The Fourth Asian School-Conference on Physics and Technology of Nanostructured Materials

ASCO-NANOMAT 2018

PROGRAMME

Institute of Automation and Control Processes FEB RAS

Far Eastern Federal University

Vladivostok
2018

General information

Plenary talk – 40 minutes including questions
Ordinary talk – 15 minutes including questions
Coffee break – 15–20 minutes
Lunch – 90 minutes

Organizers

Institute of Automation and Control Processes FEB RAS

Far Eastern Federal University

General sponsors

Russian Foundation for Basic Research

Skolkovo Institute of Science and Technology

Official sponsors

LLC “MACRO GROUP”

Technoinfo Ltd.

Sunday, 23 September

09:00 – 18:00	Participants arrival at the airport of Vladivostok, transportation and accommodation
18:00 – 20:00	Participants registration in the hotel at FEFU campus

Monday, 24 September

08:00 – 08:30	Participants registration
08:30 – 08:50	Opening remarks
08:50 – 10:50	Plenary session
10:50 – 11:05	General sponsor talk
11:05 – 11:20	*Coffee break*
11:20 – 12:50	Physics of nanostructures and interfaces, self-organization processes
12:50 – 14:30	*Conference Photo and Lunch*
14:30 – 16:30	Plenary session
16:30 – 16:50	*Coffee break*
16:50 – 18:35	Physics of semiconducting nanostructures and heterostructures, including silicide, germanide and stannide heterostructures: experiment, calculations and technology
18:35 – 20:00	Poster session I
20:00 – 21:00	*Welcome party*

Tuesday, 25 September

09:00 – 10:20	Plenary session
10:20 – 10:40	*Coffee break*
10:40 – 12:25	4th group material's alloy based on Si, Ge, Sn & Pb, C: formation, structure and properties
12:25 – 14:00	*Lunch*
14:00 – 16:00	Plenary session
16:00 – 16:15	*Coffee break*
16:15 – 17:00	Official sponsor session
17:00 – 18:30	Optical materials and photonic crystals
18:30 – 18:50	*Coffee break*
18:30 – 20:00	Poster session II
20:30 – 23:00	*Excursion "Night Vladivostok"*

Wednesday, 26 September

09:00 – 12:00	Excursion to the Institute of Automation and Control Processes FEB RAS
12:00 – 13:30	*Lunch (FEFU campus)*
13:30 – 19:00	Excursion "Voroshilov's battery of Russky Island" and "Primorsky Aquarium"

Thursday, 27 September

09:00 – 10:20	Plenary session
10:20 – 10:40	*Coffee break*
10:40 – 12:40	Nanostructured coverages, nanocomposites, functional hybrid materials: formation, structure and properties
12:40 – 14:10	*Lunch*
14:10 – 15:30	Plenary session
15:30 – 17:15	Formation and properties of ferromagnetic and ferroelectric materials, a spintronics optoelectronics and electromechanics
17:15 – 18:00	*Coffee break*
18:00 – 19:00	Award ceremony and closing remarks
19:30 – 21:30	*Symposium Dinner (Café of FEFU)*

Friday, 28 September

09:00 – 22:00	Participants departure

Programme of the Fourth Asian School-Conference on Physics and Technology of Nanostructured Materials ASCO-NANOMAT 2018

SUNDAY, 23 SEPTEMBER

09:00 – 18:00 Participants arrival at the airport of Vladivostok, transportation and accommodation

18:00 – 20:00 Participants registration in the hotel at FEFU campus

MONDAY, 24 SEPTEMBER

Participants registration **08:00 – 08:30**

Opening remarks **08:30 – 08:50**

Chairman: *A.A. Saranin*

Plenary session **08:50 – 10:50**

PS.24.01i **A.V. Dvurechenskii,** A.I. Yakimov, A.F. Zinovieva, A.V. Nenashev, V.V. Kirienko, A.F. Bloshkin
Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia
Optical and spin phenomena in silicon based quantum dot heterostructures

PS.24.02i F. Rovaris, R. Bergamaschini, **F. Montalenti**
L-NESS and Materials Science Department, University of Milano-Bicocca, Milano, Italy
Continuum modeling of semiconductor heteroepitaxial growth including both elastic and plastic relaxation

PS.24.03i **D. Vyalikh**
Donostia International Physics Center (DIPC), Departamento de Fisica de Materiales and CFM-MPC UPV/EHU, San Sebastian, Spain
ARPES insight into the exotic magnetism and strong electron correlations at the surface and in the bulk of rare-earth intermetallics

General sponsor talk **10:50 – 11:05**

S.24.01o Skolkovo Institute of Science and Technology

Coffee break ***11:05 – 11:20***

Physics of nanostructures and interfaces, self-organization processes — Chairman: *F. Montalenti* — **11:20 – 12:50**

I.24.01o **L.V. Bondarenko[1]**, A.Y. Tupchaya[1], D.V. Gruznev[1,2], A.V. Zotov[1,2,3], A.A. Saranin[1,2]
[1]*Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
[2]*Far Eastern Federal University, Vladivostok, Russia*
[3]*Vladivostok State University of Economics and Service, Vladivostok, Russia*
Atomic and electronic structure of Si(111)6x6-Au surface

I.24.02o **H. Toyama[1]**, H. Huang[1], T. Nakamura[1], L.V. Bondarenko[2], A.Y. Tupchaya[2], D.V. Gruznev[2], A. Takayama[1], A.V. Zotov[2,3], A.A. Saranin[2,3], S. Hasegawa[1]
[1]*Department of Physics, School of Science, University of Tokyo, Japan*
[2]*Institute of Automation and Control Processes, Vladivostok, Russia*
[3]*School of Natural Science, Far Eastern Federal University, Vladivostok, Russia*
Superconductivity of Pb ultrathin film on Ge(111) surface

I.24.03o **I. Krasnikov[1]**, A. Seteikin[1], B. Roth[2], M. Meinhardt-Wollweber[2]
[1]*Amur State University, Blagoveschensk, Russia*
[2]*Hannover Centre for Optical Technologies, Leibniz University Hannover, Hannover, Germany*
Monte Carlo modeling of Raman scattering in multilayer turbid media

I.24.04o **N.S. Saenko**, A.M. Ziatdinov
Institute of Chemistry FEB RAS, Vladivostok, Russia
Full-profile approximation of the X-ray diffraction pattern for nanographite powder including γ-band by taking into account a radial distribution of interatomic distances

I.24.05o **I.A. Kibirev[1,2]**, A.V. Matetskiy[1], A.V. Zotov[1,2,3], A.A. Saranin[1,2]
[1]*Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
[2]*Far Eastern Federal University, Vladivostok, Russia*
[3]*Department of Electronics, Vladivostok State University of Economics and Service, Vladivostok, Russia*
Electronic topological transition in InSe thin films

I.24.06o **P.D. Andriushchenko[1,2]**, Y.A. Shevchenko[1,2], A.G. Makarov[1,2], K.V. Nefedev[1,2]
[1]*Far Eastern Federal University, Vladivostok, Russia*
[2]*Institute of Applied Mathematics of FEB RAS, Vladivostok, Russia*
The heat capacity of honeycomb lattice with long- and short-range interactions

Conference Photo and Lunch — ***12:50 – 14:30***

Plenary session — Chairman: *A.V. Dvurechenskii* — **14:30 – 16:30**

PS.24.04i **T. Suemasu**, R. Takabe, T. Deng, T. Sato, Z. Xu, Y. Yamashita, K. Kodama, S. Matsuno, K. Toko
University of Tsukuba, Tsukuba, Japan
Present status and future prospect of $BaSi_2$ solar cells

