International Conference
“Micro- and nanoelectronics – 2009”

2009 ICMNE
Micro- and nanoelectronics

QI 2009
Quantum informatics

Russian Academy of Sciences
Russian Foundation for Basic Research

Conference Programme

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October 5th - 9th, 2009

Moscow – Zvenigorod, Russia

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SESSIONS LOCATION

Monday, October 5th, 2009

TIME	CONFERENCE HALL	AUDITORIUM A	AUDITORIUM B
16.00 – 18.00	Hi-Tech Companies Presentations	----------	----------

Tuesday, October 6th, 2009

8.50. Conference Hall. WELCOME REMARKS

TIME	CONFERENCE HALL	AUDITORIUM A	AUDITORIUM B
9.00 – 11.40	**Plenary Session I.**	----------	----------
12.00 – 13.30	Session 1. Advanced Lithography	Session 2. Simulation & Modeling I	Session 3. Photonics & Optoelectronics I
14.30 – 16.30	Session 4. Nanodevices & Nanostructures I	Session 5. Superconducting Structures & Devices I	Session 6. Thin Films
17.00 – 18.40	Session 7. Devices and ICs	Session 8. Superconducting Structures & Devices II	Session 9. Photonics & Optoelectronics II

Wednesday, October 7th 2009

TIME	CONFERENCE HALL	AUDITORIUM A	AUDITORIUM B
8.50 – 11.00	**Plenary Session II.** Quantum Informatics	----------	----------
11.20 – 13.00	Session 10. Carbon Nanostructures	Session 11. Quantum Informatics II	----------
14.00 –16.10	Session 12. Ion and Plasma Processing	Session 13. Quantum Informatics III	Session 14. Simulation & Modeling II

TIME	ENTRESOL	BOTTOM HALL
16.30 – 18.30	POSTER SESSION I	EXHIBITION

Thursday, October 8th 2009

TIME	CONFERENCE HALL	AUDITORIUM A	AUDITORIUM B
9.00 – 11.00	Session 15. Nanostructures Fabrication Techniques	Session 16. Quantum Informatics IV	Session 17. Simulation and Modeling III
11.30 - 13.20	Session 18. Magnetic Micro- & Nanostructures	Session 19. Quantum Informatics V	Session 20. Micro- and Nanostructures Characterization I
14.20 – 16.30	Session 21. Plasma Physics & Technologies	Session 22. Quantum Informatics VI	Session 23. Micro- and Nanostructures Characterization II

TIME	ENTRESOL	BOTTOM HALL
16.45 – 18.30	POSTER SESSION II	EXHIBITION

18.45. Conference Hall. CLOSING CONFERENCE REMARKS

ICMNE-2009 SCIENTIFIC PROGRAM
Oral Sessions

Monday, October 5th, 2009

9.00 - …Registration & Accommodation
13.00-14.00 Lunch

Conference hall

Special Session. Presentations of Hi-Tech Companies

16.00 S1-1 **Will be announced later**

16.30 S1-2 **Nanoimprint Lithography: Principles, Possibilities, and High Volume Manufacturing.** ***M. Beck.*** *Eurotek, Inc., Germany*

17.00 S1-3 **TechnoInfo products overview.** ***A. Kuznetsov.*** *Technoinfo Ltd., London, UK*

17.30 S1-4 **Technological complexes for MEMS and NEMS research and development.** ***V. Bykov*** *. NT-MDT Co., Zelenograd, Russia*

18.00 **Welcome Party**
19.00 **Dinner**

Tuesday, October 6th, 2009

8.15 Breakfast

Conference hall

8.50. WELCOME REMARKS

E.P. Velikhov, Conference Chair, RSC "Kurchatov Institute", Moscow
K.A. Valiev, Program Chair, IPT RAS, Moscow

Plenary Session I

Session Chairman: Alexander Orlikovsky, *Institute of Physics &Technology RAS, Russia*

9.00 L1-01 **KEYNOTE: Nanoelectronic devices and materials for the end of the roadmap.** ***G. Ghibaudo and F. Balestra.*** *IMEP-LAHC, Minatec (CNRS-Grenoble INP, UJF, US), Grenoble, France*

9.40 L1-02 **KEYNOTE: Challenges of Advanced Interconnects: from Cu/low-k to Wireless.** ***T. Kikkawa.*** *Research Institute for Nanodevice and Bio Systems, Hiroshima University, Japan.*

10.20 L1-03 **INVITED: Emerging non-volatile semiconductor memories in deep submicron technologies.** ***Y. Roizin.*** *Tower Semiconductor Ltd., Migdal HaEmek, Israel.*

11.00 L1-04 INVITED: Electromigration theory and its applications to integrated circuit metallization. ***T. Makhviladze, M. Sarychev.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*

11.40-12.00 Coffee break. Winter garden

Conference Hall
Session 1. Advanced Lithography

Session Chairman: Vladimir Lukichev, *Institute of Physics &Technology RAS, Russia*

12.00 L1-05 INVITED: Immersion Lithography and Double Patterning in Advanced Microelectronics. ***T. Vandeweyer, J. Bekaert, M. Ercken, R. Gronheid, A. Miller, V. Truffert, J. Versluijs, V. Wiaux, P. Wong, G. Vandenberghe, M. Maenhoudt.*** *IMEC vzw, Leuven, Belgium*

12.30 O1-01 Projection photolithography modeling using the finite-difference time-domain approach. ***T. Makhviladze, M. Sarychev.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia.*

12.50 O1-02 The metal hard-mask approach for contact patterning. ***J.-F. de Marneffe, D. Goossens , D. Shamiryan, F. Lazzarino, Th. Conard, I. Hoflijk, H. Struyf and W. Boullart.*** *IMEC v.z.w., Leuven, Belgium.*

13.10 O1-03 Manufacturing of diffraction quality optical elements for high resolution optical systems. ***N.I. Chkhalo, A.E. Pestov, N.N. Salashchenko, M.N. Toropov.*** *Institute for Physics of Microstructures, Russian Academy of Sciences, Nizhny Novgorod, Russia*

Auditorium A
Session 2. Simulation and Modeling I

Session Chairman: Vladimir Vyurkov, *Institute of Physics &Technology RAS, Russia*

12.00 O1-04 Nanoelectronic device simulation software system NANODEV: New opportunities. ***I.I. Abramov, A.L. Baranoff, I.A. Goncharenko, N.V. Kolomejtseva, Y.L. Bely.*** *Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus.*

12.20 O1-05 The charge sharing inside the layers of nano- CMOS integrated structures under controllable substrate biasing. ***T. Krupkina, D. Rodionov, A. Shvets, I. Titova.*** *Moscow Institute of Electronic Engineering, Moscow, Russia*

12.40 O1-06 Analysis of lateral thermal SOA for smart power IC's. ***Yu. Chaplygin, A. Krasukov, E. Artamonova.*** *Moscow Institute of Electronic Technology (Technical University*

13.00 O1-07 Advanced atomic-scale simulation of silicon nitride CVD from dichlorosilane and ammonia. ***T. Makhviladze, A. Minushev.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*

Auditorium B
Session 3. Photonics and Optoelectronics I

Session Chairman: **Sergey Nikitov,** *Institute of Radioengineering and Electronics RAS, Russia*

12.00 O1-08 **One-dimensional Photonic Crystals on Silicon as Optical Elements for Integrated Microphotonics.** ***V. Tolmachev[1], E. Astrova[1], T. Perova[2].*** *1. Ioffe Physical Technical Institute, Russian Academy of Sciences, St. Petersburg, Russia, 2. Department of Electronic and Electrical Engineering, University of Dublin, Trinity College, Dublin 2, Ireland*

12.20 O1-09 **Reduction of noise in atomic system driven by squeezed coherent field.** ***A. Gelman, V. Mironov.*** *Institute of Applied Physics of Russian Academy of Sciences, Nizhny Novgorod , Russia*

12.40 O1-10 **Enhancement of Optical Properties by Surface Nanostructuring.** ***V.V. Nanumov[1] , V.A. Paporkov[2] , N.A. Rud[2] , E.I. Vaganova[1] , A.V. Prokaznikov[1].*** *1. Yaroslavl Branch of Institute of Physics and Technology RAS, Yaroslavl, Russia 2. Yaroslavl State University named after Demidov P.G., Yaroslavl, Russia*

13.00 O1-11 **Excitation dependence of infrared emission at 1.5-1.6 μm from defect-rich Si layers.** ***A.A. Shklyaev[1,2], A.B. Latyshev[1,2], M. Ichikawa[3]*** *1. Institute of Semiconductor Physics, SB RAS, Novosibirsk, Russia, 2. Novosibirsk State University, Novosibirsk, Russia 3. Quantum-Phase Electronics Center, Department of Applied Physics, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan*

13.30-14.30 Lunch

Conference Hall
Session 4. Nanodevices and Nanostructures I

Session Chairman: ***Vitaly Aristov.*** *Institute of Microelectronics Technology, RAS, Russia*

14.30 O1-12 **Electronic transport in heterogeneous nanometer FET channels.** ***V. P. Popov.*** *Institute of Semiconductor Physics, Novosibirsk, Russia*

14.50 O1-13 **Ballistic and Pseudo-Relativistic Carrier Transport in Graphene.** ***G. I. Zebrev.*** *Micro- and Nanoelectronics Department, National Research Nuclear University "MEPHI", Moscow, Russia*

15.10 O1-14 **Comparative studies of single- and double-nanocrystal layer NVM structures: charge accumulation and retention.** ***V. Turchanikov[1], V. Ievtukh[1], A. Nazarov[1], V. Lysenko[1], M. Theodoropoulou[2], A.G. Nassiopoulou[2] .*** *1. Lashkaryov Institute of Semiconductor Physics NASU, Kyiv, Ukraine, 2. IMEL/NCSR Demokritos, Athens-Greece*

