V. Vdovin¹, V. Andreev², S. Pronin², I. Khorin³.** 1. Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russia. 2. Moscow State University, Moscow, Russia. 3. Institute of Physics and Technology of RAS, Moscow, Russia.

15.40-16.00 Coffee break

**16.00-18.20 POSTER SESSION II**

18.30. **Conference Hall. CLOSING CONFERENCE REMARKS**

**V.F. Lukichev, Program Committee Chair,**

*Institute of Physics and Technology of RAS, Moscow, Russia*

**19.30 CONFERENCE DINNER**

Friday, October 5, 2018

09.00 Breakfast

**10.00 DEPARTURE**
Physics of Semiconducting, Superconducting, and Spintronic Devices


P1-02 Fabrication of electrodes for a logic element based on a disordered dopant atoms network. S. Dagesyan1, S. Ryzhenkova1, D. Presnov2, I. Sapkov, V. Gaydamachenko1, G. Zharik1, A. Stepnanov2. 1. Faculty of Physics, M.V. Lomonosov Moscow State University, Russia. 2. Skobeltsyn Institute of Nuclear Physics, Moscow, Russia.

P1-03 Compact Modeling of Electrical Characteristics of p-MNOS Based RADFETs. E. Mrozovskaya1,2, P. Zimin1,2, P. Chubunov1,2, G. Zebrev1. 1. National Research Nuclear University MEPhI, Moscow, Russia. 2. United Rocket and Space Corporation, Institute of Space Device Engineering, Moscow, Russia.


P1-05 Charge effects in dielectric films of MIS structures being under high-field injection of electrons at ionizing radiation. V.V. Andreev1, V.M. Maslovsky2, D.V. Andreev1, A.A. Stolyarov1. 1. Bauman Moscow State Technical University (Kuluga Branch), Kuluga, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

P1-06 Generation of surface states in MOS devices by space radiation protons. A.N. Volkov1, D.V. Andreev2, V.M. Maslovsky3. 1. Research Institute of Physical Problems, Zelenograd, Russia. 2. Bauman Moscow State Technical University (Kuluga Branch), Kuluga, Russia. 3. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

P1-07 The physics-based modeling of TID induced leakage currents atop the buried oxide in SOI MOSFETs. M. Drosdetsky1, M. Gorbunov1,2, G. Zebrev1. 1. National Research Nuclear University MEPhI, Moscow, Russia. 2. Scientific Research Institute of System Analysis of RAS, Moscow, Russia.

P1-08 Stabilization methods of \( V_{SET} \) and \( R_{OFF} \) in cycling process for ReRAM based on hafnium oxide. A.O. Lebedev, S.V. Ivanov, O.M. Orlov. JCS Molecular Electronics Research Institute, Zelenograd, Russia.

P1-09 Electroforming-free titanium oxide nanoscale memristor structures for neuromorphic and RRAM elements. V. Avilov1, V. Smirnov1, N. Polupanov1, N. Sharapov1, O. Ageev1,2. 1. Southern Federal University, Institute of Nanotechnologies, Electronics and Equipment Engineering, Taganrog, Russia. 2. Southern Federal University, Research and Education Center “Nanotechnologies”, Taganrog, Russia.
P1-10  Investigation of size effect on memristive properties of ZnO thin films. R. Tominov\textsuperscript{1}, V. Avilov\textsuperscript{1}, V. Smirnov\textsuperscript{1}, E. Zamburg\textsuperscript{2}, O. Ageev\textsuperscript{1}. 1. Southern Federal University, Institute of Nanotechnologies, Electronics and Equipment Engineering, Taganrog, Russia. 2. National University of Singapore, Department of Electrical & Computer Engineering, Singapore.

P1-11  Investigations of the resistive switching of the TiN-TiO\textsubscript{2}-SiO\textsubscript{2}-W memristors in the oxygen atmosphere with varying pressure. E.S. Gorlachev, V.M. Mordvintsev, S.E. Kudyavtsev. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.