PS.24.05i **D.B. Migas[1],** V.O. Bogorodz[1], A.B. Filonov[1], A.Yu. Alexeev[1], V.E. Borisenko[1], N.V. Skorodumova[2,3]
[1]Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
[2]Multiscale Materials Modelling, Department of Materials and Engineering, Royal Institute of Technology (KTH), Stockholm, Sweden
[3]Department of Physics and Astronomy, Uppsala Unciversity, Uppsala, Sweden
New 2D-like structures based on ultrathin Mg_2X (X = Si, Ge, Sn) films

PS.24.06i **J. Kaplun[1,2]**
[1]Phononics Technology Inc., Israeli Center of Advanced Diamond Technologies, Hataasia 51 St., Nesher 3660102, Israel
[2]Dare Labs Consulting, Harav Kitroni 26/7, Petach Tiqwa, 4939029, Israel
CVD diamond: the present and the future. Review

Coffee break ***16:30 – 16:50***

Physics of semiconducting nanostructures and heterostructures, including silicide, germanide and stannide heterostructures: experiment, calculations and technology

Chairman: *V.Y. Nazarov*

16:50 – 18:35

III.24.01o **T. Deng**, T. Sato, Z. Xu, R. Takabe, S. Yachi, Y. Yamashita, K. Toko, T. Suemasu
University of Tsukuba, Tsukuba, Japan
Towards $BaSi_2$ homojunction solar cells on Si(001)

III.24.02o **E.A. Chusovitin[1],** D.L. Goroshko[1,2], N.G. Galkin[1,2], S.V. Chusovitina[1], A.V. Tupkalo[2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Si matrix charge state influence on photoresponse of Si layer with embedded β-$FeSi_2$ nanocrystals

III.24.03o **Yu.V. Luniakov**
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
New phases of high pressure Mg_2Si: an extensive first principle structure search

III.24.04o A.A. Spirina[1,2], A.G. Nastovjak[1], **N.L. Shwartz[1,2]**
[1]Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia
[2]Novosibirsk State Technical University, Novosibirsk, Russia
Surface orientation influence on the characteristics of GaAs substrates high-temperature annealing

III.24.05o **A.S. Tarasov[1,2]**, I.A. Bondarev[1,2], M.V. Rautskii[1], A.V. Lukyanenko[1,2], D.A Smolyakov[1], T.E. Smolyarova[1,2], I.A. Tarasov[1], S.N. Varnakov[1], S.G. Ovchinnikov[1,2], N.V. Volkov[1]
[1]Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia
[2]Institute of Engineering Physics and Radio Electronics, Siberian Federal University, Krasnoyarsk, Russia
Iron silicide hybrid structures: magnetoimpedance and spin accumulation effect

III.24.06o **A.S. Gouralnik[1]**, A.M. Maslov[1,2], A.V. Gerasimenko[3]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
[3]Institute of Chemistry FEB RAS, Vladivostok, Russia
Mg_2Si formation at high temperatures by pulse deposition of Mg onto Si(111)

III.24.07o **I.A. Yakovlev**, B.A. Belyaev, S.N. Varnakov, S.G. Ovchinnikov
Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia
The magnetic anisotropy of Fe_3Si synthesized at magnetic field by MBE

Poster session I **18:35 – 20:00**

Welcome party **20:00 – 21:00**

TUESDAY, 25 SEPTEMBER

Chairman: *T. Suemasu*

Plenary session **09:00 – 10:20**

PS.25.01i **V.A. Bykov[1,2]**, A. Kalinin[1,2], V. Polyakov[1], A. Shelaev[1,2]
[1]NT-MDT-Spectral Instruments Companies Group, www.ntmdt-si.com
[2]Moscow Institute of Physics and Technology
Modern possibilities of scanning probe methods for complex analysis of surface

PS.25.02i **S.A. Kukushkin[1]**, A.V. Osipov[1], A.V. Luk'yanov[2]
[1]Institute of Problems of Mechanical Engineering of RAS (IPME RAS), St. Petersburg, Russia
[2]New Silicon Technologies Ltd., St. Petersburg, Russia
Nano-assembly of SiC films on Si - a new method of growing low-defect epitaxial structures. Nanoscaled silicon carbide on silicon: a new bandgap material for micro- and optoelectronics

Coffee break ***10:20 – 10:40***

4th group material's alloy based on Si, Ge, Sn & Pb: formation, structure and properties Chairman: *D.B. Migas* **10:40 – 12:25**

II.25.01o **H. Eguchi**, M. Iinuma, H. Hoshida, N. Murakoso, Y. Terai
Department of Computer Science and Electronics, Kyushu Institute of Technology, Fukuoka, Japan
Growth of Sb-doped β-$FeSi_2$ epitaxial films and optimization of donor activation conditions

II.25.02o **A.E. Klimov[1,2]**, A.N. Akimov[1], V.S. Epov[1], E.V. Fedosenko[1], D.V. Ishchenko[1], N.S. Paschin[1], V.N. Sherstyakova[1], O.E. Tereshchenko[1,3]
[1]Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia
[2]Novosibirsk State Technical University, Novosibirsk, Russia
[3]Novosibirsk State University, Novosibirsk, Russia
The effect of surface on conductivity of PbSnTe:In/BaF_2 topological crystalline insulator in space charge limited current regimes

II.25.03o **H. Hoshida[1]**, N. Murakoso[1], T. Suemasu[2], Y. Terai[1]
[1]Department of Computer Science and Electronics, Kyushu Institute of Technology, Fukuoka, Japan
[2]Institute of Applied Physics, University of Tsukuba, Tsukuba, Japan
Identification of Raman vibrational modes in $BaSi_2$ epitaxial film by depolarization ratio

II.25.04o **S.G. Bobkov[1,2]**
1 Federal State-Funded Institution of Science Institute for Design Problems in Microelectronics of Russian Academy of Sciences (IPPM RAS) Moscow, Russian Federation
2 Electronics Department, National Research Nuclear University «MEPhI» Moscow, Russian Federation
High-performance microprocessors for industrial applications

II.25.05o **I.A. Tambasov[1]**, A.S. Voronin[2], N.P. Evsevskaya[3], M.N. Volochaev[1,4], A.S. Aleksandrovsky[1], S.R. Abelian[1], E.V. Tambasova[4]
[1]Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia
[2]Federal Research Centre Krasnoyarsk Scientific Center of the Siberian Branch of Russian Academy of Sciences, Krasnoyarsk, Russia
[3]Institute of Chemistry and Chemical Technology, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia
[4]Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
Thermoelectric properties of optically transparent thin films based on single-walled carbon nanotubes

II.25.06o **D.L. Goroshko[1,2]**, E.Y. Subbotin[1], K.N. Galkin[1], S.A. Dotsenko[1,2], E.A. Chusovitin[1], A.K. Gutakovskii[3,4], A.A. Usenko[5], V.V. Khovailo[5]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
[3]Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia
[4]Novosibirsk State University, Novosibirsk, Russia
[5]National University of Science and Technology, Moscow, Russia
Thermoelectric properties of nanostructured material based on Si and GaSb

II.25.07o A. Paddubskaya[1], **P. Kuzhir[1,2]**, A. Stepanov[2], G. Remnev[2], T. Kaplas[3], Y. Svirko[3]
[1]Institute for Nuclear Problems of Belarusian State University, Minsk, Belarus
[2]Tomsk Polytechnic University, Tomsk, Russia
[3]Institute of Photonics, University of Eastern Finland, Joensuu, Finland
Graphene based passive THz devices: impact of high intensity pulse ion beam

Lunch ***12:25 – 14:00***

Chairman: *S.A. Kukushkin*

Plenary session **14:00 – 16:00**

PS.25.03i **Y.K. Kim**
Department of Materials Science and Engineering, Korea University, Seoul 02841, Korea
Spin-orbit torque in nonmagnet-ferromagnet junctions

PS.25.04i **X.F. Han**
Institute of Physics, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Beijing, China
Magnon valve effect

PS.25.05i **O.A. Tretiakov[1,2]**
[1]Institute for Materials Research, Tohoku University, Sendai, Japan
[2]School of Physics, The University of New South Wales Sydney NSW 2052, Australia
Skyrmionics in ferromagnets and antiferromagnets

Coffee break ***16:00 – 16:15***

Chairman: *N.G. Galkin*

Official sponsor`s session **16:15 – 17:00**

S.25.01o LLC “MACRO GROUP”

S.25.02o Technoinfo Ltd.

