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18th International Conference on Modification of Materials with Particle Beams and Plasma Flows (CMM)

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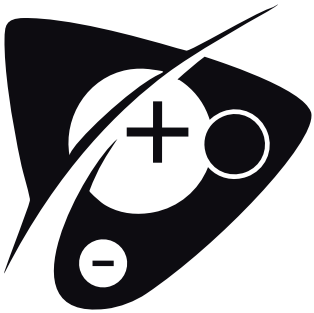


10th International Congress on Energy Fluxes and Radiation Effects
EFRE 2026
September 14-18, 2026, Tomsk, Russia

Organizing Committee of the Congress

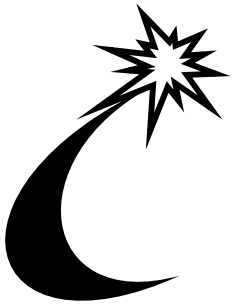
General Chair of the Congress
Gennady Mesyats
Russian Academy of Sciences, Moscow, Russia

Co-chair of the Congress
Andrey Zherlitsyn
Institute of High Current Electronics SB RAS, Tomsk, Russia

Co-chair of the Congress
Leonid Sukhih
National Research Tomsk Polytechnic University, Tomsk, Russia

Co-chair of the Congress
Alexey Markov
Tomsk Scientific Center SB RAS, Tomsk, Russia

Congress Program Chair
Alexander Batrakov
Institute of High Current Electronics SB RAS, Tomsk, Russia



24th International Symposium on High Current Electronics (SHCE)

Chair of the Symposium
Nikolay Ratakhin
Institute of High Current Electronics SB RAS, Tomsk, Russia

Co-chair of the Symposium
Gennadii Remnev
National Research Tomsk Polytechnic University, Tomsk, Russia

Program Chair of the Symposium
Igor Pegel
Institute of High Current Electronics SB RAS, Tomsk, Russia

Symposium Topics:
- *S1 – Intense electron and ion beams*
- *S2 – Pinches, plasma focus and capillary discharge*
- *S3 – High power microwaves*
- *S4 – Pulsed power technology and applications*
- *S5 – Discharges with runaway electrons*

Program Committee
Efim Oks
Institute of High Current Electronics SB RAS, Tomsk, Russia
Alexander Shishlov
Institute of High Current Electronics SB RAS, Tomsk, Russia
Pavel Priputnev
Institute of High Current Electronics SB RAS, Tomsk, Russia
Gennadii Remnev
National Research Tomsk Polytechnic University, Tomsk, Russia
Victor Tarasenko
Institute of High Current Electronics SB RAS, Tomsk, Russia

18th International Conference on Modification of Materials with Particle Beams and Plasma Flows (CMM)

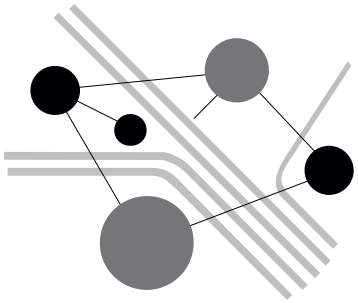
Chair of the Conference
Nikolay Koval
Institute of High Current Electronics SB RAS, Tomsk, Russia

Co-chair of the Conference
Valery Krivobokov
National Research Tomsk Polytechnic University, Tomsk, Russia

Program Chair of the Conference
Yuri Akhmadeev
Institute of High Current Electronics SB RAS, Tomsk, Russia

Conference Topics:
- *C1 – Beam and plasma sources*
- *C2 – Fundamentals of modification processes*
- *C3 – Modification of material properties*
- *C4 – Coatings deposition*
- *C5 – Nanoscience and nanotechnology*
- *C6 – Synchrotron and neutron research in materials science*

Program Committee
Vladimir Denisov
Institute of High Current Electronics SB RAS, Tomsk, Russia
Valery Krivobokov
National Research Tomsk Polytechnic University, Tomsk, Russia
Yuri Ivanov
Institute of High Current Electronics SB RAS, Tomsk, Russia
Yuri Akhmadeev
Institute of High Current Electronics SB RAS, Tomsk, Russia
Yuri Sharkeev
Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia
Yan Zubavichus
Synchrotron Radiation Facility SKIF of Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia



22nd International Conference on Radiation Physics and Chemistry of Condensed Matter (RPC)

Chair of the Conference

Elena Polisadova
National Research Tomsk Polytechnic University, Tomsk, Russia

Co-chair of the Conference

Maksim Vorobyov
National Research Tomsk Polytechnic University, Tomsk, Russia

Program of the Conference

Sergey Ghyngazov
National Research Tomsk Polytechnic University, Tomsk, Russia

Conference Topics:

- *R1 – Physical and chemical processes in inorganic materials induced by energy beams*
- *R2 – Materials under extreme conditions: design, characterization and applications*
- *R3 – Modern research methods and instruments, modeling of the interaction of radiation with materials*
- *R4 – Radiation technologies: advantages and applications*

Program Committee

Sergey Ghyngazov
National Research Tomsk Polytechnic University, Tomsk, Russia
Maksim Vorobyov
National Research Tomsk Polytechnic University, Tomsk, Russia
Sergey Stepanov
National Research Tomsk Polytechnic University, Tomsk, Russia
Anna Karnaukhova
National Research Tomsk Polytechnic University, Tomsk, Russia
Victor Lisitsyn
National Research Tomsk Polytechnic University, Tomsk, Russia

7th International Conference on New Materials and High Technologies (NMHT)

Chair of the Conference
Alexey Markov
Tomsk Scientific Center SB RAS, Tomsk, Russia

Co-chair of the Conference
Anatoly Maznoy
Tomsk Scientific Center SB RAS, Tomsk, Russia

Program Chair of the Conference
Oksana Ivanova
Tomsk Scientific Center SB RAS, Tomsk, Russia

Symposium Topics:

- *N1 – Inorganic materials and coatings*
- *N2 – Self-propagating high-temperature synthesis and advanced powder technologies*
- *N3 – Carbon materials for electronics and photonics*
- *N4 – Resource- and energy-saving technologies*
- *N5 – Synchrotron radiation detectors*

Program Committee

Sergey Zelepugin
Tomsk Scientific Center SB RAS, Tomsk, Russia
Alexander Potekaev
Tomsk Scientific Center SB RAS, Tomsk, Russia
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Tomsk Scientific Center of SB RAS, Tomsk, Russia
Dmitry Genin
National Research Tomsk State University, Tomsk, Russia
Oleg Tolbanov
National Research Tomsk State University, Tomsk, Russia
Ivan Chsherbakov
National Research Tomsk State University, Tomsk, Russia

September 14 | Monday

Plenary Lectures

Large Conference Hall in the Rubin

09:25 – 10:10 **Air-insulated Fast Linear Transformer Driver**

S4-O-047401

Andrey Zherlitsyn, Evgeniy Kumpyak, Alexander Lenskiy, Grigory Smorudov, Nikolay Tsoy

Institute of High Current Electronics SB RAS, Tomsk, Russia

10:10 – 10:55 **Synchrotron Radiation Facility SKIF: Project Status and Progamme of Infrastructure Development**

C6-O-032501

Yan Zubavichus, Andrey Bukhtiyarov

Synchrotron Radiation Facility 'SKIF', Novosibirsk, Russia

September 15 | Tuesday

Plenary Lectures

Large Conference Hall in the Rubin

09:00 – 09:45 **Hierachical Design in Digital Dentistry**

N1-O-044801

Sergey Panin[1], Sergey Arutyunov[2]

[1] V.E.Panin Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia

[2] Russian University of Medicine, Moscow, Russia, Moscow, Russia

09:45 – 10:05 **Modern Solutions for Research Challenges**

C3-O-048001

Mikhail Mikhaylov

Erstvak, Moscow, Russia

10:05 – 10:25 **Modern Analytical Solutions from the Exiton Group of Companies**

Dmitrii Safonov

Exiton Test LLC, Saint-Petersburg, Russia

10:25 – 11:10 **Plasma Technologies for the Remanufacturing of Cemented Carbide Tools: Enabling a Circular Economy in the Cutting Tool Industry**

N1-O-022201

Massimiliano Bestetti

Politecnico di Milano, Milan, Italy

September 16 | Wednesday

Plenary Lectures

Large Conference Hall in the Rubin

09:00 – 09:45 **Roll-to-roll Boosting the Energy Storage of Ultrathin Biaxially-oriented Polypropylene Film by Pulsed Excimer-induced Crosslink Implanted**

S4-O-038801

Tao Shao[1,2], Bangdou Huang[1], Cheng Zhang[1]

[1] Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
[2] Beijing International S&T Cooperation Base for Plasma Science and Energy Conversion, School of Electrical Engineering and Automation, Wuhan University, Wuhan, China

09:45 – 10:30 **Vacuum and plasma technology. Current state of the industry and development prospects**

Iaroslav Zhelonkin

FERRY VATT Group, Kazan, Russia

10:30 – 11:15 **Special Optical Fibers Application for High-energy Facilities Radiation Environment Monitoring**

R2-O-046701

Irina Azanova, Damir Khisamov, Yulia Sharonova

Public Joint Stock Company "Perm Scientific and Production Instrument-Making Company", Perm, Russia

September 17 | Thursday

Plenary Lectures

Large Conference Hall in the Rubin

09:00 – 09:45 **Studies of the Kinetics of Radiation Damage to Structural Materials Using the Ion Irradiation Method**

R4-P-006602

Vladimir Uglov[1], Igor Ivanov[2], Bauyrzhan Amanzhulov[2], Mikhail Koloberdin[2], Artem Kozlovskiy[2]

[1] Belarusian State University, Minsk, Belarus
[2] Institute of Nuclear Physics of the ARKAE, Almaty, Kazakhstan

09:45 – 10:30 **Degradation Mechanisms and Mitigation Strategies for Hybrid Halide Perovskites Exposed to Light, Heat and Radiation**

R1-O-046601

Ivan Zhidkov

Ural Federal University, Yekaterinburg, Russia

10:30 – 11:15 **Polymer Combustion and Pyrolysis: Challenges, Modeling and State of the Art**

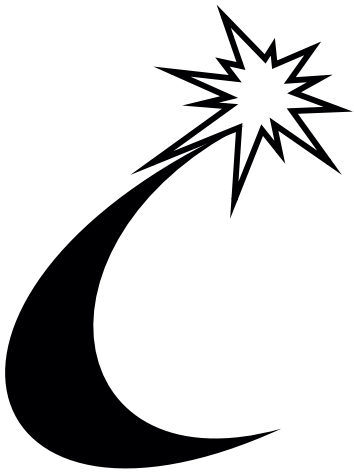
N2-O-047901

Roman Fursenko

Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia

Oral Sessions of the

24th International Symposium on High Current Electronics (SHCE)



Symposium Topics:

- *S1 – Intense electron and ion beams*
- *S2 – Pinches, plasma focus and capillary discharge*
- *S3 – High power microwaves*
- *S4 – Pulsed power technology and applications*
- *S5 – Discharges with runaway electrons*

September 14 | Monday

S1 – Intense electron and ion beams
1st Oral Session
Large Conference Hall in IHCE

Invited
11:45 – 12:15
Influence of an External Magnetic Field on Operation of Explosive-emission Cathode Based on Vacuum Arcs
S1-P-042601
Pavel Kiziridi, Grigory Ozur, Alexander Batrakov
Institute of High Current Electronics SB RAS, Tomsk, Russia

12:15 – 12:35
The Influence of Cathode Roughness and Magnetic Field Tilt in a Plasma Anode Diode on the Angular Characteristics of the Electron Beam
S1-O-015101
Vitaly Astrelin, Ivan Ivanov, Vladimir Postupaev, Dmitriy Cherepanov
Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

12:35 – 12:55
Energy Spectrum Recovery of Collectively Accelerated Protons Using the Radioactivation Method
S1-O-033501-Y
Predrag Glumac, Vladislav Ryzhkov, Gennady Remnev
National Research Tomsk Polytechnic University, Tomsk, Russia

12:55 – 13:15 **Metal-dielectric Plasma Source for Plyutto-Luce Diode**

S1-O-016201-Y

Khertek Romesh, Maksim Serebrennikov, Gennady Remnev

National Research Tomsk Polytechnic University, Tomsk, Russia

13:15 – 13:35 **Generation of Twisted Photons in a Medium Filled Elliptical Undulator**

S1-O-013201-Y

George Lazarenko, Nataliya Malygina

National Research Tomsk Polytechnic University, Tomsk, Russia

13:35 – 13:55 **Nonionizing Scattering Cross Section of Electron with Finite Coherence Length on Anatomic System**

S1-P-035901-Y

Danil Zainutdinov[1], Nikita Medvedev[2,3], Alexander Volkov[1]

[1] P.N. Lebedev Physical Institute RAS, Moscow, Russia
[2] Institute of Physics, Czech Academy of Sciences, Prague, Czechia
[3] Institute of Plasma Physics, Czech Academy of Sciences, Prague, Czechia

13:55 – 15:30 **Lunch**

S1 – Intense electron and ion beams
2nd Oral Session
Large Conference Hall in IHCE

Invited
15:30 – 16:00

Generation of Technological and Emission Beam-plasma Formations in Large Vacuum Volumes in a High-current Low-pressure Hollow Cathode Glow Discharge

S1-O-024602

Vladimir Denisov, Mikhail Savchuk, Nikolai Koval, Ostroverkhov, Danil Ignatov, Artem Egorov, Sergey Kovalsky, Tamara Koval, Ilya Podgorny, Vladislav Krivshenko, Vladislav Yakovlev, Yulia Denisova, Andrey Leonov, Danil Zaytsev

Institute of High Current Electronics SB RAS, Tomsk, Russia

16:00 – 16:20

Titanium Foils as Extraction Windows for a Pulsed Ion Beam

S1-O-034601

Mikhail Zhuravlev, Predrag Glumac, Grigory Kurapov, Sergey Martemyanov, Andrey Bukharkin, Gennady Remnev

National Research Tomsk Polytechnic University, Tomsk, Russia

16:20 – 16:40

Kinetic Model of the Near Cathode Layer of a High-current Vacuum Arc

S1-P-015201

Dmitry Shmelev[1], Sergei Barengolts[2], Igor Uimanov[1]

[1] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[2] A.M. Prokhorov General Physics Institute RAS, Moscow, Russia

16:40 – 17:00 **High Voltage Gap for Ion Beam Acceleration and Deceleration**

S1-O-024701

Tatyana Devyataikina, Vladimir Korchagin, Vadim Pavlyuchenko, Aleksandr Putmakov, Aleksandr Starostenko, Aleksandr Tsyganov

Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

17:00 – 17:20 **The Role of the Internal Resistance of the Plasma Emitter Power Supply in Beam Current Stabilization**

S1-P-029902

Maxim Vorobyov, Nikolay Koval, Ruslan Kartavtsov, Anton Grishkov, Diana Mokeeva, Daniil Chugunov

Institute of High Current Electronics SB RAS, Tomsk, Russia

S2 – Pinches, plasma focus and capillary discharge

1st Oral Session

Small Hall in IHCE

Invited 11:45 – 12:15 **Marple 3D, Software for Modeling Plasmodynamic Processes in Modern Electrophysical Facilities**

S2-P-022401

Olga Olkhovskaya

Keldysh Institute of Applied Mathematics RAS, Moscow, Russia

12:15 – 12:35 **Generation of Ultra-strong Magnetic Fields by Nanosecond Switching of Megaampere Current on a Cylindrical Conductor**

S2-O-008001

Sergey Sorokin

Institute of High Current Electronics SB RAS, Tomsk, Russian Federation

12:35 – 12:55 **Integral of Action of Current for Tungsten Fuzz Nanostructure and Vacuum Arc Spot Explosive Plasma Parameters Estimation**

S2-O-036401

Mikhail Tsventoukh

Lebedev Physical Institute of Russian Academy of Sciences, Moscow, Russia

12:55 – 13:15 **Regulation of Neutron Radiation Parameters of Plasma Focus Chambers**

S2-O-014301

Ilya Prokuratov, Yuri Mikhailov, Boris Lemeshko

Dukhov Automatics Research Institute, ROSATOM, Moscow, Russia

13:15 – 13:35 **Calculating Transition Probabilities in the NeII Spectra Emitted by Plasma of Current Sheets**

S2-O-020301

Elena Koryukina

National Research Tomsk State University, Tomsk, Russia

13:35 – 13:55 **Refinement of Two-level Model Parameters Based on Experimental Data on K-shell Radiation Generation Using Hybrid Load**

S2-O-006201

Rustam Cherdizov, Alexander Shishlov, Vladimir Oreshkin, Vladimir Kokshenev, Nikolay Kurmaev

Institute of High Current Electronics SB RAS, Tomsk, Russia

13:55 – 15:30 **Lunch**

S2 – Pinches, plasma focus and capillary discharge
2nd Oral Session

Small Hall in IHCE

Invited 15:30 – 16:00 **Simulation of a Capillary Plasma Channel Formation by a Knife-like Laser Pulse**

S2-P-017801

Vladimir Gasilov, Olga Olkhovskaya

Keldysh Institute of Applied Mathematics RAS, Moscow, Russia

16:00 – 16:20 **PZ-pinch Based on a Plasma Gun with a Molybdenum Cathode**

S2-P-012301

Anton Artyomov, Anatoly Fedunin, Alexander Rousskikh, Vladimir Oreshkin

Institute of High Current Electronics SB RAS, Tomsk, Russia

16:20 – 16:40 **Simulation of the Effect of Cathode and Anode Plasma Interaction in the Diode Gap of the Kalmar Accelerator on the Propagation of Shock Waves Inside the Target**

S2-O-036501-Y

Anna Smirnova[1,2,3], Dmitry Boikov[4], Evgeny Kazakov[2,1], Olga Olkhovskaya[4], Svetlana Tkachenko[1,2,3]

[1] Moscow Institute of Physics and Technology, Moscow, Russia
[2] National Research Center "Kurchatov Institute", Moscow, Russia
[3] Joint Institute for High Temperatures RAS, Moscow, Russia
[4] Keldysh Institute of Applied Mathematics RAS, Moscow, Russia

16:40 – 17:00 **Operation of Small-sized Plasma Focus Chambers as a Part of Device with an Energy Capacity 1-2 kJ**

S2-P-010901-Y

Igor Il'ichev, Boris Lemeshko, Yuri Mikhailov, Ilya Prokuratov, Alexander Sadilkin, Ekaterina Zyablitsevs, Stanislav Puchkin, Yanina Nikolaeva

Dukhov Automatics Research Institute, ROSATOM, Moscow, Russia

17:00 – 17:20 **Modeling of a Discharge in a Humid Inert Gas with a Water Anode**

S2-O-012601

Almaz Saifutdinov, Aliia Saifutdinov, Vadim Purin

A.N.Tupolev Kazan National Research Technical University, Kazan, Russia

17:20 – 17:40 **Probe Measurements of the Magnetic Field of a Plasma Jet Formed with a Vacuum Arc Discharge**

S2-P-004201-Y

Alexandr Kuzminykh, Alexander Rousskikh, Alexander Zhigalin, Vladimir Oreshkin

Institute of High Current Electronics SB RAS, Tomsk, Russia

September 15 | Tuesday

S1 – Intense electron and ion beams
3rd Oral Session
Large Conference Hall in IHCE

Invited
11:45 – 12:15
High-current Pulsed Electron Accelerators of Nanosecond Duration for Collective Acceleration of Light Ions
S1-O-039001
Gennadii Remnev
National Research Tomsk Polytechnic University, Tomsk, Russia

12:15 – 12:35
Emission of Photons with OAM Created by a Uniformly Accelerated Electron
S1-O-023901-Y
Nataliya Malygina, George Lazarenko
National Research Tomsk Polytechnic University, Tomsk, Russia

12:35 – 12:55
Influence of Reactive Inductive Coupling Two-grid Plasma Cathod on the Stability of Generation of Pulsed Electron Beam
S1-O-001501-Y
Diana Mokeeva, Maksim Vorobiev, Nikolay Koval, Sergey Doroshkevich, Daniil Chugunov
Institute of High Current Electronics SB RAS, Tomsk, Russia

12:55 – 13:15 **Generation of an Intense Electron Beam in Collector Vapors in a HVGD-based Source with a Plasma Cathode**

S1-O-011301-Y

Ruslan Kartavtsov, Sergey Doroshkevich, Maksim Vorobyov, Nikolay Koval, Nikita Prokopenko, Maria Rygina

Institute of High Current Electronics SB RAS, Tomsk, Russia

13:15 – 13:35 **Unitary Emission Cell of a Multiarc Grid Plasma Cathode for Generation of a Radially Convergent Electron Beam**

S1-O-024502-Y

Maksim Torba, Sergey Doroshkevich, Maksim Vorobyov, Anton Grishkov, Nikolai Koval, Daniil Chugunov

Institute of High Current Electronics SB RAS, Tomsk, Russia

13:35 – 13:55 **Investigation of the Relative Nonuniformity of an Electron Beam in a Multi-arc Source with a Plasma Cathode**

S1-O-037701-Y

Maksim Mokeev, Diana Mokeeva, Pavel Moskvin, Maksim Vorobyov, Nikolai Koval, Vladimir Devyatkov, Ruslan Kartavtsov

Institute of High Current Electronics SB RAS, Tomsk, Russia

13:55 – 15:30 **Lunch**

S3 – High power microwaves

1st Oral Session

Large Conference Hall in IHCE

Invited
15:30
–
16:00

Design of W-band Relativistic Gyrotron with Sub-gigawatt Pulsed Power

S3-O-037901

Vladislav Zaslavsky, Nikolay Peskov, Ilya Zheleznov, Kseniya Leshcheva, Mikhail Vilkov, Vladimir Manuilov