P1-12  Efficiency of terahertz harmonic generation in GaAs quantum wire structure: a Monte Carlo simulation. A.V. Borzdov\textsuperscript{1}, V.M. Borzdov\textsuperscript{1}, V.A. Labunov\textsuperscript{2}, V.V. Vyurkov\textsuperscript{3}. 1. Belarusian State University, Minsk, Belarus. 2. Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus. 3. Institute of Physics and Technology of RAS, Moscow, Russia.

P1-13  THz GaAs/AlAs double barrier nanostructures in the rectification mode with internal amplification. A.A. Aleksanyan\textsuperscript{1}, A.L. Karuzskii\textsuperscript{1}, Yu.A. Mityagin\textsuperscript{1}, V.N. Murzin\textsuperscript{1}, A.V. Perestoronin\textsuperscript{1}, A.P. Chernyav\textsuperscript{2}. 1. P.N. Lebedev Physical Institute of RAS, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

P1-14  Investigation of the characteristics of relaxation processes in multi-barrier heterostructures based on GaAs. V.A. Gergel\textsuperscript{1}, N.M. Gorshkova\textsuperscript{1}, A.S. Sobolev\textsuperscript{1,2}, M.A. Tarasov\textsuperscript{1}, V.S. Minkin\textsuperscript{1}, R.A. Khabibullin\textsuperscript{1}. 1. Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 3. V.G. Mokerov Institute of UHF Semiconductor Electronics of RAS, Moscow, Russia.

P1-15  Phase Locking in Josephson High-Q Arrays. N. Kolotinskiy, V. Kornev. Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russia.

P1-16  Spin waves in coupled easy-axis antiferromagnet crystals. A.Yu. Sharaevskaya\textsuperscript{1,2}, E.N. Beginin\textsuperscript{1}, D.V. Kalyabin\textsuperscript{2,3}, S.A. Nikitov\textsuperscript{1,2,3}, Yu.P. Sharaveskii\textsuperscript{1}. 1. Laboratory “Metamaterials”, Saratov State University, Saratov, Russia. 2. Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russia. 3. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

P1-17  Spin waves in 3D magnonic crystals. P. Popov\textsuperscript{2,3}, A. Sharaevskaya\textsuperscript{1,2}, E. Beginin\textsuperscript{1}, A. Sadovnikov\textsuperscript{1,2}, and S. Nikitov\textsuperscript{1,2,3}. 1. Laboratory “Metamaterials”, Saratov State University, Saratov, Russia. 2. Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russia. 3. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

P1-18  Different magnetooptical properties of metallized nanostructural arrays on silicon surface. A.V. Prokaznikov\textsuperscript{1}, V.A. Paporkov\textsuperscript{2}, N.Yu. Zvezdin\textsuperscript{2}. 1. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia. 2. P.G. Demidov Yaroslavl State University, Yaroslavl, Russia.

P1-19  Energetics of domain wall in magnetic nanowire. O.S. Trushin\textsuperscript{1}, E. Granato\textsuperscript{2}, S.C. Ying\textsuperscript{3}. 1. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia. 2. LAS, National Institute for Space Research, São José dos Campos, Brazil. 3. Department of Physics, Brown University, Providence, Rhode Island, USA.
Edge and defect modes of spin waves in finite chains of ferromagnetic pillars. 
¹ Kotelnikov Institute of Radio-engineering and Electronics of RAS, Moscow, Russia. 
² Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

**MEMS Devices**

P1-21 Modeling of characteristics of low-voltage lateral MEMS switch type based on the double fixed beam. *K.V. Lebedev*. 
Institute of Physics and Technology of RAS, Moscow, Russia.

National Research University of Electronic Technology - MIET, Zelenograd, Russia.

P1-23 Simulation of the sensitive element of the micro-accelerometer with the software product ANSYS. *S.P. Timoshenkov, V.V. Kalugin, S.A. Anchutin, E.S. Kochurina*. 
National Research University of Electronic Technology - MIET, Zelenograd, Russia.

P1-24 Magnetometric MEMS manufacture based on magnetoresistive nanostructures. 
*N. Djuzhev, A. Iurov, M. Chinenkov*. 
National Research University of Electronic Technology - MIET, Zelenograd, Russia.

