

September 22, Monday

09:00 – 09:30, Conference Hall of the RUBIN hotel

OPENING CEREMONY

09:30 – 10:00

Review Lecture “Fast Pulsed Power Generators Based on LTD Stages”, Prof. A. Kim (Russia)

10:00 – 10:30

Review Lecture “Thin Films, Material Modification, and Application Technologies”, Prof. K. Uemura (Japan)

10:40 – 10:45

PHOTOGRAPHING

15th SHCE: Conference Hall of the Institute of High Current Electronics

9th CMM: Conference Hall of the RUBIN hotel

11:00 – 11:30 Coffee break

11:30 – Start of 15th SHCE and 9th CMM Sessions

15th International Symposium on High Current Electronics

15th SHCE

September 22, Monday

11:30 – 12:30, 14:00 – 18:20

Oral Session 1. Intense electron and ion beams

11.30 – 12.10 (Invited)	SHCE-1-1-01427 Sources for Low Energy Extreme of Ion Implantation <u>A. Hershcovitch</u> <i>Brookhaven National Lab., Upton, USA</i>
12.10 – 12.30	SHCE-1-1-00440 Production of Low-Energy, Dense Pulsed Electron Beams in Channel Spark at High Level of Pre-ionization <u>G.E. Ozur and V.A. Flegentov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
12.30 – 14.00 Lunch	
14.00 – 14.20	SHCE-1-1-01283 Characteristics of Intense Pulsed Electron Beam Generated by Muhiplate Pseudospark Chamber (MPC) <u>Xiaoyun Le, Cuihua Rong, Tao Wang, and Liying Wang</u> <i>Dept. of Phy., School of Sci., Beijing University of Aeronautics and Astronautics</i>
14.20 – 14.40	SHCE-1-1-00359 Numerical Simulation of Diodes with Plasma Electrodes <u>V. Astrelin, A. Burdakov, G. Derevyankin, V. Ivanov, I. Kandaurov, S. Sinitsky, Yu. Trunev</u> <i>Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia Novosibirsk Technical State University, Novosibirsk, Russia Novosibirsk State University, Novosibirsk, Russia Fermi National Accelerator Laboratory, Batavia, IL, USA</i>
14.40 – 15.00	SHCE-1-1-00419 Self-Magnetic-Pinch Diode Experiments on the MIG Generator <u>S.A. Sorokin and B.A. Kablambaev</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
15.00 – 15.20	SHCE-1-1-00407 Current Density Distribution for the Space-Charge-Limited Flow at the Edge of the Beam <u>N.M. Zubarev and G.Sh. Boltachev</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i>
15.20 – 15.40	SHCE-1-1-01235 Generation of Supershort Avalanche Electron Beams in Nanosecond Discharges in High-Pressure Gases <u>D.V. Rybka, A.G. Burachenko, V.F. Tarasenko, E.H. Baksht, and M.I. Lomaev</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>

15.40 – 16.00 Coffee break	
16.00 – 16.20	<p>SHCE-1-1-00311 Fore-Pump Plasma Source of Ribbon Electron Beam with Raised Power Density and Some its Application</p> <p><u>V.A. Burdovitsin</u>, A.S. Klimov, and E.M. Oks</p> <p><i>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i></p>
16.20 – 16.40	<p>SHCE-1-1-01499 Investigation of Emission Increasing Effect at the Generation of Low-Energy Sub-Millisecond Electron Beam in the Diode with a Plasma Cathode</p> <p><u>S.V. Grigoriev</u>, N.N. Koval, V.N. Devjatkov, A.D. Teresov, and P.M. Schanin</p> <p><i>Institute of High Current Electronics, SB RAS, Tomsk, Russia</i></p>
16.40 – 17.00	<p>SHCE-1-1-00235 A Planar Diode Operating in the Mode of Limited Electron Emission</p> <p><u>A.I. Pushkarev</u>, R.V. Sazonov, and A.Yu. Patronov</p> <p><i>High Voltage Research Institute of Tomsk Polytechnic University, Tomsk, Russia</i></p>
17.00 – 17.20	<p>SHCE-1-1-00411 Influence of a Space Charge on Energy Spectrum of a Multi-Species Accelerated Ion Beam</p> <p><u>V.L. Paperny</u>, A.A. Chernikh, and V.A. Shklyayev*</p> <p><i>Irkutsk State University, Irkutsk, Russia</i> *Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
17.20 – 17.40	<p>SHCE-1-1-01479 Enhancement of Characteristics of Planar Magnetron by in-situ Sputtering of the Magnetron Cathode and Anode by the Ion Beam</p> <p><u>A.P. Semenov</u> and <u>I.A. Semenova</u></p> <p><i>Department of Physical Problems at the Presidium of Buryat Scientific Center SB RAS, Ulan-Ude, Russia</i></p>
17.40 – 18.00	<p>SHCE-1-0-01096 Plasma Flow Parameters in a Vacuum Spark Discharge</p> <p><u>I. Muzukin</u>, I.V. Uimanov, and Yu.A. Zemskov</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
18.00 – 18.20	<p>SHCE-1-1-00847 High-Current, Low-Energy Electron Beam Transportation through Plasma Channel in a Guide Magnetic Field</p> <p><u>V.P. Grigoriev</u>, T.V. Koval, G.E. Ozur*, and E.V. Nefyodtsev*</p> <p><i>Institute Cybernetic Centre, Tomsk Polytechnic University, Tomsk, Russia</i> *Institute of High Current Electronics SB RAS, Tomsk, Russia</p>

15th SHCE

September 22, Monday

14:00 – 19:00

Poster Session 1.1. Pinches, plasma focus and capillary discharge

1	<p>SHCE-2-2-00408 Modeling the Neck Development Dynamics for the Axially Symmetric Magnetic Compression of a Thick Shell</p> <p><u>N.M. Zubarev</u> and K.E. Bobrov</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
2	<p>SHCE-2-2-00519 Transport of the Beams of Charged Particles by Using Dielectric Capillaries</p> <p><u>A.E. Lagutin</u></p> <p><i>A.N. Sevchenko Institute for Applied Physical Problems of BSU, Minsk, Belarus</i></p>
3	<p>SHCE-2-2-00639 An Investigation of Plasma Parameters of a High-Current Hollow-Cathode Glow Discharge</p> <p><u>I.A. Shemyakin</u>, A.V. Bolotov, Yu.D. Korolev, N.V. Landl, O.B. Frants, and J. Urban*</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*University of Erlangen-Nuremberg, Erlangen, Germany</i></p>
4	<p>SHCE-2-2-00719 Peculiarities of Current Formation in Pulse Plasma Accelerator</p> <p><u>A. Zhukeshov</u></p> <p><i>SRIETP Kazakh National University named al-Farabi, Almaty, Kazakhstan</i></p>
5	<p>SHCE-2-2-00984 Electrode Erosion in High Current Pulsed Discharge Initiated by Wire Explosion in High Density Hydrogen</p> <p><u>M.E. Pinchuk</u>, A.A. Bogomaz, A.V. Budin, S.Yu. Losev, A.A. Pozubenkov, and Ph.G. Rutberg</p> <p><i>Institute for Electrophysics and Electric Power RAS, St.-Petersburg, Russia</i></p>
6	<p>SHCE-2-2-01009 SPHINX Test-Bed for Wire-Arrays Studies and X-Pinch Radiography</p> <p><u>F. Lassalle</u>, H. Calamy, A. Loyen, P. Maury, F. Zucchini, P. Combes, and A. Morell</p> <p><i>Centre d'Etudes de Gramat, Gramat, France</i></p>
7	<p>SHCE-2-2-01047 One-Dimensional Drift-Diffusion Model of the Kr Dielectric Barrier Discharge</p> <p><u>S.V. Avtaeva</u>, E.B. Kulumbaev, and A.V. Skornyakov</p> <p><i>Kyrgyz-Russian Slavic University, Bishkek, Kyrgyz Republic</i></p>

8	<p>SHCE-2-2-01048 Characteristics of the DBD in 0.95Ne/0.05Xe Mixture <u>S.V. Avtaeva and E.B. Kulumbaev</u> <i>Kyrgyz-Russian Slavic University, Bishkek, Kyrgyz Republic</i></p>
9	<p>SHCE-2-2-01051 Electron Concentration Measurements of High Pressures Nanosecond Volume Gas Discharge Plasma <u>D.A. Sorokin, M.I. Lomaev, D.V. Rybka, and K.Yu. Krivonogova</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
10	<p>SHCE-2-2-01163 Numerical Modelling of Plasma Ablation in the Multiwire Arrays Experiments <u>O. Olkhovskaya, E. Grabovskiy*, V. Gasilov, V. Alexandrov*, A. Boldarev, S. D'yatchenko, I. Frolov*, A. Gribov*, A. Gritsuk*, E. Kartasheva, Ya. Laukhin*, S. Medovschikov*, K. Mitrofanov*, G. Oleynik*, A. Samokhin*, P. Sasorov**, V. Smirnov***, G. Volkov*, and V. Zaytsev*</u> <i>IMM RAS, Moscow, Russia</i> <i>*TRINITI, Troitsk, Russia</i> <i>**ITEP, Moscow, Russia</i> <i>***"Kurchatov Institute", Moscow, Russia</i></p>
11	<p>SHCE-2-2-01167 Pulsed Excilamps Excited by Volume Discharge without Preionization <u>M. Erofeev, M.I. Lomaev, D.V. Rybka, and V.F. Tarasenko</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
12	<p>SHCE-2-2-01504 On Correlations between Neutron Yield and Potential Well Dynamics at Electrostatic Confinement in Nanosecond Vacuum Discharge <u>Yu.K. Kurilenkov and V.P. Tarakanov</u> <i>Joint Institute for High Temperatures RAS, Moscow, Russia</i></p>

Poster Session 1.2. High power microwaves

13	<p>SHCE-4-1-00987 Laser Frequency Conversion with Pulse Compression in Solid Solution Crystals <u>Yu.M. Andreev, G.V. Lanskii, and A.V. Shaiduko</u> <i>Department of Ecological Devises Making, Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia</i></p>
14	<p>SHCE-4-0-01039 High-Power Microwave Radiation Source for Ultra-Short Pulses in X Band <u>P.Yu. Chumerin, V.A. Vaulin, and V.N. Slinko</u> <i>Nuclear Physics Institute, Tomsk, Russia</i></p>

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15	<p>SHCE-4-0-01491 On Hard X-rays Lasing from Interelectrodes Nanoparticle Ensembles of Vacuum Discharge <u>Yu. Kurilenkov, Yu.B. Konev, and M. Skowronek*</u> <i>Joint Institute for High Temperatures of RAS, Moscow, Russia</i> <i>*Universite P.& M. Curie, Paris, France</i></p>
16	<p>SHCE-4-2-00251 Relativistic Magnetron with Distributed Output of Microwave Radiation <u>I.I. Vintizenko and S.S. Novikov*</u> <i>Nuclear Physics Institute, Tomsk, Russia</i> <i>*Tomsk State University, Tomsk, Russia</i></p>
17	<p>SHCE-4-2-00391 High Power Microwave Detector with Improved Frequency Response <u>A.I. Klimov and A.E. Komarov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
18	<p>SHCE-4-2-00393 Short Electric Dipole Antennas for HPM Pulse Detection <u>A.I. Klimov and V.Yu. Konev</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
19	<p>SHCE-4-2-00447 Computer Simulation of the Process of MWCG Operation Start in Case of Slow Growth of E-beam Current <u>V.N. Kornienko and V.A. Cherepenin</u> <i>Institute of Radioengineering and Electronics RAS, Moscow, Russia</i></p>
20	<p>SHCE-4-2-00531 Resonance Electromagnetic Oscillations in MWCG Slow-Wave Structure <u>M.P. Deichuly and V.I. Koshelev</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
21	<p>SHCE-4-2-00556 Estimation of Radiation Power Losses in MWCG Output Horn <u>V.I. Koshelev, V.M. Tarnovsky, and A.S. Zavyalov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
22	<p>SHCE-4-2-00559 High-Power Sources of Ultrawideband Picosecond Radiation Pulses <u>Yu.A. Andreev, A.M. Efremov, V.I. Koshelev, B.M. Kovalchuk, V.V. Plisko, and K.N. Sukhushin</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
23	<p>SHCE-4-2-00595 On the Influence of Resonant Couplings on Coherent Regimes of Multigenerator Systems <u>S. Novikov and A.A. Usjukevitch</u> <i>Tomsk State University, Tomsk, Russia</i></p>

24	<p>SHCE-4-2-00596 Operation Features of Auto-Oscillator Synchronous Regimes at Large Delays in the Channel of Mutual Coupling</p> <p><u>S.S. Novikov</u></p> <p><i>Tomsk State University, Tomsk, Russia</i></p>
25	<p>SHCE-4-2-00731 Estimation of Possibility to Create a Parametric Generator of THz Radiation on Base of ZnGeP₂ Crystals Modified by Fast E-Beam</p> <p><u>A.I. Gribenyukov</u>, V.R. Sorochenko*, and Yu.A. Shakir*</p> <p><i>Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia</i></p> <p><i>*A.M. Prokhorov General Physics Institute RAS, Moscow, Russia</i></p>
26	<p>SHCE-4-2-01011 Microwave Pulse Compression Experiments at Low Power</p> <p><u>E.G. Farr</u>, L.H. Bowen, C.E. Baum*, and W.D. Prather**</p> <p><i>Farr Research, Inc, Albuquerque, USA</i></p> <p><i>*University of New Mexico, Albuquerque, USA</i></p> <p><i>**Air Force Research Laboratory, Albuquerque, USA</i></p>

15th SHCE

September 23, Tuesday

9:00 – 12:30, 14:00 – 18:10

Oral Session 2. Pinches, plasma focus and capillary discharge

09:00 – 09:40 Invited	<p>SHCE-2-1-01007 Use of a Multi-Microsecond Prepulse for Implosion of Single Wire Array Z-Pinches on the 6MA-1Microsecond SPHINX Machine</p> <p><u>F. Lassalle</u>, H. Calamy, F. Zucchini, A. Loyen, P. Maury, A. Georges, J.P. Bedoch, and A. Morell</p> <p><i>Centre d'Etudes de Gramat, Gramat, France</i></p>
09:40 – 10:00	<p>SHCE-2-1-00611 Study of Planar Wire Arrays at Microsecond Implosion Times</p> <p><u>A.V. Shishlov*</u>, S.A. Chaikovsky, A.V. Fedunin, F.I. Fursov, V.A. Kokshenev, N.E. Kurmaev, A.Yu. Labetsky, N.A. Labetskaya, V.I. Oreshkin, and A.G. Rousskikh</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Faculty of Electrophysics and Electronic Equipment, Tomsk Polytechnic University, Tomsk, Russia</i></p>
10:00 – 10:20	<p>SHCE-2-1-01008 Recent Results for a 20 cm Diameter, Triple Shell Argon Z-Pinch on the SPHINX Machine</p> <p><u>F. Lassalle</u>, H. Calamy, A. Loyen, A. Morell, F. Zucchini, P.L. Coleman*, M. Krishnan**, A. Bixler**, K. Champagne**, K. Wilson**, and J. Thompson***</p> <p><i>Centre d'Etudes de Gramat, Gramat, France</i> <i>*Consultant, Philomath, USA</i> <i>**Alameda Applied Sciences Corp., San Leandro, USA</i> <i>***Consultant, San Diego, USA</i></p>
10:20 – 10:40	<p>SHCE-2-1-00575 Fast Electrical Explosion in Megagauss Magnetic Field</p> <p><u>V.I. Oreshkin</u>, S.A. Chaikovsky, N.A. Ratakhin, I.M. Datsko</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
10:40 – 11:10 Coffee break	
11:10 – 11:30	<p>SHCE-2-1-01003 Discharge Channel Development upon Electrical Explosion of Wire with and without Outer Interruption of Current Pulse</p> <p><u>V.M. Romanova</u>, S.I. Tkachenko, A.R. Mingaleev, A.E. Ter-Oganesyan, T.A. Shelkovenko, and S.A. Pikuz</p> <p><i>P.N. Lebedev Physical Institute RAS, Moscow, Russia</i></p>

11:30 – 11:50	<p>SHCE-2-1-00795 Study of the Exploding Aluminum Wire Stratification <u>A.G. Roussikh</u>, R.B. Baksht*, V.I. Oreshkin, N.A. Labetskaya <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Electrical Discharge and Plasma Laboratory, Tel Aviv University, Tel Aviv, Israel</i></p>
11:50 – 12:10	<p>SHCE-2-1-00983 Radiation Characteristics of High Current Pulsed Discharge Initiated by Wire Explosion in High Density Hydrogen <u>M. Pinchuk</u>, A.A. Bogomaz, A.V. Budin, S.Yu. Losev, A.A. Pozubenkov, and Ph.G. Rutberg <i>Institute for Electrophysics and Electric Power RAS, St. Petersburg, Russia</i></p>
12:10 – 12:30	<p>SHCE-2-0-01004 Experimental Study of a Dense and Current-Conducting Matter Distribution in the Discharge Channel upon Wire Explosion <u>S.I. Tkachenko</u>, V.M. Romanova, A.R. Mingaleev, A.E. Ter-Oganesyan, T.A. Shelkovenko, and S.A. Pikuz <i>P.N. Lebedev Physical Institute RAS, Moscow, Russia</i></p>
12:30 – 14:00 Lunch	
14:00 – 14:20	<p>SHCE-2-1-01119 Studies of Conical Plasma Liners: Simulation vs Experiment <u>V. Gasilov</u>, E. Grabovskiy*, V. Alexandrov*, A. Boldarev, S. D'yatchenko, I. Frolov*, A. Gribov*, A. Gritsuk*, E. Kartasheva, Ya. Laukhin*, S. Medovschikov*, K. Mitrofanov*, G. Oleynik*, O. Olkhovskaya, A. Samokhin*, P. Sasorov**, V. Smirnov***, G. Volkov*, and V. Zaytsev* <i>IMM RAS, Moscow, Russia</i> <i>*TRINITI, Troitsk, Russia</i> <i>**ITEP, Moscow, Russia</i> <i>***"Kurchatov Institute", Moscow, Russia</i></p>
14:20 – 14:40	<p>SHCE-2-1-00576 Overheat Instabilities during the Electrical Explosion Wires <u>V.I. Oreshkin</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
14:40 – 15:00	<p>SHCE-2-1-01159 Point-Type Soft X-Rays Source Formed by Supersonic Gas Jet <u>O.G. Olkhovskaya</u>, A.S. Boldarev, V.A. Gasilov, S.V. Dyachenko, E.L. Kartasheva, G.A. Bagdasarov, A.Yu. Krukovsky, V.G. Novikov*, A.D. Solomyannaya*, D.A. Kim*, I.Yu. Vichev*, V.V. Alexandrov**, G.S. Volkov**, V.I. Zaytsev**, I.A. Barykov** <i>Institute for Mathematical Modelling RAS, Moscow, Russia</i> <i>*Keldysh Institute of Applied Mathematics RAS, Moscow, Russia</i> <i>**Troitsk Institute for Innovation and Fusion Research, Troitsk, Moscow region, Russia</i></p>

