

**16<sup>th</sup> SHCE**

**10<sup>th</sup> CMM**

**September 19, Sunday**

17:00 — 21:00, RUBIN hotel

**REGISTRATION**

19:00 — 22:00, RUBIN hotel

**Welcome party**

**September 20, Monday**

8:30 — 16:00, RUBIN hotel

**REGISTRATION**

**September 20, Monday**

09:00 — 09:20, Conference Hall of the RUBIN hotel

**OPENING CEREMONY**

09:20 — 09:50

**Review Lecture "Fast Pulsed Power Generators Based on LTD Stages", Prof. N. Ratakhin**

*(Institute of High Current Electronics SB RAS, Tomsk, Russia)*

09:50 — 10:20

**Review Lecture "Versatile Device for in-situ Multiple Coatings of Long, Small Diameter Tubes",**

**Dr. A. Hershcovitch**

*(Brookhaven National Laboratory, USA)*

10:25 — 10:30

**PHOTOGRAPHING**

**16<sup>th</sup> SHCE: Conference Hall of the Institute of High Current Electronics**

**10<sup>th</sup> CMM: Conference Hall of the RUBIN hotel**

10:40 - 11:00 Coffee break

**11:00 — Start of 16<sup>th</sup> SHCE and 10<sup>th</sup> CMM Sessions**

**10<sup>th</sup> International  
Conference on  
Modification  
of Materials  
with Particle Beams  
and Plasma Flows**

**September 20, Monday**

11:00 – 12:40, 15:00 – 18:20

**Oral Session 1. Beam and plasma sources**

11:00 - 11:40 Invited	<b>CMM-1-1-90027</b> New Applications of Gas-Discharge Systems with Gridded Plasma Cathode for Modification of Materials <b><u>N.V. Gavrilov</u></b> <i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>
11:40 - 12:00	<b>CMM-1-1-00190</b> Self-Sputtering Mode of Planar Magnetron Discharge for Ion Beams Generation <b><u>E.M. Oks</u>, <u>A.V. Vizir</u>, <u>V.I. Gushenets</u>, <u>G.Yu. Yushkov</u>, <u>T.V. Kulevoy*</u>, <u>A. Anders**</u>, <u>A. Hershcovitch***</u></b> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*SSC RF Institute for Theoretical and Experimental Physics, Moscow, Russia</i> <i>**Lawrence Berkeley National Laboratory, Berkeley, USA</i> <i>***Brookhaven National Laboratory, Upton, USA</i>
12:00 - 12:20	<b>CMM-1-1-00646</b> Etching Contoured Grooves on Superhard Dielectric Surface with a Broad Beam of Fast Atoms <b><u>Yu.A. Melnik</u>, <u>S.N. Grigoriev</u>, <u>A.S. Metel</u>, <u>V.V. Panin</u></b> <i>Moscow State Technological University "Stankin", Moscow, Russia</i>
12:20 - 12:40	<b>CMM-1-1-00543</b> Pseudoribbon Vacuum Arc Ion Source "RADUGA-6" <b><u>D.O. Sivin</u>, <u>A.I. Ryabchikov</u>, <u>I.B. Stepanov</u>, <u>S.E. Eremin</u></b> <i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i>
<b>12:40 – 14:00 Lunch</b>	
<b>14:00 – 15:00 Poster Session</b>	

**Oral Session 2. Fundamentals of modification processes**

<b>12:40 – 14:00 Lunch</b>	
<b>14:00 – 15:00 Poster Session</b>	
15:00 - 15:20	<b>CMM-2-1-00346</b> Stress and Dislocation Fields in Metal Target Irradiated by Ultra Short Electron Beam <b><u>V. Krasnikov</u>, <u>A.E. Mayer</u>, <u>A.P. Yalovets*</u></b> <i>Chelyabinsk State University, Chelyabinsk, Russia</i> <i>*South-Ural State University, Chelyabinsk, Russia</i>
15:20 - 15:40	<b>CMM-2-1-00690</b> Processes of Surface Modification by the Concentrated Energy Sources and Their Numerical Modeling <b><u>A. Batranin</u>, <u>R.A. Krektuleva</u></b>