P1-25 Research and analysis of heat exchange processes of a micromechanical mirror based on a thermal micro actuator. *S. Evstafiev, V. Samoylikov*. 
National Research University of Electronic Technology - MIET, Zelenograd, Russia.

¹ Quantum Technology Centre, Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russia. 
² D.V. Skobeltsyn Institute of Nuclear Physics, M.V. Lomonosov Moscow State University, Moscow, Russia. 
³ Department of Physics, Lancaster University, Lancaster, United Kingdom. 
⁴ P.N. Lebedev Physical Institute of RAS, Moscow, Russia.

P1-27 Determination of vibration axes of a micromachined ring resonator for the modal tuning purposes. *O.V. Morozov, I.V. Uvarov*. 
Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.

P1-28 Development of hybrid acousto-nano-biosensors. *V. Kolesov*, *V. Anisimkin*, *I. Kuznetsova*, *E. Soldatov*, *S. Dagesyan*, *A. Melnikov*, *V. Kashin*, *A. Smirnov*. 
¹ Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russia. 
² Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russia.

¹ State Research and Production Association "Optic, Optoelectronic and Laser technique". 
² Institute of Physics and Technology of RAS, Moscow, Russia.
Biosensor with two independent Si NW FETs for cancer biomarker detection. 
I.I. Tsiniaikin, G.V. Presnova, V.V. Shorokhov, M.Yu Rubtsova, I.V. Bozhev, 
1. Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russia. 
2. Skobeltsin Nuclear Physics Institute, M.V. Lomonosov Moscow State University, Moscow, Russia. 
3. Faculty of Chemistry, M.V. Lomonosov Moscow State University, Moscow, Russia.

**Metrology and Characterization**

**P1-31** Basic principles of non-destructive 3-D microtomography in scanning electron microscopy. E.I. Rau, S.V. Zaytsev, V.Yu. Karaulov. M.V. Lomonosov Moscow State University, Moscow, Russia.


**P1-34** Photoluminescence of AlGaAs/GaAs quantum well heteroepitaxial structures. M.R. Yuskaev, D.A. Pashkeev, A.V. Nikonov, V.E. Goncharov. 1. JSC Scientific and Production Association “Orion”, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 3. Russian Technological University - MIREA, Moscow, Russia.

**P1-35** Structural properties of InSb substrates for MBE. A.E. Mirofyanchenko, E.V. Mirofyanchenko. JSC Scientific and Production Association “Orion”, Moscow, Russia.

**Quantum Informatics**

**P1-36** The investigation of the quantum entanglement generation in the process of state transfer along the quantum chain. E.I. Kuznetsova, I.D. Lazarev. 1. Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia. 2. Faculty of Fundamental Physical-Chemical Engineering, M.V. Lomonosov Moscow State University, Moscow, Russia.

**P1-38 Robust compact transistor based random number generator.** F.M. Ablayev¹, S.N. Andrianov², D.V. Vahrushev¹, M.T. Ziadinov¹, V.S. Romanov¹, A.A. Soloviev³. 1. Kazan Federal University, Kazan, Russia. 2. Institute for Applied Research of Tatarstan Academy of Sciences, Kazan, Russia. 3. Kazan Physical and Technical Institute of Kazan Scientific Center of RAS, Kazan, Russia.

**P1-39 Optical properties of a microdisk resonator in a diamond substrate with metal contacts.** M.S. Rogachev¹, I.Yu. Kateev¹, A.V. Tsukanov¹. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

**P1-40 The influence of decoherence on the implementation of a C-NOT gate in a double quantum dots-microcavity system under a laser pulse.** A.V. Tsukanov, V.G. Chekmachev. Institute of Physics and Technology of RAS, Moscow, Russia.