15th SHCE

15:00 – 15:20	<p>SHCE-2-1-00688 Nonlinear Dynamics of a Metal Irradiated with Power Electron or Laser Radiation of Subnanosecond Duration</p> <p><u>N.B. Volkov</u>, S.A. Asselborn, S.V. Barakhvostov, N.D. Kundikova, K.A. Nagaev, and A.P. Yalovets</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
15:20 – 15:40	<p>SHCE-2-1-00689 Thermodynamic Functions of Metal at High Density of Energy in One and Two-Temperature Approximation</p> <p><u>N.B. Volkov</u>, Z.R. Kozlova*, S.P. Protzenko*, E.A. Chingina</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> <i>*Institute of Thermophysics UB RAS, Ekaterinburg, Russia</i></p>
15:40 – 16:00	<p>SHCE-2-1-00687 Physical Mechanisms of Metal Nanoparticle Generation at Electric Explosion</p> <p><u>N.B. Volkov</u>, E.L. Fen'ko, A.E. Mayer*, V.S. Sedoi**, A.P. Yalovets*</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> <i>*South-Ural State University, Chelyabinsk, Russia</i> <i>**Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
16:00 – 16:30 Coffee break	
16:30 – 16:50	<p>SHCE-2-1-00643 Mechanism of Extreme Ultra-Violet Radiation Formation in the Pseudospark Discharge Plasma</p> <p><u>N.V. Landl</u>, Yu.D. Korolev, O.B. Frants, A.V. Bolotov, and I.A. Shemyakin</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
16:50 – 17:10	<p>SHCE-2-0-01071 Low Scale Soft X-Ray Pulse Radiograph</p> <p>A.G. Rousskikh, <u>N.A. Labetskaya</u>, S.A. Chaikovsky*, A.A. Erfort, A.V. Fedunin, V.F. Feduschak, V.I. Oreshkin, N.A. Ratakhin, and N.V. Zharova</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*P.N. Lebedev Physical Institute RAS, Moscow, Russia</i></p>
17:10 – 17:30	<p>SHCE-2-1-00903 Intense Pulsed X-ray Source for High-Speed Radiography</p> <p><u>V.F. Feduschak</u>, A.A. Erfort, I.V. Lavrinovich, N.A. Ratakhin, N.V. Zharova, S.V. Shlyakhtun, and V.K. Petin</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17:30 – 17:50	<p>SHCE-2-0-00951 An X-ray Source for Irradiation of Large-Area Objects</p> <p>V.I. Oreshkin, V.K. Petin, N.A. Ratakhin, and <u>S.V. Shlyakhtun</u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17:50 – 18:10	<p>SHCE-2-1-01503 Inertial Electrostatic Confinement for DD Nuclear Synthesis at Nanosecond Vacuum Discharge. Experiment and PIC simulations</p> <p><u>Yu.K. Kurilenkov</u>, V.P. Tarakanov, and M. Skowronek*</p> <p><i>Joint Institute for High Temperatures RAS, Moscow, Russia</i> <i>*Laboratoire des Plasmas Denses, Paris Cedex 05, France</i></p>

September 23, Tuesday

11:00 – 18:20

Poster Session 2. Intense electron and ion beams (Part 1)

1	<p>SHCE-1-1-00423 Some Regularities of Ion Sheath Dynamics at High Voltage Pulses <u>E.V. Nefyodtsev</u> and G.E. Ozur <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
2	<p>SHCE-1-1-01228 Cathode Spot Plasma Dynamics in Spark and Arc Stages of Vacuum Discharge <u>A. Batrakov</u>^{***}, D. Uhrlant^{***}, S. Popov[*], R. Methling^{***}, K.-D. Weltmann^{***}, and E. Pryadko^{*****} [*]<i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> ^{**}<i>Tomsk Polytechnic University, Tomsk, Russia</i> ^{***}<i>Leibniz-Institute for Plasma Science and Technology (INP), Greifswald, Germany</i> ^{****}<i>Tomsk State University, Tomsk, Russia</i></p>
3	<p>SHCE-1-0-00431 On Abnormal Acceleration of Ions at Initial Stage of a Pulse Vacuum Arc <u>V.L. Paperny</u> and A.A. Chernikh <i>Irkutsk State University, Irkutsk, Russia</i></p>
4	<p>SHCE-1-0-01059 Electric Field at a Cathode Microprotrusion under Intense Field Emission <u>I.V. Uimanov</u> <i>Institute of Electrophysics UB RUS, Ekaterinburg, Russia</i></p>
5	<p>SHCE-1-0-01060 Prebreakdown Phenomena in a Cathode Microprotrusion at Subnanosecond Pulse Durations <u>I.V. Uimanov</u> and G.A. Mesyats[*] <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> [*]<i>Lebedev Physical Institute, Moscow, Russia</i></p>
6	<p>SHCE-1-0-01303 The Influence of the Directed Motion of Electrons in Gas Discharge Plasma on the Value of Negative Anode Potential Drop <u>V.Ya. Martens</u> and N.V. Zhdanova <i>North Caucasus State Technical University, Stavropol, Russia</i></p>
7	<p>SHCE-1-2-00360 High Current Source of Relativistic Ribbon Electron Beam with Small Angle Divergence <u>V.T. Astrelin</u>, A.V. Arzhannikov, V.B. Bobylev, A.V. Burdakov, and S.L. Sinitsky <i>Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia</i> <i>Novosibirsk State Technical University, Novosibirsk, Russia</i> <i>Novosibirsk State University, Novosibirsk, Russia</i></p>

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8	<p>SHCE-1-2-00363 Computer Simulation of Atomic and Ionic Emission Spectra in an Alternating Electric Field <u>E.V. Koryukina</u> <i>Tomsk State University, Tomsk, Russia</i></p>
9	<p>SHCE-1-2-00399 Exact Solutions for the Shapes of Two-Dimensional Liquid Metal Droplets on the Electrode Surface <u>O.V. Zubareva and N.M. Zubarev</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
10	<p>SHCE-1-2-00439 On Limitation of the Current of Low-Energy, High-Current Electron Beam Formed in Plasma-Filled Diode <u>G.E. Ozur</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
11	<p>SHCE-1-2-00635 Electro Physical Ways of Creating Pressure Differential in the Course of Charged Particles Output into the Atmosphere <u>L.N. Orlikov and A.G. Chugunov</u> <i>Tomsk State University of Control Systems and Radioelectronics (TUSUR), Tomsk, Russia</i></p>
12	<p>SHCE-1-2-00671 Generation of Intense Low-Energy Ion Beams <u>S. Nikulin and P.V. Tretnikov</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
13	<p>SHCE-1-2-00711 Computer Simulation for Ion Sources Optimization <u>V.I. Gushenets and I.V. Litovko*</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Institute of Nuclear Research NASU, Kiev, Ukraine</i></p>
14	<p>SHCE-1-2-00712 Time-of-Flight Mass-Spectrometer and Magnetic Mass-Separator. Comparison of Experimental Results <u>V.I. Gushenets</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
15	<p>SHCE-1-2-00855 Model of Collective Acceleration of Ions in Spark Stage of Vacuum Discharge <u>D.L. Shmelev and S.A. Barengolts*</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> <i>*Natural-Science Research Center, Moscow, Russia</i></p>
16	<p>SHCE-1-2-00857 Model of Ignation of Droplet Spot <u>D.L. Shmelev</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>

17	<p>SHCE-1-2-00999 Repetitive Rate Operation Mode of Magnetically Isolated Diode with Dielectric Anode</p> <p><u>A.V. Stepanov</u>, V.S. Lopatin, G.E. Remnev, E.N. Melnikova*</p> <p><i>High Voltage Research Institute, Tomsk, Russia</i> <i>*Tomsk Polytechnic University, Tomsk, Russia</i></p>
18	<p>SHCE-1-2-01055 Streak Investigations of the Initial Phase of a Subnanosecond Pulsed Electrical Breakdown in Gas Gaps</p> <p><u>S.N. Ivanov</u>, V.V. Lisenkov, and V.G. Shpak</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
19	<p>SHCE-1-2-01056 The Effect of Pre-ionization Inhomogeneities on the Dynamics of a Subnanosecond Pulsed Electrical Breakdown in Gas Gaps</p> <p><u>S.N. Ivanov</u>, V.V. Lisenkov, and V.G. Shpak</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
20	<p>SHCE-1-2-01063 Current Probes for Picosecond Electron Beams</p> <p><u>A.G. Reutova</u>, K.A. Sharypov, V.G. Shpak, S.A. Shunailov, and M.I. Yalandin</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
21	<p>SHCE-1-2-01079 Subnanosecond Multipurpose E-beam Diode</p> <p><u>S.A. Shunailov</u>, A.G. Reutova, V.G. Shpak, and M.I. Yalandin</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
22	<p>SHCE-1-2-01095 Selective Acceleration Effect in Combined Vacuum-Flashover Discharges</p> <p><u>I. Muzukin</u> and S.V. Barakhvostov</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
23	<p>SHCE-1-2-01127 Run-away Nanosecond-Discharge Electron Passage through Thick Foils</p> <p><u>A.G. Burachenko</u>, D.V. Rybka, V.F. Tarasenko, E.Kh. Baksht, and M.I. Lomaev</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
24	<p>SHCE-1-2-01195 Study of Intensive Long-Pulse Electron Beam Generation in a Source with Arc Plasma Emitter Operated in an External Magnetic Field</p> <p><u>I.V. Kandaurov</u>, V.T. Astrelin, A.V. Burdakov, G.E. Derevyankin, and Yu.A. Truney</p> <p><i>Budker Institute of Nuclear Physics, Novosibirsk, Russia</i></p>
25	<p>SHCE-1-2-01215 Magnetic Compression of a Long Pulse Electron Beam Produced with an Arc Plasma Emitter</p> <p><u>Yu.A. Truney</u>, I.V. Kandaurov, and A.V. Burdakov</p> <p><i>Budker Institute of Nuclear Physics, Novosibirsk, Russia</i></p>

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26	SHCE-1-2-01223 Discharge Stabilization and Obtaining of Quasistationary Electron Beams in Explosive-Emission Sources <u>E.N. Abdullin</u>, G.P. Bazhenov, and A.V. Morozov <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
27	SHCE-1-2-01224 Anode Plasma Influence on Breakdown Formation in Explosive-Emission Electron Sources <u>E.N. Abdullin</u>, G.P. Bazhenov, and A.V. Morozov <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
28	SHCE-1-2-01225 Concerning Electrical Breakdown in Vacuum <u>E.N. Abdullin</u>, G.P. Bazhenov, Yu.P. Bazhenov, A.V. Morozov <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
29	SHCE-1-2-01240 Time and Spectra Resolved Investigation of Light Emitted by Cathode Spot at Vacuum Discharges <u>S.A. Popov</u>, R. Methling*, D. Uhrlandt*, and A.V. Batrakov <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Leibniz-Institute for Plasma Science and Technology (INP), Greifswald, Germany</i>
30	SHCE-1-2-01243 Mass and Energy Analysis of Plasma Flow Generated by Cathode Spot of Low-Current Vacuum Discharges <u>S.A. Popov</u> and E.L. Pryadko <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>

September 24, Wednesday

9:00 – 12:20, 14:00 – 16:00

Oral Session 3. Pulsed power technology

9.00 – 9.20	SHCE-3-1-00628 Cascade from Power Amplifier and Current Transformer for Z-pinch Experiments on the GIT-12 Generator <u>V.A. Kokshenev</u> , <u>B.M. Kovalchuk</u> , <u>N.E. Kurmaev</u> , <u>F.I. Fursov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
9.20 – 9.40	SHCE-3-1-01203 Mathematical Modeling of the Solid Dielectric Brittle Destruction as a Result of Pulse Electrical Breakdown <u>G.Z. Usmanov</u> , <u>V.V. Lopatin</u> , <u>M.D. Noskov</u> , <u>A.A. Cheglov</u> <i>Research Institute of High Voltages, Tomsk, Russia</i>
9.40 – 10.00	SHCE-3-1-00803 High Power Pulsed Action on Solid-Liquid Interface <u>A.I. Mamaev</u> <i>Advanced Equipment and Technologies for Electrochemistry Ltd, Tomsk, Russia</i>
10.00 – 10.30	SHCE-3-1-00255 Plasma Opening Switches Operation Scenario <u>S.V. Loginov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
10.30 – 11.00 Coffee break	
11.00 – 11.20	SHCE-3-1-00835 Semiconductor Opening Switch Operation at Microsecond Forward Pumping Time <u>S.N. Rukin</u> , <u>E.A. Alichkin</u> , <u>A.I. Bushlyakov</u> , <u>A.V. Ponomarev</u> , <u>S.P. Timoshenkov</u> , <u>S.N. Tsyranov</u> , and <u>P.V. Vasiliev</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i>
11.20 – 11.40	SHCE-3-1-00875 High-Power Subnanosecond Switching Processes in SOS-Diodes <u>S.N. Tsyranov</u> and <u>S.N. Rukin</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i>
11.40 – 12.00	SHCE-3-2-00607 Air Insulated LTD for E-beam Diode <u>A.A. Zherlitsyn</u> , <u>B.M. Kovalchuk</u> , <u>G.V. Smorudov</u> , <u>N.V. Tsoy</u> , <u>V.A. Vizir</u> , and <u>V.B. Zorin</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
12.00 – 12.20	SHCE-3-1-00259 High-Current Electron Accelerator Based on Pulse Generator with Vacuum Insulation <u>E.N. Abdullin</u> , <u>A.M. Efremov</u> , <u>B.M. Kovalchuk</u> , <u>S.V. Loginov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>

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12.20 – 14.00 Lunch	
14.00 – 14.20	<p>SHCE-3-1-01267 Compact Pulsed Power Generator <u>V.F. Feduschak</u>, N.V. Zharova, I.V. Lavrinovich, V.I. Oreshkin, A.V. Fedunin, and A.A. Erfort <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
14.20 – 14.40	<p>SHCE-5-1-00571 Electron Accelerator for Pumping of XeF (C–A) Femtosecond Pulse Amplifier <u>N.G. Ivanov</u>, V.F. Losev, and L.D. Mikheev* <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*P.N. Lebedev Physical Institute, Moscow, Russia</i></p>
14.40 – 15.00	<p>SHCE-5-2-00915 High-Voltage Pulsed Generator for Dynamic Fragmentation of Rocks <u>V.A. Vizir</u>, B.M. Kovalchuk, A.V. Kharlov, E.V. Kumpyak, V.V. Chervyakov, N.G. Shubkin, N.V. Tsoy, V.B. Zorin, V.N. Kiselev, and V.V. Chupin <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
15.00 – 15.20	<p>SHCE-5-2-00752 Large-Area Metal Ceramic Cathode <u>M.E. Balezin</u> and S.Yu. Sokovnin <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
15.20 – 15.40	<p>SHCE-3-1-00260 High-Voltage Pulse Generators for Microwave Radiation Sources A.M. Efremov, B.M. Kovalchuk, <u>S.V. Loginov</u>, S.N. Volkov, and A.A. Zherlitsyn <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
15.40 – 16.00	<p>SHCE-3-1-00608 GIT-4 Experiments with Plasma Opening Switch of RFNC-VNIITF Design A.M. Gafarov*, A.V. Komissarov*, <u>S.V. Loginov</u>, A.A. Zherlitsyn <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Russian Federal Nuclear Centre – Institute of Technical Physics, Snezhinsk, Russia</i></p>

September 24, Wednesday

16:20 – 18:20

Poster Session 3.1. Intense electron and ion beams (Part 2)

1	<p>SHCE-1-2-01251 The Determination of True Quantity of Accelerated Particles (Ions, Neutrals) Falling on a Metal Target <u>B.A. Nechaev</u>, G.N. Dudkin, V.L. Kaminsky, V.N. Padalko, A.V. Petrov, V.M. Bystritsky, V.V. Gerasimov, S.S. Parzycki*, Vit.M. Bystritskii**, and J. Wozniak***</p> <p>Nuclear Physics Institute TPU, Tomsk, Russia *Joint Institute for Nuclear Research, Dubna, Moscow Region, Russia **Department of Physics and Astronomy, University of California, Irvine, USA ***Faculty of Physics and Applied Computer Sciences, AGH, University of Science and Technology, Krakow, Poland</p>
2	<p>SHCE-1-2-01252 Parameters of the Flow of Accelerated Particles Generated by the Ion Source with Closed Drift of Electrons <u>B.A. Nechaev</u>, G.N. Dudkin, V.N. Padalko, A.V. Petrov, V.I. Veretelnik, V.M. Bystritsky, V.V. Gerasimov, S.S. Parzycki*, Vit.M. Bystritskii**, and J. Wozniak***</p> <p>Nuclear Physics Institute TPU, Tomsk, Russia *Joint Institute for Nuclear Research, Dubna, Moscow Region, Russia **Department of Physics and Astronomy, University of California, Irvine, USA ***Faculty of Physics and Applied Computer Sciences, AGH, University of Science and Technology, Krakow, Poland</p>
3	<p>SHCE-1-2-01339 The Number and Lifetime of the Fragments of Vacuum Arc Cathode Spot <u>M.B. Bochkarev</u></p> <p>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</p>
4	<p>SHCE-1-2-01535 About a Voltage of the Hollow Cathode Reflective Discharge <u>S. Kornilov</u>, I.V. Osipov, N.G. Rempe, and A.V. Kozyrev*</p> <p>Tomsk State University of Control System and Radioelectronics, Tomsk, Russia *Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
5	<p>SHCE-1-2-01551 About Formation of Electron Beam on Target of the EMIR-M Accelerator <u>R.V. Protas</u>, B.N. Lavrentyev, D.E. Pavlovskih, R.R. Hafizov</p> <p>Russian Federal Nuclear Center – All-Russia Research Institute of Technical Physics, Snezhinsk, Chelyabinsk region, Russia</p>

