6th International Congress on Energy Fluxes and Radiation Effects (EFRE 2018)

General Chairman of the Congress

Gennady MESYATS Russian Academy of Sciences

Co-Chairmen of the Congress

Nikolay RATAKHIN Institute of High Current Electronics SB RAS

Petr CHUBIK National Research Tomsk Polytechnic University

The Congress will combine four International Conferences regularly hosted in Tomsk:

- 20th International Symposium on High-Current Electronics
- 14th International Conference on Modification of Materials with Particle Beams and Plasma Flows
- 18th International Conference on Radiation Physics and Chemistry of Condensed Matter
- 3rd International Conference on New Materials and High Technologies

It will be a good platform for researchers to discuss a wide range of scientific, engineering, and technical problems in the fields of pulsed power technologies; ion and electron beams; high power microwaves; plasma and particle beam sources; modification of material properties; pulsed power applications in chemistry, biology, and medicine; physical and chemical nonlinear processes excited in inorganic dielectrics by particle and photon beams; physical principles of radiation-related and additive technologies; self-propagating high-temperature synthesis; and combustion waves in heterogeneous systems.

The Congress will also provide a workshop at which leading world scientists can lecture to young scientists on the topics involved. Competition of young scientists presentation of conference papers will be held within the framework of the Congress.

The six-day Congress will bring together specialists from different countries and organizations and will give an excellent opportunity to share their knowledge, present oral reports and posters, and discuss research issues of interest.

Plenary Lectures .....

20th SHCE

Monday 17 September

Oral Sessions (S2, S3) .....

Poster Sessions (S1) .....

Tuesday 18 September

Oral Sessions (S4, S6) .....

Poster Sessions (S2, S3, S5) .....

Wednesday 19 September

Oral Sessions (S5) .....

Thursday 20 September

Oral Sessions (S1, S6) .....

Poster Sessions (S4, S6) .....

Friday 21 September

Oral Sessions (S5) .....

14th CMM

Monday 17 September

Oral Sessions (C1, C2) .....

Poster Sessions (C3) .....

Tuesday 18 September

Oral Sessions (C1, C5, C3) .....

Poster Sessions (C2, C5) .....

Wednesday 19 September

Oral Sessions (C3) .....

Thursday 20 September

Oral Sessions (C3) .....

Poster Sessions (C1, C4) .....

Friday 21 September

Oral Sessions (C4) .....

18th RPC

Monday	17 September
Oral Sessions (R2)	.....
Poster Sessions (R3, R4, R5)	.....
Tuesday	18 September
Oral Sessions (R1)	.....
Poster Sessions (R2)	.....
Wednesday	19 September
Oral Sessions (R4)	.....
Thursday	20 September
Oral Sessions (R4)	.....
Poster Sessions (R1)	.....
Friday	21 September
Oral Sessions (R3, R5)	.....

3rd NMHT

Monday	17 September
Oral Sessions (N1, N2)	.....
Poster Sessions (N1, N2)	.....
Tuesday	18 September
Oral Sessions (N3)	.....
Poster Sessions (N3)	.....
Wednesday	19 September
Oral Sessions (N1)	.....
Thursday	20 September
Oral Sessions (N3)	.....
Friday	21 September
Oral Sessions (N2)	.....

17 September (Monday) **9:00 – 10:30**

Plenary Lectures 1

9:00 – 9:45	**S1-O-016501** **Accelerator Driven High Energy Density Science** Prof. Dr. Dieter HH Hoffmann *Xian Jiaotong University, Xian, China* *National Research Nuclear University "MEPhI", Moscow*
9:45 – 10:30	**C1-O-012803** **Current State of Development of Ion Sources for Hardening of Machine Parts and Tools and Alloying of Semiconductors** Prof. Dr. Vadim Dudnikov *Muons Inc., Alexandria, United States*
10:30 – 11:00	**Coffee**

18 September (Tuesday) **9:00 – 10:30**

Plenary Lectures 2

9:00 – 9:45	**S5-O-039601** **Features of the Cold-Cathode Thyratron Operation in the Linear Accelerator Liu-2** Academician Pavel Logachev *Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia*
9:45 – 10:30	**Some Recent Progress in the Ti-Al Metal-Intermetallic Laminate (Mil) Composite** Prof. Dr. Fengchun Jiang *Harbin Engineering University, Harbin, China*
10:30 – 11:00	**Coffee**

19 September (Wednesday) **9:00 – 10:30**

Plenary Lectures 3

9:00 – 9:45	**Searches for Optical Nuclear Isomeric Transition in Thorium-229** Corresponding member of RAS Kolachevsky Nikolay *The Lebedev Physical Institute of RAS, Moscow, Russia*
9:45 – 10:30	**Dies and Molds Modification with Nitrogen Plasma, Ion Beam Irradiation and Carbon Atoms Bombardment** Prof. Dr. Kensuke Uemura *ShinMaywa Industries Ltd., Takarazuka, Japan*
10:30 – 11:00	**Coffee**

20 September (Thursday) **9:00 – 10:30**

Plenary Lectures 4

9:00 – 9:45	**R4-O-916801** **Radiation Effects and Defect Annealing in Functional Materials for Fusion Applications** Prof. Dr. Anatoli Popov *Institute of Solid State Physics, University of Latvia, Riga, Latvia*
9:45 – 10:30	**Paper-Derived Ceramic-Based Materials** Prof. Dr. Nahum Travitzky *Institute of Glass and Ceramics, Erlangen, Germany*
10:30 – 11:00	**Coffee**

21 September (Friday) **9:00 – 10:30**

Plenary Lectures 5

9:00 – 9:45	**C1-O-954501 Plasmadynamic Processes in Quasi-Stationary Plasma Accelerators with Ion Current Transfer Mode Providing the Formation of High-Energy Compression Plasma Flows for Effective Modification of Materials Surface Properties** Prof. Dr. Valentin Astashinsky *A.V. Luikov Heat and Mass Transfer Institute NAS, Minsk, Belarus*
9:45 – 10:30	**S1-O-910901** **Power Spectra in Interaction of Charged Particle Beams with Gas and Plasma** Academician Eduard Son *Joint Institute for High Temperature RAS, Moscow, Russia* *Moscow Institute of Physics and Technology, School of Aerospace Technology* *Department of Physical Mechanics, Dolgoprudny, Russia*
10:30 – 11:00	**Coffee**

20th International Symposium on High-Current Electronics

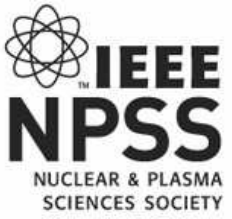
Chairman
Nikolay RATAKHIN
Institute of High Current Electronics, Tomsk, Russia

Co-Chairman
Gennady REMNEV
Institute of High-Technology Physics, TPU, Tomsk, Russia

Program Chairman
Edl SCHAMILOGLU
University of New Mexico, Albuquerque, USA

Program Co-Chairman
Alexander BATRAKOV
Institute of High Current Electronics, Tomsk, Russia

S1 Intense electron and ion beams
S2 Pinches, plasma focus and capillary discharge
S3 High power microwaves
S4 Pulsed power technology
S5 Pulsed power applications
S6 Discharges with runaway electrons



17 September (Monday) **11:00 – 13:10**

Oral Session 1.1

Pinches, plasma focus and capillary discharge

11:00 – 11:30 Invited	**S2-O-033801** **Z-Pinch Implosion Simulations: Single and Nested Wire Arrays at Angara-5-1** O.G. Olkhovskaya, V.A. Gasilov, P.V. Sasorov *Keldysh Institute of Applied Mathematics RAS, Moscow, Russia*
11:30 – 11:50	**S2-O-027504** **Optimization of Double Shell Neon Gas-Puff with Outer Plasma Shell for Efficient Generation of K-Shell Radiation** R.K. Cherdizov, F.I. Fursov, V.A. Kokshenev, N.E. Kurmaev, N.A. Labetskaya, A.V. Shishlov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
11:50 – 12:10	**S2-O-008201** **Plasma Channel Parameters in High-Pressure Hydrogen** M.E. Pinchuk, A.A. Bogomaz, A.V. Budin, A.G. Leks, N.K. Kurakina, A.A. Pozubenkov *Institute for Electrophysics and Electric Power RAS, St.-Petersburg, Russia*
12:10 – 12:30	**S2-O-012202** **Ultrafast Skin Layer Explosion at Surface Magnetic Field Rise Rates of More than 4 Mg/Ns** S.A. Sorokin *Institute of High Current Electronics SB RAS, Tomsk, Russia*
12:30 – 12:50	**S2-O-008301** **The Slow Relaxation of Non-Equilibrium State in Metal Target Exited by Picosecond Electron Beam: Interferometric and Simulation Studies** S.V. Barakhvostov*, A.I. Lipchak*, N.B. Volkov*, V.P. Tarakanov**, S.I. Tkachenko***, I.S. Turmyshev*, A.P. Yalovets**** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***Join Institute for High Temperatures RAS, Moscow, Russia* ****Moscow Institute of Physics and Technology, Dolgoprudny, Russia* *****National Research South Ural State University, Chelyabinsk, Russia*

17 September (Monday) **11:00 – 13:10**

Oral Session 1.2

High power microwaves

11:00 – 11:30 Invited	**S3-O-956001** **Formation of Multi-Wave Coherent Radiation by Relativistic Electronic Flows in Oversize Electrodynamic Structures** V.A. Cherepenin*, V.N. Kornienko*, V.I. Koshelev** **Kotelnikov Institute of Radioengineering and Electronics RAS, Moscow, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
11:30 – 11:50	**S3-O-025404** **Cherenkov Ka-Band Oscillator with 45% Efficiency of Beam-To-Microwave Power Conversation** R.V. Tsygankov, I.K. Kurkan, A.V. Gunin, V.V. Rostov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
11:50 – 12:10	**S3-O-026901** **Bulk Resonances in Slow–Wave Structures with High Ratio of Diameter to Radiation Wavelength** V.A. Chazov, M.P. Deichuly, V.I. Koshelev *Institute of High Current Electronics SB RAS, Tomsk, Russia*
12:10 – 12:30	**S3-O-027301** **Azimuthally Nonuniform Periodic Waveguides and Slow-Wave Structures for Generation of Linearly Polarized Radiation** M.P. Deichuly, V.I. Koshelev *Institute of High Current Electronics SB RAS, Tomsk, Russia*
12:30 – 12:50	**S3-O-008101** **Measurements of Sub-Nanosecond Pulsed Electromagnetic Waves by Strip-Line Sensors with Long Transmitting Coaxial Cable** V.M. Fedorov, V.E. Ostashev, V.P. Tarakanov, A.V. Ul'yanov *Joint Institute for High Temperatures RAS, Moscow, Russia*

17 September (Monday) **14:30 – 16:40**

12:50 – 13:10	**S3-O-049501** **Plasma Ultra-Wideband Amplifier of Relativistic Electron Beam Noise** D.E. Dias Mikhaylova*, I.E. Ivanov*, P.S. Strelkov*, D.V. Shumeiko*, V.P. Tarakanov**,*** **A.M. Prokhorov General Physics Institute RAS, Moscow, Russia* ***Joint Institute for High Temperatures RAS, Moscow, Russia* ****National Research Nuclear University MEPhI, Moscow, Russia*

13:10 – 14:30	**LUNCH**

17 September (Monday) **14:30 – 16:40**

Oral Session 2.1

Pinches, plasma focus and capillary discharge

14:30 – 14:50 Invited	**S2-O-008302** **Structural Changes and Peculiarities of Sodium Melting Curve at High Pressures** N.B. Volkov, E.A. Chingina *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
14:50 – 15:10	**S2-O-013401** **Research of Near Electrode Phenomena at Electrolyte Discharge** D.L. Kirko *National Research Nuclear University MEPhI, Moscow, Russia*
15:10 – 15:30	**S2-O-001903** **Computer Simulation of the Interaction of Single-Torch System and the Several Capillary Torches** S.V. Ryzhkov*, V.V. Kuzenov**, K.V. Polyakov* **Bauman Moscow State Technical University, Moscow, Russia* ***All-Russia Research Institute of Automatics named after N.L. Dukhov, Moscow, Russia*
15:30 – 15:50	**S2-O-047501** **Volt-Ampere Characteristics of High-Frequency Arc Discharge. Development of the Generalized Equation in the Criterion Form** A.F. Kokorin *Ural Federal University, Ekaterinburg, Russia*
15:50 – 16:10	**S2-O-048701** **Requirements to Sprayed Coatings for Delaying of Plasma-Formation at Surface Electric Explosion of Double-Layer Conductors** N.A. Labetskaya*, D.V. Rybka*, I.M. Datsko*, V.A. Vankevich*, S.A. Chaikovsky** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Institute of Electrophysics UD RAS, Ekaterinburg, Russia*

17 September (Monday) **14:30 – 16:40**

16:10 – 16:30	**S2-O-025301** **Delayed Plasma Formation on Titanium Or Zirconium–Coated Copper Or Duralumin Conductors** I.M. Datsko*, N.A. Labetskaya*, S.A. Chaikovsky**, D.V. Rybka*, V.A. Vankevich* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Institute of Electrophysics UD RAS, Ekaterinburg, Russia*

Oral Session 2.2

High power microwaves

14:30 – 14:30 Invited	**S3-P-023407** **Generation of Ultra-Wideband and Mesoband Pulses by Using Radial Forming Lines** V.A. Baldygin, I.N. Grigoriev, M.B. Kruchenov,V.P. Lisitsyn, I.A. Mysin, M.G. Nikiforov *Research and Production Enterprise "ERA" Istra, Russia*
15:00 – 15:20	**S3-O-025801** **A High-Power Source of Ultrawideband Radiation with Reflector Antenna** E.V. Balzovsky, Yu.I. Buyanov, V.P. Gubanov, A.M. Efremov, V.I. Koshelev, E.S. Nekrasov, A.S. Stepchenko *Institute of High Current Electronics SB RAS, Tomsk, Russia*
15:20 – 15:40	**S3-O-028601** **Nanosecond Front Dynamics and Rf Oscillation Generation in a Transmission Line with Nonlinear Capacitors** P.V. Priputnev, I.V. Romanchenko, V.V. Rostov, O.B. Kovalchuk, V.V. Barmin *Institute of High Current Electronics SB RAS, Tomsk, Russia*
15:40 – 16:00	**S3-O-026302** **Characteristics of an Ultrawideband 8×8 Array of Cylindrical Helical Antennas** Yu.A. Andreev, V.I. Koshelev, S.S. Smirnov *Institute of High Current Electronics SB RAS, Tomsk, Russia*

17 September (Monday) **14:30 – 16:40**

16:00 – 16:20	**S3-O-026304** **Some Characteristics of Ultra-Wideband 2×2 Combined Antenna Array** Y.A. Andreev*, E.V. Balzovsky*, V.N. Kornienko**, Y. Xie***, S. Wang*** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Kotel'nikov Institute of Radio Engineering and Electronics RAS, Moscow, Russia* ****Xi'an Jiaotong University, Xi'an, China*

16:40 – 18:30	**Poster Session 1 & Coffee**

17 September (Monday) **16:30 – 18:30**

Poster Session 1:

Intense electron and ion beams

1	**S1-O-014002** **Parameters of Plasma Bunches Generated by Pulsed Surface Flashover on Kcl and Ptfe at 100 Kv** P.A. Morozov, R.V. Emlin, V.V. Lisenkov, I.F. Punanov *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
2	**C1-P-037602** **Generation of Plasma and Ion Beam by Vacuum Arc with Copper-Chromium Cathodes** V. Frolova*,**, A. Nikolaev**, E. Oks*,**, G. Yushkov* **Tomsk State University of Control System and Radioelectronics, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
3	**S1-O-042601** **Analysis of Liquid Metal Jet Development During the Formation of Craters in a Vacuum Arc Cathode Spot** M.A. Gashkov*, G.A. Mesyats*,**, I.V. Uimanov*, N.M. Zubarev*,** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***P.N. Lebedev Physical Institute RAS, Moscow, Russia*
4	**S1-O-039501** **Measurement of the Temperature of Aluminum with a Titanium Coating in a High-Speed Pulse of an Electron Beam** A.D. Teresov*, T.V. Koval**, P.V. Moskvin*, Chan Mi Kim An**, N.N. Koval* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
5	**S1-O-050001** **Challenges and Approaches to Radiation Hardness Control of Electronic Components to In-Space High-Energy Particles Exposure** V.S. Anashin*, P.A. Chubunov*, A.E. Koziukov*, G.A. Protopopov*, A.S. Konyukhov* **JSC United Rocket and Space Corporation – Institute of Space Device Engineering (JSC URSC – ISDE), Moscow, Russia*

17 September (Monday) **16:30 – 18:30**

6	**S1-P-003803** **Forvacuum Plasma Electron Source of a Ribbon Beam for a Plasma Discharge Generating** A.S. Klimov *Tomsk State University of Control System and Radioelectronics, Tomsk, Russia*
7	**S1-P-006101** **Study of Plasma Formation in a Planar Type Ion Diode with Self-Magnetic Isolation** A.V. Stepanov, V.I. Shamanin, G.E. Remnev *National Research Tomsk Polytechnic University, Tomsk, Russia*
8	**S1-P-010801** **An Anode-Layer Plasma Thruster as Plasma Optical System for an Intense Electron Beam Transport** A.S. Bugaev*, V.I. Gushenets*, E.M. Oks** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Tomsk State University of Control System and Radioelectronics, Tomsk, Russia*
9	**S1-P-013201** **The Use of Permanent Magnets for the Treatment of Massive Workpieces with a High-Current Electron Beam** P.P. Kiziridi, G.E. Ozur, E.V. Yakovlev *Institute of High Current Electronics SB RAS, Tomsk, Russia*
10	**S1-P-013202** **The Formation of a Plasma Anode in a Penning Discharge Cell Combined with a Planar Magnetron** P.P. Kiziridi*, G.E. Ozur*, L.A. Zulkova*, S.A. Popov*, S.A. Shevelev** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
11	**S1-P-017404** **High-Intensity Pulsed Ion Beam Focusing by Its Own Charge** A. Pushkarev*, A. Prima*, X.P. Zhu**, L. Ding**, Q. Zhang**, C.C. Zhang**, Yu. Isakova*, M.K. Lei** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Surface Engineering Laboratory, School of Materials Science and Engineering and Key Laboratory of Materials Modification by Laser, Ion, and Electron Beams (Ministry of Education), Dalian University of Technology, Dalian, China*

17 September (Monday) **16:30 – 18:30**

12	**S1-P-018403** **Numerical Simulation of Eos with a Large-Area Plasma Cathode with Mesh Stabilization of the Emission-Plasma Boundary** V.T. Astrelin*,***, A.N. Kozyrev**, V.M. Sveshnikov**,***, M.S. Vorobyov**** **Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia* ***Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia* **** National Research Novosibirsk State University, Novosibirsk, Russia* *****Institute of High Current Electronics SB RAS, Tomsk, Russia*
13	**S1-P-018701** **Development of the Plasma Generator on the Partial Discharge of Low Voltage** E.A. Yakovlev*, A.D. Mekhtiyev*, V.V. Yugay*, O.V. Aldoshina*, L.A. Zinovyev** **Karaganda State Technical University, Karaganda, Republic of Kazakhstan* ***Private Institution "Information Technologies", Karaganda, Republic of Kazakhstan*
14	**S1-P-026501** **Numerical Simulation of Low-Current Vacuum Arc Plasma Jet in Strong Axial Magnetic Field** D.L Shmelev*, I.V. Uimanov*, V.I. Oreshkin** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
15	**S1-P-031101** **The Measurement of Ion Flux Parameters Time Dependence** I.L. Muzyukin **Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
16	**S1-P-033501** **Generation of Jets and Drops by the Cathode Spot of a Vacuum Arc** I.V. Uimanov*, G.A. Mesyats** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***P.N. Lebedev Physical Institute RAS, Moscow, Russia*

17 September (Monday) **16:30 – 18:30**

17	**S1-P-033701** **Influence of Radiation-Induced Defects on the Overheating of a Metal Target** Y.I. Isakova*, A. Prima*, X.P. Zhu**, L. Ding**, Q. Zhang**, A.I. Pushkarev*, M.K. Lei** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Dalian University of Technology, Dalian City, China*
18	**S1-P-044101** **Investigation of the Distribution of Current Density in the Cross-Section of the Electron Beam Produced by Multi-Aperture Diode and Transported in Guiding Magnetic Field** I.V. Kandaurov*, V.V. Kurkuchekov*,** **Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia* ***Novosibirsk State Technical University, Novosibirsk, Russia*
19	**S1-P-046701** **Automatic Probe Diagnostic System for Pulse Plasma Electron Source** N.N. Koval, S.S. Kovalsky, P.V. Moskvin *Institute of High Current Electronics SB RAS, Tomsk, Russia*
20	**S1-P-047802** **10,11b Ion Beam Production, Formation and Acceleration at the Cyclotron DC-60** I.A. Ivanov*, V.V. Alexandrenko* **Institute of Nuclear Physics ME RK, Astana, Kazakhstan*
21	**S1-P-048801** **Accelerated Ion Beams and Methods of Research on the Physical Units of the Cyclotron DC-60** E.V. Alexandrenko*, I.A. Ivanov*, M.V. Zdorovets*, M.V. Koloberdin*, S.G. Kozin*, Y.K. Sambayev*, A.E. Kurakhmedov* *Institute of Nuclear Physics ME RK, Astana, Kazakhstan*
22	**S1-P-051601** **Three-Dimensional Simulation of the Electron Beam Interaction with Modulated Density Plasma** E.A. Genrikh*, E.A. Berendeev*, G.I. Dudnikova** ** Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia* ***Institute of Computational Technologies SB RAS, Novosibirsk, Russia*

17 September (Monday) **16:30 – 18:30**

23	**S4-P-000403** **Investigations of the Space-Time Stability of a Large Cross Section Electron Beam Generated by an Accelerator with a Mesh Plasma Cathode** M.S. Vorobyov, S.S. Kovalsky, N.N. Koval *Institute of High Current Electronics SB RAS, Tomsk, Russia*
24	**S1-P-946701** **Investigation of Plasma Potential and Concentration Dynamics in Plasma Electron Emitter Based on a Low-Pressure Arc Discharge** P.V.Moskvin, E.A.Proskurina *Institute of High Current Electronics SB RAS, Tomsk, Russia*

18 September (Tuesday) **11:00 – 13:10**

Oral Session 3.1

Pulsed power technology

11:00 – 11:30 Invited	**S4-O-029903** **Marx Generators for Rectangular Microsecond Voltage Pulses Production at a Constant Arbitrary Resistive Load** E.N. Abdullin, G.F. Basov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
11:30 – 11:50	**S4-O-027401** **Megaampere Low-Inductance Crowbar Based on a Plasma Switch** V.A. Kokshenev, N.E. Kurmaev, F.I. Fursov, R.K. Cherdizov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
11:50 – 12:10	**S4-O-046401** **Corona Preionized High-Current Closing Switch for Repetitively Operated 300 Kv Double-Forming Line (Blumlein)** E.G. Krastelev*, A.V. Nashilevski**, D.V. Ponomarev**, G.E. Remnev**, A.A. Sedin* **Joint Institute for High Temperatures RAS, Moscow, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
12:10 – 12:30	**S4-O-003503** **High-Powered 100-Nanosecond Capacitor-Switch Assemblies** I.V. Lavrinovich, D.V. Molchanov, N.V. Zharova *Institute of High Current Electronics SB RAS, Tomsk, Russia*

18 September (Tuesday) **11:00 – 13:10**

Oral Session 3.2

Discharges with runaway electrons

11:00 – 11:30 Invited	**S6-O-017201** **Instability of the Overvoltage Regime of the Open Discharge in D_2 Generating High-Energy Run-Away Electrons** Yu.S. Akishev*,**, V.B. Karalnik*, A.V. Petryakov*, N.I. Trushkin* **RF SRC Troitsk Institute for Innovation and Fusion Research, Troitsk, Russia* ***National Research Nuclear University MEPhI, Moscow, Russia*
11:30 – 12:00 Invited	**S6-O-030701** **Runaway Electrons from Streamer Breakdown in Short Overvolted Gaps in Air at Atmospheric Pressure: Simulation Study** Z. Bonaventura*, O. Chanrion**, A. Bourdon***, T. Neubert** **Masaryk University, Brno, Czech Republic* ***Technical University of Denmark, National Space Institute (DTU Space), Lyngby, Denmark* ****LPP, CNRS, Ecole polytechnique, UPMC Univ Paris 06, Univ. Paris-Sud, Observatoire de Paris, Universit´e Paris-Saclay, Sorbonne Universit´es, PSL Research University, Palaiseau, France*
12:00 – 12:20	**S6-O-041101** **Conditions Aor Generation of Runaway Electrons in a Gas Diode with a Strongly Nonuniform Electric Field** G.A. Mesyats*, M.I. Yalandin**, N.M. Zubarev** **P.N. Lebedev Physical Institute, RAS, Moscow, Russia* ***Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
12:20 – 12:40	**S6-O-018601** **Dynamics of a Positive Streamer in Atmospheric Pressure Air in a Sharply Inhomogeneous Field under Threshold Conditions for Breakdown of a Gap** M.I. Lomaev*,**, D.V. Beloplotov*, V.F. Tarasenko*,**, D.A. Sorokin* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*

18 September (Tuesday) **11:00 – 13:10**

12:40 – 13:00	**S6-O-032201** **Formation of Diffuse Discharges in Atmospheric Pressure Air** N.Yu. Babaeva, G.V. Naidis *Joint Institute for High Temperatures RAS, Moscow, Russia*

13:10 – 14:30	**LUNCH**

18 September (Tuesday) **14:30 – 16:40**

Oral Session 4.1

Pulsed power technology

14:30 – 15:00 Invited	**S4-O-035004** **SOS Diodes Based on P-Type Silicon (P-SOS)** A.G. Lyublinskiy, E.I. Belyakova, I.V. Grekhov *Ioffe Physical Technical Institute RAS, Saint Petersburg, Russia*
15:00 – 15:20	**S4-O-040801** **Effect of Voltage Rise Rate and Temperature on the Switching of High-Voltage Silicon Thyristors** S.N. Tsyranov*, A.I. Gusev*, S.K. Lyubutin*, S.N. Rukin*, O.E. Perminova*** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia Russia* *** Ural Federal University, Ekaterinburg, Russia*
15:40 – 16:00	**S4-O-044402** **Compression Characteristics of the Slit and Capillary Eptrons** P.A. Bokhan, P.P. Gugin, M.A. Lavrukhin, D.E. Zakrevsky *Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia*
16:50 – 16:20	**S4-O-044501** **Two Stage Subnanosecond Open Discharge Based Generator in the Regular Pulses Mode** P.A. Bokhan, P.P Gugin, M.A. Lavrukhin, D.E. Zakrevsky *Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia*

Oral Session 4.2

Discharges with runaway electrons

14:30 – 15:00 Invited	**S6-O-002901** **Simulation of Streamer Discharges** N.Yu. Babaeva, G.V. Naidis *Joint Institute for High Temperatures RAS, Moscow, Russia*

18 September (Tuesday) 14:30 – 16:40

15:30 – 16:00 Invited	**S6-O-017001** **Generation of Runaway Electron Beam in Nanosecond Pulsed Discharge by Using Different Electrode Materials** C. Zhang*, D.A. Sorokin**, H. Bai*, V.F. Tarasenko**, P. Yan*, E.Kh. Baksht**, T. Shao* **Institute of Electrical Engineering CAS, Beijing, China* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
15:30 – 15:50	**S6-O-008401** **X-Ray and Vuv Reflectometry and Metrology of Plasma Radiation Sources** A.P. Shevelko *P.N. Lebedev Physical Institute of the RAS, Moscow, Russia*
15:50 – 16:10	**S6-O-016902** **Optical Characterization of Pulsed Plasma Jet and Jet Array** R. Wang, Y. Zhao, C. Zhang, T. Shao *Institute of Electrical Engineering CAS, Beijing, China*
16:10 – 16:30	**S6-O-044602** **Comparative Study of the Characterisics of Anomalous and «Open» Discharge in Helium** P.A. Bokhan *Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia*

16:30 – 18:30	**Poster Session 2 & Coffee**

18 September (Tuesday) **16:30 – 18:30**

Poster Session 2:

Pinches, plasma focus and capillary discharge

1	**S2-P-001902** **Study of Interaction of Pulsed Jets Generated by Atmospheric Discharge** V.V. Kuzenov**, S.V. Ryzhkov*, K.V. Polyakov* **Bauman Moscow State Technical University, Moscow, Russia* ***All-Russia Research Institute of Automatics named after N.L. Dukhov, Moscow, Russia*
2	**S2-P-013001** **X-Ray Sources on the Base of X- and Pz-Pinches** A.P. Artyomov*, A.G. Rousskikh*, V.I. Oreshkin*,**, S.A. Chaikovsky*,***, A.S. Zhigalin*, A.V. Fedunin* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia* ****Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
3	**S2-P-013402** **Investigation of Electrical Oscillations in Plasma of Vacuum Spark** D.L. Kirko, O.A. Bashutin, P.P. Sidorov, A.S. Savjolov *National Research Nuclear University MEPhI, Moscow, Russia*
4	**S2-P-016201** **Radiography of Thin Metallic Foils Explosion in Vacuum** A.S. Zhigalin*, A.G. Rousskikh*, V.I. Oreshkin*,**, A.P. Artyomov*, R.B. Baksht* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
5	**S2-P-016202** **Using of B-Dot Probe for Z-Pinch Plasma Diagnostics** A.G. Rousskikh*, A.S. Zhigalin*, V.I. Oreshkin*,**, R.B. Baksht* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*

