



PROGRAM

International Student
Conference

“Science and Progress-
2017”

November, 13-17

Saint-Petersburg – Peterhof

November, 13 (Monday)

09.30 – 10.00 Registration (Faculty of Physics, hall of the 1st floor)

10.00 – 10.15 Opening Ceremony, aud. B-04

10.15 – 11.30 Lecture I, aud. B-04

"SOLID STATE NMR SPECTROSCOPY - BASIC IDEAS AND NEW DEVELOPMENTS"

Prof. Dr. Dieter Michel, University of Leipzig, Germany

11.30 – 12.00 Coffee-break (hall nearby aud. B-04)

12.00 – 13.00 Lecture II, aud. B-04

Title is expected

Prof. Dr. Alexander Chirtsov, ITMO University

13.00 – 14.00 Lunch

14.00 – 15.30 **Oral sections**

H – Biophysics, aud. 225

I – Resonance Phenomena in Condensed Matter, aud. B-04

15.30 – 16.00 Coffee-break

16.00 – 17.00 **Poster sections, 2nd floor hall**

H – Biophysics

I – Resonance Phenomena in Condensed Matter

November, 14 (Tuesday)

11.30 – 13.00 Lecture III, aud. B-02

"QUANTUM SPIN AND ANOMALOUS HALL EFFECTS"

Prof. Dr. Mikhail Otrokov, Centro de Física de Materiales, Spain

13.00 – 14.00 Lunch

14.00 – 16.30 **Annual Meeting of G-RISC “Results-2017”**, aud. B-02

14.00 – 14.10 Welcome speeches, Representative of SPbSU

14.10 – 14.20 Representative Freie University Berlin

14.20 – 14.30 Representative G-RISC Administrative Committee Natalia Kolanovska

14.30 – 16.00 Reports by the Winners of Award “The Best reports 2016”

16.00 – 16.30 Ceremonies of the Winners awarding

17.00 – 19.00 **Third G-RISC'S Alumni Meeting** (Student canteen, ul. Ulyanovskaya, 9)

17.00 – 17.05 Welcome speeches (Prof. Dr. A. Shikin / Prof. Dr. E. Ruehl)

17.05 – 17.15 Presentation from G-RISC Offices (Mrs. N. Kolanovska)

17.15 – 17.45 Reports by the G-RISC Alumnis

17.45 – 19.00 Welcome-buffet

November, 15 (Wednesday)

10.30 – 12.00 Lecture IV, aud. B-04

"ANALYTICAL AND NUMERICAL METHODS FOR THE STUDY OF ATTRACTORS: HOMOCLINIC BIFURCATIONS, LOCALIZATION, AND DIMENSION CHARACTERISTICS"

Prof. Dr. Nikolay Kuznetsov, Saint-Petersburg State University

12.00 – 12.30 Coffee-break

12.30 – 14.00 **Oral sections, Part I**

A – Chemistry, aud. B-04

B – Geo- and Astrophysics, aud. 225

C - Mathematics and Mechanics, aud. 210

F – Optics and Spectroscopy, aud. 227

14.00 – 15.00 Lunch

15.00 – 16.30 **Oral sections, Part II**

A – Chemistry, aud. B-04

B – Geo- and Astrophysics, aud. 225

C - Mathematics and Mechanics, aud. 210

Poster sections, 2nd floor hall

F – Optics and Spectroscopy

16.30 – 17.00 Coffee-break

17.00 – 18.30 **Poster sections, 2nd floor hall**

A – Chemistry

B – Geo- and Astrophysics

C - Mathematics and Mechanics

November, 16 (Thursday)

10.30 – 12.00 **Oral sections, Part I**

D – Solid States Physics, aud. 210

G – Theoretical, Mathematical and Computational Physics, aud. 229

E – Electromagnetic and Acoustical Processes, aud. 225

12.00 – 12.30 Coffee-break

12.30 – 14.00 **Oral sections, Part II**

D – Solid States Physics, aud. 210

G – Theoretical, Mathematical and Computational Physics, aud. 229

E – Electromagnetic and Acoustical Processes, aud. 225

14.00 – 15.00 Lunch

14.00 – 18.00 **S – First Steps in Science (for secondary school students)**, aud. B-04

14.00 – 15.00 **Lecture “Вселенная: от самого маленького к самому большому” (in Russian)**, Dr. Sergey Manida, Saint-Petersburg State University

15.00 – 15.30 Coffee-break

15.30 – 17.00 Oral section S, aud. B-04

17.00 – 17.30 Coffee-break

17.30 – 18.00 Ceremony of winners awarding the “The best presentation”

15.00 – 17.00 **Poster sections, 2nd floor hall**

D – Solid States Physics

G – Theoretical, Mathematical and Computational Physics

E – Electromagnetic and Acoustical Processes

November, 17 (Friday)

11.00 – 12.00 **Lecture V**, aud. B-04

Level-mixing effect induced by blackbody radiation and its influence on the cosmological recombination problem, Dr. Timur Zalialiutdinov, Saint-Petersburg State University

12.00 – 12.15 Ceremony of honor “The best conference reporters”

12.15 – 13.00 Lunch

13.00 – 18.00 Excursion to the Saint-Petersburg Dike and Kronstadt (island Kotlin)

Section A – Chemistry

November, 15 (Wednesday)

Oral sections 12.30 – 14.00 and 15.00 – 16.30

Aud. B-04, Leader – Dr. Alina Manshina

Cherkasina Kseniia (Saint-Petersburg State University, Institute of Chemistry)

“A cloud point microextraction approach using octylamine for the separation and preconcentration of tetracyclines in urine”

Chernysheva Anna (Saint-Petersburg State University, Institute of Chemistry)

“Lewis acid/base stabilized phosphanylalanes $\text{IPrAlH}_2\text{PH}_2$ and $\text{IPrAlH}_2\text{PH}_2\text{W}(\text{CO})_5$: synthesis and characterization”

Dmitriev Viktor (Saint-Petersburg State University, Institute of Chemistry)

“Synthesis and reactivity of new indolyl and pyrrolyl substituted izoxazolidines”