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6	<p>SHCE-1-0-01567 Electron Gun Based on Plasma Potential Controlled Plasma Cathode</p> <p><u>V.I. Gushenets</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
7	<p>SHCE-3-2-00667 Motion of Charged Particles in High-intensities Electromagnetic Fields in Plasma</p> <p><u>V.I. Geyko and G.M. Fraiman</u> <i>Institute of Applied Physics RAS, Nizhny Novgorod, Russia</i></p>
8	<p>SHCE-1-2-01679 Electron Flow PIC Simulation in MITL</p> <p><i>S.Ya. Belomytsev, A.A. Kim, <u>A.V. Kirikov</u>, and V.V. Ryzhov</i> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
9	<p>SHCE-1-2-01591 The Formation of Electrons Beams in Gas under Atmospheric Pressure</p> <p><u>V.A. Shklyayev, V.V. Ryzhov, S.Ya. Belomytsev, I.Yu. Turchanovsky, M.I. Yalandin*</u>, and <i>S.A. Shunailov*</i> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
10	<p>SHCE-1-2-01583 Ion Acceleration by Moving Virtual Cathode during the Electron Beam “Compressed” State Collapse</p> <p><u>A.A. Grishkov, S.Ya. Belomytsev, and V.V. Ryzhov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
11	<p>SHCE-3-2-00351 Effect of Anode Dimensions on Characteristics of Nonself-Sustained Hollow Cathode Discharge</p> <p><i>N.V. Gavrilov, O.A. Bureyev, <u>D.R. Emlin</u>, A.S. Kamenetskikh</i> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
12	<p>SHCE-1-1-01587 Runaway Electron Beam Formation in Coaxial Gas-Filled Diode</p> <p><u>V.V. Ryzhov, K.P. Artemov, S.Ya. Belomytsev, A.A. Grishkov, I.Yu. Turchanovskii, and V.A. Shklyayev</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

Poster Session 3.2. Pulsed power applications

13	<p>SHCE-5-2-00291 Electrical Explosion of Wires Applying in Nanometer Materials Preparation</p> <p><u>Youcheng Wu, Shirong Hao, Yu Yang, Minghua Wang, and Jianjun Deng</u> <i>Institute of Fluid Physics CAEP, Mianyang, China</i></p>
14	<p>SHCE-5-2-00827 Discharge Stability in the Gas Mixtures with Halogen at High Specific Pump Power</p> <p><u>Yu.N. Panchenko and V.F. Losev</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

15	<p>SHCE-5-2-01603 Study of Explosive Decomposition of Priming Explosives under Action by Eximer and CO₂ Lasers</p> <p><u>I.Yu. Zykov</u>, V.F. Losev*, V.I. Oleshko, Yu.N. Panchenko*, V.P. Tsipilev, and A.N. Yakovlev</p> <p>Tomsk Polytechnic University, Tomsk, Russia *Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
16	<p>SHCE-5-2-00839 Investigation of Xenon Fluorescence at Excitation by Powerful Nanosecond Microwave Pulses</p> <p><u>M. Arteev</u></p> <p>Nuclear Physics Institute at TPU, Tomsk, Russia</p>
17	<p>SHCE-5-2-01471 Setup for Water Treatment by Products of Pulsed Nanosecond Discharge in Air</p> <p><u>A.V. Krivonosenko</u>, D.A. Krivonosenko, and A.P. Huzeev</p> <p>Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
18	<p>SHCE-5-2-01472 High-Voltage Pulsed Power Supply with a Transistor Switch</p> <p><u>A.V. Krivonosenko</u>, D.A. Krivonosenko, and A.P. Huzeev</p> <p>Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
19	<p>SHCE-5-2-00503 Relief of a Surface, Structure and Phase Constitution of a Zone Electroexplosive Alloying Carbon Steel</p> <p><u>A. Vostretsova</u>, E.A. Budovskikh, Yu.F. Ivanov*, V.E. Gromov</p> <p>Siberian State University of Industry, Novokuznetsk, Russia *Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
20	<p>SHCE-5-2-01115 Research into the Possibility of Converting HCl to Molecular Chlorine with the Use of a Nanosecond Electron Beam</p> <p><u>M.E. Balezin</u>, I.A. Buldakov, <u>S.Yu. Sokovnin</u>, V.A. Simakina*, I.S. Puzryev*, and Yu.G. Yatluk*</p> <p>Institute of Electrophysics UB RAS, Ekaterinburg, Russia *Institute of Organic Synthesis UB RAS, Ekaterinburg, Russia</p>
21	<p>SHCE-5-2-00751 Using Nanosecond Electron Beam to Produce a Silver Nanopowder</p> <p><u>M.E. Balezin</u>, O.R. Timoshenkova, S.Yu. Sokovnin, C.K. Rhee*</p> <p>Institute of Electrophysics UB RAS, Ekaterinburg, Russia *Korea Atomic Energy Research Institute, Daejeon, Korea</p>
22	<p>SHCE-5-2-01483 Application of Plasma Focus Device for Nanolayers Deposition on Silicon Wafers</p> <p><u>M. Chernyshova</u>, <u>L. Karpinski</u>, M. Scholz, B. Ulejczyk, Jeon K. Lee*, Jae K. Lee*, and K. Jung*</p> <p>Institute of Plasma Physics and Laser Microfusion, Warszawa, Poland *Korean Institute of Science and Technology, Seoul, Korea</p>

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23	<p>SHCE-5-1-00859 Wave Dynamics in Condensed Materials at a Wire Electro Burst <u>N. Kuznetsova</u>, V.V. Burkin, V.V. Lopatin, V.V. Perkov, D.V. Jdun <i>High Voltage Research Institute at TPU, Tomsk, Russia</i></p>
24	<p>SHCE-5-0-00347 The Calculated Evolution of the Plasma Channel in the Electric Discharge in SF₆ <u>A.G. Yastremskii</u> and Yu.I. Bychkov <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
25	<p>SHCE-5-2-01699 Automatic System of the Pulsed Electron Beam Accelerator Monitoring <u>P.N. Malych</u> and <u>S.V. Scherbinin</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
26	<p>SHCE-5-1-01703 UV and an IR Lasers Pumped by Generators with Inductive Energy Storage <u>A.N. Panchenko</u>, V.F. Tarasenko, and A.E. Tel'minov <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
27	<p>SHCE-5-2-01707 X-ray Emission from a Spark Gap with Laser Triggering <u>A.N. Panchenko</u>, V.F. Tarasenko, and A.E. Tel'minov <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
28	<p>SHCE-5-2 The Magnetic Fields Effect on Sorption Properties of Dielectric Surface <u>S.I. Krivosheev</u>, G.A. Shneerson, V.D. Selemir*, O.M. Tatsenko*, and V.V. Platonov* <i>Saint-Petersburg State Polytechnical University, Saint-Petersburg, Russia</i> <i>*Russian Federal Nuclear Center-VNIIE, Sarov, Russia</i></p>

September 25, Thursday

9:00 – 13:00, 14:00 – 16:10

Oral Session 4. High power microwaves

9:00 – 9:40 Invited	<p>SHCE-4-1-01507 The Folded Horn Antenna <u>E.G. Farr</u>, <u>L.H. Bowen</u>, <u>C.E. Baum*</u>, and <u>W.D. Prather**</u> <i>Farr Research Inc, Albuquerque, USA</i> <i>*University of New Mexico, Albuquerque, USA</i> <i>**Air Force Research Laboratory, Albuquerque, USA</i></p>
9:40 – 10:00	<p>SHCE-4-1-00555 High-Power Source of Ultrawideband Radiation Wave Beams with High Directivity <u>V.I. Koshelev</u>, <u>A.M. Efremov</u>, <u>B.M. Kovalchuk</u>, <u>V.V. Plisko</u>, and <u>K.N. Sukhushin</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
10:00 – 10:20	<p>SHCE-4-1-00823 Optimization of Combined Radiators of High-Power Ultrawideband Electromagnetic Pulses <u>Yu.A. Andreev</u> and <u>S. Liu*</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Tomsk Polytechnic University, Tomsk, Russia</i></p>
10.20 – 10.40 Coffee break	
10:40 – 11:00	<p>SHCE-4-1-00315 Switching of H₁₁ Mode in the Overmoded Circular Waveguide of a Resonant Microwave Compressor <u>S.A. Novikov</u>, <u>V.A. Avgustinovich</u>, <u>S.N. Artemenko</u>, <u>V.F. Dyachenko</u>, <u>V.L. Kaminsky</u>, and <u>Yu.G. Yushkov</u> <i>Nuclear Physics Institute, Tomsk, Russia</i></p>
11:00 – 11:20	<p>SHCE-4-1-00335 Frequency-Agile High-Power Resonant Microwave Compressors <u>S.N. Artemenko</u>, <u>V.A. Avgustinovich</u>, and <u>A.S. Shlapakovski</u> <i>Nuclear Physics Institute, Tomsk, Russia</i></p>
11:20 – 12:40	<p>SHCE-4-1-01199 Energy Conversion of a High-Voltage Pulse to Electromagnetic Oscillations in a Coaxial Line with a Periodic Structure of Gas Switches <u>D.N. Bykov</u>, <u>N.M. Bykov</u>, and <u>V.V. Rostov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
12:40 – 13:00	<p>SHCE-4-1-01247 Ultra-Wideband Sub-Nanosecond High Power Radiators <u>V.M. Fedorov</u>, <u>I.V. Grekhov*</u>, <u>E.F. Lebedev</u>, <u>V.E. Ostashev</u>, and <u>A.V. Ul'yanov</u> <i>Institute for High Energy Densities of AIHT RAS, Moscow, Russia</i> <i>*Ioffe Physical and Technical Institute, St. Petersburg, Russia</i></p>
13.00 – 14.00 Lunch	

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14:00 – 14:30	<p>SHCE-4-1-01683 The Use of Hybrid Bragg Resonators for Generation of Spatial Coherent Radiation by Powerful Relativistic Electron Beams</p> <p><u>N.S. Ginzburg</u>, V.Yu. Zaslavsky, A.M. Malkin, N.Yu. Peskov, and A.S. Sergeev</p> <p><i>Institute of Applied Physics RAS, Nizhny Novgorod, Russia</i></p>
14:30 – 14:50	<p>SHCE-4-1-00583 A Possibility of Pulsed Power Increasing of X Band Relativistic Backward Wave Oscillator</p> <p><u>E.M. Totmeninov</u>, A.I. Klimov, I.K. Kurkan, S.D. Polevin, and V.V. Rostov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
14:50 – 15:10	<p>SHCE-4-1-00851 Investigation of Microwave Radiation in the Coaxial Reflective Triode</p> <p><u>T. Koval</u>, V.P. Grigoriev, G.V. Melnikov*, R.R. Raxmatullin*</p> <p><i>Institute Cybernetic Centre, Tomsk Polytechnic University, Tomsk, Russia</i> <i>*Nuclear Physics Institute of Tomsk Polytechnic University, Tomsk, Russia</i></p>
15:10 – 15:30	<p>SHCE-4-1-00659 Experimental Measurement of a Virtual Cathode Velocity</p> <p><u>S.D. Polevin</u>, S.Ya. Belomyttsev, A.A. Grishkov, S.A. Kitsanov, I.K. Kurkan, V.V. Ryzhov, and R.V. Tsygankov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
15:30 – 15:50	<p>SHCE-4-1-00543 Characterization of Active Ultrawideband Array Antennas with Dual Polarization</p> <p><u>E.V. Balzovsky</u>, Yu.I. Buyanov, and V.I. Koshelev</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
15:50 – 16:10	<p>SHCE-4-1-00392 A Calorimeter for High Power Microwave Pulse Measurements</p> <p><u>A.I. Klimov</u>, P.V. Vykhodtsev, A.A. Elchaniniov, O.B. Kovalchuk, I.K. Kurkan, S.D. Polevin, E.M. Totmeninov, and V.V. Rostov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

September 25, Thursday

16:30 – 18:30

Poster Session 4. Pulsed power technology

1	<p>SHCE-3-2-01555 To the Question about Synchronization of High-Voltage Generator Modules of the EMIR-2 Accelerator <u>V.Yu. Kononenko</u>, B.N. Lavrentyev, D.E. Pavlovskih, R.V. Protas, R.R. Hafizov, and A.V. Shlyapkin <i>Russian Federal Nuclear Center – All-Russia Research Institute of Technical Physics, Chelyabinsk region, Snezhinsk, Russia</i></p>
2	<p>SHCE-3-2-00367 Arc Motion and Electrode Erosion in Rail Spark Gaps <u>A.V. Kharlov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
3	<p>SHCE-3-2-00627 Current Sheath Dynamics in a Coaxial Plasma Opening Switch <u>V.A. Kokshenev, N.E. Kurmaev, and F.I. Fursov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
4	<p>SHCE-3-2-00267 Current Channel Structure in Plasma Opening Switches <u>S.V. Loginov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
5	<p>SHCE-3-2-00268 Conduction Stage Scaling of Plasma Opening Switches with Nonuniform Plasma Density Distribution <u>S.V. Loginov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
6	<p>SHCE-3-2-00256 Downstream Plasma Propagation in Opening Switches <u>S.V. Loginov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
7	<p>SHCE-3-2-00257 Analysis of Electrical Circuit with Current Interrupter and Diode Load <u>S.V. Loginov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
8	<p>SHCE-3-2-01363 Contact Glow Discharge Formation in the Electrolyte <u>A.N. Rybina, N.S. Sochugov, and V.G. Podkovirot</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
9	<p>SHCE-3-2-00339 High-Voltage Pulsed Power Supply with Cascade Output <u>A. Pavlinskiy, I.R. Arslanov, A.V. Mikov, and N.S. Sochugov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

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10	<p>SHCE-3-2-00343 Pulsed Power Supply with High Voltage Output Transformer</p> <p><u>I.R. Arslanov</u>, A.V. Krivovosenko, A.V. Mikov, V.G. Podkovyrov, and N.S. Sochugov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
11	<p>SHCE-3-2-01511 Development and Tests of the High-Voltage Nanosecond Generator</p> <p><u>E. Bolshakov</u>, V.I. Engelko, D.V. Getman, and V.V. Eryomkin</p> <p><i>Efremov Scientific Research Institute of Electrophysical Apparatus, St.-Petersburg, Russia</i></p>
12	<p>SHCE-3-2-00412 Application of a Ferroelectric Electrode for Production of Intensive Pulse Ion Flow</p> <p>S.P. Gorbunov, V.A. Myaekivi, and <u>V.L. Paperny</u></p> <p><i>Irkutsk State University, Irkutsk, Russia</i></p>
13	<p>SHCE-3-2-01057 A Study of Operating Regimes of an Explosive-Emission Vacuum Diode as a Source of Pulsed X-Rays in the Subnanosecond Range</p> <p><u>S.N. Ivanov</u> and V.G. Shpak</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
14	<p>SHCE-3-2-00499 Relief of a Surface, Structure and Phase Constitution of a Zone Electroexplosive Alloying Carbon Steel</p> <p><u>A. Vostretsova</u>, E.A. Budovskikh, Yu.F. Ivanov*, V.E. Gromov</p> <p><i>Siberian State University of Industry, Novokuznetsk, Russia</i> <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
15	<p>SHCE-3-2-01083 The Measurement of Picosecond Gas Discharge Parameters</p> <p><u>K.A. Sharypov</u>, V.G. Shpak, S.A. Shunailov, and M.I. Yalandin</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
16	<p>SHCE-3-2-00303 GaAs Photoconductive Semiconductor Switch Experiment and Improved Design</p> <p><u>Wenkang Zou*</u>, Hongwei Liu*, Liangji Zhou*, Jiangqiang Yuan***, Jinfeng Liu*, Hongtao Li*, Weiping Xie*, and Jianjun Deng*</p> <p><i>*Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, China</i> <i>**Department of Electrical Engineering, Tsinghua University, Beijing, China</i></p>
17	<p>SHCE-3-0-00791 Pulsed High Power Action and Technology of Nanostructural Bioceramic Coatings</p> <p><u>V.A. Mamaeva</u>, A.I. Mamaev*, V.N. Borikov**, T.I. Dorofeeva</p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i> <i>*Advanced Equipment and Technology LTD, Tomsk, Russia</i> <i>**Tomsk Polytechnical University, Tomsk, Russia</i></p>

18	<p>SHCE-3-1-00699 50 W Efficient Discharge XeCl Laser <u>V.V. Dudarev</u>, Yu.N. Panchenko, V.F. Losev, N.G. Ivanov, and I.N. Konovalov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
19	<p>SHCE-3-2-01711 Application of the Dielectric Spectroscopy Method for Assessing Quality of HV Capacitors O.S. Gefle, <u>S.M. Lebedev</u>, S.N. Tkachenko, V.F. Feduschak*, and I.V. Lavrinovich*</p> <p><i>High-Voltage Research Institute of Tomsk Polytechnic University, Tomsk, Russia</i> *<i>Institute of High-Current Electronics SB RAS, Tomsk, Russia</i></p>

15th SHCE

September 26, Friday

9:00 – 12:10

Oral Session 5. Pulsed power applications

9:00 – 9:20	<p>SHCE-5-1-00647 Non-Steady Processes Effect on Discharge Formation and Evolution in Electrolyte of Electrode Systems Similar to Plasma Scalpel</p> <p><u>R.V. Ivashov</u>, V.G. Geyman, Yu.D. Korolev, I.A. Shemyakin <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
9:20 – 9:40	<p>SHCE-5-1-00691 Microspectral Analysis of Substance with Help of the Nitrogen Laser</p> <p><u>D.M. Lubenko</u>, N.G. Ivanov, and V.F. Losev <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
9:40 – 10:00	<p>SHCE-5-1-01107 Physico-Chemical Processes in Electric Discharges in Liquid Media</p> <p><u>J.I. Kornev</u>, N.A. Yavorovsky, G.G. Saveliev, A.I. Galanov, S.M. Zaharchenko*, A.E. Perekos**, N.B. Danilenko, and T.A. Yurmazova <i>High Voltage Research Institute, Tomsk, Russia</i> <i>*Electrodynamics Institute of NASU, Kiev, Ukraine</i> <i>**Institute for Metal Physics of NASU, Kiev, Ukraine</i></p>
10:00 – 10:20	<p>SHCE-5-1-01108 Working Fluid Speed Influence on Dispersity of the Powders Obtaining by Spark Erosion</p> <p><u>J.I. Kornev**</u>, A.E. Perekos, A.A. Shcherba*, N.A. Yavorovsky**, V.Z. Voynash, O.F. Boytzov, and S.M. Zaharchenko* <i>Institute for Metal Physics of NASU, Kiev, Ukraine</i> <i>*Electrodynamics Institute of NASU, Kiev, Ukraine</i> <i>**High Voltage Research Institute at TPU, Tomsk, Russia</i></p>
10:20 – 10:50 Coffee break	
10:50 – 11:10	<p>SHCE-5-2-00491 The Influence of the Conductive Shell Material on the Effectiveness of Magnetic Pulsed Compaction of Nanopowders</p> <p><u>G.Sh. Boltachev</u>, N.B. Volkov, S.N. Pararin, A.V. Spirin <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
11:10 – 11:30	<p>SHCE-5-2-00492 Deformation Dynamics of Radially Loaded Tubular Conductive Shell under High Pulsed Magnetic Field at Comparable Thickness of Wall and Skin-Layer</p> <p><u>G.Sh. Boltachev</u>, N.B. Volkov, S.N. Pararin, and A.V. Spirin <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>