	<i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>
15:40 - 16:00	<p><b>CMM-2-1-01634</b> Elimination of Inclusions and Formation of Surface Alloys Using Low-Energy, High-Current Electron Beams</p> <p><b><u>A.B. Markov</u></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
<b>16:20 – 16:40 Coffee Break</b>	
16:40 - 17:00	<p><b>CMM-2-1-00738</b> Diffusion in Multilayer System Irradiated by Intense Energy Streams</p> <p><b><u>K.A. Talala, A.Ya. Leyvi, A.P. Yalovets</u></b></p> <p><i>South-Ural State University, Chelyabinsk, Russia</i></p>
17:00 - 17:20	<p><b>CMM-2-1-00938</b> Reaction-Diffusion Modelling of Electron Beam and Insulator Interaction in Alumina and Polymer</p> <p><b><u>G. Damamme, A. Aoufi*</u></b></p> <p><i>CEA, Bruyeres le Chatel, France</i> <i>PECM UMR CNRS, Saint-Etienne, France</i></p>
17:20 - 17:40	<p><b>CMM-2-1-01174</b> Phase Composition and Mechanical Properties of Titanium Alloyed by Chromium and Molybdenum Atoms under High-Current Electron Beams</p> <p><b><u>N. Cherenda, V.V. Uglov, V.I. Shymanski, N.N. Koval*, Yu.F. Ivanov*, A.D. Teresov*</u></b></p> <p><i>Belarusian State University, Minsk, Belarus</i> <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17:40 - 18:00	<p><b>CMM-2-2-00510</b> Microcrystal Material Dynamics at Irradiation by Powerful Beams of Charged Particles</p> <p><b><u>I.N. Borodin, A.E. Mayer, V.S. Krasnikov</u></b></p> <p><i>Chelyabinsk State University, Chelyabinsk, Russia</i></p>
18:00 - 18:20	<p><b>SHCE-1-1-01154</b> The Combination of Electron Beam Treatment Technologies for Forming the Strengthening Coatings on Steel Substrate</p> <p><b><u>T.A. Krylova, I.M. Poletika, M.G. Golkovski, Yu.F. Ivanov*, A.D. Teresov*</u></b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i> <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

September 20, Monday

14:00 – 18:00

## Poster Session 1.1. Fundamentals of modification processes

1	<p><b>CMM-2-2-01622</b> Phase Composition of 316L Stainless Steel after Electron-Beam Irradiation Followed by Chromium Ion Implantation</p> <p><u>E. Pryadko</u>, A.B. Markov, A. Kolitsch*, H. Reuther*, N. Shevchenko*</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*Forschungszentrum Dresden-Rossendorf e.V., Dresden, Germany</i></p>
2	<p><b>CMM-2-2-01290</b> Surface Heating of a Steel Sample Containing Secondary Phase Inclusions by Pulsed Electron Beams</p> <p><u>D. Shepel</u>, A.B. Markov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
3	<p><b>CMM-2-2-01058</b> Electronic Accommodation of Energy of Reactionary Atom Impacts from Plasma to Surface with System of Metallic Nanodots</p> <p><u>V.P. Grankin</u>, M.V. Grankin*</p> <p><i>Priazovsky State Technical University, Mariupol, Ukraine</i>  <i>*University of Illinois at Chicago, Chicago, USA</i></p>
4	<p><b>CMM-2-2-01168</b> Simulation of Elastic and Electric Properties of Composite Materials Si-Fe, Si-Ni, Si-Cr, Fe-W by Percolation Theory and Renormalization Group</p> <p><u>A.V. Punko</u>, V.V. Uglov*, Yu.V. Sveshnikau*</p> <p><i>Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus</i>  <i>*Belarusian State University, Minsk, Belarus</i></p>
5	<p><b>CMM-2-2-90045</b> Plasma Jets Formation by Coaxial Electric Explosion Foils and Their Influence on Metals Surface</p> <p><u>V.D. Sarychev</u>, E.A. Budovskikh, S.P. Mochalov, E.S. Vaschuk, D.A. Romanov, V.E. Gromov</p> <p><i>Siberian State University of Industry, Novokuznetsk, Russia</i></p>
6	<p><b>CMM-2-2-00786</b> Pulse Electrical Breakdown in Crystalline Quartz and Yttrium-Aluminum Garnet</p> <p><u>R.V. Emlin</u>, A.S. Gilev*, I.F. Punanov, V.D. Kulikov*, S.O. Cholakh**</p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>  <i>*Tomsk Agricultural Institute, Tomsk, Russia</i>  <i>**Ural State Technical University, Ekaterinburg, Russia</i></p>