Chairman: *H. Tatsuoka*

Optical materials and photonic crystals 17:00 – 18:30

V.25.01o **A.A. Sergeev[1,2]**, K.A. Sergeeva[2], A.A. Leonov[1,2], I.V. Postnova[2], S.S. Voznesenskiy[1,2], Yu.N. Kulchin[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Manganese-doped zinc sulfide quantum dots for methane detection in aqueous media

V.25.02o A.E. Nazirov[1], A.V. Pestov[2], E.B. Modin[1], Yu.O. Privar[1], **A.Yu. Mironenko[1]**, S.Yu. Bratskaya[1]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]I. Ya. Postovsky Institute of Organic Synthesis, Ural Branch of RAS, Yekaterinburg, Russia
Ligand-assisted synthesis of ZnSe quantum dots in solutions of carboxyalkyl chitosan derivative

V.25.03o V.I. Ivanov, **V.K. Khe**, V.I. Krylov, D.A. Syrnikov
Far Eastern State Transport University, Khabarovsk, Russia
Optical method for formation of nanostructures in nanosuspension

V.25.04o **S.O. Gurbatov[1,2]**, A.A. Kuchmizhak[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Mapping the refractive index of dielectric surfaces with spherical plasmonic nanoantenna

V.25.05o **A.N. Galkina[1]**, R.V. Romashko[1,2], A.A. Sergeev[1], A.A. Leonov[2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Static and dynamic sorption of free amines on surface of carbon nanotubes modified with nanolayers of polymers

V.25.06o **K.S. Golokhvast[1,2]**, V.V. Chaika[1], R.V. Romashko[3], A.N. Galkina[3], I.V. Zemchenko[1], A.A. Sergievich[1], A.F. Artemenko[1], E.M. Bulakh[4], E.V. Dzubenko[1], I.V. Seredkin[1,2]
[1]Far Eastern Federal University, Vladivostok, Russia
[2]Pacific Institute of Geography FEB RAS, Vladivostok, Russia
[3]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[4]Federal Scientific Center of the East Asia Terrestrial Biodiversity FEB RAS, Russia
Can plants and fungi cure «the wounds» using silicon gel?

Coffee break ***18:30 – 18:50***

Poster session II 18:30 – 20:00

Excursion "Night Vladivostok" *20:30 – 23:00*

WHENSDAY, 26 SEPTEMBER

Excursion to the
Institute of Automation and Control Processes FEB RAS ***09:00 – 12:00***

Lunch (FEFU campus) ***12:00 – 13:30***

Excursion
"Voroshilov's battery of Russky Island" and
"Primorsky Aquarium" ***13:30 – 19:00***

THURSDAY, 27 SEPTEMBER

Chairman: *I. Terai*

Plenary session **09:00 – 10:20**

PS.27.01i **T.S. Shamirzaev**
Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia
Exciton recombination and spin dynamics in indirect band gap heterostructures

PS.27.02i Y. Huang[1], Y. Kumazawa[2], S. Kusazaki[2], Y. Saito[2], V. Saxena[2], K. Konishi[3], Y. Kujime[3], T. Kato[3], K. Tanaka[3], **H. Tatsuoka[2]**
[1]Graduate School of Science and Technology, Shizuoka University, Hamamatsu, Japan
[2]Graduate School of Integrated Science and Technology, Shizuoka University, Hamamatsu, Japan
[3]Faculty of Engineering, Shizuoka University, Hamamatsu, Japan
Morphological and structural modifications of Si-based nanostructures synthesized from metal silicide templates in IP6, acid and metal chloride solutions

Coffee break ***10:20 – 10:40***

Nanostructured coverages, nanocomposites, functional hybrid materials: formation, structure and properties Chairman: *T.S. Shamirzaev*
10:40 – 12:40

VI.27.01o **V.V. Khovaylo**, A.A. Usenko, A.I. Voronin
National University of Science and Technology "MISIS", Moscow, Russia
Impact of nanoinclusions on thermoelectric properties of skutterudites and SiGe alloys

VI.27.02o M.M. Mikhailov[1], **V.V. Neshchimenko[2]**, Chundong Li[3]
[1]Tomsk State University of Control Systems and Radio-electronics, Tomsk, Russia
[2]Amur State University, Blagoveshchensk, Russia
[3]Harbin Institute of Technology, Harbin, China
Effect of the surface morphology of zinc oxide particles on their radiation stability

VI.27.03o **A.S. Gnedenkov[1]**, S.L. Sinebryukhov[1], D.V. Mashtalyar[1,2], V.S. Egorkin[1,2], I.E. Vyaliy[1], S.V. Gnedenkov[1,2]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]Far East Federal University, Vladivostok, Russia
Anticorrosion PEO-coating as the effective way of aluminum alloys protection

VI.27.04o **A.B. Podgorbunsky[1]**, T.F. Antokhina[1], N.N. Savchenko[1], A.A. Sokolov[2], S.L. Sinebryukhov[1], S.V. Gnedenkov[1]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]Far East Federal University, Vladivostok, Russia
Properties of a new superionic compounds $(NH_4)_6LiZr_{4-n}Hf_nF_{23}$ (n=1, 3)

VI.27.05o **D.P. Opra[1]**, S.V. Gnedenkov[1,2], S.L. Sinebryukhov[1], A.A. Sokolov[1,2]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]Far East Federal University, Vladivostok, Russia
Doped TiO_2(B) as high performance anode for lithium storage: strategy and principles

VI.27.06o V.S. Egorkin[1,2], **I.E. Vyaliy**[1], N.S. Svirirdov[2], A.N. Minaev[1,2], S.L. Sinebryukhov[1], S.V. Gnedenkov[1]
[1]*Institute of Chemistry FEB RAS, Vladivostok, Russia*
[2]*Far East Federal University, Vladivostok, Russia*
Formation and electrochemical properties of the hydrophobic composite coatings on aluminum alloy

VI.27.07o **N.B. Kondrikov[1]**, P.L. Titov[1], S A. Shegoleva[1], A.S. Lapina[1], V.G. Kuryavyi[2], M.A. Khorin[1], A.K. Runov[1]
[1]Far Eastern Federal University, Vladivostok, Russia
[2]Institute of Chemistry FEB RAS, Vladivostok, Russia
The preparation, self-organisation and properties of nanostructured metal-oxiding coatings formed by anodic oxidation

VI.27.08o **V.S. Rudnev[1,2]**, I.V. Lukiyanchuk[1], M.S. Vasilyeva[1,2], A.A. Zvereva[1]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Thermally stimulated transformation of the surface nanoarchitecture of Ni-and Cu-doped oxide coatings on titanium