<p>11:30 – 11:50</p>	<p>SHCE-5-2-01388 Surface Modification of Superelastic NiTi Alloy Wires Using Low Energy High Current Electron Beam Irradiation <u>P. Raharjo, K. Uemura*</u>, H. Murayama**, and R. Souba** <i>ITAC Ltd., Niigata, Japan</i> <i>*Tomsk Polytechnic Univ.</i> <i>**Terumo Corporation, Shizuoka, Japan</i></p>
<p>11:50 – 12:10</p>	<p>SHCE-5-2-01389 Application of Large Area Plasma Cathode Electron Beam for Natural Rubber Vulcanization <u>P. Raharjo, K. Uemura, N.N. Koval*</u>, V. Shugurov*, V. Denisov*, V. Jakovlev*, W. Setiawan**, and M. Utama*** <i>ITAC Ltd., Niigata, Japan</i> <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>**Indonesia National Nuclear Energy Agency (PTAPB BATAN), Yogyakarta, Indonesia</i> <i>***Indonesia National Nuclear Energy Agency (PATIR BATAN), Jakarta, Indonesia</i></p>
<p>12:45 – 13:15 Closing Ceremony (Rubin Hotel)</p>	

**9th International
Conference on
Modification
of Materials
with Particle Beams
and Plasma Flows**

September 22, Monday

11:30 – 12:30, 14:00 – 17:40

Oral Session 1. Beam and plasma sources

11:30 – 11:50	CMM-1-1-00307 Sources of Ribbon Ion Beams with Coarse-Structure Gridded Plasma Cathode <u>N.V. Gavrilov, O.A. Bureev, D.R. Emlin, A.S. Kamenetskikh, and A.I. Menshakov</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i>
11:50 – 12:10	CMM-1-1-01611 Quasiribbon Vacuum Arc Ion Source “RADUGA-6” <u>A.I. Ryabchikov, I.B. Stepanov, S.E. Eremin, and D.O. Sivin</u> <i>Nuclear Physics Institute of Tomsk Polytechnical University, Tomsk, Russia</i>
12:10 – 12:30	CMM-1-2-01239 Pulsed High-Current Vacuum Arc Evaporator for Coating Technologies <u>S.A. Popov, D.I. Proskurovsky, E.L. Pryadko, and A.V. Batrakov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
12:30 – 14:00 Lunch	
14:00 – 14:40 Invited	CMM-1-1-01615 Sources of Charged Particle Beams and Plasma Flows for Material Modification Developed by Plasma Source Laboratory of HCEI <u>E.M. Oks</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
14:40 – 15:00	CMM-1-1-01495 The Automated Installation for Surface Modification of Metal and Ceramic-Metal Materials and Products by Intensive Pulse Sub-Millisecond Electron Beam S.V. Grigoriev, V.N. Devjatkov, N.N. Koval, and A.D. Teresov <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
15:00 – 15:20	CMM-1-1-01327 Modernization of the Electron Accelerator “DUET” with a Large Beam Aperture <u>V. Yakovlev, M.S. Vorobyev, V.V. Denisov, N.N. Koval, and V.V. Shugurov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
15:20 – 15:40	CMM-2-1-01403 Influence of Sputter Atoms on Magnetron Discharge <u>S.N. Yanin and V.P. Krivobokov</u> <i>Nuclear Physics Institute, Tomsk, Russia</i>
15:40 – 16:00 Coffee Break	
16:00 – 16:20	CMM-1-1-00623 Extended Arc Plasmagenerator PINK-P <u>V.V. Shugurov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>

9th CMM

16:20 – 16:40	<p>CMM-1-1-01103 Automated Vacuum Ion-Plasma Setup “TRIO” for Making Nanostructure Coatings</p> <p><u>V.V. Denisov</u>, <u>N.N. Koval</u>, <u>M.I. Lobach</u>, <u>A.V. Mikov</u>, <u>V.V. Shugurov</u>, and <u>V.V. Yakovlev</u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
16:40 – 17:00	<p>CMM-1-1-01383 Simulation of a Penning Gas Discharge</p> <p><u>L. Zjulkova</u> and <u>A.V. Kozyrev</u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17:00 – 17:20	<p>CMM-1-0-00927 Automatic Installation for Magnetron Sputtering Deposition of Nanostructured Coatings with Middle-Frequency Discharge of Oil-Free Plasma</p> <p><u>O.S. Kuzmin</u>, <u>L.G. Kositsin</u>, <u>A.N. Padusenko</u>, <u>A.V. Pokushalov</u>, <u>I.M. Yermolovich*</u>, and <u>V.F. Pichugin*</u></p> <p><i>Institute of Strength Physics and Material Sciences SB RAS, Tomsk, Russia</i> <i>*Tomsk Polytechnic University, Tomsk, Russia</i></p>
17:20 – 17:40	<p>CMM-1-0-01563 Optimization of Magnet System for Magnetron Plasma Source</p> <p><u>O.H. Asainov</u>, <u>E.A. Ibragimov</u>, and <u>V.P. Krivobokov</u></p> <p><i>Nuclear Physics Research Institute, Tomsk, Russia</i></p>

September 22, Monday

14:00 – 19:00

Poster Session 1.1. Fundamentals of modification processes

1	<p>CMM-2-1-00931 On the Experimental Search of Nonlinear Localized Modes in Binary Ordered Alloy with Stoichiometry A_3B <u>N.N. Medvedev, S.V. Dmitriev*, M.D. Starostenkov**, A.V. Sinelnikova, and O.V. Pozhidaeva**</u> <i>Biysk Pedagogical State University, Biysk, Russia</i> <i>*Institute of super plasticity of metals problems RAS, Ufa, Russia</i> <i>**Altai State Technical University, Barnaul, Russia</i></p>
2	<p>CMM-2-1-00932 The Nonlinear Localized Modes of Atoms Included into the Frenkel Pairs Aggregates in Binary Alloy <u>N.N. Medvedev, S.V. Dmitriev*, O.A. Tereschenko, M.D. Starostenkov**, and R.Y. Rakitin**</u> <i>Biysk Pedagogical State University, Biysk, Russia</i> <i>*Institute of super plasticity of metals problems RAS, Ufa, Russia</i> <i>**Altai State Technical University, Barnaul, Russia</i></p>
3	<p>CMM-2-1-00563 Radiation Swelling of Concentrated Alloys <u>V.L. Orlov and A.V.Orlov*</u> <i>Polzunov Altai State Technical University, Barnaul, Russia</i> <i>*Yugra State University, Khanty-Mansiysk, Russia</i></p>
4	<p>CMM-2-1-00243 X-ray Diffraction Studies of the Molybdenum Thin Films Magnetron-Sputtered on the TiNi Alloy Surface <u>M.G. Dementyeva, L.L. Meisner, A.I. Lotkov, Yu.P. Mironov</u> <i>ISPMS SD RAS, Tomsk, Russia</i></p>
5	<p>CMM-1-0-00663 Critical Conditions of Particle Solution in the Molten Bath during Electron-Beam Modification of Metal Surface <u>O.N. Kryukova and A.G. Knyazeva</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
6	<p>CMM-2-1-01331 Self-Organization Processes Leading to Volume Modification of Metals and Alloys <u>I. Tereshko, V. Abidzina, I. Elkin***, A. Tereshko, and V. Gilushchenko</u> <i>Belarusian-Russian University, Mogilev, Belarus</i> <i>*Research and Production Enterprise "KAMA VT" Plc., Mogilev, Belarus</i> <i>**"NANTES – Systemy Nanotechnologii" Plc., Boleslawiec, Poland</i></p>

7	<p>CMM-2-2-00755 The Simulation of Dielectrics Charging by Electrons and Gamma Radiation <u>A.A. Ebel</u>, <u>A.E. Mayer</u>, and <u>A.P. Yalovets</u> <i>South-Ural State University, Chelyabinsk, Russia</i></p>
8	<p>CMM-2-2-00771 The Modelling of Flows in Composites at Irradiating by Powerful Beams of Charged Particles <u>A.P. Yalovets</u> and <u>V.V. Pogorelko</u> <i>Chelyabinsk State University, Chelyabinsk, Russia</i></p>
9	<p>CMM-2-2-00815 Structure Modification of Surface of Fine-Grained Graphite and Glassy Carbon under High Power Action by Hydrogen Plasma <u>I.A. Ivanov</u>, <u>A.V. Burdakov</u>, <u>K.N. Kuklin</u>, <u>S.V. Polosatkin</u>, <u>V.V. Postupaev</u>, <u>K.S. Raspopin*</u>, <u>P.A. Simonov*</u>, <u>V.N. Snytnikov*</u>, and <u>A.A. Shoshin</u> <i>Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia</i> <i>*Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia</i></p>
10	<p>CMM-2-2-00947 Study of Interaction of High Power Plasma Stream with Lithium-Carbon Composites <u>A.A. Shoshin***</u>, <u>A.V. Burdakov****</u>, <u>B.F. Bayanov*</u>, <u>I.A. Ivanov***</u>, <u>K.N. Kuklin*</u>, <u>P.A. Simonov****</u>, <u>V.N. Snytnikov****</u>, <u>S.V. Polosatkin***</u>, and <u>V.V. Postupaev***</u> <i>*Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia</i> <i>**Novosibirsk State University, Novosibirsk, Russia</i> <i>***Novosibirsk State Technical University, Novosibirsk, Russia</i> <i>****Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia</i></p>
11	<p>CMM-2-2-00992 Electroexplosive and Electron Beam Combined Treatment of AISI 1045 Steel <u>Yu.F. Ivanov</u>, <u>A.D. Teresov</u>, <u>S.Yu. Filimonov</u>, <u>N.N. Koval</u>, <u>E.A. Budovskih*</u>, <u>A.N. Vostretsova*</u>, and <u>V.E. Gromov*</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Siberian State University of Industry, Novokuznetsk, Russia</i></p>
12	<p>CMM-2-2-00993 Multistage Process Control of Submicro- and Nanocrystalline Multiphase Structure Formation in Hard Alloy Materials Treated by Electron Beam <u>Yu.F. Ivanov</u>, <u>Yu.A. Kolubaeva</u>, <u>A.D. Teresov</u>, <u>N.N. Koval</u>, <u>V.E. Ovcharenko*</u>, and <u>P.V. Burkov*</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
13	<p>CMM-2-2-01131 Filling of Traps with Electrons in Insulators Subjected to Intense Electron Irradiation <u>V.D. Kulikov</u> <i>Tomsk Agriculture Institute, Tomsk, Russia</i></p>
14	<p>CMM-2-2-01276 Modification of Structure and Properties of AiSi M₂ High-Speed Steel by Pulse Electron Beam <u>Yu.A. Kolubaeva</u>, <u>A.D. Teresov</u>, <u>Yu.F. Ivanov</u>, and <u>N.N. Koval</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

15	<p>CMM-2-2-00527 The Geometrical Profile of the Focusing Protons by Glass Capillary <u>A. Lagutin</u> <i>Minsk, Belarus</i></p>
16	<p>CMM-2-2-01547 Ion Etching by Low-Energy Ions in the Presence of UV-Excitation of Solids <u>D. Grankin</u> <i>Priazovskiy State Technical University, Mariupol, Ukraine</i></p>
17	<p>CMM-2-2-01311 Action of High Power Ion Beam on Dielectric Film on Metal Substrate <u>V.S. Kovivchak***, T.V. Panova**, R.B. Burlakov**, and K.A. Michailov**</u> <i>*Omsk Branch of the Institute of Semiconductor Physics, SB RAS, Omsk, Russia</i> <i>**Omsk State University, Omsk, Russia</i></p>
18	<p>CMM-2-2-01287 Interaction of Nonequilibrium Plasma with an Evaporating Metal Drop <u>A.G. Sitnikov and A.V. Kozyrev</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
19	<p>CMM-2-2-01277 Electron-Ion-Plasma Modification of Steel <u>Yu.F. Ivanov, Yu.A. Kolubaeva, A.D. Teresov, and N.N. Koval</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
20	<p>CMM-2-2-00675 On Evaporation Smoothing Mechanism of Metal Surface under the Irradiation by Submicrosecond Ion Beams <u>G.A. Bleicher, V.P. Krivobokov, and O.M. Stepanova</u> <i>Nuclear Physics Institute, Tomsk, Russia</i></p>
21	<p>CMM-2-2-00683 Role of Thermal Diffusion in the Redistribution of Impurity during High Intensive Pulsed Irradiation of Binary Alloys <u>E. Sidorova, G.A. Vershinin, and G.I. Gering</u> <i>Omsk State University, Omsk, Russia</i></p>
22	<p>CMM-2-2-00723 Interaction of Pulsed Plasma Streams with Surfaces of Constructional Materials <u>A.M. Zhukeshov and A.T. Gabdullina</u> <i>Al Farabi Kazakh National University, Science Research Institute of Experimental and Theoretical Physics, Almaty, Kazakhstan</i></p>
23	<p>CMM-2-0-01255 Modeling and Application of Physical and Chemical Processes on Solid-Liquid or Liquid-Liquid Interface at High-Energy Pulse Influence <u>A. Mamaev and V.A. Mamaeva</u> <i>Advanced Equipment and Technologies for Electrochemistry Ltd, Tomsk, Russia</i></p>

Poster Session 1.2

Beam and plasma nanoscience and nanotechnology

24	<p>CMM-5-1-00787 Structure and Mechanical Properties of TiAlN Coatings Handled by a High-Energy of (Cr + B) Ion Beams <u>O.V. Sergeev</u>, V.P. Sergeev, M.V. Fedorishcheva, A.R. Sungatulin, and I.K. Zverev <i>Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i></p>
25	<p>CMM-5-1-00863 The Appearance of the Waves Atomic Displacement Nearby Point Defects as the Result Ion Beam Influence on Crystal <u>M. Starostenkov</u>, O.V. Pozhidaeva, and M.B. Kondratenko <i>Altay State Technical University, Barnaul, Russia</i></p>
26	<p>CMM-5-1-01027 Electronic Structure of HfO_xN_y Thin Films Fabricated by Ion-Assisted Reactive Sputtering Deposition <u>V.N. Kruchinin</u>, A.V. Kalinkin*, A.V. Vorontsov*, V.Sh. Aliev**, V.V. Atuchin***, and K.P. Mogilnikov** <i>Texture Research Laboratory, Institute of Catalysis SB RAS, Novosibirsk, Russia</i> <i>*Laboratory of Surface Science, Institute of Catalysis SB RAS, Novosibirsk, Russia</i> <i>**Laboratory of Physical Chemistry of Semiconductor Surface and Semiconductor-Dielectric Systems, Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i> <i>***Laboratory of Optical Materials and Structures, Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i></p>
27	<p>CMM-5-0-01151 Dynamic Synthesis of Nanodispersed C–N Crystalline Phases <u>A.A. Sivkov</u>, A.S. Saigash, and A.J. Pak <i>Tomsk Polytechnic University, Tomsk, Russia</i></p>
28	<p>CMM-5-0-01152 Direct Dynamic Synthesis of Nanodispersed Titanium Nitride in Highvelocity Pulsed Electric-Discharge Plasma Jet <u>A.A. Sivkov</u>, A.S. Saigash, and A.J. Pak <i>Tomsk Polytechnic University, Tomsk, Russia</i></p>
29	<p>CMM-5-2-00616 Evaluation of Evaporation Chamber Heat Transfer Parameters for Producing of Nanoparticle Powders by Focused Electron Beam Evaporation in Atmospheric Pressure Medium <u>M.G. Golkovski</u>, S.P. Bardakhanov*, A.I. Korchagin, S.N. Fadeev, N.K. Kuksanov, A.V. Lavrukhin, R.A. Salimov, and V.V. Cherepov <i>Budker Institute of Nuclear Physics, Novosibirsk, Russia</i> <i>*Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia</i></p>

30	<p>CMM-5-2-00832 Modernization of the Installation for Production of Nanopowders of Metal Oxides Using Pulsed Electron Beam</p> <p><u>V.G. Il'ves, A.S. Kamenetskikh, Yu.A. Kotov, S.Yu. Sokovnin, and A.I. Medvedev</u></p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
31	<p>CMM-5-2-00867 Mechanical Properties and Structure of TiAlSiN Coatings, Deposited in Conditions Magnetron Sputtering</p> <p><u>A.V. Voronov, V.P. Sergeev, M.V. Fedorishcheva, O.V. Sergeev, A.R. Sungatulin, and V.V. Neyfeld</u></p> <p><i>Institute of Strength Physics and Materials Sciences SB RAS, Tomsk, Russia</i></p>
32	<p>CMM-5-2-00979 New Electroexplosion Methods for Synthesis of Nanocarbon</p> <p><u>A.D. Rud, N.I. Kuskova*, L.I. Ivaschuk, A.E. Perekos, V.N. Uvarov, L.Z. Boguslavskii*, and V.I. Oreshkin**</u></p> <p><i>G.V. Kurdyumov Institute for Metal Physics of NASU, Kiev, Ukraine</i> <i>*Institute of Pulse Research and Engineering of NASU, Nikolaev, Ukraine</i> <i>**Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
33	<p>CMM-5-2-01183 Increase of Resistance to Hydrogen Wear of 0.38C–Cr–3Ni–V Steel Modified by Beams of Cr and B Ions</p> <p><u>A.R. Sungatulin, V.P. Sergeev, M.V. Fedorishcheva, and O.V. Sergeev</u></p> <p><i>Institute of Strength Physics and Materials Sciences SB RAS, Tomsk, Russia</i></p>
34	<p>CMM-5-2-01207 Investigation of the Structural-Phase State of Cladded Steels Treated by Pulsed Plasma Flows</p> <p><u>V.L. Yakushin, B.A. Kalin, V.I. Polsky, P.S. Dzhumayev, Kyi Linn Hlaing, and O.N. Sevryukov</u></p> <p><i>Moscow Engineering Physics Institute (State University), Moscow, Russia</i></p>
35	<p>SHCE-1-0-00679 Synthesis of Nanosized Powders Using Wire Explosion</p> <p><u>V.S. Sedoj, L.I. Ivaschuk*, N.I. Kuskova**, A.E. Perekos*, A.D. Rud*, and N.A. Yavorovsky***</u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*V. Kurdyumov Institute for Metal Physics, NASU, Kiev, Ukraine</i> <i>**Institute of Pulse Research and Engineering, NASU, Nikolaev, Ukraine</i> <i>***High Voltage Research Institute TPU, Tomsk, Russia</i></p>

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36	<p>CMM-5-1-00655 Modelling of Formation of Disperse Particles in the Plasma Torch of the Metal Irradiated with the Powerful Beams of Charged Particles</p> <p><u>E.L. Fenko</u>, N.B. Volkov, and A.P. Yalovets*</p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> <i>*South-Ural State University, Chelyabinsk, Russia</i></p>
37	<p>CMM-5-1-01691 Novel Polymeric Composite Materials with High Specific Storage Energy</p> <p>O.S. Gefle, S.M. Lebedev, and <u>S.N. Tkachenko</u></p> <p><i>High-Voltage Research Institute of Tomsk Polytechnic University, Tomsk, Russia</i></p>