7	<p><b>CMM-2-2-01054</b> The Simulation of Dielectrics Charging by Electron Radiation</p> <p><u>A. Ebel*</u>, A.E. Mayer, A.P. Yalovets*</p> <p><i>Chelyabinsk State University, Chelyabinsk, Russia</i>  <i>*South-Ural State University, Chelyabinsk, Russia</i></p>
8	<p><b>CMM-2-1-00538</b> The Dynamics of Metal Target Surface at Irradiation by Intense Plasma Streams</p> <p><u>A. Leyvi</u>, K.A. Talala, A.P. Yalovets</p> <p><i>South-Ural State University, Chelyabinsk, Russia</i></p>
9	<p><b>CMM-2-2-00238</b> The Simulation of Ion Bombardment on the Ti<sub>13</sub> Clusters with Pair Interatomic Interaction</p> <p><u>N.A. Pan'kin</u>, N.A. Smolanov</p> <p><i>N.P. Ogarev Mordovian State University, Saransk, Russia</i></p>
10	<p><b>CMM-2-2-00258</b> Conductivity of Threadlike Crystals of Silver Azide, Grown in Weak Electric and Magnetic Fields</p> <p><u>V. Krashenin</u>, L.V. Kuzmina, E.G. Gazenaur, E.V. Sugatov, N.V. Goliash</p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p>
11	<p><b>CMM-2-2-00398</b> Mechanism of Influence of Substrate on the Initiation of PETN by a Laser Pulse</p> <p><u>A.V. Khanef</u>, E.V. Duginov</p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p>
12	<p><b>CMM-2-1-00686</b> Self-Organizing Process Research in Surface Material Treatment</p> <p><u>R. Krektuleva</u></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
13	<p><b>CMM-2-1-01342</b> Comparative Analysis of Structure and Properties of Steel Subjected to Electroexplosive Aluminizing and Electroexplosive Copper Plating with Subsequent Electron-Beam Treatment</p> <p><u>Yu.F. Ivanov</u>, S.Yu. Filimonov, Yu.A. Kolubaeva, A.D. Teresov, A.V. Vostrecova*, E.A. Budovskih*, V.E. Gromov*</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*Siberian State Industrial University, Novokuznetsk, Russia</i></p>
14	<p><b>CMM-2-1-00070</b> The Waves Appearing during Recombination of Frenkel Pairs in Three-Dimensional Model Lattices of Metals and Their Influence on the Drift of Point Defects Aggregates</p> <p><u>N. Medvedev</u>, M.D. Starostenkov*, A.V. Markidonov**</p> <p><i>V.M. Shukshin Biysk Pedagogical State University, Biysk, Russia</i>  <i>*I.I. Polzunov Altay State Technical University, Barnaul, Russia</i>  <i>**Kuzbass State Pedagogical Academy, Novokuznetsk, Russia</i></p>
15	<p><b>CMM-2-1-00354</b> Formation of Stress Fields in the Composite Material at Influence of the High-Current Electronic Beam</p> <p><u>V.V. Pogorelko</u>, A.P. Yalovets*, A.E. Mayer</p>

	<p><i>Chelyabinsk State University, Chelyabinsk, Russia</i>  <i>*South-Ural State University, Chelyabinsk, Russia</i></p>
16	<p><b>SHCE-2-2-01344</b> The Role of Structural Factor in the Formation of Surface-Sensitive Properties of the Titanium-Based Alloy  <u>Yu.F. Ivanov</u>, Yu.A. Kolubaeva, A.D. Teresov, N.N. Koval, Gao Yukui*, Lu Feng*, Liu Guangxun*  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*Beijing Institute of Aeronautical Materials, Beijing, China</i></p>
17	<p><b>CMM-2-2-00378</b> Analysis of Mass Transfer in Metallic Materials under Irradiation by the Particle Beams of the Vacuum-arc Ion Sources  <u>T.S. Grekova</u>, G.A. Vershinin, Yu.P. Sharkeev*, I.A. Kurzina**, I.A. Bozkho**  <i>Omsk F.M. Dostoevsky State University, Omsk, Russia</i>  <i>Tomsk</i>  <i>*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <i>**Tomsk State University of Architecture and Building, Tomsk, Russia</i></p>
18	<p><b>CMM-2-2-90039</b> Investigation of Microdefects Transformation on the Coatings Surface during Vacuum-Arc Plasma Deposition  <u>A.I. Ryabchikov</u>, I.A. Shulepov, D.O. Sivin  <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
19	<p><b>CMM-2-2-90041</b> Structure and composition of near-surface layers in the ion-implanted NiTi alloy  <u>A.D. Pogrebnyak</u>, S.N. Bratushka*, N. Levintant**  <i>Sumy Institute for Surface Modification, Sumy, Ukraine</i>  <i>*Sumy State University, Sumy, Ukraine</i>  <i>**Institute of Fundamental Technological Research, Warsaw, Poland</i></p>