18 September (Tuesday) **16:30 – 18:30**

6	**S2-P-021201** **Development of Model of the Vacuum Arc Cathode Erosion Based on Radiographic Investigation** A.G. Rousskikh*, A.V. Fedyunin, A.P. Artyomov*, A.S. Zhigalin*, V.I. Oreshkin*,** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
7	**S2-P-021202** **Radiograph PR-PZP-M1 Based on Pz-Pinch** A.G. Rousskikh*, A.V. Fedyunin, A.P. Artyomov*, A.S. Zhigalin*, V.I. Oreshkin*,**, V.V. Danilov***, M.A. Holopov***, V.V. Kurkuchekov***, A.C. Popov***, M.G. Altuhanov***, A.V. Burdakov***, C.C. Popov***, Yu.A. Trutnev***, D.I. Skovorodin*** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia* ****Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia*
8	**S2-P-021801** **Simulation of the Spectral Line Profiles in the Krypton Spectrum Emitted from a Current Sheet Plasma** E.V. Koryukina*, V.I. Koryukin** **National Research Tomsk State University, , Tomsk, Russia* ***Siberian State Medical University, Tomsk, Russia*
9	**S2-P-026502** **Hybrid MHD/PIC Simulation of Bismuth Gas-Puff Z Pinch Implosion** D.L Shmelev*, V.I. Oreshkin**, S.A. Chaikovsky* **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
10	**S2-P-026503** **On Initial Mass Distribution of the Plasma Liner Produsedby Arc Plasma Gun in External Axial Magnetic Field** D.L Shmelev*, A.S. Zhigalin** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*

18 September (Tuesday) 16:30 – 18:30

11	**S2-P-027502** **Research of Neutron Emission from Deuterium Gas-Puff Z-Pinch on the GIT-12 Generator at Currents of 3 MA** R.K. Cherdizov*, F.I. Fursov*, V.A. Kokshenev*, N.E. Kurmaev*, A.V. Shishlov*, J. Cikhardt**, B. Cikhardtova**, D. Klir**, J. Kravarik**, P. Kubes**, K. Rezac**, G.N. Dudkin***, V.N. Padalko***, V.A. Varlachev*** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Czech Technical University in Prague, Prague, Czech Republic* ****National Research Tomsk Polytechnic University, Tomsk, Russia*
12	**S2-P-041401** **Effect of the Gas Distribution on Implosion Dynamics and the K-Shell Yield of the Neon Gas-Puffs with the Outer Plasma Shell** A.V. Shishlov, R.K. Cherdizov, F.I. Fursov, V.A. Kokshenev, N.E. Kurmaev, N.A. Labetskaya *Institute of High Current Electronics SB RAS, Tomsk, Russia*
13	**S2-P-042201** **The Effect of the Phase State of a Metal on the Growth of Thermal Instabilities** V.I. Oreshkin*, K.V. Khishchenko**, E.V. Oreshkin***, A.G. Rousskikh** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Joint Institute for High Temperatures RAS, Moscow, Russia* ****P.N. Lebedev Physical Institute RAS, Moscow, Russia*
14	**S2-P-048702** **Electrical Explosion of Profiled Cylindrical Conductors** N.A. Labetskaya*, I.M. Datsko*, S.A. Chaikovsky**, V.I. Oreshkin*, D.V. Rybka*, V.A. Vankevich* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
15	**S2-P-049101** **Delayed Large-Scale Instabilities on Ti-Coated Copper Conductors** V.A. Vankevich*, N.A. Labetskaya*, I.M. Datsko*, V.I. Oreshkin*, D.V. Rybka*, S.A. Chaikovsky**, V.V. Shugurov* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Institute of Electrophysics UD RAS, Ekaterinburg, Russia*

18 September (Tuesday) **16:30 – 18:30**

Poster Session 2: High power microwaves

16	**S1-P-027201** **Generation of Terahertz Radiation by Electron Beam-Plasma Interaction** G.I. Dudnikova*, E.A. Berendeev**, A.A. Efimova**, V.A. Vshivkov** **Institute of Computational Technologies SB RAS, Novosibirsk, Russia* ***Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia*
17	**S3-P-041303** **High-Voltage Transitions from the Coaxial Output of the Generator to the Tem Horn Antenna** L.A. Busygina, A.A. Chumakov, V.P. Lisitsyn, M.G. Nikiforov *Research and Production Enterprise "ERA" Istra, Russia*
18	**S3-P-004301** **Investigation of the Characteristics of Electrodynamic Structures of Multiwave Cherenkov Generators Using Numerical Methods for Solving Nonstationary Problems of Electrodynamics** V.A. Cherepenin, V.N. Kornienko *Kotel'nikov Institute of Radio Engineering and Electronics RAS, Moscow, Russia*
19	**S3-P-022101** **Interference Microwave Switch with Automatic Performance Control** S.N. Artemenko, S.A. Gorev, S.A. Novikov, Yu.G. Yushkov *National Research Tomsk Polytechnic University, Tomsk, Russia*
20	**S3-P-022102** **Interference Microwave Switch with Automatic Performance Control** S.N. Artemenko, S.A. Gorev, S.A. Novikov, Yu.G. Yushkov *National Research Tomsk Polytechnic University, Tomsk, Russia*
21	**S3-O-030301** **Couple Coefficients of Waves of Magnetized Thin-Walled High Current Electron Beams** N.F. Kovalev, M.B. Goikhman, A.V. Gromov, A.V. Palitsin *Institute of Applied Physics RAS, Nizhny Novgorod, Russia*

18 September (Tuesday) **16:30 – 18:30**

22	**S3-P-048601** **Spectra of Radiation of a Plasma Relativistic Microwave Oscillator** I.E. Ivanov *Prokhorov General Physics Institute of the Russian Academy of Sciences, Moscow, Russia*
23	**S3-P-020001** **Interference Switch of a Superconducting Resonance Microwave Compressor** S.N. Artemenko, G.M. Samoylenko *National Research Tomsk Polytechnic University, Tomsk, Russia*
24	**S3-P-028602** **RF Pulse Generation in Transmission Line with Discharge Gaps and Cross-Link Capacitors** P.V. Priputnev, I.V. Romanchenko, V.V. Rostov *Institute of High Current Electronics SB RAS, Tomsk, Russia*

Poster Session 2:

Pulsed power applications

25	**S5-P-000305** **Methods for Increasing the Breakdown Voltage in the Cold-Cathode Thyratron** N.V. Landl, Y.D. Korolev, V.G. Geyman, O.B. Frants, G.A. Argunov, V.S. Kasyanov, V.O. Nekhoroshev *Institute of High Current Electronics, Akademichesky Ave. 2/3, Tomsk, 634055, Russia*
26	**S5-P-939601** **Features of the Discharge Ignition in the Trigger Unit of Cold-Cathode Thyratron** N.V. Landl, Y.D. Korolev, V.G. Geyman, O.B. Frants, G.A. Argunov, A.V. Bolotov *Institute of High Current Electronics, Akademichesky Ave. 2/3, Tomsk, 634055, Russia*

18 September (Tuesday) 16:30 – 18:30

27	**S3-P-007801** **Physiological Stress Responses to Nanosecond Pulsed-Periodic Microwave** I.R. Knyazeva*,**, M.A. Medvedev*, O.P. Kutenkov **, A.V. Vasilev*, A.A. Gorokhovsky*, V.V. Rostov** ** Siberian State Medical University, Tomsk, Russia* *** Institute of High Current Electronics SB RAS, Tomsk, Russia*
28	**S5-P-001704** **Research Disinfective Effect of Joint Action of the Nanosecond Electron Beam and Plasma Radiation of the Gas Discharge** S.Yu. Sokovnin*,**,***, A.S. Krivonogova*,****, A.G.Isaeva*,****, M.E. Balezin*,*** **Urals State Agrarian University, Ekaterinburg, Russia* ***Ural Federal University, Ekaterinburg, Russia* ****Institute of Electrophysics UD RAS, Ekaterinburg, Russia* *****State Science Establishment - the Urals Scientific-Research Veterinary Institute, Ekaterinburg, Russia*
29	**S5-P-003901** **Research of Luminophores Afterglow under Influence of Pulsed X-Ray Radiation of Nanosecond Duration** A.S. Chepusov*, A.A. Komarskiy*, S.R. Korzhenevskiy*, Y.I. Mamontov**, A.V. Ponomarev* ** Institute of Electrophysics UD RAS, Ekaterinburg, Russia* *** Ural Federal University, Ekaterinburg, Russia*
30	**S5-P-004703** **Generator of Powerful Current Pulses for Electrostimulated Drawing Process** V.A. Kuznetsov, E.A. Kuznetsova, V.E. Gromov, D.A. Kosinov, A.P. Semin *Siberian State Industrial University, Novokuznetsk, Russia*
31	**S5-P-004704** **Hardware Provision of Electrostimulated Machining of Metals** V.A. Kuznetsov, V.E. Gromov, E.S. Kuznetsova, A.Yu. Gagarin, D.A. Kosinov , Yu. Rubannikova *Siberian State Industrial University, Novokuznetsk, Russia*

18 September (Tuesday) 16:30 – 18:30

32	**S5-P-004705** **Nanostructural Wear-Resistant Coatings Synthesising on Martensite Steel by Surfacing** V.E. Kormyshev*, S.A. Nevskii*, V.E. Gromov*, Yu.F. Ivanov**, S.V. Konovalov***, Yu.A. Rubannikova* **Siberian State Industrial University, Novokuznetsk, Russia* ***Institute of High Current Electronics, Akademichesky Ave. 2/3, Tomsk, 634055, Russia* ****National Research Samara University, Samara, Russia*
33	**S5-P-006201** **The Use of Method of Standard Mixtures for Investigation of Sulfur-Containing Impurities Conversion in Pulsed Corona Discharge Plasma** I.E. Filatov, D.L. Kuznetsov, V.V. Uvarin *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
34	**S5-P-006202** **Characteristics of High-Pressure Nanosecond Discharge in Methane-Containing Gas Mixtures** I.E. Filatov, D.L. Kuznetsov, V.V. Uvarin *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
35	**S5-P-006203** **The Effect of Electronegative Additives on Air Cleaning from Vapors of Unsaturated VOCs by Pulsed Corona Discharge** I.E. Filatov, D.L. Kuznetsov, V.V. Uvarin *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
36	**S5-P-007001** **Mitochondrial Membrane Permeability after Nanosecond Electromagnetic Pulsed Exposure** L.P. Zharkova, I.V. Romanchenko, M.A. Buldakov, P.V. Priputnev, M.A. Bolshakov, V.V. Rostov *Institute of High Current Electronics SB RAS, Tomsk, Russia* *National Research Tomsk State University, Tomsk, Russia*

18 September (Tuesday) **16:30 – 18:30**

37	**S5-P-008202** **Dielectric Barrier Discharge Plasma Jet in Argon and Hellium** M.E. Pinchuk*,**, O.M. Stepanova*,**, A.V. Lazukin**,***, A.M. Astafiev*,** **Institute for Electrophysics and Electric Power RAS, Saint Petersburg, Russia* ***Saint Petersburg State University, Saint Petersburg, Russia* ****National Research University "Moscow Power Engineering Institute", Moscow, Russia*
38	**S5-P-008204** **Influence of the Supply Voltage Frequency and Electrode System Configuration on the Length of Microdischarges in the SDBD** A.V. Lazukin*, I.V. Selivonin**, M.E. Pinchuk***, I.A. Moralev**, S.A. Krivov* ** National Research University "Moscow Power Engineering Institute", Moscow, Russia* *** Joint Institute for High Temperatures RAS, Moscow, Russia* ****Institute for Electrophysics and Electric Power RAS, Saint Petersburg, Russia*
39	**S5-P-008702** **Multichannel High-Frequency Generator of Sawtooth Pulses for Electrohydrodynamic Flows Formation** Ch.G. Antipova, V.Yu. Khomich, I.E. Rebrov *Institute for Electrophysics and Electric Power RAS, Saint Petersburg, Russia*
40	**S5-P-012301** **Compact High Voltage Pulse Generator for DBD Plasma Jets** S.I. Moshkunov, N.A. Podguyko, E.A. Shershunova *Institute for Electrophysics and Electric Power RAS, Saint Petersburg, Russia*
41	**S5-P-016301** **Two-Channel High-Voltage Generator of Rectangular Pulses for Electrospinning Oriented Fibers** A.V. Kasnin, I.E.Rebrov *Institute for Electrophysics and Electric Power RAS, Saint Petersburg, Russia*
42	**S5-P-019501** **Experimental Investigation of Linear Thermal Expansion of HOPG Near Its Melting Point** V.N. Senchenko, R.S. Belikov *Joint Institute for High Temperatures RAS, Moscow, Russia*

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43	**S5-P-019503** **Experimental Investigation of Thermoradiative Properties of Refractory Materials** V.N. Senchenko, R.S. Belikov, P.A. Konovalov *Joint Institute for High Temperatures RAS, Moscow, Russia*
44	**S5-P-020303** **Production of High-Purity Quartz Concentrate by Electrical Pulse Fragmentation** L.G. Ananyeva*, S.S. Ilenok*, M.V. Korovkin*, E.V. Kumpyak**, A.A. Zherlitsyn** ** National Research Tomsk State University, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
45	**S5-P-020701** **Numerical Simulation of Spark Channel Dynamics in Railgun Switches** A.V. Kharlov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
46	**S5-P-022201** **Plasma Chemical Purification of Flue Gases Using Pulsed Electron Beams** R.V. Sazonov, G.E. Kholodnaya, D.V. Ponomarev *National Research Tomsk State University, Tomsk, Russia*
47	**S5-P-024401** **Study of Electrode Spots from a Spark Discharge with the Help of Interference Microscope** I.V. Beketov, A.V. Bagazeev, E.I. Azarkevich, D.S. Koleukh *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
48	**S5-P-024402** **The Installation for Production of Metal and Oxide Nanopowders by the Spark Discharge Method, and Its Testing** I.V. Beketov, A.V. Bagazeev, E.I. Azarkevich, A.D. Maximov, A.I. Medvedev, A.I. Beketova *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*

18 September (Tuesday) **16:30 – 18:30**

49	**S5-P-026704** **Development of a Powerful High-Voltage Power Supply for 30 KV** Y.A. Bykov, V.F. Feduschak, K.V. Gorbachev, Y.I. Isaenkov, V.A. Stroganov *Joint Institute for High Temperatures RAS, Moscow, Russia*
50	**S5-P-027402** **Experimental Investigation of Exploding the Surface of Conductors by a Multimegagauss Magnetic Field with a Microsecond Rise Time** V.A. Kokshenev, N.E. Kurmaev, F.I. Fursov, R.K. Cherdizov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
51	**S5-P-029101** **Numerical Investigation of Subnanosecond Pulses Amplification in the Gas Amplifier of the THL-100 Laser System** A.G. Yastremskii, N.G. Ivanov, V.F. Losev *Institute of High Current Electronics SB RAS, Tomsk, Russia*
52	**S5-P-030702** **Study of Electron Interactions with Liquid Water and Processes Related to Sub-Nanosecond Electrical Breakdown** Z. Bonaventura*, P. Bílek*, T. Hoder*, M. Šimek** **Masaryk University, Brno, Czech Republic* ***Institute of Plasma Physics CAS, Prague, Czech Republic*
53	**S5-P-031301** **Discharge Chamber Gas Dynamics with Moving Contact** N.K. Kurakina*,**, M.E. Pinchuk*,**, A.V. Budin*, A.A. Smirnovsky***, V.E. Kuznetsov*, A.A. Kiselev* **Institute for Electrophysics and Electric Power RAS, Saint Petersburg, Russia* *** Peter the Great St. Petersburg Polytechnic University, Saint Petersburg, Russia*

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54	**S5-P-035001** **Compact High Voltage Dsrd-Based Generators of Nanosecond Pulses for Discharge and Medical Applications** A.G. Lyublinskiy, A.F. Kardo-Sysoev *Ioffe Institute RAS, Saint Petersburg, Russia*
55	**S5-P-035201** **Generation of Laser Radiation in the Pumping Discharge of Krf-Laser with Channels** Yu.N. Panchenko, S.A. Yampolskaya, A.G. Yastremskii *Institute of High Current Electronics SB RAS, Tomsk, Russia*
56	**S5-P-035701** **Optical Properties of $Si_xTi_yC_zO_w$ Composite Nanopowder Obtained by Pulsed Plasma Chemical Method** G.E. Kholodnaya*, F.V. Konusov*, R.V. Sazonov*, D.V. Ponomarev*, M.I. Kaikanov** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan*
57	**S5-P-039101** **Plasma-Stirling Cryogenic Refrigerator** A. Aramyan*, S.Yu. Martinez**, V.V. Zuev***, M.R. Santos**** **Institute of Applied Problems of Physics NASRA, Yerevan, Republic of Armenia* ***National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia* ****Moscow Technological University, Moscow, Russia* *****Universidad Politécnica de Zacatecas, Fresnillo Zacatecas, Mexico*
58	**S5-P-044401** **Development of Discharge and Generation Characteristics of Cu-Ne and CuBr-Ne Lasers When Excited by Pulses with a Short Front** P.A. Bokhan, P.P. Gugin, M.A. Lavrukhin, D.E. Zakrevsky *Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia*
59	**S5-P-045101** **Characterization of the Ablative Anode Micro-Cathode Vacuum Arc Thruster** D.B. Zolotukhin*,**, S. Hurley**, M. Keidar** **Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia* ***The George Washington University, Northwest Washington, USA*

18 September (Tuesday) **16:30 – 18:30**

60	**S5-P-046801** **Triggered Spark-Gap Switch with Gas Circulation for Repetitively Operated Multistage Marx Generator** A.S. Yudin* , S.M. Martemyanov* , A.A. Bukharkin* , I.V. Bugaev* , E.G. Krastelev** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Joint Institute for High Temperatures RAS, Moscow, Russia*
61	**S5-P-047901** **Application of Ionizing Radiation for the Protection of Grain from Pests and Diseases** T.V. Chizh*, N.N. Loy*, A.N. Pavlov*, M.S. Vorobyev** **RIARAE, Obninsk, 249032, Kaluga region, Kiev highway, 109 km, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
62	**S4-O-010701** **Regulator Settings Effect for High-Current Electronics on Functional Efficiency of Gas Cleaning System Filters** M.Yu. Nikolaev, V.V. Makarov, O.P. Kuznetsova *Dostoevsky Omsk State University, Omsk, Russia*

19 September (Wednesday) **11:00 – 13:10**

Oral Session 5

Pulsed power applications

11:00 – 11:30 Invited	**S5-O-000304** **Auxiliary Glow Discharge with Hollow Cathode and Hollow Anode in the Trigger Unit of Cold-Cathode Thyratron** N.V. Landl, Y.D. Korolev, V.G. Geyman, O.B. Frants, G.A. Argunov, I.A. Shemyakin *Institute of High Current Electronics SB RAS, Tomsk, Russia*
11:30 – 11:50	**S5-O-037801** **Study on Series of Multi Thyristor for High Voltage and Rep-Frequency Power Supply** Y. Gao, J. Han, K. Liu, Y. Sun, P. Yan *Institute of Electrical Engineering CAS, Beijing, China*
11:50 – 12:10	**S5-O-014401** **Methods of Triggering for the Cold-Cathode Thyratron with Nanosecond Operation Stability** G.A. Argunov*, N.V. Landl*, Y.D. Korolev*, V.G. Geyman*, O.B. Frants*, P.A. Bak**, A.V. Akimov** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia*
12:10 – 12:30	**S5-O-020702** **Investigation of Arc Motion in Railgun Gas Switch in Oscillatory Regime of Discharge** A.V. Kharlov, E.V. Kumpyak, G.V. Smorudov, N.V. Tsoy *Institute of High Current Electronics SB RAS, Tomsk, Russia*
12:30 – 12:50	**S5-O-024801** **Destruction Features of Steel Inductors with Nitrided Working Surface under Strong Magnetic Field Generation** V.I. Krutikov, A.V. Spirin, S.N. Paranin, D.S. Koleukh, P.A. Russkikh *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*

19 September (Wednesday) 11:00 – 13:10

12:50 – 13:10	**S5-O-031701** **Initiation of Partial Discharges in Oil Shales** A.A. Bukharkin, S.M. Martemyanov *National Research Tomsk Polytechnic University, Tomsk, Russia*

20 September (Thursday) **11:00 – 13:10**

Oral Session 6.1

Intense electron and ion beams

11:00 – 11:30 Invited	**Initiation and Progression of Unipolar, RF, and HPM Breakdown in Gases** A. Neuber *Texas Tech University, USA* *Center for Pulsed Power & Power Electronics, USA*
11:30 – 11:50	**S1-O-012201** **Transport and Focusing of an Electron Beam in Low-Impedance Rod Pinch Diodes** S.A. Sorokin *Institute of High Current Electronics SB RAS, Tomsk, Russia*
11:50 – 12:10	**S1-O-030201** **Realizartion of a Low Energy State of an Electron Beam in a Uniform Channel** M.I. Fuks*, N.F. Kovalev**, E. Schamiloglu* **University of New Mexico, Albuquerque, USA* ***Institute of Applied Physics RAS, Nizhny Novgorod, Russia*
12:10 – 12:30	**S4-P-020301** **A Submicrosecond High-Current Electron Beam Source with an Explosiveemission Cathode and an Auxiliary Discharge Initiated by a Pre-Pulse** A.A. Zherlitsyn, N.V. Tsoy *Institute of High Current Electronics SB RAS, Tomsk, Russia*
12:30 – 12:50	**S1-O-051703** **Research of Energy Density for Pulsed Electron Beam of Wide Electron Kinetic Energy Spectrum** I.S. Egorov, A.V. Poloskov, M.V. Serebrennikov, A.A. Isemberlinova **National Research Tomsk Polytechnic University, Tomsk, Russia*

20 September (Thursday) **11:00 – 13:10**

12:50 – 13:10	**S1-O-038801** **3d Numerical Modeling of Ultrarelativistic Particle Beams with Crossing Angle** M.A. Boronina, V.A. Vshivkov *Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia*

Oral Session 6.2

Discharges with runaway electrons

11:00 – 11:30 Invited	**S6-O-044701 Subnanosecond Switching Devices Based on an «Open» Discharge** P.A. Bokhan*, I.V. Schweigert**, D.E. Zakrevsky* **Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia* ***Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia*
11:30 – 12:00 Invited	**S6-O-002501 Deterministic Modelling of the Runaway Electron Beams Formation in High-Pressure Nanosecond Gas Discharges** V.Y. Kozhevnikov*,**, A.V. Kozyrev**, N.S. Semeniuk**, A.O. Kokovin** **Institute of Electrical and Electronics Engineers, Piscataway, USA* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
12:00 – 12:20	**S6-O-013304** **Main Parameters of the High-Pressure Gas-Discharge Plasma Formed in Strongly Overvoltaged Gaps** D.A. Sorokin*, V.S. Ripenko*, M.I. Lomaev*,** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Reasearch Tomsk State University, Tomsk, Russia*

20 September (Thursday) 11:00 – 13:10

12:20 – 12:40	**S6-O-018603** **Diffuse Discharge in SF_6 and Its Mixtures with H_2, D_2 and C_2H_6 Formed by Nanosecond Voltage Pulses in Non-Uniform Electric Field** D.V. Beloplotov*, M.I. Lomaev*,**, V.F. Tarasenko*,**, A.N. Panchenko*,**, N.A. Panchenko*,*** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia* ****Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*
12:40 – 13:00	**S6-O-018806** **Influence of Frequency and Voltage to Apokamp Discharge Dynamics at Moderate Pressures** E.Kh. Baksht*, E.A. Sosnin*,**, V.S. Skakun*, V.A. Panarin*, V.F. Tarasenko*,** V.S. Kuznetsov* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*
13:10 – 14:30	**LUNCH**

20 September (Thursday) **14:30 – 16:40**

Oral Session 7.1

Intense electron and ion beams

14:30 – 15:00 Invited	**S1-O-012801** **Modern High Intense H-Sources for Accelerators** V. Dudnikov *Muons, Inc., Batavia IL, USA*
15:00 – 15:20	**S1-O-000406** **The Reaction of Arc Discharge Parameters to the Selection of Electrons from the Emission Plasma in an Electron Accelerator with a Mesh Plasma Cathode** M.S. Vorobyov, N.N. Koval, S.Yu. Doroshkevich, S.A. Sulakshin *Institute of High Current Electronics SB RAS, Tomsk, Russia*
15:20 – 15:40	**S1-O-040103** **Table-Top Source of Accelerated Beams of Metallic Ions for Ion Implantation** O.I. Shipilova*, V.P. Dresvyansky**, E.F. Martynovich**, A.L. Rakevich**, S.P. Gorbunov*,V.L. Paperny* **Irkutsk State University, Irkutsk, Russia* ***Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia*
15:40 – 16:00	**S1-P-040501 a Forevacuum Plasma Electron Source for Processing Dielectric Surfaces** A.A. Zenin*, I.Yu. Bakeev*, A.S. Klimov*, Yu.G. Yushkov** **Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
16:00 – 16:20	**S1-O-049901** **Ion Beams of Low-Pressure Glow Discharge in Transverse Supersonic Gas Flow** D. Israphilov *Naberezhnye Chelny Institute (Branch of Kazan Federal University), Naberezhnye Chelny, Russia*

20 September (Thursday) **14:30 – 16:40**

16:20 – 16:40	**S1-O-010401** **Features of Plasma Cathode Grid Stabilization in the Presence of Intense Ion Flux from Accelerating Gap** V.N. Devyatkov, N.N. Koval *Institute of High Current Electronics SB RAS, Tomsk, Russia*

Oral Session 7.2

Discharges with runaway electrons

14:30 – 14:50	**S6-O-045501** **Mechanism of Runaway Electron Generation at Gas Pressures from a Few Atmospheres to Several Tens of Atmospheres** S.N. Ivanov*, N.M. Zubarev*,** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***P.N. Lebedev Physical Institute RAS, Moscow, Russia*
14:50 – 15:10	**S6-O-044601** **I-V Characteristics and Efficiency of Electron Beams Generation in a Continuous "Open" Discharge** P.A. Bokhan *Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia*
15:10 – 15:30	**S6-O-018101** **Changes of the Plane Anode Surface under Different Regimes of Discharge in Nonequlibrium Electric Field** M.A. Shulepov*, M.V. Erofeev*, S.E. Zatsepina*, V.S. Ripenko*, V.F. Tarasenko*, K.I. Almazova**, A.N. Belonogov**, V.V. Borovkov**, E.V. Gorelov**, V.I. Karelin**, I.V. Morozov**, A.A. Trenkin**, S.Yu. Haritonov** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Russian Federal Nuclear Center - All-Russian Research Institute of Experimental Physics, Sarov, Russia*

20 September (Thursday) **14:30 – 16:40**

16:10 – 16:30	**S6-O-010502** **Runaway Electron Beams and X-Ray Radiation Generated During Discharges in Air at Rise Times of Voltage Pulse of 500 and 50 ns** V.F. Tarasenko*, Ch. Zhang**, I.D. Kostyrya*, J. Qiu**, D.A. Sorokin*, P. Yan**, E.Kh. Baksht*, T. Shao** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Institute of Electrical Engineering CAS, Beijing, China*
15:50 – 16:10	**S6-O-025901** **Spectral Pyrometry of Plasma Vortex Rings at Atmospheric Pressure Air** L.Y. Volodin, A.S. Kamrukov, E.Y. Kotovrasov *Bauman Moscow State Technical University, Moscow, Russia*

16:10 – 18:30	**Poster Session 3 & Coffee**

20 September (Thursday) **16:30 – 18:30**

Poster Session 3:

Pulsed power technology

1	**S4-P-002202 Upgrade of the Pulse Transformer URT-0.5M Accelerator** M.E. Balezin*, S.Yu. Sokovnin*,**, A.A. Andreev**, F.V. Averin*** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***Ural Federal University, Ekaterinburg, Russia* ****Ashinskiy Iron and Steel plant, Ash, Russia*
2	**S4-P-003502** **Compact Ltd Cavity on the Basis of New Capacitor-Switch Assembly** I.V. Lavrinovich, D.V. Molchanov, D.V. Rybka, A.P. Artyomov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
3	**S4-P-008701** **Investigation of Power Transistor Parameters for Design High-Frequency High-Voltage Switches** Ch.G. Antipova, V.Yu. Khomich, I.E. Rebrov *Institute for Electrophysics and Electric Power RAS, Saint Petersburg, Russia*
4	**S4-P-019001** **Lewis Transformer with Sequential Adder** V.V. Kladukhin, A.A. Novoselov *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
5	**S4-P-019101** **Pulsed Power Generator Based on Sequential Adder and Double Forming Lines** V.V. Kladukhin, S.P. Khramtsov *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
6	**S4-P-019201** **Controlled Autowave Multi Gap Switch** S.V. Kladukhin, A.A. Novoselov *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*