15.30 O1-15 **Silicon nanoballs recharging in plasma-chemical oxide of nanometric thickness.** ***M.D. Efremov[1,2], S.A. Arzhannikova[1,2], V.A. Volodin[1,2], G.N. Kamaev[1,2], S.A. Kochubei[1], I.G. Neizvestny[1]*** *1. Institute of Semiconductor Physics, Russian Academy of Sciences, Novosibirsk, Russia, 2. Novosibirsk State University, Novosibirsk, Russia*

15.50 O1-16 **Charges and states in nitrided buried dielectrics of SOI structures.** ***V. P. Popov, I.E. Tyschenko.*** *Institute of Semiconductor Physics, Novosibirsk, Russia.*

Auditorium A
Session 5. Superconducting Structures and Devices I

Session Chairman: **Vladimir Lukichev,** *Institute of Physics &Technology RAS, Russia*

14.30 L1-06 **INVITED: Thermo-Electric Charge-to-Voltage Converter with an SIN Tunnel Junction for Bolometer Applications.** ***L. Kuzmin.*** *Chalmers University of Technology, Goteborg, Sweden.*

15.00 O1-17 **DC SQUID modulation electronics for operation with HTS DC SQUID magnetometers in the unshielded environment.** ***E.V. Burmistrov, V.Yu. Slobodchikov, V.V. Khanin, Yu.V. Maslennikov.*** *Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Moscow, Russia*

15.20 O1-18 **Properties of planar Nb/α-Si/Nb Josephson junctions with various doped degree of α-Si interlayers.** ***A.L. Gudkov, A.A. Gogin, A.I. Kozlov, A.N. Samys.*** *CJSC "Compelst", FSUE "SRIPP n. F.V. Lykin", Moscow, Zelenograd, Russia*

15.40 O1-19 **The theoretical analysis of the new microwave detector based on a Josephson heterostructure.** ***I.A. Devyatov[1], M.Yu. Kupriyanov[2]*** **.** *1. Lomonosov Moscow State University, Russia 2. Skobeltsyn Institute of Nuclear Physics, Moscow, Russia*

16.00 O1-20 **«Conventional» SQUIDs and quantum interferometers on matter waves in superfluid helium.** ***A. Golovashkin[1], G. Izmaïlov[2], G. Kuleshova[3], A. Tshovrebov[1], L. Zherikhina[1]*** **.** *1. Lebedev Physical Institute, Russian Academy of Science, Moscow, Russia; 2. Moscow Aviation Institute (State Technical University), Moscow, Russia 3. Moscow Engineering Physics Institute (State University) , Moscow, Russia*

Auditorium B
Session 6. Thin Films

Session Chairman: **Andrey Vasiliev,** *FSU Enterprise"Pulsar", Russia*

14.30 O1-21 **The thermodynamic theory of interfacial adhesion between materials containing point defects.** ***R. Goldstein[1], T. Makhviladze[2], M. Sarychev[2]*** *1. Institute for Problems in Mechanics, Russian Academy of Sciences, Russia, 2. Institute of Physics and Technology, Russian Academy of Sciences, Russia.*

14.50 O1-22 **The thickness-dependence of the polariton effect in the single quantum well.** ***Yu.V. Moskalev[1], S.B. Moskovski[2].*** *1. Yaroslavl State Pedagogical University, Yaroslavl, Russia, 2. Yaroslavl State University, Yaroslavl, Russia*

15.10 O1-23 **$CoSi_2/TiO_2/SiO_2/Si$ gate structure formation.** ***A.E. Rogozhin [1], I.A Khorin [1,2], V.V. Naumov [1], A.A. Orlikovsky [1], V.V. Ovcharov [1], V.I. Rudakov [1], A.G. Vasiliev [1,3]*** *1. Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia, 2. Moscow State Institute of Radio-engineering, Electronics and Automation, Moscow, Russia, 3. Federal State Unitary Enterprise "Scientific & Product Enterprise "Pulsar", Moscow , Russia*

15.30 O1-24 **Local performances of PZT films with a thickness less than 100 nanometers.** ***V.M Roshchin, M.V. Silibin.*** *Moscow Institute of Electronic Technologies (Technical University), Zelenograd, Russia*

15.50 O1-25 **Polysilicon Inductive Elements for IC's.** ***A.M. Pashayev, F.D. Kasimov., R.A. Ibragimov.*** *National Academy of Aviation, Baku, Azerbaijan*

16.30-17.00 Coffee break. Winter garden.

Conference Hall
Session 7. Devices and ICs

Session Chairman: Boris Konoplev,
Taganrog Institute of Technology - Southern Federal University, Russia

17.00 O1-26 **SiGe and GaN heterostructure microwave devices.** ***A.G. Vasiliev, Y.V. Kolkovsky, S.V. Korneev, A.A. Dorofeev, V.M. Minnebaev.*** *FSUE "Science and Production Enterprise "Pulsar" Moscow, Russia*

17.20 O1-27 **Methods of cache memory optimization for multimedia applications.** ***A. Kravtsov.*** *JSC Mikron, Moskow, Zelenograd, Russia*

17.40 O1-28 **Integrated Injection Laser with Amplitude Modulation in Terahertz Band.** ***B. Konoplev[1,2], E. Ryndin[2], M. Denisenko[1].*** *1. Taganrog Institute of Technology - Southern Federal University, Taganrog, Russia, 2. Southern Scientific Center of Russian Academy of Sciences, Rostov-on-Don, Russia*

18.00 O1-29 **Gas medium influence on characteristics stability of electroformed structures Si-SiO_2-W and reliability of switching processes of memory elements on the basis of these structures.** ***V.M. Mordvintsev, S.E. Kudryavtsev, V.L. Levin, L.A. Tsvetkova.*** *Yaroslavl Branch of the Institute of Physics and Technology, Russian Academy of Sciences, Russia*

18.20 O1-30 **Low-resistance Ge/Au/Ni/Ti/Au based ohmic contact to n-GaAs.** ***E. Erofeev[1], V. Kagadei[2].*** *1. Scientific Research Institute of Electrical Communication Systems, Tomsk, Russia, 2. Research and production company "Micran", Tomsk, Russia*

Auditorium A
Session 8. Superconducting Structures and Devices II

Session Chairman: Mikhail Kupriyanov, *Institute of Nuclear Physics, Moscow State University, Russia*.

17.00 O1-31 **Manipulating superconductivity with magnetism: from unconventional physical effects to cryogenic spintronics.** ***L.R. Tagirov.*** *Solid State Physics Department, Kazan State University, Kazan, Russia*

17.20 O1-32 **Magnetic field-tuned superconductor-insulator transition in PbTe/PbS heterostructures with superconducting interface.** ***O. Yuzephovich[1,2], S. Bengus[1,2], M. Mikhailov[1], A. Sipatov[3], E. Buchstab[4], N. Fogel[4]*** *1. Institute for Low Temperature Physics and Engineering, Kharkov, Ukraine, 2. International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw, Poland 3. National Technical University "Kharkov Polytechnical Institute" Kharkov, Ukraine 4. Solid State Institute, Technion, Haifa, Israel*

17.40 O1-33 **Could equilibrium noise be detected with help of series-connected asymmetric superconducting rings?** ***V.L. Gurtovoi, A.I. Ilin, A.V. Nikulov, V.A. Tulin.*** *Institute of Microelectronics Technology, Russian Academy of Sciences, Chernogolovka, Russia*

18.00 O1-34 **Superconductivity of polymers with charge injection doping.** ***A.N. Ionov[1], R. Rentzsch[2].*** *1. A.F. Ioffe Physico-Technical Institute, St. Petersburg, Russia, 2. Institut für Experimentalphysik, Freie Universität Berlin, Berlin, Germany*

Auditorium B
Session 9. Photonics and Optoelectronics II

Session Chairman: **Sergey Nikitov,** *Institute of Radioengineering and Electronics RAS, Russia*

17.00 O1-35 **CMOS color image sensors. Current state and aspects.** ***V.A. Gergel*[1], *I.V. Vanyushin*[2] .** *1. Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Moscow, Russia.2. LCC "SensorIC", Moscow, Russia*

17.20 O1-36 **Monolithic photodetector 32x32.** ***A.V. Sorochkin, M.V. Yakushev, S.A. Dvoretsky, A.I. Kozlov, I.V. Sabinina, Y.G. Sidorov, B.I. Fomin, A.L. Aseev.*** *Institute of Semiconductor Physics, Russian Academy of Sciences, Novosibirsk, Russia*

17.40 O1-37 **Improvement of Radiation Resistance of Multijunction Solar Cells by Application of Bragg Reflectors.** ***V. Emelyanov, N. Kaluzhniy, S. Mintairov, M. Shvarts, V. Lantratov.*** *Ioffe Physico-Technical Institute of RAS, St.-Petersburg, Russia*

18.00 O1-38 **Polycrystalline Silicon Short Wave Photodetectors.** ***F.D. Kasimov., N.G. Javadov.*** *National Academy of Aviation, Baku, Azerbaijan*

19.00 Dinner

Wednesday, October 7th 2009

8.15 Breakfast

Conference hall
Plenary Session II. Quantum Informatics.