## Poster Session 1.2. Modification of material properties (Part 1)

20	<p><b>CMM-3-1-00290</b> Photochemical Transformations in the Thallium Azide-Cuprum Oxide (I) Systems  <u>L. Shurygina</u>, E.P. Surovoi, L.N. Bugerko  <i>Kemerovo State University, Kemerovo, Russia</i></p>
21	<p><b>CMM-3-1-00520</b> Formation Features and Mechanical Properties of Transitive Metals Borides Layers on Fast-Cutting Steel P18 at Electron Beam Processing in Vacuum  <u>N.N. Smirnjagina</u>, A.D. Dorzhiev, A.D. Greshilov*</p>



	<p>Department of Physical Problems of Buryat Scientific Center SD RAS, Ulan-Ude, Russia *East Siberian state technological university, Ulan-Ude, Russia</p>
22	<p><b>CMM-3-1-00519</b> Structure, Heat Resistance and Thermal Stability Nanostructural Borides Transitive Metals Layers on Carbon Steel S45 after Electron Beam Processing in Vacuum <b><u>N.N. Smirnjagina</u>, B.V. Radnaev, B.V. Radnaev</b> Department of Physical Problems of Buryat Scientific Center SD RAS, Ulan-Ude, Russia</p>
23	<p><b>CMM-1-0-01246</b> Investigation of Resistance to Hydrogen Weares of 38HN3MFA Steel Modified by (Al+B) Ion Beams <b><u>A.R. Sungatulin</u>, V.P. Sergeev, O.V. Sergeev, M.V. Fedorisheva</b> Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</p>
24	<p><b>CMM-3-2-01530</b> Vacuum Technological Complex "SPRUT" for High-Quality Surface Reinforcing Treatment of Work Pieces by Plasma Magnetron-Arc Methods <b><u>D.P. Borisov</u>, K.N. Detistov, A.D. Korotaev*, V.M. Kuznetsov*, V.Yu. Moshkov*, Yu.P. Pinzhin*, G.E. Remnev, A.N. Tumentsev*</b> Research Institute of High Voltages of National Research Tomsk Polytechnic University, Tomsk, Russia *Tomsk State University, Tomsk, Russia</p>
25	<p><b>CMM-3-2-01482</b> Surface Modification of Reactive Metals by Electron Beam Surface Melting <b><u>K. Vutova</u>, E. Koleva, V. Vassileva, G. Mladenov</b> Academician Emil Djakov Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria</p>
26	<p><b>CMM-3-2-01466</b> Examination of Structure of Aluminum Alloys AMg6 and 1441 after Ion-Beam Treatment <b><u>N.V. Gushchina</u>, V.V. Ovchinnikov, S.M. Mozharovsky*, A.V. Filippov*, V.V. Sagaradze**, N.F. Vildanova**</b> Institute of Electrophysics UD RAS, Ekaterinburg, Russia *Kamensk-Uralsky Metallurgical Plant, Kamensk-Uralsky, Russia **Institute of Metals Physics UD RAS, Ekaterinburg, Russia</p>
27	<p><b>CMM-3-2-01422</b> Elastic Waves in Crystals AgInSe<sub>2</sub> and AgInTe<sub>2</sub> <b><u>E. Antropova</u>, A.V. Kopytov</b> Kemerovo State University, Kemerovo, Russia</p>
28	<p><b>CMM-3-2-01399</b> Heavy Ions Induced Damage of Lithium Fluoride Surface <b><u>A.K. Dauletbekova</u>, M.V. Zdorovets, A.T. Akilbekov, A.A. Abdrakhmetova</b> L.N. Gumilyov Eurasian National University, Astana, Republic of Kazakhstan</p>

