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

ASCO-NANOMAT 2020

PROGRAMME

Institute of Automation and Control Processes FEB RAS

Far Eastern Federal University

Vladivostok
2020

General information

Plenary talk – 30 minutes including questions
Ordinary talk – 15 minutes including questions
Coffee break – 15 minutes
Lunch – 90 minutes

Organizers

Institute of Automation and Control Processes of FEB RAS

Far Eastern Federal University

Thursday, 29 July

09:00 – 18:00	Participants arrival at the airport of Vladivostok, transportation and accommodation
17:00 – 20:00	Participants registration in the hotel at FEFU campus

Thursday, 30 July

08:00 – 08:50	Participants registration
08:50 – 09:00	Opening remarks
09:00 – 10:30	Plenary session
10:30 – 10:45	*Coffee break*
10:45 – 12:30	Physics of nanostructures and interfaces, self-organization processes
12:30 – 12:45	Group photo
12:30 – 14:00	*Lunch*
14:00 – 15:00	Plenary session
15: 00 – 16:15	Physics of nanostructures and interfaces, self-organization processes
16:15 – 16:30	*Coffee break*
16:30 – 17:15	Nanostructured coverages, nanocomposites, functional hybrid materials: formation, structure and properties
17:15 – 19:30	Poster session I (and Welcome party)

Friday, 31 July

09:00 – 10:00	Plenary session
10:00 – 10:15	*Coffee break*
10:15 – 12:15	Physics of semiconducting nanostructures and heterostructures, including silicide, germanide and stannide heterostructures: experiment, calculations and technology
12:15 – 13:30	*Lunch*
13:30 – 15:00	Plenary session
15:00 – 15:15	*Coffee break*
15:15 – 15:15	4th group material's alloy based on Si, Ge, Sn & Pb, C: formation, structure and properties
16:15 – 16:30	*Coffee break*
16:30 – 19:30	Poster session II

Saturday, 01 August

08:45 – 9:45	Plenary session
09:45 – 10:00	*Coffee break*
10:00 – 11:00	Plenary session
11:00 – 12:30	Laser nanofabrication and laser ablation in liquids: fundamentals and applications
12:30 – 14:00	*Lunch*
14:00 – 15:00	Plenary session
15:00 – 16:00	All-dielectric materials and their applications
16:00 – 16:15	*Coffee break*
16:15 – 18:15	Nanomaterials and their applications

Sunday, 02 August

08:30 – 10:00	Transfer from Russky island (FEFU campus) to the village of Shkotovo
10:00 – 12:00	Excursions: “Tiger park, park ungulates, the leopard’s park, bear park” and “Park of wild animals and birds park”
12:00 – 13:00	Transfer to the village of Shtykovo
13:00 – 14:30	*Lunch*
14:30 – 18:30	Visiting the Art park “Shtykovsky Ponds”
18:30 – 20:00	Transfer from the village of Shtykovo to Russky Island (FEFU campus)

Monday, 03 August

09:00 – 10:00	Plenary session
10:00 – 10:15	*Coffee break*
10:15 – 12:30	Formation and properties of ferromagnetic and ferroelectric materials, a spintronics
12:30 – 13:45	*Lunch*
13:45 – 14:45	Plenary session
14:45 – 16:30	Nanostructured coverages, nanocomposites, functional hybrid materials: formation, structure and properties
16:30 – 17:00	*Coffee break*
17:00 – 17:30	Work of the award committee
17:30 – 18:00	Award ceremony and closing remarks

Tuesday, 04 August

09:00 – 22:00	Participants departure

Programme of the Fifth Asian School-Conference on Physics and Technology of Nanostructured Materials ASCO-NANOMAT 2020

THURSDAY, 29 JULY

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

17:00 – 20:00 Participants registration in the hotel at FEFU campus

THURSDAY, 30 JULY

Participants registration **08:00 – 08:45**

Opening remarks **08:45 – 09:00**

Chairman: *A.A. Saranin*

Plenary session **09:00 – 10:30**

PS.30.01i **S. Hasegawa**
Department of Physics, School of Science, University of Tokyo, Tokyo, Japan
Non-reciprocal flow of charge and spin at surfaces of materials

PS.30.02i **A.V. Dvurechenskii**[1,2], Zh.V. Smagina[1], V.A. Zinovyev[1], P.L. Novikov[1,2], S.A.Rudin[1], A.F.Zinovieva[1], A.V. Nenashev[1,2]
[1] *Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia*
[2] *Novosibirsk state University, Novosibirsk, Russia*
Atomic Scale Tuning of Quantum Dot Nucleation and Epitaxial Growth of heterostructures for nanophotonic and quantum information processing

PS.30.03i **V. Bykov**[1,2], V. Polyakov[1], A.V. Bykov[1], V. Kotov[1], S. Leesment[1], Yu. Bobrov[1]
[1] *NT-MDT-Spectral Instruments Companies Group (www.ntmdt-si.com), Moscow, Russia*
[2] *Moscow Institute of Physics and Technology, Moscow, Russia*
From first STM to complex analysis systems - 30 years' experience of R&D and production of metrological equipment

Coffee break ***10:30 – 10:45***

Physics of nanostructures and interfaces, self-organization processes Chairman: *S. Hasegawa* **10:45 – 12:30**

I.30.01o **M.M. Simunin**[1,2], E.V. Mikhlina[2], A.S. Vyatkin[2], O.E. Bezrukova[1], I.A. Kharchenko[2], I.V. Nemtsev[3], A.S. Voronin[2], I.A. Tambasov[2], I.I. Ryzhkov[1,2]
[1] *Siberian Federal University, Krasnoyarsk, Russia*
[2] *Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia*
[3] *Federal Research Center KSC SB RAS, Krasnoyarsk, Russia*
Synthesis of carbon layers on aluminium oxide surfaces

I.30.02o **E.V. Parinova**[1], V. Sivakov[2], D.A. Koyuda[1], O.A. Chuvenkova[1], D.N. Nesterov[1], A. Schleusener[2], T. Ming[2], D. Marchenko[3], A.K. Pisliaruk[1], R.G. Chumakov[4], A.M. Lebedev[4], D. Smirnov[5], A. Makarova[5], S.Yu. Turishchev[1]

[1] *Voronezh State University, Voronezh, Russia*
[2] *Leibniz Institute of Photonic Technologies, Jena, Germany*
[3] *Helmholtz-Zenrtrum-Berlin, Berlin, Germany*
[4] *National Research Center "Kurchatov Institute", Moscow, Russia*
[5] *Dresden University of Technology, Dresden, Germany*

Atomic and electronic structure of top-down MAWCE silicon nanowires arrays and nanostructures on their basis

I.30.03o **A.A. Dronov**[1], D.A. Dronova[1], I.M. Gavrilin[1], M.S. Kuzmicheva[1], E.P. Kirilenko[2], S.A. Gavrilov[1]

[1] *National Research University of Electronic Technology - MIET, Zelenograd, Moscow, , Russia*
[2] *Institute of Nanotechnology of Microelectronics of the Russian Academy of Sciences (INME RAS), Moscow, Russia*

Investigation of the porous anodic titanium oxide layers self-organization process during formation by AES and ToF SIMS

I.30.04o **V.Y. Nazarov**

Moscow Institute of Physics and Technology, Moscow, Russia

Inclusion of the electron-electron interactions in the theory of photoemission by the TDDFT-based theory of the reduced density matrix

I.30.05o **S.Yu. Turishchev**[1], E.V. Parinova[1], O.A. Chuvenkova[1], F. Kronast[2], D. Marchenko[2], A.K. Fedotov[3], V. Sivakov[4], S.S. Antipov[5], A.K. Pisliaruk[1], R. Ovsyannikov[2], D.A. Koyuda[1]

[1] *Voronezh State University, Voronezh, Russia*
[2] *Helmholtz-Zenrtrum-Berlin, Berlin, Germany*
[3] *Belarus State University, Minsk, Belarus*
[4] *Leibniz Institute of Photonic Technologies, Jena, Germany*
[5] *Immanuel Kant Baltic Federal University, Kaliningrad, Russia*