**P1-41 Molecule ground state estimation via continuous-time quantum walks.** L. Fedichkin¹,²,³, F. Meshchaninov²,³. 1. NIX, Moscow, Russia. 2. Institute of Physics and Technology of RAS, Moscow, Russia. 3. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

**P1-42 Theoretical and experimental investigation of multi-mode thermal states with subtraction of a random number of photons.** Yu.I. Bogdanov¹,²,³, N.A. Bogdanova¹,², K.G. Katamadze¹,⁴, G.V. Avosopiants¹,³. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. National Research University of Electronic Technology - MIET, Zelenograd, Russia. 3. National Research Nuclear University MEPhI, Moscow, Russia. 4. Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russia.

**P1-43 Quantum approach to the dynamical systems modeling.** Yu.I. Bogdanov¹,²,³, N.A. Bogdanova¹,², D.V. Fastovets¹,², V.F. Lukichev¹. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. National Research University of Electronic Technology - MIET, Zelenograd, Russia. 3. National Research Nuclear University MEPhI, Moscow, Russia.

**P1-44 The concept of weak measurements and the super-efficiency of quantum tomography.** Yu.I. Bogdanov¹,²,³, N.A. Bogdanova¹,², B.I. Bantysh¹,², Yu.A. Kuznetsov¹,², V.F. Lukichev¹. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. National Research University of Electronic Technology - MIET, Zelenograd, Russia. 3. National Research Nuclear University MEPhI, Moscow, Russia.

**P1-45 Sequences of selective rotation operators to engineer interactions for quantum annealing on three qutrits.** V.E. Zobov¹, I.S. Pichkovskiy². 1. Kirensky Institute of Physics, Federal Research Center KSC of Siberian Branch of RAS, Krasnoyarsk, Russia. 2. Institute of Engineering Physics and Radio Electronics, Siberian Federal University, Krasnoyarsk, Russia.

**P1-46 Fast quantum randomness generation from vacuum fluctuation induced phase diffusion between pulses of laser diode.** R. Ermakov¹, V. Sharoglazova², A. Losev¹, V. Zavodilenko, V. Kurochkin¹, Y. Kurochkin¹. 1. Russian Quantum Centre, Moscow, Russia. 2. National Research Nuclear University MEPhI, Moscow, Russia.
Materials and Films

P2-01 The manifestation of rising of the impurity density of states after the field stress in increasing of the effective electron mobility in the inversion channel at the silicon-oxide contact. **G. Chucheva**, E. Goldman, A. Nabiev, V. Naryshkina. 1. Fryazino Branch of the Kotelnikov Institute of Radioengineering and Electronics of RAS, Fryazino, Russia. 2. Azerbaijan State Pedagogical University, Baku, Azerbaijan.


P2-03 Synergistic effects of deformation and solid-state reactions in Si with buried glass layer initiated by annealing in non-isothermal reactor. **Yu.I. Denisenko**. Yaroslavl Branch of the Kotel'nikov Institute of Radioengineering and Electronics of RAS, Yaroslavl, Russia.


P2-05 Dependence of dielectric constant of hydrocarbon bridged low-k films on porosity. **A. Palov**, M. Baklanov, Sh. Wei. 1. Skobeltsyn Institute of Nuclear Physics, M.V. Lomonosov Moscow State University, Moscow Russia. 2. North China University of Technology, Beijing, China.


P2-08 Nanoscale domain growth dynamics of lead-free ferroelectric BST thin films. **M.S. Afanasiev**, G.V. Chucheva, D.A. Kiselev. 1. Fryazino Branch of the Kotelnikov Institute of Radioengineering and Electronics of RAS, Fryazino, Russia. 2. Department of Materials Science of Semiconductors and Dielectrics, National University of Science and Technology MISIS, Moscow, Russia.

P2-10 Features of ferroelectric charging process and switching of the domains under electron beam irradiation. A.A. Tatarintsev, E.I. Rau, K.E. Markovets. 1. M.V. Lomonosov Moscow State University, Moscow, Russia. 2. Institute of Physics and Technology of RAS, Moscow, Russia.

P2-11 Influence of Power and Pulsed Regime of Low Frequency Discharge on Clusters Incorporation in Dielectric Films for ReRAM Application. A.A. Popov, A.E. Berdnikov. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.