Session Chairman: **K.A.Valiev,** *Institute of Physics and Technology, RAS, Russia*

8.50 **Introductory Remarks: Quantum informatics and complex systems. Yu.I. Ozhigov.** *M.V. Lomonosov Moscow State University, Russia*

9.00 qL-01 **INVITED: Quantum Mechanics as Emergent Phenomenon.** ***A. Khrennikov.*** *International center for mathematical modeling in physics, engineering and cognitive science, University of Vaxjo, Sweden*

9.30 qL-02 **INVITED: Dynamical Decoupling Pushed to the Extreme.** ***V.M. Akulin.*** *Laboratoire Aime Cotton CNRS ,Orsay, France*

10.00 qL-03 **INVITED: Tunneling without tunneling: wavefunction reduction in a mesoscopic qubit.** ***J.A. Nesteroff and D. V. Averin.*** *Department of Physics and Astronomy, Stony Brook University, Stony Brook, NY, USA*

10.30 qL-04 **INVITED: Superconducting Qubits.** ***E. Il'ichev.*** *Institute of Photonic Technology, Jena, Germany*

11.00 Coffee break

Conference Hall
Session 10. Carbon Nanostructures

Session Chairman: **Anatoly Vyatkin,** *Institute of Microelectronics Technologies, RAS, Russia*

11.20 L2-01 **INVITED: Carbon nanostructures as new material for emission electronics.** ***Yu. V. Gulyaev.*** *Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Moscow, Russia*

12.00 O2-01 **Linear-chain carbon films for micro- and nanoelectronics.** ***N.D. Novikov, A.F. Alexandrov, M.B. Guseva, V.V. Khvostov, N.F. Savchenko, Yu.V. Korneeva.*** *Physics Department, M.V. Lomonosov Moscow State University, Moscow, Russia*

12.20 O2-02 **Fabrication of device structures from single-walled carbon nanotubes selectively grown on patterned catalytic layers.** ***O.V. Kononenko [1], V.N. Matveev [1], Yu.A. Kasumov[1], I.I. Khodos[1], D.V. Matveev[2], V.T. Volkov[1], A.I. Il'in[1], M.A. Knyazev[1]*** *1. Institute of Microelectronics Technology, Russian Academy of Sciences, Chernogolovka, Russia. 2. Institute of Solid State Physics Russian Academy of Sciences, Chernogolovka, Russia*

12.40 O2-03 **CNS catalyst growth from carbonaceous substrate.** ***E. Ilyichev, V. Inkin, D. Migunov, G. Petruhin, E. Poltoratskii, G. Rychkov, D. Shkodin.*** *FSUE "Res. Inst. of Phys. Problems named after F.V. Lukin", Zelenograd*

Auditorium A
Session 11. Quantum Informatics II

Session Chairman: **Yuri Ozhigov,** *M.V.Lomonosov Moscow State University, Russia*

11.20 q2-01 **Simulation of entangled nuclei in two-atom association.** ***B. Aksenov, Yu. Ozhigov.*** *Lomonosov Moscow State University, Russia*

11.40 q2-02 **Could the Schrodinger's Cat be used as Quantum Bit?** ***V.V. Aristov, A.V. Nikulov.****Institute of Microelectronics Technology, Russian Academy of Sciences, Chernogolovka, Russia*

12.00 q2-03 **Unified Statistical Method for Tomography of Quantum States by Purification.** ***Yu.I. Bogdanov.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*

12.20 q2-04 **Information aspects of «which way» experiments with microparticles.** ***Yu.I. Bogdanov[1], K.A. Valiev[1], S.A. Nuyanzin[2], A.K. Gavrichenko[1].*** *1. Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia, 2. Moscow Institute of Electronic Technology (Technical University),Zelenograd, Russia*

12.40 q2-05 **Simulation of electron jumps in the collision of two hydrogen atoms.** ***K. Burtniy[1], Yu. Ozhigov[1,2].*** *1. Institute of Physics and Technology, RAS, Moscow, Russia 2. M.V. Lomonosov Moscow State University, Russia*

13.00 Lunch

Conference hall
Session 12. Ion and Plasma Processing

Session Chairman: **Alexander Efremov,** *Ivanovo State University of Chemistry & Technology, Russia*.

14.00 L2-02 **INVITED: Evolution of Ion Implantation Technology Towards sub-45 nm Device Fabrication.** ***S. I. Kondratenko, R. N. Reece, M. S. Ameen, M. A. Harris, and L. M. Rubin.*** *Axcelis Technologies, 108 Cherry Hill Drive, Beverly, MA 01915 USA*

14.30 L2-03 **INVITED: Challenges and future prospects in plasma etching processes.** ***O. Joubert[1], E. Pargon[1], T. Chevolleau[1], G. Cunge[1], L. Vallier[1], T. David[2], S. Barnola[2], T. Lill[3].*** *1. LTM (CNRS-UJF-INPG), France 2. CEA-LETI, France. 3. Applied Materials Inc., Santa Clara, USA*

15.00 O2-04 **Dry Etch Solutions for 3D Integration Technology.** ***N. Tutunjyan, M. Van Cauwenberghe, P. Verdonck, B. Majeed, T. Buisson, Y. Civale, W. Boullart.*** *IMEC, Leuven, Belgium*

15.20 O2-05 **Impact of plasma exposure on organic low-k materials.** ***E. Smirnov[1,2], A. K. Ferchichi[1], C. Huffman[1], M. R. Baklanov[1].*** *1. IMEC vzw, Heverlee, Belgium, 2. Moscow Institute of Electronic Technology, Moscow, Russia*

15.40 O2-06 **Application of Langmuir probe technique in depositing plasmas for monitoring of etch process robustness and for end-point detection.** ***A.V. Miakonkikh, K.V. Rudenko.*** *Institute of Physics and Technology of RAS , Moscow, Russia.*

Auditorium A
Session 13. Quantum Informatics III

Session Chairman: **A. Tsukanov,** *Institute of Physics and Technology, RAS, Russia*

14.00 qL-05 **INVITED: Quantum Measurement of Open Systems.** ***L. Fedichkin.*** *Michigan State University, East Lansing, USA*

14.30 q2-06 **Quantum Entanglement and its Observation at Measurement of Magnetic Succeptibility and in Multiple Quantum NMR Experiments.** ***E.B. Fel'dman.*** *Institute of Problems of Chemical Physics of Russian Academy of Sciences, Chernogolovka, Moscow Region*

14.50 q2-07 **The qubit states decoherence in antiferromagnet-based nuclear spin model of quantum register.** ***A.A. Kokin[1], V.A. Kokin[2].*** *1. Institute of Physics and Technology of RAS , Moscow, Russia 2. Institute of Radioengineering and Electronics of RAS, Moscow Russia*

15.10 q2-08 **Quantum Double Helix.** ***A.Yu. Okulov.*** *General Physics Institute of Russian Academy of Sciences, Moscow, Russia*

15.30 q2-09 **Time-optimal control of quantum dynamics of a quadrupole nucleus by NMR techniques.** ***V.P. Shauro, V.E. Zobov.*** *L.V.Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Krasnoyarsk, Russia*

15.50 q2-10 **Resonant dipole-dipole interaction of a few cold Rydberg atoms in a magneto-optical trap.** ***D.B. Tretyakov[1], I.I. Beterov[1], V.M. Entin[1], I.I. Ryabtsev[1], P.L. Chapovsky[2]*** *1. Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia, 2. Institute of Automation and Electrometry SB RAS, Novosibirsk, Russia*

Auditorium B
Session 14. Simulation and Modeling II

Session Chairman: Tariel Makhviladze, *Institute of Physics &Technology RAS, Russia*

14.00 O2-07 **Mathematical modeling of a fast neutrals beam source neutralization channel.** ***A.V. Degtyarev, V.P. Kudrya, Yu.P. Maishev.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*

14.20 O2-08 **TCAD technique to simulate total dose effects in SOI MOSFETs.** ***K. Petrosjanc, I. Kharitonov, E. Orekhov.*** *Moscow State Institute of Electronics and Mathematics (Technical University), Moscow, Russia*

14.40 O2-09 **Optimization of near-surficial annealing for decreasing of depth of p-n-junction in semiconductor heterostructure.** ***E.L. Pankratov.*** *The Mathematical Department, Nizhny Novgorod State University of Architecture and Civil Engineering,, Nizhny Novgorod, Russia*

15.00 O2-10 **Research of current injection process in to the substrate during digital gate switching.** ***T. Krupkina, D. Rodionov.*** *Moscow Institute of Electronic Technology (Technical University), Moscow, Russia*

15.20 O2-11 **Extrinsic Compact MOSFET Model with Correct Account of Positive Differential Conductivity after Saturation.** ***V.O. Turin[1], A.V. Sedov[1], G.I. Zebrev[2], B. Iñiguez[3],M.S. Shur[4]*** *1. Orel State Technical University, Orel, Russia, 2. National Research Nuclear University "MEPHI", Moscow, Russia, 3. Rovira i Virgili University, Tarragona, Spain, 4. Rensselaer Polytechnic Institute, Troy, NY, USA*

15.40 O2-12 **Informational charge readout dynamics and non-linearity of photosignal characteristics of active pixels in CMOS image sensors.** ***A.V. Verhovtseva, V.A. Gergel', V.A. Zimoglyad.*** *LLC RPC «SensorIS», Moscow, Russia*

16.10 Coffee break

16.30 Entresol
POSTER SESSION I

Bottom hall. EXHIBITION

19.00 Dinner

Thursday, October 8th 2009

08.15 Breakfast

Conference hall
Session 15. Nanostructures Fabrication Techniques

Session Chairman: Anatoly Vyatkin, *Institute of Microelectronics Technologies, RAS, Russia*

09.00 O3-01 **Nucleation and growth of Ge nanoislands on pit-patterned Si substrates.** ***J.V. Smagina[1], P.L. Novikov[1], A.S. Deryabin[1], E.E. Rodyakina, D.A. Nasimov[1], B.I. Fomin[1], V.A. Zinovyev[1], A.V. Dvurechenskii[1,2]*** **.** *1. Institute of Semiconductor Physics SB RA , Novosibirsk, Russia, 2. Novosibirsk State University, Novosibirsk, Russia.*

09.20 O3-02 **Nanoscale Si/SiO_2 superlattices produced by plasma-chemical technology.** ***S.A. Arzhannikova*[1,2], *M.D. Efremov*[1,2], *A.Kh. Antonenko*[1,2], *V.A. Volodin*[1,2], *G.N. Kamaev*[1,2], *D.V. Marin*[1,2], *S.A. Kochubei*[1], *A.A. Voschenkov*[1]** *1. Institute of Semiconductor Physics, Russian Academy of Sciences, Novosibirsk, Russia, 2. Novosibirsk State University, Novosibirsk, Russia*