Photoemission electron microscopy application for functional nanostructures characterization

I.30.06o M.A. Pugachevskii[1], **A.N. Chibisov**[2], A.S. Fedorov[3]

[1] *Southwest State University, Kursk, Russia*
[2] *Computing Center of FEB RAS, Khabarovsk, Russia*
[3] *L.V. Kirenky Institute of Physics of SB RAS, Krasnoyarsk, Russia*

Theoretical and experimental studies of structural defects in CeO_2 nanoparticles

I.30.07o **T.I. Sharipov**[1], S. Santer[2], A. Kopyshev[2], I.T. Amangulova[1], R.Z. Bakhtizin[1]

[1] *Bashkir State University, Ufa, Russia*
[2] *Institute of Physics and Astronomy, University of Potsdam, Potsdam-Golm, Germany*

Scanning probe microscopy/spectroscopy of oligonucleotides with homonucleotide sequence

Photo and Lunch ***12:30 – 14:00***

Chairman: *A.V. Dvurechenskii*

Plenary session 14:00 – 15:00

PS.30.04i **T.S. Shamirzaev**
Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia
Spin dynamics in indirect band gap III-As heterostructures

PS.30.05i A.Yu. Alexeev[1], **D.B. Migas**[1,2], A.B. Filonov[1], V.E. Borisenko[1,2], N.V. Skorodumova[3,4]
[1] *Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
[2] *National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia*
[3] *Multiscale Materials Modelling, Department of Materials and Engineering, Royal Institute of Technology (KTH), Stockholm, Sweden*
[4] *Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden*
Property modifications of 2D Me2X (Me = Mg, Ca, Sr, Ba and X = Si, Ge, Sn): from 2D to 1D in ternary MeMe´X compounds

Physics of nanostructures and interfaces, self-organization processes

Chairman: *T.S. Shamirzaev*

15:00 – 16:15

I.30.08o **A.A. Makarova**[1], O. Vilkov[2], K. Bokai[2], D. Usachov[2], L. Fernandez[3], K. Ali[3], D. Smirnov[4], C. Laubschat[4], D. Vyalikh[5,6], F. Schiller[3] and E. Ortega[3,5,7]
[1] *Freie Universität Berlin, Berlin, Germany*
[2] *St. Petersburg State University, St. Petersburg, Russia*
[3] *CSIC/UPV-EHU-Materials Physics Center, San Sebastian, Spain*
[4] *Technische Universität Dresden, Dresden Germany*
[5] *Donostia International Physics Centre, San Sebastian, Spain*
[6] *IKERBASQUE, Basque Foundation for Science, Bilbao, Spain*
[7] *Departamento Física Aplicada I, Universidad del País Vasco, San Sebastian, Spain*
Two-dimensional materials grown on curved crystal substrates

I.30.09o **A.V. Dvurechenskii**[*,1,2], A.I. Yakimov[1], V.V. Kirienko[1], A.A. Bloshkin[1,2], A.F.Zinovieva[1], A.V.Nenashev[1,2], V.A.Zinovyev[1]
[1] *Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia*
[2] *Novosibirsk State University, Novosibirsk, Russia*
Collective effects in quantum dot Si based nanostructures coupled with the hybrid metal-dielectric metasurfaces for nanophotonic

I.30.10o **D.A. Koyuda**[1], A.V. Ershov[2], V.A. Terekhov[1], E.V. Parinova[1], D.N. Nesterov[1], D.E. Spirin[1], T.V. Kulikova[1], B.L. Agapov[1], M.V. Grechkina[1], E.N. Zinchenko[1], I.A. Karabanova[2], U.A. Vainer[3], S.Yu. Turishchev[1]
[1] *Voronezh State University, Voronezh, Russia*
[2] *Lobachevsky State University of Nizhni Novgorod, Nizhni Novgorod, Russia*
[3] *Institute for Physics of Microstructures RAS, Nizhni Novgorod, Russia*
Soft X-rays synchrotron studies of the multilayered nanoperiodical structures with silicon nanoparticles formation

I.30.11o **D.A. Tsukanov**[1,2], M.V. Ryzhkova[1]
[1] *Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
[2] *Far Eastern Federal University, Vladivostok, Russia*
Electrical conductivity study of the adsorbate-induced Si(111) surface reconstructions after C60 adsorption

I.30.12o **A.M. Ziatdinov**, N.S. Saenko and G.A. Zverev
Institute of Chemistry FEB RAS, Vladivostok, Russia
Raman spectroscopy and features of magnetic properties of nanostructured carbon materials

Coffee break ***16:15 – 16:30***

Nanostructured coverages, nanocomposites, functional hybrid materials: formation, structure and properties Chairman: *D. Migas*
16:30 – 17:15

VI.30.01o **I.M. Gavrilin**
[1] *Frumkin Institute of Physical Chemistry and Electrochemistry of RAS, Moscow, Russia*
[2] *National Research University of Electronic Technology – MIET, Zelenograd, Moscow, Russia*
Effect of electrolyte temperature on the kinetic of germanium nanowire growth by the electrochemical liquid-liquid-solid mechanism

VI.30.02o **G.S. Eritsyan[1,2],** E.P. Kitsyuk[2], A.A. Shamanaev[2], D.G.Gromov[1]
[1] *National Research University of Electronic Technology (MIET),Moscow, Zelenograd, Russia*
[2] *Scientific-Manufacturing Complex "Technological Centre», Moscow, Zelenograd, Russia*
CNT formation at the edge of a Co-Zr-N- (O) alloy film with a low content of catalytic metal for using in VLSI technology

VI.30.03o **A. S. Fedorov**[1,2], P. O. Krasnov[2] , M. A. Visotin[1] and H. Ågren[3]
[1] *Kirensky Institute of Physics SB RAS, Krasnoyarsk*
[2] *Siberian Federal University, Krasnoyarsk, Russia*
[3] *Royal Institute of Technology, Stockholm, Sweden*
Study of plasmons and thermoelectric properties of nanoparticles connected by thin conductive bridges

Poster session I and Welcome party **17:15 – 19:30**

FRIDAY, 31 JULY

Chairman: *M. Imai*

Plenary session **9:00 – 10:00**

PS.31.01i **T. Suemasu**
Tsukuba University, Tsukuba, Japan
Rare earth free semiconducting silicide solar cells and Mn_4N-based spintronic devices for sustainable electronics

PS.31.02i **H. Udono**
Ibaraki University, Ibaraki, Japan
Development of Mg_2Si pn-junction photodiode

Coffee break ***10:00 – 10:15***

Physics of semiconducting nanostructures and heterostructures, including silicide, germanide and stannide heterostructures: experiment, calculations and technology Chairman: *T. Suemasu*
10:15 – 12:00

III.31.01o L. Dermenji[1], K.G. Lisunov[1], K.N. Galkin[2], D.L. Goroshko[2], E.A. Chusovitin[2], N.G. Galkin[2], **E. Arushanov**[1]
[1] *Institute of Applied Physics of ASM, Chisinau, Moldova*
[2] *Institute of Automation and Control Processes of FEB RAS, Vladivostok, Russia*
Transport properties of $CaSi_2$ and Ca_2Si thin films

III.31.02o **L.V. Bondarenko**[1], A.Y. Tupchaya[1], A.N. Mihalyuk[1,2], D.V. Gruznev[1], A.V. Zotov[1], A.A. Saranin[1]
[1] *Institute of Automation and Control Processes, Vladivostok, Russia*
[2] *Far Eastern Federal University, Vladivostok, Russia*
Single layer nickel disilicide on Si(111) surface

III.31.03o **A.A. Gnidenko**, P.G. Chigrin, E.A. Kirichenko
Institute of Material Science KhSC FEB RAS, Khabarovsk, Russia
Computer simulation of oxygen vacancy formation in YFeO3 perovskite