Institute of Applied Physics RAS, Nizhniy Novgorod, Russia

16:00
–
16:20

Project of 140 GHz Megawatt Power-level Planar Gyrotron with Transverse Energy Extraction

S3-O-034401

Michael Vilkov, Vladislav Zaslavsky, Naum Ginzburg, Ilya Zheleznov, Alexander Sergeev, Andrey Kuftin, Kseniya Leshcheva, Dmitry Sobolev, Vladimir Manuilov

Institute of Applied Physics RAS, Nizhniy Novgorod, Russia

16:20 – 16:40 **Computer Modeling of Plasma-chemical Methane Decomposition Processes in a Microwave Discharge**

S3-O-009801-Y

Alina Agatanova[1,2], Mazhyn Skakov[3], Arman Miniyazov[1], Balzhan Bekmagambetova[1,4], Kuanyshbek Toleubekov[1], Gainiya Zhanbolatova[1]

[1] Institute of Atomic Energy of National Nuclear Center of the Republic of Kazakhstan, Kurchatov, Kazakhstan
[2] NPJSC "Shakarim University", Semey, Kazakhstan
[3] RSE "National Nuclear Center of the Republic of Kazakhstan", Kurchatov, Kazakhstan
[4] Serikbayev East Kazakhstan Technical University, Ust-Kamenogorsk, Kazakhstan

16:40 – 17:00 **Generation of High Power Microwave Oscillations at S-100 Facility**

S3-O-030801

Maksim Pedos, Sergei Timoshenkov, Sergei Rukin, Vitaly Patrakov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

17:00 – 17:20 **Self-similar Amplification and Compression of Ultrashort Microwave Pulses During the Nonlinear Interaction of Electromagnetic Waves with Quasi-stationary Electron Beams**

S3-O-010801-Y

Alena Rostuntsova[1,2], Nikita Ryskin[1,2]

[1] Saratov Branch of Kotelnikov Institute of Radio Engineering and Electronics RAS, Saratov, Russia
[2] Saratov State University, Saratov, Russia

17:20 – 17:40 **Dispersion Equation for Virtual Cathode Oscillations: a One-dimensional Ultrarelativistic Case**

S3-O-019801

Igor Pegel

Institute of High Current Electronics SB RAS, Tomsk, Russia

17:40 – 18:00 **Study of a Relativistic Traveling Wave Tube with Externel Feedback**

S3-O-019001-Y

Egor Tishin, Ruslan Tsygankov, Vladislav Rostov

Institute of High Current Electronics SB RAS, Tomsk, Russia

S5 – Discharges with runaway electrons

1st Oral Session

Small Hall in IHCE

Invited 11:45 – 12:15 **Obtaining Electrohydrodynamic Flows Using Barrier and Corona Discharges, and Prospects for Their Application**

S5-O-028701

Vladimir Yamshchikov, Vladislav Khomich

Institute of Electrophysics and Electric Power of the Russian Academy of Sciences, Saint Petersburg, Russia

Invited
12:15 – 12:45

Plasma Reactor with an Extended Hollow Cathode for Precision Additive Technologies

S5-O-026201

Nazir Ashurbekov[1], Kadi Iminov[1], Kurban Rabadanov[1,2], Gadzhi Shakhsinov[1], Hizri Hizriev[3]

[1] Dagestan State University, Makhachkala, Russia
[2] Harbin Institute of Technology, Harbin, China
[3] Institute of Physics DFR Center of the RAS, Makhachkala, Russia

12:45 – 13:05

Detection of X- and Gamma Rays in Experiments on Modeling of Lightning Discharge at the GIN-1MV Facility of the Institute of Applied Physics of the Russian Academy of Sciences

S5-O-008801

Sergey Svertilov[1], Evgeny Mareev[2], Yurii Shlyugaev[2], Maria Shatalina[2], Fedor Sarafanov[2], Vitaly Bogomolov[1], Anatoly Yyudin[1], Ivan Yashin[1]

[1] Lomonosov Moscow State University, Moscow, Russia
[2] Institute of Applied Physics RAS, Nizhniy Novgorod, Russia

13:05 – 13:25

Dynamics of Nanosecond Discharges in Water and Ethanol

S5-P-000301

Dmitry Sorokin[1,2], Dmitry Beloplotov[1]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia

13:25 – 13:45 **Plasma Cathode Switches Based on Slit and Capillary Discharges**

S5-O-037501

Maxim Lavrukhin, Petr Bokhan, Pavel Gugin, Gleb Shevchenko, Dmytry Zakrevsky

A.V. Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia

13:45 – 14:05 **Research of Conditions for Increasing the Efficiency of Pyroelectric Generation from Lithium Niobate Crystals**

S5-P-005001

Leonid Orlikov, Stanislav Shandarov

Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia

14:05 – 15:30 **Lunch**

S5 – Discharges with runaway electrons

2nd Oral Session

Small Hall in IHCE

Invited 15:30 – 16:00 **The Study of the Kinetics of N_2 Triplet States and N_2^+ Doublet State in Sprites and a Discharge Chamber**

S5-O-039501

Andrey Kirillov[1], Victor Tarasenko[2]

[1] Polar Geophysical Institute, Apatity, Russia
[2] Institute of High Current Electronics SB RAS, Tomsk, Russia

Invited
16:00 – 16:30

Study of Spatial Structure of Pulsed Discharge in Helium at Various Pressures in "Needle-Plane" Gap

S5-O-018201

Artem Belonogov[1], Alexey Trenkin[1], Kseniya Almazova[1], Evgeny Gorelov[1], Alexander Dolotov[1], Igor Morozov[1], Gadzhimirza Ragimkhanov[2], Zaira Khalikova[2]

[1] Russian Federal Nuclear Center - All-Russian Research Institute of Experimental Physics, Sarov, Russia
[2] Dagestan State University, Makhachkala, Russian Federation

16:30 – 16:50

Possibilities of Experiments on Satellite SINP-MSU-80 for Observations of High-altitude Electromagnetic Discharges

S5-O-008701

Vitaly Bogomolov, Sergey Svertilov, Alexander Belov, Egor Voskresenskov, Iyudin Anatoly, Pavel Klimov, Ivan Kucherenko, Alexey Murashov, Vladislav Osedlo, Ivan Yashin

Lomonosov Moscow State University, Moscow, Russia

16:50 – 17:10

Formation of Discharges in the Atmosphere of Mars and Venus

S5-O-008001

Victor Tarasenko[1,2], Andrey Kirillov[2], Alexei Panchenko[1]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Polar Geophysical Institute, Apatity, Russia

17:10 – 17:30 **Yellow, Red and Infrared Emissions of Molecular Nitrogen in Aurora, Sprites and Plasma Diffuse Jets**

S5-O-039701-Y

Vitalii Kirillov[1], Boris Zolotenkov[2]

[1] Polar Geophysical Institute, Apatity, Russia
[2] Institute of High Current Electronics SB RAS, Tomsk, Russia

17:30 – 17:50 **Characteristics of a High-power VUV-UV Radiation Source Based on a Nanosecond Volume Discharge in Xenon**

S5-O-014001

Victor Paperny[1], Valentin Baryshnikov[2]

[1] Irkutsk State University, Irkutsk, Russia
[2] Irkutsk State Transport University, Irkutsk, Russia

September 16 | Wednesday

S3 – High power microwaves
2nd Oral Session
Large Conference Hall in IHCE

Invited
11:45 – 12:15

Liquide Calorimeters for Measuring the Energy of High-power Microwave Pulses

S3-O-003102

Aleksei Klimov

Institute of High Current Electronics SB RAS, Tomsk, Russia

12:15 – 12:35

Regimes of Electron Beam and Electromagnetic Field Interaction in Multiwave Cherenkov Generators of G-band

S3-O-003901

Vladimir Koshelev, Vadim Chazov, Andrey Petkun

Institute of High Current Electronics SB RAS, Tomsk, Russia

12:35 – 12:55

Vavilov-Cherenkov Radiation in Plasma Relativistic Microwave Electronics

S3-O-013901

Igor Ivanov

Prokhorov General Physics Institute of the Russian Academy of Sciences, Moscow, Russia

12:55 – 13:15 **Development of a Sub-THz Traveling Wave Tube with a Metamaterial-inspired Slow-wave Structure**

S3-O-035601

Nikita Ryskin[1,2], Alena Rostuntsova[1], Roman Torgashov[1], Dmitry Nozhkin[1], Dmitry Bessonov[1], Valeriy Emelianov[1], Anna Akst[2], Igor Navrotskiy[1]

[1] Saratov Branch of Kotelnikov Institute of Radio Engineering and Electronics RAS, Saratov, Russia
[2] Saratov State University, Saratov, Russia

13:15 – 13:35 **On the Effect of the Trailing Edge on the Dynamics of Oscillations in a High-frequency Pulse Generated in a Nonlinear Transmission Line**

S3-P-032702-Y

Oleg Mutylin, Igor Pegel, Pavel Priputnev

Institute of High Current Electronics SB RAS, Tomsk, Russia

13:35 – 13:55 **Design of a Powerful C-band Klystron**

S3-O-026101

Valentin Ivanov, Alexey Barnyakov, Alexey Levichev, Danila Nikiforov

Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

13:55 – 14:15 **Radiation of a Monopolar Pulse During the Emission of a Short Tubular Electron Beam from a Cathode**

S3-P-032001

Vladimir Kornienko[1], Victor Kulagin[2]

[1] Kotelnikov Institute of Radioengineering and Electronics RAS, Moscow, Russia
[2] Lomonosov Moscow State University, Moscow, Russia

14:15 – 14:35 **Influence of Paraboloid Geometry on the Effective Potential of a Reflector Antenna**

S3-O-023701-Y

Maria Koloskova, Yury Andreev, Evgeny Balzovsky

Institute of High Current Electronics SB RAS, Tomsk, Russia

14:35 – 15:30 **Lunch**

S5 – Discharges with runaway electrons

3rd Oral Session

Small Hall in IHCE

Invited 11:45 – 12:15 **Dynamic Conditions of Electron Runaway in Dense Gases in Sharply Inhomogeneous Electric Fields**

S5-O-026401

Nikolay Zubarev[1,2], Michael Yalandin[1,2], Olga Zubareva[1]

[1] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[2] P.N. Lebedev Physical Institute RAS, Moscow, Russia

Invited 12:15 – 12:45 **High-voltage Nanosecond Discharge: Dynamics of the Initial Stage of Breakdown in a Sharply Non-uniform Electric Field**

S5-O-006001

Mikhail Lomaev[1,2], Dmitry Beloplotov[1], Dmitry Pechenicin[1], Dmitry Sorokin[1,2]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia

12:45 – 13:05 **Electron Beam Generation Efficiency in Abnormal Discharge in Pure Inert Gases**

S5-O-014701-Y

Gleb Shevchenko, Petr Bokhan, Pavel Gugin, Maxim Lavrukhin, Dmitry Zakrevsky

A.V. Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia

13:05 – 13:25 **Dynamics of Formation and Spectral Characteristics of a Nanosecond Discharge in Atmospheric Air of Various Humidity**

S5-O-016802

Dmitry Beloplotov[1], Victor Tarasenko[1], Alexei Panchenko[1], Dmitry Sorokin[1,2]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia

13:25 – 13:45 **Self-sustained Subnanosecond Discharge in Highly Overvoltaged Gas Gaps**

S5-O-017401

Stepan Ivanov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

13:45 – 14:05 **Influence of the Pre-pulse on the Emission of the Runaway Electrons in an Atmospheric Pressure Air-filled Diode**

S5-O-020201-Y

Leonid Lobanov[1], Michael Yalandin[1,2], Sergey Shunailov[1], Konstantin Sharypov[1], Nikolay Zubarev[1,2], Natalia Semeniuk[1,3], Andrey Kozyrev[3]

[1] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[2] P.N. Lebedev Physical Institute RAS, Moscow, Russia
[3] Institute of High Current Electronics SB RAS, Tomsk, Russia

14:05 – 15:30 **Lunch**

September 17 | Thursday

S4 – Pulsed power technology and applications
1st Oral Session

Large Conference Hall in IHCE

Invited
11:45 – 12:15

Formation of Controlled Magnetic Pressure Pulses: Capabilities and Constraints

S4-O-029301

Sergey Krivosheev, Ivan Kuznetsov, Sergey Magazinov, Yuri Adamyan

Peter the Great St.Petersburg Polytechnic University, Saint Petersburg, Russia

12:15 – 12:35

The Investigation of the Instability of a High-voltage High-pressure Gas Discharge Triggered by Pulsed Laser Radiation

S4-O-012901

Alexander Lipchak, Nikolay Volkov, Ivan Turmyshev, Efrem Makarov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

12:35 – 12:55 **Simulation of Electrical Explosion of Profiled Cylindrical Conductors.**

S4-O-021701

Evgeny Oreshkin[1,2], Igor Datsko[3], Stanislav Chaikovsky[2], Vladislav Van'kevich[3], Natalia Labetskaya[3], Vladimir Oreshkin[3], Nikolay Ratakhin[3], Gennady Mesyats[1]

[1] P.N. Lebedev Physical Institute RAS, Moscow, Russia
[2] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[3] Institute of High Current Electronics SB RAS, Tomsk, Russia

12:55 – 13:15 **Estimation of a Vacuum Gap Breakdown Voltage by Considering Cathode Field Emission Properties**

S4-O-023201-Y

Yuriy Mamontov[1], Sergei Barengolts[2,3], Igor Uimanov[1], Yury Zemskov[1]

[1] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[2] A.M. Prokhorov General Physics Institute RAS, Moscow, Russia
[3] P.N. Lebedev Physical Institute RAS, Moscow, Russia

13:15 – 13:35 **All-solid-state I Pulse Power Generator Using Inductive Energy Storage Method for Plasma Discharge**

S4-O-037301-Y

Yu Feng[1], Cheng Zhang[1], Tao Shao[1,2]

[1] Institute of Electrical Engineering CAS, Beijing, China

[2] University of Chinese Academy of Sciences, Beijing, China

13:35 – 13:55 **Energy Balance in a Different-mode Pulsed Plasma Accelerator**

S4-O-028601-Y

Denis Egoshin, Yuri Grishin, Victor Telekh

Bauman Moscow State Technical University, Moscow, Russia

13:55 – 14:15 **Nanosecond Pulse Generator Based on a Linear Transformer and a Double Forming Line**

S4-O-025201

Andrey Bukharkin, Mikhail Zhuravlev, Grigory Kurapov, Sergey Martemyanov, Predrag Glumac, Gennady Remnev

National Research Tomsk Polytechnic University, Tomsk, Russia

14:15 – 15:30 **Lunch**

S4 – Pulsed power technology and applications

2nd Oral Session

Large Conference Hall in IHCE

Invited 15:30 – 16:00 **Interlayer Energy Dynamics and Vortex Structure of Solitons in Multi-gigawatt Magnetic Compression Lines**

S4-P-004001-Y

Vitaly Patrakov, Maxim Pedos, Sergei Rukin, Sergei Timoshenkov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

16:00 – 16:20 **Dynamics of High-frequency Pulsed Discharge Formation in Air at Atmospheric Pressure**

S4-O-041401-Y

Artem Belev, Nikolay Sharapov

Bauman Moscow State Technical University, Moscow, Russia

16:20 – 16:40 **Obtaining Monel Alloy Micron-sized Metal Particles by Electric Explosion of a Wire**

S4-O-015701

Aleksei Pustovalov, Kirill Akimov, Alexander Pervikov

Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia

16:40 – 17:00 **Phase Transitions and Formation of Nanocomposite Based High-entropy Oxide and Noble Metals Alloy Under Conditions of Joint Exploding Wires**

S4-O-014501

Alexander Pervikov

Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia

17:00 – 17:20 **Use of a Luce Diode for Radioactivation Analysis of Light Elements**

S4-O-030901

Vladislav Ryzhkov, Predrag Glumac

National Research Tomsk Polytechnic University, Tomsk, Russia

17:20 – 17:40 **Stem Cell Response to Nanosecond Microwave Pulses**

S4-O-001601

Liubov Zharkova[1], Anna Samoylova[1], Alena Gostyukhina[2], Oleg Kutenkov[1], Vladislav Rostov[1]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Federal Scientific and Clinical Center of Medical Rehabilitation and Balneology, Tomsk, Russia, Tomsk, Russia

17:40 – 18:00 **Entropy Analysis of Burn Wound Regeneration After Nanosecond Microwave Pulse Exposure**

S4-O-006301

Anna Samoylova, Loubov Zharkova, Alena Gostyukhina, Oleg Kutenkov, Vladislav Rostov

Institute of High Current Electronics SB RAS, Tomsk, Russia

September 18 | Friday

S4 – Pulsed power technology and applications
3rd Oral Session

Large Conference Hall in IHCE

Invited 09:00 – 09:30 **A New Concept: Dual-switch Pulse Slicing**

S4-O-012701

Junfeng Rao

Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, Suzhou, China

09:30 – 09:50 **Pulse Modulators for SKIF Booster Ring Kicker Magnets Power Supply**

S4-O-032101

Aleksandr Akimov[1,2], Valentin Akimov[1], Peter Bak[1], Arkadii Spesiftzev[1], Oleg Anchugov[1], Dmitry Shvedov[1]

[1] Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia
[2] Novosibirsk State University, Novosibirsk, Russia

09:50 – 10:10 **Investigation of a Power Silicon Thyristor Switched by a Shock Ionization Wave**

S4-O-011101

Sergey Tsyranov, Sergey Rukin, Sergey Lyubutin, Boris Slovikovsky

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

10:10 – 10:30 **Control and Data Acquisition System for the Operation of Quasi-stationary High-current Plasma Accelerator in Pulse-periodic Mode**

S4-O-013301-Y

Anton Mamonov, Konstantin Gutorov, Valentin Chernyshev, Maxim Krapivin, Vyacheslav Podkovyrov

State Research Center of Russian Federation Troitsk Institute for Innovation and Fusion Research, Moscow, Russia

10:30 – 10:50 **Field-effect Plasma Switch**

S4-O-024401

Pavel Gugin, Bokhan Petr, Dmitry Zakrevsky, Maxim Lavrukhin, Gleb Shevchenko

A.V. Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia

10:50 – 11:10 **Influence of Gas Mixture Composition on the Switching Characteristics of a Multi-channel Gas Spark Gap**

S4-O-025301

Grigory Kurapov, Sergey Martemyanov, Mikhail Zhuravlev, Andrey Bukharkin, Gennady Remnev

National Research Tomsk Polytechnic University, Tomsk, Russia

11:10 – 11:40 **Coffee Break**

Oral Sessions of the

18th International Conference on Modification of Materials with Particle Beams and Plasma Flows (CMM)

Conference Topics:

- *C1 – Beam and plasma sources*
- *C2 – Fundamentals of modification processes*
- *C3 – Modification of material properties*
- *C4 – Coatings deposition*
- *C5 – Nanoscience and nanotechnology*
- *C6 – Synchrotron and neutron research in materials science*

September 14 | Monday

C4 – Coatings deposition
1st Oral Session
Large Conference Hall in the Rubin

Invited
11:45 – 12:15

Structure and Properties of Coatings Based on Ti and Zr Diboride

C4-O-008501

Sergey Fedorov, Mars Migranov, Anton Fedorov, Artem Mitrofanov, Sergey Grigoriev

Moscow State University of Technology STANKIN, Moscow, Russia

12:15 – 12:35

Behavior of Cr_2AC Max-phase Coatings on SiC Substrates Under Hydrothermal and High-temperature Conditions

C4-O-008901-Y

Elena Chubieva, Pavel Dzhumaev, Egor Korenevsky

National Research Nuclear University MEPhI, Moscow, Russia

12:35 – 12:55

Sputtering Facility for Depositing Multilayer Structures on Long Substrates

C4-O-005201

Aleksandr Ivanov, Dmitry Karpov, Ivan Lazarenko

JSC "D.V.Efremov Institute of Electrophysical Apparatus", Saint Petersburg, Russia

12:55 – 13:15 **Mechanical and Tribological Properties of Multilayer Cr-Al-N/Ti-B-N Coatings Obtained by Dual Magnetron Sputtering**

C4-O-023401

Andrey Solovyev, Elizaveta Kraynova, Alexander Grenadyorov, Alexander Zakharov, Konstantin Oskomov

Institute of High Current Electronics SB RAS, Tomsk, Russia

13:15 – 13:35 **Production of Y-Al-O Ceramics by Solid-phase Synthesis**

C4-O-005801-Y

Aleksandr Nikitin, Almaz Nazarov

Ufa University of Science and Technology, Ufa, Russia

13:35 – 13:55 **Boron Carbide Coatings by DC Magnetron with Boron and Boron Carbide Targets**

C4-O-014601-Y

Vadim Gridilev, Alexey Nikolaev, Efim Oks, Georgy Yushkov

Institute of High Current Electronics SB RAS, Tomsk, Russia

13:55 – 15:30 **Lunch**

C4 – Coatings deposition
2nd Oral Session
Large Conference Hall in the Rubin

Invited
15:30 – 16:00

Thickness Non-uniformity of the YSZ Coatings Deposited from Fore-vacuum Beam Plasma on the Curved Objects

C4-O-002901-Y

Denis Zolotukhin, Hamidou Benjamin, Artem Andronov, Andrey Tyunkov, Yury Yushkov

Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia

16:00 – 16:20

Study of the Influence of Vacuum Arc Deposition Parameters on the Properties of TiAlCrN Coatings

C4-O-018801-Y

Angela Tulina, Almaz Nazarov, Kamil Ramazanov

Ufa University of Science and Technology, Ufa, Russia

16:20 – 16:40

Magnetron Deposited Titanium Nitride Coatings for Cathodes of Temporary Pacemaker Electrodes