20 September (Thursday) **16:30 – 18:30**

7	**S4-P-020302** **A Triggered Multi-Gap Switch with a Highly Non-Uniform Electric Field at Negative Potential Electrodes** A.A. Zherlitsyn, E.V. Kumpyak *Institute of High Current Electronics SB RAS, Tomsk, Russia*
8	**S4-P-020502** **Peculiarities of Using the Charging Coils in Fast Ltd Cavities** V.M. Alexeenko*,**, S.S. Kondratiev*, V.A. Sinebryukhov*, S.N. Volkov*, A.A. Kim* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
9	**S4-P-020505** **Numerical Model of the Hcei Switch for the Fast Ltd Cavities** V.M. Alexeenko*,**, S.S. Kondratiev*, V.A. Sinebrukhov*, S.N. Volkov* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
10	**S4-P-020601** **A Coupled-Line Voltage Divider for Recording High-Voltage Nanosecond Pulses** A.M. Efremov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
11	**S4-P-023101** **New Gas Switch Operating Characteristics of Low-Inductance Capacitor-Switch Assembly** D.V. Molchanov, I.V. Lavrinovich, A.P. Artyomov, D.V. Rybka *Institute of High Current Electronics SB RAS, Tomsk, Russia*
12	**S4-P-025602** **Statistical Regularity in LTD Technology** A.A. Kim*, V.M. Alexeenko*,**, S.S. Kondratiev*, V.A. Sinebrukhov*, S.N. Volkov* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*

20 September (Thursday) 16:30 – 18:30

13	**S4-P-026705** **A Compact High-Current «Field-Distortion» Gas Switch with Increased Lifetime of Sharp Trigger Electrode** Y.A. Bykov, V.F. Feduschak, E.G. Krastelev, A.A. Sedin *Joint Institute for High Temperatures RAS, Moscow, Russia*
14	**S4-P-027405** **Sensor of Megaampere Range Current with Risetime Up to 100 TA/s** V.A. Kokshenev *Institute of High Current Electronics SB RAS, Tomsk, Russia*
15	**S4-P-027801** **Alternating Magnetic Field Diffusion in the Inductive Measuring Probe of Circular Cross-Section** G.Sh. Boltachev*, S.A. Chaikovsky*,** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
16	**S4-P-034801** **A Study of Shock Wave Regulation Technology Based on Pulsed Discharge in Water** R. Fu*,**,***, Y. Sun*,**,*** , X. Xu**,***, Y. Gao**,***, P. Yan*,**,*** **Chinese Academy of Sciences, Beijing, China* ***Institute of Electrical Engineering CAS, Beijing, China* ****Key Laboratory of Power Electronics and Electric Drive CAS, Beijing, China*
17	**S4-P-039201** **Al-Si Allooy Multilayer Structure Formation after Electro-Explosive Alloying with Yttrium Oxide Powder** V.E. Gromov*, A.M. Glezer**, Y.F. Ivanov***, S.V. Konovalov****, A.A. Klopotov*****, Y.A. Rubannikova* ** Siberian State Industrial University, Novokuznetsk, Russia* ***National University of Science and Technology, Moscow, Russia* ****Institute of High Current Electronics SB RAS, Tomsk, Russia* ***** National Research Samara University, Samara, Russia* ******Tomsk State University of Architecture and Building, Tomsk, Russia*

20 September (Thursday) 16:30 – 18:30

18	**S4-P-040802** **Features of Process of Avalanche Switching of Silicon Thyristors at High Temperature** S.N. Tsyranov*, O.E. Perminova** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* *** Ural Federal University, Ekaterinburg, Russia*
19	**S4-P-043801** **Inductive Energy Storage for Power Supply of Plasma Cathodes on the Basis of Low Pressure Arc Discharge** S.Yu. Doroshkevich, V.N. Devyatkov, N.N. Koval, M.S. Vorobyov, V.V. Yakovlev *Institute of High Current Electronics SB RAS, Tomsk, Russia*
20	**S4-P-044502** **Fully Solid State High Voltage Pulse Generator for Thyratron Replacement** P.P. Gugin, M.A. Lavrukhin, V.A. Kim *Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia*
21	**S4-P-046001** **Effect of Electron-Beam Polishing of Electrodes on Hold-Off at Pulsed Dc and Microwave Electric Fields in Vacuum** A.V. Batrakov, I.K. Kurkan, E.V. Nefedtsev, S.A. Onischenko, V.V. Rostov, R.V. Tsygankov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
22	**S4-P-046201** **Impact of Snubber Circuit Inductance on Damping Late Currents in a Pulsed Power Circuit** H.S. Grover, F.P. Dawson *University of Toronto, Toronto, Canada*
23	**S4-P-050801** **Numerical Simulation of Common Vacuum Diode Load of «Gamma-4» Facility** S.Yu. Puchagin, V.S. Gordeev, K.V. Strabykin, E.A. Chernyshev, R.P. Truntseva *Russian Federal Nuclear Center - All-Russian Research Institute of Experimental Physics, Sarov, Russia*

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24	**S4-P-050802** **Predictions of Bremsstrahlung Dose Output of «Gamma-4» Facility** S.Yu. Puchagin, K.V. Strabykin, V.S. Gordeev, R.P. Truntseva, E.A. Chernyshev, A.N. Zalyalov **Russian Federal Nuclear Center - All-Russian Research Institute of Experimental Physics, Sarov, Russia*
25	**S4-P-052501** **Study of Process of Avalanche Switching of Silicon Thyristors without Bias** O.E. Perminova*, S.N. Tsyranov** **Ural Federal University, Ekaterinburg, Russia* ***Institute of Electrophysics UD RAS, Ekaterinburg, Russia*

Poster Session 3:

Discharges with runaway electrons

26	**S6-O-003601** **Subnanosecond Breakdown of a Point-To-Plane Gap at Negative and Positive Polarities** D.V. Beloplotov*, D.E. Genin*, D.V. Shtangovets**, V.F. Tarasenko* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*
27	**S6-O-016901** **The Spatial-Temporal Diagnosis of 3-D Multiple Pulsed Plasma Jets** R. Wang, H. Xu, Y. Zhao, C. Zhang, T. Shao *Institute of Electrical Engineering CAS, Beijing, China*
28	**S6-O-018804** **X-Ray and Optical Radiation Generated During Corona Discharge in Air at Microsecond Rise Time of Voltage Pulse** E.Kh. Baksht, V.F. Tarasenko, E.A. Sosnin, I.D. Kostyrya *Institute of High Current Electronics SB RAS, Tomsk, Russia*

20 September (Thursday) 16:30 – 18:30

29	**S6-P-000202** **The Effect of the Micro-Structure of Cathode Surface on the Generation of Runaway Electrons in a Forming Cathode Layer of Self-Sustained High Pressure Gas Discharge** V.V. Lisenkov*,**, S.N. Ivanov*, Yu.I. Mamontov**, I.N. Tikhonov** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***Ural Federal University, Ekaterinburg, Russia*
30	**S6-P-000203** **Study of High-Pressure Gas Diode Switching Process in Subnanosecond Time Scale** S.N. Ivanov, V.V. Lisenkov *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
31	**S6-P-000205** **Dynamics of the Electron Energy Distribution Function in an Inhomogeneous Electric Field** V.V. Lisenkov*,**, Yu.I. Mamontov** **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***Ural Federal University, Ekaterinburg, Russia*
32	**S6-P-001301** **Dynamics of Pulse Discharge in Atmospheric Pressure Argon** V.S. Kurbanismailov*, S.A. Maiorov**,***, O.A. Omarov*, G.B. Ragimkhanov*, D.V. Tereshonok*** **Dagestan State University, Makhachkala, Russia* ***A.M. Prokhorov General Physics Institute RAS, Moscow, Russia* ****Joint Institute for High Temperatures RAS, Moscow, Russia*
33	**S6-P-001302** **Electrondrift Caracteristicsin Argon with Iron Vapor: Coefficients of Mobility, Ionization and Runaway** V.S. Kurbanismailov*, S.A. Maiorov**,***, O.A. Omarov*, G.B. Ragimkhanov* **Dagestan State University, Makhachkala, Russia* ***A.M. Prokhorov General Physics Institute RAS, Moscow, Russia* ****Joint Institute for High Temperatures RAS, Moscow, Russia*

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34	**S6-P-001303** **Impulse Discharge in Argon in the Spray Mode of the Matrix of the Substance of the Electrode** V.S. Kurbanismailov*, S.A. Maiorov**,***, O.A. Omarov*, G.B. Ragimkhanov* **Dagestan State University, Makhachkala, Russia* ***A.M. Prokhorov General Physics Institute RAS, Moscow, Russia* ****Joint Institute for High Temperatures RAS, Moscow, Russia*
35	**S6-P-003602** **Streamers in a Gap with an Inhomogeneous Electric Field Strength Distribution Filled with Atmospheric Pressure Air** V.F. Tarasenko*, G.V. Naidis**, D.V. Beloplotov*, M.I. Lomaev*, D.A. Sorokin*, N.Yu. Babaeva** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Joint Institute for High Temperatures, Izhorskaya 13, Moscow, 125412, Russia*
36	**S6-P-003603** **Excitation of Diamonds by a Subnanosecond Runaway Electron Beam with an Electron Energy of Up to 200 KeV Generated in a Nanosecond Gas Discharge** D.V. Beloplotov, M.I. Lomaev, V.F. Tarasenko, E.Kh. Baksht, A.G. Burachenko, M.V. Erofeev, E.I. Lipatov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
37	**S6-P-006001** **Low-Energy Ions Source of Plane Geometry on the Basis of Plasma-Beam Discharge with a Slot Cathode** N.A. Ashurbekov, K.O. Iminov, G.Sh. Shakhsinov, A.R. Ramazanov *Dagestan State University, Makhachkala, Russia*
38	**S6-P-006002** **The Impact of the Dielectric Boundary on the Spatial Structure and Properties of a Nanosecond Discharge with an Extended Slot Cathode** N.A. Ashurbekov, K.O. Iminov, G.Sh. Shakhsinov, A.R. Ramazanov *Dagestan State University, Makhachkala, Russia*

20 September (Thursday) 16:30 – 18:30

39	**S6-P-008402** **Spectral Instruments for X-Ray and VUV Plasma Diagnostics** A.P. Shevelko *P.N. Lebedev Physical Institute RAS, Moscow, Russia*
40	**S6-P-010302** **Effect of the Plasma Channel Velocity on the Diode Parameters During Breakdown in a Highly Inhomogeneous Electric Field** S.Ya. Belomyttsev*, A.A. Grishkov*, V.A. Shklyaev*,**, V.V. Ryzhov*,** **Institute of High Current Electronics SB RAS, Tomsk, Russia* *** Institute of High Technology Physics of National Research Tomsk Polytechnic University, Tomsk, Russia*
41	**S6-P-010303** **Ionization Wave Velocity for a Rapidly Broadening Channel** V.A. Shklyaev*,**, A.A. Grishkov*, S.Ya. Belomyttsev* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Institute of High Technology Physics of National Research Tomsk Polytechnic University, Tomsk, Russia*
42	**S6-P-045502** **Study of the Formation Time of a Self-Sustained Subnanosecond Discharge at High and Ultrahigh Gas Pressures** S.N. Ivanov, V.V. Lisenkov *Institute of Electrophysics UD RAS, Ekaterinburg, Russia*
43	**S6-P-045503** **Study of the Ionization Processes at the Delay Stage of the Subnanosecond Discharge in High-Pressure Nitrogen** S.N. Ivanov*, V.A. Shklyaev** ** Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*

20 September (Thursday) 16:30 – 18:30

44	**S6-P-010503** **Luminescence of Crystals Excited by a Runaway Electron Beam and by KrCl Excilamp** V.F. Tarasenko, D.V. Beloplotov, A.G. Burachenko, E.Kh. Baksht, D.A. Sorokin, E.I. Lipatov, M.I. Lomaev *Institute of High Current Electronics SB RAS, Tomsk, Russia*
45	**S6-P-013305** **The Formation of Diffuse Plasma of a Discharge in Air, Nitrogen and Argon at Atmospheric Pressure Above the Surface of Liquid H_2o and a Change in the Structure of H_2O Upon Discharge Plasma Effect** D.A. Sorokin*, V.M. Orlovskii*, V.A. Panarin* *Institute of High Current Electronics SB RAS, Tomsk, Russia*
46	**S6-P-013309** **Breakdown Phase in Strongly Overvoltaged Gaps Filled with High-Pressure Gases** D.A. Sorokin*, D.V. Beloplotov*, V.A. Shklayev*, A.A. Grishkov*, V.F. Tarasenko*, M.I. Lomaev*,** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*
47	**S6-P-013801** **Theoretical Modelling of Fast Atmospheric Pressure Discharge in Gas Diode with Plane-Grid Cathode System** A.O.Kokovin*, V. Kozhevnikov**, A. Kozyrev*, N. Semeniuk**, V. Goliak* **National Research Tomsk State University, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
48	**S6-P-015101** **Formation of 1.4-MeV Runaway Electrons Flow in Air** A.G. Sadykova*, M.S. Pedos*, S.N. Rukin*, V.V. Rostov**, I.V. Romanchenko**, A.F. Sadykov***, K.A. Sharypov*, V.G. Shpak*, S.A. Shunailov*, M.R. Ul'masculov*, M.I. Yalandin* **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia* ****M.N. Mikheev Institute of Metal Physics UD RAS, Ekaterinburg, Russia*

20 September (Thursday) 16:30 – 18:30

49	**S6-P-017002** **Study on Characteristics of Multi-Needle-To-Plate Nanosecond-Pulse Diffuse Discharge at Atmospheric Pressure** C. Zahgn*,***, Z. Li*,**, J. Qiu*,***, X. Chen*,***, P. Yan*,***, T. Shao*,*** **Institute of Electrical Engineering CAS, Beijing, China* ***Industrial Technology Research Institute, Zhengzhou University, Zhengzhou, China* ****University of Chinese Academy of Sciences, Beijing, China*
50	**S6-P-018602** **Formation of a Negative Streamer in Nitrogen and Air in a Non-Uniform Electric Field at Submicrosecond Front of Voltage Pulse** M.I. Lomaev*,**, D.V. Beloplotov*, V.F. Tarasenko*,**, D.A. Sorokin* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*
51	**S6-P-018803** **Apokamp Discharge as a Source of Nitrogen Oxcides** E.Kh. Baksht*, E.A. Sosnin*,**, V.S. Skakun*, V.A. Panarin*, V.F. Tarasenko*,**, M.V. Didenko** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*
52	**S6-P-035501** **High–Voltage Pulse Generator for «Runaway Electrons» Sources in Dense Gases** B.A. Kozlov, N.S. Kulikov *Ryazan State Radio Engineering University, Ryazan, Russia*
53	**S6-P-035502** **Volume Discharges in CO_2–Laser Mixtures at Atmospheric Pressure with High Energy Density** D. Manh, B.A. Kozlov, M. Nguyen, N.V. Sukhorukova *Ryazan State Radio Engineering University, Ryazan, Russia*

20 September (Thursday) 16:30 – 18:30

54	**S6-P-036501** **Physical Kinetics of Electrons in the Breakdown of a Long Gas-Filled Gap with a Longitudinally Inhomogeneous Field and Pressure Distribution** V.S. Golyak*, A.O. Kokovin*, V.Yu. Kozhevnikov**, A.V. Kozyrev*, N.S. Semeniuk** **National Research Tomsk State University, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
55	**S6-P-036502** **Two Models of Three-Component High-Pressure Oxygen Plasma** V.S. Goliak*, V.Yu. Kozhevnikov**, A.V. Kozyrev*, N.S. Semeniuk** **National Research Tomsk State University, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
56	**S6-P-043001** **Critical Runaway Electron Avalanche** E.V. Oreshkin *P.N. Lebedev Physical Institute RAS, Moscow, Russia*
57	**S6-P-044703** **Spectral Characteristics of Fast Heavy Particles in an Open Discharge** P.A. Bokhan, P.P. Gugin, M.A. Lavrukhin, D.E. Zakrevsky *Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia*
58	**S6-P-027101** **The Near-Cathode Processes and Initiation of Sparks in Air Discharge** E.V. Parkevich*,**, M.A. Medvedev*,**, A.V. Agafonov*, S.I. Tkachenko**, A.V. Oginov*, T.A. Shelkovenko*, S.A. Pikus* **P.N. Lebedev Physical Institute RAS, Moscow, Russia* ***Moscow Institute of Physics and Technology, Dolgoprudny, Russia*
59	**S6-O-027001** **Filamentation of Sparks in Air Discharge** E.V. Parkevich, M.A. Medvedev *P.N. Lebedev Physical Institute RAS, Moscow, Russia* *Moscow Institute of Physics and Technology, Dolgoprudny, Russia*

21 September (Friday) **11:00 – 13:10**

Oral Session 8

Pulsed power applications

11:00 – 11:30 Invited	**S5-O-035901** **All Solid-State Modularized Sparker Used for Metallic Ore Exploration** Y. Sun*,**, X. Xu*, R. Fu*,*, P. Yan*,** **Institute of Electrical Engineering CAS, Beijing, China* *** University of Chinese Academy of Sciences, Beijing, China*
11:30 – 11:50	**S3-O-007101** **Physiological Mechanisms of Nanosecond Repetitive Pulsed Microwave Exposure on the Organism** A.V. Kereya*,**, M.A. Bolshakov*,***, L.P. Zharkova*,***, O.P. Kutenkov*, V.V. Rostov* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Siberian State Medical University, Tomsk, Russia* ****National Research Tomsk State University, Tomsk, Russia*
11:50 – 12:10	**S5-O-001708** **The Use of Nanosecond Electron Beam for the Eggs Surface Disinfection in Industrial Poultry** S.Yu. Sokovnin*,**,***, I.M. Donnik*, I.A. Shkuratova****, A.S. Krivonogova*,****, A.G. Isaeva*,****, M.E. Balezin*,*** R.A. Vazirov*,** **Urals State Agrarian University, Ekaterinburg, Russia* ***Ural Federal University, Ekaterinburg, Russia* ****Institute of Electrophysics UD RAS, Ekaterinburg, Russia* *****State Scientific Research Institute of the Veterinary Medicine, Ekaterinburg, Russia*
12:10 – 12:30	**S5-O-026703** **A High-Current Nanosecond Electron Accelerator Mir-M for Biomedical Research** Y.A. Bykov*, V.F. Feduschak*, A.V. Ivanov**, E.G. Krastelev*, A.A. Sedin*, A.M. Shishkin**, V.P. Smirnov* **Joint Institute for High Temperatures RAS, Moscow, Russia* *** Russian Scientific Center of Roentgenology, Moscow, Russia*

21 September (Friday) **11:00 – 13:10**

12:30 – 12:50	**S5-O-030001** **Comparison of Acceleration for Different Metallic Flyers on the Angara-5-1 Installation** S.I. Tkachenko*,**, G.M. Oleinik*, E.V. Grabovski*, A.N. Gribov*, A.O. Shishlov*, K.V. Khishchenko*** **RF SRC Troitsk Institute for Innovation and Fusion Research, Troitsk, Russia* ***Moscow Institute of Physics and Technology, Dolgoprudny, Russia* ****Joint Institute for High Temperatures RAS, Moscow, Russia*
12:50 – 13:10	**S5-O-043601** **Intensification of the Output of Chemical Elements from Ore in Conditions Gliding Discharge** L. Hongda*, S.A. Sosnovskiy**, V.I. Sachkov**, B.B. Kudabayev***, M.A. Kazaryan****, V.G. Rozdolskiy***** ** Shenyang University of Technology, Shenyang, China* ***National Research Tomsk State University, Tomsk, Russia* ****Engineering School of New Manufacturing Technologies of National Research Tomsk Polytechnic University, Tomsk, Russia* *****P.N. Lebedev Physical Institute RAS, Moscow, Russia* ******Engineering School of Nuclear Technology of National Research Tomsk Polytechnic University, Tomsk, Russia*

13:10 – 14:30	**LUNCH**
17:00	**CLOSING CEREMONY**

14th International Conference on Modification of Materials with Particle Beams and Plasma Flows

Chairman
Nikolai KOVAL
Institute of High Current Electronics, Tomsk, Russia

Co-Chairman
Valery KRIVOBOKOV
Institute of Physics and Technology, TPU, Tomsk, Russia

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Institute of High Current Electronics, Tomsk, Russia

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Institute of Physics and Technology, TPU, Tomsk, Russia

C1 Beam and plasma sources
C2 Fundamentals of modification processes
C3 Modification of material properties
C4 Coatings deposition
C5 Nanoscience and nanotechnology

17 September (Monday) **11:00 – 13:10**

Oral Session 1.1

Beam and plasma sources

11:00 – 11:30 Invited	**C1-O-018001** **Some Vacuum-Arc-Based Plasma and Ion Beam Tools for Surface Modification** I. Brown *Lawrence Berkeley National Laboratory*
11:30 – 11:50	**C1-O-006501** **Research of Igdantine Destruction under High-Current Beam of Electrons with Energy more than 1 MeV** E.D. Kazakov*, G.I. Dolgachev*, Yu.G. Kalinin*, S.A. Malinin**, D.D. Maslennikov*, D.N. Sadovnichnii** **NRC «Kurchatov Institute», Moscow, Russia* *** FGUP "FCDT "Soyuz", Dzerzhinsky, Russia*
11:50 – 12:10	**C1-O-929001** **Energy Spectrum of the Electron beam outputted into the atmosphere Using an Electron Accelerator with a Mesh Plasma Cathode** M.S. Vorobyov, E.Kh. Baksht, N.N. Koval, V.F. Tarasenko, S.Yu. Doroshkevich *High Current Electronics Institute SB RAS, Tomsk, Russia*
12:10 – 12:30	**C1-O-009206** **To the Question of Instability in the Hall Thruster (Ion Beam Source)** M.K. Marakhtanov *Bolshaya Cherkizovskaya, Moscow, Russia*

17 September (Monday) **11:00 – 13:10**

12:30 – 12:50	**C1-O-005902** **Investigation of a High Voltage Ac Plasma Torch Operating on Mixtures of Methane and Other Gases** D.I. Subbotin*,**,***, A.V. Surov*, S.D. Popov*, V.E. Popov*, E.O. Serba*, V.V. Lizander*,**, N.A. Charykov**, Gh.V. Nakonechny* **Institute for Electrophysics and Electric Power of the Russian Academy of Sciences (IEE RAS), Saint-Petersburg, Russia* ***St. Petersburg State Technological Institute (Technical University), Saint-Petersburg, Russia* ****St. Petersburg State University, Saint Petersburg, Russia*
12:50 – 13:10	**C1-O-010101** **Extended Ion-Plasma Deposition System** V.V Shugurov, N.A. Prokopenko *High Current Electronics Institute SB RAS, Tomsk, Russia*

Oral Session 1.2

Fundamentals of modification processes

11:00 – 11:30 Invited	**C2-O-024301 Progress in High Intensity, Low Ion Energy Implantation Method Development** A.I. Ryabchikov *National Research Tomsk Polytechnic University, Tomsk, Russia*
11:30 – 11:50	**C2-O-021601** **Plasma-Surface Interaction: Ion Flux on Emissive Surface with Debye-Scale Erosion Trenches** I.V. Schweigert*,**, M. Keidar** **Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Russia* ***George Washington University, Washington D.C., USA*

17 September (Monday) **11:00 – 13:10**

11:50 – 12:10	**C3-P-021504** **Cracks Formation in Tungsten after Combined Compression Plasma Flows and High-Intense Ion Beam Influence** V.I. Shymanski*, V.V. Uglov*, V.S. Pigasova*, V.M. Astashynski**, G.E. Remnev***, H.W. Zhong****, J. Shen****, X.Y. Le**** **Belarusian State University, Minsk, Belarus* ***A.V. Luikov Heat and Mass Transfer Institute of National Academy of Science of Belarus, Minsk, Belarus* ****Tomsk Polytechnic University, Tomsk, Russia* *****School of Physics and Nuclear Engineering, Beihang University, Beijing, China*
12:10 – 12:30	**C2-O-018301** **Diagnostics of Gas Cluster Ion Beam for Materials Treatment** N.G. Korobeishchikov*, M.A. Roenko*, V.A. Kharchenko*, I.V. Nikolaev* **Novosibirsk State University, Novosibirsk, Russia*
12:30 – 12:50	**C2-O-040701** **Modeling of the Physicochemical Interaction of Reacting Components in a Molten Pool During Laser Deposition of Powder** O.B. Kovalev, A.M. Gurin *Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia*
12:50 – 13:10	**C2-O-014601** **Vibroacoustic Diagnosis of the Surface Alloying Process** S.V. Fedorov, M.P. Kozochkin, Thein Htoo Maung *MSTU "STANKIN", Moscow, Russia*

13:10 – 14:30	**LUNCH**

17 September (Monday) **14:30 – 16:40**

Oral Session 2.1

Beam and plasma sources

14:30 – 14:50 Invited	**C1-O-014301** **Discharge with a Self-Heated Hollow Cathode and a vaporizable anode in an Inhomogeneous Magnetic Field** N.V. Gavrilov, A.S. Kamenetskikh, S.V. Krivoshapko, P.V. Tretnikov *Institute of Electrophysics of the UB of RAS, Yekaterinburg, Russia*
14:50 – 15:10 canceled	**C1-O-012802** **Modern Ion Sources for Semiconductor Implantation** V. Dudnikov *Muons Inc., Alexandria, United States*
15:10 – 15:35 report	**C1-O-047201** **Increase of the Uniformity of the Plasma Density Distribution in a Non-Self-Sustained Glow Discharge by Change of the Shape of a Mesh Emission Electrode** E.V. Ostroverchov *Institute of High Current Electronics SB RAS, Tomsk, Russia* **C1-O-041801** **Optical Spectra of Plasma of a Pulsed Non-Self-Sustained Hollow Cathode Glow Discharge** V.V. Denisov, E.V. Ostroverchov, V.E. Prokopyev, N.N. Koval *Institute of High Current Electronics SB RAS, Tomsk, Russia*
15:35 – 15:55	**C1-O-040104** **Registration of Over-Accelerated Electrons in a High-Current Picosecond Accelerator** V.L. Paperny**, V.I. Baryshnikov*,** **Irkutsk State Railway University, Irkutsk, Russia* ***Applied Physics Institute of the Irkutsk State University, Irkutsk, Russia*

17 September (Monday) **14:30 – 16:40**

15:55 – 16:15	**C1-O-030102** **Powerful Ac Electric Arc Plasma Torches - Advanced Directions of Implementation** S. D. Popov*, A.V. Surov*, A.A. Safronov*, E.O. Serba*, V.A. Spodobin*, G.V. Nakonechny*, A.V. Nikonov*, D.I. Subbotin*,**,*** **Institute for Electrophysics and Electric Power of the Russian Academy of Sciences (IEE RAS), St. Petersbourg, Russia* **St. Petersburg State Technological Institute (Technical University), Saint-Petersburg, Russia* **St. Petersburg State University, Saint Petersburg, Russia*
16:15 – 16:35	**C1-O-037001** **Generation of the Low-Energy Large-Radius Quasi-Continuous Electron Beam by the Forevacuum Plasma-Cathode Source Based on the Cathodic Arc** A.V. Medovnik*, A.V. Kazakov*, V.A. Burdovitsin*, E.M. Oks*,** **Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia* ***Institute of High Current Electronics, Siberian Branch of the Russian Academy of Sciences, Tomsk, Russia*

Oral Session 2.2

Fundamentals of modification processes

14:30 – 15:00 Invited	**C2-O-050401** **Mechanisms of Surface Formation under Processing by Compression Plasma Flows** A.Ya. Leyvi, A.P. Yalovets ** Federal State Autonomous Educational Institution of Higher Education "South Ural State University (national research university)", Chelyabinsk, Russia*

17 September (Monday) **14:30 – 16:40**

15:00 – 15:20	**C2-O-046101 Blistering Formation in Stainless Steel C12Cr18Ni10Ti and Pure Metals Mo and W Induced by Low-Energy Alpha-Particles Bombardment** S.B. Kislitsin*,** I.D. Ivanov*, A.S. Dikov* **Institute of Nuclear Physics, Almaty, Kazakhstan* ***NRNU "MEPhI", Moscow, Russia*
15:20 – 15:40	**C2-O-048101** **Ion-Beam Nitriding of Steel 40x with a High-Intensity Ion Beam** Chan Mi Kim An, A.I. Ryabchikov, T.V. Koval, D.O. Sivin, P.S. Anan'in, O.S. Korneva *National Research Tomsk Polytechnic University, Tomsk, Russia*

16:40 – 18:30	**Poster Session 1 & Coffee**

17 September (Monday) **16:30 – 18:30**

Poster Session 1:

Modification of material properties

1	**C3-P-001101** **Tribomechanical Properties of the Surface of Instrumental Steel after Laser Modification** S.A. Vavilin*, S.I. Yaresko** ** Samara State Technical University, Samara, Russia* ***Samara Branch of P.N. Lebedev Physical Institute of the Russian Academy of Sciences, Samara, Russia*
2	**C3-P-001402** **Influence of Hydrogen Content in Working Gas on Growth Kinetics of Hardened Layer at Ion Nitriding of Steels** R.S. Esipov, Yu.G. Khusainov, K.N. Ramazanov, R.D. Agzamov, I.V. Zolotov *Ufa state aviation technical university, Ufa, Russia*
3	**C3-P-001403** **Low Temperature Ion Nitriding Titanium Alloy Ti-6Al-4V in the Coarse Grained and Ultrafine-Grained States** Yu.G. Khusainov, R.D. Agzamov, A.A. Nikolaev, R.S. Esipov, A.F. Tagirov, I.V. Zolotov *Ufa State Aviation Technical University, Ufa, Russia*
4	**C3-P-001501** **Effect of Pulsed Electron Beam Exposure on Structure and Diffusive Properties of the Ultrafine-Grained Molybdenum** E.N. Stepanova*, G.P. Grabovetskaya**, A.D. Teresov***, I.P. Mishin**, A.G. Knyazeva** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia* ****Institute of High Current Electronics SB RAS, Tomsk, Russia*