09.40 O3-03 **Impurity activation and nanocrystals formation using excimer lasers.** ***M.D. Efremov*[1,2], *S.A. Arzhannikova*[1,2], *V.A. Volodin*[1,2], *G.N. Kamaev*[1,2], *S.A. Kochubei*[1], *I.G. Neizvestny*[1].** *1. Institute of Semiconductor Physics, Russian Academy of Sciences, Novosibirsk, Russia, 2. Novosibirsk State University, Novosibirsk, Russia*

10.00 O3-04 **Femtosecond and nanosecond laser assistant formation of Si nanoclusters in silicon-rich nitride films.** ***V.A. Volodin*[1,2], *T.T. Korchagina*[1], *G.N. Kamaev*[1], *A.H. Antonenko*[1], *J. Koch*[3], *B.N. Chichkov*[3].** *1. Institute of Semiconductor Physics, Russian Academy of Sciences, , Novosibirsk, Russia, 2. Novosibirsk State University, Novosibirsk, Russia. 3. Laser Zentrum Hannover, Hannover, Germany*

10.20 O3-05 **Optical diagnostics of GaAs nanoheterostructures growth processes.** ***I.P. Kazakov, E.V. Glazyrin, V.I. Tsekhosh.*** *P.N. Lebedev Physical Institute of Russian Academy of Sciences, Moscow, Russia*

10.40 O3-06 **Low voltage micro lens ion beam column for nano-patterning with resolution of 1.5÷2 nm. Numerical simulation and prospects.** ***V.A. Zhukov*[1], *S. Kalbitzer*[2], *A. I. Titov*[3]** *1. Institute for Informatics and Automation, Russian Academy of Sciences, St. Petersburg, Russia, 2. Ion Beam Technology, D-69121 Heidelberg, Germany, 3. St. Petersburg State Technical University, St. Petersburg, Russia*

Auditorium A
Session 16. Quantum Informatics IV

Session Chairman: **Yu.I.Bogdanov,** *Institute of Physics and Technology, RAS, Russia*

09.00 q3-01 **Quantum computer without uncontrollable Coulomb interaction among space-based qubits.** ***S. Filippov, V. Vyurkov.*** *Institute of Physics and Technology, RAS, Moscow, Russia*

09.20 q3-02 **Quantum information transfer protocol via optimized single-electron transport in semiconductor nanostructure.** ***A.V. Tsukanov.*** *Institute of Physics and Technology, RAS, Moscow, Russia*

09.40 q3-03 **Outlook for the application of Ge/Si quantum dots in quantum calculations.** ***A. Zinovieva*[1], *A. Nenashev*[1], *A. Dvurechenskii*[1], *A.I. Nikiforov*[1], *A. Lyubin*[1], *L. Kulik*[2].** *1. Institute of Semiconductor Physics, Russian Academy of Sciences, Novosibirsk, Russia, 2. Institute of Chemical Kinetics and Combustion, Novosibirsk, Russian Academy of Sciences Russia*

10.00 q3-04 **The quantum dynamics of two coupled large spins.** ***V.E. Zobov.*** *L.V. Kirensky Institute of Physics, SB Russian Academy of Sciences,Krasnoyarsk, Russia*

10.20 q3-05 **Can entanglement fluctuate?** ***M. A. Yurishchev.*** *Institute of Problems of Chemical Physics, Russian Academy of Sciences, Chernogolovka, Russia*

Auditorium B
Session 17. Simulation and Modeling III

Session Chairman: Igor Abramov, *Belarusian State University of Informatics & Radioelectronics, Belarus*

9.00 O3-07 **The influence of the suboxide layer structure on equivalent oxide thickness in nanoscale MIS-structure.** ***N.A. Zaitsev, G.Ya Krasnikov, Matyushkin I.V.*** *Micron Corp., Moscow, Zelenograd, Russia*

9.20 O3-08 **Semi-analytical model of a field-effect transistor with an ultra-thin channel.** ***A. Khomyakov, V. Vyurkov.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*

9.40 O3-09 **Impact of channel inhomogeneities on characteristics of a quantum field-effect transistor.** ***V. Vyurkov, I. Semenikhin, V. Lukichev, A. Orlikovsky.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*

10.00 O3-10 **Bulk and Nanoribbon Graphene Field-Effect Transistor Modeling.** ***G.I. Zebrev[1], E.A. Zotkin[1], A.A. Tselykovskiy[1], E.V. Melnik[1], V.O. Turin[2] .*** *1. Micro- and Nanoelectronics Department, National Research Nuclear University "MEPHI", Moscow, Russia, 2. Orel State Technical University, Orel, Russia*

10.20 O3-11 **Electron optical spin polarization in broken-gap heterostructures.** ***A. Zakharova[1], K. A. Chao[2], I. Semenikhin[1].*** *1. Institute of Physics and Technology of the Russian Academy of Sciences, Moscow, Russia, 2. Department of Physics, Lund University, Lund, Sweden, and Department of Physics, Chemistry and Biology, Linkoping University, Linkoping, Sweden*

11.00 Coffee break

Conference hall
Session 18. Magnetic Micro- and Nanostructures

Session Chairman: Mikhail Chuev, *Institute of Physics &Technology RAS, Russia*

11.30 O3-12 **High-temperature magnetization and Mössbauer spectra of nanoparticles in a weak magnetic field.** ***M. A. Chuev.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia.*

11.50 O3-13 **Mössbauer study of nanomagnetics.** ***V.I. Bachurin[1], I.N. Zakharova[1], M.A. Shipilin[2], A.M. Shipilin[3] .*** *1. Yaroslavl State Technical University, Yaroslavl, Russia, 2. P.G.Demidov Yaroslavl State University, Yaroslavl, Russia, 3. M.V. Lomonosov Moscow State University, Moscow, Russia*

12.10 O3-14 **Ferromagnetic resonance and magnetoelastic demodulation in giant magnetostriction TbCo2/FeCo nanostructured thin film.** ***A. Klimov[1,2], Yu. Ignatov[2], S. Nikitov[2], N. Tiercelin[1], V. Preobrazhensky[1,3], P. Pernod[1].*** *1. LEMAC–IEMN CNRS, Ecole Centrale de Lille, France 2. Kotel'nikov Institute of Radioengineering and Electronics (IRE RAS),Moscow, Russia 3. Wave Research Center, A.M. Prokhorov General Physics Institute RAS, Moscow, Russia*

12.30 O3-15 **Odd-even effects in magnetic nanostructures.** ***V.V. Kostyuchenko.*** *Institute of Physics and Technology RAS, Yaroslavl Branch, Yaroslavl, Russia*

12.50 O3-16 Magnetoresistance of multilayer ferromagnetic nanoparticles. ***S.N. Vdovichev, A.A. Fraerman, B.A. Gribkov, S.A. Gusev, A.Yu. Klimov, V.L. Mironov, V.V. Rogov.*** *Institute for Physics of Microstructures, Russian Academy of Science, Nizhniy Novgorod, Russia*

Auditorium A
Session 19. Quantum Informatics V

Session Chairman: Yuri Ozhigov, *M.V.Lomonosov Moscow State University, Russia*

11.30 q3-06 Quantum cryptography system using phase-time coding and resistant to PNS attack. ***D.A. Kronberg[1] , S.N. Molotkov[1,2,3]*** *1. Faculty of Computational Mathematics and Cybernetics, Moscow State University, Moscow, Russia 2. Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Moscow region, Russia. 3. Academy of Cryptography of the Russian Federation, Moscow, Russia*

11.50 q3-07 Entanglement measure for multipartite pure states and its numerical calculation. ***A. Yu. Chernyavskiy.*** *Institute of Physics & Technology of RAS (FTIAN), Moscow, Russia*

12.10 q3-08 Quantum Computing with Collective Ensembles of Multilevel Systems. ***E. Brion, K. Mølmer, and M. Saffman.*** *Laboratoire Aime Cotton (CNRS), Orsay, France*

12.30 q3-09 Spin-1/2 systems with simple two- and three-dimensional geometrical configurations: state transfer and entanglement between different nodes. ***S.I. Doronin, E.B. Fel'dman and A.I. Zenchuk*** *Institute of Problems of Chemical Physics, Russian Academy of Sciences, Chernogolovka, Moscow reg., Russia*

12.50 q3-10 Flux-qubit and the law of angular momentum conservation. ***A.V. Nikulov.*** *Institute of Microelectronics Technology, Russian Academy of Sciences,Chernogolovka, Moscow District, Russia.*

Auditorium B.
Session 20. Micro- and Nanostructures Characterization I

Session Chairman: Eduard Rau, *Moscow State University, Moscow, Russia*

11.30 O3-17 SEM Probe Defocusing Method of Measurement of Linear Sizes of Nanorelief Elements. ***M.N. Filippov[1], Yu.A. Novikov[2], A.V. Rakov[3], P.A. Todua[3].*** *1. N.S. Kurnakov General and Inorganic Chemistry Institute of the Russian Academy of Sciences, Moscow, Russia, 2. A.M. Prokhorov General Physics Institute of the Russian Academy of Sciences, Moscow, Russia. 3. Center for Surface and Vacuum Research, Moscow, Russia*

11.50 O3-18 SEM Relief Structure Images with Trapezoid Profile and Big Inclination Angle of Side Walls in Back Scattered Electrons. ***M.N. Filippov[1], Yu.A. Novikov[2], A.V. Rakov[3], P.A. Todua[3].*** *1. N.S. Kurnakov General and Inorganic Chemistry Institute of the Russian Academy of Sciences, Moscow, Russia, 2. A.M. Prokhorov General Physics Institute of the Russian Academy of Sciences, Moscow, Russia. 3. Center for Surface and Vacuum Research, Moscow, Russia*

12.10 O3-19 **Combined electron-beam method of the diagnostic of microelectronic structures in scanning electron microscopy.** ***F.A. Lukyanov[1] , N.A. Orlikovsky[2] , E.I. Rau[3] , R.A. Sennov[3].*** *1. Moscow State University, Moscow, Russia 2. Institute of Physic and Technology RAS, Moscow, Russia. 3. Institute of Microelectronics Technology RAS, Chernogolovka, Moscow Region, Russia*