P2-12 Effect of mechanical deformations on absorption spectrum of metallic films of nanometer thickness. K.M. Tsyrar, E.M. Smelova, V.S. Zelensky, V.A. Vdovin. 1. Faculty of Physics, M.V. Lomonosov Moscow State University, Moscow, Russia. 2. Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, Russia.

P2-13 Modeling of the effective ion charges in grain boundaries of polycrystalline interconnects. T. Makhviladze, M. Sarychev. Institute of Physics and Technology of RAS, Moscow, Russia.

P2-14 Swift heavy ion stimulated formation of the Si quantum dots in Si/SiO₂ multilayer heterostructures. G. Kamaev, S. Cherkova, A. Gismatulin, V. Volodin, V. Skuratov, V.A. Popov, A.E. Berdnikov. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.

P2-15 Luminescent properties of GeOₓ thin films and GeO/SiO₂ heterostructures modified with swift heavy ions. S.G. Cherkova, V.A. Volodin, V.A. Skuratov, M. Stoffel, H. Rinnert, M. Vergnat. 1. Rzhanov Institute of Semiconductor Physics of Siberian Branch of RAS, Novosibirsk, Russia. 2. Novosibirsk State University, Novosibirsk, Russia. 3. Joint Institute for Nuclear Research, Dubna, Russia. 4. National Research Nuclear University MEPhI, Moscow, Russia. 5. Dubna State University, Dubna, Russia. 6. Université de Lorraine, CNRS, IJL, Nancy, France.


P2-17 Concept of glass formation in chalcogenide systems and the possibility of predicting new compounds for micro- and nanoelectronics. N. Korobova, S. Timoshenkov, V. Minaev. Institute of Nano-MicroSystem Technique, National Research University of Electronic Technology - MIET, Zelenograd, Russia.

Mechanical properties and adhesion of Ge$_2$Sb$_2$Te$_5$ thin films obtained by different deposition methods. A. Yakubov$^1$, A. Sherchenkov$^1$, I. Bdikin$^2$, P. Lazarenko$^1$, D. Terekhov$^1$, A. Babich$^1$.
1. National Research University of Electronic Technology - MIET, Zelenograd, Russia.
2. Department of Mechanical Engineering & Centre for Mechanical Technology & Automation, University of Aveiro, Portugal.

1. Institute of Nanotechnologies, Electronics and Equipment Engineering, Taganrog, Russia.
2. National University of Singapore, Singapore.
3. Institute of Physics and Technology of RAS, Moscow, Russia.

Materials based on AgGaS$_2$ for X-ray Detection. S. Asadov$^1$, S. Mustafaeva$^2$, V. Lukichev$^3$.
1. Institute of Catalysis and Inorganic Chemistry, Baku, Azerbaijan.
2. Institute of Physics, Baku, Azerbaijan.
3. Institute of Physics and Technology of RAS, Moscow, Russia.

Comparative study of the dependence of line edge roughness of resists patterns on its molecular structure. A. Sharapov$^{1,2}$, G. Baranov$^{1,2}$, A. Shishlyannikov$^{1,2}$, A. Tatarintsev$^3$, O. Gushin$^1$, K. Rudenko$^1$.
1. JSC Molecular Electronics Research Institute, Zelenograd, Russia.
2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.
3. Institute of Physics and Technology of RAS, Moscow, Russia.

1. L.Ya. Karpov Institute of Physical Chemistry, Moscow, Russia.
2. Institute of Physics and Technology of RAS, Moscow, Russia.

Formation of nanosized elements by ion beam lithography for multiple fin field effect transistor prototyping. K.A. Tsarik$^1$, A.I. Martynov$^1$, S.D. Fedotov$^{1,2}$, V.K. Nevolin$^1$.
1. National Research University of Electronic Technology - MIET, Zelenograd, Russia.
2. Epiel JSC, Zelenograd, Russia.