17 September (Monday) **16:30 – 18:30**

5	**C3-P-002001** **Formation Features of Composite Coatings Based on Titanium Nitride by Method of Vacuum-Arc evaporation and Magnetron Sputtering** D.B-D. Tsyrenov, A.P. Semenov, N.N. Smirnyagina, I.A. Semenova *Institute of Physical Materials Science SB RAS, Ulan-Ude, Russia*
6	**C3-P-003801** **Electron-Beam Synthesis of Graded Metal-Ceramic Materials in the Forevacuum Pressure Range** A.S. Klimov, I.Yu. Bakeev, A.A. Zenin *Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*
7	**C3-P-009401** **Obtaining Al/Sic Composite from the Product of Si-C System Dc Arc Discharge Synthesis** A.Y. Pak, A.A. Tsuprianchik, O.A. Bolotnikova, M.S. Tukeeva *Tomsk Polytechnic University, Tomsk, Russia*
8	**C3-P-009803** **Introducing of Hydrogen into Titanium by Plasma Methods** N.N. Nikitenkov, E.D. Dauletkhanov, D.O. Sivin, V.S. Sypchenko, M.S. Syrtanov, Zhan Le *Tomsk Polytechnic University, Tomsk, Russia*
9	**C3-P-013601** **Mechanisms for the Strengthening of Silumins** E.A. Petrikova, Yu.F. Ivanov **Institute of High Current Electronics SB RAS, Tomsk, Russia*
10	**C3-P-014003** **Absorption of Light by Yag:Nd Nanopowder-Based Laser Ceramics Irradiated by Pulsed Electronic Beam** P.A. Morozov*, V.Yu. Yakovlev**, V.D. Kulikov***, V.A. Shitov* **Institute of Electrophysics UD RAS, Ekaterinburg, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia* ****Tomsk Agricultural Institute, Tomsk, Russia*

11	**C3-P-016401** **Influence of High-Intense Pulsed Ion Irradiation on Optical Properties of Al–Si–N Nanocomposite Coatings** S.K. Pavlov*, G.E. Remnev*, J. Musil*,**, V.A. Tarbokov*, F.V Konusov*, A.V. Kabyshev*, D. Jandovšňák**, S.P. Zenkin* **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Department of Physics and NTIS-European Centre of Excellence, University of West Bohemia, Plzeň, Czech Republic*
12	**C3-P-017501** **Composition of Catalytic Layers Prepared by Ion Beam Assisted Deposition of Platinum and Ytterbium on Carbon Fiber Paper Catalyst Carriers** V.V. Poplavsky, A.V. Dorozhko *Belarusian State Technological University, Minsk, Belarus*
13	**C3-P-018102** **The Effects of Electron Radiation on Polymeric Materials in Space** V.S. Ripenko*** Yu.V. Savinykh*,**, V.M.Orlovskii***, N.S.Kobotaeva** **Institute of petroleum chemistry SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia* ****Institute of High Current Electronics SB RAS, Tomsk, Russia*
14	**C3-P-019701** **The Relaxation of Electrophysical Properties of MCT Epitaxial Films after Influence of a High Frequency Nanosecond volume discharge in Atmospheric Pressure Air** P.A. Ermachenkov*, D.V. Grigoryev*, A.V. Voitsekhovskii*, V.F. Tarasenko**, V.S. Ripenko**, M.A. Shulepov**, M.V. Erofeev**, S.A. Dvoretskii***, N.N. Mikhailov*** **Tomsk State University, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia* ****Semiconductor Physics SB RAS, Novosibirsk, Russia*
15	**C3-P-019801 Red Shift of Absorption Spectra of Metal-Doped TiO_2 Coatings** M.V. Shandrikov*, A.S. Bugaev*, A.V. Vizir*, K.P. Savkin*, E.M. Oks*,** **Institute of High Current Electronics SB RAS, Tomsk, Russia* *** Tomsk State University of Control System and Radioelectronics, Tomsk, Russia*

17 September (Monday) **16:30 – 18:30**

16	**C3-P-021503** **Radiation Resistance of Multilayered Thin Films under High-Intense Short-Pulsed Ion Beam Impact** V.I. Shymanski*, V.V. Uglov**, S.K. Pavlov**, A. Kadyrov**, G.E. Remnev** **Belarusian State University, Minsk, Belarus* ***Tomsk Polytechnic University, Tomsk, Russia*
17	**C2-O-021501** **Oxidation Resistance of Titanium Treated by Compression Plasma Flows** V.I. Shymanski*, N.N. Cherenda*, V.V. Uglov*, V.M. Astashynski**, A.M. Kuzmitski** **Belarusian State University, Minsk, Belarus* ***A.V. Luikov Heat and Mass Transfer Institute of National Academy of Science of Belarus, Minsk, Belarus*
18	**C3-P-022401** **Investigation of the Effect of Soft X-Ray Radiation on the Electrophysical Characteristics of Epitaxial Layers N-$Hg_{1-X}Cd_xTe$** A.V. Voitsekhovskii*, V.G. Sredin**, O.B. Anan`In***, A.P. Melekhov***, S.N. Nesmelov*, S.M. Dzyadukh*, V.A. Yurchak*** **National Research Tomsk State University, Tomsk, Russia* ***The Military Academy of Strategic Rocket Troops after Peter the Great, Balashikha, Russia* ****National Research Nuclear University MEPhI, Moscow, Russia*
19	**C3-P-022402** **Distribution Profiles of Radiation Donor Defects in Arsenic-Implanted HgCdTe Films** A.V. Voitsekhovskii*, I.I. Izhnin*,**, Syvorotka I.I.**, A.G. Korotaev*, K.D. Mynbaev***, V.S. Varavin****, S.A. Dvoretsky*, ****, N.N. Mikhailov****, V.G. Remesnik****, M.V. Yakushev**** **National Research Tomsk State University, Tomsk, Russia* ***Scientific Research Company "Electron-Carat", Lviv, Ukraine* ****Ioffe Institute, St.–Petersburg, Russia* *****A.V. Rzhanov Institute of Semiconductor Physics of SB RAS, Novosibirsk, Russia*

20	**C3-P-023202** **Combined Electron-Ion-Plasma Treatment of High-Chromium Steel Surface** Yu.F. Ivanov, O.V. Krysina, Yu.H. Akhmadeev, I.V. Lopatin, E.A. Petrikova, Yu.A. Denisova *Institute of high current electronics SB RAS, Tomsk, Russia*
21	**C3-P-023203** **Surface Alloying of High-Chromium Steel: Structure and Properties** Yu.F. Ivanov, O.V. Krysina, Yu.H. Akhmadeev, I.V. Lopatin, E.A. Petrikova, Yu.A. Denisova *Institute of high current electronics SB RAS, Tomsk, Russia*
22	**C3-P-024501** **The Initial Stage of Particle Beam Action on the Taget Surface** E.S. Parfenova*, A.G. Knyazeva*,** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*
23	**C3-P-024601** **Diffusion in the Volume and Along Grain Boundaries under Action of an Electron Beam** M.V. Chepak-Gizbrekht *Tomsk Polytechnic University, Tomsk, Russia*
24	**C3-P-025202 High Intensity, Low Ion Energy Implantation of Nitrogen in AISI 420 Alloy Steel** O.S. Korneva, A.I. Ryabchikov, D.O. Sivin, P.S. Ananin, S.V. Dectyarev *National Research Tomsk Polytechnic University, Tomsk, Russia*
25	**C3-P-026801 Effect of Megaplastic Deformation and Subsequent Ion Irradiation on the Al–Cu–Mg Alloy Structure** N.V. Gushchina*, V.V. Ovchinnikov*,**, F.F. Makhin'ko*, L.I. Kaigorodova***, D.Y. Rasposienko*** **Institute of Electrophysics UB RAS, Yekaterinburg, Russia* ***Ural Federal Technical University named after the First President of Russia B.N. Yeltsin, Yekaterinburg, Russia* ****Institute of Metal Physics UB RAS, Yekaterinburg, Russia*

26	**C3-P-030404 the Effect of Fluence and Annealings on Light-Emitting Properties of Silicon Oxide Films Implanted with Zinc and Oxygen Ions** F.F. Komarov*, M.A. Makhavikou*, L.A. Vlasukova**, I.N. Parkhomenko**, O.V. Milchanin*, E. Wendler***, A.V. Mudryi****, V.D. Zhivulko**** **A.N. Sevchenko Institute of Applied Physical Problems, Belarusian State University, Minsk, Belarus* ***Belarusian State University, Minsk, Belarus* ****Friedrich-Schiller University Jena, Jena, Germany* *****Scientific and Practical Materials Research Center, National Academy of Sciences of Belarus, Minsk, Belarus*
27	**C3-P-030902** **The Structure and Properties of Modified Surface Carbon Steel by Compression Plasma Flow** K.V. Nosov, A.V. Pavlov, Yu.Yu. Protasov, V.D. Telekh, T.C. Shchepanyuk *Bauman Moscow State Technical Uneversity, Moscow, Russia*
28	**C3-P-031401** **Thermal Stresses Computation under High–Current Pulsed Radiation of AISI M2 Tool Steel** A.I. Blesman*, D.A. Postnikov**, D.A. Polonyankin** **Omsk State Technical University (OmSTU), Omsk, Russia* ***Omsk State Technical University (OmSTU), Omsk, Russia*
29	**C3-P-034004** **Experimental and Modelling Studies of Sn-Fe Layered System** B.Zh. Suleimanov, A.K. Zhubaev *Aktobe Regional State University, Aktobe, Kazakhstan*
30	**C3-P-034601** **Plasma Device for Material Surface Treatment by High-Heat Plasma** V.P. Budaev*,**, S.D. Fedorovich*, M.V. Lukashevsky*, Yu.V. Martynenko**, M.K. Gubkin*, A.V. Karpov**, A.V. Lazukin*, E.A. Shestakov**, E.V. Sviridov*, K.A. Rogozin*, N.S.Sergeev*, K.S. Kondratenko*, P.A.Dergachev*, E. A. Kuznetsova* **National Research University "MPEI", Moscow, Russia* **NRC Kurchatov Institute, Moscow, Russia*

31	**C3-P-035401** **Study of Plasma Influence and Sterilization Effect on the Wettability Changing of polylactic acid films** E.O. Filippova, N.M. Ivanova, V.F. Pichugin *Tomsk Polytechnic University, Tomsk, Russia*
32	**C3-P-037101** **Production of Porous Hydroxyapatite Coating on the Titanium Substrate by High Power Ion Beam Irradiation** T.V. Panova, V.S. Kovivchak, Ya.A. Kalinina *Dostoevsky Omsk State University, Omsk, Russia*
33	**C3-P-037303** **Formations of Wear-Resistant Extended Layers by Combined Electron-Ion-Plasma Treatment on the Surface of Aluminum** O.V. Krysina, Yu.F. Ivanov, Yu.H. Akhmadeev, P.V. Moskvin, E.A. Petrikova *Institute of high current electronics SB RAS, Tomsk, Russia*
34	**C3-P-038201** **Field Ion Microscopy of Radiation Damages in Materials after Exposure by Fast Neutrons Or Ar+Beams** V.A. Ivchenko *Institute of Electrophysics UB RAS, Yekaterinburg, Russia*
35	**C3-P-038601** **Structural Phase Transformations of the Surface Layer of Ti-SiC System under Electron Beam Treatment** A.A. Leonov*, E.E. Kuzichkin*, V.V. Shugurov**, A.D. Teresov**, M.P. Kalashnikov*, M.S. Petyukevich*, V.V. Polisadova*, Yu.F. Ivanov** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Institute of High-Current Electronics SB RAS, Tomsk, Russia*
36	**C3-P-038701** **Hypereutectic Silumin Modification by Ion-Electron-Plasma Method** M.E. Rygina*, E.A. Petrikova**, A.D. Teresov**, V.V. Shugurov**, Yu.F. Ivanov** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*

17 September (Monday) **16:30 – 18:30**

37	**C3-P-039001** **The Formation of Ohmic Contacts of Molybdenum/Silicon at Ion Implantation into the Interface Region** Y.P. Snitovsky *JSC ''Integral''– managing company ''Integral'', Minsk, Belarus*
38	**C3-P-043401** **Structuring of Steel Surface by Powerfull Plasma Pinch** A.M. Zhukeshov, M. Mukhamedryskyzy, A.T Gabdullina, A.U. Amrenova, Z. Moldabekov *Nanotechnology laboratory open type of Kazakh national university named after al-Farabi, Almaty, Kazakhstan*
39	**C3-P-051101 First Principles Investigation on Catalytic Properties of N-Doped Co_3O_4 Bulk** G.A. Kaptagay*, Y. Mastrikov**, A. Kopenbaeva*, S. Sandivaeva* **Kazakh State teacher training university, Almaty, Kazakhstan* ***Institut of Solids, Riga, Latvia*
40	**C3-P-051401** **Phase Transformations in Nanostructured Coatings Based on Zr-Y-O Produced by a Method Magnetron sputtering** A.V. Nikonenko*, M.V. Fedorischeva**, M.P. Kalashnikov**, I.A. Bozhko**, V.P. Sergeev** **Tomsk State University, Tomsk, Russia* ***Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*
41	**C3-P-051501** **Irradiation Effect on the electrical properties of $AgGe_{1.6}As_{0.4}(S+CNT)_3$ Glassy Composite Material** K.V. Kurochka*,**, N.V. Melnikova*, T.E. Kurennykh**, D.O. Alikin* **Ural Federal University, Ekaterinburg, Russia* ***Institute of Metal Physics UB RAS, Ekaterinburg, Russia*
42	**C3-P-053803** **Modification of Titanium Microstructure under Ion Irradiation from Inductively Coupled Plasma** M.M. Kharkov, A.V. Kaziev, M.S. Kukushkina *National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia*

43	**C3-P-054001** **Effect of Irradiation with a High-Intensity Pulsed Electron Beam on Mechanical Properties and Structural States of Coatings Formed by Plasma Spraying** A.A. Klopotov*,**, Yu.A. Abzaev*, Yu.F. Ivanov***, A.I. Potekaev**, M.P. Kalashnikov****, G.G. Volokitin*, A.V. Chumaevskii**** **Tomsk State University of Architecture and Building, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia* **** Institute of High Current Electronics SB RAS, Tomsk, Russia* *****Institute of strength physics and materials science SB RAS, Tomsk, Russia*
44	**C3-P-904901** **Translational Nonivariance of the Modified Layer FeV - N Treated with a High Power Pulse Ion Beam** A.E. Ligachev***, G.V. Potemkin*, D.C. Lepakova** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Tomsk scientific Center SB RAS, Tomsk, Russia* ****Institute of General physics named after A. N. Prokhorov of RAS, Moscow, Russia*
45	**C3-P-904902** **The Structure of Craters on the Surface of Stainless Steel after the High-Power Pulsed Ion Beam** A E. Ligachev*, M.V. Zhidkov**, J.R. Kolobov**,***, G.V. Potemkin****, S.S. Manokhin**,***, G.E. Remnev**** **Institute of General physics. A. N. Prokhorov RAS, Moscow, Russia* ***Belgorod state national research University, Belgorod, Russia* ****Institute of problems of chemical physics RAS, Chernogolovka, Russia* *****Tomsk Polytechnic University, Tomsk, Russia*
46	**C3-P-954401** **Complete Impregnation of Coniferous Woods under the Influence of High-Frequency Currents** F.G. Sekisov, O.V. Smerdov, Zh.A. Akhmettayev **Tomsk Polytechnic University, Tomsk, Russia*
47	**C3-P-955701** **Ibuprofen Controlled Release from E-Beam Treated Polycaprolactone Electrospun Scaffolds** A.A. Rakina, T.I. Spriridonova, V.L. Kudryavtseva, I.M. Kolesniik, R.V. Sazonov, G.E. Remnev, S.I. Tverdokhlebov *National Research Tomsk Polytechnic University, Tomsk, Russia*

17 September (Monday) **16:30 – 18:30**

48	**C3-P-955501** **The Phase Composition of Tool Steels after Nitriding by Glow Discharge in the Magnetic Field** A.M. Pesin*, D.O. Pustovoytov*, R.K. Vafin**, A.V. Asylbaev** **Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia* ***Ufa State Aviation Technical University, Ufa, Russia*
49	**C3-P-955502** **Effect of Nitriding in a Glow Discharge with a Magnetic Field on the Microhardness of 08X18H10T Steel** A.M. Pesin*, D.O. Pustovoytov*, R.K. Vafin**, A.V. Asylbaev** **Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia* ***Ufa State Aviation Technical University, Ufa, Russia*
50	**C3-P-956201** **Changes in the Structural Properties of Nb as a Result of Irradiation by a Pulsed Ion Beam** M. Kaikanov*, A. Kozlovskiy*,**,***, V. Shamanin****, A. Tikhonov***** **National Laboratory Astana, Astana, Kazakhstan* ***The Institute of Nuclear Physics of Republic of Kazakhstan, Astana, Kazakhstan* ****L.N. Gumilyov Eurasian National University, Astana, Kazakhstan* *****National Research Tomsk Polytechnic University, Tomsk, Russia* ******Nazarbayev University, School of Science and Technology, Astana, Kazakhstan*
51	**C3-P-956202** **Pulsed Ion Beam Modification of Silver Nanowires Pulsed Ion Beam Modification of Silver Nanowires** M. Kaikanov*, F. Bozheyev*, A. Stepanov**, G. Remnev**, A. Tikhonov*** **National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan* ***National Research Tomsk Polytechnic University, Tomsk, Russia* ****Nazarbayev University, School of Science and Technology, Astana, Kazakhstan*
52	**C3-P-000405** **Evolution of the Structure and Properties of the Surface Layer of High-Chromium Steel Irradiated with a Pulsed Electron Beam of Submillisecond Duration** M.S. Vorobyov, Yu.F. Ivanov, Yu.H. Akhmadeev, I.V. Lopatin, E.A. Petrikova *Institute of high current electronics, Tomsk, Russia*

17 September (Monday) **16:30 – 18:30**

53	**C3-P-956401** **Influence of Al Additions on Microstructure of Mg-6 Wt.%Y Alloy and Synthesis of Mg-10 Wt.%Al_2Y Master Alloy** Z. T. Zhong*, B. Jiang**, T. B. Wu* **Research Institute for New Materials Technology, Chongqing University of Arts and Sciences, Chongqing, China* ***National Engineering Research Center for Magnesium Alloys, Chongqing University, Chongqing, China*
54	**C3-O-003702** **AISI 5140 Steel Nitriding in a Plasma of a Non-Self-Sustaining Arc Discharge with a Thermionic Cathode under the Pulse Action of Ions** Yu.H. Akhmadeev, I.V. Lopatin, N.N. Koval, E.A. Petrikova *Institute of High Current Electronics SB RAS, Tomsk, Russia*
55	**C3-O-959101** **Low-Energy Plasma-Immersion Implantation of Nitrogen Ions in Titanium by a Beam with Ballistic Focusing** I.V Lopatin*, Yu.H. Akhmadeev*, O.S. Korneva**, O.V. Krysina*, E.A Petrikova*, N.A. Prokopenko*, A.I. Ryabchikov**, D.O. Sivin** **Institute of High Current Electronics, SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*

18 September (Tuesday) **11:00 – 13:10**

Oral Session 3.1

Beam and plasma sources

11:00 – 11:30 Invited	**C1-O-045601** **The Potential Distribution in Two-Electrode Gas-Filled Gap in Weak and Strong Electric Field** V.G. Kuznetsov *Institute of problems of mechanical engineering RAS, St. Petersburg, Russia*
11:30 – 11:50	**C1-O-044001** **Investigation of Electric-Arc Plasmotrons for Material Processing** A.S. Anshakov*, P.V. Domarov*, and V.R. Bower** ** Kutateladze Institute of Thermophysics SB RAS. Novosibirsk, Russia* *** Novosibirsk State Technical University, Novosibirsk, Russia*
11:50 – 12:10	**C1-O-008501** **Development of Plasma Discharge in Saline Solution** V.S. Kasyanov*, Y.D. Korolev*,**,***, I.A. Shemyakin*,**, A.V. Bolotov*, O.B. Frants*, N.V Landl*, V.G. Geyman* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia* ****National Research Tomsk Polytechnic University, Tomsk, Russia*
12:10 – 12:30	**C1-O-022501** **Pulsed high-intensity Silicon Ion Beams Formation** D.O. Sivin, A.I. Ryabchikov, P.S. Ananin, S.V. Dectyarev, A.E Shevelev *National Research Tomsk Polytechnic University, Tomsk, Russia*
12:30 – 12:50	**C1-O-023801** **Atmospheric Pressure Discharge Plasma Source for Biocompatible Polymers Treatment** K.P. Savkin*,**, A.G. Nikolaev*,**, A.V. Vizir*, G.Yu. Yushkov*, M.V. Shandrikov*, V.P. Frolova*,***, I.V. Vasenina*,** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia* ****Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*

12:50 – 13:10	**C1-O-035304** **Emission of the Electron Beam from a Single Channel of the Forevacuum Plasma Electron Source** I.Yu. Bakeev, A.S. Klimov ** Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*
13:10 – 13:30	**C1-O-014802** **Power Supply for Low-Temperature Plasma Jet (Design and Results of Testing)** V.O. Nekhoroshev*, Y.D. Korolev*,**,***, O.B. Frants*, V.G. Geyman*, A.V. Bolotov*, I.A. Shemyakin*,**, G.A. Argunov* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia* ****National Research Tomsk Polytechnic University, Tomsk, Russia*

Oral Session 3.2

Nanoscience and nanotechnology

11:30 – 11:55 report	**C5-O-001707** **Physical Properties of Fluorides Barium and Calcium Nanopowders Produced by the Pulsed Electron Beam evaporation method** S. Yu. Sokovnin*,**, V.G. Ilves**, M.G. Zuev*,***, M.A. Uimin*,**** **Ural Federal University, Yekaterinburg, Russia* ***Institute of Electrophysics UB RAS, Yekaterinburg, Russia* ****Institute of Solid State Chemistry UB RAS, Yekaterinburg, Russia* *****Miheev Institute of Metal Physics UB RAS, Yekaterinburg, Russia* **C5-O-002404** **Physicochemical Characterization and Antioxidant Properties of Cerium Oxide Nanoparticles** R.A. Vazirov*, S.Y. Sokovnin**, V.G. Ilves**, I.N. Bazhukova*, N. Pizurova***, M.V. Kuznetsov****, A.V. Myshkina* **Ural Federal University, Ekaterinburg, Russia* ***Institute of Electrophysics, UB RAS, Ekaterinburg, Russia* ****Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Brno, Czech Republic* *****Institute of Solid State Chemistry, UB RAS, Ekaterinburg, Russia*

18 September (Tuesday) 11:00 – 13:10

11:55 – 12:15	**C5-O-038301** **Effect of Multi-Layer Coatings on Shock Resistance of Optical Glass** V.P. Sergeev*, I.A. Bozhko*, M.P. Kalashnikov*, T.I. Dorofeeva*, Yu.F. Khristenko** **Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia* ***Scientific Research Institute of Applied Mathematics and Mechanics of National Research Tomsk State University, Tomsk, Russia*
12:15 – 12:35	**C5-O-005901** **Plasma Synthesis of Al_2O_3-TiO_2 from Related Nitrates** D.I. Subbotin*,**,***, A.V. Surov*, V.E. Kuznetsov*, E.A. Pavlova**, V.V. Azartsova**, J.A. Kuchina*, J.D. Dudnik* **Institute for Electrophysics and Electric Power of the Russian Academy of Sciences (IEE RAS), Saint-Petersburg, Russia* ***St. Petersburg State Technological Institute (Technical University), Saint-Petersburg, Russia* ****St. Petersburg State University, Saint Petersburg, Russia*
12:35 – 12:55	**C5-O-016002** **Modification of Polymer template for improving of structure and Properties of the Electroless Deposited Copper Nanotubes** A.M. Temir*, K.O. Turapbay*, A.S. Seytbayev**, A. Krekesheva*, A.A. Mashentseva** **The L.N.Gumilyov Eurasian National University, Astana, Kazakhstan* ***Institute of Nuclear Physic Republic of Kazakhstan, Almaty, Kazakhstan*
12:55 – 13:15	**C5-O-026201** **Large Scale Production of Carbon Nanotubes and Graphene Using Nitrogen Plasma Jet System: Synthesis, Characterization and Gas Phase Kinetics** R.H. Amirov, M.B. Shavelkina, E.A. Filimonova *Joint Institute for High Temperatures of Russian Academy of Sciences, Moscow, Russia*

13:15 – 14:30	**LUNCH**

18 September (Tuesday) **14:30 – 16:40**

Oral Session 4

Modification of material properties

14:30 – 15:00 Invited	**C3-O-023702** **Structure and Optical Properties of Selenium Inmpalnted Silicon Processed with Short-Time Annealings** N.S. Nechaev**, F.F Komarov*, G. D. Ivlev*, L.A. Vlasukova**, I.N. Parkhomenko**, I.A. Romanov**, E. Wendler*** **Sevchenko Institute of Applied Physical Problems, Belarusian State University, Minsk, Belarus* ***Belarusian State University, Minsk, Belarus* ****Institut für Festkörperphysik, Friedrich-Schiller-Universität Jena, Jena, Germany*
15:00 – 15:20	**C3-O-004601** **Precise Dies Surface Treatment with Charged Particle Beam** K. Uemura *ShinMaywa Industries, Ltd. Takarazuka, Japan*
15:20 – 15:40	**C3-O-001801** **Calculated and Experimental Studies at Critical Facility in View of Development of a Technology for Neutron Transmutation Doping of a Large Size Silicon Specimen in WWR-K Reactor** N. Romanova, Sh. Gizatulin, D. Dyssambayev, M. Aitkulov*, A. Shaimerdenov, Y. Kenzhin *Institute of Nuclear Physics under the Ministry of Energy, Almaty, Kazakhstan*
15:40 – 16:00	**C3-O-001401** **Ion Nitriding with Different Temperature of Martensitic and Austenitic Steels after SPD** R.S. Esipov, Yu.G. Khusainov, K.N. Ramazanov, R.D. Agzamov, I.V. Zolotov *Ufa state aviation technical university, Ufa, Russia*

18 September (Tuesday) **14:30 – 16:40**

16:00 – 16:20	**C3-O-023201** **Structure and Properties of High-Chromium Steel Treateded by Low-Energy Electron Beam with Pulse Duration of (50-450) Microseconds** Yu.F. Ivanov, O.V. Krysina, Yu.H. Akhmadeev, I.V. Lopatin, E.A. Petrikova, A.D. Teresov *Institute of high current electronics, Tomsk, Russia*
16:20 – 16:40	**C3-O-003701** **Modification of Stainless Steel by Low-Energy Focused Nitrogen Ion Beam** Yu.H. Akhmadeev*, I.V. Lopatin*, O.V. Krysina*, N.A. Prokopenko*, E.A. Petrikova*, A.I. Ryabchikov**, D.O. Sivin**, O.S. Korneva** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
16:40 – 17:00	**C3-O-034901** **Ultra-High Fluence Low Ion Energy Implantation of Al into Ti** A. Shevelev, A. Ryabchikov, D. Sivin, E. Kashkarov, I. Bozhko, T. Koval *National Research Tomsk Polytechnic University, Tomsk, Russia*

16:45 – 18:30	**Poster Session 2 & Coffee**

18 September (Tuesday) **16:30 – 18:30**

Poster Session 2:

Fundamentals of modification processes

Nanoscience and nanotechnology

1	**C2-P-014202** **Simulation of surface proceses on silicon in $Cf_4/O_2/H_2$ Plasmas** A.G. Gorobchuk *Institute of Computational Technologies SB RAS, Novosibirsk, Russia*
2	**C2-P-025702** **Features of Plasticity Nucleation in Deformed Vanadium Crystallite under Irradiation** A.V. Korchuganov, D.S. Kryzhevich, K.P. Zolnikov *Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*
3	**C2-P-029502** **Formation of Hollow Ceramic Particles in Plasma Flow** V.A. Arkhipov*, O.G. Volokotin**, A.I. Konovalenko*, A.S. Usanina*, V.V. Shekhovtsov**, **Tomsk State University, Tomsk, Russia* ***Tomsk State University of Architecture and Building, Tomsk, Russia*
4	**C2-P-038202** **Identification of Structural Modification of Pt Equivalent after Neutron and Ion Irradiation by Field Ion Microscopy** V.A. Ivchenko **Institute of Electrophysics, Ural Branch, Russian Academy of Sciences, Yekaterinburg, Russia*
5	**C2-P-049003** **Regularities of Implantation Al, Cr Atoms of Two-Component Films to Polycrystalline Substruction from Zirconia under Irradiation of Ions of Ar and Xe with Energy to 10 KeV** N.V. Volkov, D.A. Safonov, A.S. Yashin, E.L. Korenevsky, B.A. Kalin, V.V. Uglov *National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia*

18 September (Tuesday) **16:30 – 18:30**

6	**C2-P-049801** **Operation Parametrs of Magnetron Diode for High-Rate Depositon of Aluminum Films** D.V. Sidelev, V.A. Grudinin, G.A. Bleykher *Tomsk Polytechnic University, Tomsk, Russia*
7	**C2-P-051001** **Thermodynamic Disturbances Control During Flow of Viscous Fluid Through a Pipeline with a Conical Section** D.S. Fatyanov, S.N. Kharlamov *Tomsk Polytechnic University, Tomsk, Russia*
8	**C2-P-051301** **The Wave Mechanism of Heat Transfer in Finite Samples Irradiated by Short Pulse Lasers** G.A. Vershinin *Dostoevsky Omsk State University, Omsk, Russia*
9	**C2-P-957401** **Study of the Surface Relief, Structure and Phase Composition of the Silumin Composite Layer Obtained by the Method of Electric Explosion Alloying by Al-Y_2O_3 System** D.V. Zagulyaev*, V.E. Gromov*, Yu.F. Ivanov**, E.A. Petrikova**, A.D. Teresov**, S.V. Konovalov***, A.P. Semin* **Siberian State Industrial University, Novokuznetsk, Russia* *** Institute of High Current Electronics SB RAS, Tomsk, Russia* **** Samara National Research University, Samara, Russia*
10	**C2-P-960201** **On Range in Polylactic Acid and Polyvinyl Alcohol after Silver, Magnesium, Zinc Ion Implanattion** I.V. Vasenina*,**, M.C. Salvadori***, O.A. Laput*, D.A.Zuza*, I.A. Kurzina* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia* ****University of São Paulo, Rua do Matão, Cidade Universitária, São Paulo, Brasil*