29	<p><b>CMM-3-2-01398</b> Deviation of the Reciprocity Law between the Intensity and Duration of Irradiation in Lithium Fluoride Irradiated with Heavy Ions</p> <p><u>A.K. Dauletbekova</u>, M.V. Zdorovets, A.T. Akilbekov, F. Abuova, S. Tulepbergenov</p> <p>L.N. Gumilyov Eurasian National University, Astana, Republic of Kazakhstan</p>
30	<p><b>CMM-3-2-01354</b> The Peculiarities of Power and Spectral Characteristics of Porous Burning Processes in Gas Porous/Tubular Channel Configuration</p> <p><u>E.A. Sosnin</u>, V.K. Baev*, A.N. Gushin**, A.I. Kirdyashkin**, Yu.M. Maksimov**, V.M. Orlovskii, V.A. Panarin, V.F. Tarasenko</p> <p>Institute of High Current Electronics SB RAS, Tomsk, Russia        *S.A. Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia        **Tomsk Scientific Center SB RAS, Tomsk, Russia</p>
31	<p><b>CMM-3-2-01266</b> Features of a Hardened Layer Formation on a Steel upon Ion Nitriding in Hydrogen-Free Plasma of Low-Pressure Arc Discharge</p> <p><u>K.A. Koshkin</u>, I.M. Goncharenko, S.V. Grigoriev, A.A. Malakhov*</p> <p>Institute of High Current Electronics SB RAS, Tomsk, Russia        *National Research Tomsk Polytechnic University, Tomsk, Russia</p>
32	<p><b>CMM-3-2-01254</b> Structure-Phase State of a Coating/Substrate System Treated by Pulsed Low-Energy Electron Beam</p> <p><u>Yu.A. Kolubaeva</u>, Yu.F. Ivanov, P.V. Moskvina, A.D. Teresov, N.N. Koval</p> <p>Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
33	<p><b>CMM-3-2-01234</b> Damage Threshold of Modified GaSe Crystals under Irradiation of Pulsed CO<sub>2</sub>-Laser with Inductive Energy Storage and SOS-Diodes</p> <p><u>A. Tel'minov</u>, A.G. Sitnikov, A.N. Panchenko, D.E. Genin, S.Yu. Sarkisov*, S.A. Bereznyaya*, Z.V. Korotchenko*, A.V. Kazakov*</p> <p>Institute of High Current Electronics SB RAS, Tomsk, Russia        *Siberian Physical-Technical Institute of Tomsk State University, Tomsk, Russia</p>
34	<p><b>CMM-3-2-01230</b> Nanocrystalline Coating as a Method to Improve Physical and Mechanical Characteristics of Materials</p> <p><u>I.M. Goncharenko</u>, M.I. Lobach, B.S. Semukhin*</p> <p>Institute of High Current Electronics SB RAS, Tomsk, Russia        *Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</p>