III.31.04o **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*
[2] *Siberian Federal University, Krasnoyarsk, Russia*
Iron disilicide lattice thermal expansion coefficients from first principle calculations

III.31.05o **N.I. Plusnin**[1,3], A.M. Maslov[1,2], V.M. Il'yashenko[1]
[1] *Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
[2] *Far Eastern Federal University, Vladivostok, Russia*
[3] *St. Petersburg State University, St. Petersburg, Russia*
Formation of Fe_2Si Wetting Coating and Fe Growth on Si(001): AES and EELS Study

III.31.06o **Yu. Luniakov**
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Mg_2Sn stannide under pressure: first principle evolutionary search results

III.31.07o **G.O. Silakov,** O.V. Volovlikova, K. Bazov
National Research University of Electronic Technology (MIET), Moscow, Russia
Investigation of the effect of the amount of Au catalyst on the morphology of porous silicon layers obtained by the metal-assisted chemical etching

Lunch ***12:00– 13:30***

Chairman: *H. Odono*

Plenary session **13:30 – 15:00**

PS.31.03i **M. Imai**
National Institute for Materials Science, Tsukuba, Japan
Semiconducting ternary Si clathrates

PS.31.04i **S.A. Gavrilov**
National Research University of Electronic Technology (MIET), Moscow, Russia
The role of heterogeneous melting in germanium nanowire growth by the electrochemical liquid-liquid-solid mechanism

PS.31.05i **Y. Shimura,** J. Utsumi, M. Okado, K. Iwamoto, and H. Tatsuoka
Shizuoka University, Hamamatsu, Japan
Sn-nanodot mediated formation of GeSn and Si(Ge)Sn polycrystalline alloys for thermoelectric applications

Coffee break ***15:00 – 15:15***

4th group material's alloy based on Si, Ge, Sn & Pb: formation, structure and properties and properties Chairman: *S.A. Gavrilov*
15:15 – 16:15

II.31.01o **A.S. Petrov[1],** D.I. Rogilo[1], D.V. Sheglov[1], A.V. Latyshev[1,2]
[1] Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia
[2] Novosibirsk State University, Novosibirsk, Russia
Structural transformations on the Si(111) surface observed during Sn adsorption, desorption, and electromigration

II.31.02o **A.O. Zamchiy**[1,2], E.A. Baranov[1], I.E. Merkulova[1,2], N.A. Lunev[1,2]
[1] Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia
[2] Novosibirsk State University, Novosibirsk, Russia
Effect of stoichiometry on aluminum-induced crystallization of a-SiO_x thin films

II.31.03o D.L. Goroshko[1], **E.Yu. Subbotin[1]**, E.A. Chusovitin[1], S.V. Chusovitina[1], S.A. Dotsenko[1], A.K. Gutakovskii[2], N.G. Galkin[1]
[1] Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
[2] Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia
Formation and structure of epitaxial GaSb nanodots in monocrystalline silicon

II.31.04o **S.A. Ponomarev**[1,2], D.I. Rogilo[2], A.S. Petrov[2], L.I. Fedina[2], D.V. Shcheglov[2], A.V. Latyshev[1,2]
[1]Novosibirsk State University, Novosibirsk, Russia
[2]Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia
Etching of the Si(111) surface by a selenium molecular beam

Coffee break ***16:15 – 16:30***

Poster session II **16:30 – 19:00**

SATURDAY, 01 AUGUST

Chairman: *S. Kulinich*

Plenary session **08:45 – 09:45**

PS.01.01i **A. Rogach**,
City University of Hongkong, Hongkong, China
Chemical Synthesis, Optical Properties, and Applications of Carbon Dots

PS.01.02i **Na Li**, Jianbo Deng, Jiupeng Zhao, Yao Li
Harbin Institute of Technology, Harbin, P. R. China
Electrochromic Films with plasmonic noble metal nanomaterials

Coffee break ***9:45 – 10:00***

Chairman: *A. Rogach*

Plenary session **10:00 – 11:00**

PS.01.03i **S. Kulinich**
Tokai University, Tokyo, Japan
Gold-decorated titania nanoparticles prepared by laser irradiation in water

PS.01.04i **N.A. Inogamov[1],** A.A. Kuchmizhak[2], V.V. Zhakhovsky[1], V.A. Khokhlov[1], Y.V. Petrov[1]
[1] Landau Institute for Theoretical Physics of the RAS, Chernogolovka, Russia
[2] Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Laser ablation for shock generation, synthesis of colloids, and surface nanostructuring of bulk and film targets

Laser nanofabrication and laser ablation in liquids: fundamentals and applications Chairman: *H. Li* **11:00 – 12:30**

V.01.01o **S.V. Zabotnov**[1], A.V. Skobelkina[1], F.V. Kashaev[1], D.E. Presnov[1], T.P. Kaminskaya[1], L.A. Golovan[1], P.K. Kashkarov[1], D.A. Kurakina[2], A.V. Khilov[2], E.A. Sergeeva[1,2], P.D. Agrba[1,3], M.Yu. Kirillin[2]
[1] Lomonosov Moscow State University, Moscow, Russia
[2] Institute of Applied Physics RAS, Nizhny Novgorod, Russia
[3] Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia
Pulsed laser ablation of silicon nanowires and porous silicon in liquids

V.01.02o **A.V. Dostovalov**, A.A. Wolf, K.A. Bronnikov, M.I. Skvortsov, S.A. Babin
[1] *Institute of Automation and Electrometry SB RAS, Novosibirsk, Russia*
[2] *Novosibirsk State University, Novosibirsk, Russia*
Femtosecond pulse structuring of multicore fibers for development of advanced fiber lasers and sensors

V.01.03o A. Zhizhchenko[1,2], S. Starikov[3], S. Makarov[4], **A. Kuchmizhak**[1,2]
[1] *Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
[2] *Far Eastern Federal University, Vladivostok, Russia*
[3] *Joint Institute for High Temperatures of RAS, Moscow, Russia*
[4] *ITMO University, St. Petersburg, Russia*
Precise ablation of methylammonium lead iodide perovskite films with femtosecond laser pulses

V.01.04o **S.V. Starinskiy**[1,2], A.A. Rodionov[1,2], Yu.G. Shukhov[1], A.V. Bulgakov[1,3]
[1] *S.S. Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia*
[2] *Novosibirsk State University, Novosibirsk, Russia*
[3] *HiLASE Centre, Institute of Physics, Czech Academy of Sciences, Dolní Břežany, Czech Republic*
The influence of liquid boiling on nanosecond laser damage threshold of metal immersed into water

V.01.05o **I. Tumkin**
Saint Petersburg State University, S.-Petersburg, Russia
Direct laser writing techniques for creation sensory platforms

V.01.06o **D.V. Shuleiko[1],** M.N. Martyshov[1], D.V. Orlov[1], D.E. Presnov[1], S.V. Zabotnov[1,2], A.G. Kazanskii[1], P.K. Kashkarov[1,2]
[1] *Lomonosov Moscow State University, , Moscow, Russia*
[2] *National Research Centre «Kurchatov Institute», Moscow, Russia*
Fabrication of anisotropic structures on amorphous silicon surfaces by femtosecond laser pulses

Lunch ***12:30 – 14:00***

Chairman: *N. Inogamov*

Plenary session **14:00 – 15:00**

PS.01.05i **S. Makarov**
ITMO University, S.-Petersburg, Russia
Materials for all-dielectric nanophotonics: from silicon to perovskites

PS.01.06i K. Koshelev[1,2], S. Kruk[2], M. Odit[1,3], E. Melik-Gaykazyan[2], J.-H. Choi[4], S. Gladyshev[1], K. Ladutenko[1], H.-G. Park[4], **A. Bogdanov[1]**, Yu. Kivshar[1,2]
[1] *ITMO University, St Petersburg, Russia,*
[2] *Australian National University, Canberra, Australia,*
[3] *Electrotechnical University LETI, St Petersburg, Russia,*
[4] *Korea University, Seoul, Republic of Korea*
High-Q subwavelength dielectric resonators: from microwaves to optics