Lunch ***12:40 – 14:10***

Chairman: *X. F. Han*

Plenary session 14:10 – 15:30

PS.27.03i **E.B. Modin**
CIC nanoGUNE Consolider, San Sebastian, Spain
Advanced three-dimensional electron microscopy characterization of nanomaterials

PS.27.04i **V.U. Nazarov**[1], V.M. Silkin[2,3,4], E.E. Krasovskii[2,3,4]
[1]*Research Center for Applied Sciences, Academia Sinica, Taipei 11529, Taiwan*
[2]*Departamento de F´ısica de Materiales, Facultad de Ciencias Qu´ımicas, Universidad del Pais Vasco/Euskal Herriko Unibertsitatea, San Sebastia´n/Donostia, Basque Country, Spain*
[3]*List Donostia International Physics Center (DIPC), San Sebastia´n/Donostia, Basque Country, Spain*
[4]*Ikerbasque, Basque Foundation for Science, Bilbao, Spain*
Electron energy-loss spectroscopy of quasi-two-dimensional crystals: beyond the energy-loss functions formalism

Formation and properties of ferromagnetic and ferroelectric materials, a spintronics optoelectronics and electromechanics

Chairman: *Y.K. Kim*

15:30 – 17:15

IV.27.01o **R.G. Burkovsky**[1], D.A. Andronikova[2], I.A. Bronwald[1], M.A. Kniazeva[1], A.V. Filimonov[1]
[1]*Peter the Great Saint-Petersburg Polytechnic University, St.-Petersburg, Russia*
[2]*Ioffe Institute, St.-Petersburg, Russia*
Structure of incommensurate phases in antiferroelectrics $PbZrO_3$ and $PbHfO_3$ at high pressures

IV.27.02o **E.V. Pustovalov**, A.N. Ferdorets, E.B. Modin, V.V. Tkachev, V.S. Plotnikov
Far Eastern Federal University, Vladivostok, Russia
3D structure of thin films by means of focal series

IV.27.03o **A.S. Samardak**[1], A.G. Kolesnikov[1], A.V. Ognev[1], L.A. Chebotkevich[1], A.V. Sadovnikov[2,3], S.A. Nikitov[2,3], Y.J. Kim[4], I.H. Cha[4], Y.K. Kim[4]
[1]*Laboratory of thin film technologies, School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russia*
[2]*Laboratory "Metamaterials", Saratov State University, Saratov, Russia*
[3]*Kotel'nikov Institute of Radioengineering and Electronics, Russian Academy of Sciences, Moscow, Russia*
[4]*Department of Materials Science and Engineering, Korea University, Seoul, Korea*
Additive chiral interaction on interfaces of "heavy metal/ferromagnet" structures for enhancement of the Dzyaloshinskii–Moriya interaction

IV.27.04o **M.E. Stebliy**, A.G. Kolesnikov, A.V. Ognev, A.S. Samardak, A.V. Davydenko, L.A. Chebotkevich
Far Eastern Federal University, Vladivostok, Russia
Influence of W layer on spin-orbit torques in Ru/Co/Ru films

IV.27.05o **T.A. Pisarenko**[1,2], V.V. Balashev[1,2], V.V. Korobtsov[1,2], A.A. Dimitriev[1,2], V.A. Vikulov[1]
[1]*Institute of Automation and Control processes FEB RAS, Vladivostok, Russia*
[2]*Far Eastern Federal University, Vladivostok, Russia*
The lateral photovoltaic effect in $Fe/SiO_2/Si$ structure with different silicon conductivity type

IV.27.06o **N.I. Plusnin**
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Wetting layer and formation of metal - semiconductor interface

IV.27.07o **A.V. Davydenko[1]**, A.G. Kozlov[1], V.P. Berdnikov[1], G.S. Suslin[1], M.E. Stebliy[1], A.V. Ognev[1], A.S. Samardak[1], A.V. Sadovnikov[2,3], S.A. Nikitov[2,3], L.A. Chebotkevich[1]

[1]*Far Eastern Federal University, Vladivostok, Russia*
[2]*Laboratory "Metamaterials", Saratov State University, Saratov, Russia*
[3]*Kotel'nikov Institute of Radioengineering and Electronics, Russian Academy of Sciences, Moscow, Russia*

Tuning of Dzyaloshinskii-Moriya interaction and magnetic structure in symmetric crystalline $[Co/Pd(111)]_n$ superlattices by variation of Co thickness

Coffee break ***17:15 – 18:00***

Award ceremony and closing remarks **18:00 – 19:00**

Symposium Dinner (Café of FEFU) **19:30 – 21:30**

FRIDAY, 28 SEPTEMBER

Participants departure **09:00 – 22:00**

POSTER SESSION I, 24 SEPTEMBER

I.24.01p **N.V. Denisov[1]**, A.V. Matetskiy[1], O.A. Utas[1], V.G. Kotlyar[1], D.V. Gruznev[1], L.V. Bondarenko[1], A.Y. Tupchaya[1], A.N. Mihalyuk[1,2], A.V. Zotov[1,3], A.A. Saranin[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
[3]Vladivostok State University of Economics and Service, Vladivostok, Russia
Study of atomic and electronic structure of Si(100)√2×√2-(Au/Tl) surface reconstruction

I.24.02p **K.V. Ignatovich**
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Second-Harmonic Generation from bismuth on Si(111) surface

I.24.03p **K.V. Ignatovich**
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Investigation of initial stages of growth Pb on Si(111) surface by second harmonic generation

I.24.04p N.V. Denisov[1], A.A. Alekseev[1], O.A. Utas[1], **S.G. Azatyan[1]**, A.V. Zotov[1,2,3], A.A. Saranin[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russia
[3]Vladivostok State University of Economics and Service, Vladivostok, Russia
Bismuth-indium surface compounds on Si(111) and their modification with sodium

I.24.05p E.P. Kitsyuk[1], E.A. Lebedev[2], A.S Nartov[1], **R.M Ryazanov[1]**, A.A. Shamanaev[3]
[1]Scientific-manufacturing company "Technological Centre", Zelenograd, Moscow, Russia
[2]National Research University of Electronic Technology, Zelenograd, Moscow, Russia
[3]Institute of Nanotechnology of Microelectronics of the RAS, Moscow, Russia
Improvement of electron field emission from carbon nanotubes by $Ba(NO_3)_2$ treatment

I.24.06p **M.V. Ivanchenko[1,2]**, E.A. Borisenko[1], M.V. Ryzhkova[1], D.A. Tsukanov[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Conductivity study of initial stages of β-$PdBi_2$ formation on Bi/Si(111)

I.24.07p **M.V. Ryzhkova[1]**, D.A. Tsukanov[1,2], E.A. Borisenko[1], M.V. Ivanchenko[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Study of sodium adsorption on Pb/Si(111) surfaces

I.24.08p **A.M. Ziatdinov[1]**, P.G. Skrylnik[1], V.G. Makotchenko[2]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]Nikolaev Institute of Inorganic Chemistry of SB RAS, Novosibirsk, Russia
Films of reduced graphene oxide with percolation nets of nanographenes

I.24.09p **T.V. Utas[1]**, D.A. Olyanich[1], V.V. Mararov[1,2], A.V. Zotov[1,2,3], A.A. Saranin[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russia
[3]Department of Electronics, Vladivostok State University of Economics and Service, Vladivostok. Russia
Fullerene trilliumene on Pb/Si(111) surface