Eremina Anzhelika (Saint-Petersburg State University, Institute of Chemistry)

“Acyclic diaminocarbene complexes of iridium(III): synthesis, structure and properties”

Ionova Snezhana (Kazan Federal University, A.M. Butlerov Institute of Chemistry)

“Influence of calixarene polymorphic modification on its receptor properties for guest vapors”

Ivanov Mikhail (Saint-Petersburg State University, Institute of Chemistry)

“Molecular dynamics simulations of double-stranded RNA oligomer with G-quadruplex DNA ligands”

Ivanova Elena (Saint-Petersburg State University, Institute of Chemistry)

“Separation of N_2/CO_2 mixture by adsorption in modified CMK-5: molecular simulation study”

Kanashina Daria (Saint-Petersburg State University, Institute of Chemistry)

“An evaporation-assisted liquid-liquid microextraction technique for HPLC-MS/MS determination of pesticides in wine”

Kazakova Angelina (Saint Petersburg State University, Institute of Chemistry)

“Synthesis of building blocks for covalent porphyrin-fullerene dyads”

Kinziabulatova Lilia (Saint Petersburg State University, Institute of Chemistry)

“Synthesis of monolithic polymeric sorbents with molecular imprints for solid-phase extraction and analysis of proteins”

Rafiee Zeinab (Lorestan University, Iran)

“Synthesis of Polyacrylic-Citric acid for Biomedical Applications”

Tataurov Maksim (Saint Petersburg State University, Institute of Chemistry)
“Separation performance of novel polyheteroarylene membranes”

Poster section 17.00 – 18.30

A-01. Abdrashidov Georgy (Saint Petersburg State University, Institute of Chemistry)
“Synthesis and catalytic properties of ferromagnetic bimetallic nanoparticles based on cobalt”

A-02. Afanaseva Kseniia (Saint Petersburg State University, Institute of Chemistry)
“(3+2)- and (3+3)-cycloadditions of 3,4-dihydroisoquinoline-N-oxides to N-vinylpyrroles”

A-03. Atta Ramadan (Saint Petersburg State University, Institute of Chemistry)
“Development and study of novel green membranes based on PVA and chitosan for pervaporation dehydration”

A-04. Bakholdina Anna (Moscow Technological University, Lomonosov Institute of Fine Chemical Technology, Faculty of Biotechnology and Industrial Pharmacy)
“Exploration of 1,2,4-thiadiazole-containing scaffolds in the design of Free Fatty Acid Receptor 1 (GPR40) agonists”

A-05. Baranauskaite Valeria (Saint Petersburg State University, Institute of Chemistry)
“Laser-induced deposition of catalytically active metal nanoparticles and highly porous nanostructured films from salt solutions for catalysis of organic reactions”

A-06. Bodnar Victoria (Saint Petersburg State University, Institute of Chemistry)
“Direct determination of fluorine in KTP single crystals by pulsed glow discharge time-of-flight mass spectrometry”

A-07. Buldakov Alexander (Saint Petersburg State University, Institute of Chemistry)
“Low-temperature equilibrium in solutions of (isocyanide)(phosphine)palladium (ii) complexes”

A-08. Dabranskaya Uladzislava (Saint Petersburg State University, Institute of Chemistry)
“Isostructural Cl/Br exchange in adducts of dimethylcyanamide platinum(II) complexes with tetrabromomethane”

A-09. Devleshova Natalia (Saint Petersburg State University, Institute of Chemistry)
“Critical phenomena for the quaternary system propionic acid – ethanol – ethyl propionic – water at 313.15 K”

A-10. Dobrovolskaya Victoria (Moscow Technological University, Lomonosov Institute of Fine Chemical Technology, Faculty of Biotechnology and Industrial Pharmacy)
“1,3,4-Thiadiazole-2-carboxamide scaffold as a precursor for the synthesis of free fatty acid receptor 1 (FFA1) agonists”

- A-11. Dzhuzha Apollinariia (Saint Petersburg State University, Institute of Chemistry)
“Molecularly imprinted macroporous polymeric layers: preparation and properties exploration”
- A-12. Elistratova Anastasiia (Saint Petersburg State University, Institute of Chemistry)
“Laser-Induced Migration of Alkali Ions in Phosphate Glasses”
- A-13. Filippov Ilya (Saint Petersburg State University, Institute of Chemistry)
“Molecular dynamics simulation of methane hydrate nanocluster melting in water and nitrogen environment”
- A-14. Gavrilova Daria (Saint Petersburg State University, Institute of Chemistry)
“Water-insoluble complexes of polyacrylic acid with low molecular weight counterions having different number of amino groups”
- A-15. Gitlina Anastasia (Saint Petersburg State University, Institute of Chemistry)
“Novel «prolongated» Ir(III) complexes as d-blocks for multiple emissive materials: synthesis and photophysical properties”
- A-16. Golikova Alexandra (Saint Petersburg State University, Institute of Chemistry)
“On the using of equations AGA8 and PC-SAFT for the calculation of thermodynamic properties of natural gas”
- A-17. Grintcevich Sergei (Saint Petersburg State University, Institute of Chemistry)
“Molecular simulation of CO₂/CH₄ mixed hydrates”
- A-18. Gugin Nikita (Saint Petersburg State University, Institute of Chemistry)
“Complexes of AlX₃ (X=Cl, Br) with bifunctional N-donors: from molecular complexes to 1D, 2D coordination polymers”
- A-19. Kalinchenkova Natalya (Moscow Technological University, Lomonosov Institute of Fine Chemical Technology, Faculty of Biotechnology and Industrial Pharmacy)
“Synthesis of spirocyclic amino alcohol building blocks prepared via a Prins-type cyclization in aqueous sulfuric acid”
- A-20. Kashina Maria (Saint Petersburg State University, Institute of Chemistry)
“Synthesis and Structure of Hypervalent Antimony Trichloride Complexes with Pyridine”
- A-21. Kazakova Ekaterina (Moscow Technological University, Lomonosov Institute of Fine Chemical Technologies)
“Synthesis of α -riboside analogue pyridine-nucleoside form of vitamin B₃”
- A-22. Khairullina Evgeniia (Saint Petersburg State University, Institute of Chemistry)
“Composition and structure of main chemical species in aqueous solutions for laser-induced deposition”