All-dielectric materials and their applications

Chairman: *S. Makarov*

15:00 – 16:00

V.01.07o **A.Yu. Mironenko**[1], A.A. Sergeev[2], M.V. Tutov[1,3], A.A. Kuchmizhak[2,3]
[1] *Institute of Chemistry FEB RAS, Vladivostok, Russia*
[2] *Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
[3] *Far Eastern Federal University, Vladivostok, Russia*
Functionalization of nanostructured Si surfaces for advanced sensing applications

V.01.08o **L. Pan**, Y. Hu
Harbin Institute of Technology, Harbin, China
Ultra-black coating based on micro hollow carbon sphere

V.01.09o K.A. Sergeeva**, A.A. Sergeev**
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Photonic nanojet generation in transmission and reflection mode

V.01.10o **E.S. Sheremet**[1], A. Averkiev[1], S. Shchadenko[1], V. Kolchuzhin[2], R.D. Rodriguez[2]
[1] *Tomsk Polytechnic University, Tomsk, Russia*
[2] *Qorvo Munich GmbH, München, Germany*
Beyond diffraction limit: local features of electromagnetic field in plasmon-based nanospectroscopy

Coffee break ***16:00 – 16:15***

Nanomaterials and their applications

Chairman: *A. Bogdanov*

16:15 – 18:15

V.01.11o **O. Lyutakov**, O. Guselnikova, A. Trelin, V. Svorcik
University of Chemistry and Technology Prague, Prague, Czech Republic
Functional plasmonic materials for targeted surface enhanced Raman spectroscopy: from pollutant detection to tumor discrimination

V.01.12o **A.P. Porfirev**[1,2], A.B. Dubman[2], S.A. Fomchenkov[1,2]
[1] *Image Processing Systems Institute—Branch of the Federal Scientific Research Centre "Crystallography and Photonics" of the Russian Academy of Sciences, Samara, Russia*
[2] *Samara National Research University, Samara, Russia*
Laser manipulation of microparticles with the help of structured light

V.01.13o **V.I. Iurina**[1], V.V. Neshchimenco[1], Li Chundong[2]
[1] *Amur State University, Blagoveshchensk, Russia*
[2] *Harbin Institute of Technology, Harbin, China*
Size effect on optical properties of silicon dioxide hollow particles

V.01.14o **I.A. Tarasov[1],** T.E. Smolyarova[2,3], I.A. Yakovlev[1], I.V. Nemtsev[3], S.N. Varnakov[1] and S.G. Ovchinnikov[1,2]

[1] Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia

[2] Siberian Federal University, Krasnoyarsk, Russia

[3] Federal Research Center KSC SB RAS, Krasnoyarsk, Russia

Microsphere lithography for Fe_3Si-Au magnetoplasmonic nanostructures

V.01.15o **K.R. Karimullin**[1,2], A.I. Arzhanov[1,2], A.E. Eskova[2], K.A. Magaryan[2], N.V. Surovtsev[3], A.V. Naumov[1,2]

[1] Institute for Spectroscopy RAS, Troitsk, Moscow, Russia

[2] Moscow State Pedagogical University, Moscow, Russia

[3] Institute of Automation and Electrometry SB RAS, Novosibirsk, Russia

Spectroscopic study of low-temperature dynamics in nanocomposites based on semiconductor colloidal quantum dots

V.01.16o D.S. Ovechenko, **A.P. Boychenko**

Kuban State University, Krasnodar, Russia

Transformation of the nanoporous structure of anodic aluminium oxide and its electroluminescence without electrolysis

V.01.17o **A.E. Sokolov**[1,2], A.V. Kurilova[1], V.A. Svetlichniy[3], D.A. Velikanov[2], A.V. Sherepa[2], M.N. Volochaev[2], D.A. Goncharova[3], A.V. Shabalina[3]

[1] Siberian Federal University, Krasnoyarsk, Russia

[2] Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia

[3] Siberian Physical-Technical Institute of Tomsk State University, Tomsk, Russia

Obtaining and properties of biomagnetic nanoconjugates based on DNA aptamers and magnetic nanoparticles for magnetodynamic cell therapy

V.01.18o **A.N. Galkina**[1], A.A. Leonov[1], R.V. Romashko[1,3], JIANG Jyh-Chiang[2]

[1] Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia

[2] National Taiwan University of Science and Technology, Taipei, Taiwan

[3] Far Eastern Federal University, Vladivostok, Russia

A new efficient luminescent chemosensor of gaseous amines for medicine and food safety

SUNDAY, 02 AUGUST

08:30 – 10:00 Transfer from Russky island (FEFU campus) to the village of Shkotovo

10:00 – 12:00 Excursions: "Tiger park, park ungulates, the leopard's park, bear park" and "Park of wild animals and birds park"

12:00 – 13:00 Transfer to the village of Shtykovo

13:00 – 14:30 ***Lunch***

14:30 – 18:30 Visiting the Art park "Shtykovsky Ponds"

18:30 – 20:00 Transfer from village of Shtykovo to Russky island (FEFU campus)

MONDAY, 03 AUGUST

Chairman: *T.S. Shamirzaev*

Plenary session **09:00 – 10:00**

PS.03.01i **D. Vyalikh**
Donostia International Physics Center (DIPC), San Sebastian, Spain
Unusual magnetism and strongly-correlated electrons in quasi-two-dimensional 4f-systems

PS.03.02i **O.A. Tretiakov**
University of New South Wales, Sydney, Australia
Topological Spintronics with (Anti)Skyrmions and Bimerons

Coffee break ***10:00 – 10:15***

Formation and properties of ferromagnetic and ferroelectric materials, sensors and spintronics Chairman: *D. Vyalikh*

10:15 – 12:30

IV.03.01o **D.A. Petrov[1]**, I.V. Beketov[2,3], O.S. Ivanova[1], R.D. Ivantsov[1], I.S. Edelman[1], D.K. Baranov[2], I.A. Nekrasov[3] and A.A. Bagazeev[3]
[1] Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia
[2] Ural Federal University, Ekaterinburg, Russia
[3] Institute of Electrophysics UB RAS, Ekaterinburg, Russia
Magnetic circular dichroism and surface plasmon resonance in Ni@C nanoparticles

IV.03.02o **A. Yu. Samardak**[1], E. Yoo[2], Y. S. Jeon[2], S.V. Komogortsev[3], A.V. Ognev[1], A. S. Samardak[1], Y. K. Kim[2]
[1] Far Eastern Federal University, Vladivostok, Russia
[2] Korea University, Seoul, Republic of Korea
[3] Institute of Physics of SB RAS, Krasnoyarsk, Russia
Magnetic properties and FORC-based characterization of electrodeposited Co–W alloy nanowires

IV.03.03o **L.A. Ivanov[1],** T.P. Kaminskaya[1], I.S. Tereshina[1], S.V. Dobatkin[2], G.A. Politova[2]
[1] Lomonosov Moscow State University, Moscow, Russia
[2] Baikov Institute of Metallurgy and Material Science RAS, Moscow, Russia
Magnetic properties of nanocrystalline (Nd,R)-(Fe,Co)-B (R = Pr, Ho) alloys after melt spinning, severe plastic deformation and heat treatment

IV.03.04o **R.G. Burkovsky[1],** G.A. Lityagin[1], A.F. Vakulenko[1], A.E. Ganzha[1], R. Gao[2], A. Dasgupta[2], A.V. Filimonov[1]
[1] Peter the Great Saint-Petersubrg Polytechnic University, St.-Petersburg, Russia
[2] University of California, Berkeley, California, United States
Ferrielectric-like structures in antiferroelectric epitaxial films under electric field bias

IV.03.05o **R.D Ivantsov**[1], D.A. Petrov[1], O.S. Ivanova[1,2], I.S. Edelman[1], S.M. Zarkov[1,2], D.A. Velikanov[1], Chun-Rong Lin[3]