35	<p><b>CMM-3-2-01186</b> Portable Barrier Discharge Excilamps  <u>D.V. Schitz</u>, <u>V.F. Tarasenko</u>, <u>V.S. Skakun</u>, <u>M.I. Lomaev</u>,  <u>S.M. Avdeev</u>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
36	<p><b>CMM-3-2-01178</b> Structure of Silumin Surface Layer Modified by Compression Plasma Flow  <u>A.P. Laskovnev</u>, <u>N.N. Cherenda</u><sup>*</sup>, <u>V.V. Uglov</u><sup>*</sup>, <u>J.V. Amyaga</u><sup>*</sup>,  <u>S.V. Gusakova</u><sup>*</sup>, <u>A.T. Volochko</u>, <u>V.M. Astashynski</u><sup>**</sup>,  <u>A.M. Kuzmicki</u><sup>**</sup>  <i>Institute of Physics and Technology of National Academy of Sciences of Belarus, Minsk, Belarus</i>  <sup>*</sup>Belarusian State University, Minsk, Belarus  <sup>**</sup>B.I. Stepanov Institute of Physics of National Academy of Sciences of Belarus, Minsk, Belarus</p>
37	<p><b>CMM-3-2-01166</b> Structure, Phase Composition and Mechanical Properties of "Nitride Coatings-Hard Alloy" System after Low-Energy High-Current Electron Beams Influence  <u>V.V. Uglov</u>, <u>N.N. Koval</u><sup>*</sup>, <u>A.K. Kuleshov</u>, <u>Y.F. Ivanov</u><sup>*</sup>,  <u>A.D. Teresov</u><sup>*</sup>, <u>E.A. Soldatenko</u>  <i>Belarusian State University, Minsk, Belarus</i>  <sup>*</sup>Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
38	<p><b>CMM-3-2-01118</b> Converting Energy Pulsed Electron Beams in High-Resistivity Materials  <u>V. Shtanko</u>, <u>S.A. Stepanov</u>  <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
39	<p><b>CMM-3-2-01002</b> Formation of Periodical Structure on Surface of Magnesium and Aluminium under High-Power Ion Beam Irradiation  <u>V.S. Kovivchak</u>, <u>T.V. Panova</u><sup>*</sup>, <u>K.A. Michailov</u><sup>*</sup>, <u>E.S. Gavrilov</u><sup>*</sup>  <i>Omsk Branch of the Institute of Semiconductor Physics SB RAS, Omsk, Russia</i>  <sup>*</sup>Omsk State University, Omsk, Russia</p>
40	<p><b>CMM-3-2-00986</b> Features of High-Power Ion Beam Treatment of Systems Thin Film – Metal Substrate  <u>T.V. Panova</u>, <u>V.S. Kovivchak</u><sup>*</sup>, <u>V.I. Blinov</u>, <u>K.O. Sharifulin</u>  <i>Omsk State University, Omsk, Russia</i>  <sup>*</sup>Omsk Branch of the Institute of Semiconductor Physics SB RAS, Omsk, Russia</p>
41	<p><b>CMM-3-2-00962</b> Increase of Plasticity of Maraging Steels by Means of Ion Beam Nanostructuring of Surface Layer  <u>O.V. Sergeev</u>, <u>M.V. Fedorisheva</u>, <u>V.P. Sergeev</u>, <u>N.A. Popova</u><sup>*</sup>,  <u>E.V. Kozlov</u><sup>*</sup>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>*</sup>Tomsk State University of Architecture and Building, Tomsk,</p>

	<i>Russia</i>
42	<p><b>CMM-3-2-90008 Effect of Ion Beam Treatment on Wetting of Graphite by Liquid Copper</b>  <u>A.E. Ligachev, N.V. Gavrilov*</u>, <u>E.V. Gostev**</u>, <u>D.R. Emlin*</u>, <u>I.N. Pashkov***</u>, <u>I.V. Rodin***</u>  <i>A.M. Prokhorov General Physics Institute RAS, Moscow, Russia</i>  <i>*Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>  <i>**Belgorod State University, Belgorod, Russia</i>  <i>***Moscow Steel and Alloys Institute, Moscow, Russia</i></p>
43	<p><b>CMM-3-2-90035 Surface Modification of Graphite by Ion Flows and Pulsed Laser Irradiation of Femtosecond Duration</b>  <u>A.E. Ligachev, V. Golosov*</u>, <u>O.A. Golosova*</u>, <u>N.V. Gavrilov**</u>, <u>D.R. Emlin**</u>, <u>S.I. Kudryashov***</u>, <u>A.E. Ligachev****</u>, <u>L.V. Seleznev***</u>, <u>D.V. Sinitsyn***</u>  <i>A.M. Prokhorov General Physics Institute RAS, Moscow, Russia</i>  <i>*Belgorod State University, Belgorod, Russia</i>  <i>**Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>  <i>***P.N. Lebedev Physical Institute RAS, Moscow, Russia</i>  <i>****Moscow Aviation Institute of Technology, Moscow, Russia</i></p>
44	<p><b>CMM-3-2-00958 Radical Products in the Irradiated Crystals Pentaerythritol Tetranitrate</b>  <u>N. Nelyubina, B.P. Aduiev, V.Kh. Pak*</u>  <i>Kemerovo Branch of Institute of Solid State Chemistry and Mechanochemistry of the SB RAS, Kemerovo, Russia</i>  <i>*Kemerovo State University, Kemerovo, Russia</i></p>
45	<p><b>CMM-3-2-00850 Biocompatible Polymer Hydrogels Ion Exchange</b>  <u>V.H. Pak, V.D. Zhevnyak, T.V. Dikunova, G.N. Shraibman, V.M. Le</u>  <i>Kemerovo State University, Kemerovo, Russia</i></p>
46	<p><b>CMM-3-2-90036 Mechanism of Formation of Silicon Films on Ti49.5Ni50.5 Alloy Surface</b>  <u>A. Lotkov, S.N. Meisner, L.L. Meisner, Y.P. Mironov, N.S. Sochugov*</u>, <u>A.A. Soloviev*</u>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