- A-23. Khistiaeva Viktoria (Saint Petersburg State University, Institute of Chemistry)
“Controlled construction of d-f dyads: heteronuclearIr(III)/Yb(III) NIR emitter”
- A-24. Khistiaeva Viktoria (Saint Petersburg State University, Institute of Chemistry)
“Ambipolar Phosphine Derivatives as “Antenna” for Eu(III): Synthesis and Luminescent Properties”
- A-25. Kochurin Matvey (Saint Petersburg State University, Institute of Chemistry)
“Molecular simulation of gas hydrates occupation: comparison of SI and SII structures”
- A-26. Kondratyev Vadim (Saint Petersburg State University, Institute of Chemistry)
“Synthesis, characterization and functional characteristics of hydroxyapatite and ferrite barium based bioceramics and polymer composites”
- A-27. Korchak Petr (Saint Petersburg State University, Institute of Chemistry)
“Phase behavior of aqueous biphasic systems containing dialkylimidazolium ionic liquids with halide or amino acid anions”
- A-28. Kurnosenko Sergey (Saint Petersburg State University, Institute of Chemistry)
“A study of methylamine intercalation into the interlayer space of protonated layered perovskite-like titanates $HLnTiO_4$ ($Ln = La, Nd$)”
- A-29. Kurnosenko Sergey (Saint Petersburg State University, Institute of Chemistry)
“New experimental data on synthesis and protonation of layered perovskite-like titanates $K_2Ln_2Ti_3O_{10}$ ($Ln = La, Nd$)”
- A-30. Kuznetsova Anastasia (Saint Petersburg State University, Institute of Chemistry)
“Structural and electrostatic properties of porous glasses in $FeCl_3$ solutions”
- A-31. Laptchenkova Anastasia (Saint Petersburg State University, Institute of Chemistry)
“Synthesis and characterization of hexacyanoferrates of transition metals doped with magnesium as promising cathode materials”
- A-32. Lavit Kseniia (Saint Petersburg State University, Institute of Chemistry)
“Synthesis and X-ray study of non-covalent Interactions in new adducts $[Cu(I_3)(CNXyl)_3]$ and $[Cu(I_3)(CNXyl)_3] \cdot CHI_3$ ”
- A-33. Lebedinets Sofya (Saint Petersburg State University, Institute of Chemistry)
“Dispersive liquid-liquid microextraction for HPLC determination of meropenem in biological fluids”
- A-34. Mikhailova Aleksandra (Saint Petersburg State University, Institute of Chemistry)
“PLA-based films with gradient concentration of L-cysteine”

- A-35. Mikheyev Alexander (Saint Petersburg State University, Institute of Chemistry)
“Interaction between aldazines and homophthalic anhydride. Following transformations of (E)-2-arylydenamino-1-oxo-3-aryl-1,2,3,4-tetrahydroisoquinoline-4-carboxylic acids”
- A-36. Minich Iana (Saint Petersburg State University, Institute of Chemistry)
“Phase transformations of protonated and hydrated perovskite type layered titanate $K_{2.5}Bi_{2.5}Ti_4O_{13}$ derivative during thermolysis”
- A-37. Oleneva Polina (Saint Petersburg State University, Institute of Chemistry)
“Colloidal CdSe quantum dots: new synthetic route, spectroscopy and applications”
- A-38. Olisov Dmitrii (Saint Petersburg State University, Institute of Chemistry)
“Synthesis and magnetic properties of $Sr_2Mg_{1-x}Ni_xSi_2O_7$ and $Sr_2Mg_{1-x}Ni_xGe_2O_7$ ($0 \leq x \leq 0.1$)”
- A-39. Parfenyuk Tatyana (Saint Petersburg State University, Institute of Chemistry)
“Synthesis and characterization of $Na[Ga(NH_2BH_3)_4]$ ”
- A-40. Petukhova Yulia (Saint Petersburg State University, Institute of Chemistry)
“The influence of hydrothermal VO_2 thermal treatment conditions on product morphology and properties”
- A-41. Pokhvishcheva Nadezhda (Saint Petersburg State University, Institute of Chemistry)
“New color standards for color normalization in optical sensing”
- A-42. Polikarpova Daria (Saint Petersburg State University, Institute of Chemistry)
“Nanosized anion exchanger as stationary phase in capillary electrochromatography”
- A-43. Putintseva Maia (Saint Petersburg State University, Institute of Chemistry)
“Transport and physicochemical properties of nanocomposite pervaporation membranes”
- A-44. Ranny Gleb (Platov South-Russian State Polytechnic University (NPI), Chemistry Faculty)
“Stability of PEPPSI-type metal-organic complexes”
- A-45. Rudakova Daria (Saint Petersburg State University, Institute of Chemistry)
“Hybrid Membranes Containing Star-Shaped Macromolecules with Fullerene Core for Intensification of Propyl Acetate Production”
- A-46. Sadaev Aleksey (Saint Petersburg State University, Institute of Chemistry)
“Investigation of heterogeneous area in the systems with reaction of ethyl formate and ethyl acetate synthesis by the gas chromatography method”
- A-47. Sadaeva Anna (Saint Petersburg State University, Institute of Chemistry)

“Possibilities of the using of some equations of state for the estimation the mass flow of natural gases”

A-48. Scherbina Nadezhda (Saint Petersburg State University, Institute of Chemistry)
“On the way to the Lewis acid/base stabilized phosphanyltrialanes: synthesis and structure of H_3GaPCy_3 ”

A-49. Senina Alina (Saint Petersburg State University, Institute of Chemistry)
“Research of the critical phenomena in the liquid-phase splitting system propionic acid – ethanol – ethyl propionate – water at 30°C”

A-50. Shelyganov Pavel (Saint Petersburg State University, Institute of Chemistry)
“DFTB/MD-study of BN-clusters formation in the gas phase”