I.24.10p **D.A. Olyanich[1]**, V.V. Mararov[1], T.V. Utas[1], A.V. Zotov[1,2], A.A. Saranin[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Granular C_{60} layer on Si(111)-Tl surface

I.24.11p I.A. Tarasov[1], **T.E. Smolyarova[1,2]**, I.A. Yakovlev[1], A.V. Lukyanenko[1,2], S.A. Lyaschenko[1], I.V. Nemtsev[1]
[1]Kirensky Institute of Physics of SB RAS, Krasnoyarsk, Russia
[2]Siberian Federal University, 79 Svobodny Pr., Krasnoyarsk 630041, Russia
Hybrid Au-Fe crystalline nanoparticles obtained by MBE

III.24.01p **D.V. Fomin[1]**, V.L. Dubov[1], K.N. Galkin[2], N.G. Galkin[2], S.A. Pyachin[3], A.A. Burkov[3]
[1]Amur State University, Blagoveshchensk, Russia
[2]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[3]Institute of Materials Science FEB RAS, Khabarovsk, Russia
The formation and crystalline properties of thin $BaSi_2$ films obtained by Ba and Si co-deposition and annealing on a Si(111) substrate

III.24.02p **M.A. Visotin[1,2]**, I.A. Tarasov[1], A.S. Fedorov[1,2], S.G. Ovchinnikov[1,2]
[1]Kirensky Institute of Physics SB RAS, Krasnoyarsk, Russia
[2]Siberian Federal University, Krasnoyarsk, Russia
The role of surface energy in α-$FeSi_2$ nanocrystal orientation on Si(001): density functional study

III.24.03p **N.G. Galkin[1,2]**, K.N. Galkin[1], I.M. Chernev[1], D.L. Goroshko[1,2], E.A. Chusovitin[1], A.V. Shevlyagin[1], A.A. Usenko[3], V.V. Khovaylo[3]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
[3]National University of Science and Technology, Moscow, Russia
Comparison of the structural, optical and thermoelectrical properties of Ca silicide films with variable composition on Si substrates

III.24.04p **A.S. Gouralnik[1]**, S.V. Chusovitina[1], S.A. Dotsenko[1], V.A. Ivanov[2], I.V. Tkachenko[3]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
[3]Institute of Chemistry FEB RAS, Vladivostok, Russia
Magnetism in exchange coupled Fe-Si 3-layers with controlled composition profile

III.24.05p **S.A. Lyaschenko[1]**, O.A. Maximova[1,2], D.V. Shevtsov[1], I.A. Yakovlev[1], I.A. Tarasov[1], S.N. Varnakov[1], S.G. Ovchinnikov[1,2]
[1]Kirensky Institute of Physics of SB RAS, Krasnoyarsk, Russia
[2]Siberian Federal University, Krasnoyarsk, Russia
Measurements of the optical and magneto-optical properties of Fe-Si layer structures at different temperatures

III.24.06p **K.N. Galkin[1]**, D.L. Goroshko[1,2], E.A. Chusovitin[1], S.A. Dotsenko[1,2], N.G. Galkin[1,2], A.K. Gutakovskii[3,4]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
[3]Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia
[4]Novosibirsk State University, Novosibirsk, Russia
Formation of α-FeSi2 nanorods on Si(111) vicinal surface by solid phase epitaxy

III.24.07p **I.A. Tarasov[1]**, M.A.Visotin[1,2], M.N.Volochaev[1,3], L.A. Solovyov[4], A.S. Aleksandrovsky[1,2], M.V. Rautskii[1], V.S. Zhandun[1], I.A. Yakovlev[1], I.V. Nemtsev[1], S.N.Varnakov[1], S.G.Ovchinnikov[1]

[1]Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia
[2]Siberian Federal University, Krasnoyarsk, Russia
[3]Siberian State Aerospace University, Krasnoyarsk, Russia
[4]Institute of Chemistry and Chemical Technology, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia

Tuning the magnetic, transport and optical properties of $FeSi_2$ nanocrystals

III.24.08p **N.I. Plusnin**

Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia

Epitaxial metallic spin injector for spin-devices with field control channel on silicon substrate: review

III.24.09p S.V. Dubkov[1], D.G. Gromov[1], **A.I. Savitskiy[1]**, A.Yu. Trifonov[2], Yu.P. Shaman[3], A.A. Polokhin[3], A.A. Dudin[4]

[1]National Research University of Electronic Technology, Moscow, Zelenograd, Russia
[2]Institute of Physical Problems named after F.V. Lukin, Moscow, Zelenograd, Russia
[3]SMC «Technological Centre», Moscow, Zelenograd, Russia
[4]Institute of Nanotechnology of Microelectronics of the RAS, Moscow, Russia

Influence of nanostructures parameters based on Au, Ag, Au-Ag nanoparticles formed by thermal evaporation in vacuum on amplification of the Raman scattering

III.24.10p E.O. Nashchochin[1], **D.S. Shtarev[2]**, A.V. Shtareva[1], A.V. Syuy[1]

[1]Far Eastern State Transport University, Khabarovsk, Russia
[2]Yu.A. Kosygin Institute of Tectonics and Geophysics Far Eastern Branch, Russian Academy of Sciences, Khabarovsk, Russia

Strontium bismuthates $Sr_2Bi_2O_5$ and $Sr_6Bi_2O_{11}$: temperature dependencies of urbach energy and location of «urbach focus»

III.24.11p **D.A. Shashura[1]**, Yu.O. Privar[1], A.V. Pestov[2], E.B. Modin[1], S.Yu. Bratskaya[1]

[1]Institute of Chemistry Far Eastern Branch of RAS, Vladivostok, Russia
[2]I. Ya. Postovsky Institute of Organic Synthesis, Ural Branch of RAS, Yekaterinburg, Russia

Metal-affine sorbents based on cryogels of carboxyalkyl chitosan derivatives for fluoroquinolones uptake

III.24.12p **A.M. Maslov[1,2]**, N.I. Plusnin[1]

[1]Institute for Automation and Control Processes, 5 Radio St., Vladivostok 690041, Russia
[2]Far Eastern Federal University, 8 Sukhanova St., Vladivostok 690950, Russia

Evolution of optical spectra at the initial stages of Fe growth on Si(001)

III.24.13p **O.V. Volovlikova[1]**, S.A. Gavrilov[1], G.O. Silakov[1], A.A. Polokhin[2], Yu.P. Shaman[2], A.A. Dudin[3], A.V. Zheleznyakova[1]

[1]National Research University of Electronic Technology (MIET), Zelenograd, Moscow, Russia
[2]Scientific-Manufacturing Complex "Technological Centre" MIET, Zelenograd, Moscow, Russia
[3]Institute of Nanotechnology of Microelectronics, Russian Academy of Sciences, Moscow, Russia

The synthesis of the porous silicon powder by Pd-assisted chemical etching

III.24.14p **D.A. Smolyakov[1]**, N.V. Volkov[1], A.N. Masyugin[2], A.S. Tarasov[1], M.V. Rautskii[1], A.V. Lukyanenko[1], M.N. Volochaev[1,2], I.A.Yakovlev[1,2]
[1]Kirensky Institute of Physics, Krasnoyarsk, Russia
[2]Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
Investigation of silicon-based hybrid structures of different composition

III.24.15p **O.M. Orlov**
JSC "Research Institute of Molecular Electronics", Moscow, Zelenograd, Russia
Promising materials of nonvolatile memory based on HfO_X and achievement of device parameters in the $TiN/Hf_{0.5}Zr_{0.5}O_2/TiN/SiO_2/Si$ and $TiN/Hf_XAl_{1-X}O_Y/Pt/SiO_2/Si$ test structures obtained on the national technological basis