C4-O-029601-Y

Yuliya Rukina[1], Oleg Obrezkov[1], Yuri Martynenko[1,2], Sergey Shevchuk[1]

[1] National Research Center "Kurchatov Institute", Moscow, Russia
[2] National Research Nuclear University MEPhI, Moscow, Russia

16:40 – 17:00 **Effect of Deposition Parameters on Mechanical and Tribological Properties of Ti-B-C Coatings Deposited by Dual Magnetron Sputtering**

C4-O-021201-Y

Elisaveta Kraynova, Alexander Grenadyorov, Alexander Zakharov, Andrey Leonov, Konstantin Oskomov, Andrey Solovyev

Institute of High Current Electronics SB RAS, Tomsk, Russia

17:00 – 17:20 **Modification of the Structural and Electrophysical Properties of CVD Graphene by Magnetron Sputtering**

C4-O-020901-Y

Timur Gareev[1], Oleg Zaitsev[1,2], Dmitry Sorokin[1], Dmitry Smovzh[1]

[1] Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia
[2] Novosibirsk State University, Novosibirsk, Russia

17:20 – 17:40 **Physico-mechanical Properties of Ti-doped a-C:H:SiO_x Coatings on Titanium Nickelide for Biomedical Applications**

C4-O-030501-Y

Tomiris Dzhambulova[1], Nikita Madzhara[1], Alexsander Grenadyorov[1], Dmitry Sirota[2], Maksim Zhulkov[2]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Meshalkin National Medical Research Center of Ministry of Health, Novosibirsk, Russia

September 15 | Tuesday

C4 – Coatings deposition
3rd Oral Session
Large Conference Hall in the Rubin

Invited
11:45 – 12:15

Synthesis of TiON Coatings by Reactive Anodic Evaporation of Titanium in Hollow Cathode Arc Discharge

C4-O-018501

Andrey Menshakov[1], Yulia Menshakova[1], Efrem Makarov[1], Polina Skorynina[2]

[1] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[2] Institute of Engineering Science UB RAS, Yekaterinburg, Russia

12:15 – 12:35

Influence of Ion Bombardment on Growth of Al Films, Prepared by Magnetron Sputtering

C4-O-020801-Y

Oleg Zaitsev, Timur Gareev, Evgeniy Baranov, Dmitriy Smovzh

Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia

12:35 – 12:55 **Properties of W Films Co-deposited in H_2/He and H_2/He/Ar Mixtures Using Various Magnetron Discharge Modes**

C4-O-036301-Y

Gleb Lomonosov[1], Andrey Kaziev[1], Dobrynya Kolodko[1,2], Vladimir Sidorov[1], Maxim Kharkov[1], Alexander Tumarkin[1]

[1] National Research Nuclear University MEPhI, Moscow, Russia
[2] Fryazino Branch of Kotelnikov Institute of Radio Engineering and Electronics RAS, Fryazino, Russia

12:55 – 13:15 **Study of the Biocompatibility of Plasma-polymerized SiOCH Coatings Deposited Via Glow Discharge Plasma in an Ar/HMDSO/O_2 Mixture**

C4-O-006601-Y

Daniil Zuza[1], Alexander Gorbunov[2], Igor Khlusov[3]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia
[3] Laboratory of Cellular and Microfluidic Technologies, Siberian State Medical University, Tomsk, Russia

13:15 – 13:35 **Structuring the TiN Surface to Improve Tribological Characteristics**

C4-O-040201

Marina Gazizova[1], Nikita Smirnov[2], Sergey Kudryashov[2], Vladimir Shugurov[3], Yuriy Akhmadeev[3], Olga Klimova-Korsmik[1], Marat Gazizov[1]

[1] Saint Petersburg State Marine Technical University, Saint Petersburg, Russia
[2] Lebedev Physical Institute of Russian Academy of Sciences, Moscow, Russia
[3] Institute of High Current Electronics SB RAS, Tomsk, Russia

13:35 – 13:55 **Influence of the Bias Potential on the Mechanical Properties and Corrosion Resistance of Titanium Nickelide Modified with Hydrocarbon Coatings**

C4-O-042301-Y

Evgenia Ivanova[1], Nikita Madzhara[1], Aleksandr Grenadyorov[1], Konstantin Oskomov[1], Andrey Solovyev[1], Olga Korneva[2]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk Polytechnic University, Tomsk, Russia

13:55 – 15:30 **Lunch**

C3 – Modification of material properties

1st Oral Session

Large Conference Hall in the Rubin

Invited 15:30 – 16:00 **Modification of the Surface Layers of Magnesium Alloys Under the Action of a High-power Ion Beam of Nanosecond Duration for the Creation of Biodegradable Implants**

C3-O-036701

Vladimir Kovivchak, Tatyana Panova, Alexey Belozerov, Alexander Vitershpan

Dostoevsky Omsk State University, Omsk, Russia

16:00 – 16:20 **The Influence of Chromium Coating on the Resistance of Zirconium E110 Alloy to the Complex Effects of Hydrogen, Irradiation and High-temperature Oxidation**

C3-O-001001-Y

Mark Kruglyakov, Viktor Kudiiarov, Roman Laptev

National Research Tomsk Polytechnic University, Tomsk, Russia

16:20 – 16:40 **Creation of Composites Based on β-C_3N_4/g-C_3N_4 by Pulsed Underwater Plasma**

C3-O-025001

Anna Khlyustova[1], Valeria Aisina[1], Andrey Larionov[1], Nikolay Sirotkin[1], Alexander Baranchikov[2], Alrxander Agafonov[1]

[1] G. A. Krestov Institute of Solution Chemistry of RAS, Ivanovo, Russia

[2] Kurnakov Institute of General and Inorganic Chemistry, Moscow, Russia

16:40 – 17:00 **The Influence of Technological Parameters of Ion-plasma Nitriding on the Structural-phase State and Properties of the Modified Layer of Cr12MoV Die Steel**

C3-O-003601-Y

Andrey Leonov, Julia Denisova, Vladimir Denisov, Evgeny Ostroverkhov, Vasily Tishchenko, Mikhail Savchuk

Institute of High Current Electronics SB RAS, Tomsk, Russia

17:00 – 17:20 **Plasma as a Tool for Creating Multifunctional Materials**

C3-O-025901-Y

Valeriia Aisina[1], Anna Khlustova[1], Nikolay Sirotkin[1], Andrey Larionov[1,2], Alexander Agafonov[1]

[1] G.A. Krestov Institute of Solution Chemistry RAS, Ivanovo, Russia
[2] Ivanovo State Universiry of Chemistry and Technology, Ivanovo, Russia

17:20 – 17:40 **Modification of Surface Structure and Technological Properties of Natural Spodumene by Low-temperature Dielectric Barrier Discharge Plasma**

C3-O-009901

Igor Bunin, Irina Khabarova

N.V.Melnikov's Institute of Comprehensive Exploitation of Mineral Resources Russian Academy of Sciences, Moscow, Russia

C6 – Synchrotron and neutron research in materials science

1st Oral Session

Meeting room in IHCE

Invited 11:45 – 12:15 **In Sutu Synchrotron X-ray Diffraction Studies of Gas-metal Plasma Coating Synthesis and Evolution**

C6-O-034101

Alexander Shmakov[1], Nikolay Koval[2], Nikolay Ratakhin[2], Anton Teresov[2], Maxim Syrtanov[3], Stepan Korneev[3], Gleb Dovzhenko[1]

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[2] Institute of High Current Electronics SB RAS, Tomsk, Russia
[3] National Research Tomsk Polytechnic University, Tomsk, Russia

12:15 – 12:35 **Instrumentation Modules Based on the VEIPS Vacuum Electron-ion-plasma Stand for the Beamlines of SRF SKIF**

C6-O-033001

Vladimir Denisov[1], Alexandr Shmakov[2,3], Nikolay Koval[1], Michael Savchuk[1], Sergey Kovalsky[1], Evgeny Ostroverkhov[1], Konstantin Beskonchin[1], Danil Ignatov[1], Yakovlev Vladislav[1], Artem Egorov[1], Anton Teresov[1], Yulia Denisova[1], Andrey Leonov[1], Alexandr Nazarov[1], Andrey Solovyov[1], Anton Shneider[1], Evgeny Yakovlev[1], Efim Oks[1,4], Yury Yushkov[4]

[1] *Institute of High Current Electronics SB RAS, Tomsk, Russia*
[2] *Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia*
[3] *Boreskov Institute of Catalysis, Novosibirsk, Russia*
[4] *Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*

12:35 – 12:55 **Conceptual Design of a Macromolecular Crystallography-specialized Beamline of SRF SKIF**

C6-O-044301

Sergey Arkhipov[1], Zakhar Vinokurov[1], Alexander Selyutin[1], Valentin Borshchevskiy[2], Alexander Popov[2], Anatoly Snigirev[3]

[1] *Synchrotron Radiation Facility 'SKIF', Novosibirsk, Russia*
[2] *Moscow Institute of Physics and Technology, Moscow, Russia*
[3] *Immanuel Kant Baltic Federal University, Kaliningrad, Russia*

12:55 – 13:15 **Software Environment for Supporting Single-crystal X-ray Diffraction Experiments**

C6-O-044501-Y

Dmitrii Ulybin, Tatyana Nikolaeva, Ruslan Khalilov, Vladislav Komarov, Sergey Arkhipov

Synchrotron Radiation Facility 'SKIF', Novosibirsk, Russia

13:15 – 13:35 **Control System and Control Algorithms for Monocrystal Diffraction Diffractometer Units of Station 1-2 "Structural Diagnostics" SRF SKIF**

C6-O-043701

Vladislav Yakovlev[1], Vladimir Denisov[1], Mikhail Andreev[1], Sergey Kovalskiy[1], Artyom Egorov[1], Konstantin Beskonchin[1], Zakhar Vinokurov[2], Sergey Arkhipov[2], Denis Mishchenko[2], Alexander Selyutin[2], Georgiy Fatkin[3]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Boreskov Institute of Catalysis, Novosibirsk, Russia
[3] Buro-F, LLC, Novosibirsk, Russia

13:55 – 15:30 **Lunch**

C6 – Synchrotron and neutron research in materials science

2nd Oral Session

Meeting room in IHCE

Invited
15:30 – 16:00

Engineering Materials Science Beamline at SRF SKIF

C6-O-044101-Y

Gleb Dovzhenko[1,2], Ivan Bataev[1,2], Kemal Emurlaev[1,2], Igor Nasennik[1,2], Natalia Aleksandrova[1,2], Alexander Yurgin[1,2], Dmitry Zverev[3], Anatoly Snigirev[3], Olga Klimova-Korsmik[4]

[1] Synchrotron Radiation Facility 'SKIF', Novosibirsk, Russia
[2] Novosibirsk State Technical University, Novosibirsk, Russia
[3] Immanuel Kant Baltic Federal University, Kaliningrad, Russia
[4] State Marine Technical University, St. Petersburg, Russia

16:00 – 16:20

Conceptual Design of the Second-stage Station of the SRF SKIF: Small-angle X-ray Scattering

C6-O-044601

Yurii Larichev[1,2], Alexander Selyutin[1,2], Sergey Arkhipov[2], Yan Zubavichus[2]

[1] Boreskov Institute of Catalysis, Novosibirsk, Russia

[2] SRF «SKIF» of Boreskov Institute of Catalysis, Koltsovo, Russia

16:20 – 16:40

In Situ Diffraction Studies of Structural and Functional Materials Using Synchrotron Radiation from the VEPP-3 Storage Ring

C6-O-033901

Maxim Syrtanov[1,2], Vladiimir Denisov[2], Anton Teresov[2], Egor Kashkarov[1], Viktor Kudiiarov[1], Dmitriy Krotkevich[1], Kristina Kamelina[1]

[1] National Research Tomsk Polytechnic University, Tomsk, Russia
[2] Institute of High Current Electronics SB RAS, Tomsk, Russia

16:40 – 17:00 **Magnetism of Ferromagnetic-superconducting Layered Heterostructures: from Nanocomposites to Fibonacci Quasicrystals**

C6-O-037201-Y

Vladimir Zhaketov[1,2,3], Zaky A. Zaky[2,4], Dmitriy Tatarskiy[5], Evgeny Kolupaev[2], Roman Sadradze[6]

[1] Moscow Institute of Physics and Technology (National Research University), Dolgoprudny, Russia
[2] Joint Institute for Nuclear Research, Dubna, Russia
[3] HSE University, Moscow, Russia
[4] Beni-Suef University, Beni-Suef, Egypt
[5] Lobachevsky University, Nizhny Novgorod, Russia
[6] Dubna State University, Dubna, Russia

17:00 – 17:20 **Nine-channel Scintillation Spectrometer for High-resolution Diffractometer of Station 1-2 Structural Diagnostics Synchrotron Radiation Facility SKIF**

C6-O-043101-Y

Viacheslav Eruntsov, Aleksey Gogolev, Nikolay Filatov, Sergey Chistyakov, Nikita Alekseev, Egor Smolyanskiy

National Research Tomsk Polytechnic University, Tomsk, Russia

17:20 – 17:40 **Development of a Sector Microstrip Detector Based on Hr GaAs:Cr for the 1-2 "structural Diagnostics" Beamline at the SRF "SKIF"**

C6-O-043801

Kovalsky Sergey, Victor Khristenko, Konstantin Beskonchin, Dmitry Kokin, Anton Teresov, Vladimir Denisov

Institute of High Current Electronics SB RAS, Tomsk, Russia

September 16 | Wednesday

C3 – Modification of material properties
2nd Oral Session
Large Conference Hall in the Rubin

Invited
11:45 – 12:15

Continuous Electron Beam Treatment of 3D Fabricated TiC/CP-TI and TiC/Ti 6Al-4V Composites

C3-O-023801

Alexey Panin, Tatyana Lobova, Marina Kazachenok, Sergey Martynov

Institute of Strength Physics and Materials Sciences of Siberian Branch of Russian Academy of Sciences, Tomsk, Russia

12:15 – 12:35

Modification of YSZ Ceramics Surface Properties by Electron Beam Sintering in Forevacuum

C3-O-016402

Aleksandr Klimov[1], Ilya Bakeev[1], Anna Dolgova[1], Efim Oks[1,2], Aleksey Zenin[1]

[1] Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia
[2] Institute of High Current Electronics SB RAS, Tomsk, Russia

12:35 – 12:55 **Influence of Electron Beam Treatment on Structure and Properties of "ZrO_2*3%Y_2O_3 (substrate) , Al (coating)" System**

C3-O-032801-Y

Dmitry Shpanov[1,2], Pavel Moskvin[1], Elizaveta Petrikova[1], Oleg Tolkachev[2], Yury Ivanov[1], Maxim Vorobyov[1,2]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk Polytechnic University, Tomsk, Russia

12:55 – 13:15 **Plasma Modification of Polytetrafluoroethylene as a Method of Surface Activation for the Attachment of Bioactive Molecules**

C3-O-029801-Y

Alena Korzhova[1], Olesya Laput[1], Yurii Akhmadev[2], Daniil Zuza[2], Vitaly Nekhoroshev[2], Irina Kurzina[1]

[1] National Research Tomsk State University, Tomsk, Russia
[2] Institute of High Current Electronics SB RAS, Tomsk, Russia

13:15 – 13:35 **Electron-beam Deposition of Hydroxyapatite on 3D Polycaprolactone Scaffolds**

C3-O-038301-Y

Ulyana Khomutova[1,2], Olesya Laput[1], Andrey Kazakov[3], Irina Kurzina[1]

[1] National Research Tomsk State University, Tomsk, Russia
[2] Institute of High Current Electronics SB RAS, Tomsk, Russia
[3] Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia

13:35 – 13:55 **Effect of High-intense Pulsed Ion Beam Irradiation on the Structure and Properties of High-entropy Alloys**

C3-O-043201

Vladislav Tarbokov[1], Sergey Pavlov[1], Sergey Zenkin[2], Gennady Remnev[1], Peng Zhang[3], Feng Jiang[3], Xianxiu Mei[3]

[1] National Research Tomsk Polytechnic University, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia
[3] Dalian University of Technology, Dalian, China

13:55 – 15:30 **Lunch**

C6 – Synchrotron and neutron research in materials science

3rd Oral Session

Meeting room in IHCE

Invited 11:45 – 12:15 **Status of the Creation of Beamlines 1-2 "Structural Diagnostics" and 1-4 "XAFS Spectroscopy and Magnetic Dichroism" of SRF SKIF**

C6-O-030602

Anton Teresov[1], Vladimir Denisov[1], Sergey Kovalskiy[1], Konstantin Beskonchin[1], Zahar Vinokurov[2], Andrey Saraev[2], Yan Zubavichus[2], Yuriy Panchenko[1], Mikhail Andreev[1]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Synchrotron Radiation Facility 'SKIF', Novosibirsk, Russia

12:15 – 12:35 **X-ray Optical Elements of the Experimental Beamline 1-2 of the SRF SKIF with Precise Positioning Systems**

C6-O-043601

Konstantin Beskonchin

Institute of High Current Electronics SB RAS, Tomsk, Russia

12:35 – 12:55 **Station Control System 1-4 XAFS Spectroscopy and Magnetic Dichroism of the SKIF Collective Use Center**

C6-O-008102

Mikhail Andreev[1], Vladimir Kisilev[1], Yuri Panchenko[1], Alexander Erfort[1], Vladimir Artamonov[1], Leonid Najlovec[1], Vladislav Yakovlev[1], Andrei Saraev[2], Sergey Kovalsky[1], George Fatkin[3,4], Konstantin Beskonchin[1], Vladimir Denisov[1], Alexander Senchenko[3], Fedor Sannikov[3]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Boreskov Institute of Catalysis, Novosibirsk, Russia
[3] Buro-F, Novosibirsk, Russia
[4] Novosibirsk State University, Novosibirsk, Russia

12:55 – 13:15 **X-ray Diffraction Study of Potential Fusion Reactor Ceramics**

C6-P-038501-Y

Ilya Balash[1,2,3], Sergei Kazantsev[1,2,3], Alexander Shmakov[1,2], Dmitriy Cherepanov[2,3,4,5], Alexei Seregin[6]

[1] Synchrotron Radiation Facility 'SKIF', Novosibirsk, Russia
[2] Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia
[3] Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia
[4] Novosibirsk State University, Novosibirsk, Russia
[5] Patrice Lumumba Peoples' Friendship University of Russia, Moscow, Russia
[6] National Research Center "Kurchatov Institute", Moscow, Russia

13:15 – 13:35 **Optical Layout and Parameters of the "surface" Beamline**

C6-P-033902

Maxim Syrtanov[1,2], Alexander Shmakov[3,4], Nikolay Koval[2], Vladimir Denisov[2], Stepan Korneev[2,1], Anton Teresov[2], Gleb Dovzhenko[3]

[1] National Research Tomsk Polytechnic University, Tomsk, Russia
[2] Institute of High Current Electronics SB RAS, Tomsk, Russia
[3] Synchrotron Radiation Facility 'SKIF', Novosibirsk, Russia
[4] Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

13:35 – 15:30 **Lunch**

September 17 | Thursday

C1 – Beam and plasma sources
1st Oral Session
Large Conference Hall in the Rubin

Invited
11:45 – 12:15

Investigation of Compression and Heat Processes in Multilayer Targets Under the Influence of Laser and Wide-band Radiation

C1-O-000501

Sergei Ryzhkov, Victor Kuzenov

Bauman Moscow State Technical University, Moscow, Russia

12:15 – 12:35

Generation and Focusing of an Electron Beam by a Forevacuum Plasma Source with a Multichannel Emission Electrode

C1-O-002102-Y

Ilya Bakeev

Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia

12:35 – 12:55

Hybrid-type Beam-plasma Systems: Plasma Volume Control and Application for Organic Materials Processing

C1-O-006901

Tatiana Vasilieva[1], Michael Vasiliev[2]

[1] Moscow Institute of Physics and Technology, Dolgoprudnyy, Russia
[2] Joint Institute for High Temperatures RAS, Moscow, Russia

12:55 – 13:15 **Probe Measurements of Arc-enhanced Glow Discharge Assisted Magnetron Sputtering System**

C1-O-014401-Y

Anton Fedorov, Sergey Fedorov, Marina Volosova, Sergey Grigoriev

Moscow State University of Technology STANKIN, Moscow, Russia

13:15 – 13:35 **Application of a Discharge with a Plasma Cathode and Oscillating Electrons in a Source of Ion Beams of Light Gases**

C1-O-007201

Daniil Emlin, Nikolay Gavrilov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

13:35 – 13:55 **Time Dependence of the Energy Spectra of the Vacuum Arc Plasma Flow**

C1-O-023601

Ilya Muzyukin, Pavel Mikhailov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

13:55 – 15:30 **Lunch**

C1 – Beam and plasma sources
2nd Oral Session
Large Conference Hall in the Rubin

Invited
15:30 – 16:00

High-frequency and Bimodal Atmospheric-pressure Plasma Jet

C1-O-047001

Irina Schweigert[1], Pavel Gugin[1,2], Dmitry Zakrevsky[1,2], Gleb Shevchenko[1,2]

[1] Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia

[2] A.V. Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia

16:00 – 16:20

Investigation of Instabilities in Background Plasma of Mass-separator Using Four-channel Floating Probe

C1-O-021601-Y

Marat Valinurov, Ravil Usmanov, Andrey Oiler, Andrey Gavrikov

Joint Institute for High Temperatures RAS, Moscow, Russia

16:20 – 16:40

Plasma Boundary Simulation in the Bernas-type Ion Source

C1-O-023301-Y

Anton Ralnikov[1,2], Mihail Danilov[1], Nikita Mamedov[1,2]

[1] Joint-Stock Company Research Institute of Precision Engineering (JSC NIITM), Moscow, Russia
[2] National Research Nuclear University MEPhI, Moscow, Russia