12.30 O3-20 **Problems of AFM-investigations of open sandwich MIM-structures.** ***E.S. Gorlachev, V.M. Mordvintsev, V.L. Levin.*** *Yaroslavl Branch of the Institute of Physics and Technology RAS, Yaroslavl, Russia*

12.50 O3-21 **Correct measurements of capacity using atomic force microscope.** ***A.A. Chouprik, A.S. Baturin.*** *Moscow Institute of Physics and Technology, Dolgoprudny, Russia*

13.20 Lunch

Conference hall
Session 21. Plasma Physics and Technologies

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

14.20 L3-01 **INVITED: Problems of nano-sized and high aspect ratio features plasma etching.** ***V. Lukichev[1], K. Rudenko[1], A. Orlikovsky[1], V. Yunkin[2].*** *1. Institute of Physics & Technology (FTIAN) 2. Institute of Microelectronics Technology, Russian Academy of Sciences, Russia*

14.50 O3-22 **Modeling of plasma reactive ion etching of ultra high aspect ratio Si trenches.** ***I.I.Amirov[1], A.S.Shumilov[1], A.N.Kupriynov[1], V.F.Lukichev[2] .*** *1. Institute RAS Yaroslavl branch of the Institute of Physics & Technology RAS, Yaroslavl, Russia, 2. Institute of Physics & Technology (FTIAN), Russian Academy of Sciences, Moscow, Russia*

15.10 O3-23 **Plasma parameters and active particles kinetics in HBr dc glow discharges.** ***A. Smirnov[1,2], A. Efremov[1], V. Svettsov[1], A. Islyaykin[2].*** *1. Ivanovo State University of Chemistry & Technology, Ivanovo, Russia, 2. Mikron JSC, Zelenograd, Moscow, Russia*

15.30 O3-24 **Mechanisms of film deposition from BCl_3-based plasma during dry etching.** ***D. Shamiryan[1] , A.M. Efremov[2] , V. Serlenga[3] , M.R. Baklanov[1], W. Boullart[1].*** *1. IMEC, Leuven, Belgium 2. Ivanovo State University of Chemistry and Technology, Ivanovo, Russia 3. Instituto Universitario di Studi Superiori, Pavia, Italy*

15.50 O3-25 **Excitation Mechanism of the B+ Emission Line at 345.1 nm in Low-Temperature Plasma.** ***V.P. Kudrya.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*

Auditorium A
Session 22. Quantum Informatics VI

Session Chairman: Yuri Ozhigov, *M.V.Lomonosov Moscow State University, Russia*

14.20 q3-11 **Implementation of the quantum order-finding algorithm by adiabatic evolution of two qubits.** ***A.S. Ermilov, V.E. Zobov.*** *L. V. Kirensky Institute of Physics, Russian Academy of Sciences, Siberian Branch, 660036, Krasnoyarsk, Russia*

14.40 q3-12 **NMR Saturation and Entanglement in Solids.** ***M. Kutcherov.*** *Siberian Federal University, Krasnoyarsk, Russia*

15.00 q3-13 Quantum Scattering on Dypole Potential in Adiabatic Approximation. ***K.S. Arakelov.*** *M.V.Lomonosov Moscow State University, Russia*

15.20 16.20 Round Table Discussion: Quantum Systems in Computer Simulation

Auditorium B
Session 23. Micro- and Nanostructures Characterization II

Session Chairman: **Mikhail Chuev,** *Institute of Physics &Technology RAS, Russia*

14.20 O3-26 De-processing technologies for modern VLSI based on grazing incident ion beams. ***A.F. Vyatkin.*** *Institute of Microelectronics Technologies, Russian Academy of Sciences, Chernogolovka, Russia*

14.40 O3-27 Development of computer methods for multi nano-layer parameters measurements by X-Ray reflectometry. ***N.N. Gerasimenko[1], D.A. Kartashov[2], A.G. Turyansky[3] .*** *1. Moscow Institute of Electronic Technology, Moscow, Zelenograd, Russia, 2. JSC Mikron, Moscow, Zelenograd, Russia, 3.LPI, Moscow, Russia*

15.00 O3-28 Experimental scheme for observation of anomalous Kossel effect in semiconductor structures. ***P.G. Medvedev, M.A. Chuev.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*

15.20 O3-29 Structural Investigation of Magnetic Digital Alloys. ***I.A. Subbotin[1], M.A. Chuev[2], V.V. Kvardakov[1], I.A. Likhachev[1], E.M. Pashaev[1].*** *1. Russian Research Center "Kurchatov Institute", Moscow, Russia. 2. Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia*

15.40 O3-30 Spectroscopic and scanning ellipsometry for investigation of surfaces, thin films and nanolayers. ***V. Tolmachev[1], T. Zvonareva[1], L. Portzel[1], V. Kudoyarova[1], T. Perova[2], V. Shvets[3], S. Rykhlitskii[3]*** *1. Ioffe Physical Technical Institute, Russian Academy of Sciences, St. Petersburg, Russia 2. Department of Electronic and Electrical Engineering, University of Dublin, Trinity College, Dublin 2, Ireland, 3. Semiconductor Physics Institute SB RAS, Novosibirsk, Russia*

16.00 O3-31 Temperature of one-side polished silicon wafer at different position relatively incoherent radiance source. ***V.I. Rudakov, V.V. Ovcharov, V.P. Prigara.*** *Yaroslavl Branch of Institute of Physics and Technology RAS*

16.30 Coffee break

16. 45 Entresol. POSTER SESSION II
Bottom hall. EXHIBITION

18.45. Conference Hall. CLOSING CONFERENCE REMARKS
A.A. Orlikovsky, Chair of Organizing Committee ICMNE-2009,
Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia

19.30 BANQUET

Friday, October 9th, 2009

09.00 Breakfast
10.00 DEPARTURE

ICMNE-2009 SCIENTIFIC PROGRAM
POSTER SESSIONS

Wednesday, October 7th 2009

Entresol

16.30 – 18.30 Poster session I

Nanodevices and Nanostructures

P1-01 **Determination of electronic properties of molecular objects on the basis of nanodevices transport characteristics.** ***V.A. Malinin, V.V. Shorokhov, E.S. Soldatov.*** *Faculty of Physics, Moscow State University, 119899 Moscow, Russia*

P1-02 **Highly doped SOI based single-electron transistor: noise characteristics and charge sensitivity.** ***D.E. Presnov[1], V.S. Vlasenko[2], S.V. Amitonov[2], V.A. Krupenin[2].*** *1. Nuclear Physics Institute, Moscow State University, Moscow, Russia 2. Laboratory of Cryoelectronics, Moscow State University, Moscow, Russia*

P1-03 **Nanocarbon films with electronic conductivity.** ***N.F. Savchenko, M.B. Guseva, V.V. Khvostov, Yu.A. Korobov, A.F. Alexandrov.*** *Physics Department, M.V. Lomonosov Moscow State University, Russia*

P1-04 **Secondary-emission properties of the carbon films.** ***V.V. Khvostov, M.B. Guseva, N.F. Savchenko, Yu.A. Korobov, N.D. Novikov.*** *Physics Department, M.V. Lomonosov Moscow State University, Moscow, Russia.*

P1-05 **Investigation of auto-emission diodes with CNT emitters under small inter-electrode distance conditions.** ***S. Orlov[1], O. Gushchin[1], S. Yanovich[1], V. Shyshko[1], O. Perveeva[1], N. Savinsky[2].*** *1. Mikron JSC, Zelenograd, Russia, 2. Institute of Physics and Technology, Yaroslavl Branch, RAS, Yaroslavl, Russia*

P1-06 **Design of 3D nano-carbon emitter based autoemission devices.** ***N. Savinski[1], M. Gitlin[1], A. Shornikov[1].*** *1. Yaroslavl branch of Institute of Physics & Technology,Russian Academy of Sciences, Yaroslavl, Russia*

P1-07 **ZnO nanorods for device application.** ***O.V. Kononenko [1], A.N. Red'kin [1], A.N. Baranov[2], A.N. Panin[1], 4, M.V. Shestakov[3], V.T. Volkov[1], A.I. Il'in[1], E.E. Vdovin[1]*** *1. Institute of Microelectronics Technology, Russian Academy of Sciences, Chernogolovka, Russia. 2. Moscow State University, Chemistry Department, Moscow, Russia 3. Moscow State University, Department of Materials Science, Moscow, Russia 4. Quantum-functional Semiconductor Research Center, Department of Physics, Dongguk University, Seoul, Korea.*

P1-08 **Observation of spin injection in ballistic nanostructures Mo(001)/Py.** ***G.M. Mikhailov, V.Yu. Vinnichenko, A.V. Chernykh, I.V. Malikov, S.V. Piatkin.*** *Institute of microelectronic technology and high purity materials RAS, Chernogolovka, Russia.*

Nanostructure Technologies

P1-09 **Formation of Voids in Silicon-Based Structures Annealed in Non-Isothermal Reactor.** ***Yu. I. Denisenko.*** *Institute of Physics and Technology, Yaroslavl Branch, RAS, Yaroslavl, Russia*

P1-10 **Si wires deposition by magnetron sputtering method.** ***S. Evlashin, N. Suetin, V. Krivchenko.*** *D.V. Skobeltsyn Institute of Nuclear Physics, Lomonosov Moscow State University*

P1-11 **Nanocrystalline silicon on sapphire.** ***D. Pavlov, P. Shilyaev, E. Korotkov, N. Krivulin.*** *University of Nizhniy Novgorod, Nizhniy Novgorod, Russia.*

P1-12 **Formation of the atomically smooth surface of gold film and the binding of gold nanoparticles on it by the self-assembly method.** ***A.N. Kuturov[1], E.S. Soldatov[2], L.A. Polyakova[3], S.P. Gubin[3].*** *1. P.N. Lebedev Physical Institute of the Russian Academy of Science, Moscow, Russia 2. M.V. Lomonosov Moscow State University, Moscow, Russia, 3. Institute of General Inorganic Chemistry of the Russian Academy of Science, Moscow, Russia*