V.24.01p **A.V. Syuy[1]**, A.A. Gabain[2], N.A. Teplyakova[2], N.V. Sidorov[2], M.N. Palatnikov[2]
[1]Far Eastern State Transport University, Khabarovsk, Russia
[2]Tananaev Institute of Chemistry and Technology of the Federal Research Centre "Kola Science Centre of the Russian Academy of Sciences», Apatity, Russia
Kinetic dependencies of the photorefractive effect in lithium niobate crystals

V.24.02p **K.R. Karimullin[1,2]**, A.I. Arzhanov[1,2], A.V. Naumov[1,2]
[1]Institute for Spectroscopy RAS, Troitsk, Moscow, Russia
[2]Moscow State Pedagogical University, Moscow, Russia
Low temperature photon echo spectroscopy of nanocomposites with semiconductor colloidal quantum dots

V.24.03p M.M. Mikhailov[1], **V.V. Neshchimenko[2]**, A.V. Grigorevsky[3], A.A. Lovitskiy[1], I.S. Vashchenkov[3]
[1]Tomsk State University of Control Systems and Radio-electronics, Tomsk, Russia
[2]Amur State University, Blagoveshchensk, Russia
[3]OAO "Kompozit", Moscow, Russia
On the radiation stability of $BaSO_4$ pigment modified with SiO_2 nanoparticles and applied for spacecraft thermal control coatings

V.24.04p **E.V. Mitsai[1]**, A.A. Kuchmizhak[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Non-invasive temperature-feedback SERS with all-dielectric resonant nanostructures

V.24.05p **D.V. Pavlov[1,2]**, A.A. Kuchmizhak[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Laser-printed self-organized bimetallic nanotextures for multiwavelength surface enhanced photoluminescence

V.24.06p R.V. Romashko[1,2], **M.A. Asalkhanova[1]**
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Recording of dynamic holograms in photorefractive crystals CdTe by bichromatic radiation

V.24.07p **S.A. Syubaev[1,2]**, A.A. Kuchmizhak[1,2], A.P. Porfirev[3]
[1]*Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
[2]*Far Eastern Federal University, Vladivostok, Russia*
[3]*Samara National Research University, Samara, Russia*
Designing spiral-shape beams to tailor chirality of laser-printed nanoneedles

V.24.08p V.I. Ivanov, **O.O. Ovseychook**
Far Eastern State Transport University, Khabarovsk, Russia
The nonlinear optical properties of the vanadium dioxide films

V.24.09p **K.A. Sergeeva[1]**, A.A. Sergeev[1,2], I.V. Postnova[1], S.S. Voznesenskiy[1,2]
[1]*Far Eastern Federal University, Vladivostok, Russia*
[2]*Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
ZnS:Mn^{2+} quantum dots as efficient photocatalyst for organic dye degradation

V.24.10p V.I. Ivanov, **A.V. Myagotin**, G.D. Ivanova
Far Eastern State Transport University, Khabarovsk, Russia
Thermal lens method of the diagnostics of liquid nanomaterials

V.24.11p M.V. Tutov[1], A.Yu. Mironenko[2], **A.A. Sergeev[3]**, A.A. Leonov[1,3], S.Yu. Bratskaya[2]
[1]*Far Eastern Federal University, Vladivostok, Russia*
[2]*Institute of Chemistry FEB RAS, Vladivostok, Russia*
[3]*Institute for Automation and Control Processes FEB RAS, Vladivostok, Russia*
Highly sensitive luminescent sensor complexes for selective detection of gold ions in aqueous media

V.24.12p **K.S. Golokhvast[1]**, A.V. Fedorov[2], A.I. Korobeev[1], A.I. Kamko[3], A.S. Smirnov[1], I.V. Zemchenko[1], A.A. Sergievich[1], A.F. Artemenko[1], V.V. Chernyshev[1], V.V. Chaika[1]
[1]*Far Eastern Federal University, Vladivostok, Russia*
[2]*Institute of Legislation and Comparative Law under the Russian Federation Government, Moscow, Russia*
[3]*Khabarovsk Department of Internal Affairs, Khabarovsk city, Russia*
Microparticles of silicon oxide (phytoliths) found in Cannabis sativa from Khabarovsky Krai (Russia)

V.24.13p **K.S. Golokhvast[1,2]**, V.V. Chaika[1], A.M. Zakharenko[1], A.A. Sergievich[1], I.V. Zemchenko[1], A.F. Artemenko[1], I.V. Seryodkin[2]
[1]*Far Eastern federal University, Vladivostok, Russia*
[2]*Pacific Geographical Institute FEB RAS, Vladivostok, Russia*
Hexagonal microparticles of silicon oxide (phytolites) from red algae Tichocarpus crinitus

V.24.14p Yu.N. Kulchin[1], **O.V. Nakonechnaya[2]**, I.V. Gafitskaya[2], O.V. Grishchenko[2], T.Yu. Epifanova[2], I.Yu. Orlovskaya[2], Yu.N. Zhuravlev[2], E.P. Subbotin[1]
[1]*Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
[2]*Federal Scientific Center of the East Asia Terrestrial Biodiversity, Vladivostok, Russia*
Plant morphogenesis under different light

V.24.15p Yu.N. Kulchin[1], **A.A Kostyanko[1]**, V.N. Zmeeva[2], E.P. Subbotin[1]
[1]*Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
[2]*Federal Scientific Center of the East Asia Terrestrial Biodiversity, Vladivostok, Russia*

The effect of multispectral light emitting diodes (LEDs) on the activation of morphogenic processes in cell culture of rice Oryza Sativa l

POSTER SESSION II, 25 SEPTEMBER

II.25.01p **A.A. Spirina[1,2]**, I.G. Neizvestny[1,2], N.L. Shwartz[1,2]
[1]Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia
[2]Novosibirsk State Technical University, Novosibirsk, Russia
Examination of GaAs and InAs Langmuir evaporation by simulation

II.25.02p **E.Y. Subbotin[1]**, D.L. Goroshko[1,2], E.A. Chusovitin[1], S.V. Chusovitina[1], S.A. Balagan[1], V.U. Nazarov[3], N.G. Galkin[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
[3]Research Center for Applied Sciences, Academia Sinica, Taipei 11529, Taiwan
Formation and temperature stability of GaSb islands on Si(111)

II.25.03p **S.V. Chusovitina[1]**, E.Y. Subbotin[1], E.A. Chusovitin[1], D.L. Goroshko[1,2], S.A. Dotsenko[1,2], S.A. Pyachin[3], I.A. Astapov[3], K.N. Galkin[1]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
[3]Far Eastern State Transport University, Khabarovsk, Russia
Formation and temperature stability of GaSb film grown on Si(111) by solid phase epitaxy

II.25.04p **S.A. Dotsenko[1,2]**, D.L. Goroshko[1,2], E.A. Chusovitin[1], S.A. Kitan'[1], K.N. Galkin[1], N.G. Galkin[1,2]
[1]Institute of Automation and Control processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
$Si_{1-x}Sn_x$ films grown by low-temperature on Si(100) substrate: crystal structure, optical properties and thermal stability

II.25.05p **S.A. Balagan[1]**, D.L. Goroshko[1,2], V.U. Nazarov[3], N.G. Galkin[1,2]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
[3]Research Center for Applied Sciences, Academia Sinica, Taipei 11529, Taiwan
Ab-initio calculation of phonon spectrum and thermal conductivity of Si with embedded GaSb nanocrystals