16:40 – 17:00 **Development of a Program for Calculations Gas-dynamic Parameters of Plasma Torches and Ore-thermal Reactors**

C1-O-037401

Vladimir Andryushchenko, Dmitry Smovzh

Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia

17:00 – 17:20 **Simulation and Design of a 30 kV Electron Source for Electron Beam Micro-welding**

C1-O-029401-Y

Pavel Makukha[1,2], Tatyana Devyataikina[1,2], Alexander Anatolyevich[1,2]

[1] Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia
[2] Novosibirsk State University, Novosibirsk, Russia

17:20 – 17:40 **Gasless Magnetron Plasma Parameters in DC and Hybrid Modes.**

C1-O-038401

Maxim Shandrikov, Dmitry Beloplotov, Alexander Cherkasov, Efim Oks, Alexander Zaharov, Semyon Vagaytsev, Maxim Azhgikhin

Institute of High Current Electronics SB RAS, Tomsk, Russia

C5 – Nanoscience and nanotechnology

Small Hall in the Rubin

Invited
11:45 – 12:15 **Insights into Cu-based Catalysts Interface Properties: a Strategy to Improve Methanol Synthesis from Plasma-coupled CO_2 Hydrogenation**

C5-O-002401

Liguang Dou, Cheng Zhang, Tao Shao

Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China

12:15 – 12:35 **Synthesis of Mixed Oxide Nanoparticles in Plasma Discharge Under Ultrasonic Treatment**

C5-O-011001

Nikolay Bulychev

Moscow Aviation Institute, Moscow, Russia

12:35 – 12:55 **Simulation of Field-induced Structuring of Lithium Niobate Particle Ensembles**

C5-O-017601-Y

Andrei Podoinitsyn, Andrei Oleinik

Belgorod State National Research University, Belgorod, Russia

12:55 – 13:15 **Structure and Catalytic Activity of Electroexplosive Nanoparticles of Multicomponent Alloys in Pyrolysis of Hydrocarbons**

C5-O-015401

Alexander Pervikov[1,2], Yuri Bauman[1], Danil Shivtsov[1], Anton Popov[1], Yuri Shubin[1], Ilya Mishakov[1]

[1] Boreskov Institute of Catalysis, Novosibirsk, Russia
[2] Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia

13:15 – 13:35 **Photocatalytic Activity of Fhy-SiO_2-Ag Nanocomposite**

C5-O-016001-Y

Andrey Gerasimov, Sergey Sokovnin

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

13:35 – 13:55 **Formation of Nanoparticles as a Result of Electric Discharge in Water Using Silver and Titanium Electrodes**

C5-O-042801

Svetlana Makarova[1], Vadim Snetov[1], Dmitry Subbotin[1], Ksenia Babich[2]

[1] Institute for Electrophysics and Electric Power, Saint Petersburg, Russia
[2] Saint-Petersburg State Institute of Technology (Technical University), Saint Petersburg, Russia

13:55 – 15:30 **Lunch**

C2 – Fundamentals of modification processes

Small Hall in the Rubin

Invited
15:30 – 16:00

Modification of the Composition of Surface Layers of Thin Dieletric Films by a High-power Ion Beam of Nanosecond Duration

C2-O-036601

Vladimir Kovivchak[1,2], Sergei Nesov[3], Alexsandr Kuklev[1,2], Oleg Dubovik[3]

[1] Omsk Scientific Center SB RAS, Omsk, Russia
[2] Dostoevsky Omsk State University, Omsk, Russia
[3] Omsk State Technical University, Omsk, Russia

16:00 – 16:20

Transportation of Arc-evaporated Material Through a Quarter-torus Separator

C2-O-046801

Vassily Grigoriev, Evgeniy Berlin, Sergey Turenko

Laboratory of Vacuum Technologies, LLC, Moscow, Russia

16:20 – 16:40

Investigation of Tungsten Erosion at the Linear Plasma Device BPD-PSI

C2-O-026301-Y

Nikita Sergeev

National Research Nuclear University MEPhI, Moscow, Russia

16:40 – 17:00 **Modeling of Gas Plasma of Non-self-sustained Glow Discharge in a Hollow Cylindrical Cathode with Two Electron Sources in Ar/N_2 Mixture**

C2-O-020701-Y

Daniil Zaytsev, Tamara Koval, Vladimir Denisov, Evgeniy Ostroverkhov, Sergey Kovalsky

Institute of High Current Electronics SB RAS, Tomsk, Russia

17:00 – 17:20 **Changes in the Substance of Stone Meteorites Under the Impact of Air Plasma**

C2-P-035201-Y

Aleksandr Popov, Anatoly Kokorin, Nikita Smirnov, Eugenia Petrova, Victor Grokhovsky

Ural Federal University, Yekaterinburg, Russia

September 18 | Friday

C1 – Beam and plasma sources

3rd Oral Session

Large Conference Hall in the Rubin

Invited
09:00 – 09:30

Conditions for Diffuse Mode in Vacuum Arc Discharge on Thermionic and Non-thermionic Cathodes

C1-O-020501-Y

Mikhail Paramonov, Anton Melnikov, Artemii Belostotskii, Ravil Usmanov, Andrey Gavrikov

Joint Institute for High Temperatures RAS, Moscow, Russia

09:30 – 09:50

End-to-end Model of Ion Beam for TM-200T Implanter

C1-O-027801-Y

Mikhail Danilov[1], Anton Ralnikov[1,2], Nikita Mamedov[1,2], Evgeniy Tretyakov[1], Tatyana Devyataikina[3], Vadim Pavlyuchenko[3]

[1] Joint-Stock Company Research Institute of Precision Engineering (JSC NIITM), Moscow, Russia
[2] National Research Nuclear University MEPhI, Moscow, Russia
[3] Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

09:50 – 10:10

Investigation of a Two-cathode Spark Ion Source for a Vacuum Neutron Tube

C1-O-011401-Y

Luka Polyanskiy, Aleksei Uzvolok, Artem Chergintsev, Segrei Sarapulov, Yuriy Mikhailov

Dukhov Automatics Research Institute, ROSATOM, Moscow, Russia

10:10 – 10:30 **Operating Features and Emission Characteristics of the Planar Magnetron Discharge in a Pulsed Forevacuum Plasma Electron Source**

C1-O-004401

Andrey Kazakov[1], Valery Arkatov[1], Efim Oks[1,2]

[1] Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia
[2] Institute of High Current Electronics SB RAS, Tomsk, Russia

10:30 – 10:50 **Design Features of a Charged Particle Flux Analyzer Based on a Wien Filter for an Electrodeless Plasma Thruster**

C1-O-015601-Y

Aleksandra Aksenova[1], Dobrynya Kolodko[2,1], Maksim Kharkov[1], Andrey Kaziev[1], Aleksander Tumarkin[1]

[1] National Research Nuclear University MEPhI, Moscow, Russia
[2] Fryazino Branch of Kotelnikov Institute of Radio Engineering and Electronics RAS, Fryazino, Russia

10:50 – 11:10 **The Influence of Electron Injection Through a Cylindrical Grid on the Parameters of Plasma Generated by a Non-self-sustaining Glow Discharge Inside an Elongated Hollow Cathode**

C1-O-033701

Danil Ignatov, Vladimir Denisov, Sergey Kovalsky

Institute of High Current Electronics SB RAS, Tomsk, Russia

11:10 – 11:40 **Coffee Break**

C1 – Beam and plasma sources
4th Oral Session
Large Conference Hall in the Rubin

Invited
11:40 – 12:10

Selection of Approximation for Simulating a Pulsed Arc Discharge in the MEVVA Sokol-mini Ion Source

C1-O-017501-Y

Viktor Pervushin[1,2], Sergey Shevchuk[1], Oleg Obrezkov[1], Mikhail Nagel[1]

[1] National Research Center "Kurchatov Institute", Moscow, Russia
[2] National Research Nuclear University MEPhI, Moscow, Russia

12:10 – 12:30

Study of the Ion Current of an Ion Source of a Vacuum Neutron Tube

C1-O-026701-Y

Sergey Shmelev, Vladimir Ermakov, Ali Dulatov, Sergey Maslennikov

Dukhov Automatics Research Institute, ROSATOM, Moscow, Russia

12:30 – 12:50

On the Controllability of Self-oscillation Parameters Induced by the Secondary-emission Instability of a Plasmasurface Contact

C1-O-018001

Ivan Sorokin

Fryazino Branch of Kotelnikov Institute of Radio Engineering and Electronics RAS, Fryazino, Russia

12:50 – 13:10 **Numerical Determination of Integral Characteristics of Plasma Torches Taking into Account the Influence of the Working Gas**

C1-O-037601-Y

Pavel Kovalenko, Lev Kvasnikov, Andrey Orlov, Vladimir Andryushchenko, Dmitry Smovzh

Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia

13:10 – 13:30 **Dynamics of Zinc Nanoparticle Formation in an Atmospheric Pressure Glow Discharge**

C1-O-005401

Konstantin Savkin, Dmitry Beloplotov, Alexey Nikolaev, Valeria Frolova, Vadim Gridilev

Institute of High Current Electronics SB RAS, Tomsk, Russia

13:30 – 13:50 **Regularities in the Generation of Volumetrically Uniform Gas-metal Beam-plasma Formations**

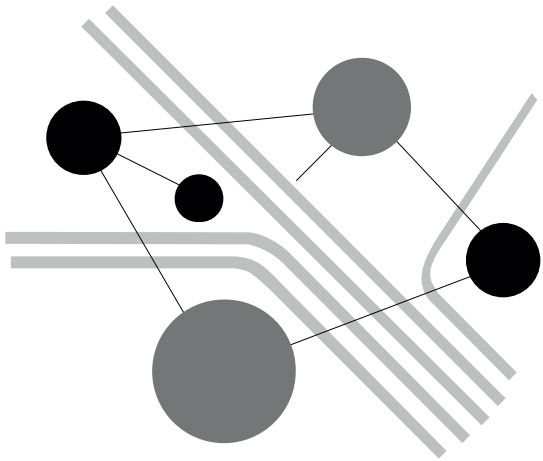
C1-O-024601-Y

Mikhail Savchuk, Vladimir Denisov, Sergey Kovalsky, Evgeniy Ostroverkhov, Artem Egorov, Danil Zaytsev

Institute of High Current Electronics SB RAS, Tomsk, Russia

Oral Sessions of the

22nd International Conference on Radiation Physics and Chemistry of Condensed Matter (RPC)



Conference Topics:

- *R1 – Physical and chemical processes in inorganic materials induced by energy beams*
- *R2 – Materials under extreme conditions: design, characterization and applications*
- *R3 – Modern research methods and instruments, modeling of the interaction of radiation with materials*
- *R4 – Radiation technologies: advantages and applications*

September 14 | Monday

R1 – Physical and chemical processes in inorganic materials induced by energy beams

1st Oral Session

Hearth Room in the Rubin

Invited
11:45 – 12:15

Radiation Synthesis of Luminofor Ceramics

R1-O-028301

Victor Lisitsyn

National Research Tomsk Polytechnic University, Tomsk, Russia

12:15 – 12:35

Anion-deficient Corundum as the Basis for Neutron OSL Detectors

R1-O-012201-Y

Alexander Boyarintsev[1,2], Rinat Abashev[1], Alexander Surdo[1]

[1] M.N.Mikheev Institute of Metal Physics UB RAS, Yekaterinburg, Russia
[2] Ural Federal University, Yekaterinburg, Russia

12:35 – 12:55

Assessment of Degradation of the Structural Order of Irradiated Quartz Materials

R1-O-001201-Y

Veronika Kurskaya[1], Mikhail Korovkin[2,3], Ludmila Ananieva[2], Bulat Soktoev[2]

[1] Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia
[2] National Research Tomsk Polytechnic University, Tomsk, Russia
[3] National Research Tomsk State University, Tomsk, Russia

12:55 – 13:15 **Energy Transfer to Substance During the Radiation Synthesis of YAG:Ce Ceramics**

R1-O-010101

Anna Karnaukhova, Victor Lisitsyn

National Research Tomsk Polytechnic University, Tomsk, Russia

13:15 – 13:35 **The Effect of UV Laser Treatment on the Surface Microstructure and Functional Properties of TiNi Alloy**

R1-O-012001-Y

Marina Kandaurova, Tatiana Sablina, Ilya Zyatikov, Ilya Lopatkin, Yuri Panchenko

Institute of High Current Electronics SB RAS, Tomsk, Russia

13:35 – 13:55 **Comparative Analysis of the Maxwell Classical Electrodynamic Model and the Theory of Ordered Quantum Systems**

R1-O-022701

Boris Gritsenko, Valeriy Krivobokov, Dmitriy Lubenko

National Research Tomsk Polytechnic University, Tomsk, Russia

13:55 – 15:30 **Lunch**

R1 – Physical and chemical processes in inorganic materials induced by energy beams

2nd Oral Session

Hearth Room in the Rubin

Invited
15:30
–
16:00

Pulsed Cathodoluminescence of YAG Ceramic Synthesized by Radiation Treatment

R1-O-030201-Y

Vitalii Vaganov[1], Abylai Kobey[2]

[1] National Research Tomsk Polytechnic University, Tomsk, Russia
[2] L.N.Gumilyov Eurasian National University, Astana, Kazakhstan

16:00
–
16:20

Properties of YAG:Tb,Ce Phosphorus Coatings Prepared by Reactive Magnetron Co-sputtering

R1-O-028501-Y

Artem Runts, Galina Bleykher

National Research Tomsk Polytechnic University, Tomsk, Russia

16:20
–
16:40

Recombination Processes of Charge Carriers in Al_2O_3 Ceramics

R1-O-029501-Y

Nataliia Karavannova, Sergey Nikiforov, Daria Ananchenko, Yulia Kuznetsova

Ural Federal University, Yekaterinburg, Russia

16:40
–
17:00

Laser Synthesis of YAG-Ce Ceramics in Atmospheric Air

R1-P-029701

Vladimir Oleshko

National Research Tomsk Polytechnic University, Tomsk, Russia

RPC

17:00 – 17:20 **Radiation-chemical Synthesis of Copper Nanoparticles and Its Oxides in an Aqueous Solution of Copper Sulfate with Polyvinylpyrrolidone**

R1-P-002502

Vladislav Ilves, Mikhail Balezin, Sergey Sokovnin

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

17:20 – 17:40 **Influence of an Autocatalytic Reaction on the Ignition Delay Time of PETN Induced by a Laser Pulse**

R1-P-018101

Evgeny Duginov[1], Evgeniya Nikolaeva[1], Alexander Khaneft[2]

[1] T.F. Gorbachev Kuzbass State Technical University, Kemerovo, Russia

[2] Kemerovo State University, Kemerovo, Russia

September 15 | Tuesday

R2 – Materials under extreme conditions: design, characterization and applications

1st Oral Session

Hearth Room in the Rubin

Invited
11:45 – 12:15

Pyrotechnic Generation of Titanium Dioxide and Parameters of Its Photocatalytic Activity

R2-O-005301-Y

Ivan Sorokin, Oleg Glotov, Grigory Surodin

Voevodsky Institute of Chemical Kinetics and Combustion SB RAS, Novosibirsk, Russia

12:15 – 12:35

Halide Perovskites Under Irradiation Towards Stable and Efficient Photovoltaics for Space Applications

R2-O-012401

Ivan Zhidkov[1,2], Andrey Kukharenko[1,2], Viktoria Ozerova[3], Maxim Gerasimov[1], Lyubov Frolova[4], Ernst Kurmaev[1,2], Pavel Troshin[3,5]

[1] Ural Federal University, Yekaterinburg, Russia
[2] M.N.Mikheev Institute of Metal Physics UB RAS, Yekaterinburg, Russia
[3] Federal Research Center for Problems of Chemical Physics and Medicinal Chemistry of Russian Academy of Sciences, Chernogolovka, Russia
[4] Federal Research Center for Problems of Chemical Physics and Medicinal Chemistry of Russian Academy of Sciences, Yekaterinburg, Russia
[5] Zhengzhou Advanced Research Institute of HIT, Zhengzhou, China

12:35 – 12:55 **Plasma Synthesis of Fluorescent Carbon Dots in Gas-liquid Media**

R2-O-019501-Y

Aleksander Tyutrin, Aleksander Rakevich, Yaroslav Grigorov

Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia

12:55 – 13:15 **The Development of the Micro Hot Spot Model of the Composite Explosives Laser Initiation**

R2-O-025101

Anastasia Borovikova, Alexander Zvekov, Alexander Kalenskii, Alexey Ivanov

Kemerovo State University, Kemerovo, Russia

13:15 – 13:35 **Pulsed Cathodoluminescence of Radiation-assisted Synthesized $ZnAl_2O_4$ Spinel Ceramics Doped with Eu^{3+} and Er^{3+}**

R2-O-036201-Y

Lingyin Long, Elena Polisadova, Victor Lisitsyn

National Research Tomsk Polytechnic University, Tomsk, Russia

13:35 – 13:55 **Substantiation of Experimental Parameters for Corium Interaction with AlOSb Sacrificial Material by Numerical Modeling**

R2-P-034901

Yekaterina Martynenko[1], Mazhyn Skakov[2], Maxat Bekmuldin[1], Kuanyshbek Toleubekov[1]

[1] Institute of Atomic Energy of National Nuclear Center of the Republic of Kazakhstan, Semey, Kazakhstan

[2] National Nuclear Center of the Republic of Kazakhstan, Semey, Kazakhstan

13:55 – 15:30 **Lunch**

R2 – Materials under extreme conditions: design, characterization and applications

2nd Oral Session

Hearth Room in the Rubin

Invited

15:30 – 16:00 **La-doping as a Strategy for Stabilizing the Crystal Structure of $CsFAPbI_3$ Perovskites Under Electron Irradiation**

R2-O-011601-Y

Maxim Gerassimov[1], Marina Ustinova[2], Sergey Nikiforov[1], Lyubov Frolova[2], Ernst Kurmaev[3,1], Pavel Troshin[4,2], Ivan Zhidkov[1,3]

[1] Ural Federal University, Yekaterinburg, Russia
[2] Federal Research Center for Problems of Chemical Physics and Medicinal Chemistry of Russian Academy of Sciences, Chernogolovka, Russia
[3] M.N.Mikheev Institute of Metal Physics UB RAS, Yekaterinburg, Russia
[4] Zhengzhou Advanced Research Institute of HIT, Zhengzhou, China

16:00 – 16:20 **Fast Radiation Converters Based on Solid Solutions of Chalcogenides: Electronic Structure, Optical Properties**

R2-O-039801-Y

Dmitry Tavrunov[1], Vladimir Pustovarov[1], Maksim Sarychev[1], Alexander Sapov[2], Maria Tarasenko[3]

[1] Ural Federal University, Yekaterinburg, Russia
[2] Novosibirsk State University, Novosibirsk, Russia
[3] Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia

16:20 – 16:40 **The Use of ZrB_2 Synthesized by the Electric Arc Vacuumless Method for Producing a Metal Matrix Composite**

R2-P-036901-Y

Yulia Li, Sabina Babaeva, Yaroslav Shugonsov, Anna Pavlenko

National Research Tomsk Polytechnic University, Tomsk, Russia

R4 – Radiation technologies: advantages and applications

1st Oral Session

Hearth Room in the Rubin

16:40 – 17:00 **Installations for Annealing and Testing Thermionic Cathodes LaB6**

R4-O-035801

Evgeny Domarov, Yuri Golubenko, Vladimir Zhivotiagin, Nikolay Kuksanov, Alexander Lavruhin, Yulia Potapova, Rustam Salimov, Alexey Semenov, Sergey Fadeev

Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

17:00 – 17:20 **DC Electron Beam Accelerator with Energy up to 4 MeV**

R4-O-035701

Denis Vorobev, Evgeny Domarov, Yuri Gokubenko, Alexey Korchagin, Rustam Salimov, Sergey Fadeev, Ivan Chakin, Alexey Semenov, Alexander Lavrukhin, Yulia Potapova

Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

17:20 – 17:40 **Modification of Polyethylene Films by a Pulsed Electron Beam Extracted into the Atmosphere**

R4-O-029901

Maxim Vorobyov, Maxim Mokeev, Sergey Doroshkevich, Maxim Torba, Nikolay Koval, Vladislav Nedoshivin

Institute of High Current Electronics SB RAS, Tomsk, Russia

September 16 | Wednesday

R4 – Radiation technologies: advantages and applications

2nd Oral Session

Hearth Room in the Rubin

Invited
11:45 – 12:15

Electrodeposition of Multicomponent Alloys Under an Effext of the X-ray Radiation

R4-O-042101

Natalia Valko[1], Dmitry Lavysh[1], Natalia Poliak[2], Victor Anishchik[2]

[1] Yanka Kupala State University of Grodno, Grodno, Belarus

[2] Belarusian State University, Minsk, Belarus

12:15 – 12:35

Radiation of Twisted Photons in Multifrequency Laser Fields

R4-O-007501-Y

Sergey Bragin, Oleg Bogdanov

National Research Tomsk Polytechnic University, Tomsk, Russia

12:35 – 12:55

Electron Dynamics in a Pyroelectric Accelerator

R4-O-007001-Y

Andrey Oleinik[1], Alexander Kubankin[1], Pavel Karataev[2], Pavel Shapovalov[3]

[1] Belgorod State National Research University, Belgorod, Russia
[2] Royal Holloway College, University of London, London, United Kingdom
[3] National Research Nuclear University MEPhI, Moscow, Russia

12:55 – 13:15 **Hydrogen-driven Phase Transformations and Property Alterations in NbZr Functionally Graded Materials**

R4-O-001102-Y

Stepan Korneev, Anton Lomygin, Dmitry Krotkevich

National Research Tomsk Polytechnic University, Tomsk, Russia

13:15 – 13:35 **Nanosecond Electron Beams Irradiation of Sulfonamide Antibiotics: Degradation Efficiency and Toxicity Assessment**