18 September (Tuesday) **16:30 – 18:30**

Poster Session 2:

Nanoscience and nanotechnology

11	**C5-P-009402** **Synthesis of Silicon Carbide Nanorods in the Atmospheric Dc Arc Discharge Plasma** A.Y. Pak, A.A. Tsuprianchik, A.A. Zakharova, A.S. Ivashutenko *Tomsk Polytechnic University, Tomsk, Russia*
12	**C5-P-031202** **Structure of Zinc Oxyde Nanocrystals in Track Templates** A.T. Akilbekov*, A.K. Dauletbekova*, A.L. Kozlovskiy**, Z. Baimukhanov*, Sh.G. Giniyatova*, A.S. Seitbayev*,** **L.N. Gumilyov Eurasian National University, Astana, Kazakhstan* ***Astana Branch of Institute of Nuclear Physics, Astana, Kazakhstan*
13	**C5-P-034701** **Plasmadynamic Synthesis of Powders of the Ti-B System and Their Spark Plasma Sintering** S.O. Pogorelova, A.R. Nassyrbayev *National Research Tomsk Polytechnic University, Tomsk, Russia*
14	**C5-P-035802** **Light-Induced Sedimentation in Nanoliquids** G.D. Ivanova, V.K. Khe, V.I. Ivanov *Far Eastern State Transport University, Khabarovsk, Russia*
15	**C5-P-036701** **Plasmodynamic Synthesis in the Si-C-N-O System** A.R. Nassyrbayev, S.O. Pogorelova *National research Tomsk Polytechnic University, Tomsk, Russia*

18 September (Tuesday) 16:30 – 18:30

16	**C5-P-036901** **Synthesis of Amorphous Carbon Nanofibers on a Surface of Commercial Chlorinated Polymers under the Action of a High Power Ion Beam of Nanosecond Duration** V.S. Kovivchak*,**, Yu.G. Kryazhev* **Omsk Scientific Center SB RAS, Omsk, Russia* ***Dostoevsky Omsk State University, Omsk, Russia*
17	**C5-P-040301** **Long Term Operation of 100-M Differentially Hardened Rails: Evolution of Defect Substructure** E.V. Musorina*****, A.A. Yuriev*, Yu.F. Ivanov**, A.M. Glezer***, S.V. Konovalov****, A.P. Semin***** **LTD company «EVRAZ – Integrated West Siberian metallurgical combine», Novokuznetsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia* ****I.P. Bardin Central Research Institute of ferrous metallurgy, Moscow, Russia* ***** Samara National Research University, Samara, Russia* ******Siberian State Industrial University, Novokuznetsk, Russia*
18	**C5-P-041501** **Modification of terahertz properties of graphene/polymer multilayers by Ion Beam of Nanosecond Duration** A. Paddubskaya*, P. Kuzhir*,**, A. Stepanov**, V. Shamanin**, G. Remnev** **Institute for Nuclear Problems, Belarus State University, Minsk, Belarus,* ***Institute of High-Technology Physics, Tomsk Polytechnic University, Tomsk, Russia*
19	**C5-P-043603** **Plasma Chemical Technology for Processing Rare Earth Elements in the Production of Nano- Powder** S.A. Sosnovskiy**, Li Hongda*, V.I. Sachkov**, E.V. Obkhodskaya***, M.A. Kazaryan*** **Shenyang Polytechnic University, Shenyang, China* ***«Innovative-technology center» of Siberian physical-technical institute of Tomsk state university, Tomsk, Russia* ****The Lebedev Physical Institute of the Russian Academy of Sciences (LPI RAS), Moscow, Russia*

20	**C5-P-045901** **Atmospheric Arc Processing of Food Polymers in Nanosized Carbon Powder** M.S. Tukeeva, A.Ya. Pak, A.A. Zakharova, A.A. Tsuprianchik *Tomsk Polytechnic University, Tomsk, Russia*
21	**C5-P-053701** **Recrystallization and Studies of Thin Bismuth Films by Means of Electron Microscopy** A.A. Yushkov, V.Yu. Kolosov, L.M. Veretennikov *Ural Federal University, Inst. Nat. Sci. & Math, Ekaterinburg, Russia*
22	**C5-P-959901** **Synthesis of Amorphous Hydrogenated Carbon (a-C:H) Films on Germanium by the Use of the Linear Anode Layer Source** A. Zolkin*, A. Semerikova*, S. Chepkasov*, M. Khomyakov** **Novosibirsk State University, Novosibirsk, Russia* ***Institute of Laser Physics SB RAS, Novosibirsk, Russia*

19 September (Wednesday) **11:00 – 13:10**

Oral Session 5

Modification of material properties

11:00 – 11:30 Invited	**C3-O-017301** **Effect of Thermal Treatment on the Structure, Phase Composition and Properties of Steels Surface Layer Modified by Compression Plasma Flows** N.N. Cherenda*, V.V. Uglov*, A.A. Malashevich*, V.M. Astashynski**, A.M. Kuzmitski** **Belarusian State University, Minsk, Belarus* ***A.V.Lyikov Heat and Mass Transfer Institute of the National Academy of Sciences of Belarus, Minsk, Belarus*
11:30 – 12:00 report	**C3-O-050902** **Aplication of Intense Pulsed Electron Beams for Repair and Property Recovery of GhS32 Nickel Alloy Turbine Blades with NiCrAly+NiAl Coating and Perforate Holes** D.A. Teryaev, O.A. Bytzenko, V.A. Shulov, I.G. Steshenko, K.I. Tkachenko *Moscow Aviation Institute, Moscow, Russia* **C3-O-050901** **Residual Stresses Formation in the Surface Layers of Targets from Refractory Titanium Alloys During Their Irradiation with Intense Pulsed Electron Beams** D.A. Teryaev, V. A. Shulov, O.A. Bytzenko, I.G. Steshenko, *Moscow Aviation Institute, Moscow, Russia* **C3-O-050903** **The Effect of Irradiation with Intense Pulsed Electron Beams Heat Resistance of Gas Turbine Engine Compressor Blades from Ep866-Sh Refractory Steel** D.A. Teryaev, V. A. Shulov, O.A. Bytzenko, I.G. Steshenko *Moscow Aviation Institute, Moscow, Russia*

19 September (Wednesday) 11:00 – 13:10

12:00 – 12:20	**C3-O-034101** **Nanoscale Dynamic Effects and Long-Range Effects in Condensed Matter under Cascade-Forming Irradiation** V.V. Ovchinnikov *Institute of Electrophysics, UB RAS, Yekaterinburg, Russia* *Ural Federal Technical University named after the First President of Russia B.N. Yeltsin, Yekaterinburg, Russia*
12:20 – 12:40	**C3-O-030601** **Simulation of Irradiation Effects with Ions on the RFQ Linac Hipr** P.A. Fedin*,**,***, M.S. Saratovskikh*,***, R.P. Kuibeda*,***, A.L. Sitnikov*,***, T.V. Kulevoy*,**,***, A.A. Nikitin*,**, S.V. Rogozhkin*,** **NRC "Kurchatov institute" - ITEP, Moscow, Russia* ***NRNU MEPhI, Moscow, Russia* **** NRC "Kurchatov institute", Moscow, Russia*
12:40 – 13:00	**C3-O-014602** **Wear of Carbide Inserts with Surface Electron Beam Alloying when Milling Nickel Alloy** S.V. Fedorov, Min Htet Swe *MSTU "STANKIN", Moscow, Russia*
13:00 – 13:20	**C3-O-005201** **Modification of Vanadium Borides the Surface of Alloy Tool Steel T31507 Powerful Electron Beams in a Vacuum** A.S. Milonov, N.N. Smirnyagina, B.A. Danzheev *Institute of Physical Materials Science SB RAS, Ulan-Ude, Russia*

13:20 – 14:30	**LUNCH**

20 September (Thursday) **11:00 – 13:10**

Oral Session 6

Modification of material properties

11:00 – 11:30 Invited	**C3-O-037401** **Effect of Pulsed Electron-Beam Treatment and Subsequent Additive Thin-Film Synthesis of Surface Ti-Ta-Ni Alloys on Nanocomposite Structure, Residual Stress, and Shape Memory Characteristics of Tini Substrates** L.L. Meisner*,****, V.O. Semin***, A.A. Neiman*, Yu.P. Mironov*, S.N. Meisner*, F.A. D'yachenko***, A.B. Markov**, V.P. Rotshtein****, E.V. Yakovlev** **Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia* ****National Research Tomsk State University, Tomsk, Russia* *****Tomsk State Pedagogical University, Tomsk, Russia*
11:30 – 11:50	**C3-O-017101** **Surface Property Modification of Biodegradable Polymer and Composites by Low-Temperature Atmospheric Plasma Treatment** I.A. Kurzina*, I.V. Vasenina*,**, K.P. Savkin**, O.A. Laput*,*** D.A.Zuza* **National Research Tomsk State University, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia* ****National Research Tomsk Polytechnic University, Tomsk, Russia*
11:50 – 12:10	**C3-O-039802** **Pulsed Electron Beam Scanning Treatment of Titanium Alloys** A.V. Panin*,**, M.S. Kazachenok*, E.A. Sinyakova*, O.V. Evtushenko*, S.A. Martynov* **Institute of Strength Physics and Materials Science of the SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
12:10 – 12:30	**C3-O-031902** **Physical and Chemical Aspects of Ion Etching Process for Cutting Tools Refurbishing** A.G. Remnev, K. Uemura **ITAC Ltd., Group of ShinMaywa Industries, Takarzuka, Japan*

20 September (Thursday) 11:00 – 13:10

12:30 – 12:50	**C3-O-024201** **Influence of Microwave Radiation on Chemical Reactivity of Aluminum Powder** Ya.A. Dubkova*, V.A. Arkhipov*, A.P. Ilyin**, V.T. Kuznetsov*, A.V. Mostovshikov** **Tomsk State University, Tomsk, Russia* ***Tomsk Polytechnic University, Tomsk, Russia*
12:50 – 13:10	**C3-O-034503** **Effect of Ion Irradiation of Zirconium Alloy E110 and Its Laserwelds on Corrosion Resistance and High-Temperature Oxidation** M.S. Slobodyan, M.A. Elkin, A.S. Kiselev, S.K. Pavlov, G.E. Remnev **TomskPolytechnicUniversity, Tomsk, Russia,*

13:10 – 14:30	**LUNCH**

20 September (Thursday) **14:30 – 16:40**

Oral Session 7

Modification of material properties

14:30 – 15:00 Invited	**C3-O-957601** **Cell Adhesion and Growth on Modified Surfaces** M.C. Salvadori*, W.W.R. Araujo*, F.S. Teixeira*, G.N. da Silva** and D.M.F. Salvadori*** ** Institute of Physics, University of São Paulo, C.P. 66318, CEP 05315-970 São Paulo, Brazil* *** Clinical Analyses Dept., Pharmacy School, Federal University of OuroPreto, UFOP, MG, Brazil* **** Dept. Pathoogy., Fac. Med., São Paulo State University, UNESP, SP, Brazil*
15:00 – 15:20	**C3-O-036101** **Effect of Plasma Ion-Immersion Treatment on the Structured and Phase State of the TiNi Alloy for Medical Implants** T.M. Poletika, S.L. Girsova, O.A. Kashin, A.I. Lotkov, K.V. Krukovskii *Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*
15:20 – 15:40	**C3-O-010201** **Ion-Beam Chemical-Thermal Treatment of Aluminum** I.V Lopatin, Yu.H. Akhmadeev, D.Yu. Ignatov, N.N. Koval, E.A. Petrikova *Institute of High Current Electronics SB RAS, Tomsk, Russia*

20 September (Thursday) 14:30 – 16:40

15:40 – 16:05 report	C3-O-046602 **Structure and Properties of Titanium after Nitriding in a Plasma of Pulsed Hollow Cathode Glow Discharge** Yu.A. Denisova, V.V. Denisov, E.V. Ostroverchov, Yu.F. Ivanov, N.N. Koval, P.M. Schanin *Institute of High Current Electronics SB RAS, Tomsk, Russia* C3-O-046601 **Influence of Combined Ion-Plasma Treatment on Wear-Resistance of Die Steel Cr_6VF** Yu.A. Denisova, V.V. Denisov, E.V. Ostroverchov, N.A. Prokopenko, V.V. Shugurov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
16:05 – 16:30 report	C3-O-001601 **Formation of Iron Borides from Reaction Daubs under the Influence of an electron Beam** D.E. Dasheev, N.N. Smirnyagina *Institute of Physical Materials Science SB RAS, Ulan-Ude, Russia* C5-O-021901 **Investigation of the Plasma-Chemical Synthesis of Fullerenes and Modification of Building Materials by Fullerenes** B.O. Tsyrenov*, N.N. Smirnyagina*, D.E. Dasheev*, A.P. Semenov*, L.A. Urkhanov*,**, S.A. Lkhasaranov** **Institute of Physical Materials Science SB RAS, Ulan-Ude, Russia* ***East Siberia State University of Technology and Management, Ulan-Ude, Russia*
16:30 – 16:50	C3-O-012701 **Nano-Scratch Test of Nanostuctured Surface Layer Ti-6Al-4V Alloy** E.A. Sinyakova*, A.V Panin*, A.R. Shugurov*, A.V. Teresov**, Y.F. Ivanov** **Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*

16:55 – 18:30	**Poster Session 3 & Coffee**

20 September (Thursday) **16:30 – 18:30**

Poster Session 3:

Beam and plasma sources

1	**C1-P-003802** **A Homogeneous Emission Plasma Generation in a Discharge System with an Extended Hollow Cathode** A.S. Klimov *Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*
2	**C1-P-004402** **Experimental Investigation of Powerful Wide Band Radiation Interaction with the Condensed Matters** V.D. Telekh, K.V. Nosov, A.V. Pavlov, Yu.Yu. Protasov, T.S. Tshepanuk *Bauman Moscow State Technical University, Moscow, Russia*
3	**C1-P-008502** **Features of Development of a Pulse Discharge in a Soline Solution at Different Voltage Polarity on Active Electrode** V.S. Kasyanov*, Y.D. Korolev*,**,***, I.A. Shemyakin*,**, A.V. Bolotov*, V.G. Geyman*, O.B. Frants* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia* ****National Research Tomsk Polytechnic University, Tomsk, Russia*
4	**C1-P-008503 Formation of Shock Waves at Different Stages of Discharge Development in Saline Solution** V.S. Kasyanov*, Y.D. Korolev*,**,***, I.A. Shemyakin*,**, A.V. Bolotov*, V.O. Nekhoroshev*, V.G. Geyman* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia* ****National Research Tomsk Polytechnic University, Tomsk, Russia*
5	**C1-P-008601** **Gas-Discharge Starting of Hollow Cathode Operation in Self-Heating Mode** D.R. Emlin, N.V. Gavrilov *IEP UB RAS, Yekaterinburg, Russia*

20 September (Thursday) 16:30 – 18:30

6	**C1-P-010802** **A Novel Anode-Layer Plasma Thrusters for Materials Modification** A.S. Bugaev*, V.I. Gushenets*, E.M. Oks**, A.A. Goncharov*** **Institute of High Current Electronics, Tomsk, Russia* ***State University of Control Systems and Radioelectronics, Tomsk, Russia* ****Institute of Physics, National Academy of Science of Ukraine, Kiev, Ukraine*
7	**C1-P-014801** **Method of Diagnostics for the Low-Temperature Plasma Jet** V.O. Nekhoroshev*, Y.D. Korolev*,**,***, O.B. Frants*, V.G. Geyman*, A.V. Bolotov*, N.V. Landl*, I.A. Shemyakin*,**, V.S. Kasyanov* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia* ****National Research Tomsk Polytechnic University, Tomsk, Russia*
8	**C1-P-015601** **DBD as a Tool for Initiating and Stimulating of Chemical Reactions** V.E. Malanichev *Institute for Electrophysics and Electric Power of the RAS, Saint Petersburg, Russia*
9	**C1-P-016302** **Investigation of Multistage Electrode Systems for Increasing Electrohydrodynamic Flow Velocity** A.V. Kasnin, V.Yu. Khomich, I.E. Rebrov *Institute for Electrophysics and Electric Power RAS, Saint- Petersburg, Russia*
10	**C1-P-017701** **Parameters of the Beam Plasma Near the Isolated Collector** P.V. Alekseevsky, V.A. Burdovitsin, D.B. Zolotukhin *Tomsk State University of Control Systems & Radioelectronics, Tomsk, Russia*

20 September (Thursday) 16:30 – 18:30

11	**C1-P-023001** **Angular and Energy Distributions of Ions in Plasma Vacuum Arc with Zirconium Cathode Saturated by Deutherium** A.G. Nikolaev*, V.P. Frolova*,**, E.M. Oks*,**, K.P. Savkin*, G.Yu. Yushkov* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*
12	**C1-P-026402** **Optical Emission Spectroscopy Study of the Influence of the Low-Energy Electron Beam Parameters on the Content of Neutral Atomic Nitrogen in the Beam Plasma** A.I. Menshakov, Y.S. Surkov, V.I. Solomonov, N.V. Gavrilov *Institute of Electrophysics UB RAS, Yekaterinburg, Russia*
13	**C1-P-030103** **Operation of High-Voltage Ac Plasma Torches with Changing Pressure** S.D. Popov*, A.V. Surov*, D.I. Subbotin*,**,***, V.E. Popov*, E.O. Serba*, V.A. Spodobin*, G.V. Nakonechny*, A.V. Nikonov* **Institute for Electrophysics and Electric Power of the Russian Academy of Sciences (IEE RAS), St. Petersbourg, Russia* ***St. Petersburg State Technological Institute (Technical University), Saint-Petersburg, Russia* ****St. Petersburg State University, Saint Petersburg, Russia*
14	**C1-P-033201** **Investigation of Average Charge State of Copper Ions in the Low-Current Vacuum Arc Plasma at Different Values of Discharge Current** Yu.A. Zemskov, I.V. Uimanov *Institute of Electrophysics UB RAS, Yekaterinburg, Russia*
15	**C1-P-033202** **Investigation of the Mass-Charge Composition of Ion Flux from the Plasma of the Vacuum Arc Discharge on Cucr Cathode** Yu.A. Zemskov, I.V. Uimanov *Institute of Electrophysics UB RAS, Yekaterinburg, Russia*

20 September (Thursday) 16:30 – 18:30

16	**C1-P-038401** **The Cutting Edge Sharpening by Fast Neutral Argon Atoms** A.S. Metel, M.A. Volosova, H.A. Nay, E.S. Mustafaev, Yu.A. Melnik *MSUT "STANKIN", Moscow, Russia*
17	**C1-P-038402** **Surface Strengthening in Plasma of Non-Self-Sustained Glow Discharge with Electrostatic Confinement of Electrons** A.S. Metel, H.A. Nay, E.S. Mustafaev *MSUT "STANKIN", Moscow, Russia*
18	**C1-P-040001** **Study of Plasma Parameters and Optical Emission in DC, Hipims and Hybrid DC + HiPIMS Modes of Magnetron Sputtering** V.A. Semenov, V.O. Oskirko, A.A. Solovyev, S.V. Rabotkin, I.V. Ionov *Institute of High Current Electronics, Tomsk, Russia*
19	**C1-P-040101** **Microwave Discharge of Reduced Pressure to Modify the Crystal Surface** O.I. Shipilova*, A.A. Chernykh*, A.L. Khvalin**, N.S. Bobina***, V.L. Paperny* **Irkutsk State University, Irkutsk, Russia* *** Saratov State University, Saratov, Russia* ****Institute of Geochemistry A.P. Vinogradova, Irkutsk, Russia*
20	**C1-P-044301** **Generation of High Charge State Heavy Metal Ion Beams** G.Yu. Yushkov*, V.P. Frolova**, A.G. Nikolaev*, E.M. Oks** **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*
21	**C1-P-045602** **Volt-Ampere Characteristic of Two-Electrode gap at high pressure and an arbitrary Emission of Current Carriers** V.G. Kuznetsov *Institute of problems of mechanical engineering RAS, St. Petersburg, Russia*

22	**C1-P-046901** **Some Non-Vacuum Applications of Guns with a Plasma Emitter** S. Kornilov*, N. Rempe** **Advanced E-beam technology LLC, Tomsk, Russia* ***Elion Ltd., Timiryazevskoe, Tomsk, Russia*
23	**C1-P-047601** **Features of the Formation of High-Intensity Beams of Aluminum Ions** Chan Mi Kim An, T.V. Koval, A.I. Ryabchikov, A.R. Shevelev, D.O. Sivin, A.I. Ivanova, D.M. Paltsev *National Research Tomsk Polytechnic University, Tomsk, Russia*
24	**C1-P-047801** **Obtaining of Metal Ion Beams by Heating Methods in an ECR Source of DC-60 Cyclotron** I.A. Ivanov*, S.B. Kislitsin*, V.V. Alexandrenko*, M.V. Koloberdin*, S.G. Kozin*, Y.K. Sambayev*, A.E. Kurakhmedov*, D.A. Mustafin*, V.N. Loginov**, S.L. Bogomolov** ** Institute of Nuclear Physics ME RK, Astana, Kazakhstan* *** Joint Institute for Nuclear Research, Dubna, Russia*
25	**C1-P-048802** **Online Method of Diagnostics of Physical Quantities on the Accelerator DC-60** V.V. Alexandrenko*, I.A. Ivanov*, A.S. Nikiforov**, M.V. Zdorovets*, A.E. Kurakhmedov* ** Institute of Nuclear Physics ME RK, Astana, Kazakhstan* *** Joint Institute for Nuclear Reaction, Dubna, Russia*
26	**C1-P-053802** **Mass-Spectrometer with E×B Filter for Beam and Plasma Diagnostics** D.V. Kolodko, A.V. Kaziev, D.G. Ageychenkov *National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia*

20 September (Thursday) 16:30 – 18:30

27	**S1-P-011001** **Generation of Monatomic, Molecular and Triatomic Hidrogen Isotope Ion Beams Using Hollow Cathode Discharge** A.V. Vizir*, E.M. Oks*,**, M.V. Shandrikov*, G.Yu. Yushkov* **Institute of High Current Electronics SB RAS, Tomsk, Russia* ***Tomsk State University of Control System and Radioelectronics, Tomsk, Russia*
28	**C1-P-956701** **Influence of Combustion Conditions on the Temperature Distribution on the Surface of Extended Metal Products Heated in a Plasma of Glow Discharge with Hollow Cathode** D.Y. Ignatov, I.V. Lopatin, Yu. Kh. Achmadeev, V.V. Denisov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
29	**C1-P-958401** **Influence of the Conditions of Combustion of the Emitter Discharge on the Homogeneity of Distribution of Plasma Density in a Non-Self-Sustained Glow Discharge with Hollow Cathode** S.S. Kovalsky, V.V. Denisov, N.N. Koval, E.V. Ostroverkhov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
30	**C1-P-958301** **Peculiarities of Combustion of a Non-Self-Sustained Low-Pressure Glow Discharge with Hollow Cathode the Emitting Surface of which is Covered by Titanium Nitride** V.V. Yakovlev, V.V. Denisov, N.N. Koval, S.S. Kovalsky, E.V. Ostroverkhov *Institute of High Current Electronics SB RAS, Tomsk, Russia*

20 September (Thursday) **16:30 – 18:30**

Poster Session 3:

Coatings deposition

31	**C4-P-003002** **Investigation of a Coatings Based on Intermetallics of Ti-Al System Alloyed with Chromium by Vacuum-Arc Plasma** E.L. Vardanyan*, K.N. Ramazanov*, A.Yu. Nazarov*, R.Sh. Khusnimardanov* *Ufa state aviation technical university, Ufa, Russia*
32	**C4-P-003003** **Mathematical Model of Deposition Process of Composite Coatings Based on Intermetallic Ti-Al System by Vacuum Arc Plasma** E.L. Vardanyan*, K.N. Ramazanov*, A.Yu. Nazarov* *Ufa state aviation technical university, Ufa, Russia*
33	**C4-P-008604** **Deposition of Silicon Carbonitride Coatings in the Plasma of High-Current Discharge with Self-Heated Hollow Cathode** D.R. Emlin*,**, A.I. Menshakov*,**, N.V. Gavrilov*, S.O. Cholakh** **Institute of Electrophysics UB RAS, Yekaterinburg, Russia* *** Ural Federal University, Yekaterinburg, Russia*
34	**C4-P-009702** **High Thermal Stability Ohmic Contacts to Nitride Semiconductors with Refractory Metal Sidewall Diffusion Barrier Deposited by Magnetron Sputtering** E.V. Erofeev, I.V. Fedin, V.V. Fedina *Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*
35	**C4-P-012501** **Copper Oxide-Based Thin Films Deposited by Magnetron Sputtering: Morphological, Structural and Optical Properties** S. Pashayan *Institute for Physical Research of NAS of Armenia, Ashtarak-2, Armenia*

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36	**C4-P-014501** **Minimization of the Arc Energy in High Current Impulse Magnetron Sputtering** V.O. Oskirko*, A.P. Pavlov**, V.A. Semenov* **Institute of High Current Electronics, Tomsk, Russia* ***OOO Prikladnaya Elektronika, Tomsk, Russia*
37	**C4-P-014502** **Pulse Form Modifier for Dual Magnetron Sputtering** V.O. Oskirko*, A.P.Pavlov** **Institute of High Current Electronics, Tomsk, Russia* ***OOO Prikladnaya Elektronika, Tomsk, Russia*
38	**C4-P-018103** **Properties of the Polysiloxane Films Produced in Discharge Initiated by Runaway Electron Beam** V. Ripenko, M. Erofeev, M. Shulepov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
39	**C4-P-020201** **Investigation of the Formation Features of Gradient Structures at the Interface of the Tin Coating and A-Ti Substrate Obtained by Plasmaimmersion Ion Nitriding** V.A. Slabodchikov*, S.V.Ovchinnikov**, V.M.Kuznetsov* **Tomsk state University, Tomsk, Russia* ***Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*
40	**C4-P-024001** **Optical and Structural Properties of Nitrogen-Doped Titanium Dioxide Thin Films Deposited by Magnetron Sputtering** Zhilei Sun, E. Konishchev, K. Evdokimov, V. Pichugin *Tomsk Polytechnic University, Tomsk, Russia*
41	**C4-P-025501** **Magnetron Sputtered Lsc Thin Films for solid Oxide Fuel Cell Applications** E.A. Smolyanskiy*, S.A. Linnik*, I.V. Ionov**, A.V. Shipilova**, V.A. Semenov**, A.L. Lauk*, A.A. Solovyev** **Tomsk Polytechnic University, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*

42	**C4-P-027702** **Structural Features, Phase Composition and Properties of N-Containing Titanium Dioxide Thin Films Deposited by Magnetron Sputtering** K.E. Evdokimov, Zhilei Sun, M.E. Konishchev, V.F. Pichugin *Tomsk Polytechnic University, Tomsk, Russia*
43	**C4-P-032001** **Formation of Superhard and Wear-Resistant NbC Based Coatings on Hard Alloy Tools by Cathodic Arc Deposition** A.K. Kuleshov, V.V. Uglov, V.M. Anischik, D.P. Rusalski *Belarusian State University, Minsk, Belarus*
44	**C4-P-033901** **Comparative Study of the Resistance of the Protective Nanocomposite Al-Si-N and In-Sn-O Coatings to the Shock Impact of Solid Microparticles** R.A. Kaliyeva*, I.A. Bozhko**, E.V. Rybalko**, M.V. Fedorischeva**, V.P. Sergeev** ** Tomsk Polytechnic University, Tomsk, Russia* ***Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*
45	**C4-P-036202** **Properties of Thin Tantalum Films Deposited in Different Modes of Magnetron Sputtering** A.S. Grenadyorov, A.N. Zakharov, V.O. Oskirko, K.V. Oskomov, A.A. Solovyev *Institute of High Current Electronics SB RAS, Tomsk, Russia*
46	**C4-P-036203** **Investigation of parameters of plasma generated by high power impulse magnetron Sputtering (HiPIMS) of Graphite** A.S. Grenadyorov*, V.O. Oskirko*, K.V. Oskomov** **Institute of High-Current Electronics, Tomsk, Russia* ***Tomsk State University, Tomsk, Russia*