A-51. Shinkar Xenia (ITMO University, Laboratory of Solution Chemistry of Advanced Materials and Technologies)
“Synthesis magnetite sorbents based on zeolite and magnetite nanoparticles”

A-52. Silyavka Elena (Saint Petersburg State University, Institute of Chemistry)
“Mass spectrometric study of Langmuir-Blodgett films based on lanthanide stearates”

A-53. Slavova Sofia (Saint Petersburg State University, Institute of Chemistry)
“Excited states of Eu-Au heterometallic luminescent complex with 5-(4-ethynylphenyl)-2,2'-bipyridine bridging ligand: DFT-based from-the-ground-up approach”

A-54. Strykanova Vera (Saint Petersburg State University, Institute of Chemistry)
“Synthesis of copper containing nanoparticles by microwave heating”

A-55. Sychev Dmitrii (Saint Petersburg State University, Institute of Chemistry)
“Monodisperse hydrosol of detonational nanodiamond coagulation in KCl and BaCl₂ solutions”

A-56. Syukkalova Evgeniya (Saint Petersburg State University, Institute of Chemistry)
“Synthesis and thermal properties of hydroxyapatite nanoparticles with different morphology”

A-57. Teryokhina Irina (Saint Petersburg State University, Institute of Chemistry)
“Voltammetric determination of sulfur-containing amino acids using nanostructured electrodes”

A-58. Tiuftiakov Nikolai (Saint Petersburg State University, Institute of Chemistry)
“Palladium(II) mediated addition of aminothiazaheterocycles to coordinated isocyanides”

A-59. Toikka Iulia (Saint Petersburg State University, Institute of Chemistry)

“Self-organization of Langmuir-Blodgett films on the surface of an aqueous subphase containing 3d-metal ions and the study of their physico-chemical properties”

A-60. Tolmachev Maxim (Saint Petersburg State University, Institute of Chemistry)
“Solubility and solid phase formation in ternary systems $CdX_2 - S - DX$ ($X=Cl, Br, I$; S =dimethylsulfoxide, N,N -dimethylacetamide; $DX=1,4$ -dioxane) at 298 K”

A-61. Vasileva Anna (Saint Petersburg State University, Institute of Chemistry)
“Active templates for Surface-enhanced Raman spectroscopy based on $AgAu@C$ nanoparticles”

A-62. Vasileva Anna (Saint Petersburg State University, Institute of Chemistry)
“Polymerization of droplets under flow using photoinitiated azide-alkyne cycloaddition”

A-63. Vasin Semen (Saint Petersburg State University, Institute of Chemistry)
“Membranes based on polysulfone for pervaporation of binary and multicomponent mixtures”

A-64. Vernadskaya Victoria (Saint Petersburg State University, Institute of Chemistry)
“Critical phenomena in acetic acid – amyl alcohol – amyl acetate – water system under polythermal conditions”

A-65. Vlasova Anna (Saint Petersburg State University, Institute of Chemistry)
“Synthesis and adsorption properties of $Fe_3O_4@AlOOH$ nanoparticles: removal of Congo red dye from aqueous solutions”

A-66. Zaringhadam Parisa (Lorestan University, Iran)
“Synthesis and characterization of nanoflower $Bi_2O_2CO_3-ZnFe_2O_4$ ”

Section B – Geo- and Astrophysics November, 15 (Wednesday)

**Oral sections 12.30 – 14.00 and 15.00 – 16.30
Aud. 225, Leader – Prof. Dr. Vladimir Troyan**

Biryukov Egor (Saint-Petersburg State University, Faculty of Physics)
“The application of multiple linear regression algorithm to the microwave radiometer RPG-HATPRO data in the problem of liquid water path retrieval”

Foka Stefani (Saint-Petersburg State University, Faculty of Physics)
“Analysis of the observation of atmospheric CO_2 concentrations in the ambient air at the Peterhof station over a four-year period (2013-2016)”

Grishunin Konstantin (Saint Petersburg State University, Faculty of Mathematics and Mechanics)

“Investigation of the width of the spiral structure of disk galaxies”

Karagodin Arseniy (Saint-Petersburg State University, Faculty of Physics)

“The first outcomes and further plans of incorporating GEC into the chemical climate models”

Kozlovtseva Kate (Lomonosov Moscow State University, Faculty of Physics)

“The study of ionospheric total electron content variability using for the signals of COMPASS/Beidou geostationary navigational satellites”

Shablovinskaya Elena (Saint Petersburg State University, Faculty of Mathematics and Mechanics)

“Polarimetric observations of blazar AO 0235+164”

Shuvalov Andrey (Saint-Petersburg State University, Faculty of Physics)

“Simultaneous source separation via hyperbolic vector-median filtering”

Tarasov Aleksei (Saint-Petersburg State University, Faculty of Physics)

“The use of quasiorthogonal sweeps in vibroseis survey”

Poster section 17.00 – 18.30

B-01. Egorova Nataliia (Saint-Petersburg State University, Institute of Earth Sciences)

“The new method processing of seismic data for study geological structure of Lake Baikal”

B-02. Grudskaja Aleksandra (Lomonosov Moscow State University, Faculty of Physics)

“The effect of atomic clock noise on searching of narrow-band gravitational signal in pulsar timing”

B-03. Ivanova Olga (Saint-Petersburg State University, Faculty of Physics)

“The study of cloud condensation nuclei properties of pollen grains”

Section C – Mathematics and Mechanics November, 15 (Wednesday)

Oral sections 12.30 – 14.00 and 15.00 – 16.30
Aud. 210, Leader – Prof. Dr. Volker Reitmann

Anikushin Mikhail (Saint Petersburg State University, Faculty of Mathematics and Mechanics)

“Topology of two-frequency quasi-periodic regimes in control systems”

Boltachev Andrei (RUDN University)

“The use of differential inclusions in the investigation of an elasto-plastic oscillator”

Davydov Aleksey (Saint Petersburg State University, Faculty of Mathematics and Mechanics)

“Takens’ method for an autonomous bicycle with control”

Egorov Sergei (RUDN University, Faculty of Physics, Mathematics and Natural Science)