R4-O-026601-Y

Nadezhda Bezlepkina[1,2], Elena Bocharnikova[1,2], Alfia Spirina[2], Olga Tchaikovskaya[1,2], Vladimir Solomonov[2]

[1] National Research Tomsk State University, Tomsk, Russia
[2] Institute of Electrophysics UB RAS, Yekaterinburg, Russia

13:35 – 13:55 **Influence of Composition on the Luminescent Properties of High-entropy Ce^{3+}-activated Garnets Synthesized by Radiation Methods**

R4-O-018601-Y

Gulnur Nogaibekova, Aida Tulegenova

Al-Farabi Kazakh National University, Almaty, Kazakhstan

13:55 – 15:30 **Lunch**

September 17 | Thursday

R3 – Modern research methods and instruments, modeling of the interaction of radiation with materials

1st Oral Session

Hearth Room in the Rubin

Invited
11:45
–
12:15

Application of Synchrotron Radiation in the Petroleum Industry

R3-O-043301

Aleksey Gogolev

National Research Tomsk Polytechnic University, Tomsk, Russia

12:15
–
12:35

Validation of Dose Distribution Detection for Potassium Chloride-based Radiation Detectors Using Radiochromic Dosimetry Film and a Calorimeter

R3-O-005601-Y

Yuchun Ding, Maksim Serebrennikov, Ivan Egorov

National Research Tomsk Polytechnic University, Tomsk, Russia

12:35
–
12:55

Monte Carlo Simulation of the Ion-charge States Time Dynamics During the Cascade Decay of Single Inner-shell Vacancies in Atomic Gadolinium

R3-O-013401

Andrei Kochur, Alexander Chaynikov, Alexei Dudenko

Rostov State Transport University, Rostov, Russia

12:55 – 13:15 **Monte Carlo Modeling of Radiation Effects in $APbI_3$ Perovskites**

R3-O-016301-Y

Ivan Novoselov[1], Ivan Zhidkov[1,2]

[1] Ural Federal University, Yekaterinburg, Russia
[2] M.N.Mikheev Institute of Metal Physics UB RAS, Yekaterinburg, Russia

13:15 – 13:35 **Comparative Numerical Study of Radiative Transfer Models in Hv Gas Blast Interrupters**

R3-O-023501

Natalia Kurakina, Nikita Obraztsov, Svetlana Averyanova, Ruslan Zhiligotov

Peter the Great St.Petersburg Polytechnic University, Saint Petersburg, Russia

13:35 – 15:30 **Lunch**

R3 – Modern research methods and instruments, modeling of the interaction of radiation with materials

2nd Oral Session

Hearth Room in the Rubin

Invited
15:30 – 16:00

Time-resolved Optical Absorption Measurements of Fluoride Crystals

R3-O-043901

Sergey Stepanov, Evgeny Chinkov

National Research Tomsk Polytechnic University, Tomsk, Russia

16:00 – 16:20

The Anomalous Effect of Thermoluminescence Decay in Terms of the Kinetic Models with One Recombination Center

R3-O-028201-Y

Samuel Kiggundu, Dariya Ananchenko, Sergey Nikiforov

Ural Federal University, Yekaterinburg, Russia

16:20 – 16:40

Monte Carlo Simulation of the Passage of High-energy Electrons (1.4 MeV) through Multicomponent Oxide Layers with Different Bulk Densities

R3-O-030001-Y

Dossymkhan Mussakhanov[1], Abylai Kobey[1], Aida Tulegenova[2]

[1] L.N.Gumilyov Eurasian National University, Astana, Kazakhstan
[2] Al-Farabi Kazakh National University, Almaty, Kazakhstan

RPC

16:40 – 17:00 **The Limit of Applicability of the Kubelka-Munk Formula**

R3-O-030401-Y

Ibrokhimkhon Saidazimov

National Research Tomsk Polytechnic University, Tomsk, Russia

17:00 – 17:20 **Experimental Verification of a Non-destructive Position-sensitive Electron Beam Profilometer Using a 16-channel Ionization Chamber System**

R3-O-031001-Y

Konstantin Timoshenko[1,2], Elizaveta Bushmina[1,2], Sergey Alexeev[1], Angelina Bulavskaya[2], Irina Miloichikova[2,3], Semen Mitrofanov[1], Daria Polomoshnova[2], Yuri Teterev[1], Sergey Stuchebrov[2]

[1] Joint Institute for Nuclear Research, Dubna, Russia
[2] National Research Tomsk Polytechnic University, Tomsk, Russia
[3] Tomsk National Research Medical Center, Tomsk, Russia

Oral Sessions of the

7th International Conference on New Materials and High Technologies (NMHT)

Symposium Topics:

- *N1 – Inorganic materials and coatings*
- *N2 – Self-propagating high-temperature synthesis and advanced powder technologies*
- *N3 – Carbon materials for electronics and photonics*
- *N4 – Resource- and energy-saving technologies*
- *N5 – Synchrotron radiation detectors*

September 14 | Monday

N5 – Synchrotron radiation detectors
1st Oral session
Academic Room in the Rubin

Invited
11:45 – 12:15
Development of Detectors for Studies of Dynamic Processes at a Synchrotron Radiation Beam
N5-O-014101
Lev Shekhtman
Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

12:15 – 12:35
Application of Allpix2 Software for Simulation of Amplitude Spectrum of Si P^+-N^0-N^+ Sensors Irradiated with 10 - 81 keV Quanta
N5-O-009401-Y
Kirill Chashtanov, Anton Tyazhev, Alexander Vinnik, Ivan Chsherbakov, Mikhail Trofimov
National Research Tomsk State University, Tomsk, Russia

12:35 – 12:55 **Temporal Stability of Photocurrent Pulses from Chromium-compensated Gallium Arsenide Sensors Under the Influence of Synchrotron Radiation**

N5-O-011701

Mikhail Trofimov[1], Ivan Chsherbakov[1], Oleg Tolbanov[1], Anton Tyazhev[1], Lev Shektman[2]

[1] National Research Tomsk State University, Tomsk, Russia
[2] Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

12:55 – 13:15 **In Situ Study of the Growth Process of High- and Medium-entropy Alloys and Nitrides Based on Them Using Synchrotron Radiation**

N5-O-016602

Yurii Ivanov[1], Nikita Prokopenko[1], Elizaveta Petrikova[1], Yurii Akhmadeev[1], Olga Krysina[1], Nikolai Koval[1], Aleksandr Shmakov[2]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Boreskov Institute of Catalysis, Novosibirsk, Russia

13:15 – 13:35 **Ultraviolet Photodetector Based on Gallium Oxide**

N5-O-004701-Y

Dmitry Almaev[1,2], Viktor Kopyev[1], Alexander Tsymbalov[1], Inna Keda[1]

[1] National Research Tomsk State University, Tomsk, Russia
[2] Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia

13:35 – 15:30 **Lunch**

N5 – Synchrotron radiation detectors
2nd Oral session
Academic Room in the Rubin

Invited
15:30 – 16:00

Research at Tomsk State University in the Field of Ionizing Radiation Sensors Based on Wide-band Semiconductors

N5-O-038701

Anton Tyazhev, Alexander Vinnik, Kirill Chashtanov, Oleg Tolbanov, Leila Shaimerdenova, Maxim Skakunov, Andrei Zarubin, Anastasiya Shemeryankina, Yulianna Petrova

National Research Tomsk State University, Tomsk, Russia

16:00 – 16:20

Dynamics of Photocurrent in Chromium-compensated Gallium Arsenide Sensors Under X-ray Radiation

N5-O-020401

Vlastimir Tkachev, Mikhail Trofimov, Ivan Chsherbakov, Oleg Tolbanov, Anton Tyazhev, Andrey Zarubin

National Research Tomsk State University, Tomsk, Russia

16:20 – 16:40

Studies of Characteristics HR-GaAs:Cr Sensors That Determine Radiation Durability

N5-O-033801-Y

Vladislav Babeshko[1], Oleg Tolbanov[1], Anton Tyazhev[1], Ivan Chsherbakov[1], Mikhail Trofimov[1], Boris Goldenberg[2], Lev Shekhtman[2]

[1] National Research Tomsk State University, Tomsk, Russia
[2] Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

16:40 – 17:00 **Dark Current Dynamics in Ionizing Radiation Sensors Based on HR-GaAs:Cr**

N5-O-015301-Y

Viktor Chernenko, Ivan Chsherbakov, Oleg Tolbanov, Anton Tyazhev, Andrei Zarubin, Pavel Kosmachev, Anastasia Shemeryankina, Yulianna Petrova

National Research Tomsk State University, Tomsk, Russia

17:00 – 17:20 **Simulation of Steady-state IV Characteristics and Electric Field Profiles Within X-ray HR-GaAs:Cr Pixel Sensors**

N5-O-016901-Y

Alexander Vinnik, Kirill Chashtanov, Anton Tyazhev, Leila Shaimerdenova, Maksim Skakunov, Andrey Zarubin, Anastasia Shemeryankina

National Research Tomsk State University, Tomsk, Russia

September 15 | Tuesday

N2 – Self-propagating high-temperature synthesis and advanced powder technologies

1st Oral Session

Academic Room in the Rubin

Invited
11:45 – 12:15

The Effect of Irradiation by High-intensity High-current Pulsed Electron Beams on the Surface Layers of Ti-6Al-4V Titanium Alloy Samples Obtained Using SLM Technology

N2-O-025601

Oxana Bytcenko[1], Alexander Shirokozhukhov[2], Alexey Gromov[2], Kirill Bernatskii[3]

[1] Moscow Aviation Institute (National Research University); Joint Stock Company United Engine Corporation, Bransh UEC-SALUT, Moscow, Russia
[2] Joint Stock Company United Engine Corporation, Bransh UEC-SALUT, Moscow, Russia
[3] Moscow Aviation Institute, Moscow, Russia

12:15 – 12:35

Development of Electro-explosive Powder Compositions for Extrusion Based 3D-printing of Products Based on Multicomponent Alloys

N2-O-018301

Alexander Pervikov[1,2], Konstantin Suliz[1,2], Egor Ryumin[1,2], Elena Glazkova[2], Natalya Svarovskaya[1,2], Marat Lerner[1,2]

[1] National Research Tomsk State University, Tomsk, Russia
[2] Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia

12:35 – 12:55 **Plasma Fragmentation of Water-kerosene Emulsion Droplets Under High-voltage Pulsed Electric Discharge**

N2-O-005901-Y

Dmitrii Antonov

National Research Tomsk Polytechnic University, Tomsk, Russia

12:55 – 13:15 **Combustion Synthesis of Porous B-SiAlON Fiber-reinforced Filters**

N2-O-016501-Y

Anton Reger, Pavel Vashurkin

Tomsk Scientific Center SB RAS, Tomsk, Russia

13:15 – 13:35 **The Influence of Pine Nut Shells on Aluminum Nitridation in Combustion Mode**

N2-O-015001-Y

Pavel Vashurkin, Anton Reger

Tomsk Scientific Center SB RAS, Tomsk, Russia

13:35 – 13:55 **Mechanochemically Synthesized Niobium Silicides from Waste Materials: Properties and Application in Conductive Composites**

N2-O-007601

Olga Shkoda, Nikita Belyaev, Alexander Shulpekov, Evgeny Golovin

Tomsk Scientific Center SB RAS, Tomsk, Russia

13:55 – 15:30 **Lunch**

N2 – Self-propagating high-temperature synthesis and advanced powder technologies

2nd Oral Session

Academic Room in the Rubin

Invited
15:30 – 16:00

Self-propagating High-temperature Synthesis of TiN-TiC Composition Using Sodium Azide and Polytetrafluoroethylene

N2-P-036802

Yuliya Titova, Alexander Amosov, Alsu Yakubova, Alina Ivanova

Samara State Technical University, Samara, Russia

16:00 – 16:20

Azide SHS of Compositions of Highly Dispersed Nitride Powders with Silicon Carbide

N2-O-036801

Yuliya Titova

Samara State Technical University, Samara, Russia

16:20 – 16:40

The Impact of Shock Wave Action on Formation of Amorphous-crystalline Structure in Ti-Al System

N2-O-021901

Alexey Sobachkin[1], Marina Loginova[1], Alexander Sitnikov[1], Vladimir Yakovlev[1], Valery Filimonov[1,2], Alexey Negodyaev[1], Andrey Myasnikov[1], Alexander Roznyj[1], Evgenij Lakman[1], Alexander Sobachkin[1], Yakov Ochakovskii[1]

[1] Polzunov Altai State Technical University, Barnaul, Russia
[2] Institute for Water and Environment Problems SB RAS, Barnaul, Russia

16:40 – 17:00 **Critical Combustion Conditions of a Two-layer Powder System (Ni+Al)/Me**

N2-O-001801

Vadim Prokof'ev[1,2], Ramil Gabbasov[1], Vladimir Kitler[1], Alexandr Shul'pekov[1]

[1] Tomsk Scientific Center SB RAS, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia

17:00 – 17:20 **A Multi-component Kinetic Model for Numerical Investigation of Shock-induced Exothermic Reactions in W-PTFE-Al Reactive Composites**

N2-O-001901

Sergey Zelepugin, Oksana Ivanova, Roman Cherepanov

Tomsk Scientific Center SB RAS, Tomsk, Russia

17:20 – 17:40 **Nonisothermal Synthesis of TiN and ZrN Powders by Calciothermal Reactions Under Nitrodgen**

N2-O-024001

Alexander Avramchik, Boris Braverman

[1] Tomsk Scientific Center SB RAS, Tomsk, Russia

September 16 | Wednesday

N2 – Self-propagating high-temperature synthesis and advanced powder technologies

3rd Oral Session

Academic Room in the Rubin

Invited
11:45 – 12:15 **Synthesis of Hybrid Composites by the SHS Method Using PET-plastic and Aluminum Waste**

N2-O-009101-Y

Aleksey Matveev, Nikita Pichugin

Tomsk Scientific Center SB RAS, Tomsk, Russia

12:15 – 12:35 **Photocatalytic Water Purification from Methylene Blue Using an Iron-ceramic Composite Obtained by Self-propagating High-temperature Synthesis**

N2-O-022901-Y

Tatyana Tatarinova, Olga Kryukova

Tomsk Scientific Center SB RAS, Tomsk, Russia

12:35 – 12:55 **Combustion Synthesis of Macroporous Ni-Fe-Al Alloys**

N2-O-007801-Y

Nikita Pichugin, Anatoly Maznoy

Tomsk Scientific Center SB RAS, Tomsk, Russia

12:55 – 13:15 **The Influence of Mutual Concentration of Ni and Al Powders on the Agglomeration Processes of Mechanocomposites**

N2-O-002601

Evgeny Boyangin, Oleg Lapshin

Tomsk Scientific Center SB RAS, Tomsk, Russia

13:15 – 13:35 **Features of Spinel Synthesis in the MnO-MgO-Al_2O_3 System by the SHS Method**

N2-O-002301

Nina Radishevskaya, Oleg Lvov, Roman Minin

Tomsk Scientific Center SB RAS, Tomsk, Russia

13:35 – 13:55 **Non-isothermal Synthesis of the Magnesium Boronitride Phase**

N2-O-012802

Olga Lepakova, Boris Braverman

Tomsk Scientific Center SB RAS, Tomsk, Russia

13:55 – 15:30 **Lunch**

September 17 | Thursday

N1 – Inorganic materials and coatings
1st Oral Session
Academic Room in the Rubin

Invited
11:45 – 12:15 **Deposition of a Uniform Nanocrystalline Diamond Coating on a High Aspect Ratio Tungsten Carbide Substrate in a Microwave Plasma Reactor**

N1-P-008502

Sergey Fedorov[1], Evgeny Ashkinazi[2], Artem Martyanov[2], Andrey Litvinov[1], Konstantin Sergeychev[2], Mikhail Shevchenko[2]

[1] Moscow State University of Technology STANKIN, Moscow, Russia
[2] A.M. Prokhorov General Physics Institute RAS, Moscow, Russia

12:15 – 12:35 **Synthesis, Composition, and Properties of Granular Storntium-tricalcalcium Phosphate**

N1-O-021301

Olga Golovanova

Dostoevsky Omsk State University, Omsk, Russia

12:35 – 12:55 **On The Use Of Oxalates Decomposition For Magnetic Adsorbents And Catalysts Preparation**

N1-O-011801

Alexander Zvekov, Alexander Kalenskii, Alexey Ivanov, Vyacheslav Kachurin, Sergey Yakovlev

Kemerovo State University, Kemerovo, Russia

12:55 – 13:15 **Low-viscosity High-solid Loading Photosensitive Slurries for 3D Printing of Garnet Oxide Ceramics**

N1-O-005101

Petr Sokolov[1], Alexander Sergeev[1,2], Lidiya Ermakova[1], Valentina Smyslova[1], Ilya Komendo[1,2], Sergey Fedorchenko[1]

[1] National Research Centre "Kurchatov Institute", Moscow, Russia
[2] Mendeleev University of Chemical Technology of Russia, Moscow, Russia

13:15 – 13:35 **Zr-B-Si-C-(N) Coatings Formed from an Ion Flux Formed by the Action of a Vacuum Electric Arc on a Ceramic-metal Cathode**

N1-O-009701

Igor Blinkov, Dmitry Belov, Alexander Demirov

NUST MISIS, Moscow, Russia

13:35 – 13:55 **Fabrication of Electroactive Oxide-phosphate and Calcium-phosphate Coatings on Titanium by Micro-arc Oxidation**

N1-O-033101-Y

Elizaveta Akimova[1], Ekaterina Komarova[1], Alexander Kashin[1], Marina Ostapenko[1], Tatiana Tolkacheva[1], Anatoly Zharin[2], Yurii Sharkeev[1]

[1] Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia
[2] Belarussian National Technical University, Minsk, Belarus

13:55 – 15:30 **Lunch**

N4 – Resource- and energy-saving technologies

Academic Room in the Rubin

Invited
15:30 – 16:00 **A Liquid Phase Gliding Arc Strategy for Stable Methanol Reforming Toward Efficient Hydrogen Production**

N4-O-002701-Y

Yanbin Xin, Quanli Wang, Bing Sun

Dalian Maritime University, Dalian, China

16:00 – 16:20 **Characteristics and Mechanism of Heavy Oil Upgrading by Liquid Phase Gliding Arc Plasma**

N4-O-005501

Quanli Wang, Yanbin Xin, Bing Sun

Dalian Maritime University, Dalian, China

16:20 – 16:40 **Microwave Fragmentation of Composite Droplets**

N4-O-024901-Y

Dmitry Kovalev, Dmitry Antonov

National Research Tomsk Polytechnic University, Tomsk, Russia

16:40 – 17:00 **Effect of Radiative Heat Transfer on Pyrolysis-gasification of a Single Biomass Particle: a Numerical Study**

N4-O-034301

Igor Yakovlev, Dmitry Hoptyar

Tomsk Scientific Center SB RAS, Tomsk, Russia

17:00 – 17:20 **Numerical Evaluation of Radiant Efficiency of Cylindrical Hollow Porous Burners of Increased Length**

N4-O-034201-Y

Daniil Astakhov, Igor Yakovlev

Tomsk Scientific Center SB RAS, Tomsk, Russia

17:20 – 17:40 **Pyrolysis Waste Processing: Methods for Increasing Efficiency**

N4-O-043501

Alina Ponomareva[1,2], Mensura Muradova[3,2]

[1] Saint Petersburg State University, Saint Petersburg, Russia
[2] Far Eastern Federal University, Vladivostok, Russia
[3] ITMO University, Saint Petersburg, Russia

17:40 – 18:00 **The Investigation of Co-pyrolysis of Polymers and Birch Phloem Wastes**

N4-O-043401-Y

Mensura Muradova[1,2], Olesya Petryaeva[1], Alina Ponomareva[1,2,3]

[1] ITMO University, Saint Petersburg, Russia
[2] Far Eastern Federal University, Vladivostok, Russia
[3] Saint Petersburg State University, Saint Petersburg, Russia

18:00 – 18:20 **Application of Porous Inert Media Combustion to Enhance the Efficiency of Radiant Tubes**

N4-O-003501

Anatoly Maznoy[1], Igor Yakovlev[1], Alexander Guschin[1], Kirill Larionov[1,2]

[1] Tomsk Scientific Center SB RAS, Tomsk, Russia
[2] National Research Tomsk Polytechnic University, Tomsk, Russia

September 18 | Friday

N3 – Carbon materials for electronics and photonics

Academic Room in the Rubin

Invited
09:00 – 09:30

Graphene Cleaning by External Heating and Joule Heating Annealing

N3-O-030301-Y

Dmitry Sorokin[1,2], Dmitry Smovzh[1,2]

[1] Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia
[2] Novosibirsk State University, Novosibirsk, Russia

09:30 – 09:50

Modeling of Photoelectron Diffraction Map of the C60F18 Framework

N3-P-041101-Y

Vasilii Nevtinov[1], Anton Shurygin[1], Yaroslav Zernov[1], Savelii Pisarev[1], Egor Shramkov[2], Natalya Fedorova[1], Daniil Dakamin[1]

[1] Far Eastern Federal University, Vladivostok, Russia
[2] National Research Center "Kurchatov Institute", Moscow, Russia

09:50 – 10:10

Laser Processing of Industrial By-products and the Routes to Improve Their Performance in Flexible Electronics

N3-O-049001-Y

Ilia Petrov, Andrey Grinko, Elizaveta Dogadina, Raul Rodriguez, Evgeniya Sheremet