47	**C4-P-040002** **Process Stability of Reactive Magnetron Sputtering of Ce/Gd Target** V.A. Semenov, S.V. Rabotkin, V.O. Oskirko, I.V. Ionov, A.V. Shipilova, A.A. Solovyev *Institute of High Current Electronics, Tomsk, Russia*
48	**C4-P-042801** **Synthesis of Multilayered Coatings of the Metal/Ceramics System by Vacuum Arc Method with Plasma Assistance** N.A. Prokopenko, O.V. Krysina, V.V. Shugurov *Institute of high current electronics, Tomsk, Russia*
49	**C4-P-045701** **Thermo-Barrier Nanostructure microplasma coatings of ZrO_2** M S. Dorofeeva*, T.I. Dorofeeva**, B.P. Gritsenko** **Tomsk state University, Tomsk, Russia* ***Institute of Strength Physics and Materials SB RAS Tomsk, Russia*
50	**C4-P-049002** **Application of a Film Deposition Regime from Three magnetrons on a cylindrical surface to Create a Multilayer Coating** N.V. Volkov*, B.A. Kalin*, A.S. Yashin*, D.A. Safonov*, E.L. Korenevskiy*, V.P. Krivobokov**, S.N. Yanin** ** National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia* *** National Research Tomsk Polytechnic University, Tomsk, Russia*
51	**C4-P-052201** **Influence of Ultra Short Waves on Nanorelief and Precipitated Nanoparticles Metals** A.A. Ebel, A.E. Mayer *Chelyabinsk State University, Chelyabinsk, Russia* *South Ural State University, Chelyabinsk, Russia*

52	**C4-O-953501** **Influence of Micro-Arc Oxidation Time and Applied Voltage on Formation of Strontium- and Silicon-Incorporated Biocoatings** E.G. Komarova*, M.B. Sedelnikova*, E.A. Kazanceva**, Y.P. Sharkeev* **Institute of Strength Physics and Materials Science of SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*
53	**C4-P-955601** **The Effect of Fibers Average Diameter PLLA Scaffold on the Depth of Penetration Titanium Obtained by the DC Magnetron Sputtering** P.V. Maryin, E.N. Bolbasov, S.I. Tverdokhlebov *Tomsk Polytechnic University, Tomsk, Russia*
54	**C4-P-955801** **Deposition of Calcium Phosphate Coatings Using Radio Frequency Magnetron Sputtering of Substituted B-Tricalciumphosphate Targets** A.Y. Fedotkin, A.I. Kozelskaya, E.N. Bolbasov, S.I. Tverdokhlebov *National Research Tomsk Polytechnic University, Tomsk, Russia*
55	**C4-P-958101** **Evaluation of the Temperature of Melting of Multi-Element Coatings** S.A. Guchenko, V.M. Yurov, V.Ch. Laurinas, S.S. Kasymov *Karaganda State University named after E.A. Buketov, Karaganda, Kazakhstan*
56	**C4-P-958102** **Surface Energy of Plasma Coatings** V.M. Yurov, S.A. Guchenko, V.Ch. Laurinas, S.S. Kasymov *Karaganda State University named after E.A. Buketov, Karaganda, Kazakhstan*
57	**C4-P-959601** **Properties of Ta-C Coatings Prepared by Pulsed Cathodic Arc Source at Various Distances** S Chepkasov*, a Zolkin*, D Piliptsou**, E Gladkikh***, K Kravchuk*** **Novosibirsk state university, Novosibirsk, Russia* ***Francisk Skorina Gomel state university, Gomel, Republic of Belarus* ****Technological Institute for Superhard and Novel Carbon Materials, Troitsk, Moscow, Russia*

21 September (Friday) **11:00 – 13:10**

Oral Session 8

Coatings deposition

11:00 – 11:30 Invited	**C4-O-047101** **Development of Robotic Microplasma Spraying Technology for Applying Biocompatible Coatings on Medical Implants** D.L. Alontseva *D.Serikbayev East Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan*
11:30 – 11:50	**C4-O-040601** **Diagnostic System «Yuna» for Desperse Phase Properties Control in Plasma and Laser Powder Deposition Processes** I.P. Gulyaev*,**, A.V. Dolmatov** **Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia* ***Ugra State University, Khanty-Mansiysk, Russia*
11:50 – 12:10	**C4-O-042001** **Zinc Substituted Hydroxyapatite Coatings' Structure Manipulation by Variation of RF Magnetron Sputtering Parameters** K.A. Prosolov*,**, O.A. Belyavskaya*, J.V. Rau***, Yu.P. Sharkeev*,** **Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia* ****Istituto di Struttura della Materia, Consiglio Nazionale delle Ricerche (ISM-CNR), Roma, Italy*
12:10 – 12:30	**C4-O-036001** **Tribological Properties and Features of Destruction of Antifrictional Magnetron-Plasma Coating Ti-C-Mo-S on Steels and Titanium Substrates under Different Load-Speed Regimes** D.A. Osipov**, A.Y. Shubin*, A.I. Potekaev**, V.M. Savostikov*** **Joint Stock Company Scientific Production Centre «Polus», Tomsk, Russia* ***National Research Tomsk State University, Tomsk, 634050, Russia* ****Limited liability company «RITM-S», Tomsk, Russia*

21 September (Friday) **11:00 – 13:10**

12:30 – 12:50	**C4-O-042102** **Structure of SnO_2-Ag Coating Formed on Copper by Electroexplosion Method** D.A. Romanov*, S.V. Moskovskii*, V.E. Gromov*, Yu.F. Ivanov**, M.A. Stepikov*, E.A. Gayevoy*, A.V. Ysova* **Siberian State Industrial University, Novokuznetsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
12:50 – 13:10	**C4-O-003001** **The Physical and Mechanical Properties of Coatings Based on Intermetallics of Ti-Al System Synthesized in a Oxygen Environment by Vacuum Arc Plasma** E.L. Vardanyan, K.N. Ramazanov, A.Yu. Nazarov *Ufa state aviation technical university, Ufa, Russia*

13:10 – 14:30	**LUNCH**

21 September (Friday) **14:30 – 16:40**

Oral Session 9

Coatings deposition

14:30 – 15:00 Invited	**C4-O-033401** **Peculiarities of Metal Coatings Deposition Using Magnetron sputtering systems with hot and evaporative targets** G.A. Bleykher, D.V. Sidelev, V.P. Krivobokov, A.V. Yuryeva, A.S. Shabunin *National Research Tomsk Polytechnic University, Tomsk, Russia*
15:00 – 15:20	**C4-O-042101** **The Formation of the Structure, Phase composition and Properties of the Electric Explosive Wear – Resistant Coating after Electron Beam Processing** D.A. Romanov*, V.E. Gromov*, Yu.F. Ivanov**, M.A. Stepikov*, E.A. Gayevoy*, E.A. Budovskikh* **Siberian State Industrial University, Novokuznetsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
15:20 – 15:40	**C4-O-013701** **Investigation of the Deformation Structural Features under Indentation of Nanostructured Ti-Al-Si-Cu-N Coatings** S.V. Ovchinnikov*, Yu.P. Pinzhin* **Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*
15:40 – 16:00	**C4-O-031502** **Investigation of Refurbishing Technique for Diamond Coated Tools** A.K. Soldatov*, A. Okada*, A.G. Remnev**, K. Uemura** **Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan* ***ITAC.LTD, Takarazuka, Japan*

21 September (Friday) **14:30 – 16:40**

16:00 – 16:20	**C4-O-037301** **Influence of Nitrogen Concentration on Structure, Composition and Properties of Monolayered Nitride Coatings Deposited by Vacuum Arc Plasma-Assisted Method** O.V. Krysina, V.V. Shugurov, N.A. Prokopenko *Institute of high current electronics SB RAS, Tomsk, Russia*
16:20 – 16:40	**C4-O-022001** **The Study of Conditions of Al_2O_3 Coatings Deposition by Reactive Evaporation of Aluminum in the Discharge with Hollow Anode** A.S. Kamenetskikh*, N.V. Gavrilov*, P.V. Tretnikov*, A.V. Chukin**, A.A. Ershov** **Institute of Electrophysics of the UB of RAS, Ekaterinburg, Russia* ***Ural Federal University, Institute of Physics and Technology, Ekaterinburg, Russia*

16:30 – 17:00	**Coffee**
17:00	**CLOSING CEREMONY**

18th International Conference on Radiation Physics and Chemistry of Condensed Matter

Chairman
Alexey YAKOVLEV
Institute of High-Technology Physics, TPU, Tomsk, Russia

Co-Chairman
Elena POLISADOVA
Institute of High-Technology Physics, TPU, Tomsk, Russia

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Institute of High-Technology Physics, TPU, Tomsk, Russia

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Elena POLISADOVA
Institute of High-Technology Physics, TPU, Tomsk, Russia

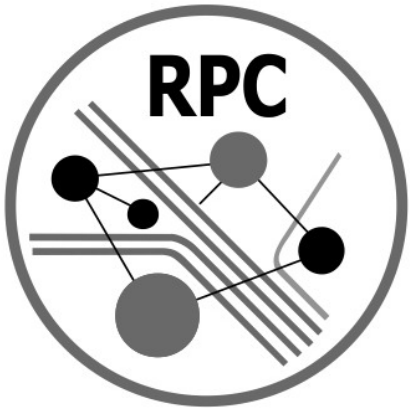
R1 Luminescence: processes, luminescence centers, scintillators and luminophores, application

R2 Non-linear physicochemical processes under severe energetic impact: breakdown, facture, explosion, etc.

R3 Physical principles of radiation and photonic technologies

R4 Radiation defects: structure, formation, properties

R5 Methods, instruments and equipment for physicochemical studies



17 September (Monday) **11:00 – 13:10**

Oral Session 1

Non-linear physicochemical processes under severe energetic impact: breakdown, facture, explosion, etc.

11:00 – 11:30 Invited	**R2-O-043301** **Mathematical and Numerical Analysis of TiC Combustion Synthesis in a 2D Polar Coordinate System** A.Aoufi *UMR CNRS 5307, Laboratoire Georges Friedel, EMSE, Saint-Etienne, France*
11:30 – 11:50	**R2-O-009602** **The Structural Properties of Unganuted Condensed Medium in the Framework of a Cluster Model** G.A. Melnikov, S.G.Emelyanov, N.M. Ignatenko, V.G. Melnikov, O.A. Manzhos *South-West State University, Kursk, Russia*
11:50 – 12:10	**R2-O-052301** **Conversion of the Waste-Derived Hydrocarbon Fuel under Laser Irradiation** R.I. Egorov, A. Zaitsev *National research Tomsk Polytechnic university, Tomsk, Russia*
12:10 – 12:30	**R2-O-028103** **Electron-Beam Initiation of Dadne Polycrystals** I.Y. Liskov*, A.P. Nikitin*, N.N. Ilyakova** **Federal Research Center of Coal and Coal Chemistry of SB RAS, Kemerovo, Russia* ***Kemerovo State University, Kemerovo, Russia*
12:30 – 12:50	**R2-O-009207** **Electronic Ricochet Explosion of Metal Wire** M.K. Marakhtanov *Bauman Moscow State Technical University, Moscow, Russia*

12:50 – 13:10	**R2-O-042401** **The Effect of CuO Film Reduction on the Initiation of Petn by Laser Pulse** A.V. Khaneft, A.Y. Mitrofanov, A.G. Krechetov, N.N. Ilyakova, A.S. Zverev *Kemerovo State University, Kemerovo, Russia*

13:10 – 14:30	**LUNCH**

17 September (Monday) **14:30 – 16:40**

Oral Session 2

Non-linear physicochemical processes under severe energetic impact: breakdown, facture, explosion, etc.

14:30 – 15:00 Invited	**R2-O-034401** **Laser Initiation of Petn Containing Aluminum Nanoparticles under Static Pressure** B.P. Aduev, D.R. Nurmukhametov, A.A. Zvekov, N.V. Nelyubina, G.M. Belokurov *Federal Research Center Coal and Coal Chemistry of SB RAS, Kemerovo, Russia*
15:00 – 15:20	**R2-O-009204** **Electronic Destruction of Metal — from Crystal to Nuclear Transmutation** M.K. Marakhtanov *Bauman Moscow State Technical University, Moscow, Russia*
15:20 – 15:40	**R2-O-044801** **Modeling the Reactivity of Energy-Saturated Materials** E.G. Gazenaur*, L.V. Kuzmina*, M.A. Matyuk*, V.I. Krasheninin*, A.P. Rodzevich** **Kemerovo State University, Kemerovo, Russia* ***Yurga Institute of Technology, Yurga, Russia*
15:40 – 16:00	**R2-O-029803** **Kinetic Model of Coal Spontaneous Ignition** M.V. Anan'eva*, A.A. Zvekov**, A.V. Kalenskii*, A.S. Zverev*, V.V. Galkina* **Kemerovo State University, Kemerovo, Russia* ***Federal Research Center of Coal and Coal Chemistry, Kemerovo, Russia*
16:00 – 16:20	**R2-O-027906** **The Influence of Residual Porosity on Optical Properties of RDX-Al Nanoparticles' Composites** A.A. Zvekov*, B.P. Aduev*, A.V. Kalenskii**, Ja.V. Kraft* **Federal Research Center of Coal and Coal Chemistry, Kemerovo, Russia* ***Kemerovo State University, Kemerovo, Russia*

16:20 – 16:40	**R2-O-029802** **Micro Hot-Spot Model of Thermal Explosion Taking into Account Dielectric Shell of Sensitizing Nanoparticle** A.V. Kalenskii*, A.A. Zvekov**, M.V. Anan'eva*, E.V. Galkina*, V.G. Kriger* **Kemerovo State University, Kemerovo, Russia* ***Federal Research Center of Coal and Coal Chemistry, Kemerovo, Russia*

16:40 – 18:30	**Poster Session 1 & Coffee**

17 September (Monday) **16:30 – 18:30**

Poster Session 1:

Physical principles of radiation and photonic technologies

1	**R3-O-049302** **Reliability of Leds Based Upon Algaas Heterostructures: Combined Influence of Fast Neutrons and Operational Factors** A.V. Gradoboev, A.V. Simonova, K.N. Orlova *National Research Physics Tomsk Polytechnic University, Tomsk, Russia*
2	**R3-O-049301** **Effect of Sequence of Combined Impact of Influencing Factors on Operation of Ir-Leds** A.V. Gradoboev, A.V. Simonova *National Research Physics Tomsk Polytechnic University, Tomsk, Russia*
3	**R3-O-050201** **Overview of the CMS BCML System and the Potential of Diamond Detectors Surface Modification Application** V.V. Okhotnikov, S.A. Linnik, A.V. Gaydaychuk *National Research Physics Tomsk Polytechnic University, Tomsk, Russia*
4	**R3-O-040702** **Analysis of the Absorption of Polarized Radiation by Particles in Laser Powder Deposition** O.B. Kovalev *Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia*
5	**R3-P-945401** **Investigation of Betatron Radiation Generated in Interaction of 18 MeV Electron Beam with Internal Microtarget** V.B. Smolyanskiy, M.M. Rychkov, V.V. Kaplin, I.B. Stepanov *National Research Physics Tomsk Polytechnic University, Tomsk, Russia*

17 September (Monday) **16:30 – 18:30**

6	**R3-P-032301** **Light Induced Currents in the Ferroelectric Films** V.I. Ivanov, Y.O. Perkov, Y.M. Karpets *Far Eastern State Transport University, Khabarovsk, Russia*
7	**R3-P-032901** **Technological Management by the Nonlinear Optical Properties of the Vanadium Dioxide Films** V.I. Ivanov *Far Eastern State Transport University, Khabarovsk, Russia*
8	**R3-P-032501** **Thermal Action of the Radiation in the Transparent Nanosuspension** V.I. Ivanov, A.V. Myagotin, G.D. Ivanova *Far Eastern State Transport University, Khabarovsk, Russia*
9	**R3-P-032601** **X-Ray Generation Based on Lithium Niobate Crystal Heating** L.N. Orlikov, K.M. Mambetova, A.O. Zlobin, S.M. Shandarov *Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*
10	**R3-P-041201** **Spectrally Resolved Thermoluminescence in UV Excited Hexagonal Boron Nitride Nanopowder1** D.M. Spiridonov*, A.M.A. Henaish, S.A. Shalyakin, A.S. Vokhmintsev, I.A. Weinstein **NANOTECH Center, Ural Federal University, Ekaterinburg, Russia* ***Tanta University, Physics Department, El-Gaish, Tanta, Egypt*
11	**R4-O-028002** **Effect of Electronic Irradiation on the Properties of Polyimide Films of Various Marks** A.I. Kupchishin*,**, B.G. Taipova*, N.A. Voronova* **Abay Kazakh National Pedagogical University, 13 Dostyk ave., Almaty, Kazakhstan* ***Al-Farabi Kazakh National University, Almaty, Kazakhstan,*

17 September (Monday) **16:30 – 18:30**

Radiation defects: structure, formation, properties

12	**R4-P-007302** **Chances Crystal Structure of Silicon Hexaboride Irradiated under Gamma Ray** M.N. Mirzayev*,**, Kh.F.Mammadov**, R.N.Mehdiyeva**, S.H. Jabarov*,***, E.B. Asgerov*, S.M. Akberova**** **Joint İnstitute for Nuclear Researchers, Dubna, Russia* ***Institute of Radiation Problems, ANAS, AZ 1143 Baku, Azerbaijan* ****Institute of Physics, ANAS, Baku, Azerbaijan* ****Azerbaijan University of Architecture and Construction, Baku, Azerbaijan*
13	**R4-P-012001** **Effect of Ion Irradiation on Optical and Electrical Properties of Aluminum Oxide** F.V. Konusov*, A.V. Kabyshev* **National Research Tomsk Polytechnic University, Tomsk, Russia*
14	**R4-P-018901** **The Change in the Topography of Titanium under Femtosecond Laser Irradiation** M. V. Zhidkov *, E. I. Ageev **, Yu. R. Kolobov ***, V. P. Veiko **, A. E. Ligachev **** **Belgorod State National Research University, Belgorod, Russia* ***ITMO University, St. Petersburg, Russia* ****Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia* *****A.M. Prokhorov General Physics Institute RAS, Moscow, Russia*
15	**R4-P-020901** **Surface Erosion in ZrN/SiN_x, AlN/SiN_x and CrN/SiN_x Multilayers after He Irradiationi** V.V. Uglov*,**, G. Abadias***, S.V. Zlotski*, I.A. Saladukhin*, A.A. Malashevich* **Belarusian State University, Minsk, Belarus* ***Tomsk Polytechnic University, Tomsk, Russia* ****Institut Pprime, Université de Poitiers-CNRS-ENSMA, Dpt. Physique et Mécanique des Matériaux, Chasseneuil-Futuroscope cedex, France*
16	**R4-P-025701** **Simulation of Interaction of Edge Dislocations with Radiation Defects in Fe-10Cr Alloy** A.V. Korchuganov, K.P. Zolnikov, D.S. Kryzhevich *Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*

17 September (Monday) **16:30 – 18:30**

17	**R4-P-028003** **Study of the Properties of the Unirradiated and Irradiated Dried Active Sludge Using the Optical Method** A.I. Kupchishin*,**, V.M. Lisitsyn***, M.N. Niyazov*, B.G. Taipova*, N.A. Voronova* **Abay Kazakh National Pedagogical University, Almaty, Kazakhstan* *** Al-Farabi Kazakh National University, Almaty Kazakhstan* ****Tomsk National Research Polytechnical University, Tomsk, Russia*
18	**R4-P-028401** **Radiation Defects in Sulfates of Alkali and Alkaline-Earth Metals Creating at Excitation by Ultraviolet Photons** T.N. Nurakhmetov, B.M.Sadykova*, Zh.M. Salikhodzha, A.M. Zhunusbekov, A.Zh. Kainarbay , D.H. Daurenbekov, K.B.Zhanylysov *L.N. Gumilyov Eurasian national university, Astana, Kazakhstan*
19	**R4-P-030503** **Defects in $LiMgPO_4$, Material for Radiation Dosimetry** R.M. Abashev*, M.O. Kalinkin**, A.I. Surdo*, N. I. Medvedeva**, D.G. Kellerman** **Institute of Industrial Ecology, UB RAS, Ekaterinburg, Russia* **Department of Experimental Physics, Ural Federal University, Ekaterinburg, Russia* ***Institute of Solid State Chemistry, UB RAS, Ekaterinburg, Russia*
20	**R4-P-039401** **Phonon Interaction with OH^- Complexes and Products of Their Radiation Decay in LiF Crystals** N.A. Ivanov*, L.I. Bryukvina**, D.S. Glazunov** **Irkutsk National Research Technical University, Irkutsk, Russia* ***Irkutsk Division of Institute of Laser Physics of the Siberian Branch of the RAS, Irkutsk, Russia*
21	**R4-P-045801** **Xrd and Tem Studies of Silicon and Aluminum Nitrides Irradiated with Swift Xenon Ions** A.Ibrayeva*,**, A.Kozlovskiy*, A.Janse Van Vuuren***, V.A.Skuratov****, M.Zdorovets* **Astana Branch of Institute of Nuclear Physics, Astana, Kazakhstan* ***L.N. Gumilyov Eurasian National University, Astana, Kazakhstan* ****Nelson Mandela Metropolitan University, University way, Summerstrand, South Africa* *****Flerov Laboratory of Nuclear Research, Joint Institute for Nuclear Research, Dubna, Russia*

22	**R4-P-046102** **Accumulation of Gas Impurities in Structural Steel under The Synergistic Action of Neutron Irradiation in Helium Atmosphere at High Temperatures** S.B. Kislitsin*,** A.C.Dikov*,**, I.V.Khromushin* **Institute of Nuclear Physics, Almaty, Kazakhstan* ***NRNU "MEPhI", Moscow, Russia*
23	**R4-P-046502** **Optical Characteristics LiF Crystals Irradiated with Silver Ions** V.P. Dresvyanskiy*, E.F. Martynovich*,**, A.L. Rakevich*, O.I. Shipilova**, V.L.Paperny**, A.A. Chernich** **Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia* ***Institute of Applied Physics, Irkutsk State University, Irkutsk, Russia*
24	**R4-P-049201** **Photothermal Conversion of Color Centers in Lithium Fluoride Crystals under Laser Excitation** V.P. Dresvyanskiy*, S. Murzin***, M.D. Zimin*, E.F. Martynovich*,** **Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia* ***Institute of Applied Physics, Irkutsk State University, Irkutsk, Russia* ****Irkutsk State Transport University, Irkutsk, Russia*
25	**R4-P-051801** **Radiation Hardness of Gap Leds to Gamma-Quantum Irradiation** A.V. Gradoboev, K.N. Orlova, A.V. Simonova *National Research Tomsk Polytechnic University, Tomsk, Russia*
26	**S1-P-046301** **Vacancy Related Radiation Defects in Germanium Doped with TiN** L.I. Khirunenko*, M.G. Sosnin*, A.V. Duvanskii*, N.V. Abrosimov**, H. Riemann** **Institute of Physics NAS, Kiev, Ukraine* ***Leibniz Institute for crystal Growth, Berlin, Germany*

17 September (Monday) **16:30 – 18:30**

27	**R4-P-957701** **Influence of the Preparation Conditions on Optical Properties of Single Crystals $ZnGeP_2$ in THz Range** A.I. Gribenyukov**, V.I. Voevodin* **Tomsk State University, Tomsk, Russian Federation* ***Institute for Monitoring of Climatic and Ecological Systems of the SB RAS, Tomsk, Russian Federation*
28	**R4-P-958501** **On the Possibility of the Existence of Nanodefects in YAG:Ce Phosphors** Victor Lisitsyn *National Research Tomsk Polytechnic University, Tomsk, Russia*
29	**R4-P-920101** **Radiation-Induced Absorption in Ceramics YSZ** E.F. Polisadova, O.L. Khasanov, S.A. Stepanov, D.T. Valiev, V.D. Paygin, A.M. Shrayber, P.D. Zhvakina *National Research Tomsk Polytechnic University, Tomsk, Russia*
30	**R2-P-925001** **Concerning the Beam Blocking Plasma Torch During Laser Engraving the Metal Surface** O.V. Nozdrina, I.Yu.Zykov, V.I.Oleshko, V.P. Tsipilev *National Research Tomsk Polytechnic University, Tomsk, Russia*
31	**R4-P-922701** **Peculiarities of Porosity Formation Along the Range of Helium Ions Path in Vanadium Alloys** I.I. Chernov*, M.S. Staltsov*, S.N. Korshunov** **National Research Nuclear University MEPhI, Moscow, Russia* ***National Research Center "Kurchatov Institute", Moscow, Russia*

17 September (Monday) **16:30 – 18:30**

Methods, instruments and equipment for physicochemical studies

32	**R5-P-031001** **Equipment Lower Measurement Limit and Its Accounting During Control of Radioactive Materials in Npp Aiborne Discharges** A.-N.V. Vukolova*, A.P. Dolgikh** **"Kurchatov Institute" NRC, Moscow, Russia* ***"Rosenergoatom" Concern JSC, Moscow, Russia*
33	**R5-P-034002** **Thermal Stabilization of Zr-Fe Layered System Obtained by Ion-Plasma Sputtering** A.K. Zhubaev, B.Zh. Suleimanov, M.Ye.Bersieva, T.S.Mukhambetzhan *Aktobe Regional State University, Aktobe, Kazakhstan*
34	**R5-P-050102** **Spectral Investigation of Ensembles of Ag_2S Quantum Dots, Passivated with Thioglycolic Acid** T .S. Kondratenko*, I.G. Grevtseva*, O.V. Ovchinnikov*, M.S. Smirnov*, E.V. Shabunya-Klyachkovskaya**, A.S. Matsukovich**, A.S. Perepelitsa* **Department of Optics and Spectroscopy, Voronezh State University, Voronezh, Russia* ***B.I.Stepanov Institute of Physics of the NAS of Belarus, Minsk, Belarus*
35	**R5-P-954701** **Use of Diffusion Model of Radon Transfer Through Soil for Radon Risk Assessment of Building Plots** K.O.Stavitskaya, N.K. Ryzhakova *Nationl Research Tomsk Polytechnic University, Tomsk, Russia*
36	**R5-P-954702** **Systematic Study of the Influence of Atmospheric Conditions on the Radon Flux from the Surface of Soils** K.O.Stavitskaya, N.K. Ryzhakova, A.A.Udalov *Nationl Research Tomsk Polytechnic University, Tomsk, Russia*

37	**R5-O-029804** **Simulation of Photoacoustic Effects in Systems with Multiple Scattering of Radiation** A.A. Zvekov*, A.V. Kalenskii**, M.V. Anan'eva**, B.P. Aduev*, Gazenaur N.V.** **Federal Research Center of Coal and Coal Chemistry, Kemerovo, Russia* ***Kemerovo State University, Kemerovo, Russia*

18 September (Tuesday) **11:00 – 13:10**

Oral Session 3

Luminescence: processes, luminescence centers, scintillators and luminophores, application

11:00 – 11:30 Invited	**R1-O-050601** **Tunable-Spectrum Garnat Solid Solution Phosphors for Near Ultraviolet Light Emitting Diode** T. Han*, T. Lang**, C. Zhao*, S. Cao*, L. Peng*, Y. Zhong**, A. N. Yakovlev**, E. F. Polisadova** **Chongqing University of Arts and Sciences, Yongchuan, Chongqing, China* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
11:30 – 11:50	**R1-O-004501** **Title Peculiarities in the Anion Vacancies Distribution and the Relationship Between Their Concentration and the TLD-500 Detectors Tl Output** Surdo A.I.*,**, Abashev R.M*,**, Milman I.I.**, Yemelyanov A.J.** **Institute of Industrial Ecology of UB RAS, Ekaterinburg, Russia* ***Ural Federal University, Ekaterinburg, Russia*
11:50 – 12:10	**R1-O-007701** **Luminescence-Optical Properties of Complex Oxyfluorides Crystals** A.V. Kozlov, V.A. Pustovarov *Ural Federal University, Yekaterinburg, Russia*
12:10 – 12:30	**R1-O-023501** **Influence of Varying Gd^{3+} Concentration on the Structure and Optical Properties of $ZnAl_2O_4$:0.1% Eu^{3+}; X% Gd^{3+} (0 ≤ X ≤ 1.2) Synthesized Via Citrate Sol-Gel Method** S.V. Motloung, V.M. Maphiri *Department of Physics, Sefako Makgatho Health Science University, Medunsa, South Africa*

18 September (Tuesday) **11:00 – 13:10**

12:30 – 12:50	**R1-O-053201** **Theoretical Study of Small Calcium Fluoride Nanoparticles** M.Yu. Yurev*, A.S. Mysovsky*,** **Irkutsk National Research Technical University, Irkutsk, Russia* ***A.P. Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia*
12:50 – 13:10	**R1-O-048401** **Investigation of Phosphor Compositions for Led Filament Bulb** V.I. Tuev, V.S. Soldatkin, M.V. Andreeva, E.S. Ganskaya, G.A. Kosacheva *Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia*

13:10 – 14:30	**LUNCH**

18 September (Tuesday) **14:30 – 16:40**

Oral Session 4

Luminescence: processes, luminescence centers, scintillators and luminophores, application

14:30 – 15:00 Invited	**R1-O-031802** **Set-Up for Ionoluminescence Characterization of Radiation Damage in Materials at Dc-60 Cyclotron** M.Zdorovets*, V.A.Skuratov**, A.Dauletbekova***, Yu.G.Teterev**, A.Seitbayev***, A.N.Krylov**, M.Koloberdin* **Astana Branch of Institute of Nuclear Physics, Astana, Kazakhstan* ***Joint Institute for Nuclear Research, Dubna, Russia* ****L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*
15:00 – 15:20	**R1-O-052601** **Luminescence of Nanoparticles, Created by Laser Ablation of the Natural Diamond** N.L. Lazareva*,**, E.A. Ludina**, N.V. Bryanskiy***, E.F. Martynovich*,** **Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia* ***Irkutsk State University, Irkutsk, Russia* ****Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia*
15:20 – 15:40	**R1-O-024901** **Effects of Nonstoichiometry on Radiation-Induced Processes and Luminescence of Monoclinic Zirconia** S.V. Nikiforov, A.A. Menshenina, S.F. Konev, A.N. Kiryakov *Ural Federal University, Ekaterinburg, Russia*
15:40 – 16:00	**R1-O-032701** **Luminescent Properties of YAG:Ce,BaF_2 Phosphors and Ceramics** S.A. Stepanov, D.T. Valiev, V.D. Paygin, V.A. Vaganov *National Research Tomsk Polytechnic University, Tomsk, Russia*

18 September (Tuesday) **11:00 – 13:10**

16:00 – 16:20	**R1-O-032801** **Study of Luminescent Properties of Al-Si-N Films** B.P. Gritsenko*,**, V.F. Shtan'ko**, S.A. Stepanov**, G.Zh. Nogai'bekova*,**, V.P. Sergeev*,** **Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
16:20 – 16:40	**R1-O-036402** **A Low-Temperature Luminescence Spectroscopy Study of BEO:Mg and BeO:Zn Single Crystals** M.D. Petrenko, I.N. Ogorodnikov, V.Yu. Ivanov *Ural Federal University, Ekaterinburg, Russia*

16:40 – 18:30	**Poster Session 2 & Coffee**

18 September (Tuesday) **16:30 – 18:30**

Poster Session 2:

Non-linear physicochemical processes under severe energetic impact: breakdown, facture, explosion, etc.