[1] Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia

[2] Siberian Federal University, Krasnoyarsk, Russia

[3] National Pingtung University, Pingtung City, Taiwan

Magnetooptics of nanocomposites based on iron chalcogenide nanoparticles

IV.03.06o **A.G. Kolesnikov**[1], M.E. Stebliy[1], A.V. Davydenko[1], A.G. Kozlov[1], A.V. Ognev[1], A.S. Samardak[1,2], In Ho Cha[3], Yong Jin Kim[3], Young Keun Kim[3]

[1] Far Eastern Federal University, Vladivostok, Russia

[2] National Research South Ural State University, Chelyabinsk, Russia

[3] Korea University, Seoul, Republic of Korea

Novel topological objects in films with easy cone anisotropy

IV.03.07o **A.S. Tarasov**[1], I.A. Bondarev[1,2], M.V. Rautskii[1], A.V. Lukyanenko[1], D.A Smolyakov[1], T.E. Smolyarova[1,2], I.A. Tarasov[1], I.A. Yakovlev[1], M.N. Volochaev[1], S.N. Varnakov[1], S.G. Ovchinnikov[1,2] and N.V. Volkov[1]

[1] Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia

[2] Siberian Federal University, Krasnoyarsk, Russia

Magnetic and transport properties of trilayered $Fe_3Si/Ge/Fe_3Si$ hybrid structures synthesized on Si(111)

IV.03.08o **V. Kapitan**, E. Vasiliev, A. Perzhu, D. Kapitan, R. Volotovskiy, A. Rybin, K. Soldatov, A. Makarov, V. Strongin, Y. Shevchenko, K. Nefedev

[1] Far Eastern Federal University, Vladivostok, Russia

2 Institute of Applied Mathematics of FEB RAS, Vladivostok, Russia

Numerical simulation of magnetic skyrmions in ferromagnetic film

IV.03.09o **S.V. Anisimov**, L.L. Afremov

Far Eastern Federal University, Vladivostok, Russia

Effect of magnetostatic interaction on the blocking temperature of core/shell nanoparticles

Lunch ***12:30– 13:45***

Chairman: *O.A. Tretiakov*

Plenary session **13:45 – 14:45**

PS.03.03i Gyu Won Kim, In Ho Cha, Taehyun Kim, Yong Jin Kim, **Young Keun Kim**

Korea University, Seul, Republic of Korea

Magnetization switching in interface engineered W-based nonmagnet/ferromagnet heterostructures

PS.03.04i **S.G. Ovchinnikov**, V. Zhandun, N. Zamkova, O. Maximova, S. Lyaschenko, M. Vysotin, I. Sandalov

Kirensky Institute of Physics SB RAS, Krasnoyarsk, Russia

Electronic structure and magnetic properties of Iron Silicides

Nanostructured coverages, nanocomposites, functional hybrid materials: formation, structure and properties Chairman: *S.G. Ovchinnikov*

14:45 – 16:30

VI.03.04o **M.I. Dvornik,** E.A. Mikhailenko
Institute of Material Science of FEB RAS, Khabarovsk, Russia
Heat treatment of nanostructured powders obtained by spark erosion of WC-8Co cemented carbide in oil

VI.03.05o **A.A. Sokolov[1,2],** D.P. Opra[1], S.V. Gnedenkov[1], S.L. Sinebryukhov[1], E.I. Voit[1], A.Y. Ustinov[1], V.Y. Mayorov[1], V.V. Zheleznov[1]
[1] *Institute of Chemistry FEB RAS, Vladivostok, Russia*
[2] *Far Eastern Federal University, Vladivostok, Russia*
Metal and non-metal co-substituted titanium dioxide derivatives: Synthesis and electrochemical performance

VI.03.06o **D.P. Opra**, S.V. Gnedenkov, S.L. Sinebryukhov, A.A. Sokolov, A.B. Podgorbunsky, A.Yu. Ustinov, A.I. Neumoin, I.V. Imshinetskiy, K.V. Nadaraia, K.P. Opra, D.V. Mashtalyar
Institute of Chemistry FEB RAS, Vladivostok, Vladivostok
Enhancement the lithium storage performance of TiO2(B) through zirconium and vanadium doping

VI.03.07o **E.A. Belov**[1], K.V. Nadaraia[1,2], D.V. Mashtalyar[1,2], I.M. Imshinetsky[1], A.N. Minaev[2], S.L. Sinebryukhov[1], S.V. Gnedenkov[1]
[1] *Institute of Chemistry FEB RAS, Vladivostok, Russia*
[2] *Far Eastern Federal University, Vladivostok, Russia*
Composite coatings formed on PEO pretreated MA8 magnesium alloy in aqueous suspension of PTFE

VI.03.08o **A.B. Podgorbunsky**, S.L. Sinebrukhov, I.M. Imshinetsky, S.V. Gnedenkov
Institute of Chemistry FEB RAS, Vladivostok, Vladivostok
PEO coated porous Mg/HAp implant materials impregnated with bioactive components

VI.03.09o **K.V. Nadaraia**[1,2], A.I. Pleshkova[2], M.A. Piatkova[2], I.M. Imshinetsky[1], D.V. Mashtalyar[1,2], N.G. Plekhova[1,3], S.L. Sinebryukhov[1], S.V. Gnedenkov[1]
[1] *Institute of Chemistry FEB RAS, Vladivostok, Russia*
[2] *Far Eastern Federal University, Vladivostok, Russia*
[3] *Pacific State Medical University, Vladivostok, Russia*
Formation of PEO-coatings for implant materials

VI.03.10o **V.E. Silant'ev**, V.S. Egorkin, L.A. Zemskova, S.L. Sinebryukhov, S.V. Gnedenkov
Institute of Chemistry FEB RAS, Vladivostok, Vladivostok
Synthesis of phosphate phases on polysaccharide template

Coffee break ***16:30 – 17:00***

Award Committee for the selection of winners ***17:00 – 17:30***

Award ceremony and closing remarks **17:30 – 18:00**

TUESDAY, 04 AUGUST

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

POSTER SESSION I (30 JULY)

I.30.01p **K.V. Ignatovich**
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Investigation of C60 growth on Si(111) "5×5"-Cu by optical second harmonic generation

I.30.02p **D.L. Goroshko**[*]**,** E.A. Chusovitin, O.V. Volovlikova, S.A. Gavrilov, P.S. Volovlikov
[*] *Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
Phohluminiscence mapping of the of self-organized porous Si/SiO_2 structures

I.30.03p **M.M. Simunin**[1,2], A.S. Voronin[2], D.Yu Chirkov[2], S.S. Dobrosmyslov[1,2]
[1] *Siberian Federal University, Krasnoyarsk, Russia*
[2] *Krasnoyarsk Scientific Center SB RAS, Krasnoyarsk,, Russia*
Nanocarbon shell for solid state alumina nanofibers transformations into spinel nanofibers

I.30.04p **N.S. Saenko**, D.A. Saritskiy, A.M. Ziatdinov
Institute of Chemistry FEB RAS, Vladivostok, Russia
The approximation of X-ray diffraction profiles of thermally reduced nanostructured graphene oxide

I.30.05p **D.A. Olyanich[1]**, T.V. Utas[1], A.N. Mihalyuk[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*
Scanning tunneling microscopy of Sn adatoms on the Si(111)5x2-Au surface

I.30.06p **Yu.V. Nazarkina**[1], V. Benu[1], V.A. Rusakov[1], E.M. Eganova[2]
[1] *National Research University of Electronic Technology (MIET), Zelenograd, Moscow, Russia*
[2] *Institute of Nanotechnology Microelectronics INME of RAS, Moscow, Russia*
Effect of hydrodynamic conditions on the growth of nanostructured anodic WOx formed in NH4NO3-based electrolyte

I.30.07p **A.V. Ansovich,** A.M. Frolov, G.S. Kraynova, V.V. Tkachev, S.V. Dolzhikov, V.S. Plotnikov, E.B. Modin
Far Eastern Federal University, Vladivostok, Russia
Structural heterogeneity of amorphous-nanocrystalline alloy $Fe_{77}Cu_1Si_{16}B_6$ in nanometer range