II.25.06p N.G. Galkin[1], **D.T. Yan**[2], K.N. Galkin[1], E.A. Chusovitin[1], M.V. Bozhenko[1]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern State Transport University, Khabarovsk, Russia
Comparative analysis of the effect of immersion of porous silicon in solutions of LiBr and $Fe(NO_3)_3$ on the stability and intensity of its photoluminescence

II.25.07p **A.V. Lukyanenko[1,2]**, A.S. Tarasov[1,2], I.A. Bondarev[1,2], M.V. Rautskii[1], T.E. Smolyarova[1,2], A.N. Masyugin[3], F.V. Zelenov[2], I.A. Yakovlev[1], S.N. Varnakov[1], S.G. Ovchinnikov[1,2], N.V. Volkov[1]
[1]Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia
[2]Institute of Engineering Physics and Radio Electronics, Siberian Federal University, Krasnoyarsk, Russia
[3]Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
Silicon nanowire field-effect transistors. Technology and characterization

II.25.08p **D.L. Goroshko[1,2]**, N.G. Galkin[1,2], E.A. Chusovitin[1], S.A. Kitan[1], E.Y. Subbotin[1], A.V. Tupkalo[1]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Photoconductivity and conductivity processes in Si-Sn films grown on Si(100) substrate at room temperature

IV.25.01p **A.G. Kolesnikov**, M.E. Stebliy, A.V. Ognev, A.S. Samardak, L.A. Chebotkevich
Far Eastern Federal University, Vladivostok, Russia
Nucleation, stability and current induced motion of skyrmionium

IV.25.02p **I.G. Iliushin**, S.V. Anisimov, L.L. Afremov
Far Eastern Federal University, Vladivostok, Russia
The oxidation effect on the blocking temperature and magnetic characteristics of nanosized magnetite particles

IV.25.03p D.S. Neznakhin[1], **G.A. Politova[2,3]**, L.A. Ivanov[3], M.A. Paukov[4,5], E.A. Tereshina-Chitrova[6], D.I. Gorbunov[7], I.S. Tereshina[3], N.V. Kudrevatykh[1]
[1]Institute of Natural Sciences, Ural Federal University, Yekaterinburg, Russia
[2]Baikov Institute of Metallurgy and Materials Science RAS, Moscow, Russia
[3]Lomonosov Moscow State University, Faculty of Physics, Moscow, Russia
[4]Charles University, Faculty of Mathematics and Physics, Prague, Czech Republic
[5]Immanuel Kant Baltic Federal University, Kaliningrad, Russia
[6]Institute of Physics, ASCR, 18221, Prague, Czech Republic
[7]Dresden High Magnetic Field Laboratory (HLD-EMFL), Helmholtz-Zentrum Dresden-Rossendorf, D-01314 Dresden, Germany
Low-temperature magnetic hysteresis in Nd (Pr)-Fe-B nanostructured alloys with 2-14-1 type main phase composition

IV.25.04p **A.Yu. Samardak[1]**, A.V. Ognev[1], A.G. Kolesnikov[1], M.E. Stebliy[1], A.V. Gerasimenko[2], L.A.Chebotkevich[1], A.S. Samardak[1]
[1]Far Eastern Federal University, Vladivostok, Russia
[2]Institute of Chemistry FEB RAS, Vladivostok, Russia
Effect of annealing on magnetic properties and the interfacial Dzyaloshinskii-Moriya interaction of Ru/Co/W/Ru films

IV.25.05p **O.A. Maximova[1,2]**, S.A. Lyaschenko[1], D.V. Shevtsov[1], I.A. Yakovlev[1], S.G. Ovchinnikov[1,2]
[1]Kirensky Institute of Physics of SB RAS, Krasnoyarsk, Russia
[2]Siberian Federal University, Krasnoyarsk, Russia
Development of techniques for processing data from magneto-ellipsometry measurements

IV.25.06p **E.V. Pustovalov**, A.N. Ferdorets, V.V. Tkachev, V.S. Plotnikov
Far Eastern Federal University, Vladivostok, Russia
Atomic ordering and disordering of amorphous CoP alloy

IV.25.07p **T.A. Pisarenko[1,2]**, V.V. Balashev[1,2], V.V. Korobtsov[1,2], A.A. Dimitriev[1,2], V.A. Vikulov[1]
[1]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
The lateral photovoltaic effect in Fe_3O_4/SiO_2/p-Si structure

IV.25.08p **N.V. Ilin**, V.V. Tkachev, A.M. Frolov, V.A. Ivanov, A.S. Kuchma, G.S. Kraynova, V.S. Plotnikov
Far Eastern Federal University, Vladivostok, Russia
Structure and properties features of amorphous iron-based metal foils with different copper contents

IV.25.09p **V.V. Tkachev**, A.K. Tsesarskaya, A.N.Fedorets, D.A. Polyanskii, G.S. Kraynova, V.S. Plotnikov
Far Eastern Federal University, Vladivostok, Russia
Phase structure features of amorphous iron-based metal foils with different copper contents

IV.25.10p **V.Yu. Samardak[1]**, A.V. Ognev[1], A.Yu. Samardak[1], A. S. Noshahr[2], F. Nasirpouri[2], A.S. Samardak[1]
[1]School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russia
[2]Faculty of Materials Engineering, Sahand University of Technology, Tabriz, Iran
Temperature dependent magnetic properties and FORC probing of NiMn nanowire arrays

IV.25.11p A.Yu. Samardak, **A.V. Ognev**, A.G. Kolesnikov, M.E. Stebliy, A.S. Samardak, E.V. Pustovalov, L.A. Chebotkevich
Far Eastern Federal University, Vladivostok, Russia
Ion beam irradiation induced modification of perpendicular magnetic anisotropy and domain structure in layered films

IV.25.12p A.V. Davydenko[1], **A.G. Kozlov[1]**, V.P. Berdnikov[1], G.S. Suslin[1], M.E. Stebliy[1], A.V. Ognev[1], L.A. Chebotkevich[1], A.V. Sadovnikov[2,3], S.A. Nikitov[2,3]
[1]Far Eastern Federal University, Vladivostok, Russia
[2]Laboratory «Metamaterials», Saratov State University, Saratov, Russia
[3]Kotel'nikov Institute of Radioengineering and Electronics, RAS, Moscow, Russia
Control of Dzyaloshinskii-Moriya interaction constant and magnetization reversal processes by number of bilayers in $[Co/Pd]_n$ superlattices

IV.25.13p **K.S. Ermakov**, M.E. Stebliy, A.G. Kolesnikov, A.V. Ognev, A.S. Samardak, A.V. Davydenko, L.A. Chebotkevich
Far Eastern Federal University, Vladivostok, Russia
Magnetic and magnetoresistance properties of Co nanostrips grown on self-organizing stepped surfaces

IV.25.14p **V.Yu. Kapitan[1,2]**, A.V. Perzhu[1], K.V. Nefedev[1,2]
[1]Department of Computer Systems, School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russia
[2]Institute of Applied Mathematics, Far Eastern Branch, Russian Academy of Science, Vladivostok, Russia
The numerical study of magnetic multilayer films

IV.25.15p V.I. Ivanov, **Yu.O. Perktov**, Yu.M. Karpets
Far Eastern State Transport University, Khabarovsk, Russia
Thermoelectric element on the basis of thin sandwich metal-ferroelectric-metal system