1	**R2-O-027905** **Laser Ignition and Emission Spectrum of Lignite and Long-Flame-Gas Coal** B.P. Aduev, D.R. Nurmukhametov, R.Yu. Kovalev, Ja.V. Kraft, Z.R. Ismagilov *Federal Research Center Coal and Coal Chemistry of SB RAS, Kemerovo, Russia*
2	**R2-P-027904** **Laser Ignition Efficiency of Coal-Petn Mixture Composition** B.P. Aduev, D.R. Nurmukhametov, R.Yu. Kovalev, Ja.V. Kraft, Z.R. Ismagilov *Federal Research Center Coal and Coal Chemistry of SB RAS, Kemerovo, Russia*
3	**R2-P-008001** **Multicycle Electroimpulse Fatigue of Amorphous Metallic Alloys** V.A. Fedorov, A.D. Berezner, T.N. Pluzhnikova *Tambov State University n.a. G.R. Derzhavin, Tambov, Russia*
4	**R2-P-009601** **Clusters of Fibonacci in the Structure of Condensed Medium** G.A. Melnikov *South-West State University, Kursk, Russia*
5	**R2-P-028104** **Investigation of the Optical Properties of Hexogen-Aluminum Composites Using a Photometric Sphere** B.P. Aduev, G.M. Belokurov, D.R. Nurmukhametov, I.Yu. Liskov, N.V. Nelyubina *Federal Research Center Coal and Coal Chemistry of SB RAS, Kemerovo, Russia*

18 September (Tuesday) **16:30 – 18:30**

6	**R2-P-034301** **Laser Initiation of Low-Density Petn Containing Ultrafine Aluminum Particles** B.P. Aduev, D.R. Nurmukhametov, N.V. Nelyubina *Federal Research Center Coal and Coal Chemistry of SB RAS, Kemerovo, Russia*
7	**R2-P-042701** **Physics of the Transmutation of Stable Elements at the Collision of Macro-Objects with Regard to High Speeds** M.K. Marakhtanov, V.S. Okunev *BMSTU, Moscow, Russia*
8	**R2-P-043201** **Application of High-Voltage Nanosecond Pulses to Improve the Technological Properties of Diamond-Bearing Kimberlites** I.Zh. Bunin, M.V. Ryazantseva, N.E. Anashkina *Institute of Comprehensive Exploitation of Mineral Resources RAS, IPKON RAN, Moscow, Russia*

19 September (Wednesday) **11:00 – 13:10**

Oral Session 5

Luminescence: processes, luminescence centers, scintillators and luminophores, application

11:00 – 11:30 Invited	**R1-O-040201** **The Nature of the Absorption and Luminescence Bands of Yb:YAG, Yb:Y_2O_3 И Yb_2O_3 in the Near Infrared Field** Vladimir I. Solomonov *Institute of Electrophysics of UD RAS, Ekaterinburg, Russia*
11:30 – 11:50	**R1-O-034201** **Features of the Action of an Uniaxial Deformation on the Radiative Annihilation of Excitons in a KBr Crystal** K. Shunkeyev, N. Zhanturina, L. Myasnikova, A. Barmina, D. Sergeyev, Z. Aimaganbetova, Sh. Sagimbaev *Zhubanov Aktobe Regional State University, Aktobe, Kazakhstan*
11:50 – 12:10	**R1-O-028701** **Kinetics of Luminescence Decay of YAG Phopsphors at Different Temperatures** Ju Yangyang, S.A. Kruglyakov, V.M. Lisitsyn, Zhang Tianqi *Tomsk Polytechnic University, Tomsk, Russia*
12:10 – 12:30	**R1-O-043501** **Radioluminescence of BaF_2 Nanopowders** Shevelev V.S.*, Ishchenko A.V.*, Platonov V.V.**, Sokovnin S.Yu. *,**, Il'ves V.G.**, Tikhonov E.V.**, Karzhenkov O.I.*, Osipov V.V.**, Shulgin B.V.* **Ural Federal University, Yekaterinburg, Russia* ***Institute of Electrophysics UD RAS, Yekaterinburg, Russia*
12:30 – 12:50	**R1-O-045201** **Growth and Spectroscopy of BaBrI, BaClI and SrBrI Crystals** A.I. Rusakov*, A.A. Shalaev*, R.U. Shendrik*, A.K. Subanakov** **Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia* ***Baikal Institute of Nature Management SB RAS, Ulan-Ude, Russia*

12:50 – 13:10	**R1-O-044901** **Low Temperature Photoluminescence of Aluminum Oxynitride Doped with Rare-Earth Ions** V.V. Yagodin*, A.V. Ishchenko*, G.F. Babaylova*, Yu.F. Kargin**, N.S. Akhmadullina**, A.S. Lysenkov** and B.V. Shulgin* **Ural Federal University, Yekaterinburg, Russia* ***Institute of Metallurgy and Material Science RAS, Moscow, Russia*

13:10 – 14:30	**LUNCH**

20 September (Thursday) **11:00 – 13:10**

Oral Session 6

Radiation defects: structure, formation, properties

11:00 – 11:30 Invited	**R4-O-028001** **Effect of Anomalous Broadcast During Uniaxial Tension of Thin Polyethylene Films** A.I. Kupchishin*,**, M.N. Niyazov*, V.M. Lisitsyn***, B.G. Taipova*, N.A. Voronova*, A.T.Abdukhairova* **Abay Kazakh National Pedagogical University, Almaty, Kazakhstan* ***Al-Farabi Kazakh National University, Almaty, Kazakhstan,* ****National Research Tomsk Polytechnic University, Tomsk, Russia*
11:30 – 11:50	**R4-O-017403** **Thermal Imaging Diagnostics of Fast Radiation Processes** A. Pushkarev*, A. Prima*, X.P. Zhu**, L. Ding**, Q. Zhang**, Yu. Isakova*, M.K. Lei** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Surface Engineering Laboratory, School of Materials Science and Engineering and Key Laboratory of Materials Modification by Laser, Ion, and Electron Beams (Ministry of Education), Dalian University of Technology, Dalian, China*
11:50 – 12:10	**R4-O-053102** **The Diffusion Mechanism of Self-Trapped Holes in BaF_2 Crystal** N. G.Chuklina, A. S.Mysovsky *A.P. Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia* *Irkutsk National Research Technical University, Irutsk, Russia*
12:10 – 12:30	**R4-O-037901** **Supramolecular Rotating Structures Fueled by Light in Nanomotor Doped Chiral Liquid Crystals** T. Orlova*,***, F. Lancia**, C. Loussert*, S. Iamsaard**, N. Katsonis**, E. Brasselet* **University of Bordeaux, Talence, France* ***University of Twente, Enschede, Netherlands* ****National Research Tomsk Polytechnic University, Tomsk, Russia*

12:30 – 12:50	**R4-O-046501** **Polarization Effects in Study of the Processes of Laser Defect Formation** V.P. Dresvyanskiy*, S.A. Zilov*, E.F. Martynovich*,** **Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia* ***Institute of Applied Physics, Irkutsk State University, Irkutsk, Russia*
12:50 – 13:10	**R4-O-028203** **The Change in the Infrared Spectra of Topaz Crystals after Annealing and Irradiation** M.V. Korovkin*, L.G. Ananyeva*, N.N.Boroznovskaya**, O.V. Savinova * **National Research Tomsk Polytechnic University, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*

13:10 – 14:30	**LUNCH**

20 September (Thursday) **14:30 – 16:40**

Oral Session 7

Radiation defects: structure, formation, properties

14:30 – 15:00 Invited	**R3-O-053301** **Semiconductor Nanostructures Investigation Using Coherent X-Ray Diffraction** S. Lazarev*, D. Dzhigaev*,**, Y. Y. Kima*, Zh. Bie***, A. Nowzarie***, I. Zaluzhnyya*,**, L. Samuelsone*** and I. A. Vartanyants*,** **Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany* ***National Research Nuclear University MEPhi, Moscow, Russia* ****Lund University, Lund, Sweden*
15:00 – 15:20	**R4-O-031801** **Defect Formation in Zn Nanostructures During Irradiation with Ion Beams** M.V.Zdorovets*, D.B.Kadyrzhanov**, A.L. Kozlovskiy* **The Institute of Nuclear Physics of Republic of Kazakhstan, Astana, Kazakhstan* ***Eurasian National University, Astana, Kazakhstan*
15:20 – 15:40	**R4-O-029601** **Luminescence of Sapphire Monocrystal Irradiated by Pulsed Ion Beams** D.V. Ananchenko*, S.V. Nikiforov*, G.R. Ramazanova*, R.I. Batalov**, R.M. Bayazitov**, G.A. Novikov** **Institute of Physics and Technology, Ural Federal University, Ekaterinburg, Russia* ***Zavoisky Physical-Technical Institute, Federal Research Center Kazan Scientific Center of RAS, Kazan, Russia*
15:40 – 16:00	**R4-O-052401** **Formation of Aggregate Color Centers under the Action of Femtosecond Laser Pulses** A.V. Kuznetsov, V.P. Dresvyansky, E.F. Martynovich *IB ILP SB RAS, Irkutsk, Russia*

20 September (Thursday) **14:30 – 16:40**

16:00 – 16:20	**R4-O-046503** **Modeling of Quantum Trajectories of F3+- Center in LiF Crystal** V.P. Dresvyanskiy*, S.A. Zilov*, A.L. Rakevich*, E.F. Martynovich*,** **Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia* ***Institute of Applied Physics, Irkutsk State University, IrkutskRussia*
16:20 – 16:40	**R4-O-954601** **A Low-Temperature Luminescence Spectroscopy Study of BeO:Mg and BeO:Zn Single Crystals** A. Yashin, N.V. Volkov, D.A. Safonov, I.V. Oleinikov, N.V. Sysoeva *NRNU MEPhI, Moscow*

16:40 – 18:30	**Poster Session 3 & Coffee**

20 September (Thursday) **16:30 – 18:30**

Poster Session 3:

Luminescence: processes, luminescence centers, scintillators and luminophores, application

1	**R1-O-026103** **Cathodoluminescence of YAG:Ce** V. A. Vaganov, V. M. Lisitsyn *National Research Tomsk Polytechnic University, Tomsk, Russia*
2	**R1-O-029701** **UV Luminescence of Phosphors Based on Yag: Ce Excited by the Optical Source** A.T. Tulegenova, V.M. Lisitsyn *National Research Tomsk Polytechnic University, Tomsk, Russia*
3	**R1-P-022301** **Crystal Growth and Luminescence of Alkali-Earth Halide Scintillators** A. Shalaev*,**, R. Shendrik*,**, A. Rusakov*, A. Myasnikova* **Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia* ***Irkutsk State University, Physics Dept., Irkutsk, Russia*
4	**R1-P-022801** **Investigation of Optical Spectra of Dielectric Crystals** T.A. Koketay, A.K. Tussupbekova, E.K. Mussenova *Karaganda state university named after academician Y.A. Buketov, Karaganda, Kazakhstan*
5	**R1-P-029401** **Studing of Polymeric Nanocomposites Containing CDSE/CDS Core-Shell Nanorods** Vladimir I. Oleshko*, Svetlana S. Vil'chinskaya*, Nina S. Eremina**, Maksym F. Prodanov***, Valerii V.Vashchenko*** **National Research Tomsk Polytechnic University, Tomsk, Russia* *** National Research Tomsk State University, Tomsk, Russia,* ****Institute for Single Crystals, Kharkov, Ukraine*

6	**R1-P-030403** **Light Emitting Layered Structure Based on Silicon Nitride with Different Stoichiometry** I.A. Romanov*, I.N. Parkhomenko*, F.F. Komarov**, L.A. Vlasukova*, O.V. Milchanin**, M.A. Makhavikou**, A.V. Mudryi***, V.D. Zhivulko***, N.S. Kovalchuk**** **Belarusian State University, Minsk, Belarus* ***A.N. Sevchenko Institute of Applied physical problems, Minsk, Belarus* ****Scientific and Practical Materials Research Center, NAS of Belarus, Minsk, Belarus* *****Joint Stock Company "Integral", Minsk, Belarus*
7	**R1-P-030502** **Optically Stimulated Luminescence in Strongly Irradiated Anion-Deficient Corundum and Associated Phototransfer Effects** Abashev R.M*,**, Surdo A.I.*,**, Milman I.I.* **Ural Federal University, Ekaterinburg, Russia* ***Institute of Industrial Ecology of UB RAS, Ekaterinburg, Russia*
8	**R1-P-031201** **Iono - and Photoluminescence of Oxyde Single Crystals Induced by Swift Heavy Ions Irradiation** A.T. Akilbekov*, V.A. Skuratov**,***,****, N.S. Kirilkin**, A.K. Dauletbekova*, Sh. G. Giniyatova*, A.S. Seitbayev**,***** **L.N. Gumilyov Eurasian National University, Astana, Kazakhstan* ***FLNR JINR, Dubna, Russia* ****National Research Nuclear University MEPhI, Moskow, Russia* *****Dubna State University, Dubna, Russia* ******Astana Branch of Institute of Nuclear Physics, Astana, Kazakhstan*
9	**R1-P-032401** **Ultra-High Dose Irradiated Processes in Li Doped Sodium Fluorides** M.M.Kidibaev*, Zh.K.Mamytbekov**, U.K. Mamytbekov*, G.S.Denisov* **National Academy of Sciences, Institute of Physics, Bishkek, Kyrgyz Republic* ***Ural Federal University, Ekaterinburg, Russia*
10	**R1-P-032402** **Influence of Impurity on the Formation of Ion Radicals in Irradiated Crystals $LiNaSO_4$-Cr3+** Kidibaev M.M., Sharheev K., Soltobekova N., Rayimkul Kyzy N. *National Academy of Sciences, Institute of Physics, Bishkek, Kyrgyz Republic*

20 September (Thursday) **16:30 – 18:30**

11	**R1-P-036601** **Kinetics Cathodoluminescence Lithium Fluoride Crystals Doped with Uranium** Zh.T. Karipbayev*, D.A. Musakhanov**, V.M. Lisitsyn**, A.T. Akilbekov*, A.K. Dauletbekova*, G.S. Denisov*** **L.N.Gumilyov Eurasian National University* ***National Research Tomsk Polytechnic University, Tomsk, Russia* ****Kyrgyz Russian Slavic University named after First President of Russia B.N.Yeltsyn*
12	**R1-P-044702** **Temporal Behavior of Broadband Radiation Emitted by $Al_xGa_{1-x}N$ Structures under Optical and Electron-Beam Excitation** P.A. Bokhan, N.V. Fateev, T.V. Malin, I.V. Osinnykh, Dm.E. Zakrevsky, K.S. Zhuravlev *Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia*
13	**R1-P-049402** **Pulse Catodo- and Thermoluminescence of Alumina Ceramic with Manganese** S.V. Zvonarev*, E.I. Frolov**, V.A. Pankov*, V.Y. Churkin* **Ural Federal University, Ekaterinburg, Russia* ***Samara State Technical University, Samara, Russia*
14	**R1-P-050101** **Luminescent and Nonlinear Optical Properties of Hybrid Associates of Ag_2S Quantum Dots with Molecules of Thiazine Dyes** T. Kondratenko, I. Grevtseva, O. Ovchinnikov, M. Smirnov, A. Zvyagin *Department of Optics and Spectroscopy, Voronezh State University, Voronezh, Russia*
15	**R1-P-956301** **Near-Surface Self-Trapped Excitons in BeO** A.Y.kuznetsov, M.A.Botov, A.B Sobolev *Ural Federal University, Ekaterinburg, Russia*
16	**R1-P-956302** **Near-Surface Centers of Luminescence in Alumina** A.Y.kuznetsov, M.A.Botov, A.B Sobolev *Ural Federal University, Ekaterinburg, Russia*

21 September (Friday) **11:00 – 13:10**

Oral Session 8

Physical principles of radiation and photonic technologies

11:00 – 11:30 Invited	**R3-O-008901** **Anisotropy of Laser Defects Creation in Crystals** E.F.Martynovich*,**, V.P. Dresvyansky*, A.L. Rakevich*, N.L. Lazareva*,**, M.A. Arsentieva*, A.A. Tiutrin*, A.S. Kuzakov*, O.Bukhtsooj*** **Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia* ***Irkutsk State University, Irkutsk, Russia* ****Institute of Physics and Technology MAS, Ulaanbaatar, Mongolia*
11:30 – 11:50	**R3-O-015801** **The Glow Discharge Application for Formation of a Thin Luminescent Layer in LiF Crystals** A.A. Tyutrin, A.L. Rakevich, D.S. Glazunov, E.F. Martynovich *Irkutsk Branch of the Institute of Laser Physics SB RAS, Irkutsk, Russia*
11:50 – 12:10	**R3-O-053402** **Terahertz Generation at a Difference Frequency in a Nonlinear $ZnGeP_2$ Optical Crystal** N. N. Yudin*, Gribenyukov A. I.**, V. V. Dyomin*, S. N. Podsevalov*, I. G. Polovtsev* **National Research Tomsk State University, Russia, Tomsk* ***Institute of monitoring of climatic and ecological system SB RAS, Russia, Tomsk*
12:10 – 12:30	**R3-O-010504** **Excitonic States in Diamond in the Spectra of Optical Absorption and Luminescence** E.I. Lipatov*, D.V. Grigor'ev**, D.E. Genin*, K.R. Burumbaeva**, V.F. Tarasenko*,** **Institute of High-current Electronics SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*

21 September (Friday) **11:00 – 13:10**

12:30 – 12:50	**R3-O-053401** **Parametric Oscillator Based on a Nonlinear Crystal $ZnGeP_2$ Pumped Ho: YAG Laser** N. N. Yudin*, Gribenyukov A. I.**, V. V. Dyomin*, S. N. Podsevalov*, I. G. Polovtsev*, **National Research Tomsk State University, Tomsk, Russia* ***Institute of monitoring of climatic and ecological system SB RAS, Tomsk, Russia*
12:50 – 13:10	**R3-O-019401** **Thermoluminescence Spectra of Irradiated Nanocomposite Materials** Natalia S. Dyuryagina, Alexandr P. Yalovets *South-Ural State University, Chelyabinsk, Russia*

13:10 – 14:30	**LUNCH**

21 September (Friday) **14:30 – 16:40**

Oral Session 9

Methods, instruments and equipment for physicochemical studies

14:30 – 15:00 Invited	**R5-O-960701** **Optical Homogenous Silica Glasses – Problems of its Production** A. Nepomnyashchikh *A.P. Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia*
15:00 – 15:20	**R5-O-021301** **Dynamic Tests of Multi-Detector Radiometric System on Central Blood Circulation Phantom** S.V. Pankin*, A.I. Surdo*,**, A.D. Krotov*, M.N. Sarychev*, V.V. Pankin*,***,****, A.A. Schelkanov*, A.V. Zelenin***** **Ural Federal University, Ekaterinburg, Russia* ***Institute of Industrial Ecology UB RAS, Ekaterinburg, Russia* ****Urals State Medical University, Ekaterinburg, Russia* *****Institute of High-Temperature Electrochemistry UB RAS, Ekaterinburg, Russia* ******Regional Children's Clinical Hospital No.1, Ekaterinburg, Russia*
15:20 – 15:40	**R5-O-020801** **Influance of Radiation Defects on the Error of Thermal Imaging Diagnostics of High Intensive Pulsed Ion Beam** A. Prima*, R. Zyryanova*, L. Ding**, Q. Zhang**, Q.L. Han**, C.C. Zhang** **National Research Tomsk Polytechnic University, Tomsk, Russia* ***Dalian University of Technology, Dalian, China*
15:40 – 16:00	**R5-O-031002** **The Concept of Nuclide Vector and Fixed Radionuclides for Control of NPP Airborne Discharges** A.-N.V. Vukolova*, A.P. Dolgikh** **"Kurchatov Institute" NRC, Moscow, Russia* ***«Rosenergoatom» Concern JSC, Moscow, Russia*

21 September (Friday) **14:30 – 16:40**

16:00 – 16:20	**R5-O-053403** **Optical Defectoscopy of $ZnGeP_2$ Single Crystals by the Radiation of the Strontium Vapor Laser** N.N. Yudin*,Gribenyukov A. I.**, V. V. Dyomin*, S. N. Podsevalov*, I. G. Polovtsev* **National Research Tomsk State University, Tomsk, Russia* ***Institute of monitoring of climatic and ecological system SB RAS, Tomsk, Russia*
16:20 – 16:40	**R5-P-029702** **Synthesis and Study of the Photocatalytic Activity of Materials Based on Zinc and Tungsten Oxides** A.A. Markhabaeva*, A.T. Tulegenova**, Kh.A. Abdullin* **National nanotechnology laboratory of the open type of KazNU, Almaty, Kazakhstan* ***National Tomsk polytechnic university, Tomsk, Russia*

16:30 – 17:00	**Coffee**
17:00	**CLOSING CEREMONY**

3rd International Conference on New Materials and High Technologies

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N1 Non isothermal methods for materials synthesis

N2 Combustion waves: theory and experiment

N3 Functional materials and coatings

17 September (Monday) **11:00 – 13:10**

Oral Session 1

Non isothermal methods for materials synthesis

11:00 – 11:30 Invited	**N1-O-018501** **Application of SHS Auxiliary Reaction of Titanium Carbide for Introduction of AlN Nanoparticles into Aluminum Melt** A.P. Amosov, Yu.V. Titova, D.A. Maidan, E.I. Latukhin *Samara State Technical University, Samara, Russia*
11:30 – 11:50	**N1-O-018502** **Effect of Alloying on Structure and Properties of Particle-Reinforced Aluminum Matrix Composites Al/TiC Produced by SHS in Aluminum Melt** A.P. Amosov, A.R. Luts, E.I. Latukhin, A.D. Rybakov, V.A. Novikov, S.I. Shipilov *Samara State Technical University, Samara, Russia*
11:50 – 12:10	**N1-O-002702** **Main Factors Affecting the Structure and Properties of Titanium and Cobalt Alloys Manufactured by the 3D Printing** N.V. Kazantseva *Institute of Metal Physics, Ekaterinburg, Russia*
12:10 – 12:30	**N1-O-014701** **Features of Mechanochemical Synthesis in the «Solid Reagent - Active Gas» System** O.A. Shkoda, O.V. Lapshin *Tomsk Scientific Center SB RAS, Tomsk, Russia*
12:30 – 12:50	**N1-O-014702** **Mechanical Activation and Thermal Explosion in Ti-Ni and Nb-Si Systems** O.A. Shkoda, O.V. Lapshin *Tomsk Scientific Center SB RAS, Tomsk, Russian Federation*

17 September (Monday) **11:00 – 13:10**

12:50 – 13:10	**N3-O-011501** **Diffusion Induced Recrystallization of Ni3al-Based Alloys** N.I. Afanasyev, O.K. Lepakova *Tomsk Scientific Centre SB RAS, Tomsk, Russia*

13:10 – 14:30	**LUNCH**

17 September (Monday) **11:00 – 13:10**

Oral Session 2

Combustion waves: theory and experiment

14:30 – 15:00 Invited	**N2-O-005701** **Macrokinetics of Combustion of Layered Compositions with a Low-Melting Inert Layer** V.G. Prokof'ev, T.I. Khudyakova *Tomsk Scientific Center SB RAS, Tomsk, Russia*
15:00 – 15:20	**N2-O-011801** **Features of High-Temperature Combustion of Laminate Metal Systems** V.G. Salamatov, A.I. Kirdyashkin, R.M. Gabbasov *Tomsk Scientific Center SB RAS, Tomsk, Russia*
15:20 – 15:40	**N2-O-016701** **Coating Combustion Synthesis Controlled by Moving Electron Beam** A.G. Knyazeva*,**, O.N. Kryukova** **Tomsk Polytechnic University, Tomsk, Russia* ***Institute of Strength Physics and Materials Science of SB RAS, Tomsk, Russia*
15:40 – 16:00	**N2-O-029201** **Formation of Metal-Ceramic Composites Using Shs in Ti-Al-C System** M.G. Krinitcyn*,**, G.A. Pribytkov*, A.V. Baranovskiy* **Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia* ***Tomsk Polytechnic University, Tomsk, Russia*
16:00 – 16:20	**N2-O-038502** **High-Speed Visualization of Combustion Synthesis Discrete Reaction Waves: Coherent Heat Microstructures** M.P. Boronenko, P.Y. Gulyaev, A.V. Dolmatov *Yugra State University, Khanty-Mansiysk, Russia*
16:40 – 18:30	**Poster Session 1 & Coffee**

17 September (Monday) **16:30 – 18:30**

Poster Session 1:

Non isothermal methods for materials synthesis

1	**N1-P-002803** **Production of the Micron Powders by the Electric Explosion of Metallic Fibers** A.S. Skryabin*, A.V. Pavlov*, A.M. Kartova*, V.D. Telekh*, M.M. Serov**, A.E. Sytchev*** **Bauman Moscow State Technical University, Moscow, Russia* ***Moscow Aviation Institute, Moscow, Russia* ****ISMAN, Chernogolovka, Russia*
2	**N1-P-009903** **Synthesis of Mil Composites by Various Methods** S.A. Zelepugin*,**, O.A. Shkoda*, O.K. Lepakova*, A.S. Zelepugin *,**, N.G. Kasatsky* **Tomsk Scientific Center SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*
3	**N1-P-011101** **A Multicomponent Medium Model for Porous Mixtures under Explosive Loading** O.V. Ivanova, S.A. Zelepugin *Tomsk Scientific Center SB RAS, Tomsk, Russia*
4	**N1-P-014703** **Kinetics of Reaction Transfomations in Combustion Wave for the Titanium - Molybden – Nitrogen System** V.G. Salamatov, O.A. Shkoda *Tomsk Scientific Center SB RAS, Tomsk, Russia*
5	**N1-P-014901** **Obtaining of Vanadium Nitrides During the Combustion of Vanadium Oxide With Calcium and Calcium Nitride in Nitrogen** B.Sh. Braverman, A.N. Avramchik, Yu.M. Maksimov, A.M. Shulpekov *Tomsk Scientific Center SB RAS, Tomsk, Russia*

17 September (Monday) **16:30 – 18:30**

6	**N1-P-018503** **Application of Shs Process for Fabrication of Copper-Titanium Silicon Carbide Composite (Cu-Ti_3SiC_2)** A.P. Amosov, E.I. Latukhin, A.M. Ryabov, E.R. Umerov, V.A. Novikov *Samara State Technical University, Samara, Russia*
7	**N1-P-022901** **Phase Composition, Structural Parameters and Magnetic Properties of Barium Hexaferrite, Synthesized by Sol-Gel Combustion Using Different Organic Fuel** R.V. Minin*, V.I. Itin*, V.A. Zhuravlev**, Yu.M. Lopushnyak**, V.A. Svetlichnyi**, I.N. Lapin**, D.A. Velikanov***, I.Yu. Lilenko** **Tomsk Scientific Center, SB RAS, Tomsk, Russia* ***Tomsk State University, Tomsk, Russia* ****Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia*
8	**N1-P-022902** **Synthesis of Cubic Ferrite $CoFe_2O_4$ by Spray Pyrolysis** R.V. Minin *Tomsk Scientific Center, SB RAS, Tomsk, Russia*
9	**N1-P-042901** **Inclusions in Metallic Materials as Origin for Microcraters Formation at a Pulsed Electron-Beam Surface Melting** D.A. Shepel, A.B. Markov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
10	**N1-P-050402** **Application of Selective Laser Alloying in Orthopedics and Traumatology of Veterinary** A.Ya. Leyvi*, R.M. Baytimirov*, P.A. Lykov*, I.A. Volodin**, A.V. Shudrik **Federal State Autonomous Educational Institution of Higher Education "South Ural State University (national research university)", Chelyabinsk, Russia,* ***Veterinary hospital "Panetseya", Chelyabinsk, Russia*

17 September (Monday) **16:30 – 18:30**

11	**N1-P-052901** **Shock-Wave Synthesis in Powder Mixtures** I.V. Saikov*, M.I. Alymov*, S.G. Vadchenko*, P.Yu. Gulyaev** **Merzhanov Institute of Structural Macrokinetics and Materials Science (ISMAN), Chernogolovka, Russia* ***Yugra State University, Khanty-Mansiysk, Russia*
12	**N1-O-019301** **Mechanoactivation and Burning of Aluminum and Copper Oxide Mixtures** A. Dolgoborodov*, A. Streletskii**, V. Kirilenko**, B. Yankovskii**, S. Anan'ev**, I. Kolbanev*, G. Vorob'eva* **Join Institute for High Temperature RAS, Moscow, Russia* ***Semenov Institute of Chemical Physics RAS, Moscow, Russia*
13	**N1-P-011202** **Macrokinetics of Structural and Chemical Transformations in a Binary Powder Mixture after Mechanical Treatment** O.V. Lapshin *Tomsk Scientific Center SB RAS, Tomsk, Russia*