I.30.08p **A.A. Sergeev**, K.A. Sergeeva
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Highly-efficient photocatalytic degradation of organic compounds via zinc sulfide quantum dots

I.30.09p **A.A. Sergeev**, Leonov A.A., Voznesenskiy S.S.
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Luminescent sensing via zinc sulfide quantum dots

I.30.10p **T.V. Utas**[1], D.A. Olyanich[1], A.N. Mihalyuk[1,2], L.V. Bondarenko[1], A.Y. Tupchaya[1], D.V. Gruznev[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*
Initial stages of Bi adsorption on Si(111)5×2-Au

I.30.11p **A.Y. Tupchaya**[1], L.V. Bondarenko[1], Y.E. Vekovshinin[1,2], A.N. Mihalyuk[1,2], D.V. Gruznev[1], A.V. Zotov[1], A.A. Saranin[1]
[1] *Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia*
[2] *Far Eastern Federal University, Vladivostok, Russia*
Two-dimensional MgTl compound on the Si(111) surface

I.30.12p **V.A. Svetlichnyi[1],** E.D. Fakhrutdinova[1], T.S. Nazarova[1], S.A. Kulinich[2], O.V. Vodyankina[1]
[1] *Tomsk State University, Tomsk, Russia*
[2]*Tokai University, Hiratsuka-shi Kanagawa, Japan*
Comparative study of bismuth nanostructures obtained via pulsed laser ablation in liquid and in air

I.30.13p **R. Volotovskiy**, Y. Shevchenko, A. Perzhu, E. Vasiliev, V. Kapitan, D. Kapitan, A. Rybin, K. Soldatov, A. Makarov, V. Strongin, K. Nefedev
[1] *Far Eastern Federal University, Vladivostok, Russia*
[2] *Institute of Applied Mathematics of FEB RAS, Vladivostok, Russia*
Cooperation of genetic and metropolis algorithms for finding unconventional thermodynamic behaviour of many-body systems

I.30.14p **T.I. Sharipov,** G.F. Gilyazova, R.Z. Bakhtizin
Bashkir State University, Ufa, Russia
AFM visualization of asphaltenes surface structure

I.30.15p **M.A. Chibisova**, A.N. Chibisov, S.I. Malkovsky
Computing Center FEB RAS, Khabarovsk, Russia
Ab initio calculation of the equilibrium quantum state for hole spin of the B:Si system

I.30.16p **A. Rybin[1,2],** D. Kapitan[1,2], P. Andriushchenko[1], E. Vasiliev[1,2], V. Kapitan[1,2]
[1] *Far Eastern Federal University, Vladivostok, Russia*
[2] *Institute of Applied Mathematics of FEB RAS, Vladivostok, Russia*
Feedback optimized replica-exchange Monte-Carlo algorithm

I.30.17p **A.A. Spirina[1]**, N.L. Shwartz[1,2]
[1] *Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia*
[2] *Novosibirsk State Technical University, Novosibirsk, Russia*
Influence of the surface treatment on the GaAs planar nanowire morphology

I.30.18p **A.I. Savitskiy**[1,2], S.V. Dubkov[1], G.S. Eritsyan[1,2], A.M. Tarasov[1], S.N. Skorik[2], E.P. Kitsyuk[2], D.G. Gromov[1]
[1] *National Research University of Electronic Technology, Zelenograd, Moscow, Russia*
[2] *Scientific-Manufacturing Complex "Technological Centre", Zelenograd, Moscow, Russia*
Investigation of the plasma treatment process for the regeneration of SERS substrates sensitivity

I.30.19p **D. Kapitan**[1,2], A. Rybin[1,2], P. Andriushchenko[2], E. Vasiliev[1,2], V. Kapitan[1,2]
[1] *Institute of Applied Mathematics of FEB RAS, Vladivostok, Russia*
[2] *Far Eastern Federal University, Vladivostok, Russia*
Calculation of order parameter and critical exponents of the spin glass in frame of Edwards-Anderson Model

I

.30.20p **A.N. Chibisov[1],** M.A. Chibisova[1,2]
[1] *Computing Center of FEB RAS, Khabarovsk, Russia*
[2] *Pacific National University, Khabarovsk, Russia*
Modeling of non-collinear magnetic states of the phosphorus qubit in a silicon lattice

III.30.01p **A.M. Frolov**[1], T.A. Pisarenko[1,2]
[1] *Far Eastern Federal University, Vladivostok, Russia*
[2] *Institute of Automation and Control Processes FEB RAS, Vladivostok,, Russia*
Identification of structure ordering of melt-spun $Fe_{70}Cr_{15}B_{15}$ alloy by the entropy functionals

III.30.02p **D.A. Dronova**, A.S. Gavrilov, A.A. Dronov
National Research University of Electronic Technology (MIET), Moscow, Russia
Electrochemical properties of electrodes based on anodic titanium oxide nanotubular layers

III.30.03p **A.N. Dudin,** V.V. Neshchimenco
Amur State University, Bagoveshchensk, Russia
Radiation induced defects in hollow particles of zinc oxide

III.30.04p **I.A. Tarasov**[1], I.A. Yakovlev[1], M.N.Volochaev[1], Z.I. Nazarova[2], A. Nazarov[2], A.S.Fedorov[1,2], S.N. Varnakov[1], S.G. Ovchinnikov[1,2]
[1]*Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia*
[2]*Siberian Federal University, Krasnoyarsk, Russia*
Growth and thermoelectric properties of composite thin films based on higher iron and manganese silicides

III.30.05p N.G. Galkin[1], **D.T. Yan**[2], K.N. Galkin[1] and S.V. Chusovitina[1]
[1] *Institute of Automation and Control Processes of FEB RAS, Vladivostok, Russia*
[2] *Far Eastern State Transport University, Khabarovsk, Russia*
Relationship between the photoluminescence spectra and MIR spectroscopy of mesoporous silicon samples during long-term storage: the effect of immersion in LiBr solutions

III.30.06p K.N. Galkin, **N.G. Galkin** and E.Yu. Subbotin
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Electronic structure and morphology at the formation of multilayer heterostructures with embedded nanocrystals $CrSi_2$ and β-$FeSi_2$

III.30.07p **K.N. Galkin** and N.G. Galkin
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Optical properties and phonon structure of multilayer heterostructures with embedded $CrSi_2$ and β-$FeSi_2$ nanocrystals

III.30.08p N.G. Galkin, **K.N. Galkin**, E.A. Chusovitin and D.L. Goroshko
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Current-voltage characteristics and photoelectric properties of mesa-diodes based on multilayer heterostructures with embedded $CrSi_2$ and β-$FeSi_2$ nanocrystals

III.30.09p K.N. Galkin, N.G. Galkin, **A.V. Tupkalo**, S.A. Dotsenko, E.A. Chusovitin,
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Growth, structure and low temperature magneto transport in Ca_2Si films on Si(111) substrate

III.30.10p N.G. Galkin[1], **K.N. Galkin**[1], D.T. Yan[2], S.V. Chusovitina[1]
[1] Institute of Automation and Control Processes of FEB RAS, Vladivostok, Russia
[2] Far Eastern State Transport University, Khabarovsk, Russia
Relationship between the photoluminescence spectra and MIR spectroscopy of mesoporous silicon samples during long-term storage: the effect of immersion in $Fe(NO_3)_3$ solutions

III.30.11p **Y. Yamashita**, K. Toko, T. Suemasu
University of Tsukuba, Tsukuba, Ibaraki, Japan
First demonstration of n+-AZO/p-$BaSi_2$ thin film solar cells