“Usage of convolutional neural networks for dynamic images analysis”

Ivanovsky Leonid (P.G. Demidov Yaroslavl State University)

“Oscillating loss of stability of the trivial solution for boundary-value problem with linear deviate in boundary condition”

Izvarina Natalia (RUDN University, Department of Applied Mathematics, Faculty of Science)

“On Fredholm property of G-operators associated with Morse-Smale diffeomorphisms”

Khusaenov Artem (RUDN University, Faculty of Physico-Mathematical and Natural Science)

“Global climatic phenomenon «El- Niño» neural network forecasting”

Makhnov Andrei (Peter the Great Saint-Petersburg Polytechnic University, Institute of Applied Mathematics and Mechanics)

“Numerical investigation of cavitating flows with liquid degassing”

Pochatkin Mikhail (Saint-Petersburg State University, Faculty of Mathematics and Mechanics)

“Hausdorff dimension in non-metrizable bornological spaces of control theory”

Reitmann Stefan (Dresden Institute of Aviation and Logistics, Chair of Traffic Flow Science)

“Stability analysis of recurrent neural networks for time series based system control in aviation”

Solovev Anton (Saint-Petersburg State University, Faculty of Mathematics and Mechanics)

“Modified Foerster model in human population dynamics”

Zapov Alexandr (P.G. Demidov Yaroslavl State University)
“About one boundary problem in mechanics of the rotary system”

Zhuikov Konstantin (RUDN University, Faculty of Science)
“Elliptic theory for a generalization of non-commutative torus”

Zyryanov Dmitry (Saint-Petersburg State University, Faculty of Mathematics and Mechanics)
“A global attractor in a multivalued dynamical system for a two-phased system with heating”

Poster section 17.00 – 18.30

C-01. Kovaleva Anastasia (P.G. Demidov Yaroslavl State University, Faculty of Mathematics)
“Bifurcations of nonhomogeneous solutions for the erosion equation”

C-02. Lapina Tatiana (Saint-Petersburg State University, Faculty of Mathematics and Mechanics)
“Mandreling of shape memory alloy sleeve as simulated by COMSOL Multiphysics software”

C-03. Sekatskaya Alina (P.G. Demidov Yaroslavl State University, Faculty of Mathematics)
“The study of cloud condensation nuclei properties of pollen grains”

Section D – Solid State Physics November, 16 (Tuesday)

**Oral sections 10.30 – 12.00 and 12.30 – 14.00
Aud. 210, Leader – Prof. Dr. Elena Filatova**

Estyunin Dmitry (Saint-Petersburg State University, Faculty of Physics)
“Influence of light on electronic properties of topological insulators”

Kasatikov Sergey (Saint-Petersburg State University, Faculty of Physics)
“Mechanism of interaction of Ar^+ ions with atoms in Ta_2O_5 films”

Khabibrakhmanov Ruslan (Saint-Petersburg State University, Faculty of Physics)
“Influence of doping with rare earth ions on ZrO_2 optical properties”

Kulikov Ilia (Freie Universität Berlin, Physics Department)
“Development of a sensitive setup for measuring the Hall effect in low-mobility materials”

Lavrik Polina (Saint-Petersburg State University, Faculty of Physics)

“Temperature-programmed desorption spectra of CO₂ remaining on TiO₂ rutile surface after photooxidation of carbon monoxide”

Pudikov Dmitrii (Saint-Petersburg State University, Faculty of Physics)

“Graphene synthesis via segregation of carbon atoms through Co film on graphite”

Shapenkov Sevastian (Saint-Petersburg State University, Faculty of Physics)

“Cathodoluminescence and core structure of a-screw dislocations in gallium nitride”

Tarasov Artem (Saint-Petersburg State University, Faculty of Physics)

“Synchrotron spectromicroscopy study of top-down MAWCE silicon nanowire arrays covered by MOCVD tin oxides”

Vishniakova Alena (Saint-Petersburg State University, Faculty of Physics)

“Adsorption of silicon atoms on the surface of the Au/W(110)”

Zharovov Dmitrii (Saint-Petersburg State University, Faculty of Physics)

“Investigation of efficient upconversion nanocomposite materials”

Poster section 15.00 – 17.00

D-01. Anikeva Anastasiya (Saint-Petersburg State University, Faculty of Physics)

“The processes of charge transfer at the insulator-semiconductor interface under the irradiation of helium ion beam”

D-02. Bataev Matvey (Saint-Petersburg State University, Faculty of Physics)

“Optical properties of ZnO/ZnMgO quantum well structure”

D-03. Grigoryev Evgeniy (Saint-Petersburg State University, Faculty of Physics)

“Effect of helium ion beam treatment on the etching rate of silicon dioxide”

D-04. Katrushenko Maxim Volga (Saint-Petersburg State University, Faculty of Physics)

“The study of dislocations in HVPE GaN by electrophysical methods”

D-05. Kormilina Tatiana (ITMO University, School of Photonics, Faculty of Photonics and Optical Information, Department of Optical Physics and Modern Natural Science)

“Sucrose as a molecular crystalline matrix for alloyed semiconductor nanocrystals”

D-06. Kotkin Dmitriy (Saint-Petersburg State University, Faculty of Physics)

“NMR study of nanocomposites based on ferroelectrics KDP and DKDP”

D-07. Latynina Tatiana, Egorova Yulia (Saint-Petersburg National Research University of Information Technologies, Mechanics and Optics, Faculty of Laser and Light Engineering)

“Effect of severe plastic deformation and annealing on microstructure, mechanical and electrical properties of Al-0.4Zr alloy”

D-08. Mingaleva Alena (Komi Science Center of the Ural Division of the RAS, Institute of Physics and Mathematics, Laboratory of Experimental Physics)

“NEXAFS study of fish bones and hydroxyapatite”

D-09. Misheneva Vera (Saint-Petersburg State University, Faculty of Physics)

“Manipulation of electronic structure of graphene grown on Ir(111) by Pb atoms intercalation.”