Mask formation on GaAs substrate by focused ion beams of Ga$^+$ for plasma chemical etch. I.N. Kots$^1$, V.S. Klimin$^{1,2}$, V.V. Polyakova$^1$, A.A. Rezvan$^1$, O.A. Ageev$^2$.
1. Southern Federal University, Institute of Nanotechnologies, Electronics, and Equipment Engineering, Department of Nanotechnologies and Microsystems, Taganrog, Russia.
2. Southern Federal University, Research and Education Center "Nanotechnology", Taganrog, Russia.

Nanoscale profiling of A$_3$B$_5$ surface by the local anodic oxidation and plasma chemical etching. V.S. Klimin$^{1,2}$, M.S. Solodovnik$^{1,2}$, R.V. Tominov$^2$, A.A. Rezvan$^1$, O.A. Ageev$^2$.
1. Southern Federal University, Institute of Nanotechnologies, Electronics, and Equipment Engineering, Department of Nanotechnologies and Microsystems, Taganrog, Russia.
2. Southern Federal University, Research and Education Center "Nanotechnology", Taganrog, Russia.

Investigation modes profiling of silicon surface by the method of local anodic oxidation to create promising elements of nanoelectronics. V. Polyakova$^1$, I. Kots$^1$, O. Ageev$^2$.
2. Scientific and Educational Center of Southern Federal University, Taganrog, Russia.

P2-29 Cyclic discrete etching of Silicon oxide in deposition-sputtering cycles: towards to ALE. V. Kuzmenko1,2, A. Miakonkikh1,2, K. Rudenko1,2. 1. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 2. Institute of Physics and Technology of RAS, Moscow, Russia.

P2-30 Study of synergy phenomena for atomic layer etching of Silicon, Aluminum, and Hafnium oxides. V. Kuzmenko1,2, A. Miakonkikh1,2, K. Rudenko1,2. 1. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 2. Institute of Physics and Technology of RAS, Moscow, Russia.


P2-32 Radicals and molecules on the wafer surfaces after plasma activation for direct bonding. V.A. Antonov, L.N. Safronov, E.D. Zhanaev, V.P. Popov. Rzhanov Institute of Semiconductor Physics of Siberian Branch of RAS, Novosibirsk, Russia.

P2-33 Growing of Si/Si1-xGe/x/Si (x < 0.1) quantum wells by modulation of the Ge flow. A.V. Klekovkin1,2, I.P. Kazakov1, V.A. Tsvekov1, M.A. Akmaev1, O.V. Uvarov3. 1. P.N. Lebedev Physical Institute of RAS, Moscow, Russia. 2. V.G. Mokerov Institute of UHF Semiconductor Electronics of RAS, Moscow, Russia. 3. A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia.

P2-34 Formation of In/AlGaAs nanostructures by droplet molecular beam epitaxy. M.S. Solodovnik1,2, S.V. Balakirev1, M.M. Eremenko2, I.A. Mikhaylin2, O.A. Ageev2. 1. Southern Federal University, Institute of Nanotechnologies, Electronics and Equipment Engineering, Department of Nanotechnologies and Microsystems, Taganrog, Russia. 2. Southern Federal University, Research and Education Center “Nanotechnologies”, Taganrog, Russia.

P2-35 Droplet epitaxy of indium on nanopatterned GaAs(001) substrate studied by kinetic Monte Carlo simulations. S.V. Balakirev1, M.M. Eremenko2, I.A. Mikhaylin2, M.S. Solodovnik1,2, O.A. Ageev2. 1. Southern Federal University, Institute of Nanotechnologies, Electronics and Equipment Engineering, Department of Nanotechnologies and Microsystems, Taganrog, Russia. 2. Southern Federal University, Research and Education Center “Nanotechnologies”, Taganrog, Russia.


P2-37 Induced bistability into quartz glass by silicon wafer heat treatment in lamp-based reactor. V. Prigara, V. Ovcharov. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.
P2-38 Localization of a thermo-optical travelling wave on an optical inhomogeneity in a silicon wafer under lamp-based heating. V. Ovcharov, V. Prigara, A. Kurenya, V. Rudakov. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.