III.30.12p **Z. Xu[1]**, T. Sato[1], L. Benincasa[1], Y. Yamashita[1], T. Deng[1], K. Gotoh[2], K. Toko[1], N. Usami[2], A. B. Filonov[3], D. A. Shohonov[4], D.B. Migas[3], T. Suemasu[1]
[1] University of Tsukuba, Tsukuba, Ibaraki, Japan
[2] Nagoya University, Nagoya, Japan
[3] Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
[4] Institute of Applied Physics, National Academy of Sciences of Belarus, Minsk, Belarus
Marked photoresponsivity enhancement of boron-doped $BaSi_2$ by atomic H passivation

III.30.13p **K.N. Galkin**, N.G. Galkin, S.A. Dotsenko, E.Y. Subbotin and O.V. Kropachev
Institute of Automation and Control Processes of FEB RAS, Vladivostok, Russia
Structure and optical properties of thick Ca_2Si(100) epitaxial films on Si(111) substrate

VI.30.01p **S.N. Suchkov**[1,2], M.S. Gerasimenko[2], K.V. Nadaraia[1,2], I.M. Imshinetsky[1], D.V. Mashtalyar[1,2], A.N. Minaev[2], S.L. Sinebryukhov[1], S.V. Gnedenkov[1]
[1] Institute of Chemistry FEB RAS, Vladivostok, Russia
[2] Far Eastern Federal University, Vladivostok, Russia
Correlation between the properties of PEO-layer and coating formation current density

VI.30.02p **V.S. Filonina**[1,2], K.V. Nadaraia[1,2], D.V. Mashtalyar[1,2], A.S. Gnedenkov[1], I.M. Imshinetsky[1], I.E. Vyaliy[1], V.S. Egorkin[1], A.N. Minaev[2], S.L. Sinebryukhov[1], S.V. Gnedenkov[1]
[1] Institute of Chemistry FEB RAS, Vladivostok, Russia
[2] Far Eastern Federal University, Vladivostok, Russia
Formation of protective coatings on AMg3 aluminum alloy using fluoropolymer nanopowder

VI.30.03p **I.M. Imshinetsky[1]**, D.P. Opra[1], K.V. Nadaraia[1,2], V.S. Ivashina[2], A.A. Sokolov[1,2], D.V. Mashtalyar[1,2], S.L. Sinebryukhov[1], S.V. Gnedenkov[1]
[1]Institute of Chemistry of FEB RAS, Vladivostok, Russia
[2]Far Eastern Federal University, Vladivostok, Russia
Incorporation of TiO_2(B) nanoparticles into PEO coatings on MA8 magnesium alloy

VI.30.04p **A.B. Podgorbunsky,** D.P. Opra, A.A. Sokolov, A.I. Neumoin, S.L. Sinebrukhov, S.V. Gnedenkov
Institute of Chemistry FEB RAS, Vladivostok, Russia
Mesoporous materials based on CeO_2 and Sn with a core-shell hollow structure for electrochemical energy storage and conversion

VI.30.05p D.L. Goroshko, E.Yu. Subbotin**, E.A. Chusovitin**, S.V. Chusovitina, Anton K. Gutakovskii, Vladimir V. Khovaylo,
Institute of Automation and Control Processes FEB RAS, Vladivostok, Russia
Improving of the power factor in nanostructured GaSb-silicon thermoelectric material

VI.30.06p V.S. Egorkin[1,2], **I.E. Vyaliy**[1], A.S. Gnedenkov[1], N.V. Izotov[1,2], D.K. Tolkanov[1], A.K. Runov[1], A.N. Minaev[2], S.L. Sinebryukhov[1], S.V. Gnedenkov[1,2]
[1] *Institute of Chemistry of FEB RAS, Vladivostok, Russia*
[2] *Far Eastern Federal University, Vladivostok, Russia*
Influence of formation conditions on corrosion behavior of PEO-coatings during salt-spray test

VI.30.07p V.S. Egorkin[1,2], U.V. Kharchenko[1], **N.V. Izotov**[1,2], I.E. Vyaliy[1], A.S. Gnedenkov[1], D.K. Tolkanov[1], A.K. Runov[1], A.N. Minaev[1,2], S.L. Sinebryukhov[1], S.V. Gnedenkov[1,2]
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Morphology and chemical composition of organic coatings formed atop PEO-layers

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Structural heterogeneity of an amorpous nanocrystalline alloy in the nanometer range

VI.30.09p V.S. Rudnev[1,2], K.N. Kilin[1], **I.V. Lukiyanchuk**[1], M.S. Vasilyeva[1,2]
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The growth of microcrystals on the surface of oxide coatings

VI.30.10p N.B. Kondrikov[1], P.L. Titov[1], **S.A. Shchegoleva**[1], V.B. Cherepanov[1], M.S. Vasileva[1,2]
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Comparison of ordering characteristics of anodicformed nanostructured aluminum and titanium oxides coatings

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Explosive pressing of organic and inorganic compounds

VI.30.12p I.A. Tkachenko[1], A.E. Panasenko[1,2], **M.M. Odinokov[1,2]**
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Magnetically active sorption material SiO_2 - $CoFe_2O_4$

VI.30.13p **T.P. Savchuk**, I.M. Gavrilin**,** A.A. Dronov, S.A. Gavrilov
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VI.30.14p K.S. Lukyanenko, L.L. Afremov, Y.M. Borodaenko, A.V. Ognev, **I.G. Iliushin**, V.O. Trukhin

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Influence of a magnetic field on the scattering of γ-quanta on F_3O_4/Au particles

VI.30.15p **A.I. Savitskiy**[1,2], R.M. Ryazanov[2], D.G. Gromov[1], V.I. Shatilo[3], A.A. Shkal[1], E.P. Kitsyuk[2], A. Shtyka[3], R. Ciesielski[3], S.V. Dubkov[1]

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Photocatalytic reduction of CO_2 over metal/$BaTiO_3$ catalysts

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Nanocomposite of tin and lead oxides prepared in plasma of pulsed high-voltage discharge process: synthesis and electrochemical characteristics

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Composite cryogel for Hg(II) ions recovery

Poster session II (31 JULY)

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Current relaxations in MIS structures based on PbSnTe:In films with low conductivity

II.31.02p **A.V. Sherepa[1]**, V.N. Zabluda[1], K.N. Astankova[2], I.A. Azarov[2], A.E. Sokolov[1]

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Magneto-optical properties of Ge nanoparticles in the GeO matrix

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Indium-based metal induced crystallization of amorphous silicon suboxide thin films

IV.31.01p **Y. Shevchenko**, R. Volotovskiy, E. Vasiliev, A. Perzhu, D. Kapitan, A. Rybin, K. Soldatov, A. Makarov, V. Strongin, V. Kapitan, K. Nefedev

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Monte-Carlo simulations of fast remagnetisation process in FePt $L1_0$ granular films

IV.31.02p **N.V. Ilin**[1], S.V. Komogortsev[2,3], G.S. Kraynova[1], V.A. Ivanov[1], A.V. Davydenko[1], R.S. Iskhakov[2,3], V.S. Plotnikov[1]

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Multiscale magnetic anisotropy in amorphous ferromagnetic ribbon: an example of FeCuNbSiB alloy

IV.31.03p **V. Kapitan**, E. Vasiliev, A. Perzhu, Y. Shevchenko, K. Soldatov, D. Kapitan, R. Volotovskiy, V. Strongin, A. Rybin, A. Makarov

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Skyrmion-antiskyrmion pairs by Monte-Carlo simulation in two-dimensional antiferromagnetic film

IV.31.04p **L. M. Volkova,** D. M. Marinin

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Structural-magnetic models in search of new magnetic materials

IV.31.05p **A.V. Kurilova**[1], A.E. Sokolov[1,2], V.A. Svetlichniy[3], D.A. Velikanov[2], A.V. Sherepa[2], M.N. Volochaev[2], D.A. Goncharova[3], A.V. Shabalina[3]

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Magnetic and optical properties of the iron oxide nanoparticles obtained via pulsed laser ablation

IV.31.06p V.S. Rudnev[1], **I.V. Lukiyanchuk**, M.V. Adigamova
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Ferromagnetic oxide coatings on Al, Ti, Zr and Nb