September 23, Tuesday

9:00 – 12:30, 14:00 – 17:50

Oral Session 2. Fundamentals of modification processes

09:00 – 09:40	<p>CMM-2-1-00775 The Dynamics of Near-Surface Target Layers Irradiated by Intense Particle Beams <u>A.Ya. Leyvi</u>, <i>N.B. Volkov, K.A. Talala*</i>, and <i>A.P. Yalovets*</i> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> <i>*South-Ural State University, Chelyabinsk, Russia</i></p> <p>CMM-2-1-00776 The Influence of Initial Target Surface State and Irradiation Parameters on the Micro-craters Formation <u>A.Ya. Leyvi</u>, <i>A.E. Mayer*</i>, <i>V.A. Shulov**</i>, and <i>A.P. Yalovets*</i> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> <i>*South-Ural State University, Chelyabinsk, Russia</i> <i>**Moscow Aviation Institute, Moscow, Russia</i></p>
09:40 – 10:00	<p>CMM-2-1-00919 Charging and Plasma Effects under Ultrashort Pulsed Laser Ablation <u>N.M. Bulgakova</u> and <i>V.P. Zhukov*</i> <i>Institute of Thermophysics SB RAS, Novosibirsk, Russia</i> <i>*Institute of Computational Technologies SB RAS, Novosibirsk, Russia</i></p>
10:00 – 10:20	<p>CMM-2-1-01067 Mixing of Oxidation Resistant Alloy and Ceramic Coating by Intense Pulsed Ion Beam Irradiation <u>S. Yan</u>, <i>J.Y. Shang, J.X. Song*</i>, <i>X.Y. Le**</i>, <i>W.J. Zhao, J.M. Xue, and Y.G. Wang</i> <i>State Key Laboratory of Nuclear Physics and Technology, Institute of Heavy Ion Physics, Peking University, Beijing, China</i> <i>*Beijing Institute of Aeronautical Materials, Beijing, China</i> <i>**Department of Applied Physics, School of Science, Beihang University, Beijing, China</i></p>
10:20-10:40	<p>CMM-2-1-01476 Peculiarities of High Dose Ion Implantation of Polycrystalline Materials under Irradiation by Ion Beams with a Wide Energy Spectrum <u>N.V. Volkov</u> and <i>B.A. Kalin</i> <i>Moscow Engineering Physics Institute (State University), Moscow, Russia</i></p>
10:40 – 11:10 Coffee break	
11:10 – 11:30	<p>CMM-2-1-00371 Experimental Studies of Blistering of Targets Irradiated by Intense 200 keV Proton Beam <u>S.V. Polosatkin***</u>, <i>V.T. Astrelin***</i>, <i>A.V. Burdakov***</i>, <i>P.V. Bykov*</i>, <i>I.A. Ivanov***</i>, <i>Y. Jongen****</i>, <i>S.G. Konstantinov*</i>, <i>A.M. Kudryavtsev*</i>, <i>K.N. Kuklin*</i>, <i>K.I. Mekler*</i>, <i>V.V. Postupaev***</i>, <i>A.F. Rovenskikh*</i>, <i>S.L. Sinitskiy***</i>, and <i>E.R. Zubairov*</i> <i>*Budker Institute of Nuclear Physics, Novosibirsk, Russia</i> <i>**Novosibirsk State University, Novosibirsk, Russia</i> <i>***Novosibirsk State Technical University, Novosibirsk, Russia</i> <i>****Ion Beam Applications SA, Louvain-la-Neuve, Belgium</i></p>

11:30 – 11:50	<p>CMM-2-1-00247 Temperature and Entropy of Atomic Collision Cascade at Interaction of Accelerated Ions with a Surface <u>N.N. Nikitenkov</u> <i>Tomsk Polytechnic University, Tomsk, Russia</i></p>
11:50 – 12:10	<p>CMM-3-2-01435 Porous Metal Surfaces Produced by Ion Implantation <u>N. Shevchenko and A. Kolitsch</u> <i>Research Center Dresden-Rossendorf, Dresden, Germany Institute of Ion Beam Physics and Materials Research, Dresden, Germany</i></p>
12:10 – 12:30	<p>CMM-2-1-00587 Mathematical Modeling of Physical-Chemical Conversions in Surface Layers of Materials during their Treatment Using Ion Beams <u>A.G. Knyazeva and N.V. Bukrina</u> <i>Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i></p>
12:30 – 14:00 Lunch	
14:00 – 14:20	<p>CMM-3-2-00779 Surface Heating of Steel Specimen Containing Secondary Phase Inclusions by Pulsed Electron Beams of Various Electron Energies and Pulse Durations <u>D. Shepel and A.B. Markov</u> <i>High Current Electronics Institute SB RAS, Tomsk, Russia</i></p>
14:20 – 14:40	<p>CMM-2-1-00991 Electron Beam Nanostructurization of Titanium Alloys Surface <u>Yu.F. Ivanov, Yu.A. Kolubaeva, A.D. Teresov, N.N. Koval, Lu Feng*, Liu Guangxun*, Gao Yukui*, Zhang Xiaoyun*, Tang Zhihui*, and Wang Qiang*</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia *Beijing Institute of Aeronautical Materials (BIAM), Beijing, P.R. China</i></p>
14:40 – 15:00	<p>CMM-2-1-00479 Structural Changes into Surface Layers of Parts from Titanium Alloys Irradiated with Pulsed Electron Beams V.A. Shulov, A.G. Paikin, A.D. Teryaev, <u>O.A. Bytzenko</u>, V.I. Engelko*, K.I. Tkachenko*, A.B. Markov**, V.P. Rotshtein** <i>Chernyshev Machine Building Enterprise, Moscow, Russia *Efremov Institute of Electro-physical Apparatus, St. Petersburg, Russia **Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
15:00 – 15:20	<p>CMM-2-1-01075 Features of B2 Structures and Self-Organization of Titanium Nickel Surface Layers Modified by an Electron Beams <u>L. Meisner, A.I. Lotkov, and Yu.P. Mironov</u> <i>Institute of Strength Physics and Material Science of SB RAS, Tomsk, Russia</i></p>

15:20 – 15:40	<p>CMM-2-1-00483 Kinetic Research of Solid – Phase Synthesis of Lithium Pentaferriite in the Accelerated Electron Beam</p> <p><u>A.P. Surzhikov</u>, A.M. Pritulov, O.V. Galtseva, R.U. Usmanov, A.N. Sokolovskii, and V.A. Vlasov</p> <p><i>Tomsk Politechnic University, Tomsk, Russia</i></p>
15:40 – 16:00	<p>CMM-2-2-01147 Materials Modification by Compression Plasma Flows</p> <p><u>V.V. Uglov</u>, N.N. Cherenda, V.M. Anishchik, V.M. Astashynski*, and N.T. Kvasov**</p> <p><i>Belarusian State University, Minsk, Belarus</i> <i>*B.I. Stepanov Institute of Physics of Belarus National Academy of Sciences, Minsk, Belarus</i> <i>**Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus</i></p>
16:00 – 16:30 Coffee Break	
16:30 – 16:50	<p>CMM-2-1-01367 Electronic and Nanoscaled Effects During the Plasmochemical Modification of Wide-Gap Materials</p> <p><u>V.P. Grankin</u></p> <p><i>Priazovsky State Technical University, Mariupol, Ukraine</i></p>
16:50 – 17:10	<p>CMM-2-1-00515 Spall Fracture of Ultra-Fine-Grain and Coarse-Grain FCC Metals Irradiated by a Relativistic High-Current Electron Beam</p> <p><u>E.F. Dudarev</u>, A.B. Markov*, G.P. Bakach, A.N. Tabachenko, S.D. Polevin*, A.B. Skosyrskij, V.P. Rotshtein*, O.A. Kashin**, and N.V. Girsova**</p> <p><i>Siberian Physico-Technical Institute of TSU, Tomsk, Russia</i> <i>*High Current Electronics Institute, Tomsk, Russia</i> <i>**Institute of Strenght Physiscs and Material Science, Tomsk, Russia</i></p>
17:10 – 17:30	<p>CMM-2-1-00535 The Irradiated Target Substance Dynamics Simulation with Dislocations Generation and Moving</p> <p><u>A.E. Mayer</u> and V.S. Krasnikov*</p> <p><i>South-Ural State University, Chelyabinsk, Russia</i> <i>*Chelyabinsk State University, Chelyabinsk, Russia</i></p>

Poster Session 2.1. Beam and plasma sources

1	<p>CMM-1-2-00856 Computer Simulation of Constricted High Current Vacuum Arc Motion under Action of Transversal Magnetic Field <u>D.L. Shmelev, T. Delachaux*, and E. Schade*</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> <i>*ABB Switzerland Ltd Corporate Research, Switzerland</i></p>
2	<p>CMM-1-2-00767 Transversal Displacement of the Plasma Beam Moved in a Curvilinear Magnetic Field <u>A.I. Timoshenko and V.S. Taran</u> <i>National Science Center Kharkov Institute of Physics and Technology</i></p>
3	<p>CMM-1-2-01371 Modular Excilamps of Barrier Discharge <u>D.V. Schitz, M.V. Erofeev, V.S. Skakun, M.I. Lomaev, and V.F. Tarasenko</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
4	<p>CMM-1-2-00523 Generation of the High Charge State Metal Ion Beams by Gyrotron Microwave Heating of Vacuum Arc Plasma <u>A.G. Nikolaev, K.P. Savkin, E.M. Oks, G.Yu. Yushkov, A.V. Vodopyanov*, S.V. Golubev*, and D.A. Mansfeld*</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Institute of Applied Physics RAS, Nizhny Novgorod, Russia</i></p>
5	<p>CMM-1-2-00507 Influence of the Beam Plasma on Current Measurements of Ion Beam Collector <u>A.V. Vizir</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
6	<p>CMM-1-2-00871 Vacuum Arc MEVVA II Ion Source Test Stand <u>A.S. Bugaev and V.I. Gushenets</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
7	<p>CMM-1-1-00807 Improved Bulk Plasma Uniformity in a Discharge System with Electron Injection <u>A.V. Vizir, A.V. Tyunkov, and M.V. Shandrikov</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
8	<p>CMM-1-2-01599 Use of Plasma Cathode Electron Gun for Deposition of Silicon Oxide Films <u>S.Y. Kornilov, I.V. Osipov, N.S. Sochugov*, A.N. Zakharov*</u> <i>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i> <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

9	<p>CMM-1-2-00403 Ion Beam Mass and Charge Composition for the Vacuum Arc Mevva–V.Ru Metal Ion Source with Compound Cathodes</p> <p><u>K.P. Savkin</u>, A.G. Nikolaev, E.M. Oks, and G.Yu. Yushkov <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
10	<p>CMM-1-2-00968 The Use of Composite Cathodes in Arc Low-Pressure Discharges for Superhard Coatings Synthesis: Erosion and Cathode Spot Characteristics</p> <p><u>O.V. Krygina</u>, I.M. Goncharenko, K.A. Koshkin, M.I. Lobach, O.B. Frants, and N.V. Landl <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
11	<p>CMM-1-2-00631 Working-Gas Activation in the Hollow Anode Region of Gas Low-Pressure Arc Discharge</p> <p><u>K.A. Koshkin</u> and I.M. Goncharenko <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
12	<p>CMM-1-2-01515 Formation Features of Strengthening TiN Coatings at Joint Action Magnetron and Arc Discharge of Low Pressure</p> <p><u>D.B.-D. Tsyrenov</u> and A.P. Semenov <i>Department of Physical Problems at the Presidium of Buryat Scientific Centre SB RAS, Ulan-Ude, Russia</i></p>
13	<p>CMM-1-1-01143 Automatic Setup of Ion Implantation of Tool Steels</p> <p><u>V.V. Bryukhov</u>, <u>V.P. Yanovskii</u>*, O.S. Kuzmin*, L.G. Kositsin*, and T.V. Nekrasova <i>Tomsk Polytechnic University, Tomsk, Russia</i> <i>*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
14	<p>CMM-1-1-00735 SHS as a New Source of Intense UV-radiation: Spectroscopic Study in a 200–400 nm Wavelength Range</p> <p><u>E.A. Sosnin</u>, A.I. Kirdyashkin*, V.G. Salamatov*, R.M. Gabbasov*, Yu.M. Maksimov*, and V.F. Tarasenko <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Department of Structural Macrokinetics, TSC SB RAS, Tomsk, Russia</i></p>
15	<p>CMM-1-2-01451 Device for Measurement of Ion Beam Profile</p> <p><u>D. Ponomarev</u>, G.V. Potemkin, and Yu.B. Sharopin* <i>High Voltage Research Institute of Tomsk Polytechnic University</i> <i>*Tomsk State University of Control Systems and Radioelectronics</i></p>
16	<p>CMM-3-2-01571 Characteristics of Ion Sources on the Basis of Discharge in Crossed Electric and Magnetic Fields</p> <p><u>P. Tyuryukanov</u> <i>FGUP VEI - All-Russian Electrotechnical Institute named after V.I. Lenin, Moscow, Russia</i></p>

<p>17</p>	<p>CMM-1-2-01623 Optimized System of Gas Supply of Technological Setups on Arc and Glow Discharges <u>G.V. Potemkin, V.A. Makeev, V.V. Demidenko, G.E. Remnev</u> <i>High-Voltage Research Institute at Tomsk Polytechnic University, Tomsk, Russia</i></p>
<p>18</p>	<p>CMM-1-2-01627 Investigation of Vacuum-Arc Filtered Plasma Generation Based on Multi-Component Cathodes <u>I.B. Stepanov, G.A. Pribytkov*</u>, and <u>D.O. Sivin</u> <i>Nuclear Physics Institute of Tomsk Polytechnic University, Tomsk, Russia</i> <i>*Institute of Physics of Strength and Material Science, RAS, Tomsk, Russia</i></p>
<p>19</p>	<p>CMM-1-2-01631 Equipment and Methods for Hybrid Technologies of Ion Beam and Plasma Surface Materials Modification <u>A.I. Ryabchikov and I.B. Stepanov</u> <i>Nuclear Physics Institute, Tomsk, Russia</i></p>
<p>20</p>	<p>CMM-5-2-01295 Ion Source Based on Reflex-Discharge with Cold Hollow Cathode for Reactive Ion-Beam Synthesis of Diamond-Like Films <u>V.Ya. Martens, B.M. Sinelnikov, E.F. Shevchenko, V.A. Tarala</u> <i>North Caucasian State Technical University, Stavropol, Russia</i></p>
<p>21</p>	<p>CMM-4-2-00811 Study of Physical Characteristics of Magnetron Diode Based on Liquid Phase Copper Target <u>M.A. Zhukova, V.P. Krivobokov, R.S. Tretyakov, S.N. Yanin</u> <i>Tomsk Polytechnic University, Tomsk, Russia</i></p>
<p>22</p>	<p>CMM-1-2-01715 Generator of Gas Plasma for Ion Plasma Technological Setups with Large Vacuum Volumes <u>D.P. Borisov, V.I. Gusev'nikov, and G.T. Starostin</u> <i>High-Voltage Research Institute of Tomsk Polytechnic University, Tomsk, Russia</i></p>

Poster Session 2.2. Modification of material properties (Part 1)

23	<p>CMM-3-0-01219 Effect Isothermal Annealing on Optical Properties of the ZnGeP₂ Single Crystals Irradiated by Fast E-Beam <u>A.I. Gribenyukov</u>, G.A. Verozubova, and A.Yu. Trofimov <i>Institute of monitoring of climatic and ecological systems SB RAS, Tomsk, Russia</i></p>
24	<p>CMM-3-0-00715 Modification of Surface of Polymeric Materials under Plasma-Beam Imitations of Flight in the Ionosphere V.N. Chernik, Yu.I. Tarasov, <u>G.G. Bondarenko</u>*, A.I. Gaydar* <i>D.V.Skobeltsyn Scientific Research Institute of Nuclear Physics of M.V. Lomonosov Moscow State University, Moscow, Russia</i> <i>*Research Institute of Advanced Materials and Technologies of MSiEM(TU), Moscow, Russia</i></p>
25	<p>CMM-3-0-01043 Structure and Phase Compound of 0.38C–Cr–3Ni–V Steel Implanted by Mo and B Ions <u>M.V. Fedorishcheva</u>, V.P. Sergeev, O.V. Sergeev, N.A. Popova*, and E.V. Kozlov* <i>Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i> <i>*Tomsk State University of Architecture and Building, Tomsk, Russia</i></p>
26	<p>CMM-3-0-01191 Plasma Production in a Low-Pressure Hollow-cathode Non-Self-Sustained Discharge <u>I.V. Lopatin</u>, Yu.Kh. Akhmadeev, N.N. Koval, P.M. Schanin, and A.V. Shnyder <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
27	<p>CMM-3-0-01443 Segregations as a “Long-Range Effect” under Irradiation <u>V.Ya. Bajankin</u>, D.I. Tetelbaum, and A.A. Novoselov <i>Physical-Technical Institute Ural Branch of RAS, Izhevsk, Russia</i></p>
28	<p>CMM-3-2-00263 The Low-Temperature Removal of Hydrogen Isotopes from Submicrocrystalline Ti–6Al–4V–H Alloy <u>N.N. Nikitenkov</u>, E.N. Kudryavtzeva, I.P. Chernov, Yu.I. Tyurin, G.P. Grabovetzkaya*, and E.N. Melnikova* <i>Tomsk Polytechnic University, Tomsk, Russia</i> <i>*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
29	<p>CMM-3-2-00327 Formation of Si:Er Light Emitting Layers by Continuous and Pulsed Ion Beams R.M. Bayazitov, R.I. Batalov, <u>H.A. Novikov</u>, D.I. Krizhkov*, P.I. Gaiduk**, C.P. Marques***, and E. Alves*** <i>Kazan Physical-Technical Institute of RAS, Kazan, Russia</i> <i>*Institute for Physics of Microstructures of RAS, Nizhny Novgorod, Russia</i> <i>**Belarussian State University, Minsk, Belarus</i> <i>***Instituto Tecnológico e Nuclear, Sacavem, Portugal</i></p>