P2-39 Features of the formation thermite materials based on Al/CuO nanopowders by the electrophoretic deposition technology for reactive bonding. L. Sorokina¹, E. Lebedev¹, D. Gromov¹, Y. Shaman², R. Ryazanov³. 1. Institute of Advanced Materials and Technologies, National Research University of Electronic Technology - MIET, Zelenograd, Russia. 2. Scientific Manufacturing Complex “Technological Centre”, Zelenograd, Russia.

P2-40 Fabrication and properties of SOI-based planar silicon nanowire arrays. A. Rogozhin¹,², A. Miakonkikh¹,², A. Tatarintsev¹, K. Rudenko¹. 1. Institute of Physics and Technology of RAS, Moscow, Russia. 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.

P2-41 Effect of the sublayer material on the growth rate of carbon nanotubes in low-temperature plasma. V.S. Klimin¹², A.A. Rezvan¹, O.I. Il'In¹², O.A. Ageev². 1. Southern Federal University, Institute of Nanotechnologies, Electronics, and Equipment Engineering, Department of Nanotechnologies and Microsystems, Taganrog, Russia. 2. Southern Federal University, Research and Education Center "Nanotechnology", Taganrog, Russia.

P2-42 A Novel Method of Graphene Hydrogenation by MWCVD Plasma. E. Paramonov¹, A. Saveliev¹, M. Rybin²³, E. Obraztsova², M. Biryukov⁴, G. Pavlov⁵, A. Molin⁵. 1. Laboratory of Carbon Nanomaterials, Ltd, Skolkovo, Russia. 2. A.M. Prokhorov General Physics Institute of RAS, Moscow, Russia. 3. LLC “RUSGRAPHENE”, Protvino, Russia. 4. JSC Research Institute of Precision Machine Manufacturing, Zelenograd, Russia. 5. LLC “Atommedcenter”, Moscow, Russia.

P2-43 PECVD CNT-Si nanocomposite technology for MEMS applications. E. Gusev¹², J. Jityaeva², N. Rudyk¹, O. Ageev¹². 1. Southern Federal University, Institute of Nanotechnology, Electronics and Equipment Engineering, Taganrog, Russia. 2. Southern Federal University, Research and Educational Centre "Nanotechnologies", Taganrog, Russia.


P2-45 Ion-plasma sputtering of (111) textured Pt films with various crystalline structure parameters. R. Selyukov, I. Amirov, M. Izyumov, V. Naumov. Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia.

P2-46 Sub-micron inorganic masks for high-quality Josephson structures. S.B. Izyurov¹, V.L. Gurtovoi¹², I.N. Khrapach¹³, V.B. Lubsanov¹, O.V. Astafiev¹³⁴. 1. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. 2. Institute of Microelectronics Technology and High Purity Materials of RAS, Chernogolovka, Russia. 3. Russian Quantum Center, Skolkovo, Russia. 4. Physics Department, Royal Holloway, University of London, Egham, United Kingdom.
Delayed papers

D-01  Highly sensitive ultra-low frequency hydrophone. T.V. Krishtop¹, D.A. Zhevnenko¹,²,³, S.V. Kokhanovsky¹, P.V. Dudkin¹,², A.S. Zlobin², A.Y. Belyaev²,³, V.G. Krishtop¹,⁴. ¹ LLC «Seysmotronika», Moscow, Russia. ² Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. ³ JCS Molecular Electronics Research Institute, Zelenograd, Russia. ⁴ Institute of Microelectronics Technology and High Purity Materials RAS, Chernogolovka, Russia.

D-02  Influence of the electromigration on the characteristics of electrochemical microsystems. D.A. Zhevnenko¹,²,³, E.S. Gornev²,³, V.O. Kuzmenko², P.V. Dudkin¹,², S.N. Zhabin², T.V. Krishtop¹, V.G. Krishtop¹,⁴. ¹ Seismotronics LLC, Moscow, Russia. ² Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia. ³ JCS Molecular Electronics Research Institute, Zelenograd, Russia. ⁴ Institute of Microelectronics Technology and High Purity Materials RAS, Chernogolovka, Russia.