IV.25.16p **K.S. Soldatov[1,2]**, A.A. Peretyatko[1], K.V. Nefedev[1,2], Y. Okabe[3]
[1]Far Eastern Federal University, Vladivostok, Russia
[2]Institute of Applied Mathematics FEB RAS, Vladivostok, Russia
[3]Department of Physics, Tokyo Metropolitan University, Hachioji, Tokyo, Japan
Diluted antiferromagnetic Ising models on two-dimensional frustrated lattices in a magnetic field

IV.25.17p N.A. Djuzhev, A.S. Iurov, **M.Y. Chinenkov**
National Research University of Electronic Technology (MIET), Zelenograd, Moscow, Russia
Magnetic field MEMS-sensor: functional characteristics control during the formation of magnetosensitive structures

IV.25.18p **K. Setojima**, S. Ikeda, K. Ogi, N. Oka, Y. Terai
Department of Computer Science and Electronics, Kyushu Institute of Technology, Iizuka, Japan
Growth of Ru_2Si_3 polycrystalline thin films by solid phase epitaxy in Ru-Si amorphous layers

VI.25.01p S.V. Gnedenkov[1,2], L.A. Zemnukhova[1], D.P. Opra[1], **A.A. Sokolov[1,2]**, A.N. Minaev[2], S.L. Sinebryukhov[1]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
The correlation between the lignin origin and its electrochemical properties

VI.25.02p **D.P. Opra[1]**, S.V. Gnedenkov[1,2], S.L. Sinebryukhov[1], V.G. Kuryavyi[1], A.A. Sokolov[1,2], A.N. Minaev[1,2]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Facile synthesis of α-Fe_2O_3/carbon core-shell composite for lithium storage and conversion

VI.25.03p **I.M. Imshinetsky[1]**, S.V. Gnedenkov[1,2], S.L. Sinebryukhov[1], D.V. Mashtalyar[1,2], A.V. Samokhin[3], Y.V. Tsvetkov[3]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
[3]A.A. Baikov Institute of Metallurgy and Materials Science of RAS, Moscow, Russia
Incorporation of composite zirconia silica nanoparticles into PEO-coatings on magnesium alloys

VI.25.04p V.S. Egorkin[1,2], N.V. Izotov[2], I.E. Vyaliy[1], **A.N. Minaev[1,2]**, S.L. Sinebryukhov[1], S.V. Gnedenkov[1]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Influence of electrolyte concentration on the features of formation process and morphology of the PEO-coatings on aluminum alloy

VI.25.05p **M.S. Vasilyeva[1,2]**, V.S. Rudnev[1,2]
[1]Far Eastern Federal University, Vladivostok, Russia
[2]Institute of Chemistry FEB RAS, Vladivostok, Russia
Manganese-containing nanostructured oxide coatings on titanium formed by plasma electrolytic oxidation

VI.25.06p **M.S. Vasilyeva[1,2]**, V.S. Rudnev[1,2], E.S. Zykova[1], K.A. Sergeeva[1], A.V. Nepomnyaschiy[3], G.I. Marinina[1]
[1]Far Eastern Federal University, Vladivostok, Russia
[2]Institute of Chemistry FEB RAS, Vladivostok, Russia
[3]Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Ti/TiO_2/Au electrodes prepared by plasma electrolytic oxidation and electron beam evaporation

VI.25.07p **D.B. Migas[1]**, A.B. Filonov[1], V.E. Borisenko[1], N.V. Skorodumova[2,3]
[1]Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
[2]Multiscale Materials Modelling, Department of Materials and Engineering, Royal Institute of Technology (KTH), Stockholm, Sweden
[3]Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden
Degenerate-to-nondegenerate transition in semiconducting properties in $W_{18}O_{49}$ nanofilms

VI.25.08p **K.V. Nadaraia[1,2]**, S.V. Gnedenkov[1,2], S.L. Sinebryukhov[1], D.V. Mashtalyar[1,2]
[1]Institute of Chemistry FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Protective coatings formed by PEO and fluorine-containing compound

VI.25.09p **A.A. Gnidenko**
Institute of Materials Science, Khabarovsk Scientific Center, Russian Academy of Sciences, Khabarovsk, Russia
Computer simulation of plastic deformation in TiAl alloy in the presence of chromium

VI.25.10p **M.V. Silibin[1]**, D.V. Karpinsky[1,2], I.O. Troyanchuk[2]
[1]National Research University of Electronic Technology "MIET", Zelenograd, Moscow, Russia
[2]Scientific-Practical Materials Research Centre of NAS of Belarus, Minsk, Belarus
Structure and magnetic properties of Sm-doped $BiFeO_3$ ceramics near the morphotropic phase boundary

VI.25.11p **G.A. Zverev**, V.G. Kuryavyi
Institute of Chemistry FEB RAS, Vladivostok, Russia
Studying by a complex physical and chemical methods composite metal-fluoropolymer received by a method destruction PTFE in the plasma of pulse high-voltage discharge

VI.25.12p **Yu.M. Nikolenko**, D.P. Opra, A.K. Tsvetnikov, A.Yu. Ustinov, V.G. Kuryavyi, A.A Sokolov, V.Yu. Majorov, A.M. Ziatdinov, S.L. Sinebryukhov, S.V. Gnedenkov
Institute of Chemistry FEB RAS, Vladivostok, Russia
Prospects of application of some activated forms of hydrolytic lignin

VI.25.13p O.V. Tarakova[1], **K.S. Lukyanenko[1]**, O.S. Plotnikova[2], P.A. Apanasevich[2], L.L. Afremov[1], P.A. Lukyanov[3]
[1]Far Eastern Federal University, Vladivostok, Russia
[2]Pacific State Medical University, Vladivostok, Russia
[3]G.B. Elyakov Pacific Institute of Bioorganic Chemistry FEB RAS, Vladivostok, Russia
Biomedical contrast drugs based on iron, cobalt and tantalum oxides

VI.25.14p **M.V. Adigamova[1]**, V.S. Rudnev[1,2], E.S. Sergienko[3], P.V. Kharitonskii[3,4], K.G. Gareev[4], A.A. Kosterov[3], I.V. Lukiyanchuk[1], V.P. Morozova[1]
[1]*Institute of Chemistry FEB RAS, Vladivostok, Russia*
[2]*Far East Federal University, Vladivostok, Russia*
[3]*Saint Petersburg State University, St. Petersburg, Russia*
[4]*Saint Petersburg Electrotechnical University "LETI", St. Petersburg, Russia*
The iron distribution and ferromagnetic areas in PEO coatings

VI.25.15p **M.I. Dvornik**, E.A. Mikhailenko
Institute of Materials FEB RAS, Khabarovsk, Russia
Fabrication of nanostructured gradient tungsten-cobalt alloy using carbon deficiency powder

The Fourth Asian School-Conference on Physics and Technology of Nanostructured Materials

International School-Conference
Vladivostok, Russia, September 23 – 28, 2018

PROGRAMME

In charge of publication: Nikolay G. Galkin

Design and layout: Svetlana V. Chusovitina

Четвертая Азиатская школа-конференция по физике и технологии наноструктурированных материалов

Международная школа-конференция
Владивосток, Россия, 23 – 28 сентября 2018

ПРОГРАММА

(на англ. яз.)

Отпечатано с оригинал-макета,
подготовленного в Федеральном государственном бюджетном учреждении науки
Институт автоматики и процессов управления ДВО РАН

Подписано к печати 31.07.2018 г. Формат 60×84/16.
Усл. п. л. 1,1. Уч.-изд. л. 0,9. Тираж 150 экз. Заказ 26