30	<p>CMM-3-2-00511 Changing Near-Surface Layers Mechanical Properties of Alumina-Zirconia Ceramics by High-Current Beam of Low-Energy Electrons</p> <p><u>S.A. Ghyngazov, A.P. Surzhikov, E.N. Lysenko, T.S. Franguljan, V.N. Devjatkov*, and N.N. Koval*</u></p> <p><i>Tomsk Polytechnic University, Tomsk, Russia</i> <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
31	<p>CMM-3-2-00603 Surface Alloying of Ti–6Al–4V with Zirconium by Pulsed Electron-beam Melting of Zr/Ti Multilayers</p> <p><u>V.P. Rotshtein, A.B. Markov, N. Shevchenko*, H. Reuther*, K.V. Oskomov, and V.A. Shulov**</u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Research Center Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Dresden, Germany</i> <i>**Moscow State Aviation Institute, Moscow, Russia</i></p>
32	<p>CMM-3-2-00743 Investigation of Structure and Phase Composition under Intense Pulsed Ion Beam Mixing of Film/Substrate Systems</p> <p><u>G.A. Vershinin and T.S. Grekova</u></p> <p><i>Omsk State University, Omsk, Russia</i></p>
33	<p>CMM-3-2-01291 Modification of the Near-Surface Layers of a Copper Foil under the Action of a Volume Gas Discharge in Air at Atmospheric Pressure</p> <p><u>M.A. Shulepov, V.F. Tarasenko, I.M. Goncharenko, N.N. Koval, and I.D. Kostyrya</u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
34	<p>CMM-3-2-01527 Influence of a Reactor Irradiation on the Dynamical Parameters in a Crystalline Silica</p> <p><u>I. Abdukadyrova</u></p> <p><i>Ulugbek, Tashkent, Uzbekistan</i></p>
35	<p>CMM-3-2-01528 Radiation-Induced of a Dielectric Absorption in the Oxide Aluminum</p> <p><u>I. Abdukadyrova</u></p> <p><i>Ulugbek, Tashkent, Uzbekistan</i></p>
36	<p>CMM-3-2-01023 Nitriding of Titanium Alloy VT-16 in Plasma of Glow and Arc Discharges</p> <p><u>Yu.H. Akhmadeev, K.A. Koshkin, A.V. Shnaider, and D.S. Vershinin*</u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Centre of Nanostructured Materials and Nanotechnologies of Belgorod State University, Belgorod, Russia</i></p>

37	<p>CMM-3-2-00599 Investigation of Properties of Titanium Alloy VT-16 after Nitriding in Plasma of Non-Selfsustained Glow and Arc Discharges</p> <p><u>D.S. Vershinin, O.A. Druchinina*, E.V. Golosov, D.A. Kolesnikov*, Yu.R. Kolobov, and T.N. Vershinina</u></p> <p><i>Centre of Nanostructured Materials and Nanotechnologies of Belgorod State University, Belgorod, Russia</i></p> <p><i>*Join Research Centre “Diagnostics of structure and properties of nanomaterials” of Belgorod State University</i></p>
38	<p>CMM-3-2-00975 Mechanical Properties and Surface Relief of 35HgSa Steel under Active Straining after Magnetron Deposition of Nanocomposite Coating and Ion Implantation</p> <p><u>P.V. Kuznetsov, V.E. Panin, V.P. Sergeev, I.V. Petrakova, and A.V. Voronov</u></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
39	<p>CMM-3-2-01148 The Influence of Intense Pulsed Ion Beams and Compression Plasma Flows Treatment on Phase Composition and Mechanical Properties of WC–TiC–Co Hard Alloy Surface Layer</p> <p><u>V.V. Uglov, G.E. Remnev*, A.K. Kuleshov, N.N. Cherenda, V.M. Astashinski**, and M.S. Saltymakov*</u></p> <p><i>Belarusian State University, Minsk, Belarus</i></p> <p><i>*Nuclear Physics Institute, Tomsk, Russia</i></p> <p><i>**B.I. Stepanov Institute of Physics of Belarus National Academy of Sciences, Minsk, Belarus</i></p>
40	<p>CMM-3-2-00379 Cationic Impurities Diffusion Sub-Surface Layers of Alkali Halide Crystals under Electron Irradiation</p> <p><u>A.V. Chernyavskij, A.P. Surzhikov, S.A. Ghyngazov, and T.S. Frangulian</u></p> <p><i>Tomsk Polytechnic University Tomsk, Russia</i></p>
41	<p>CMM-3-2-00547 Influence of Implantation Process Mode and Reactivity of the Implanted Ions on the Surface Properties of Insulators</p> <p><u>A.V. Kabyshev and K.V. Lebed</u></p> <p><i>Tomsk Polytechnic University, Tomsk, Russia</i></p>

September 24, Wednesday

9:00 – 12:30, 14:00 – 18:30

Oral Session 3. Modification of material properties

<p>09:00 – 09:40 Invited</p>	<p>CMM-3-1-01019 A New Carbon Reaction: Conversion of Isotropic Graphite into Carbon Nano-onion Particles <u>Kensuke Uemura</u>***, <u>Vladimir Kukhta</u>***, <u>Purwadi Raharjo</u>***, and <u>Eiji Osawa</u>*** <i>*Tomsk Polytechnic University, Tomsk, Russia</i> <i>**ITAC Ltd., Niigata, Japan</i> <i>***Nano-carbon Research Institute, Toyohashi University of Technology, Japan</i></p>
<p>09:40 – 10:10</p>	<p>CMM-3-1-01407 Long-Range Dynamic Effects under Corpuscular Irradiation. Radiation Methods of Materials Treatment <u>V.V. Ovchinnikov</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
<p>10:10 – 10:30</p>	<p>CMM-3-1-01284 Influence of IPIB Irradiation on Ti–Al Alloy <u>Xiaoyun Le</u>, <u>Jean de Dieu Mugiraneza</u>, <u>Ming-Juan Li</u>, <u>Cuihua Rong</u>, and <u>Liyang Wang</u> <i>Department of Applied Physics, School of Science, Beijing University of Aeronautic and Astronautic, Beijing, China</i></p>
<p>10:30 – 11:00 Coffee break</p>	
<p>11:00 – 11:20</p>	<p>CMM-3-1-01475 Increase of Wearlessness of Zirconium Alloy Enviroments for Heat-Emitting Elements <u>B.A. Kalin</u>, <u>N.V. Volkov</u>, and <u>I.V. Savchenko</u> <i>Moscow Engineering – Physical Institute (State University), Moscow, Russia</i></p>
<p>11:20 – 11:40</p>	<p>CMM-3-1-00451 Structural and Chemical Characterization of KTiOAsO₄(001) Optical Surface Modified by Ar⁺ Ion Beam Bombardment <u>V. Atuchin</u>, <u>L. Isaenko</u>*, <u>O. Khyzhun</u>***, <u>L. Pokrovsky</u>, <u>C. Ramana</u>***, and <u>A. Sinelnichenko</u>** <i>Laboratory of Optical Materials and Structures, Institute of Semiconductors Physics, Novosibirsk, Russia</i> <i>*Laboratory of Crystal Growth, Institute of Geology and Mineralogy, Novosibirsk, Russia</i> <i>**Laboratory of the Electronic Structure of Solids, Institute for Problems of Materials Science, Kiev, Ukraine</i> <i>***Department of Metallurgical and Materials Engineering, University of Texas at El Paso, El Paso, Texas 79968, USA</i></p>

	<p>CMM-3-1-00455 Effects of Ar⁺ Ion Beam Bombardment of KY(WO₄)₂(010) Surface <u>V. Atuchin, O. Khyzhun*</u>, <u>L. Pokrovsky, C. Ramana**</u> <u>and A. Sinelnichenko*</u></p> <p><i>Laboratory of Optical Materials and Structures, Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i> *<i>Laboratory of the Electronic Structure of Solids, Institute for Problems of Materials Science, NASU, Kiev, Ukraine</i> **<i>Department of Metallurgical and Materials Engineering, University of Texas at El Paso, El Paso, Texas 79968, USA</i></p>
11:40 – 12:00	<p>CMM-3-1-00467 Sand Particle Erosion Resistance of Refractory Alloys Modified by Ion and Electron Beams <u>A.G. Paikin, O.A. Bytzenko, V.A. Shulov*</u>, <u>V.I. Engelko**</u>, <u>A.D. Teryaev, and G.E. Remnev***</u></p> <p><i>Chernyshev Machine Building Enterprise, Moscow, Russia</i> *<i>Moscow Aviation Institute, Moscow, Russia</i> **<i>Efremov Institute of Electro-Physical Apparatus, St. Petersburg, Russia</i> ***<i>Nuclear Physics Institute, Tomsk, Russia</i></p>
12:00 – 12:30	<p>CMM-3-1-00695 The Nanostructural Strengthening of Tool Metal Ceramic Alloy at the Surface Electron Beam Irradiation <u>V. Ovcharenko and Yu.F. Ivanov*</u></p> <p><i>ISPMS SB RAS, Tomsk, Russia</i> *<i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p> <p>CMM-3-1-00696 The Effect of Nanostructural Modification of the Metal Ceramic Alloy Surface on its Tribological Properties <u>V. Ovcharenko and Yu.F. Ivanov*</u></p> <p><i>ISPMS SB RUS, Tomsk Russia</i> *<i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
12:30 – 14:00 Lunch	
14:00 – 14:20	<p>SHCE-4-1-01687 Customized EB Sources as Key Components for Emerging Technologies – A Mission Statement and Project Review by FEP <u>Goesta Mattausch, Peter Feinaeugle, and Frank-Holm Rögner</u> <i>Fraunhofer FEP, Dresden, Germany</i></p>
14:20 – 14:40	<p>CMM-3-1-01447 Development of New Methods of Electron Beam Surface Processing for Improving Properties of Titanium Alloys <u>I.L. Pobol, M.G. Golkovsky*</u>, <u>I.I. Vegea</u></p> <p><i>Physical-Technical Institute, Minsk, Belarus</i> *<i>Budker Institute of Nuclear Physics, Novosibirsk, Russia</i></p>

14:40 – 15:00	<p>CMM-3-1-00567 Forming of Multifunctional Coats by Vacuum-Free Electron Beam Surfacing and Thermal Treatment of this Coats</p> <p><u>T.A. Krilova</u>, <u>I.M. Poletika</u>, <u>M.G. Golkovski*</u>, <u>M.V. Perovskaya</u> <i>ISPMS SB RAS, Tomsk, Russia</i> <i>*Budker Institute of Nuclear Physics, Novosibirsk, Russia</i></p>
15:00 – 15:20	<p>CMM-3-1-00891 Modified GaSe Crystals for Laser Systems Applications</p> <p><u>Feng-Guang Wu*</u>, <u>Yu.M. Andreev</u>, <u>G.V. Lanskii</u>, <u>V.V. Atuchin**</u>, <u>T.A. Gavrilova**</u>, and <u>S.Yu. Sarkisov***</u> <i>Department of Ecological Devises Making, Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia</i> <i>*Key Laboratory of Coherent Light and Atomic and Molecular Spectroscopy of Ministry of Education and College of Physics, Jilin University, Changchun, China</i> <i>**Laboratory of Optical Materials and Structures, Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i> <i>***Semiconductor Materials Science Laboratory, Siberian Physical and Technical Institute of Tomsk State University, Tomsk, Russia</i></p> <p>CMM-3-1-00887 Coherent Sources with New Solid Solution Crystals of $\text{Ga}_{1-x}\text{In}_x\text{Se}$, $x \leq 0.232$, at 108 to 500 K</p> <p><u>Zhi-Shu Feng*</u>, <u>Yu.M. Andreev</u>, <u>G.V. Lanskii</u>, <u>V.V. Atuchin**</u>, <u>T.A. Gavrilova**</u>, and <u>S.Yu. Sarkisov***</u> <i>Department of Ecological Devises Making, Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia</i> <i>*Key Laboratory of Coherent Light and Atomic and Molecular Spectroscopy of Ministry of Education and College of Physics, Jilin University, Changchun, China</i> <i>**Laboratory of Optical Materials and Structures, Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i> <i>***Semiconductor Materials Science Laboratory, Siberian Physical and Technical Institute of Tomsk State University, Tomsk, Russia</i></p>
15:20 – 15:40	<p>CMM-3-1-01171 The Influence of Ion Implantation on Wear Kinetics of Coarse-Grained and Ultrafine-Grained Titanium Alloys</p> <p><u>B.P. Gritsenko</u>, <u>K.V. Krukovskiy</u>, <u>N.V. Girsova</u>, <u>O.A. Kashin</u>, and <u>Yu.P. Mironov</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
15:40 – 16:00	<p>CMM-3-1-01595 Structural Modification of Liquid Hydrocarbons Irradiated by E-beam of Nanosecond Duration</p> <p><u>V.M. Orlovskii</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

16:00 – 16:30 Coffee break	
16:30 – 16:50	<p>CMM-3-1-01359 Surface Modification by Pulsed Ion Beam <u>V.V. Bryukhov</u> and <u>V.P. Yanovskii</u>* <i>Tomsk Polytechnic University, Tomsk, Russia</i> <i>*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
16:50 – 17:20	<p>CMM-3-1-01307 Structure and Properties of Armco Iron and Stainless Steel, Manufactured by High-Current Low-Energy Electronic Beam <u>N.N. Koval</u>, <u>Yu.F. Ivanov</u>, <u>V.V. Kvasnytskyy</u>*, <u>V.F. Kvasnytskyy</u>**, and <u>L.I. Markashova</u>*** <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*National Technical University of Ukraine – Kyiv Polytechnic Institute, Kyiv, Ukraine</i> <i>**Admiral Makarov National University of Shipbuilding, Mykolaiv, Ukraine</i> <i>***The E.O. Paton Electric Welding Institute of the NAS of Ukraine, Kyiv, Ukraine</i></p> <p>CMM-3-1-01308 Mathematical Simulation of the Thermal Tension Material State in the High-Current Electronic Beam Pulse Surfacing <u>L.M. Dykhta</u>, <u>V.V. Kvasnytskyy</u>*, <u>N.N. Koval</u>**, <u>Yu.F. Ivanov</u>**, and <u>V.F. Kvasnytskyy</u> <i>Petro Mohyla Mykolaiv State University in Consortium with “Kyiv – Mohyla Academy”, Mykolaiv, Ukraine</i> <i>*National Technical University of Ukraine – Kyiv Polytechnic Institute, Kyiv, Ukraine</i> <i>**Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>***Admiral Makarov National University of Shipbuilding, Mykolaiv, Ukraine</i></p>
17:20 – 17:40	<p>CMM-3-1-01532 Influence of I and II Type Modifiers on the Structure of Boride Coatings Produced under the Electron Beam <u>N.K. Galchenko</u>, <u>S.I. Belyuk</u>, and <u>K.A. Kolesnikova</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
17:40 – 18:00	<p>CMM-3-1-01635 Technolugues and Equipment for Low-E Coating Deposition on Glass <u>O.Kh. Asainov</u>, <u>D.D. Bainov</u>, <u>V.P. Krivobokov</u>, <u>M.N. Mikhailov</u>, and <u>S.V. Yudakov</u> <i>Nuclear Physics Institute of Tomsk Polytechnic University</i></p>
18:00 – 18:30	<p>CMM-3-1-00295 Oxidizing of Nanosize Lead Films <u>E.P. Surovoi</u>, <u>S.V. Bin</u>, and <u>N.V. Borisova</u> <i>Kemerovo State University, Kemerovo, Russia</i></p>

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	<p>CMM-3-1-00275 Studying of Kinetic Legitimacies of Nanosize Aluminium Films Oxidizing Process <u>E.P. Surovo</u>, and N.V. Borisova <i>Kemerovo State University, Kemerovo, Russia</i></p> <p>CMM-3-1-00223 Corrosion of Nanosize Copper Films in the Ammonia Atmosphere <u>E.P. Surovoi</u>, N.V. Borisova, <u>S.P. Govorina</u>, and L.N. Bugerko <i>Kemerovo State University, Kemerovo, Russia</i></p>
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September 24, Wednesday

11:00 – 18:20

Poster Session 3. Coating deposition

1	<p>CMM-4-0-01111 Dual Magnetron Systems: Physical Characteristics and Properties of the Films <u>Yu. Yurjev, A.V. Yurjeva, and V.P. Krivobokov</u> <i>Nuclear Physics Institute, Tomsk, Russia</i></p>
2	<p>CMM-4-0-00231 Structure and Properties of Ni–Cr–B–Si–Fe/WC–Co Coating Deposited to Steel and Copper Substrates <u>A.D. Pogrebnyak****, S.N. Bratushka*, V.V. Uglov**, S.N. Dub*, O.V. Kolisnichenko***, A.N. Shypilenko*, and Yu.N. Tyurin***</u> <i>*Sumy Institute for Surface Modification, Sumy, Ukraine</i> <i>**Belarus State University, Minsk, Belarus</i> <i>***O.E. Paton Welding Institute NAS of Ukraine, Kiev, Ukraine</i> <i>****G.V. Kurdyumov Institute for Metal Physics NAS of Ukraine, Kiev, Ukraine</i></p>
3	<p>CMM-4-1-01416 Technological Methods of Gradient Composite Coatings Formation in Conditions of Different Plasma Sources Combination in a Common Vacuum Chamber <u>V.M. Savostikov, S.M. Sergeev*, V.M. Kuzmichenko*, and I.A. Shulepov**</u> <i>Technotron Company, Tomsk, Russia</i> <i>*LTD “Tomsk Electronic Company”, Tomsk, Russia</i> <i>**Nuclear Physics Institute, Tomsk, Russia</i></p>
4	<p>CMM-4-1-01575 Electron Beam Surfacing of Wear-Resistant Coatings on the Base of Chromic White Iron Alloyed by Vanadium <u>B.V. Dampilon and V.G. Durakov</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
5	<p>CMM-4-0-01395 Formation of Coatings of Various Purposes by Microarc Oxidation <u>P.I. Butvagin, Ye.V. Khokhryakov, Yu.A. Lobova, A.I. Mamaev</u> <i>Advanced Equipment and Technologies for Electrochemistry Ltd, Tomsk, Russia</i></p>
6	<p>CMM-4-0-01135 Producing of ZrO₂ Coating by Method Zol-Gel <u>T.A. Gubajdulina and V.P. Sergeev</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>

7	<p>CMM-4-1-01531 Synthesis of Titanium Diboride Layers under the High-Power Electron Beam in Vacuum <i>N.K. Galchenko, K.A. Kolesnikova, and O.K. Lepakova*</i> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i> <i>*Department of Structural Macrokinetics of the Tomsk Scientific Centre SB RAS, Tomsk, Russia</i></p>
8	<p>CMM-4-1-01031 Thin Calcium Phosphate Coating Deposited on NiTi and Ti <i>M.A. Ryabtseva, R.A. Surmenev, S.I. Tverdokhlebov, and V.F. Pichugin</i> <i>Tomsk Polytechnic University, Tomsk, Russia</i></p>
9	<p>CMM-4-1-00239 Adhesion Strength of Magnetron Sputtered Molybdenum and Tantalum Thin-Films on TiNi Substrate <i>G.V. Prozorova, A.I. Lotkov, L.L. Meysner, and A.A. Neyman</i> <i>ISPMS SB RAS, Tomsk, Russia</i></p>
10	<p>CMM-4-2-00299 Deposition of Diamond-Like a-C:H Coatings by Decomposition of Acetylene in Nonself-Sustained Plasma Cathode Discharge <i>N.V. Gavrilov, A.S. Mamaev, A.S. Kaygorodov</i> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
11	<p>CMM-4-2-00475 Deposition of Ti–Si–B Erosion Resistance Nanocoating with MAX-Phase on the Surface of Ti6Al4V Alloy Parts by Vacuum Plasma Method with Plasma Separation from Drop Fraction <i>A.G. Paikin, V.A. Shulov, A.D. Teryaev, K.B. Vertiy, O.A. Bytsenko, and V.M. Gorohov*</i> <i>Chernyshev Machine-building Enterprise, Moscow, Russia</i> <i>*Institute of Powder Metallurgy, Minsk, Belarus</i></p>
12	<p>CMM-4-2-00619 Investigation of Magnetron Sputtering System with Electromagnetic Coil <i>A.A. Soloviev, N.F. Kovsharov, and N.S. Sochugov</i> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
13	<p>CMM-4-2-00651 Investigation of Topography of the Surface and Distribution of Mechanical Properties Using Scanning Nanoindenter “NanoScan” of the Ca–P Coatings Deposited on Medical Implants by the High-frequency Magnetron Sputtering Technique <i>A. Kozelskaya, R. Surmenev, S. Tverdokhlebov, S. Useinov*, and V. Pichugin</i> <i>Tomsk Polytechnic University, Tomsk, Russia</i> <i>*Technological Institute for Superhard and Novel Carbon Materials, Troitsk, Moscow, Russia</i></p>