P1-13 **LGD-technology of FM/SC hybrid nanostructrures.** ***A.S. Sigov[1], A.V. Abramov[2], L.A.Bityutskaya[3], E.V. Bogatikov[3], M.V.Grechkina[3], Yu.I. Dikarev[3], A.P.Lazarev[2], E.A.Pankratova[2], V.M.Rubinshtein[3], A.V.Tuchin[3].*** *1. MIREA, Moscow, Russia, 2. «Rosbiokvant» Ltd, Voronezh, Russia 3. Voronezh State University, Voronezh, Russia*

P1-14 **Preparation of electrodes for molecular transistor by focused ion beam.** ***I.V. Sapkov[1], V.V. Kolesov[2], E.S. Soldatov[1] .*** *1. Department of Physics, Moscow State University, Russia, 2. Kotel'nikov Institute of Radioengineering & Electronics of Russian Academy of Sciences, Moscow, Russia*

P1-15 **Formation of molecular transistor electrodes by electromigration.** ***A.S. Stepanov[1], E.S. Soldatov[2], O.V. Snigirev[1,2].*** *1. IMP, RRC "Kurchatov Institute", Russia, 2. M.V. Lomonosov Moscow State University, Russia*

P1-16 **PECVD carbon nanostructure formation using DC glow discharge.** ***D.G. Gromov, S.A. Gavrilov, I.S. Chulkov.*** *Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russia*

Devices and ICs

P1-17 **Physical limitations of reliability in microwave microelectronic devices operating in periodical pulse mode.** ***A.G. Vasiliev, V.F. Sinkevich.*** *FSUE "Science and Production Enterprise "Pulsar" Moscow, Russia*

P1-18 **Principal problems of quality improvement for high-speed planar transmission lines issued from studies of high-Q microstrip resonators.** ***A.P. Chernyaev[2], V.A. Dravin[1], A.Yu. Golovanov[1,2], A.L. Karuzskii[1], A.E. Krapivka[1], A.N. Lykov[1], V. N. Murzin[1], A. V. Perestoronin[1], A. M. Tskhovrebov[1], N. A. Volchkov[1].*** *1. P.N. Lebedev Physical Institute of Russian Academy of Sciences, Moscow, Russia 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia.*

P1-19 **Effect of Conductivity Triggering: Studying and Optimization of MOS-like Structures.** ***A.E. Berdnikov, A.A. Popov, A.A. Mironenko, V.D. Chernomordick, A.V. Perminov.*** *Yaroslavl Branch of Institute of Physics & Technology of Russian Academy of Sciences, Russia*

P1-20 **Design and application features of nonvolatile memory based on ferroelectric thin films.** ***A. Marycheva[1], N. Zaitsev[2].*** *1. Moscow Institute of Electronic Engineering (TU), Zelenograd, Russia, 2. Micron Corp., Zelenograd, Russia*

P1-21 **Research of SONOS non -volatile memory elements.** ***O. Orlov [1], N. Shelepin [1].*** *Mikron JSC, Moscow, Russia*

P1-22 **Research and optimization of anodic joint process of SOI microelectromechanical strain transducer with glass reference element.** ***L. Sokolov[1], N. Parfenov[1], S. Timoshenkov[2], V. Kalugin[2].*** *1. Moscow Aviation Institute, Moscow, Russia 2. Moscow Institute of Electronic Technology (Technical University), Moscow, Russia.*

P1-23 **Experimental research of the Magnetotransistor in a double well.** ***A. Kozlov[1], Yu. Parmenov[1], R. Tikhonov[2].*** *1. Moscow State Institute of Electronic Engineering – Technical University, 2. SMC "Technical University"*

P1-24 **The amplifier-concentrator of electrons as the base element of the emission electronics.** ***E. Il`ichev, A. Kuleshov, E. Poltoratskii, G. Rychkov.*** *State Research Institute of Physical Problems,Zelenograd, Moscow, Russia*

P1-25 **Piezoelectric current generator through filamentary nanocrystals of zinc oxide.** ***M. Nazarkin, S. Gavrilov.*** *Moscow Institute of Electronic Technologies (Technical University, Zelenograd, Russia*

P1-26 **New type of high efficiency power supply of digital units.** ***Y. Chaplygin, V. Losev.*** *Moscow State Institute of Electronic Engineering, Moscow, Russia*

Superconducting Structures and Devices

P1-27 **The theoretical analysis of electronic thermal properties of the interfaces between multiband superconductors and a normal metal.** *I.A. Devyatov[1], M.Yu. Romashka[1], A.V. Semenov[2], P.A. Krutitskii[3], M.Yu. Kupriyanov[1]. 1. Lomonosov Moscow State University Skobeltsyn Institute of Nuclear Physics, Moscow, Russia, 2. State Pedagogical University, Moscow, Russia, 3. Keldysh Institute for Applied Mathematics, Moscow, Russia*

P1-28 **Microscopic theory of thermal phase slips in diffuse superconducting wires.** ***A.V. Semenov[1], I.A. Devyatov[2], P.A. Krutitskii[3], M.Yu. Kupriyanov[2].*** *1. Moscow State Pedagogical University, Moscow, Russia, 2. Lomonosov Moscow State University, Skobeltsyn Institute of Nuclear Physics, Moscow, Russia, 3. Keldysh Institute for Applied Mathematics, Moscow, Russia*

P1-29 **Characteristics of Nb/α-Si/Nb Josephson junction arrays at frequencies of 68 - 75 GHz.** ***A.L. Gudkov[1], A.A. Gogin[1], A.I. Kozlov[1], A.N. Samys[1], I.Ya. Krasnopolin[2].*** *1. CJSC "Compelst", FSUE "SRIPP n. F.V. Lykin", Moscow, Zelenograd, Russia 2. FSUE "VNIIMS", Moscow, Russia*

P1-30 **Transport properties of josephson junctions with ferromagnetic layers.** ***T.Yu. Karminskaya[1], A.A. Golubov[2], M.Yu. Kupriyanov[1], A.S. Sidorenko[3].*** *1. Nuclear Physics Institute, Moscow State University, Moscow, Russia. 2. Faculty of Science and Technology and MESA+ Institute of Nanotechnology, University of Twente, The Netherlands. 3. Institute of Electronic Engineering and Industrial Technologies Chisinau, Moldova.*

P1-31 **Bi-SQUID with linear transfer function.** ***V. Kornev[1] , I. Soloviev[1] , N. Klenov[1], O. Mukhanov[2].*** *1. Moscow State University, Moscow, Russia, 2. HYPRES, Elmsford, USA*

Photonics and Optoelectronics

P1-32 **Modeling of optical integrated circuit of a multiplexer/splitter on a basis of a photonic crystal structure.** ***M. Belkin, K. Kostenko.*** *Moscow State Technical University of Radio-Engineering, Electronics and Automation*

P1-33 **Computer-aided design of the high-efficient laser module for microwave-band fiber optic systems.** ***M. Belkin, A. Loparev.*** *Moscow State Technical University of Radio-Engineering, Electronics and Automation. Moscow, Russia*

P1-34 **Numerical methods for calculation of optical properties of layered structures.** ***S.A. Dyakov[1,4], V.A. Tolmachev[1,2], E.V. Astrova[2], S.G. Tikhodeev[3], V.Y.Timoshenko[4], T.S. Perova[1] .*** *1. Trinity College Dublin, Dublin 2, Ireland. 2. Ioffe Physical Technical Institute, RAS, St. Petersburg, Russia 3. General Physics Institute, RAS, Moscow, Russia. 4. Faculty of Physics, Moscow University, Moscow, Russia.*

P1-35 **Vertical double range photocell with polysilicon photodiode, volume resonator and a photoelement with isotype potential p+ barrier in the substrate for UV application.** ***I.V. Vanyushin[1], V.A. Gergel[2], N.M. Gorshkova[2], A.G. Klimkovich[1].*** *1. LCC "SensorIC", Moscow, Russia. 2. Kotel`nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Moscow, Russia*

P1-36 **Formation of One-Dimensional Photonic Crystals by Means of Photo-Electrochemical Etching of Silicon.** ***Yu.A. Zharova[1], G.V. Fedulova[1], E.V. Astrova[1], V.A. Ermakov[2] and T.S. Perova[2].*** *1. Ioffe Physical Technical Institute, Russian Academy of Sciences, St.Petersburg, Russia, 2. Department of Electronic and Electrical Engineering, University of Dublin, Trinity College, Ireland*

P1-37 **Titanium dioxide with carbon nanotubes nanocomposite for new generation solar cells.** ***A. Dronov , S. Gavrilov.*** *Moscow Institute of Electronic Technologies (Technical University), Russia*

P1-38 **Application of linear-chain carbon nano-films in optoelectronic devices.** ***M.B. Guseva[1], P.B. Konstantinov[2], Y.A. Kontsevoy[2], N.N. Novikov[1], A.S. Skrileov[2], V.V. Khvostov[1], V.V. Chernokozhin[2] .*** *1. Physical faculty of Lomonosov Moscow State University Moscow, Russia, 2. FSUE "Science and Production Enterprise "Pulsar" Moscow, Russia*

P1-39 **Critical temperature of SF and SFS multilayres with arbitrary electron mean free path in F and S films.** ***M.Yu. Kupriyanov[1], A.I. Buzdin[1], A.A. Golubov[2] .*** *1. Nuclear Physics Institute, Moscow State University, Moscow, Russia. 2. Centre de Physique Moleculaire Optique et Hertzienne, Universite Bordeaux, CNRS, France. 3. Faculty of Science and Technology and MESA+ Institute of Nanotechnology, University of Twente, The Netherlands.*

P1-40 **Experimental study of differential SQIF-structures.** ***V. Kornev[1] , I. Soloviev[1] , N. Klenov[1], O. Mukhanov[2].*** *1. Moscow State University, Russia, 2. HYPRES, Elmsford, USA*