National Research Tomsk Polytechnic University, Tomsk, Russia

10:10 – 10:30 **Optically Stimulated Luminescence in Synthetic Diamonds**

N3-P-000701-Y

Darya Peresedova, Vasilii Ripenko, Dmitriy Genin, Evgeniy Lipatov

Institute of High Current Electronics SB RAS, Tomsk, Russia

10:30 – 10:50 **Numerical Simulation of a P-i-N Diode Based on Diamond Doped with Boron and Phosphorus**

N3-P-039901-Y

Roman Kurdyukov[1], Evgeny Lipatov[1,2]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia

10:50 – 11:10 **Artificial Diamonds as a Active Laser Media**

N3-O-035501

Dmitriy Genin[1], Evgeniy Lipatov[1,2], Polina Komarova[1,2], Victor Vins[3]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia
[3] Welman LLC, Novosibirsk, Russia

11:10 – 11:40 **Coffee Break**

N1 – Inorganic materials and coatings
2nd Oral Session
Academic Room in the Rubin

Invited
11:40 – 12:10 **Investigation of Mechanical and Electrochemical Properties of Additively Manufactured AlSi10Mg Pretreated by LEHCEB**

N1-O-022202

Massimiliano Bestetti, Andrea Gaboli
Politecnico di Milano, Milan, Italy

12:10 – 12:30 **3D Printing of Refractory Mullite-bonded Silicon Carbide Ceramics Using the Robocasting Method**

N1-O-010301-Y

Sharif Sharafeev, Alexander Mezhenin, Varvara Polyakova
Tomsk Scientific Center SB RAS, Tomsk, Russia

12:30 – 12:50 **Tailoring the Microstructure of CVD Diamond Coatings for Enhanced Tribological Performance**

N1-O-020601-Y

Alexander Mitulinsky, Alexander Gaydaychuk, Sergei Zenkin, Stepan Linnik
National Research Tomsk Polytechnic University, Tomsk, Russia

12:50 – 13:10 **Selective Hydrogenation of PdMe (Me = Co, Cr) Alloys: Mechanisms of Hydride Formation Suppression and Limiting Hydrogen Solubility**

N1-O-031401

Sergey Melentyev[1], Yuri Abzaev[1], Anatoly Klopotov[1], Yuri Tyurin[2], Alexander Potekaev[3], Maxim Syrtanov[2], Vladimir Sypchenko[2], Oleg Volokitin[1]

[1] Tomsk State University of Architecture and Building, Tomsk, Russia
[2] National Research Tomsk Polytechnic University, Tomsk, Russia
[3] National Research Tomsk State University, Tomsk Russia

13:10 – 13:30 **Features of Ti+SiC Composite Layers Formation Using the Electron Beam Surfacing in a Forevacuum**

N1-O-031301

Aleksey Zenin, Anna Dolgova, Aleksandr Klimov

Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia

13:30 – 13:50 **Phase Evolution in Ti-LaB_6 Multilayers Under Pulsed Electron Beam Melting: an in Situ XRD Study**

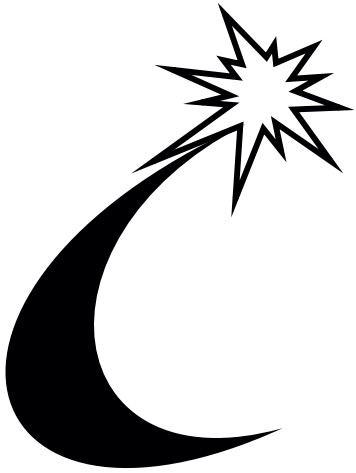
N1-O-047801

Evgeniy Yakovlev[1], Evgeniy Pesterev[1], Vsevolod Petrov[1], Andrey Solovyov[1], Ludmila Meisner[2], Alexander Shmakov[3], Anton Schneider[4], Aleksey Markov[1]

[1] Tomsk Scientific Center SB RAS, Tomsk, Russia
[2] Panin Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia
[3] Synchrotron Radiation Facility SKIF, Koltsovo, Russia
[4] Institute of High Current Electronics SB RAS, Tomsk, Russia

Poster Sessions of the

24th International Symposium on High Current Electronics (SHCE)



Symposium Topics:

- *S1 – Intense electron and ion beams*
- *S2 – Pinches, plasma focus and capillary discharge*
- *S3 – High power microwaves*
- *S4 – Pulsed power technology and applications*
- *S5 – Discharges with runaway electrons*

September 14 | Monday

House of Scientists

S1 – Intense electron and ion beams

1 **Simulation of Low-temperature Plasma of a Non-self-sustained Glow Discharge in an Extended Metal Tube**

S1-P-040901

Tamara Koval, Daniil Zaytsev, Dinil Ignatov, Vladimir Denisov, Sergey Koval'sky

Institute of High Current Electronics SB RAS, Tomsk, Russia

2 **Influence of Hollow Anode Size on Plasma Parameters of Low-pressure Pulsed Arc Discharge**

S1-P-024501-Y

Maksim Torba, Sergey Doroshkevich, Anton Grichkov, Nikolai Landl, Maksim Vorobyov, Vladislav Nedoshivin

Institute of High Current Electronics SB RAS, Tomsk, Russia

3 **Design and Optimization Study of a Cold Cathodes Penning Ion Source for High-intensity Proton Beam**

S1-P-010601

Vasily Gushenets, Alexey Bugaev, Efim Oks

Institute of High Current Electronics SB RAS, Tomsk, Russia

4 **Anomalous Proton Beam Transport through Gabor-type Space-charge Lens**

S1-P-010602

Vasily Gushenets, Alexey Bugaev, Efim Oks

Institute of High Current Electronics SB RAS, Tomsk, Russia

S2 – Pinches, plasma focus and capillary discharge

5 **Influence of Polarity of Vacuum High-current Arc Discharge Electrodes on the Metal-puff Liner Implosion**

S2-P-010401

Alexander Rousskikh, Alexander Zhigalin, Vladimir Oreshkin, Alexander Kuzminykh, Anton Artyomov

Institute of High Current Electronics SB RAS, Tomsk, Russia

6 **Study of the Development of RT Instabilities During Implosion of Metal-puff Plasma Liners on the GIT-12 Generator**

S2-P-010402

Alexander Rousskikh, Vladimir Oreshkin, Alexander Kuzminykh, Anton Artyomov, Rustam Cherdizov, Alexander Shishlov, Vladimir Kokshenev, Nikolay Kurmaev

Institute of High Current Electronics SB RAS, Tomsk, Russia

7 **Study of the Influence of Plasma Gun Electrode Polarity on the Plasma Jet Compression Process Under MIG Generator Conditions**

S2-P-021501

Zhigalin Alexander, Alexander Rousskikh, Alexandr Kuzminykh, Anton Artyomov, Vladislav Van'kevich, Vladimir Oreshkin

Institute of High Current Electronics SB RAS, Tomsk, Russia

8 **Optimization of Parameters of Two-cascade Plasma Liners**

S2-P-019901

Vladimir Oreshkin, Rustam Cherdizov, Alexander Rousskikh, Alexander Shishlov

Institute of High Current Electronics SB RAS, Tomsk, Russia

9 **Determination of the Current Distribution in Planar Wire Array in Experiments on Generator GIT-12 Using B-dot Probes**

S2-P-019702

Vladimir Kokshenev, Alexander Shishlov

Institute of High Current Electronics SB RAS, Tomsk, Russia

10 **Optimization of a Hybrid Load for Operation in the Long Implosion Time Regime**

S2-P-033201

Alexander Shishlov, Rustam Cherdizov, Sergey Kobyakov, Vladimir Kokshenev, Nikolay Kurmaev, Andrey Zherlitsyn

Institute of High Current Electronics SB RAS, Tomsk, Russia

11 **Features of Plasma Formation During the Explosion of Conductors with Flat Surfaces in Megagauss Magnetic Fields**

S2-P-039301

Labetskaya Natalia[1], Datsko Igor[1], Vankevich Vladislav[1], Oreshkin Vladimir[1], Chaikovsky Stanislav[2]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Institute of Electrophysics UB RAS, Yekaterinburg, Russia

12 **Features of Skin Explosion of Foil Conductors of Grooved Configuration**

S2-P-017701

Igor Datsko[1], Vladislav Vankevich[1], Evgeny Oreshkin[2], Vladimir Oreshkin[1], Natalia Labetskaya[1]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] P.N. Lebedev Physical Institute RAS, Tomsk, Russia

13 **Plasma Formation and Its Characteristics During the Explosion of Flat Conductors with Holes**

S2-P-035401-Y

Vladislav Van'kevich[1], Igor Datsko[1], Natalia Labetskaya[1], Stanislav Chaikovsky[2], Vladimir Oreshkin[1]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Institute of Electrophysics UB RAS, Yekaterinburg, Russia

14 **Formation of Field Reversed Configuration in Plasma Discharge**

S2-O-045901

Alexander Mozgovoy, Ivan Baidin, Alexander Oginov, Ivan Tilikin

P.N. Lebedev Physical Institute RAS, Moscow, Russia

15 **Simulation of the Dynamics of Magnetically Collimated Jets Under Multi-beam Heating of Laser Targets**

S2-P-045701-Y

Anton Bay

Keldysh Institute of Applied Mathematics RAS, Moscow, Russia

S3 – High power microwaves

16 **Experimental Investigations of Multiwave Cherenkov Generator with Linear Polarization of Radiation**

S3-P-003902

Vladimir Koshelev, Sergey Smirnov

Institute of High Current Electronics SB RAS, Tomsk, Russia

17 **"Dry" Calorimeters for Measuring the Energy of High-power Microwave Pulses**

S3-P-003101

Aleksei Klimov

Institute of High Current Electronics SB RAS, Tomsk, Russia

18 **Comparative Analysis of the Influence of Dispersion Properties and Configuration Features of Corrugated and Homogeneous Nonlinear Transmission Lines with Saturated Ferrite on the Dynamics of Generated Microwave Oscillations. Numerical Simulation**

S3-O-032701-Y

Oleg Mutylin, Pavel Priputnev

Institute of High Current Electronics SB RAS, Tomsk, Russia

S4 – Pulsed power technology and applications

19 **Longitudinal Discharge Pumped Air Laser**

S4-P-008101

Mikhail Andreev, Ivan Konovalov, Yuri Panchenko, Alexey Puchikin, Dmitrii Lubenko

Institute of High Current Electronics SB RAS, Tomsk, Russia

20 **Features of Calculating the Jitter of the Output Pulse of the LTD Stage**

S4-P-000401

Vitaly Alexeenko, Andrey Zherlitsyn, Alexander Lenskiy

Institute of High Current Electronics SB RAS, Tomsk, Russia

21 **Pulse Transformation in Trigger Circuit of LTD Cavity**

S4-P-000402

Vitaly Alexeenko, Sergey Kondratiev, Vadim Sinebryukhov

Institute of High Current Electronics SB RAS, Tomsk, Russia

22 **Analytical Description of Ferrite-filled Nonlinear Transmission Line with Non-negligible Dispersion of Quasi-TEM Mode**

S4-P-004002-Y

Vitaly Patrakov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

23 **A Former of Bipolar High-voltage Pulses with a Duration of 0.5 ns in a Circuit with a Single Spark Gap**

S4-P-004901

Anatolii Efremov

Institute of High Current Electronics SB RAS, Tomsk, Russia

24 **Influence of RLC-parameters on the Energy Balance in an Ablative Pulsed Plasma Accelerator**

S4-P-005701-Y

Daria Fedorova, Denis Egoshin, Victor Telekh

Bauman Moscow State Technical University, Moscow, Russia

25 **Determination of the Current Channel Diameter in a Power Silicon Thyristor Switched by a Shock Ionization Wave**

S4-P-011102

Sergey Tsyranov[1], Olga Perminova[2]

[1] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[2] Ural Federal University, Yekaterinburg, Russia

26 **Influence of the Design of the Cathode Cavity on the Static Breakdown Voltage in Pseudospark Switch**

S4-P-012101

Yury Korolev, Nikolay Landl, Oleg Frants, Alexander Bolotov, Vitaly Nekhoroshev

Institute of High Current Electronics SB RAS, Tomsk, Russia

27 **Operation of the Trigger Unit Based on a Discharge over a Semiconductor Surface in the Pseudospark Switch**

S4-P-012102

Yury Korolev, Nikolay Landl, Oleg Frants, Alexander Bolotov, Vitaly Nekhoroshev

Institute of High Current Electronics SB RAS, Tomsk, Russia

28 **High-current Discharge-induced Shock Waves in a Cylindrical Chamber at Initial Pressures up to 35 MPa**

S4-P-010501

Jaroslav Triaskin, Alexander Budin, Michael Pinchuk, Nikita Tryaskin, Alexander Bogomaz

Institute for Electrophysics and Electric Power, Saint Petersburg, Russia

29 **About the Mechanism of High-energy Neutron Generation in Deuterium Gas-puff Z-pinch**

S4-P-019701

Vladimir Kokshenev, Alexander Shishlov, Nikolay Kurmaev, Rustam Cherdizov, Andrey Zherlitsyn

Institute of High Current Electronics SB RAS, Tomsk, Russia

30 **Numerical Simulation of Electron Flow Dynamics in Magnetically Insulated Transmission Lines with Submicrosecond Current at the 100 kA Level**

S4-P-019802

Igor Pegel, Vitaly Alexeenko, Oleg Mutylin, Andrey Zherlitsyn

Institute of High Current Electronics SB RAS, Tomsk, Russia

31 **Investigation of a Hybrid Ferrite Line with an Additional Shielding Electrode**

S4-P-022001

Anna Sadykova, Marat Ulmaskulov, Erik Ulmaskulov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

32 **A Stand for Studying the Processes of Plasma Formation and Decay in High-current Vacuum Interrupters**

S4-P-022601

Anatoly Yushkov[1], Sergey Popov[2], Alexey Nikolaev[2], Olga Nikitenko[1]

[1] National Research Tomsk Polytechnic University, Tomsk, Russia
[2] Institute of High Current Electronics SB RAS, Tomsk, Russia

33 **Study of Conditioning a Heated Copper Needle Cathode**

S4-P-024201

Yuriy Zemskov[1], Yuriy Mamontov[1], Igor Uimanov[1], Sergey Barengolts[2,3]

[1] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[2] A.M. Prokhorov General Physics Institute RAS, Moscow, Russia
[3] P.N. Lebedev Physical Institute RAS, Moscow, Russia

34 **Estimating the Temperature of a Micrometer-sized Copper Cathode Based on Measuring Its Thermal Elongation**

S4-P-024202

Yuriy Zemskov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

35 **Bricks of a Capacitive Storage for Generating a Square Pulse in an Air-insulated LTD Stage**

S4-P-024301

Andrey Zherlitsyn, Vitaly Alexeenko, Sergey Kondratiev

Institute of High Current Electronics SB RAS, Tomsk, Russia

36 **Upgrading the LT-6 Generator to Obtain a Flat-top Pulse in an Electron Diode**

S4-P-024302

Andrey Zherlitsyn, Igor Pegel, Ilya Tereshchenko, Vitaly Alexeenko

Institute of High Current Electronics SB RAS, Tomsk, Russia

37 **High-pressure Pulse-periodic Dielectric Barrier Discharge**

S4-P-024402

Pavel Gugin, Petr Bokhan, Dmitry Zakrevsky, Maxim Lavrukhin

A.V. Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia

38 **Numerical Simulation of Increasing the Voltage Pulse Duration in a Helical Forming Line with a Tesla Transformer**

S4-P-024801

Ruslan Tsygankov, Vladimir Konev, Pavel Vykhodtsev

Institute of High Current Electronics SB RAS, Tomsk, Russia

39 **Switching Characteristics of Serial Ro-43 Type Gas Spark Gaps During the Sharpening of Nanosecond Voltage Pulses**

S4-P-025302

Grigory Kurapov[1], Sergey Martemyanov[1], Mikhail Zhuravlev[1], Andrey Bukharkin[1], Dmitriy Makhanko[2], Gennady Remnev[1]

[1] National Research Tomsk Polytechnic University, Tomsk, Russia
[2] AO "Plazma", Ryazan, Russia

40 **Simulation of Radiation Transfer in Optically Transparent Plasma in Pulsed Plasma Thruster**

S4-P-027101-Y

Vadim Danilov, Victor Telekh, Denis Egoshin, Maksim Gembar

Bauman Moscow State Technical University, Moscow, Russia

41 **Movable Multi-gap Electrode System for Electropulse Destruction of Concrete Surface Layer in Water**

S4-P-028001

Artem Yudin, Michail Zhurkov, Sergey Mertemyanov, Sergey Datskevich

National Research Tomsk Polytechnic University, Tomsk, Russia

42 **Influence of Voltage Pulse Polarity on the Parameters of a Spall Cavity During Electric Pulsed Impact on Granite in a System of Electrodes Applied to One Surface**

S4-P-028002

Artem Yudin, Yibing Mao

National Research Tomsk Polytechnic University, Tomsk, Russia

43 **Electrical Breakdown in Polymer Materials Under 30-50 kV Pulses with Nanosecond Rise Times**

S4-P-030701

Ivan Punanov, Rafail Emlin, Yevgeniy Shcherbakov, Pavel Morozov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

44 **Eptron Based High Pulse Repetition Frequency Generator for Self-terminating Lasers Excitation**

S4-P-037502

Maxim Lavrukhin, Petr Bokhan, Pavel Gugin, Gleb Shevchenko, Dmytry Zakrevsky

A.V. Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia

45 **To Explore the Mechanism of Metal-organic Frameworks (MOFs) Synergistic Plasma-catalyzed CO_2 Conversion to C_{2+} Oxygenates**

S4-P-045301-Y

Chong Qi[1,2], Pengchen He[1], Tao Shao[1,2,3]

[1] Institute of Electrical Engineering CAS, Beijing, China
[2] University of Chinese Academy of Sciences, Beijing, China
[3] Wuhan University, Wuhan, China

S5 – Discharges with runaway electrons

46 **Propagation of Streamer Channel in Gap with Large Gas Pressure Difference**

S5-P-026801-Y

Natalia Semeniuk, Andrey Kozyrev, Vasily Kozhevnikov

Institute of High Current Electronics SB RAS, Tomsk, Russia

47 **Determination of Volt- and Ampere-second Characteristics of the Initial Stage of a Self-sustained Subnanosecond Discharge in Nitrogen**

S5-P-017402

Stepan Ivanov, Vasiliy Lisenkov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

48 **Hydrophilicity Enhancement of Nitinol Surfaces by Cold Atmospheric Plasma**

S5-P-016801

Dmitry Beloplotov[1], Bogdan Zaytsev[2], Eduard Sosnin[1,2], Dmitry Sorokin[1,2]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia

49 **Effect of Air Humidity on Emission of Diffuse Discharge in Point-to-point Gap**

S5-P-007401

Alexei Panchenko, Victor Tarasenko, Dmitry Beloplotov, Dmitry Sorokin

Institute of High Current Electronics SB RAS, Tomsk, Russia

50 **Characteristics of the Broadband Continuum in Discharge in Moist Air at Low Pressures**

S5-P-007402

Alexei Panchenko[1], Nikolai Popov[2], Victor Tarasenko[1], Evgenii Baksht[1]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Skobeltsyn Research Institute of Nuclear Physics, Moscow, Russia

51 **Table-top Pulse-periodic X-ray Source Based on Runaway Electron Generation in Prebreakdown Stage of Nanosecond Discharges in Air and Helium**

S5-P-000302

Dmitry Sorokin[1,2], Bogdan Zaytsev[2], Dmitry Beloplotov[1]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia

52 **Applicability of Bethe-type Runaway Thresholds for Electrons**

S5-P-044901-Y

Shicheng Zhao[1,2], Bangdou Huang[1,2], Cheng Zhang[1,2], Tao Shao[1,2,3]

[1] Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China
[2] University of Chinese Academy of Sciences, Beijing, China
[3] Wuhan University, Wuhan, China

53 **Spatial Scale of the Near-cathode Plasma Region, the Source of Runaway Electrons, in Weakly and Strongly Inhomogeneous Electric Fields**

S5-P-026501

Olga Zubareva[1], Mark Belyaev[1], Mikhail Gashkov[1], Michael Yalandin[1,2], Nikolay Zubarev[1,2]

[1] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[2] P.N. Lebedev Physical Institute RAS, Moscow, Russia

54 **High-voltage Nanosecond Discharge: Calculation of the Streamer Capacity at the Initial Stage of Breakdown in a Sharply Non-uniform Electric Field**

S5-P-006002

Mikhail Lomaev[1,2], Dmitry Beloplotov[1], Dmitry Pechenicin[1], Dmitry Sorokin[1,2]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] National Research Tomsk State University, Tomsk, Russia

55 **Spatial Characteristics of a Discharge with Inhomogeneous Preionization in Gases Mixtures with SF_6**

S5-P-027901

Arkadij Yastremskii, Sofia Yamplskaya, Yuri Panchenko

Institute of High Current Electronics SB RAS, Tomsk, Russia

56 **The Glow Region in Columnar Red Sprites: Experimental Simulation**

S5-P-019101

Evgenii Baksht, Viktor Tarasenko, Dmitry Sorokin, Viktor Panarin, Viktor Skakun

Institute of High Current Electronics SB RAS, Tomsk, Russia

57 **Influence of Cathode Material on the Appearance of the Townsend Stage of Negative Corona Discharge**

S5-P-019102

Evgenii Baksht, Alexander Burachenko

Institute of High Current Electronics SB RAS, Tomsk, Russia

58 **Self-consistent Numerical Model of an Electron Avalanche Developing in a Homogeneous Electric Field Under High Overvoltage**

S5-P-023202-Y

Yuriy Mamontov

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

59 **Volume Discharges of Superathmospheric Pressure in CO_2 Laser Mixtures in Gaps with Graphite Cathode**

S5-P-025501

Boris Kozlov[1], Evgeniy Kozlov[1], Dmitry Makhanko[2]