14	<p>CMM-4-2-00783 Deposition of Biocompatible Calcium-Phosphate Coatings by High Power Ion Beam Ablation Plasma <u>V.K. Struts</u>, <u>V.M. Matvienko</u>, <u>A.V. Petrov</u>, <u>A.V. Mytnikov*</u>, <u>V.F. Pichugin*</u>, and <u>S.I. Tverdokhlebov*</u></p> <p><i>Nuclear Physics Institute, Tomsk, Russia</i> <i>*Tomsk Polytechnic University, Tomsk, Russia</i></p>
15	<p>CMM-4-2-00799 Deposition and Investigation of Amorphous Hydrogenated Carbon Films from Acetylene Plasma <u>M.V. Shandrikov</u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
16	<p>CMM-4-2-00963 Transparent and Conducting ZnO:Al and ZnO:Ga Films Prepared by Magnetron Sputtering <u>A.N. Zakharov</u>, <u>K.V. Oskomov</u>, and <u>N.S. Sochugov</u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17	<p>CMM-4-2-01037 In situ Synthesis, Phase Composition and Microstructure of TiB₂ Layers under Irradiation by Power Electron Beam <u>N.N. Smirnyagina</u>, <u>Z.M. Khaltarov</u>, <u>A.C. Khazagarov</u>, and <u>A.S. Milonov</u></p> <p><i>Department of Physical Problems at the Presidium of Buryat Scientific Center SB RAS, Ulan-Ude, Russia</i></p> <p>CMM-5-1-01036 Structure and Properties of Boride Layers Produced by Electron Beam in Vacuum <u>N.N. Smirnyagina</u>, <u>B.N. Banzaraksheeva</u>, <u>D.E. Dasheev</u>, <u>T.B. Kim</u>, <u>A.N. Chagdurov</u>, and <u>A.S. Milonov</u></p> <p><i>Department of Physical Problems at the Presidium of Buryat Scientific Center SB RAS, Ulan-Ude, Russia</i></p>
18	<p>CMM-4-2-01091 Carbon Films, Prepared by Electron Beam Evaporation of Graphite Target <u>A.V. Medovnik</u>, <u>Yu.A. Burachevsky</u>, <u>V.A. Burdovitsin</u>, <u>E.M. Oks</u></p> <p><i>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i></p>
19	<p>CMM-4-2-01299 Si Thin Film Deposition from Free Jet of Argon-Silane Mixture Activated by Electron Beam <u>S.Ya. Khmel</u>, <u>E.A. Baranov</u>, <u>S.Z. Sakhapov</u></p> <p><i>Institute of Thermophysics, SB RAS, Novosibirsk, Russia</i></p>
20	<p>CMM-4-2-01415 Multicomponent Tribotechnical Coatings Based on Ti–C Combinations with Dopes <u>V.M. Savostikov</u>, <u>S.M. Sergeev</u>, <u>A.N. Tabachenko*</u>, <u>S.V. Ovchinnikov**</u>, and <u>Yu.P. Pinzhin**</u></p> <p><i>Technotron Company, Tomsk, Russia</i> <i>*Tomsk State University, Tomsk, Russia</i> <i>**Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>

21	<p>CMM-4-2-01436 Real-Time Monitoring of ITO Film Structure during Annealing: Effect of Film Thickness <u>N. Shevchenko, A. Rogozin, M. Vinnichenko, A. Kolitsch, and W. Moeller</u> <i>Research Center Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Dresden, Germany</i></p>
22	<p>CMM-4-2-01455 The Increasing of the Wear Life of the Cutting and Stamping Tools by Using the Progressive Vacuum Ion-Plasma Coatings <u>A.V. Solopov, V.A. Akifev, O.V. Polunina, T.N. Mikhailova, and M.V. Zaharov</u> <i>"AUTOVAZ", Togliatti, Russia</i></p>
23	<p>CMM-4-2-01464 Surface Cu-Ni Alloy Formed on Copper Substrate by Nickel Deposition and Following Irradiation with a Low-Energy, High-Current Electron Beam <u>A.B. Markov, A.G. Padey, E.L. Pryadko, and G.E. Ozur</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
24	<p>CMM-4-2-01519 Study of the Multilayer Ohmic Contacts to n-i-GaAs with Ti Diffusion Barrier <u>E.V. Erofeev, V.A. Kagadei*, and S.V. Ishutkin**</u> <i>Research Institute of Semiconductor Devices, Tomsk, Russia</i> <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>**Tomsk state university of control systems and radioelectronics, Tomsk, Russia</i></p>
25	<p>CMM-5-1-01271 Formation of Bioactive Coatings with Micro-Plasma Technique for Medical Use <u>E.V. Legostaeva, Yu.P. Sharkeev, T.V. Tolkacheva, A.I. Piguzov</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
26	<p>SHCE-1-0-00211 Nanocomposite Protective Coatings Based on Ti-N-Cr/Ni-Cr-B-Si-Mo, their Structure and Properties <u>A.D. Pogrebnjak***, M.M. Danilionok***, A.A. Drobyshevskaya***, V.M. Beresnev***, N.K. Erdybaeva****, G.V. Kirik**, S.N. Dub*****, V.S. Rusakov*****, V.V. Uglov***, A.P. Shypulyenko****, P.V. Zuckovski*****, and Yu.N. Tuleushev*****</u> <i>*G.V. Kurdyumov Institute for Metal Physics, NAS Ukraine, Sumy, Ukraine</i> <i>**Sumy Institute for Surface Modification, Sumy, Ukraine</i> <i>***Belarus State University, Minsk, Belarus</i> <i>****East-kazakhstan State Technical University, Ust'-Kamenogorsk, Kazakhstan</i> <i>*****Institute Super Hard Materials, NAS Ukraine, Kiev, Ukraine</i> <i>*****Moscow State University, Moscow, Russia</i> <i>*****Lublin Technical University, Lublin, Poland</i> <i>*****Institute for Nuclear Physics, Almaty, Kazakhstan</i></p>

27	<p>SHCE-3-2-00435 Lattice Dynamics of GaSb/AlSb Strained Superlattices</p> <p><u>A.V. Kosobutskii</u> and E.N. Malysheva</p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p>
28	<p>SHCE-5-1-01259 Reactive Sputtering Deposition and Photocatalytic Activity of TiO_xN_y Thin Films</p> <p><u>V.N. Kruchinin</u>, A.V. Kalinkin*, A.V. Vorontsov*, V.Sh. Aliev**, V.V. Atuchin***, and K.P. Mogilnikov**</p> <p><i>Texture Research Laboratory, Institute of Catalysis SB RAS, Novosibirsk, Russia</i></p> <p><i>*Laboratory of Surface Science, Institute of Catalysis SB RAS, Novosibirsk, Russia</i></p> <p><i>**Laboratory of Physical Chemistry of Semiconductor Surface and Semiconductor – Dielectric Systems, Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i></p> <p><i>***Laboratory of Optical Materials and Structures, Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i></p>
29	<p>SHCE-1-0-00212 Structures and Properties of Ti Alloys after Double Implantation</p> <p><u>A.D. Pogrebniak</u>, S.N. Bratushka, V.V. Uglov*, V.S. Rusakov**, V.M. Beresnev, V.M. Anishchik*, L.V. Malikov, N. Levitant***, and B.P. Gritsenko****</p> <p><i>Sumy Institute for Surface Modification, Sumy, Ukraine</i></p> <p><i>*Belarus State University, Minsk, Belarus</i></p> <p><i>**Moscow State University, Moscow, Russia</i></p> <p><i>***Institute of Fundamental Technological Research PASC, Warsaw, Poland</i></p> <p><i>****Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
30	<p>SHCE-5-2-00551 Investigation of Frequency-Angular Dependences for Surface Magnetostatic Spin Waves in Cubic Ferrite Films</p> <p><u>G.G. Bondarenko</u> and V.V. Shagaev</p> <p><i>Research Institute of Advanced Materials and Technology of MSIEM (TU), Moscow, Russia</i></p>
31	<p>CMM-4-2-01639 Investigation of Properties of Multilayered Film Structure for Creation of Hydrogenselective Membrane</p> <p>A.I. Ryabchikov, V.M. Golovkov, I.B. Stepanov, V.V. Sohoreva, and <u>I.A. Shulepov</u></p> <p><i>Nuclear Physics Institute of Tomsk Polytechnic University, Tomsk, Russia</i></p>
32	<p>CMM-4-2-01643 Coating Deposition Using Vacuum Arc and Ablation Metal Plasma</p> <p><u>A.I. Ryabchikov</u>, V.M. Matvienko, and I.B. Stepanov</p> <p><i>Nuclear Physics Institute, Tomsk, Russia</i></p>

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33	<p>CMM-4-2-01647 (Ti, Al)N and (Ti, Al)N/TiN Multilayer Coating Deposition Using Filtered Vacuum Arc Plasma <i>A.I. Ryabchikov, I.B. Stepanov, V.A. Geikin*, N.A. Nochovnaya**, V.N. Legostaev, I.A. Shulepov, <u>D.O. Sivin</u>, and S.E. Eremin</i> <i>Nuclear Physics Institute, Tomsk, Russia</i> <i>*Research and Development Institute for Propulsion Engineering and Aeroengine Industrial Processes (NIID), Moscow, Russia</i> <i>**All-Russian Scientific Research Institute of Aviation Materials, Moscow, Russia</i></p>
34	<p>CMM-4-1-01099 Ion Energy Distribution Functions in an Unbalanced Magnetron Sputtering System Developed for a-C Films Deposition <i>K.V. Oskomov, N.F. Kovsharov, N.S. Sochugov, A.A. Soloviev</i> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
35	<p>CMM-4-1-00427 Influence of Mo or Ta Thin Coatings on Nickel Titanium Inelastic Behavior <i>A.A. Neyman, L.L. Meysner, A.I. Lotkov, and K.P. Redlich</i> <i>Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i></p>

September 25, Thursday

9:00 – 12:40, 14:00 – 18:00

Oral Session 4. Coating deposition

9:00 – 9:40 Invited	<p>CMM-4-1-01651 New Developments of HCEI SB RAS in the Field of Functional Layers and Coatings Fabrication by Vacuum Electron-Ion-Plasma Methods</p> <p><u>N.N. Koval</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
9:40 – 10:00	<p>CMM-4-1-00375 Coating Long Cold Stainless Steel Tube with OFHC</p> <p><u>A. Hershcovitch</u> and H. Joseph Poole <i>Brookhaven National Laboratory, Upton, USA</i></p>
10:00 – 10:20	<p>CMM-4-1-00615 Forming of Tungsten Containing Coats on the Substrates from Aluminum and Copper by Method of Vacuum-Free Electron Beam Surfacing</p> <p><u>M.G. Golkovski</u>, I.M. Poletika*, R.A. Salimov, and A.N. Lukin <i>Budker Institute of Nuclear Physics, Novosibirsk, Russia</i> <i>*Institute of Strength Physics and Material Science, Tomsk, Russia</i></p>
10:20 – 10:40 Coffee break	
10:40 – 11:00	<p>CMM-4-1-00471 Modification of Refractory Arc-Vacuum NiCrAlY Coatings Deposited on the Surface of Nickel-Base Alloy Blades with Intense Pulsed Electron Beams</p> <p>A.V. Krainikov, A.G. Paykin, V.A. Shulov, <u>O.A. Bytzenko</u>, V.I. Engelko*, and K.I. Tkachenko* <i>Chernyshev Machine Building Enterprise, Moscow, Russia</i> <i>*Efremov Institute of Electro-physical Apparatus, St. Petersburg, Russia</i></p>
11:00 – 11:20	<p>CMM-4-1-00727 Thermal Stability of Nanostructured Super-hard Coatings on the Basic of TiN</p> <p><u>S.V. Ovchinnikov</u>, A.D. Korotaev*, Yu.P. Pinzhin, A.N. Tyumentsev, V.Yu. Moshkov*, D.P. Borisov**, and V.M. Savostikov** <i>Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i> <i>*Tomsk State University, Tomsk, Russia</i> <i>**Technotron State Company, Tomsk, Russia</i></p>
11:20 – 12:40	<p>CMM-4-1-00747 Application of Ion-Plasma Methods of Bio-compatible Artificial Surface Preparation for Medical Use</p> <p><u>V.F. Pichugin</u> <i>Tomsk Polytechnic University, Tomsk, Russia</i></p>
12.40 – 14.00 Lunch	

14:00 – 14:30	<p>CMM-4-1-01431 The Concepts of Design and Approaches of Synthesis of Perspective Superhard and Antifriction Coatings <u>A. Korotaev</u>, <u>Yu.P. Pinzhin</u>[*], <u>A.N. Tyumentsev</u>[*], <u>S.V. Ovchinnikov</u>[*] <i>Tomsk State University, Tomsk, Russia</i> <i>[*]Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i></p>
14:30 – 14:50	<p>CMM-4-1-00995 Gradient-Index Antireflecting Coatings for Silicon: Modeling and Optimization <u>V.E. Nikulin</u>, <u>Sh.Sh. Sarsembinov</u>, and <u>Yu.T. Taurbayev</u> <i>al-Farabi Kazakh National University, Almaty, Republic of Kazakhstan</i></p>
14:50 – 15:10	<p>CMM-4-1-01035 Self-Heating Synthesis of Borides Layers under Power Electron Beam in Vacuum <u>N.N. Smirnyagina</u> and <u>A.P. Semenov</u> <i>Department of Physical Problems at the Presidium of Buryat Scientific Center SB RAS, Ulan-Ude, Russia</i></p>
15:10 – 15:30	<p>CMM-4-0-01315 Oxygen-Doped Nanocomposite Superhard Coating Based on TiN <u>Yu.P. Pinzhin</u>, <u>A.D. Korotaev</u>[*], <u>V.Yu. Moshkov</u>[*], <u>S.V. Ovchinnikov</u>, and <u>A.N. Tyumentsev</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i> <i>[*]Tomsk State University, Tomsk, Russia</i></p>
15:30 – 15:50	<p>CMM-4-1-01149 Combined Vacuum-Arc Deposition of Protective Coatings on Basis of Transition Metals Nitrides Solid Solution <u>V.V. Uglov</u>, <u>A.K. Kuleshov</u>, <u>V.M. Anishchik</u>, <u>V.V. Khodasevich</u>, <u>M.M. Danilionak</u>, and <u>S.V. Zlotski</u> <i>Belarusian State University, Minsk, Belarus</i></p>
15:50 – 16:10	<p>CMM-4-1-01484 Deposited of Thin Silver Film by Plasma Focus Device <u>L. Karpiński</u>, <u>E. Kowalska-Strzęciwilk</u>, <u>M. Scholz</u>, <u>B. Ulejczyk</u> <i>Institute of Plasma Physics and Laser Microfusion, Warszawa, Poland</i></p>
16:10 – 16:30 Coffee break	
16:30 – 16:50	<p>CMM-4-1-01523 Investigation of AuGeNi Ohmic Contact to <i>n</i>-i-GaAs Deposited by Different Methods <u>E.V. Erofeev</u>, <u>V.A. Kagadei</u>[*], <u>S.V. Ishutkin</u>^{**}, <u>K.S. Nosaeva</u>^{***} <i>Research Institute of Semiconductor Devices, Tomsk, Russia</i> <i>[*]Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>^{**}Tomsk state university of control systems and radioelectronics, Tomsk, Russia</i> <i>^{***}Research and production company "Micran", Tomsk, Russia</i></p>

16:50 – 17:10	<p>CMM-4-0-01375 Novel Wear Resistant Nitride Coatings for Metal Cutting Tools <u>G.A. Pribytkov, V.V. Korjova, and E.N. Korosteleva</u> <i>Institute of Strength Physics and Materials Science, SB RAS, Tomsk, Russia</i></p>
17:10 – 17:40	<p>CMM-4-1-00463 Optical Properties of Textured V₂O₅/Si Thin Films Deposited by Reactive Magnetron Sputtering <u>V.V. Atuchin, V.A. Kochubey, V.N. Kruchinin*, L.D. Pokrovsky, and C.V. Ramana**</u> <i>Laboratory of Optical Materials and Structures, Institute of Semiconductor Physics, SB RAS, Novosibirsk, Russia</i> <i>*Texture Research Laboratory, Institute of Catalysis, SB RAS, Novosibirsk, Russia</i> <i>**Department of Metallurgical and Materials Engineering, University of Texas at El Paso, El Paso, Texas, USA</i></p> <p>CMM-4-1-00703 Zirconia ZrO₂ Films on Si (100) Made by Ion-beam Sputtering Deposition: Structure and the Interfacial Layer Growth Dynamics <u>V.Sh. Aliev, V.V. Atuchin, V.N. Kruchinin*, L.D. Pokrovsky, and C.V. Ramana**</u> <i>Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i> <i>*Institute of Catalysis SB RAS, Novosibirsk, Russia</i> <i>**University of Texas at El Paso, El Paso, Texas, USA</i></p> <p>CMM-4-1-00923 Deposition of PbPc Thin Films Assisted by Argon Plasma of Electron Cyclotron Resonance Source <u>V.Sh. Aliev, I.A. Badmaeva, L.D. Pokrovsky, A.S. Vasilyev</u> <i>Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i></p>
17:40 – 18:00	<p>CMM-4-1-00579 High-Nitrogenous Coatings with Ferrovandium Additives Deposited by Electron Beam Surfacing <u>N.A. Narkevich and E.A. Ivanova*</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i> <i>*Tomsk Polytechnic University, Tomsk, Russia</i></p>
18:00 – 18:20	<p>CMM-4-1-11111 Effect of Thermal and Radiation Treatment on Structure and Mechanical Properties of PG 19-11 Alloy Coatings Deposited by Detonation Method <u>K.K. Kadyrzhanov, S.B. Kislitsyn, A.D. Pogrebnjak*, Zh.Zh. Imanbekov, Yu.Zh. Tuleushev, and V.S. Rusakov**</u> <i>Institute of Nuclear Physics, Almaty, Kazakhstan</i> <i>*Sumy Institute for Surface Modification, Sumy, Ukraine</i> <i>**Moscow State University, Russia</i></p>