P1-41 **Quantum interferometers on multichain of josephson junctions.** ***A. Karuzskiy[1], G. Kuleshova[2], A. Tshovrebov[1], L. Zherikhina[1].*** *1. Lebedev Physical Institute, Russian Academy of Science, Moscow, Russia; 2. Moscow Engineering Physics Institute (State University) , Moscow, Russia*

Magnetic Micro- and Nanostructures

P1-42 **Propagation of magnetostatic surface waves in ferromagnetic films with variable thickness.** ***Yu.A. Ignatov, V.I. Scheglov, A.A. Klimov, S.A. Nikitov.*** *Kotel'nikov Institute of Radio Engineering and Electronics (IRE RAS), Moscow*

P1-43 **Modification of magnetic domain structures in Co film using the atomic force microscopy nano-oxidation.** ***A. Bukharaev[1,2], D. Biziaev[1], P. Borodin[1], I. Merkutov[2] .*** *1. Zavoisky Physical Technical Institute of Russian Academy of Sciences, Kazan, Russia, 2. Kazan State University, Kazan, Russia*

P1-44 **Investigations of magnetic states in multilayer submicron ferromagnetic particles.** ***A.A. Fraerman, B.A. Gribkov, S.A. Gusev, A.Yu. Klimov, V.L. Mironov, V.V. Rogov, S.N.Vdovichev.*** *Institute for physics of microstructures RAS, Nizhny Novgorod, Russia.*

P1-45 **Fe/MgO/Fe heterostructures on r-sapphire for single-crystal magnetic tunnel junctions.** ***A. Chernykh, V. Vinnichenko, L. Fomin, G. Mikhailov.*** *Institute of Microelectronics Technology, Russian Academy of Sciences, Chernogolovka, Russia*

P1-46 **Epitaxial Fe_3O_4 films for spin valve applications.** ***I.V. Malikov, G.M. Mikhailov.*** *Institute of Microelectronics Technology, Russian Academy of Sciences, Chernogolovka, Russia.*

P1-47 **Investigation of domain wall pinning and nanostructures remagnetization of epitaxial Fe structures with use of magnetic force contrast and magnetoresistance measurements.** ***G.M. Mikhailov, V.Yu. Vinnichenko, L.A. Fomin, K.M. Kalach, I.V. Maliko.*** *Institute of microelectronic technology RAS, Chernogolovka, Russia*

P1-48 **Dependence of two-layer structures Cu/Co magnetoresistance on thickness of copper.** ***V. Naumov.*** *Yaroslavl branch of Institute of Physics and Technology, Russian Academy of Sciences, Yaroslavl, Russia.*

P1-49 **Study of size effect on switching characteristics of spinvalve GMR sensor.** ***O.S. Trushin[1] , E.Yu. Buchin[1] , V.F. Bochkarev[1], N. Barabanova[2].*** *1. Yaroslavl Branch of the Institute of Physics and Technology of Russian Academy of Sciences, Yaroslavl, Russia, 2. Department of Physics, Yaroslavl State University, Yaroslavl, Russia*

P1-50 **GMR sensor design optimization using micromagnetic simulations.** ***O.S. Trushin[1], N. Barabanova[2], V.P. Alexeev[2] .*** *1. Yaroslavl Branch of the Institute of Physics and Technology of Russian Academy of Sciences, Yaroslavl, Russia, 2. Department of Physics, Yaroslavl State University, Yaroslavl, Russia*

P1-51 **Optical and thermal effects in polymers with superparamagnetic impurities.** ***R.M. Aynbinder.*** *Institute of Chemical Technology, Prague, Czekh Republic.*

P1-52 **Ferromagnetic resonance study of thin $Si_{65}Mn_{35}$ layer.** ***S. Kapelnitsky[1,2].*** *1. Russian Research Centre "Kurchatov Institute", Moscow, Russia. 2. Institute of Physics and Technology, Russian Academy of Sciences, Moscow , Russia*

Thursday, October 8th 2009

Entresol

16.45 – 18.30 Poster session II

Simulation and Modeling

P2-01 **Calculation of the characteristics of electron transport through molecular clusters.** ***Y.S. Gerasimov[1] , V.V. Shorokhov[2] , E.S. Soldatov[2] , O.V. Snigirev[1,2].*** *1. IMP, RRC " Kurchatov Institute", Moscow, Russia, 2. Faculty of Physics, Moscow State University, Moscow, Russia*

P2-02 **Investigation of segregation effect in InGaAs/GaAs quantum wells by means a computer simulation.** ***A.N. Baryshev, S.V. Khazanova.*** *Nizhni Novgorod University im.N.I.Lobachevskogo, NIzhni Novgorod, Russia*

P2-03 **Simulation of impurity diffusion at the formation of ultrashallow active areas in silicon-based FET.** ***F. Komarov[1], O. Velichko[2], A. Mironov[1], G. Zayats[3], A. Komarov[1], V. Tsurko[3].*** *1. Institute of Applied Physics Problems, Minsk, Belarus, 2. Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus 3. Institute of Mathematics, Academy of Sciences of Belarus, Minsk, Belarus.*

P2-04 **Modeling of the interfacial separation work in relation to impurity concentrations in adjoining materials.** ***I. Alekseev, T. Makhviladze, A. Minushev, M. Sarychev.*** *Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia.*

P2-05 **Energetics and atomic mechanisms of strain relaxation in heteroepitaxial systems.** ***O. Trushin[1] , J. Jalkanen[2] , E. Granato[3] , S-C. Ying[4], T. Ala-Nissila[2].*** *1. Institute of Physics and Technology of Russian Academy of Sciences, Yaroslavl Branch, Yaroslavl, Russia, 2. Department of Engineering Physics, Helsinki University of Technology, Espoo, Finland, 3. Laboratrorio Associado de Sensores e Materiais, Instituto National de Pesquisas Espaciais, Sao Jose dos Campos, SP, Brazil, 4. Department of Physics, Brown University, Providence, RI 02912, USA*

P2-06 **Off-lattice self-learning kinetic Monte-Carlo: application to 2D cluster diffusion on metal surfaces.** ***O. Trushin[1] , A. Makin[2] , T.S. Rahman[3].*** *1. Institute of Physics and Technology of Russian Academy of Sciences, Yaroslavl Branch, Yaroslavl, Russia, 2. Department of Physics, Yaroslavl State University, Yaroslavl, Russia 3. Department of Physics, University of Central Florida, Orlando, FL, USA*

P2-07 **Nanoobject sizes of defects in porous systems and defective materials according ADAP method. Part I.** ***S.P. Timoshenkov[1], E.P. Svetlov-Prokop'ev[1,2], V.I. Grafutin [1]*** *1. Moscow Institute of Electronic Technology (Technical University), TU- MIET, Zelenograd, Russia,2. «State Science Centre of the Russian Federation- A.I.Alikhanov Institute for theoretical and experimental physics», Moscow, Russia*

P2-08 **Nanoobject sizes of defects in porous systems and defective materials according ADAP method. Part II.** ***S.P. Timoshenkov[1], E.P. Svetlov-Prokop'ev[1,2], V.I. Grafutin [1]*** *1. Moscow Institute of Electronic Technology (Technical University), TU- MIET, Zelenograd, Russia,2. «State Science Centre of the Russian Federation- A.I.Alikhanov Institute for theoretical and experimental physics», Moscow, Russia*

P2-09 **Calculation of electrophysical parameters of thin undoped GaAs-in-Al_2O_3 quantum nanowires and single-wall armchair carbon nanotubes.** ***D.V. Pozdnyakov[1], A.V. Borzdov[1], V.M. Borzdov[1], V.A. Labunov[2]*** *. 1. Belarusian State University, Minsk, Belarus, 2. Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*

P2-10 **Penetration of quantum-mechanical current density under semi-infinite rectangular potential barrier as the consequence of the interference of the electron waves in semiconductor 2D nanostructures.** ***V.A. Petrov, A.V. Nikitin.*** *Institute of Radio Engineering and Electronics, Russian Academy of Sciences,Moscow, Russia*

P2-11 **Laser generation in broken-gap heterostructures.** ***I. Semenikhin[1], K.A. Chao[2], A. Zakharova[1].*** *1. Institute of Physics and Technology of the Russian Academy of Sciences, Moscow, Russia, 2. Department of Physics, Lund University, Lund, Sweden, and Department of Physics, Chemistry and Biology, Linkoping University, Linkoping, Sweden*

P2-12 **Monte Carlo simulation of submicron three-gate MOSFETs.** ***O. Zhevnyak, V. Borzdov , A. Borzdov, D. Speranski.*** *Belarussian State University, Minsk, Belarus*

P2-13 **SPICE Modeling and TCAD Simulation of Si Vertical Double-Diffused MOSFET.** ***A.V. Sedov[1], V.O. Turin[1], A.M. Tsyrlov[2], G.I. Zebrev[3].*** *1. Orel State Technical University, Orel, Russia, 2. JSC "Proton", Orel, Russia, 3. National Research Nuclear University "MEPHI", Moscow, Russia*

P2-14 **Modeling of HBT with $Si_{1-X-Y}Ge_XC_Y$ base.** ***K. Petrosjanc, R. Torgovnikov.*** *Moscow State Institute of Electronics and Mathematics, Moscow, Russia*

P2-15 **Reversible Gate Oxide Defect Recharging in Nanoscale Field Effect Transistors: Charge Annealing, Tunnel Gate Leakage, Random Telegraph Signal and 1/f Noise.** ***G.I. Zebrev, N. Samokhin, D. Batmanova.*** *Micro- and Nanoelectronics Department, National Research Nuclear University "MEPHI", Moscow, Russia*

P2-16 **Radiation-Hardening-by-Design with Circuit-Level Modeling of Total Ionizing Dose Effects in Modern CMOS Technologies.** ***M. Gorbunov[1] , G. Zebrev[2] , P. Osipenko[1].*** *1. Scientific-Research Institute of System Studies, Russian Academy of Sciences, Moscow, Russia 2. Moscow Engineering Physics Institute, Moscow, Russia*