D-10. Petrova Olga (Komi Science Center of the Ural Division of the RAS, Institute of Physics and Mathematics, Laboratory of Experimental Physics)

“NEXAFS study of selected natural biopolymers”

D-11. Sakhonenkov Sergei (Saint-Petersburg State University, Faculty of Physics)

“Understanding the electronic, chemical and structural changes of perspective cathode materials for Na-ion batteries at different states of electrical charge/discharge”

D-12. Shemet Darya (Southern Federal University, Rostov-on-Don)

“Atomic structure of bimetallic nanoparticles PtCu in metall-carbon PtCu/C electrocatalysts for low-temperature fuel cells”

D-13. Sokolnikov Viktor (Saint-Petersburg State University, Faculty of Physics)

“CdTe/ZnMnTe quantum well structures - reflectivity and light emission”

D-14. Surnin Iurii (Saint-Petersburg State University, Faculty of Physics)

“Topological surface states in rare earth doped topological insulators”

Section E – Electromagnetic and Acoustical Processes November, 16 (Thursday)

Oral sections 10.30 – 12.00 and 12.30 – 14.00

Aud. 225, Leader – Prof. Dr. Nikolay Zernov

Akhmatova Ekaterina (Saint-Petersburg State University, Faculty of Physics)

“Low-frequency radiation of a charge moving along the axis of circular corrugated waveguide”

Briantcev Dmitrii (Saint-Petersburg State University, Faculty of Physics)

“The structure of mode groups in dielectric waveguides with a quadratic and stepwise refractive index profile”

Dryuk Andrey (Saint-Petersburg State University, Faculty of Physics)

“Space-frequency coherence functions of high-frequency fields in the transionospheric stochastic channel of propagation”

Getmanov Igor (Saint-Petersburg State University, Faculty of Physics)

“The structure of the polar cap patches based on TEC measurements”

Iiudina Sophia (Saint-Petersburg State University, Faculty of Physics)

“Numerical study of properties of viscous waves, generated by plane finite sources”

Lesiv Nikita (Saint-Petersburg State University, Faculty of Physics)

“Observing of macroparticles method for transverse beam dynamics calculation in dielectric waveguide”

Likholetova Marina (Saint-Petersburg State University, Faculty of Physics)

“A network protocol stack for the nRF24L01+ transceiver”

Mukhamedgaliyev Kamil (Saint-Petersburg State University, Faculty of Physics)

“Influence of transverse beam dynamics of bunch train on Cherenkov radiation in dielectric waveguide”

Renov Maksim (Saint-Petersburg State University, Faculty of Physics)

“The influence of ion wind on a Karman Vortex Street behind a circular cylinder”

Sayfutdinov Arthur (Kazan Federal University, Institute of Physics)

“High-precision measurement of speed and direction of wind”

Semushina Ekaterina (Saint-Petersburg State University, Faculty of Physics)

“Investigation of edge waves”

Shakhunyants Aleksey (Saint-Petersburg State University, Faculty of Physics)

“Experimental research of 3d structure of streamer propagation”

Shatilin Ilya (Saint-Petersburg State University, Faculty of Physics)

“Investigation of the velocity and pressure fields of a quasiplane viscous wave depending on the Mach number”

Shekhovtsov Fedor (Saint-Petersburg State University, Faculty of Physics)

“An empirical model of HF radio wave regular absorption in the middle latitude”

Suhovey Mikhail (Saint-Petersburg State University, Faculty of Physics)

“Numerical analysis of the sunset variations of a lower ionosphere fringe while the proton precipitations”

Yarmak Valerii (Saint-Petersburg State University, Faculty of Physics)

“Study of the effect of horizontal gradients in troposphere on the delay of the navigation signals”

Poster section 15.00 – 17.00

E-01. Belosheikin Daniil (Saint-Petersburg State University, Faculty of Physics)

“Asymmetrical current distribution in bus bar systems”

E-02. Dmitriev Valery (Saint-Petersburg State Marine Technical University, Faculty of Radio Engineering)

“Researching of cylindrical pipe sound emission”

E-03. Fedorov Yakov (Saint-Petersburg State University, Faculty of Physics)

“Universal ultrasonic transducer for measuring the acoustic wave velocity”

E-04. Korolev Georgiy (Saint-Petersburg State Marine Technical University)

“Research of room temperature influence on the time of standard reverberation”

E-05. Kozlov Valerii (Saint-Petersburg State University, Faculty of Physics)

“Study of the ionospheric total electron content during magnetic storm”

E-06. Markovskii Pavel (Saint-Petersburg State University, Faculty of Physics)

“Experimental study of ionic wind in row of needles – plate electrode system and its application to heat transfer enhancement”

E-07. Solin Andrey (Saint-Petersburg State University, Faculty of Physics)

“Simplified model of streamer discharge tree”

E-08. Vasilyev Dmitry (Saint-Petersburg State Marine Technical University, Faculty of Natural Sciences and Humanities Education)

“Section of a cylindrical pipe as absorber of acoustic noise”

Section F – Optics and Spectroscopy

November, 15 (Wednesday)

Oral sections 12.30 – 14.00

Aud. 227, Leader – Prof. Dr. Nikolay Timofeev

Borovykh Stanislav (Saint-Petersburg State University, Faculty of Physics)

“Evaluation of the dynamics of the diffraction pattern degradation in the high-power ultrashort x-ray radiation for the hydrogen atom and its molecular ion”

Dolgikh Irina (Moscow State University, Faculty of Physics)

“Symmetry of planar arrays of trilayer nanodisks in the appearance of their plasmonic properties”

Rasputniy Andrey (Moscow State University, Faculty of Physics)

“Development of fabrication of two-dimensional photonic crystal based on porous alumina”

Troitsyna Larisa (Saint-Petersburg State University, Faculty of Physics)

“Theoretical study of vibrational band shifts of linear molecules in high-pressure gas mixtures”

Zhygul'ove Darya (Saint-Petersburg State University, Faculty of Physics; Heinrich-Heine-University Düsseldorf)

“Generation of unipolar THz pulse in circular nonlinear medium excited at superluminal velocity”