[1] Ryazan State Radio Engineering University named after V.F.Utkin, Ryazan, Russia
[2] JSC "PLASMA", Ryazan, Russia

60 **Mass-spectrometric Diagnostics of Current-voltage Characteristic Evolution During the Process of Degasation**

S5-P-014702-Y

Gleb Shevchenko, Petr Bokhan, Pavel Gugin, Maxim Lavrukhin, Dmitry Zakrevsky

A.V. Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia

61 **Influence of the Number and Frequency of Voltage Pulses on the Formation of a Runaway Electron Beam at Low Air Pressure**

S5-P-008002

Victor Tarasenko, Evgenii Baksht, Andrei Kozyrev, Alexandr Kokovin

Institute of High Current Electronics SB RAS, Tomsk, Russia

62 **Mechanisms of the Initial Stage of Formation of Spark Breakdown at Superatmospheric Pressures**

S5-P-014201-Y

Evgeny Kozlov[1], Boris Kozlov[1], Dmitry Makhanko[2]

[1] Ryazan State Radio Engineering University named after V.F.Utkin, Ryazan, Russia
[2] JSC "PLASMA", Ryazan, Russia

63 **Spatial Structure of Near-cathode Emission Regions of Runaway Electrons: Effects of Gas Pressure and Guiding Magnetic Field**

S5-P-026402

Nikolay Zubarev[1,2], Leonid Lobanov[1], Konstantin Sharypov[1], Sergey Shunailov[1], Michael Yalandin[1,2]

[1] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[2] P.N. Lebedev Physical Institute RAS, Moscow, Russia

Poster Sessions of the

18th International Conference on Modification of Materials with Particle Beams and Plasma Flows (CMM)

Conference Topics:

- *C1 – Beam and plasma sources*
- *C2 – Fundamentals of modification processes*
- *C3 – Modification of material properties*
- *C4 – Coatings deposition*
- *C5 – Nanoscience and nanotechnology*
- *C6 – Synchrotron and neutron research in materials science*

September 14 | Monday

House of Scientists

C1 – Beam and plasma sources

84 **Atomic Structure, Phase Stability and Mechanical Properties of CuCrMn-FeCoNi High-entropy Alloy Coatings**

C1-P-009001

Yuri Abzaev[1], Sergey Guda[2], Alexander Guda[2], Vladimir Kolesnikov[3]

[1] Tomsk State University of Architecture and Building, Tomsk, Russia
[2] Southern Federal University, Rostov, Russia
[3] Rostov State Transport University, Rostov, Russia

85 **Modes of Discharge Burning in Gas-filled Bubbles for Saline Solution with Negative Polarity of the Active Electrode**

C1-P-002201

Nikolay Landl, Alexandr Bolotov, Yury Korolev, Oleg Frants, Vladimir Geyman

Institute of High Current Electronics SB RAS, Tomsk, Russia

86 **Positive Column Plasma Parameters of Low-pressure Glow Discharge with Hollow Cathode and Hollow Anode**

C1-P-002202

Nikolay Landl, Evgeniy Ostroverkhov, Sergey Kovalsky, Vladislav Krivshenko, Maksim Torba

Institute of High Current Electronics SB RAS, Tomsk, Russia

87 **Modeling of the Current Transfer in Low-temperature Atmospheric-pressure Plasma Jet in Air Based on Glow Discharge**

C1-P-022501-Y

Aleksandr Kokovin, Nikolay Landl, Yuri Korolev, Oleg Frants, Vitaly Nekhoroshev

Institute of High Current Electronics SB RAS, Tomsk, Russia

88 **Investigation of the Electric Field and Potential in a Glow Discharge-based Atmospheric Pressure Plasma Jet**

C1-P-022502-Y

Aleksandr Kokovin, Vitaly Nekhoroshev, Nikolay Landl, Yury Korolev, Oleg Frants

Institute of High Current Electronics SB RAS, Tomsk, Russia

89 **Numerical Modeling of Plasma Jet Dynamics Formed by an Explosive Generator**

C1-P-015901

Dmitry Boykov, Nikita Savenko, Egor Urvachev

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90 **Ion Charge State Composition of Vacuum Arc Plasma with Copper-chromium Electrodes in a Magnetic Field**

C1-P-011201

Alexey Nikolaev, Valeria Frolova, Georgy Yushkov

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91 **Development of Duoplasmatron-based Compact Ion Source for Low-background Experiment Facilities**

C1-P-007002-Y

Andrey Oleinik[1], Alexander Chepurnov[2], Artemy Klenin[1], Maria Berezhnaya[1], Andrey Podoynitsyn[1]

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92 **Pulsed Vacuum Arc with a Magnetic Cathode at the Moments of Plasma Formation and Decay**

C1-P-011501

Georgy Yushkov, Vadim Gridilev, Alexey Nikolaev, Efim Oks

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93 **High-frequency and Bimodal Atmospheric-pressure Plasma Jet**

C1-P-029001

Dmitry Zakrevsky[1,2], Pavel Gugin[2,1], Gleb Shevchenko[2,1], Irina Schweigert[1]

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94 **Dependence of the Total Ion Current on the Arc Current in a Vacuum Arc Discharge on a W-FUZZ-coated Cathode at Sub-ampere Discharge Currents**

C1-P-023602

Ilya Muzyukin, Pavel Mikhailov

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95 **Temporal Dependence of the Plasma Ion Flux Composition in a Vacuum Arc with a Current of 15 - 80 A**

C1-P-024101-Y

Pavel Mikhailov, Ilya Muzyukin, Dmitriy Shmelev

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96 **Defining the Threshold Voltage for Vacuum Arc Ignition**

C1-P-024102-Y

Pavel Mikhailov, Ilya Muzyukin, Yuriy Zemskov, Igor Uimanov

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97 **The Effect of Ionization on the Interatomic Interaction in a Metal Using Aluminum as an Example**

C1-P-027701-Y

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98 **High-transmission Energy Analyzer of Ion Fluxes**

C1-P-018002

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99 **Plasma Parameters of Magnetron Discharge with Electron Injection in Reactive Mode**

C1-P-038901-Y

Alexander Cherkasov, Maxim Shandrikov, Efim Oks, Alexey Bugaev, Vasily Gushenets, Maxim Azhgikhin

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100 **Modelling of ICP Discharge in a Helium-silane Mixture for Functional Nanostructure Synthesis**

C1-P-012602

Almaz Saifutdinov, Sergey Sysoev, Aliia Saifutdinova, Ruslan Fazulzyanov

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101 **Generation of Beam-plasma Formations in a System Based on a Non-self-sustaining Glow Discharge with a Hollow Cathode and an Extended Hollow Cylindrical Mesh Electron Emitter**

C1-P-034501

Evgeniy Ostroverkhov, Vladimir Denisov, Sergey Kovalsky, Vladislav Krivshenko

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102 **Vacuum Electron-ion-plasma Stand "VEIPS" with the Electron-beam Source "SOLO"**

C1-P-019301-Y

Alexandr Nazarov, Anton Teresov, Vladimir Denisov, Artem Egorov, Evgenii Ostroverkhov

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103 **Systems for Generation of Gas and Gas-metal Beam-plasma Formations for Combined Ion-plasma Treatment of Steel Surfaces**

C1-P-033002

Vladimir Denisov, Nikolay Koval, Mikhail Savchuk, Evgeny Ostroverkhov, Danil Ignatov, Artem Egorov, Sergey Kovalsky, Tamara Koval, Ilya Podgorny, Vladislav Krivshenko, Vladislav Yakovlev, Yulia Denisova, Andrey Leonov, Daniil Zaitsev

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104 **Study of the Generation Processes of Beam-plasma Formations in an Extended Hollow Cathode of a Low-pressure Non-self-sustained Glow Discharge**

C1-O-042501-Y

Vladislav Krivshenko, Evgeniy Ostroverkhov, Ilya Podgorny, Vladimir Prokopyev, Sergey Kovalsky, Artem Egorov, Vladimir Denisov

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105 **Plasma and Beam Technologies for Surface Modification of Materials and Media: Experience and New Projects**

C1-O-020101

Dmitri Karpov, Aleksandr Ivanov, Sergey Kosogorov, Konstantin Tkachenko

JSC "D.V.Efremov Institute of Electrophysical Apparatus", Saint Petersburg, Russia

106 **Numerical Model of an Arc Gas Discharge at High Frequencies**

C1-O-000601

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C2 – Fundamentals of modification processes

107 **Investigation of Incident Ion Flux Composition at the Linear Plasma Device BPD-PSI**

C2-P-026302-Y

Nikita Sergeev

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108 **Spectrometric Characteristics of Plasma Generated by Arc Vaporizers with Metal Cathodes and a PINK Plasma Generator**

C2-P-027302-Y

Ivan Azhazha, Nikita Prokopenko, Dmitry Beloplotov, Maxim Vorobyov, Nikolay Koval

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C3 – Modification of material properties

109 Plasma Modification of PCL/PVA Scaffolds to Regulate Drug Release Rate

C3-O-006501-Y

Anastasia Bryuzgina[1], Olesya Laput[1], Daniil Zuza[2], Vitaly Nekhoroshev[2], Irina Kurzina[1]

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110 Functionalization of 3D-scaffolds Based on Polycaprolactone by Methods of Plasma Treatment and Precipitation of Bioactive Substances

C3-P-038302-Y

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111 Plasma-chemical Hydrophilization of Polydimethylsiloxane: Effect of Atomic Oxygen Dose

C3-O-017301

Mikhail Isupov, Vadim Pinaev, Alexander Fedoseev, Anna Petrova

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112 **Effect of Plasma Modification on the Adhesive Properties of Polyamide Surfaces**

C3-O-028801-Y

Stepan Agnaev[1,2], Kirill Demin[1,2], Saian Dondukov[1,2], Andrey Khagleev[1,2]

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113 **Structure and Optical Properties of Silicon Super-doped with Indium and Arsenic by Implantation and Electron Beam Annealing**

C3-P-007101-Y

Ilya Chuprys[1], Fadei Komarov[1], Oleg Milchanin[1], Nilolay Koval[2], Anton Teresov[2], Irina Parkhomenko[3], Olga Korolik[3]

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114 **Improvement of Operating Characteristics of EP823 Steel Tubular Samples in HLMC**

C3-P-003701

Konstantin Tkachenko[1], Sergei Kosogorov[1], Andrey Chikiriaka[1], Nikolay Shchegolikhin[1], Georgy Birzhevoy[2]

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115 **Study of the Effect of an Electron Beam with Energy of 10 keV on the Surface of Carbon Foils**

C3-P-014901-Y

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116 **Structure and Luminescent Properties of Ultrathin Crystalline Films of Tin Dioxide Formed on Silicon by Laser-plasma Method**

C3-P-016101-Y

Irina Rogovaya[1], Fadey Komarov[1], Maxim Vorobyov[2], Irina Parkhomenko[3], Mikhail Puzyrev[1], Oleg Milchanin[1]

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117 **Structure and Mechanical Properties of the Hypereutectic Silumin Surface Layer Alloyed with Chromium Atoms**

C3-P-008601

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118 **Formation of Corrosion Resistant and Catalytic Active Layers with Use of Ion Beam Assisted Deposition of Metals from Vacuum Arc Discharge Plasma**

C3-P-022301

Vasily Poplavsky, Oleg Bobrovich, Alexander Dorozhko, Vladimir Matys

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119 **The Effect of the Vacuum Ion Beam Plasma Treatment of Steel on Biofouling and Biocorrosion of the Material**

C3-P-022801-Y

Kirill Obuchov[1], Tamara Dorofeeva[2], Marina Fedorischeva[2], Viktor Sergeev[2]

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120 **The Effect of High-current Pulsed Electron Beam Irradiation on Crack Formation During Modification of Condensation-diffusion Ion-plasma Coatings**

C3-P-025602

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121 **Investigation of Ion Irradiation Effect on a Metal Alloy Atomic**

C3-P-013101-Y

Efrem Makarov, Vladimir Semionkin

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122 **Modification of Polyketone Surface Morphology Under the Action of Bremsstrahlung from Accelerated Electrons**

C3-P-025701

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123 **Phase Composition and Structure of the "film (Ti-B)/(AISI 304 Steel) Substrate" System Formed by an Integrated Method**

C3-P-016601

Yurii Ivanov[1], Vladimir Shugurov[1], Nikita Prokopenko[1], Elizaveta Petrikova[1], Oleg Tolkachev[1], Olga Krysina[1], Nikolai Koval[1], Vladimir Astashinsky[2]

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124 **Phase Composition and Microstructure of the Ti6Al4V Surface Layer After Nanosecond UV Laser Treatment**

C3-P-028401

Tatyana Sablina, Marina Kandaurova, Ilia Zyatikov, Yurii Panchenko

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125 **Comparative Surface Analysis of TiNi Treated by Wet Chemical Etching and UV Laser Radiation**

C3-P-028402

Tatyana Sablina, Marina Kandaurova, Ilia Zyatikov, Aleksey Puchikin, Yurii Panchenko

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126 **Modification of Metal-matrix Composites Based on a Titanium by a Pulsed Electron Beam**

C3-P-030601

Anton Teresov, Andrey Leonov, Anatoliy Skosyrskiy, Mikhail Savchuk, Elizaveta Petrikova

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127 **Modification of Al-20Si Alloy with a Pulsed Electron Beam**

C3-P-028101-Y

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128 **Modeling the Spatiotemporal Temperature Distribution in Complex-shaped Ceramics During Electron-beam Treatment in Forevacuum**

C3-P-016401

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129 **Modeling of Temperature Fields in Heat-resistant Alloys During High-intensity Ion Implantation**

C3-P-032601

Anna Ivanova, Olga Korneva, Galina Bleykher

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130 **Modification of Silicon Surface Properties by High-intensity Implantation: Structural, Optical, and Electrophysical Aspects**

C3-P-032602

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131 **Surface Treatment of Glass and Polymers by a Pulsed Electron Beam in the Forevacuum Pressure Range**

C3-P-004402

Andrey Kazakov, Valery Arkatov, Yuriy Burachevsky, Nikolay Panchenko

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132 **Composition, Structure and Mechanical Properties of Ti-35Nb-2Ta-3Zr/Zn Composites Treated by Compression Plasma Flows**

C3-P-032301

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133 **Cleaning the Target Surface by an Arc Discharge Initiated by a Pulsed Electron Beam**

C3-P-038201-Y

Sergey Doroshkevich, Ruslan Kartavtsov, Maksim Vorobyov, Pavel Moskvin, Nikolay Koval, Diana Mokeeva

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134 **Synthesis of TiN-Cu Composite Coatings on R18 High-speed Steel by Plasma-chemical Vacuum Deposition**

C3-P-039201

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135 Interactions of High Power Ion Beams with the Surface of Porous Materials

C3-P-031701

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136 Corrosion Resistance of Magnesium Alloys Ml5

C3-P-031702

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137 Evaluation of the Impact of Low-temperature Plasma on the Composition of Technical Hemp Fiber

C3-P-025801-Y

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138 **Effect of Atmospheric Low-temperature Plasma on the Wettability of Printed Circuit Board Contact Pads**

C3-P-041402-Y

Artem Belev, Nikolay Sharapov

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139 **Copper-steel Contacts for Vacuum Circuit Breakers by Wire Electron Beam Additive Technology**

C3-P-002801

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140 **Modification of the Microstructure and Mechanical Properties of the Surface Layer of Hard Alloys by High-power Pulsed Ion Beams**

C3-O-041301-Y

Zhengchuan Zhao, Vladislav Tarbokov, Olga Korneva, Sergey Pavlov, Alexey Pirozhkov, Gennady Remnev

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141 **Modeling of Field Distribution in Insulating Material**

C3-P-004801

Evgeniy Radzivilov, Artem Yudin

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142 **Ti-Si-B Coating Synthesized by Vacuum-arc Plasma-assisted Method**

C3-P-034801

Elizaveta Petrikova, Yurii Ivanov, Oleg Tolkachev, Nikita Prokopenko, Olga Krysina, Anatoliy Klopotov, Nikolay Koval

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143 **Properties of Aluminum Alloys Manufactured by Additive Method Subject to Electron Beam Processing**

C3-P-034802

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C4 – Coatings deposition

144 **Deposition of Silicon-carbon Films on Aluminum Using a Fore-vacuum Electron Beam Source**

C4-P-002101-Y

Ilya Bakeev, Viktor Burdovitsin

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145 **Modification of the Surface of Nitinol Products Using Carbon-based Coatings**

C4-O-033401-Y

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146 **Deposition of $CsPbBr_3$ Films by Magnetron Sputtering of Mechanosynthesized Targets**

C4-P-017201-Y

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147 **Control of Precursor Dissociation in the Synthesis of Lithium-ion Electrolyte Films by Anodic Evaporation in a Low-pressure Arc**

C4-P-019601

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148 **Complex Electron-ion-plasma Method of Saturation of the Surface Layer of Steel with Boron**

C4-P-027301-Y

Ivan Azhazha, Yurii Ivanov, Vladimir Shugurov, Elizaveta Petrikova, Nikita Prokopenko, Oleg Tolkachev, Olga Krysina, Nikolay Koval

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149 **Features of Ion-plasma Formation on the Aluminum, Titanium and Tantalum Alloys Surfaces of Metals-alloyed Layers**

C4-P-022302

Vasily Poplavsky

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150 **Effect of the Substrate Heating Temperature on the Coating Structure During Evaporation of the YSZ**

C4-P-018901-Y

Sergey Salnikov

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151 **Physico-mechanical Properties of GZO Coatings in the Forevacuum Pressure Range**

C4-P-018902-Y

Sergey Salnikov

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152 **Structural-phase Evolution and Performance of Al-based Surface Alloys on Austenitic Stainless Steel**

C4-P-023402

Andrey Solovyev, Nikita Madzhara, Grigory Ozur, Pavel Kiziridi, Anna Shipilova

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153 **Al_2O_3 Powder Pretreatment Efficiency During Powder Interactions with an Electron Beam in a Forevacuum**

C4-P-031302

Aleksey Zenin, Anna Dolgova

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154 **Formation of Ti_2AlC Max Phase in Magnetron Sputtered Coatings on Different Sublayers After Annealing**

C4-P-036001-Y

Alexey Maslov, Alexey Nikolaev, Kamil Ramazanov

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155 **Diffusion Boronizing of Wear-resistant Cast Iron YChKh28 in Powder Mixtures Containing Boron and Copper**

C4-P-038001

Alexandr Milonov[1], Undrah Mishigdorzhiyn[1], Aleksandr Semenov[1], Stepan Lysykh[1], Vadim Pavlyuchenko[2]

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156 **Investigation of the Combined Modification of the Surface of E110 Alloy Samples by Applying a Chromium Coating and Processing with a High-current Pulsed Electron Beam**

C4-O-003801-Y

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157 **Oxidation Resistance of Cr-Al-N-O Coatings**

C4-P-032302

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158 **Oxidation Resistance of Multylayer Cr-Al-N/Ti-B-N Coatings Obtained by Dual Magnetron Sputtering**

C4-P-021202-Y

Elisaveta Kraynova, Alexander Grenadyorov, Alexander Zakharov, Konstantin Oskomov, Anna Shipilova, Andrey Solovyev

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159 **Thermally Activated Diffusion Between Cr-Al-O-N Coating and Substrate**

C4-P-032901-Y

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[3] Songshan Lake Materials Laboratory, Dongguan, China

160 **Simulation of Ablation Target Evaporation Modes with a Submillisecond Electron Beam**

C4-P-020702-Y

Daniil Zaytsev, Dmitry Shpanov, Ruslan Kartavtsov, Maxim Vorobyov, Tamara Koval, Vladislav Nedoshivin

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161 **Vacuum-arc Plasma Assisted Coating Formation of Titanium-based Oxide Coatings**

C4-P-034001-Y

Nikita Prokopenko, Elizaveta Petrikova, Yurii Ivanov, Vladimir Shugurov, Maxim Vorobyov, Nikolay Koval

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162 **Modeling of Ion Fluxes in an Ar/D_2 Discharge at Different Substrate Bias Voltages**

C4-P-042401-Y

Daniil Butniakov, Stepan Krat

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163 **Structure and Mechanical Properties of Coatings of Multicomponent Solid Solutions of Nitrides Based on Elements Cr, Ti, Zr, Al, Si Created by Simultaneous Vacuum-arc Synthesis**

C4-O-035101

Andrey Kuleshov, Dmitry Rusalsky

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C5 – Nanoscience and nanotechnology

164 **Surface Modification of TiNi-based Alloys by High-current Low-energy Electron Beams**

C5-P-021401

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165 **Modification of the Optical Characteristics of SiGe Structures by Integrating Mie Resonators**

C5-P-018701-Y

Olzhas Kukenov, Vladimir Dirko, Kirill Lozovoy, Oleg Vorsin, Konstantin Smorodin, Xeniya Maier, Nikita Plotnikov, Vladislav Katrenko, Genrikh Shabanov, Andrey Kokhanenko

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166 **Application of the Llewellyn-Jones Equation to Interpreting Product Yield Data in the Production of Metal Nanopowders by Spark Discharge Method**

C5-P-008201-Y

Artem Maksimov[1], Evgeniy Azarkevich[1], Igor Beketov[1,2]

[1] Institute of Electrophysics UB RAS, Yekaterinburg, Russia
[2] Ural Federal University, Yekaterinburg, Russia

167 **Microspectroscopy of Luminescent Defects Induced in Lithium Fluoride Crystals by a Beam of Accelerated Silver Ions**

C5-P-014002

Victor Paperny[1], Nastya Kovalenko[1], Vladimir Dresvyansky[2], Alex Chernykh[1]

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[2] Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia

168 **Charge Induction at Sidewalls of Nanogroove Scanned by SEM and Its Influence on the Measured Linewidth**