IV.31.07p **G.A. Politova**[1,2], T.P. Kaminskaya[3], A.Yu. Karpenkov[4], N.Yu. Pankratov[3], M.A. Ganin[1], D.G. Dankin[5], A.V. Filimonov[2]
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Features of the surface morphology and magnetic properties of $Sm_{0.5}R_{0.5}Fe_2$ (R = Tb, Gd) compounds

IV.31.08p **N.I. Sarnavskiy**, A.G. Kozlov, A.V. Davydenko
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Asymmetric domain wall propagation in epitaxial Pd/Co/Pd(111) trilayers

IV.31.09p **Ya.S. Drozdovskiy,** A.G. Kozlov, A.V. Davydenko
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Dzyaloshinskii-Moriya interaction in $[Co(1\ nm)/Pd]_5$ superlattices with different thickness of Pd interlayers

IV.31.10p L.N. Ignatieva, N.N. Savchenko, **Yu.V. Marchenko**, V.A. Mashchenko, I.A. Tkachenko
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Structure, crystallization and magnetic properties of new glasses in the $MnNbOF_5$-BaF_2-FeF_3 system

IV.31.11p M.V. Rautskii[1], D.A. Smolyakov[1], **I.A. Bondarev**[1,2], A.S. Tarasov[1], A.V. Lukyanenko[1,2], I.A.Yakovlev[1], A.N. Masyugin[3], M.N. Volochaev[1], N.N. Kosyrev[1], N.V.Volkov[1]
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Optically tunable magnetoimpedance in $Fe/Al_2O_3/p$-Si

IV.31.12p **I.A. Yakovlev**, B.A. Belyaev, S.N. Varnakov
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Magnetic properties of Fe_3Si synthesized at external magnetic field

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IV.31.14p **M.E. Stebliy[1],** A.G. Kolesnikov[1], M.E. Letushev[1], M.A. Bazrov[1], A.S. Samardak[1], A.V. Ognev[1], X. Wang[2], C. Wan[2], X. Han[2]
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Current induced manipulation of exchange bias in Pt/Co/NiO structure

IV.31.15p **Yu.M. Borodaenko**[1], K.S. Lukyanenko[1], Thomas Myeongseok Koo[2], Min Jun Ko[2], Yu Jin Kim[2], A.V. Ognev[1], A.S. Samardak[1], L.L. Afremov[1], Young Keun Kim[2]
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Study of gamma-ray scattering on $Fe_3O_4/SiO_2/Au$ and Ta_2O_5 nanoparticles

IV.31.16p **M.I. Sobirov**[1], L.L. Afremov[1], Thomas Myeongseok Koo[2], Min Jun Ko[2], Yu Jin Kim[2], A.G. Kolesnikov[1], A.V. Ognev[1], A.S. Samardak[1], Young Keun Kim[2]
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Magnetic properties of $Fe_3O_4/SiO_2/Au$ nanoparticles for enhancement of the radiation therapy effectiveness

IV.31.17p **M.A. Sitnik**[1], L.L. Afremov[1], Thomas Myeongseok Koo[2], Min Jun Ko[2], Yu Jin Kim[2], A.G. Kolesnikov[1], A.V. Ognev[1], A.S. Samardak[1], Young Keun Kim[2]
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Temperature dependence of the magnetic properties of Fe_3O_4/Au nanoparticles investigated by means of micromagnetic simulation

IV.31.18p **Zh.Zh. Namsaraev**, V.N. Kharitonov, P. Savinov, A.S. Samardak, R. Brizitsky, A.V. Ognev
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Controller for a VR system based on magnetic field sensors

IV.31.19p **V.N. Kharitonov**, J.J. Namsaraev, A.S. Samardak, R. Brizitsky, A.V. Ognev
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Development of a mathematical model for describing the motion of a sensor array in a magnetic field

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Concentration phase transition in a two-dimensional ferromagnet

IV.31.21p **V. Yu. Samardak**[1], Y. S. Jeon[2], E. M. Yoo[2], A. V. Ognev[1], A. S. Samardak[1], Y. K. Kim[2]
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Micromagnetic behavior of Fe/Au barcode nanowires: experiment and simulation

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Laser printing of chiral silicon nanoprotrusions by asymmetric donut-shaped femtosecond pulses

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Photoluminescence and features of the defective structure of nominally pure lithium niobate crystals

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V.31.04p **S.V. Starinskiy**[1,2], A.I. Safonov[1,2], A.A. Rodionov[1,2], Yu.G. Shukhov[1], A.V. Bulgakov[1,3]
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Control of single crystal silicon wetting by laser ablation and fluoropolymer deposition

V.31.05p **A.B. Cherepakhin[1]**, I.I. Shishkin[1], P.M. Voroshilov[1], A.A. Kuchmizhak[2,3], S.V. Makarov[1]
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Laser-printed plasmonic metasurfaces for enhancement of second harmonic generation

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Synthesis and study of the optical properties of branched organosilicon phosphors

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Visualization of the optical uniformity of rare-earth doped lithium niobate single crystals

V.31.08p **I.L. Tkhorzhevskiy**[1], A.V. Asach[1], A.S. Tukmakova[1], E.S. Makarova[1], N.S. Kablukova[1,2], P.S. Demchenko[1], D.V. Zykov[1], A.D. Zaitsev[1], A.V. Novotelnova[1], M.K. Khodzitsky[1]
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Properties of Bi and BiSb nano-dimensional layers in THz frequency range

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Fabrication of laser-induced periodic surface structures for advanced sensing applications

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Au nanoparticle-decorated TiO_2 nanospheres produced by laser reshaping in water for sensing applications

V.31.11p **D.S. Shtarev**[1], A.V. Shtareva[1,2], A.V. Syuy[2], V.V. Likhtin[3]
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Investigation of the mechanism of electric conductivity of strontium bismuthate $Sr_6Bi_2O_{11}$

V.31.12p T.A. Pisarenko[1,2], V.V. Korobtsov[1,2], V.V. Balashev[1,2], A.A. Dimitriev[1,2], **S.V. Bondarenko**[1,2]
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The features of the lateral photovoltaic effect in the Fe_3O_4/SiO_2/n-Si structure depending on silicon substrate orientation

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Generation of laser beams for laser printing of chiral nanoneedles

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Multifunctional IR sensor platform produced by direct laser pattering

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Improvement of quartz crystal microbalance gas sensors by nanostructured thin films

V.31.16p **T.A. Pisarenko**[1,2], V.V. Korobtsov[1,2], V.V. Balashev[1,2], A.A. Dimitriev[1,2]
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The influence of temperature on the lateral photovoltaic effect in the Fe_3O_4/SiO_2/n-Si structure

VII.31.01p **R.V. Moryachkov**[1,2], A.N. Berlina[1,2], P.V. Artyushenko[2], V.N. Zabluda[1], G.S. Peters[4], A.E. Sokolov[1,5]
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Conformational changes in DNA aptamers upon binding to Pb ions

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The Fe-Si-Au magnetic Janus particles for biomedical applications

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Protein biosensor based on nanowire field effect transistor

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Tomato (cv. Bonsai) plant development under different light spectra

VII.31.05p A.V. Micheeva[1], **O.V. Nakonechnaya[1]**, E.P. Subbotin[2], O.V. Grishchenko[1], I.V. Gafitskaya[1], Yu.N. Kulchin[2]

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Soybean plant growth under different light conditions

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Increased antibacterial activity by photoactivation of composites based on ZnO nanoparticles

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

International School-Conference
Vladivostok, Russia, July, 30 – August, 3, 2020

PROGRAMME

In charge of publication: Nikolay G. Galkin

Design and layout: Svetlana V. Chusovitina

Пятая Азиатская школа-конференция по физике и технологии наноструктурированных материалов

Международная школа-конференция
Владивосток, Россия, 30 июля – 3 августа 2020

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 18.06.2020 г. Формат 60×84/16.
Усл. п. л. 1,1. Уч.-изд. л. 0,9. Тираж 150 экз. Заказ 26