Poster section 15.00 – 16.30

F-01. Dolomatova Milana (Bashkir State University, Institute of Physics and Technology)
“The research of multicomponent media on autocorrelation parameters of optical spectrum”

F-02. Guz Vladimir (Saint-Petersburg State University, Faculty of Physics)
“Model of a multi-color laser on self-limited transitions”

F-03. Ivanov Danila (Saint-Petersburg State University, Faculty of Physics)
“Initiating the breakdown in a long discharge tube by light pulses”

F-04 Kapitonova Marina (Saint-Petersburg State University, Faculty of Physics)
“Observation of reverse breakdown in the tubes with non-grounded cathode”

F-05. Korshok Irina (Saint-Petersburg State University, Faculty of Physics)
“Interaction of short femtosecond pulses with two-level system”

F-06. Mukharaeva Indzhira (Saint-Petersburg State University, Faculty of Physics)
“Investigation of short-arc high pressure xenon discharge: experiment and modeling”

F-07. Orekhova Maria (ITMO University)
“Development of producing technology for educational optical elements in the Student Research Laboratory for Optical Engineering”

F-08. Pakhomov Arseniy (Saint-Petersburg State University, Faculty of Physics)
“Analysis of rotational dependence of Dicke effect”

F-09. Stepanidenko Evgeniia (ITMO University)
“Influence of linker type on optical properties and morphology of complexes of gold nanoparticle / semiconductor nanocrystal”

Section G – Theoretical, Mathematical and Computational Physics November, 16 (Thursday)

Oral sections 10.30 – 12.00 and 12.30 – 14.00

Aud. 229, Leader – Prof. Dr. Yurii Pismak

Belokurova Svetlana (Saint-Petersburg State University, Faculty of Physics)

“Long-range correlations in the model with string fusion on a lattice”

Bezborodov Sergey (Saint-Petersburg State University, Faculty of Physics)

“Study of relativistic Sturmian functions”

Dyakova Oksana (Saint-Petersburg State University, Faculty of Physics)

“Quantum algorithms in discrete and continuous variables”

Eroshkin Yurii (Saint-Petersburg State University, Faculty of Physics)

“Kinetics of micellization: passing from the discrete description to the continuous one”

Iakubovich Aleksandr (Saint-Petersburg State University, Faculty of Physics)

“Quark sigma models in media with chiral chemical potentials”

Ilin Roman (Saint-Petersburg State University, Faculty of Physics)

“Relation between Noether and metric forms of stress-energy tensor in arbitrary theories of tensor fields”

Ivonina Maria (Saint Petersburg State University, Institute of Chemistry)

“Mechanism of the rare example of dual emission in heteroleptic cyclometalated Ir(III) complexes: DFT computational study”

Kaplun Aleksandr (Saint-Petersburg State University, Faculty of Physics)

“A C^ -algebra associated with a metric graph”*

Kaygorodov Mikhail (Saint-Petersburg State University, Faculty of Physics)

“Relativistic calculations of higher-order electron-correlation corrections to the $2P_{1/2}$ -- $2S_{1/2}$ transition energies for lithium-like ions”

Leontev Daniil (Saint-Petersburg State University, Faculty of Physics)

“Comparing generators of low-discrepancy sequences”

Liashko Sergei (ITMO University; University of Iceland)

“Interaction between islands in artificial spin ice”

Lopushenko Ivan (Lomonosov Moscow State University, Faculty of Physics)

“A numerical approach to study light scattering by non-spherical plasmonic nanoparticle on the substrate accounting for Nonlocal Effect”

- Prokhorova Daria (Saint-Petersburg State University, Faculty of Physics)
“Pseudorapidity dependence of multiplicity and transverse momentum fluctuations in pp collisions at the SPS energies”
- Putilova Alyona (Saint-Petersburg State University, Faculty of Physics)
“Properties of mesons in a medium with chiral chemical potential”
- Sandul Vladislav (Saint-Petersburg State University, Faculty of Physics)
“MC model studies of pseudorapidity dependence of the average transverse momentum of charged particles produced in high-energy proton-proton collisions”
- Shchetka Ekaterina (Saint-Petersburg State University, Faculty of Physics)
“Berry phase for difference equations”
- Tambovtcev Ivan (Saint-Petersburg State University, Faculty of Physics)
“Study of dielectric properties of liquid crystal coordination compounds of lanthanides”
- Timofeev Viktor (Saint-Petersburg State University, Faculty of Physics)
“Stereographic projection approach to dynamics of skyrmionic spin structures”
- Vlasov Sergei (ITMO University; University of Iceland)
“Instantons in magnetic systems”

Poster section 15.00 – 17.00

- G-01. Chulikov Vladimir (Saint-Petersburg State University, Faculty of Physics)
“Simulation of NICA-MPD-inner tracker based on monolithic active pixel sensors”
- G-02. Glova Artem (Institute of Macromolecular Compounds RAS, Laboratory of Theory and Simulations of Polymer Systems)
“Aggregation of asphaltenes in toluene and heptane solutions”
- G-03. Komarov Dmitrii (Saint-Petersburg State University, Faculty of Physics)
“The effect of the network fault-type on the current and voltage phasors”
- G-04. Kosheleva Valeriia (Saint-Petersburg State University, Faculty of Physics)
“Mott scattering of twisted electrons by atomic target: Going beyond the Born approximation”
- G-05. Kotov Artem (Saint-Petersburg State University, Faculty of Physics)
“Ground-state energy of heavy diatomic homonuclear quasimolecules”
- G-06. Krapivin Dmitry (Saint-Petersburg State University, Faculty of Physics)
“Interaction of light with hydrogen-like ions and two-center systems in the dipole approximation and beyond”

G-07. Shukhtina Alisa (P.G. Demidov Yaroslavl State University, Faculty of Physics)
“Wave functions of doubly heavy baryons”

G-08. Vakhonin Igor (Saint-Petersburg State University, Faculty of Physics)
“Solving the Shrödinger equation with neural networks”

G-09. Vasilev Artem (Saint-Petersburg State University, Faculty of Physics)
“Non-stationary model of radial temperature distribution of open-air arc”