September 25, Thursday

10:40 – 18:30

**Poster Session 4. Modification of material properties
(Part 2)**

1	<p>CMM-3-1-01533 Increase of Quality of Welded Joint Oxygen Tuyere Electron Beam Welding <i>N.K. Galchenko, S.I. Belyuk, V.P. Samarcev, and K.A. Kolesnikova</i> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
2	<p>CMM-3-2-00819 Modification of Microstructure of Plasma Metal-Ceramic Coating <i>V. Ovcharenko and Yu.F. Ivanov*</i> <i>ISPMS SB RUS Tomsk Russia</i> <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
3	<p>CMM-3-2-01520 Effect of Sulfur Modification of GaAs Surface on Parameters of AuGeNi Ohmic Contacts <i>V.A. Kagadej, E.V. Erofeev*, and T.V. Zaretskaya*</i> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Research Institute of Semiconductor Devices, Tomsk, Russia</i></p>
4	<p>CMM-3-2-01439 The Influence of the Radiation Dose on the Change of the Mechanical Properties and Surface Composition of the Carbon Steel <i>P.V. Bykov and V.Ya. Bayankin</i> <i>Physical-Technical Institute of the Ural Branch of the RAS, Izhevsk, Russia</i></p>
5	<p>CMM-3-2-00843 Influence of Mechanical Loading on the Explosive Sensitivity of Crystals of Silver Azide <i>V.I. Krasheninin, L.V. Kuzmina, E.G. Gazenaur, D.V. Dobrynin</i> <i>Kemerovo State University, Kemerovo, Russia</i></p>
6	<p>CMM-3-2-00879 Excitation of Luminescence on Solid Surface by Thermal Atoms <i>V.D. Khoruzhij, Yu.I. Tyurin, Yu.A. Sivov, S.Kh. Shigolukov*</i> <i>Tomsk Polytechnic University, Tomsk, Russia</i> <i>*Industrial Institute, Norilsk, Russia</i></p>
7	<p>CMM-3-2-01319 Modification of Polymer Optical Hydrogel by Ion-Exchange Resins <i>V.Kh. Pak, V.D. Zhevnyak, T.V. Dikunova, G.N. Shraibman</i> <i>Kemerovo State University, Kemerovo, Russia</i></p>

8	<p>CMM-3-2-01379 Phase Formation, Mechanical Properties and Corrosion Behavior of Boron Implanted Titanium Alloy <u>I. Tsyganov, H. Reuther*</u>, and <u>A. Kolitsch*</u> <i>Lipetsk State Technical University, Lipetsk, Russia</i> <i>*Forschungszentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Dresden, Germany</i></p>
9	<p>CMM-3-2-01335 Investigation of the Effect of Ion Irradiation on Microstructure of Alloy 1960 (Al–Zn–Mg–Cu) in Different Initial States <u>V.V. Ovchinnikov, N.V. Gushchina, A.A. Klepikova, S.M. Mozharovsky*</u>, <u>A.V. Filippov*</u>, and <u>L.I. Kaigorodova**</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> <i>*Kamensk-Uralsky Metallurgical Plant, Kamensk-Uralsky, Russia</i> <i>**Institute of Metal Physics UB RAS, Ekaterinburg, Russia</i></p>
10	<p>CMM-3-2-01336 Structural Changes in Volume of Deformed Alloy 1441 (Al–Li–Cu–Mg–Zr–Mn) under Ion Bombardment <u>V.V. Ovchinnikov, N.V. Gushchina, S.M. Mozharovsky*</u>, <u>A.V. Filippov*</u>, <u>V.V. Sagaradze**</u>, and <u>N.F. Vildanova**</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> <i>*Kamensk-Uralsky Metallurgical Plant, Kamensk-Uralsky, Russia</i> <i>**Institute of Metal Physics UB RAS, Ekaterinburg, Russia</i></p>
11	<p>CMM-3-2-01323 Identification of Diamond and its Imitators with Using Excilamp <u>E.I. Lipatov, S.M. Avdeev, V.F. Tarasenko</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
12	<p>CMM-3-2-01264 Er³⁺ Emission Excited in Crystals by Nano-second Electron-Beams <u>V. Baryshnikov and V.V. Krivorotova</u> <i>Irkutsk State Railway University, Irkutsk, Russia</i></p>
13	<p>CMM-3-2-01263 Picosecond Electron-Beam Excitation of Acoustic Pulses in Cr:Al₂O₃ Crystals <u>V. Baryshnikov, E.V. Voropaev, I.V. Shipaev</u> <i>Irkutsk State Railway University, Irkutsk, Russia</i></p>
14	<p>CMM-3-2-01231 Microstructure of Heat-Affected Zone in Steel 45 Irradiated by High Power Ion Beam <u>T.V. Panova, V.S. Kovivchak*</u>, <u>V.I. Blinov</u> <i>Omsk State University, Omsk, Russia</i> <i>*Omsk Branch of the Institute of Semiconductor Physics, SB RAS, Omsk, Russia</i></p>
15	<p>CMM-3-2-01187 Strengthening of Steel 3 by Exposing its Surface Covered with Boron Nitride Emulsion to High-Power Ion Beam <u>A.P. Rubshstein, I.Sh. Trakhtenberg, and G.E. Remnev*</u> <i>*Institute of Metal Physics UB RAS, Ekaterinburg, Russia</i> <i>*High Voltage Research Institute, Tomsk, Russia</i></p>

16	<p>CMM-3-2-01140 Modification of Alkali-Halide Micro Crystals in Atmospheric Applications</p> <p><u>T. Gubareva</u> <i>Bratsk State University, Bratsk, Russia</i></p>
17	<p>CMM-3-2-01139 Transformation of Structure Alkali-Halide Crystals under Influence of Plasma</p> <p><u>T. Gubareva</u> <i>Bratsk State University, Bratsk, Russia</i></p>
18	<p>CMM-3-2-00395 Study of the Dynamics of Hydrogen Accumulation in 12H12M1BFR Steel</p> <p>A.M. Hashhash, <u>N.N. Nikitenkov</u>, I.P. Chernov, Yu.I. Tyurin, and A.M. Lider <i>Tomsk Polytechnic University, Tomsk, Russia</i></p>
19	<p>CMM-3-2-00271 Optical Properties of Alumina Implanted with Cobalt Ions</p> <p><u>A.V. Kabyshev</u> and F.V. Konusov <i>High Voltage Research Institute at Tomsk Polytechnic University, Tomsk, Russia</i></p>
20	<p>CMM-3-2-00388 Surface Morphology and Electrical Properties of DLC and CN_x Coatings Deposited by Pulse Arc Sputtering of Graphite Target in Vacuum and Nitrogen Atmosphere</p> <p><u>A.P. Rubshtein</u> and I.Sh. Trakhtenberg <i>Institute of Metal Physics Ural Branch of RAS, Ekaterinburg, Russia</i></p>
21	<p>CMM-3-2-00387 Surface Modification of Porous Titanium Matrix by Diamond-Like (DLC) and Nanocomposite Nitrogen-Containing (CN_x) Carbon Films for Creation of Effective Bioimplants</p> <p><u>A.P. Rubshtein</u> <i>Institute of Metal Physics Ural Branch of RAS, Ekaterinburg, Russia</i></p>
22	<p>SHCE-3-2-01343 Radiation Modification of the Emission Centers in CsI(Tl) Crystals</p> <p>V.Yu. Yakovlev, A. Meleshko, B. Grinyov*, <u>L. Trefilova*</u>, and V. Alekseev* <i>Tomsk Polytechnic University, Tomsk, Russia</i> <i>*Institute for Scintillation Materials, Kharkov, Ukraine</i></p>
23	<p>CMM-3-2-01408 Effect of Irradiation with Powerful Ion Beams on Microstructure of Cold-Worked Aluminum-Lithium Alloy 1441</p> <p><u>V.V. Ovchinnikov</u>, G.E. Remnev*, V.I. Gusel'nikov*, N.V. Gushchina, A.A. Klepikova, T.A. Belykh, S.M. Mozharovsky**, A.V. Filippov**, and L.I. Kaigorodova*** <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i> <i>*High Stresses Research Institute, TPU, Tomsk, Russia</i> <i>**Kamensk-Uralsky Metallurgical Plant, Kamensk-Uralsky, Russia</i> <i>***Institute of Metal Physics UB RAS, Ekaterinburg, Russia</i></p>

24	<p>CMM-3-2-01655 Formation of Nanostructure Oxide Coating under the Action of Ion Irradiation <u>V.P. Krivobokov and S.P. Umnov</u> <i>Nuclear Physics Institute, Tomsk, Russia</i></p>
25	<p>CMM-3-2-01659 Influence of Ion Irradiation of the Surface Graphite and Carbon Fibers <u>E.A. Ligacheva and A.E. Ligachev*</u> <i>Moscow Aviation and Technology Institute, Moscow, Russia</i> <i>*Institute of General Physics RAS, Moscow, Russia</i></p>
26	<p>CMM-3-1-00207 Thermotransformations in Nanosize Aluminium – Molybdenum (VI) Oxide Systems <u>E.P. Surovoi and N.V. Borisova</u> <i>Kemerovo State University, Kemerovo, Russia</i></p>
27	<p>CMM-3-1-00383 Modification of Properties of Structural Steel Processed by Vacuum Arc Discharge <u>V.V. Demidenko, G.V. Potemkin, and G.E. Remnev</u> <i>High Voltage Research Institute at Tomsk Polytechnical University, Tomsk, Russia</i></p>
28	<p>CMM-3-1-00971 Nanostructured Nitride Coatings Produced by Vacuum Arc Evaporation of Sintered Ti–Al Cathodes <u>I.M. Goncharenko, Yu.F. Ivanov, M.I. Lobach, O.V. Krysina, G.A. Pribytkov*, I.A. Andreeva*, and V.V. Korjova*</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Institute of Strength Physics and Materials Science, Tomsk, Russia</i></p>
29	<p>CMM-3-0-01256 Designing of Bioceramic Coating with the Set Properties on Titanium Alloys <u>V.A. Mamaeva, T.I. Dorofeeva, and A.I. Mamaev*</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i> <i>*Advanced Equipment and Technologies for Electrochemistry Ltd, Tomsk, Russia</i></p>
30	<p>CMM-3-1-01399 The Application of PINK and Ion Etching for Sharpening Blades <u>V. Kukhta, K. Uemura, A.G. Brigadin*, K.V. Shalnov*, and I.V. Lopatin**</u> <i>ITAC Ltd. Nagata Seiki, Tsubame, Japan</i> <i>*Tomsk Polytechnic Univ., Tomsk, Russia</i> <i>**Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
31	<p>CMM-3-1-01391 Phase Composition of Diffusion Zone and Shape Memory Effect in Nickelide Titanium after Ion Nitriding <u>V.N. Timkin, V.N. Grishkov, and A.I. Lotkov</u> <i>Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i></p>

32	<p>CMM-3-1-01355 Modification of Optical Properties of Alkali-Halide Crystals under Influence of Plasma</p> <p><u>T. Gubareva</u> <i>Bratsk State University, Bratsk, Russia</i></p>
33	<p>CMM-3-1-01015 Materials Modification with Heavy Ion Implantation</p> <p><u>K.V. Shalnov, V.K. Koukhta, K. Uemura, Y. Ito*</u>, <u>V.V. Brukhov**</u> <i>ITAC Ltd, Tsubame, Japan *Nagaoka Institute of Technology, Nagaoka, Japan **TPU, Tomsk, Russia</i></p>
34	<p>CMM-3-1-00959 Anisotropy of Propagation of Elastic Waves in Crystals with Chalcopyrite Structure</p> <p><u>E.V. Antropova</u> and <u>A.V. Kopytov</u> <i>Kemerovo State University, Kemerovo, Russia</i></p>
35	<p>CMM-3-1-00955 The Stress-Strained State of the System Surface Base During the Coating Synthesis under Electron Beam Treatment</p> <p><u>S. Sorokova</u> and <u>A.G. Knyazeva*</u> <i>Tomsk Polytechnic University, Tomsk, Russia *Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
36	<p>CMM-3-1-00883 Investigated of the Modified Surface Layers of High-Chromium Steel</p> <p><u>Zh.G. Kovalevskaya, I.M. Goncharenko*</u>, <u>K.A. Koshkin*</u>, <u>P.V. Uvarkin, V.A. Klimenov**</u>, and <u>V.A. Dolomanova**</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia *Institute of High Current Electronics SB RAS, Tomsk, Russia **Tomsk Polytechnic University, Tomsk, Russia</i></p>
37	<p>CMM-3-1-00844 Influence of the Contactless Electric Field on the Explosive Sensitivity of Crystals of Silver Azide</p> <p><u>V.I. Krasheninin, E.G. Gazenaur, L.V. Kuzmin,</u> <u>and A.P. Rodzevich*</u> <i>Kemerovo State University, Kemerovo, Russia *Yurga Technological Institute, Yurga, Russia</i></p>
38	<p>CMM-3-1-00591 Estimation of Mechanical Stress in Diffusion Zone during the Cooling of Built-up Coating</p> <p><u>N.V. Bukrina</u> and <u>A.G. Knyazeva</u> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>

39	<p>CMM-3-1-01596 Natural Gas Conversion under Influence of VUV Radiation <u>V.M. Orlovskii, S.B. Alekseev, V.A. Panarin, A.I. Suslov, V.F. Tarasenko, Y.A. Poplavskiy*, and L.N. Sinitsa*, Y.V. Medvedev**, Y.I. Polygalov**, and M.B. Shubin**</u> <i>Institute of High-Current Electronics SB RAS, Tomsk, Russia</i> <i>*Institute of Atmospheric Optics SB RAS, Tomsk, Russia</i> <i>**JSC «Vostokgazprom», Tomsk, Russia</i></p>
40	<p>CMM-3-2-01663 The Influence of the Implant Dose on Characteristics of Schottky Limiting Diode <u>V.S. Arykov, O.A. Dedkova, and Yu.V. Lilenko</u> <i>Scientific Research Institute of the Semiconductor Devices, Tomsk, Russia</i></p>
41	<p>CMM-3-2-01667 Study of the Formation of Isolation by Ion Implantation Process <u>V.S. Arykov, V.Ya. Boyko, Yu.V. Lilenko</u> <i>Scientific Research Institute of the Semiconductor Devices, Tomsk, Russia</i></p>
42	<p>CMM-3-2-01671 Porous Carbone Layers Deposition by Means of Laser Ablation <u>V.V. Savranskii</u> <i>Institute of General Physics, RAS, Moscow, Russia</i></p>
43	<p>CMM-3-2-01695 Microstructure and Wear Resistance of Titanium Subjected to Severe Plastic Deformation and Ion-Beam Nitriding <u>A.V. Byeli, V.A. Kukareko*, A.G. Kononov*, V.I. Kopylov, Yu.P. Sharkeev**, E.V. Legostaeva**, A.Yu. Eroshenko**</u> <i>Physical-Technical Institute of NASB, Minsk, Belarus</i> <i>*Joined Institute of Mechanical Engineering of NASB, Minsk, Belarus</i> <i>**Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>

September 26, Friday

9:00 – 12:20

Oral Session 5. Beam and plasma nanoscience and nanotechnology

9:00 – 9:20	CMM-5-1-00443 Production of Carbon Nanoparticles and their Compression Strength Evaluation <u>T. Yoshimura</u> , <u>K. Takeda</u> , and <u>Yu. Kunisada</u> <i>Department of Mechanical Engineering, Kure College of Technology, Hiroshima, Japan</i>
9:20 – 9:40	CMM-5-1-00707 Multilevel Nanostructuring of Surface Layers and Coatings: Scientific Fundamentals and Engineering Applications <u>V. Sergeev</u> and <u>V.E. Panin</u> <i>ISPMS SB RAS, Tomsk, Russia</i>
9:40 – 10:00	CMM-5-1-00215 Physico-Mechanical and Physico-Chemical Ti–Al–N/Ni–Cr–Mo–B–Si Characteristics in Nanocomposite Combination Coatings <u>A.D. Pogrebnyak</u> , <u>V.V. Uglov</u> , <u>M.M. Danilionok</u> , <u>F.F. Komarov</u> , <u>N.K. Erdybaeva</u> , and <u>S. Dub</u> <i>Sumy Institute for Surface Modification, Sumy, Ukraine</i>
10:00 – 10:20	CMM-5-1-01675 Structure of Modified Detonated Nanodiamond <u>G.S. Yurjev</u> , <u>A.L. Vereshchagin</u> , <u>V.S. Eliseev*</u> , <u>B.G. Goldenberg*</u> <i>Institute of Non-organic Chemistry SB RAS, Novosibirsk, Russia</i> <i>*Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia</i>
10:20 – 10:40 Coffee break	
10:40 – 11:00	CMM-5-1-00831 Production of ZnO and Zn–ZnO Nanopowders Using Evaporation by a Pulsed Electron Beam and Condensation in a Low-Pressure Gas <u>V.G. Il'ves</u> , <u>Yu.A. Kotov</u> , and <u>S.Yu. Sokovnin</u> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i>
11:00 – 11:20	CMM-5-1-01123 The Effect of Ion Irradiation on the Composition of Thin TiN, TiAlSiN Films <u>L.S. Bushnev</u> , <u>A.V. Voronov</u> , and <u>A.R. Sungatulin</u> <i>Institute of Strength Physics and Materials Sciences SB RAS, Tomsk, Russia</i>
11:20 – 11:40	CMM-5-1-01312 Application of High Power Ion Beam for Formation Conductivity Nanoparticles on Surface of Dielectric <u>V.S. Kovivchak***</u> , <u>R.B. Burlakov**</u> , and <u>T.V. Panova**</u> <i>*Omsk Branch of the Institute of Semiconductor Physics SB RAS, Omsk, Russia</i> <i>**Omsk State University, Omsk, Russia</i>

11:40 – 12:00	<p>SHCE-5-1-00895 Fundamentals of the Gradients Multiphases Layers Formations in Metallic Matrix on Base of Nanoscale Intermetallic Phases under Ion Implantation</p> <p><i>J. Kurzina, I.A. Bozhko, Yu.P. Sharkeev, and E.V. Kozlov</i></p> <p><i>Tomsk State University of Architecture and Building, Tomsk, Russia</i></p>
12:00 – 12:20	<p>CMM-5-1-01332 Computer Simulation of Self-Organization Processes Leading to Nanostructure Formation in Nonlinear Crystal Media</p> <p><i>I. Tereshko, V. Abidzina, I. Elkin***, A. Tereshko, A. Misnik</i></p> <p><i>Belarusian – Russian University, Mogilev, Belarus</i> <i>*KAMA VT Plc. Research and Production Enterprise, Mogilev, Belarus</i> <i>***"NANTES – Systemy Nanotechnologii" Plc., Bolesławiec, Poland</i></p>
12:45 – 13:15 Closing Ceremony (Rubin Hotel)	