C5-P-042701

Yury Larionov

Prokhorov General Physics Institute RAS, Moscow, Russia

169 **Highly Efficient Carbon Nanostructures Synthesized by Plasmadynamic Method for Electrocatalytic Hydrogen Evolution**

C5-P-046501-Y

Yuliya Shanenkova, Dmitry Nikitin, Ivan Shanenkov, Artur Nassyrbayev, Vladimir Fedorov

National Research Tomsk Polytechnic University, Tomsk, Russia

C6 – Synchrotron and neutron research in materials science

170 In Situ Kinetics of Neutron-induced Tritium and Helium Release from Li_2TiO_3 Under Reactor Irradiation

C6-P-021801

Yuriy Ponkratov[1], Yuriy Gordienko[1], Victor Baklanov[1], Yevgrny Tulubayev[1], Kuanysh Samarkhanov[1], Yuriy Tyurin[2]

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171 Understanding the Local Structure of Selenium in Se-derivative Amidoxime Composites Pre- and Post-uranium Sorption Via XAS

C6-P-041001-Y

Yaroslav Zernov, Savelii Pisarev, Natalia Fedorova, Vasilii Nemtinov, Anton Shurygin

Far Eastern Federal University, Vladivostok, Russia

172 Correlation Between Thermochromism and Crystal Structure of the Tb^{3+} Complex Studied by Single-crystal Diffraction

C6-P-041501-Y

Savelii Pisarev, Alexey Lembikov, Yaroslav Zernov, Vasilii Nemtinov, Ekaterina Ponomareva, Nikita Ogorodnikov, Artur Drankov, Kirill Pervakov, Anton Shurygin

Far Eastern Federal University, Vladivostok, Russia

173 **In Situ Studies Using Synchrotron Radiation of Phase Formation and Lattice Distortion Formation in Multielement, Multilayer Coatings Based on Nitrides and Oxides Synthesized by the Vacuum-arc Method**

C6-P-003602-Y

Andrey Leonov[1], Vladimir Denisov[1], Anton Teresov[1], Julia Denisova[1], Mikhail Savchuk[1], Artem Egorov[1], Zakhar Vinokurov[2], Alexander Shmakov[2,1]

[1] Institute of High Current Electronics SB RAS, Tomsk, Russia
[2] Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia

174 **Local Atomic Structure of Nanostructured ZnO:Eu from Synchrotron X-ray Absorption Spectroscopy**

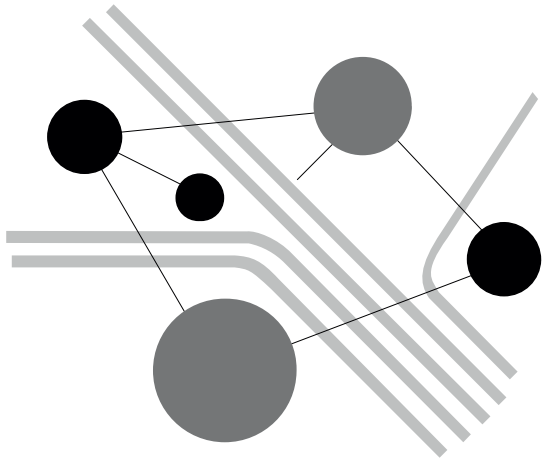
C6-P-042001-Y

Olesya Kapustina, Yaroslav Zernov, Savelii Pisarev, Natalya Fedorova, Tatyana Reznichenko, Anton Shurydin

Far Eastern Federal University, Vladivostok, Russia

Poster Sessions of the

22nd International Conference on Radiation Physics and Chemistry of Condensed Matter (RPC)



Conference Topics:

- *R1 – Physical and chemical processes in inorganic materials induced by energy beams*
- *R2 – Materials under extreme conditions: design, characterization and applications*
- *R3 – Modern research methods and instruments, modeling of the interaction of radiation with materials*
- *R4 – Radiation technologies: advantages and applications*

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House of Scientists

R1 – Physical and chemical processes in inorganic materials induced by energy beams

64 **Criteria for the Ignition of Explosives in the Form of a Parallelepiped, a Finite-length Cylinder, and a Sphere**

R1-P-007901

Alexander Khaneft

Kemerovo State University, Kemerovo, Russia

65 **Numerical Simulation of the Ignition of an Ammonium Perchlorate-Aluminum Microparticle System by a Laser Pulse with a Duration of a Millisecond**

R1-P-007902

Alexander Khaneft

Kemerovo State University, Kemerovo, Russia

66 **Radiation-chemical Synthesis of Cerium Dioxide Nanoparticles from an Aqueous Solution of Cerium Nitrate with Polyvinylpyrrolidone**

R1-P-002501

Vladislav Ilves, Mikhail Balezin, Sergey Sokovnin

Institute of Electrophysics UB RAS, Yekaterinburg, Russia

67 **Mean Charges of Ions Formed During Cascade Decays of Inner-shell Vacancies in High-Z Atoms**

R1-P-013501-Y

Alexander Chaynikov, Andrei Kochur, Alexey Dudenko

Rostov State Transport University, Rostov, Russia

68 **Increasing Surface Hydrophilicity of AISI 316L Stainless Steel Using Nanosecond UV Laser Irradiation**

R1-P-012002-Y

Marina Kandaurova, Tatyana Sablina, Ilya Zyatikov, Yurii Panchenko

Institute of High Current Electronics SB RAS, Tomsk, Russia

69 **Synthesis of YAG-Ce Ceramics in the GIN-600 Accelerator Diode by Self-focused Electron Beam Evaporation Method**

R1-P-029702

Vladimir Oleshko

National Research Tomsk Polytechnic University, Tomsk, Russia

70 **The Role of F^+ and F Centers in the Formation of OSL Properties of Thin Layers in Laser-treated Corundum Samples**

R1-P-013001-Y

Andrew Petrakovich, Alexander Surdo, Rinat Abashev

M.N.Mikheev Institute of Metal Physics UB RAS, Yekaterinburg, Russia

71 **Sputtering Resistance of Thin W-Ta-V-Cr(-Hf) High Entropy Films Under 2 keV Ar^+ Bombardment**

R1-P-044001

Sergey Pavlov[1], Shuhuey Li[1], Sergey Zenkin[1], Jingrui Huang[1], Fedor Konusov[1], Maxim Syrtanov[1], Olga Korneva[1], Kristina Kamelina[1], Vladislav Tarbokov[1], Yuri Turin[1], Peng Zhang[2], Feng Jiang[2], Xianxiu Mei[2], Gennady Remnev[1]

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[2] Dalian University of Technology, Dalian, China

R2 – Materials under extreme conditions: design, characterization and applications

72 **Hydrogen Interaction with Nb/Zr Functionally Graded Materials: Sorption and Desorption Performance**

R2-P-001101-Y

Stepan Korneev, Lomygin Anton, Mark Kruglyakov

National Research Tomsk Polytechnic University, Tomsk, Russia

73 **Determination of the Effects of High-temperature Gas-phase Hydrogenation on the Structure and Defect State of Zirconium E110 Alloy Using in Situ Positron Spectroscopy and Synchrotron X-ray Diffraction**

R2-P-001002-Y

Mark Kruglyakov, Viktor Kudiiarov, Roman Laptev

National Research Tomsk Polytechnic University, Tomsk, Russia

74 **Laser Initiation of Petn-sensitized with Bimetallic Core-shell Nanoparticles**

R2-P-025102

Anastasia Borovikova, Alexander Zvekov, Alexander Kalenskii, Alexey Ivanov, Pavel Vinodiktov

Kemerovo State University, Kemerovo, Russia

75 **The Strategies of Curcumine Derivation for Optics Applications**

R2-P-011802

Alexander Zvekov, Alexander Kalenskii, Alexey Ivanov, Vyacheslav Kachurin, Anna Tuboltseva

Kemerovo State University, Kemerovo, Russia

76 **Effects of Pre-existing Screw Dislocations on Elemental Segregation in a Refractory Complex Concentrated TiZrHfNb Alloy**

R2-P-035001-Y

Maksim Kovalenko, Igor Safronov, Nikolay Komarov, Vladimir Uglov

Belarusian State University, Minsk, Belarus

R3 – Modern research methods and instruments, modeling of the interaction of radiation with materials

77 **Development an Electron Beams Interaction Model for the Rapid Analysis Method for the Determination of C-14 Specific Activity in Irradiated Graphite**

R3-P-001701

Alexander Pavliuk, Ekaterina Zelenetskaya

National Research Tomsk Polytechnic University, Tomsk, Russia

78 **Effect of Dynamic Screening of Target Atoms in Ion Track Formation in GaN**

R3-P-036101-Y

Semion Moskalets[1], Ruslan Rymzhanov[2,3], Alexander Volkov[1]

[1] P.N. Lebedev Physical Institute RAS, Moscow, Russia
[2] Joint Institute for Nuclear Research, Dubna, Russia
[3] Institute of Nuclear Physics, Almaty, Kazakhstan

79 **XPS Fine Structure as a Probe for Electronic Effects in Organic Luminophores Based on Lanthanide Adducts**

R3-P-040801-Y

Anton Shurygin, Vasilii Nemtinov, Vladimir Korochentsev, Yaroslav Zernov

Far Eastern Federal University, Vladivostok, Russia

80 **The Cathodoluminescence of Petroleum Fractions**

R3-P-026602-Y

Nadezhda Bezlepkina[1,2], Alfia Spirina[2], Elena Bocharnikova[1,2], Olga Tchaikovskaya[1,2], Vladimir Solomonov[2], Irina Russkikh[3], Natalya Krasnoyarova[3], Natalya Tanykova[4], Yuliya Petrova[4]

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[4] Surgut State University, Surgut, Russia

R4 – Radiation technologies: advantages and applications

81 **Influence of UV-radiation on the Operational Properties of PTFE Vakofluvis-20**

R4-P-042102

Eugeny Vinogradov, Alexander Voroncov, Natalia Valko

Yanka Kupala State University of Grodno, Grodno, Belarus

82 **Influence of the Inhomogeneity of Electron Energy Losses in the Charge on the Synthesis of Tungstates**

R4-P-029201

Zhanara Bakiyeva[1], Gulnur Alpyssova[1], Dmitriy Afanasyev[1], Anna Karnaukhova[2], Dossymkhan Mussakhanov[3]

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[2] National Research Tomsk Polytechnic University, Tomsk, Russia
[3] L.N.Gumilyov Eurasian National University, Qaraghandy, Kazakhstan

83 **Optimization of Electrophysical Parameters of Neutron-doped Monocrystalline Silicon by Heat Treatment**

R4-O-009601

Muzaffar Erdonov

Institute of Nuclear Physics, AS RU, Tashkent, Uzbekistan

Poster Sessions of the

7th International Conference on New Materials and High Technologies (NMHT)

Symposium Topics:

- *N1 – Inorganic materials and coatings*
- *N2 – Self-propagating high-temperature synthesis and advanced powder technologies*
- *N3 – Carbon materials for electronics and photonics*
- *N4 – Resource- and energy-saving technologies*
- *N5 – Synchrotron radiation detectors*

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House of Scientists

N1 – Inorganic materials and coatings

175 **Mineral-based Protective and Decorative Coatings with Spinel-type**

N1-P-002302

Nina Radishevskaya, Anna Nevmyvaka

Tomsk Scientific Center SB RAS, Tomsk, Russia

176 **Optimization of Technology and Parameters of Synthesis of Yttrium-aluminum Garnet Powders by Co-deposition**

N1-P-012501-Y

Daria Deulina, Vladimir Paygin, Ivan Shevchenko, Daniil Stepichev, Edgar Dvilis, Oleg Khasanov

National Research Tomsk Polytechnic University, Tomsk, Russia

177 **Application of Rational Powder Compaction Techniques for the Partially Stabilized Zirconia Ceramics Fabrication**

N1-P-012502-Y

Daria Deulina, Vladimir Paygin, Edgar Dvilis, Oleg Khasanov, Ivan Shevchenko, Oleg Tolkachev, Daniil Stepichev

National Research Tomsk Polytechnic University, Tomsk, Russia

178 **Mullite Ceramics Doped with ZrO_2 Obtained in an Arc Plasma Environment**

N1-P-017001-Y

Valentin Shekhovtsov, Akhrorbek Ulmasov, Anastasia Litovko

Tomsk State University of Architecture and Building, Tomsk, Russia

179 **Mechanisms of the Influence of MgO on the Formation of Crystalline Phases of SiAlON Under Nonequilibrium Conditions of Plasa Synthesis**

N1-P-017002-Y

Valentin Shekhovtsov, Aisulu Abyshova, Mark Semenovykh

Tomsk State University of Architecture and Building, Tomsk, Russia

180 **Study of the Microstructure and Elemental Composition of the Surface of Carbon Stripper Foils**

N1-P-014902-Y

Zahar Lyullin[1,2], Sergey Trifonov[3], Sergey Grigorenko[1], Dmitrii Kostrin[2], Ivan Goltyaev[1,2]

[1] JSC "D.V.Efremov Institute of Electrophysical Apparatus", Saint Petersburg, Russia
[2] Saint Petersburg Electrotechnical University, Saint Petersburg, Russia
[3] LLC "NIA Engineering", Saint Petersburg, Russia

181 **Investigation of Plasma Synthesis Products in the $CaO-Al_2O_3-SiO_2$ System**

N1-P-018401-Y

Akhrorbek Ulmasov, Mark Semenovykh, Roman Bakshanskiy

Tomsk State University of Architecture and Building, Tomsk, Russia

182 **Formation of Transition Layer in Mullite-SiC Ceramic Product During Plasma Melting**

N1-P-018402-Y

Akhrorbek Ulmasov, Valentin Shekhovtsov, Alina Kim

Tomsk State University of Architecture and Building, Tomsk, Russia

183 **Synthesis of High-entropy Boride in an Open Atmosphere Using a Three-phase Electric Arc Plasma Reactor**

N1-P-019201-Y

Zhanar Bolatova, Yulia Li, Yaroslav Shugontsov, Yulia Neklya, Alexander Pak

National Research Tomsk Polytechnic University, Tomsk, Russia

184 **Formation of Composites Based on Molybdenum Boride with the Addition of Molybdenum Disilicide by Spark Plasma Sintering**

N1-P-023001-Y

Yulia Neklya, Yuliya Vassilyeva, Alexander Pak

National Research Tomsk Polytechnic University, Tomsk, Russia

185 **Enhancing the Wear Resistance of Titanium by Forming a Boron-containing Surface Alloy Via LEHCEB Treatment**

N1-P-021001-Y

Evgeniy Pesterev, Evgeniy Yakovlev, Andey Solovyev, Vsevolod Petrov, Alexey Markov

Tomsk Scientific Center SB RAS, Tomsk, Russia

186 **Fabrication of Hardening Titanium Coatings by Dual Electron Beam Treatment**

N1-P-010001

Tatyana Krylova, Evgeniy Yakovlev, Evgeniy Pesterev, Vsevolod Petrov, Andrey Solovyov, Aleksey Markov

Tomsk Scientific Center SB RAS, Tomsk, Russia

187 **Fabrication of Aluminum-matrix Coatings by Non-vacuum Electron Beam Cladding**

N1-P-010002

Tatyana Krylova

Tomsk Scientific Center SB RAS, Tomsk, Russia

188 **Computer Simulation of Thermal Fields for the Formation of a Boron-containing Surface Alloy on the Surface of a VT6 Titanium Alloy Using a Low-energy High-current Electron Beam**

N1-P-031201

Andrey Solovyov, Evgeniy Yakovlev, Evgeniy Pesterev, Vsevolod Petrov, Aleksey Markov

Tomsk Scientific Center SB RAS, Tomsk, Russia

189 **Formation of a Boron-containing Surface Alloy on VT6 Titanium Alloy Using a Low-energy High-current Electron Beam**

N1-P-031202

Andrey Solovyov, Evgeniy Yakovlev, Evgeniy Pesterev, Vsevolod Petrov, Aleksey Markov

Tomsk Scientific Center SB RAS, Tomsk, Russia

190 **Influence of Micro-arc Oxidation Voltage on Growth and Properties of Mn-Si-CaP and Sr-Si-CaP Coatings on Titanium**

N1-P-033102-Y

Elizaveta Akimova, Ekaterina Komarova, Marina Ostapenko, Tatiana Tolkacheva, Alexander Kashin, Yurii Sharkeev

Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia

191 **Experimental Study of Corium Interaction with AlOSb Sacrificial Material Under Ex-vessel Retention Conditions**

N1-P-033601

Maxat Bekmuldin, Kuanyshbek Toleubekov, Asan Akayev, Ivan Kukushkin

Institute of Atomic Energy of National Nuclear Center of the Republic of Kazakhstan, Semey, Kazakhstan

192 **Zeolite-based Matrix for Radioactive Yttrium Immobilization: Structure and Surface Characteristics**

N1-P-041201-Y

Natalia Fedorova, Yaroslav Zernov, Anton Belov

Far Eastern Federal University, Vladivostok, Russia

193 **Development of a Method for the Local Formation of MAO Coatings in a Short-pulse Mode in an Electrolyte Fow**

N1-P-045601-Y

Anton Kondratenko, Anton Bol'shanin, Svetlana Arbuzova, Evgeny Khokhryakov, Pavel Butyagin

LLC "MANEL", Tomsk, Russia

194 **The Effect of Microarc Oxidation Anodic-cathodic Pulse Parameters on Coating Properties**

N1-P-046901

Svetlana Arbuzova, Anton Bol'shanin, Pavel Butyagin

MANEL, Tomsk, Russia

N2 – Self-propagating high-temperature synthesis and advanced powder technologies

195 **Numerical Optimization of Shock-wave Synthesis in Reactive Al/S Mixtures Using Inverse-conical Ampoules**

N2-P-001902

Sergey Zelepugin, Oksana Ivanova

Tomsk Scientific Center SB RAS, Tomsk, Russia

196 **Physicomechanical Properties of the Ni3Al Intermetallic Compound Depending on the Time of Low-energy Mechanical Activation and the Heating Mode of the Powder Mixture**

N2-P-002602

Evgeny Boyangin, Oleg Lapshin

Tomsk Scientific Center SB RAS, Tomsk, Russia

197 **Combustion Synthesis of a Silicon Nitride-based Iron-containing Composite**

N2-P-022902-Y

Tatyana Tatarinova, Olga Kryukova

Tomsk Scientific Center SB RAS, Tomsk, Russia

198 **Combustion Regularities of the Ti+W Mixture in Gaseous Nitrogen**

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Olga Shkoda

Tomsk Scientific Center SB RAS, Tomsk, Russia

199 **On the Possibility of Obtaining Carbon Nitride C_xN_y by Self-propagating High-temperature Synthesis**

N2-P-012801

Olga Lepakova, Vladimir Kitler, Olga Shkoda

Tomsk Scientific Center SB RAS, Tomsk, Russia

200 **Preparation of Vanadium Carbonitride by Calciothermic Reduction of V_2O_5**

N2-P-031501

Boris Braverman, Aleksandr Avramchik

Tomsk Scientific Center SB RAS, Tomsk, Russia

N3 – Carbon materials for electronics and photonics

201 **Simulation of Cherenkov Radiation and Cathodoluminescence in Diamond Under the Action of Electrons with an Energy of Units MeV**

N3-P-040701

Alexander Burachenko[1], Konstantin Artyomov[1], Vasilii Ripenko[1], Evgeniy Lipatov[1,2], Alexander Krylov[2], Artem Vukolov[3]

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[3] National Research Tomsk Polytechnic University, Tomsk, Russia

202 **Characterization of Intrinsic Stresses in Synthetic Diamond**

N3-P-000702-Y

Darya Peresedova[1,2], Vasilii Ripenko[1], Mikhail Shulepov[1], Evgeniy Lipatov[1,2]

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[2] National Research Tomsk State University, Tomsk, Russia

203 **Dosimeters Based on Synthetic Diamonds Containing NV Centers**

N3-P-000201-Y

Vasilii Ripenko[1], Daria Peresedova[1,2], Alexander Burachenko[1], Evgeny Lipatov[1,2]

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[2] National Research Tomsk State University, Tomsk, Russia

N4 – Resource- and energy-saving technologies

204 **Optimal Design of the Combustion Chamber in Cycloidal Rotary Engine**

N4-P-007701-Y

Dmitry Kasaev

Tomsk Scientific Center SB RAS, Tomsk, Russia

205 **Search for Green Inhibitors for St3 Steel for Aggressive Environments**

N4-P-021302

Olga Golovanova

Dostoevsky Omsk State University, Omsk, Russia

206 **Production of High-entropy Carbide by the Vacuum-free Electric Arc Method Using Carbon from Biomass**

N4-P-027001-Y

Arseniy Kurdyukov, Yulia Neklya, Yuliya Vassilyeva, Alexander Pak

National Research Tomsk Polytechnic University, Tomsk, Russia

N5 – Synchrotron radiation detectors

207 Warm Magnets for the Proton Beam Medical Facility Luch-proton. Extensive Analysis of Simulation Results in Numerical Models

N5-P-037101-Y

Artemiy Malyshev, Evgeny Tsyplakov, Alexander Kozlov, Nikolay Markov, Valentina Zamyshlyaeva, Timur Kulevoy

National Research Center "Kurchatov Institute", Moscow, Russia

208 Ceramic and Composite Pixelated Scintillation Structures for X-rays and Neutron Detection Fabricated by a Digital Light Processing

N5-P-005102

Petr Sokolov[1], Lydia Ermakova[1], Alexander Sergeev[1,2], Elizaveta Borisevich[3], Ilya Komendo[1,2], Mikhail Murashov[1], Andrey Popov[4], Dmitry Sosnov[4], Vitaly Mechinsky[1,3], Mikhail Korzhik[1,3]

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