G-10. Vladimirova Anastasia (Saint-Petersburg State University, Faculty of Physics)
“Evaluation of the two-photon exchange diagrams for heavy ions and quasimolecules”

G-11. Volgin Igor (Institute of Macromolecular Compounds RAS)
“Influence of nanoparticle surface modification on structural and dynamical properties of P3HT-fullerene nanocomposites: molecular dynamics simulations”

Section H – Biophysics November, 13 (Monday)

Oral sections 14.00 – 15.30

Aud. 225, Leader – Prof. Dr. Nikolay Tsvetkov

Anufriev Ilia (Saint-Petersburg State University, Faculty of Physics)
“Molecular characteristics of comb-like polyelectrolyte with “tailed counter-ions” in solution”

Avadok Dzmitry (Saint-Petersburg State University, Faculty of Physics)
“Computer modeling of poly-glutamic acid conformational structures in electrolyte solutions”

Kotb Omar (Saint-Petersburg State University, Faculty of Physics)
“Comparative study of the DNA irradiated with proton particles and gamma radiation”

Ravodina Anastasia (Lomonosov Moscow State University, Faculty of Physics)
“Investigation of plastic rearrangements of interneuronal connections in conditions of modeling acetylcholine deficiency in rat hippocampus in vitro”

Sych Tomash (Saint-Petersburg State University, Faculty of Physics)
“Some aspects of synthesis of fluorescent silver clusters on proteins of the albumin group”

Tankovskaia Svetlana (Saint-Petersburg State University, Faculty of Physics)
“FTIR investigations of secondary structure of HSA in different pH conditions”

Zhiltsova Anna (Lomonosov Moscow State University, Faculty of Physics)
“Diagnostics of anoxygenic phototrophic microorganisms in several stratified reservoirs using bacteriochlorophyll fluorescence deconvolution”

Poster section 16.00 – 17.00

- H-01. Il'yasova Julia (Saint-Petersburg State University, Faculty of Physics)
“The equilibrium and kinetic rigidity of additive silicon-containing polytricyclononenes”
- H-02. Lezova Irina (Saint-Petersburg State University, Faculty of Physics)
“Investigation of relaxation time spectra of comb-like LC polymers in isotropic melts by Kerr effect method”
- H-03. Mukhamadiarov Evgenii (Saint-Petersburg State University, Faculty of Physics)
“Computer modeling of phospholipid membranes at different resolution”
- H-04. Nasrtdinova Anzhelika (Saint-Petersburg State University, Faculty of Physics)
“Studies of Sup35 prion protein aggregates using scanning tunneling microscopy (STM), atomic force microscopy (AFM) and surface-enhanced raman spectroscopy (SERS)”
- H-05. Senchukova Anna (Saint-Petersburg State University, Faculty of Physics)
“The study of the hydrodynamic characteristics of polymer nanostructures based on poly-11-acrylamidoundecanoic acid and its sodium salt”
- H-06. Shtyrov Andrei (Saint-Petersburg Academic University)
“The application of in silico methods for design of effective voltage-dependent rhodopsin for optogenetic studies”
- H-07. Slyusarenko Maria (Saint-Petersburg State University, Faculty of Physics)
“Hydrodynamics properties of chitosans from various natural raw materials”

Section I – Resonance Phenomena in Condensed Matter November, 13 (Monday)

Oral sections 14.00 – 15.30

Aud. B-04, Leader – Prof. Dr. Vladimir Chizhik

- Bogdanov Ivan (Saint-Petersburg State University, Faculty of Physics)
“EPR study of copper complexes in mordenites”
- Bystrov Sergei (Saint-Petersburg State University, Faculty of Physics)
“Molecular mobility in imidazolium liquids as studied by NMR”
- Krylova Ekaterina (Saint-Petersburg State University, Faculty of Physics)
“Water localization, kinetics and dynamics in sodium and copper-exchanged mordenites”
- Rabdano Sevastyan (Saint-Petersburg State University, Faculty of Physics)
“The hydration properties of $[EMIm]^+$, $[BMIm]^+$, $[HMIm]^+$ and $[OMIm]^+$ cations as studied using DFT calculations”

Zheleznyak Yuliya (Saint-Petersburg State University, Faculty of Physics)
“The XRF study of the XVIII century color glass”

Poster section 16.00 – 17.00

I-01. Efimova Aleksandra (Saint-Petersburg State University, Faculty of Physics)
“Probing of outer electronic shell of strong CH-acids by ^3He atom”

I-02. Ievleva Svetlana (Saint-Petersburg State University, Faculty of Physics)
“Diffusion and perfusion imaging”

I-03. Luzhetckaia Nadezhda (Saint-Petersburg State University, Faculty of Physics)
“Quality assurance for diffusion MRI: phantoms”

I-04. Salikov Vladislav (Saint-Petersburg State University, Faculty of Physics)
“Preliminary structure check by of a synthesized methyltransferase NSUN7 domain using ^1H NMR”

I-05. Ubovich Milosh (Saint-Petersburg State University, Faculty of Physics)
“Small-angle x-ray scattering (SAXS) profile of two-domain Pax5 protein in aqueous solution by molecular dynamics simulations”

I-06. Voloshin Artyom (Saint-Petersburg State University, Faculty of Physics)
“The study of the movement of liquid in the stems of plants using nuclear magnetic resonance”

Section S – First Steps in Science (for secondary school students) November, 16 (Thursday)

Oral sections 15.30 – 17.00

Aud. B-04, Leader – Prof. Dr. Sergey Manida

Astapov Yaroslav (School 261)
“Исследование колебательных спектров ряда современных анестетиков”

Evdokimov Yan (School 138)
“Удивительные свойства пружины”

Kriuchkov Oleg (Saint-Petersburg State University, Academic Gymnasium 45)
“The creation of gene vectors and study of their properties”

Leko Nataliya (School)
“Interaction of trans-palladium-tetrazole with DNA in vitro”

Strelkov Ivan (School)

“Изучение спектрального прибора с дифракционной решеткой”

Zhukova Alina (School 138)

“Исследование пигментов методом КРС-спектроскопии, входящих в состав монументальной живописи”

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