P2-17 **Specification of model for the multi-cathode quantum vacuum nano-triode on the base of new experimental data.** ***V.A. Zhukov.*** *St. Petersburg Institute for Informatics and Automation, Russian Academy of Sciences, St. Petersburg, Russia*

P2-18 **The specifics of modeling high-speed integrated amplifiers with high amount of feedback.** ***E.M. Savchenko, A.S. Budyakov.*** *FSUE "Science and Production Enterprise "Pulsar" Moscow, Russia*

Thin Films Technologies

P2-19 **Formation of Ge/Cu ohmic contacts to n-GaAs with atomic hydrogen pre-annealing step.** ***E. Erofeev[1], V. Kagadei[2].*** *1. Scientific Research Institute of Electrical Communication Systems, Tomsk, Russia 2. Research and production company "Micran", Tomsk, Russia.*

P2-20 **Hf-based barrier layers for Cu-metallization.** ***Denisenko Yu.I.[1], Gusev V.N.[1], Khorin A.I.[1,2], Orlikovsky A.A.[1], Rogozhin A.E.[1], Rudakov V.I.[1], Vasiliev A.G.[1,3]*** *1. Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia 2. Moscow State Institute of Radio-engineering, Electronics and Automation, Moscow, Russia, 3. Federal State Unitary Enterprise "Scientific & Product Enterprise "Pulsar", Moscow , Russia*

P2-21 **Properties of HfO_2 films on Si-substrate obtained by electron beam vapor deposition.** ***A.V. Ershov, S.N. Zubkov, V.V. Karzanov, S.V. Khazanova, O.N. Nikolaeva, D.A. Nikolichev.*** *Nizhni Novgorod University im.N.I.Lobachevskogo, NIzhni Novgorod, Russia.*

P2-22 **Some peculiarities in the formation functional films by sol-gel and electrophoretic technologies.** ***N. Korobova[1], S. Timoshenkov[2] , A. Shabanova[3].*** *1. Kazakh National University, Almaty, Kazakhstan.; 2. Moscow Institute of Electronic Technology, Moscow, Russia, 3. National Engineering Academy, Almaty, Kazakhstan.*

P2-23 **The peculiarities of creating composite glasses for multilayer structures, MEMS structures included.** ***S. Timoshenkov [1], O. Orlov [2] .*** *1. Moscow Institute of Electronic Technology, Moscow, Russia, 2. Mikron JSC, Moscow, Russia*

Lithography Techniques

P2-24 **Electron Beam Lithography using PMMA as negative resist.** ***E.N. Zhikharev, S.N. Averkin, V.A. Kalnov.*** *Institute of Physics and Technology of Russian Academy of Science, Moscow, Russia*

P2-25 **Application of virtual scanning electron microscope to determine the parameters of atom nanolithograph microlenses.** ***A. Zablozkiy[1], E. Shehin[1], A. Kuzin[1], A. Baturin[1], P. Melentiev[2], D. Lapshin[2], V. Balykin[2] .*** *1. Moscow Institute of Physics and Technology, Dolgoprudny, Russia, 2. Institute of Spectroscopy Russian Academy of Sciences, Troitsk , Russia*

Ion and Neutral Beam Processing

P2-26 **Features of relief formation at silicon surfaces by etching with focused ion beam.** ***N. Gerasimenko[1], A. Chamov[1,2], E. Novoselova[2], V. Khanin[2].*** *1. Moscow Institute for Electronic Engeneering, Moscow, Russia, 2. JSC Mikron, Moscow, Russia.*

P2-27 **Modification of electrophysical behavior of surface adjacent to FIB milling area.** ***A.A. Chouprik, A.A. Kuzin, A.V. Zablotskiy.*** *Moscow Institute of Physics and Technology, Dolgoprudny, Russia.*

P2-28 **Formation of buried borosilicate layers by means of ion implantation.** ***A. Churilov, S. Krivelevich, R. Seljukov.*** *Yaroslavl branch of Institute of Physics & Technology, Russian Academy of Sciences, Yaroslavl, Russia*

P2-29 **Fast atom beam formation of inert and chemically active substances in an extensive source of ions for application in the technological processes.** ***Y. Maishev, S. Shevchuk, T. Matveev.*** *Institute of Physics and Technology RAS, Moscow, Russia.*

Plasma Processing

P2-30 **Microwave plasma assisted single crystal diamond films growth and its application in microelectronics.** ***A.L. Vikharev[1], A.M. Gorbachev[1], A.B. Muchnikov[1], D.B. Radishev[1], A.A. Altukhov[2], A.V. Mitenkin[2], M.P. Dukhnovsky[3], V.E. Zemlyakov[3].*** *1. Institute of Applied Physics, Russian Academy of Sciences, Nizhny Novgorod, Russia, 2. ITC «UralAlmazInvest», Moscow, Russia, 3. FSUE «Istok», Fryazino, Russia*

P2-31 **Plasma damage and restoration of CVD low-k materials.** ***E. Smirnov[1,2], A. Ferchichi[2], L. Zhao[2], M.R. Baklanov[2].*** *1. Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russia 2. IMEC, Leuven, Belgium.*

P2-32 **Optimization of parameters of deep plasma chemical process of silicon etchings for elements MEMS.** ***A.I. Vinogradov, N.M. Zaryankin, Yu.A. Mikhajlov, E.P. Prokopiev, S.P. Timoshenkov.*** *Moscow Institute of Electronic Technology (Technical University), TU- MIET, Zelenograd, Moscow, Russia*

P2-33 **Formation of periodical nanostructures on semiconductors using solid alumina template.** ***A. Belov, S. Gavrilov, V. Shevyakov.*** *Moscow Institute of Electronic Techologies (Techincal University), Zelenograd, Russia*

P2-34 **The effect of plasma treatment on the residual stresses of metallic cantilever structures.** ***I.I. Amirov, V.V. Naumov.*** *Yaroslavl branch of the Institute of Physics & Technology, Russian Academy of Sciences,, Yaroslavl, Russia*

P2-35 **Kinetics of the GaAs etch process in the Cl_2 dc glow discharge plasma.** ***A. Dunaev, S. Pivovarenok, A. Efremov, V. Svettsov.*** *Ivanovo State University of Chemistry & Technology, Ivanovo, Russia*

P2-36 **Plasma parameters and composition in HCl/X (X=Cl_2, H_2, Ar) dc glow discharges.** ***A. Efremov, V. Svettsov, S. Lemehov.*** *Ivanovo State University of Chemistry & Technology, Ivanovo, Russia*

P2-37 **Emission Tomography Algorithm Optimization: Applications for Microelectronic Plasma Equipment.** ***A.V. Fadeev, K.V. Rudenko, V.F. Lukichev, A.A. Orlikovsky.*** *Lab. of Microstructuring and Submicron Devices, Institute of Physics & Technology, Russian Academy of Sciences, Moscow, Russia*

Micro- and Nanostructure Characterization

P2-38 **Characterization of GaSb(001) surface under pre-growth processing.** ***M.S. Dunaevskii, E.V. Kunitsina, T.V. L'vova, A.N. Semenov, B.Y. Meltser, J.V. Terentyev.*** *Ioffe Physico-Technical Institute, Russian Academy of Sciences, Saint-Petersburg,, Russia.*

P2-39 **Measurements samples temperature and dynamics of recrystallization of implanted silicon at rapid thermal processing.** ***Ya. Fattakhov, M. Galyautdinov, B. Farrakhov, M. Zakharov.*** *Kazan Physical Technical Institute of the Russian Academy of Sciences, Kazan, Russia.*

P2-40 **Features of electron direct tunneling through an ultrathin oxide under the non-stationary depletion of a n-Si surface.** ***G.V. Chucheva, E.I. Goldman, Yu.V. Gulyaev, A.G. Zhdan.*** *The Institute of Radio Engineering and Electronics Russian Academy of Sciences, Fryazino, Russia*

P2-41 **Investigations of nanostructured porous PbTe films with X-ray diffractometry and reflectometry.** ***S.P. Zimin[1], V.M. Vasin[1], E.S. Gorlachev[2], A.P. Petrakov[3], S.V. Shilov3.*** *1. Yaroslavl State University, Russia, 2. Yaroslavl Branch of the Institute of Physics and Technology, Russian Academy of Sciences, Russia, 3. Syktyvkar State University, Russia*

P2-42 **Relationship between modification of electrophysical properties and structural characteristics in semiconductor nanosized heterostructures$In_xAl_{1-x}As/In_yGa_{1-y}As/In_xAl_{1-x}As/InP$.** ***R.M. Imamov[1], I.A. Subbotin[1], G.B. Galiev[2], I.S. Vasil'evsky[2], E.A. Klimov[2] .*** *1. Shubnikov Institute of Crystallography RAS, Moscow, Russia. 2. Institute of UHF Semiconductor Electronic, Moscow, Russia*

P2-43 **Characterization of Polymer Semiconductors with TOF-Sims and FTIR.** ***V. Bachurin[1], A. Churilov[1], O. Kolesnikov[1], A. Rudy[2], S. Simakin[1].*** *1. Yaroslavl branch of Institute of Physics and Technology, Russian Academy of Sciences, Yaroslavl, Russia, 2. Yaroslavl State University, Yaroslavl, Russia.*

P2-44 **General mechanism of the electric inactivity of the impurity atoms in chalcogenide vitreous semiconductors.** ***G.A. Bordovsky, R.A. Castro, P.P. Seregin, Y.M. Stepanov.*** *Herzen State Pedagogical University of Russia, Saint-Petersburg, Russia*

P2-45 **Broadband dielectric spectroscopy of As_2Se_3 modified layers.** ***N.I. Anisimova, V.A. Bordovsky, R.A. Castro, G.I. Grabko, D.S. Kirbiatev, Y.M. Stepanov.*** *Herzen State Pedagogical University of Russia, Saint-Petersburg, Russia*