Poster Session 1:

Combustion waves: theory and experiment

14	**N2-P-011201** **Mathematical Modeling of Porous Material Synthesis Supported by the Filtration Combustion of a Gas Mixture** O.V. Lapshin*, V.G. Prokof'ev** **Tomsk Scientific Center SB RAS, Tomsk, Russia* ***Tomsk State University, Tomsk, Russia*
15	**N2-P-038501** **Temperature Hysteresis in the Unstable Combustion Mode of Shs: Experiment with High-Speed Micro-Pyrometry** P.Y. Gulyaev *Yugra State University, Khanty-Mansiysk, Russia*

17 September (Monday) **16:30 – 18:30**

16	**N2-P-011701** **Features of Acoustic Emission During SHS Processes** R.M. Gabbasov, A.I. Kirdyashkin, V.G. Salamatov *Tomsk Scientific Center SB RAS, Tomsk, Russia*
17	**N2-P-021001 Investigation of Minimum Laser Ignition Energies of Combustible Gas Mixtures** Y.V. Anishchanka, E.Y. Loktionov, V.D. Telekh *Bauman Moscow State Technical University, Moscow, Russia*
18	**N2-P-021002** **Exhaust Composition at Laser Ignition in a 2-Stroke and Wankel Engines** Y.V. Anishchanka, E.Y. Loktionov, N.A. Pasechnikov *Bauman Moscow State Technical University, Moscow, Russia*
19	**N2-P-041901** **Modification of the Structure and Properties of Metal after Pulse Formation Mode** Yu.N. Saraev, V.P. Bezborodov *Institute of strength physics and materials science SB RAS, Tomsk*
20	**N2-P-041902 Improving the Properties and Reliabity of Operation of Metal Structures at Low Climatic Temperatures Using Methods of Complex Modification of Protective Coatings** Yu.N. Saraev*, V.P. Bezborodov*, M.B. Perovskay*, B.S Braverman** **Institute of strength physics and materials science SB RAS, Tomsk, Russia* ***Institute of petroleum chemistry SB RAS*
21	**N2-P-007501** **Combustion Synthesis of Sialon Ceramic in Forced Oscillation Mode** A. Maznoy, A. Kirdyashkin *Tomsk Scientific Center SB RAS, Tomsk, Russia*

17 September (Monday) **16:30 – 18:30**

22	**N2-P-955901** **Measurements of Emissions for LPG Combustion Within a Porous Cylindrical Burners** N. Pichugin, A. Maznoy *Tomsk Scientific Center SB RAS, Tomsk, Russia*
23	**N2-P-955001** **Combustion Synthesis and Characterization of Macroporous B+Γ'-Nial Alloys** V. Kitler, A. Maznoy *Tomsk Scientific Center SB RAS, Tomsk, Russia*

18 September (Tuesday) **11:00 – 13:10**

Oral Session 3

Functional materials and coatings

11:00 – 11:30 Invited	**N3-O-033001** **Recent Advance in the Development of Materials for Extreme Environmental Applications** N.I. Baklanova *Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*
11:30 – 11:50	**N3-O-033101** **Sintering and Oxidation of MB_2-SiC (M = Hf, Zr) Ceramics with Addition of Cr** A. Utkin*, D. Bannykh*,**, N. Baklanova* **Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia* ***Novosibirsk State University, Novosibirsk, Russia*
11:50 – 12:10	**N3-O-021401** **Synthesis of Manganese-Doped Mesoporous Silica Nanopowder for Targeted Drug Delivery** O.A. Zlygosteva*, S.Yu. Sokovnin*,**, V.G. Il'ves** **Ural Federal University Named after the First President of Russia B. N. Yeltsin, Yekaterinburg, Russia* ***Institute of Electrophysics, Ural Branch of the Russian Academy of Sciences, Yekaterinburg, Russia*
12:10 – 12:30	**N3-O-031601** **Ga_2O_3 a New Prospective Materal for THz Domain** D.M. Ezhov*, V.A. Svetlichnyi*,**, Yu.M. Andreev*,*** **Tomsk State University, Tomsk, Russia* ***Institute of High-Current Electronics SB RAS, Tomsk, Russia* ****Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia*

18 September (Tuesday) 11:00 – 13:10

12:30 – 12:50	**N3-O-033601** **Development of a Composite Corrosion-Resistant Material Based on Titanium for Vessels of Chemical Industries** M.G. Golkovski*, V.V. Samoylenko**, I.A. Polyakov**, V.A. Bataev**, I.K. Chakin* **Budker Institute of Nuclear Physics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia* ***Novosibirsk State Technical University, Novosibirsk, Russia*
12:50 – 13:10	**N3-O-043701** **Synthesis of Films and N-P-Structures Based on Copper and Zinc Oxides Using Magnetron Sputtering** D.V. Ismailov*,** **Tomsk Polytechnic University, Institute of High Technology Physics, Tomsk, Russia* ***National Nanotechnology Laboratory of open type of Kazakh National University Al-Farabi, Almaty, Kazakhstan*

13:10 – 14:30	**LUNCH**

18 September (Tuesday) **11:00 – 13:10**

Oral Session 4

Functional materials and coatings

14:30 – 15:00 Invited	**N3-O-030802** **Mechanochemical Synthesis of Highdispersed Copper Powders** T. A. Udalova*,**, E.T. Devyatkina*, S.V. Vosmerikov*, T.F. Grigoreva*, N.Z. Lyakhov* **Institute of Solid State Chemistry and Mechanochemistry of Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia* ***Novosibirsk State Technical University, Novosibirsk, Russia*
15:00 – 15:20	**N3-O-011401** **Preparation of Nanolaminates in the Ti-Cr-Al-C System by the SHS Method** A.M. Shulpekov, O.K. Lepakova, V.G. Salamatov, N.I. Afanasyev *Tomsk Scientific Centre SB RAS, Tomsk, Russia*
15:20 – 15:40	**N3-O-007503** **Experiment on Cylindrical Ni-Al Radiant Burner with Heat Recuperation** A. Maznoy, A.I. Kirdyashkin, N. Pichugin, A.N. Guschin *Tomsk Scientific Center SB RAS, Tomsk, Russia*
15:40 – 16:00	**N3-O-002601** **Wire Feed Electron Beam Additive Manufacturing of Metallic Components** S.V. Fortuna, A.V. Filippov, S.Yu. Tarasov, E.A. Kolubaev *Institute of Strength Physics and Materials Science of Siberian Branch Russian Academy of Sciences, Tomsk, Russia*
16:00 – 16:20	**N3-O-013101** **Effect of Shungite Additives on the Nitriding of Silicon in the Combustion Mode** A.A. Akulinkin, K.A. Bolgaru *Tomsk Scientific Center SB RAS, Tomsk, Russia*

18 September (Tuesday) **11:00 – 13:10**

16:20 – 16:40	**N3-O-012101** **Synthesis of Metal-Ceramic Composites Based on Silicon Nitride in the Combustion Mode and Catalytic Activity** A.A. Reger, K.A. Bolgary *Tomsk Scientific Center SB RAS, Tomsk, Russia*

16:40 – 18:30	**Poster Session 2 & Coffee**

18 September (Tuesday) **16:30 – 18:30**

Poster Session 2:

Functional materials and coatings

1	**N3-P-015502** **Effect of Tin Oxides on the Phase Composition and Structure of CoO-Al_2O_3-SnO_2 and Nio-Al_2O_3-SnO_2 Spinels Obtained by Shs Method** O.V. Lvov, N.I. Radishevskaya *Tomsk Scientific Center SB RAS, Tomsk, Russia*
2	**N3-P-019901** **Microspheres Based on Gold Waste in Stream High-Temperature Gas** V.V. Shekhovtsov, O.G. Volokitin, G.G. Volokitin, N.K. Skripnikova *Tomsk State University of Architecture and Building, Tomsk, Russia*
3	**N3-P-040902** **Transition Levels of Acceptor Impurities in ZnO Crystal by LCAO Calculations** A.B. Usseinov*,***, Yu. Zhukovskii**, E.A. Kotomin**, A.T. Akilbekov*, M.V. Zdorovets***, G.M. Baubekova* **L.N. Gumilyov Eurasian National University, Astana, Kazakhstan* ***Institute of Solid State Physics, University of Latvia, Latvia* ****Institute of Nuclear Physics, Astana, Kazakhstan*
4	**N3-P-048001** **Synthesis of Hafnium-Based Max Phases by Magnetron Sputtering** D. Zelentsov, S. Demchenko, S. Zenkin **Tomsk Polytechnic University, Tomsk, Russia*
5	**N3-P-051201** **IR Spectra Inverstiagation of H_2 in Silica Aerogel** V.Yu. Lazebnykh*, A.S. Mysovsky*'**, L.N. Sinitsa***, A.A. Lugovsky*** **Irkutsk National Research Technical University, Irkutsk, Russia* ***Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia* ****V.E. Zuev Institute of Atmospheric Optics SB RAS, Tomsk, Russia*

18 September (Tuesday) 16:30 – 18:30

6	**N3-P-006401** **Unstable Plastic Deformation in Bimetal** Y.V. Li, S.A. Barannikova, L.B. Zuev *Institute of Strength Physics and Materials Science, SB RAS, Tomsk, Russia*
7	**N3-P-006402** **Direct Relationship Between Macroscopic Phenomena of Plastic Flow Localization and Solids Microcharacteristics** Y.V. Li*, A.M. Zharmukhambetova**, S.A. Barannikova*, L.B. Zuev* **Institute of Strength Physics and Materials Science, SB RAS, Tomsk, Russia* ***Tomsk State University, Tomsk, Russia*
8	**N3-P-011402** **Production of Ceramic Materials Based on the System of Co-Cr-O, Ce-O by the Method of Shs** A.M. Shulpekov *Tomsk Scientific Center, Siberian Branch of the Russian Academy of Sciences, Tomsk, Russia*
9	**N3-P-011403** **Coating in the Ni-Al System Using the SHS Method** A.M. Shulpekov, R.M. Gabbasov *Tomsk Scientific Center, Siberian Branch of the Russian Academy of Sciences, Tomsk, Russia*
10	**N3-P-011901** **Nanosized Magnetic Powders Based on Oxides for Medicine and Biology** A.A. Nevmyvaka*, A.G. Pershina**, V.I. Itin* **Tomsk Scientific Center SB RAS, Tomsk, Russia* ***Siberian State Medical University, Russia*
11	**N3-P-013102** **Effect of Aluminium Oxide and Ash Microspheres on Nitriding of Aluminium Ferrosilicon in the Combustion Mode** K.A. Bolgaru, A.A. Akulinkin *Tomsk Scientific Center SB RAS, Tomsk, Russia*

12	**N3-P-015001** **Nonisothermal Synthesis and Study of the Structure and Phase Composition of Titanium-Containing Nanolaminate Compounds** O.K. Lepakova, N.I. Afanasyev, A.M. Shulpekov *Tomsk Scientific Center SB RAS, Tomsk, Russia*
13	**N3-P-015301** **Formation of the Phase Composition and Structure of Alumomagnesium Spinel Obtained by the SHS Method** N.I. Radishevskaya, A.Yu. Nazarova, O.V. Lvov, N.G. Kasatsky *Tomsk Scientific Center SB RAS, Tomsk, Russia*
14	**N3-P-015401** **Synthesis of Iron-Containing Spinel-Type Pigments** A.Yu. Nazarova, N.I. Radishevskaya *Tomsk Scientific Center SB RAS, Tomsk, Russia*
15	**N3-P-018902** **Formation of the Oxide Coating on the Titanium Surface by Multipulse Femtosecond Laser Irradiation** M.V. Zhidkov*, E.V. Golosov**, T.N. Vershinina*, S.I. Kudryashov***, Yu.R. Kolobov*,**, A.E. Ligachev**** **Belgorod State National Research University, Belgorod, Russia* ***Institute of Problems of Chemical Physics, RAS, Chernogolovka, Russia* ****P.N. Lebedev Physical Institute, RAS, Moscow, Russia* *****A.M. Prokhorov General Physics Institute, RAS, Moscow, Russia*
16	**N3-P-028301** **Use of Mechanochemical Activation for the Synthesis of Garnet-Type Pigments** N.G. Kasatsky, A.Yu. Nazarova, O.V. Lvov, N.I. Radishevskaya *Tomsk Scientific Center SB RAS, Tomsk, Russia*
17	**N3-P-028402** **Investigation of the Influence of the Confinement Effect on the Yield of Luminescence in Quantum Dots of CdSe and CdTe** D.H. Daurenbekov, T.N. Nurakhmetov, B.M. Sadykova, Zh.M. Salikhodzha, A.M. Zhunusbekov, A.Zh. Kainarbay, K.B. Zhanylysov *L.N. Gumilyov Eurasian national university, Astana, Kazakhstan*

18 September (Tuesday) 16:30 – 18:30

18	**N3-P-028403** **Semiconductor Quantum Dots Downconverters for Silicon Solar Cells** A.Z. Kainarbay, D.H. Daurenbekov, B. Abdraman, T.N. Nurakhmetov, Z.M. Salikhodjha, A.M. Zhunusbekov, B.M. Sadykova, B.N. Yussupbekova, A. Kainarbaeva** *L.N. Gumilyov Eurasian national university, Astana, Kazakhstan* ***Abai Kazakh national pedagogical university, Almaty, Kazakhstan*
19	**N3-P-050701** **Modeling of the Processes of Ionic Conductivity in a Solid Oxide Electrolyte Based on ZrO_2** Zh.M. Salikhodja, T.N. Nurakhmetov, K.A. Kuterbekov, B.M. Sadykova, A.M. Zhunusbekov, A.Zh. Kainarbay, D.Kh. Daurenbekov, K.B. Zhangylysov *L.N. Gumilyov Eurasian National University, Astana, Kazakhstan*
20	**N3-P-028801** **Shields of Local Protection for Semiconductor Devices Against Outer Space Electron Radiation** D.I. Tishkevich*, S.S. Grabchikov*, S.B. Lastovskii*, D.S. Vasin**, A.S. Yakushevich*, A.V. Trukhanov* **SSPA "Scientific and Practical Materials Research Centre of NAS of Belarus", Minsk, Belarus* ***Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus*
21	**N3-P-030803** **Method Creation of Highly Disperse Metals on a Carbon Substrate** T.A. Udalova*,**, E.T. Devyatkina*, S.V. Vosmerikov*, T.F. Grigoreva*, N.Z. Lyakhov* **Institute of Solid State Chemistry and Mechanochemistry of Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia* ***Novosibirsk State Technical University, Novosibirsk, Russia*

22	**N3-P-032101** **Crystallization of a Metal Melt Inoculated with Nanoparticles** A.N. Cherepanov*, V.K. Cherepanova*, **, V. Manolov***, L. Yovkov*** **Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia* ***Novosibirsk State Technical University, Novosibirsk, Russia* ****Institute of Metal Science, Equipment and Technologies "Acad. A. Balevski" with Hydro- and Aerodynamics Centre, Bulgarian Academy of Sciences, Sofia, Bulgaria*
23	**N3-P-035402** **Comparative Study of Plasma Influence and Sterilization Effect on the Polylactic Acid Films Surface Properties** E.O. Filippova, N.M. Ivanova, V.F. Pichugin *Tomsk Polytechnic University, Tomsk, Russia*
24	**N3-P-036201** **Effect of Precursor Flow Rate on Physical and Mechanical Properties of a-C:H:SiOx Films Deposited by PACVD Method** A.S. Grenadyorov, K.V. Oskomov, A.A. Solovyev *Institute of High Current Electronics SB RAS, Tomsk, Russia*
25	**N3-P-037201** **Electron Beam Surface Alloying of Carbon Steel by Aluminum Followed by Micro-Arc Oxidation** E.V. Yakovlev, A.B. Markov, V.I. Petrov *Institute of High Current Electronics SB RAS, Tomsk, Russia*
26	**N3-P-042301** **Production of Materials with Ultrafine Structure of Aluminum Alloy by Friction Stir Processing** A.V. Chumaevskii, K.N. Kalashnikov, T.A. Kalashnikova *Institute of Strength Physics and Materials Science, SB RAS, Tomsk, Russia*

27	**N3-P-042302** **Structural Evolution of 321 Stainless Steel in Electron Beam Freeform Fabrication** A.V. Chumaevskii*, S.Yu. Tarasov**, A.V. Filippov* **Institute of Strength Physics and Materials Sciences SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
28	**N3-P-047301** **Synthesis of Poly(L-Lactic Acid)-Hydroxyapatite Composite as Material for 3d Printing of Bone Tissue Growth Stimulating Implants** G.E. Dubinenko, A.L. Zinoviev*, E.N. Bolbasov* *Tomsk Polytechnic University, Tomsk, Russia*
29	**N3-P-047401** **Novel Entropy–Stabilized Ultra High Temperature Ceramics Thin Films Prepared by Magnetron Sputtering** S. Demchenko, D. Zelentsov, S. Linnik, A. Gaydaychuk, S. Zenkin, *Tomsk Polytechnic University, Tomsk, Russia*
30	**N3-P-047701** **Improvement of Tribological and Biological Properties of Titanium Alloy Hip Replacement Implants Covered by Diamond Coatings** R.D. Khalafov, S.E. Kunashenko, S.A. Linnik *Tomsk Polytechnic University, Tomsk, Russia*
31	**N3-P-049601** **Semiconductor Quantum Dots Down Converters for Silicon Solar Cells** A.Z. Kainarbay, B. Abdraman, G. Bazarbayeva, D.K. Daurenbekov, T.N. Nurakhmetov, Z.M. Salikhodja, A.M. Zhunusbekov, B.N. Yussupbekova *L.N. Gumilyov Eurasian national university, Astana, Kazakhstan*
32	**N3-P-049701** **Photoluminescence of Hafnium and Zirconium Germanates** V.E. Prokip*, V.V. Lozanov*, A.S. Berezin**, N.I. Baklanova* **Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia* ***Nicolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*

33	**N3-P-050501** **Influence of Parameters in the Plasma Dynamic Synthesis Process on Ultradispersed Zinc Oxide** A.I. Tsimmerman*, Yu.L. Shanenkova**, M.I. Gukov* **Student of National research Tomsk Polytechnic University, Tomsk, Russia* ***National research Tomsk Polytechnic University, Tomsk, Russia*
34	**N3-P-051902** **Dielectric Properties of the Perovskite-Like Oxides $CaCu_3Ti_{4-X}M_xO_{12}$ (M = Zr, V, Nb) Prepared by High Temperature – High Pressure Synthesis** N.V. Melnikova*, N.I. Kadyrova**, A. Mirzorakhimov*, T.I. Chupakhina**, Yu.G. Zaynulin**, D.O. Alikhin* **Ural Federal University, Institute of Natural Sciences and Mathematics, Ekaterinburg, Russia* ***Institute of Solid State Chemistry, UB RAS, Ekaterinburg, Russia*
35	**N3-P-052701** **Application of the Internal Protective Layer from Corrosion-Resistance Steel to the Surface of a Long-Lenght Pipes with an Explosive Welding** A.Yu. Malakhov, I.V. Saikov *Merzhanov Institute of Structural Macrokinetics and Materials Science Russian Academy of Sciences, Chernogolovka, Moscow Region, Russia*

19 September (Wednesday) **11:00 – 13:10**

Oral Session 5

Non isothermal methods for materials synthesis

11:00 – 11:30 Invited	**N1-O-002701** **Comparative Analysis of the Structure and Internal Stress in Ti-6Al-4V Alloys Manufactured by 3D Printing and Processing with Screw Extrusion** N.V. Kazantseva*, I. Ezhov*, N.I. Vinogradova*, A.S. Fefelov**, A. Merkushev**, M. Ilyinikh**, A.E. Volkov*** **Institute of Metal Physics, Ekaterinburg, Russia* ***Regional Engineering Center of laser and additive technology, Ekaterinburg, Russia* ****Scientific and Production Company Ruteni Ltd., Ekaterinburg, Russia*
11:30 – 11:50	**N1-O-954101** **Surface Properties Enhancement of Magnesium Alloys by Low Energy High Current Pulsed Electron Beam** M. Bestetti*, B. Lavanya Rani*, S.A Pashikanti*, S. Franz*, A. Vicenzo*, A. Markov**, E. Yakovlev*** **Politecnico di Milano, Dipartimento di Chimica, Materiali e Ingegneria Chimica "Giulio Natta", Laboratorio di Ingegneria delle Superfici ed Elettrochimica Applicata "R. Piontelli"* ***Tomsk Scientific Center SB RAS, Tomsk, Russia* ****Institute of High Current Electronocs SB RAS, Tomsk, Russia*
11:50 – 12:10	**N1-O-008801** **High-Adhesion Coatings - Surface Alloys Formed by Low Energy High Current Electron Beam: Properties and Applications** A. Markov*, E. Yakovlev*, V. Petrov**, D. Shepel** **Tomsk Scientific Center SB RAS, Tomsk, Russia* ***Institute of High Current Electronics SB RAS, Tomsk, Russia*
12:10 – 12:30	**N1-O-011102** **Problems of Solid-Phase Synthesis under Explosive Loading** O.V. Ivanova*, S.A. Zelepugin*, A.S. Yunoshev**, A.S. Zelepugin* **Tomsk Scientific Center SB RAS, Tomsk, Russia* ***Lavrentyev Institute of Hydrodynamics of SB RAS, Novosibirsk, Russia*

19 September (Wednesday) 11:00 – 13:10

12:30 – 12:50	**N1-O-009902** **Failure of the Mil Composites under Shock Wave Loading** S.A. Zelepugin*, A.S. Zelepugin*, A.A. Popov**, D.V. Yanov** **Tomsk Scientific Center SB RAS, Tomsk, Russia* ***National Research Tomsk State University, Tomsk, Russia*
12:50 – 13:10	**N1-O-053001** **Mechanical Response of ZrB_2 Based Ultra-High Temperature Ceramics to Shock Pulse Loadings in a Wide Temperature Range** V.A. Skripnyak, E.G. Skripnyak, V.V. Skripnyak, I.K. Vaganova *National Research Tomsk State University, Tomsk, Russia*

13:10 – 14:30	**LUNCH**

20 September (Thursday) **11:00 – 13:10**

Oral Session 6

Functional materials and coatings

11:00 – 11:30 Invited	**N3-O-021701** **Structure and Wear Resistance of SHS TiC+HSS Composite Coatings, Obtained by Electron Beam Facing** A.V. Baranovskiy*, G.A. Pribytkov**, M.G. Krinitcyn*, I.A. Firsina** **Tomsk Polytechnic University, Tomsk, Russia* ***Institute of Strength Physics and Materials Science of the Siberian Branch of the Russian Academy of Sciences, Tomsk, Russia*
11:30 – 11:50	**N3-O-035601** **An Investigation of SHS Products in Titanium, Carbon Black Carbon and Aluminum Powder Mixtures** G.A. Pribytkov*, A.V. Baranovskiy**, V.V. Korzhova*, M.G. Krinitcyn** **Institute of Strength Physics and Materials Science, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
11:50 – 12:10	**N3-O-035602** **Shs of Tic - Nicrbsi Binder Composite Powders** G.A. Pribytkov*, I.A. Firsina*, V.V. Korthova*, M.G. Krinitcyn** **Institute of Strength Physics and Materials Science, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
12:10 – 12:30	**N3-O-052101** **Application of the Cyclic Reactor of Compression for the Production of the Silicon Carbide Nanopowder** B.S. Ezdin, V.V. Kalyada, A.E. Zarvin, A.V. Ichshenko, A.A. Nikiforov *Novosibirsk State University, Novosibirsk, Russia*

12:30 – 12:50	**N3-O-050301** **The Influence of Frequency Operation Mode of Coaxial Magnetoplasma Accelerator on the Phase Composition in the Fe-O System** M.I. Gukov, A.I. Tsimmerman, A.E. Yurtaeva *National Research Tomsk Polytechnic University, Tomsk, Russia*
12:50 – 13:10	**N3-O-030805** **Ultrafine Silicon and Germanium from Mechanocomposites Si Ge /Mgo after the Separation of Magnesium Oxide** T.A. Udalova*,**, S.V. Vosmerikov*, E.T. Devyatkina*, T.F. Grigoreva*, N.Z. Lyakhov* **Institute of Solid State Chemistry and Mechanochemistry of Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia* ***Novosibirsk State Technical University, Novosibirsk, Russia*

13:10 – 14:30	**LUNCH**

20 September (Thursday) **14:30 – 16:40**

Oral Session 7

Functional materials and coatings

14:30 – 15:00 Invited	**N3-O-039901** **Effect of Alloying on the Microstructure and Mechanical Properties of Mo-Fe-B Boride Hard Alloys** M.B. Ivanov, T.N. Vershinina, V.V. Ivanisenko *Belgorod National Research University, Belgorod, Russia* *LLC "Spetsinstrument", Belgorod, Russia*
15:00 – 15:20	**N3-O-029202** **Structure Evolution During Electron Beam Melting of Titanium * Titanium Carbide Composite Powders** M.G. Krinitcyn*,**, G.A. Pribytkov*, A.V. Baranovskiy** **Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia **Tomsk Polytechnic University, Tomsk, Russia*
15:20 – 15:40	**N3-O-004801** **Microstructure and Properties of Ti-6.5Al-3.5Mo-1.5zr-0.3si Parts Produced by Electron Beam Melting** N.S. Pushilina, E.B. Kashkarov, M.S. Syrtanov, V.N. Kudiiarov, R.S. Laptev, M. Gustomyassov, Y. Kushnarev, V.V. Fedorov *National Research Tomsk Polytechnic University, Tomsk, Russia*
15:40 – 16:00	**N3-O-049001** **Application of Ion-Electron Technology for Modifying Near-Surface Layers of a Silicon Substrate for Creating Elements of Micromechanical Systems** I.A. Bulychev*, N.V. Volkov*, I.V. Oleinikov*, N.V. Sysoeva*, V.V. Samoilov*, S.P. Timoshenkov** **National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia* ***National Research University of Electronic Technology – MIET, Zelenograd, Moscow, Russia*

20 September (Thursday) 14:30 – 16:40

16:00 – 16:20	**N1-O-026601** **Ultra-Rapid Microwave Sintering** K.I. Rybakov, Yu.V. Bykov, A.G. Eremeev, S.V. Egorov, V.V. Kholoptsev, I.V. Plotnikov, A.A. Sorokin *Institute of Applied Physics, Russian Academy of Sciences, Nizhny Novgorod, Russia*
16:20 – 16:40	**N3-O-956501** **The Pulse Current Release Properties of Glass-Added Lead Lanthanum Zirconate Titanate Stannate Antiferroelectric Ceramics** H. Tang*, Z. Jiang*, T. Wu*, Y. Feng** **Chongqing University of Arts and Sciences, Chongqing, China **Xi'an Jiaotong University, Xi'an, China*

16:40 – 18:30	**Poster Session 3 & Coffee**

21 September (Friday) **11:00 – 13:10**

Oral Session 8

Combustion waves: theory and experiment

11:00 – 11:30 Invited	**N2-O-955101** **Dynamics of Flame Oscillations in Narrow Solid Fuel Samples with Heat Losses** V.V. Gubernov*,**, V.N. Kurdyumov*** **P.N. Lebedev Physical Institute, Moscow, Russia* ***Far Easten Federal University, Vladivostok, Russia* ****Department of Energy, CIEMAT, Madrid, Spain*
11:30 – 11:50	**N2-O-029301** **Modeling of the Combustion Synthesis of Titanium Based Composite with Detailed Reaction Schema** Yu.A. Chumakov*, A.G. Knyazeva*,** **Institute of Strength Physics and Materials Science of SB RAS, Tomsk, Russia* ***National Research Tomsk Polytechnic University, Tomsk, Russia*
11:50 – 12:10	**N2-O-039701** **Chrono-Topographic Analysis of the Fire Focus Dynamics in the SHS Wave** A.V. Dolmatov*, P.Yu. Gulyaev*, I.V. Milyukova* *Ugra State University, Khanty-Mansiysk, Russia*
12:10 – 12:30	**N2-O-955401** **Effiency of Cylindrical Porous burners** E.P.Dats*,**, T.P. Miroshnichenko*, A.I. Kirdyashkin*,***, A.S. Maznoy*,*** **Far Eastern Federal University, Vladivostok, Russia* ***Vladivostok State University of Economics and Service, Vladivostok, Russia* ****Tomsk Scientific Center SB RAS, Tomsk, Russia*
12:30 – 12:50	**N2-O-954901** **Improve Heat Exchange Efficiency in Condensing Boilers with Radiation Burners** K. Tsoy, K. Shtym, A. Kulik, E. Kihajoglo *Far Eastern Federal University, Vladivostok, Russia*

21 September (Friday) **11:00 – 13:10**

12:50 – 13:10	**N2-O-955201** **Chemical Features of Coal Particles Thermal Decomposition and Combustion: Models and Experiments** A.A. Ponomareva*, I.V Grebenyuk*, A.V. Lesnykh*, K.A. Tsoy*, V.I. Babushok*,**, K.A. Shtym* **Far Eastern Federal University, Vladivostok, Russia* ***KTC Consulting, Gaithersburg, USA*

13:10 – 14:30	**LUNCH**
17:00	**CLOSING CEREMONY**