**September 21, Tuesday**

9:00 – 12:40, 15:00 – 18:20

**Oral Session 2 (continuation). Fundamentals of modification processes**

<p>9:00 - 9:40 Invited</p>	<p><b>CMM-2-1-01110</b> The Concepts of Design and Approaches of Synthesis of Perspective Superhard Coatings  <u>A. Korotaev, D.P. Borisov*</u>, <u>V.Yu. Moshkov, S.V. Ovchinnikov**</u>,  <u>A.N. Tyumentsev</u>  <i>Tomsk State University, Tomsk, Russia</i>  <i>*Research Institute of High Voltages of National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>**Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
<p>9:40 - 10:00</p>	<p><b>CMM-2-1-00526</b> High-Frequency Short-Pulse Bias Potential as a Universal Method of Ion-Beam and Plasma Treatment of Conductive and Dielectric Materials Using Vacuum-Arc and Ablation Plasma  <u>A.I. Ryabchikov, I.B. Stepanov, D.O. Sivin, I.A. Shulepov</u>  <i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
<p>10:00 - 10:20</p>	<p><b>CMM-2-0-01066</b> Formation of Nanostructured Surface Layers in Metal Articles by High-Temperature Pulsed Gas Plasma Flows Treatment  <u>V.L. Yakushin, B.A. Kalin, P.S. Dzhumaev, V.I. Polsky, O.V. Emelyanova, K.K. Dmitrieva</u>  <i>National Research Nuclear University "MEPhI", Moscow, Russia</i></p>
<p>10:20 - 10:40</p>	<p><b>CMM-2-1-00570</b> CO<sub>2</sub> Laser Ablation of Poly (Methyl Methacrylate) and Polyimide: Experiment and Theory  <u>M.A. Shulepov, N.M. Bulgakova*</u>, <u>L.A. Zakharov**</u>,  <u>A.N. Panchenko, A.E.Tel'minov</u>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*S.S. Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia</i>  <i>**Novosibirsk State University, Novosibirsk, Russia</i></p>
<p><b>10:40 – 11:00 Coffee Break</b></p>	
<p>11:00 - 11:20</p>	<p><b>CMM-2-1-01170</b> Solidification Structures Obtained by the Action of Compression Plasma Flows on "Metal-On-Silicon" Systems  <u>Yu. Petukhov, V.V. Uglov*</u>, <u>N.T. Kvasov, V.M. Astashynski**</u>,  <u>A.M. Kuzmitski**</u>  <i>Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus</i></p>

	<p><i>*Belarusian State University, Minsk, Belarus</i>  <i>**B.I. Stepanov Institute of Physics NASB, Minsk, Belarus</i></p>
11:20 - 11:40	<p><b>CMM-2-1-01498</b> Change in Spatial and Electronic Structure of Silver Azide under Deformation  <u>V.M. Lisitsyn, Yu.N. Zhuravlev*</u>  <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>*Kemerovo State University, Kemerovo, Russia</i></p>
11:40 - 12:00	<p><b>CMM-2-1-01343</b> Electron-Ion-Plasma Surface Treatment of Metal-Ceramic Alloy: Structure and Properties  <u>Yu.F. Ivanov, V.E. Ovcharenko*, N.N. Koval, N.V. Bukrina*, Yu Bao Hai**, A.A. Mokhovikov***</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>  <i>**Institute of Metals Research Chinese Academy of Sciences, Shenyang, China</i>  <i>***Yurga Institute of Technology, Yurga, Russia</i></p>
12:00 - 12:20	<p><b>CMM-2-2-01506</b> Spectral Characteristics of Nanoscale Carbon Clusters Formed in Silicon after High Intense Pulse Ion Beams Influence  <u>V.I. Shymanskij, V.V. Uglov, G.E. Remnev*, M.P. Samtsov, T.A. Grinyaeva*, A.V. Stepanov*</u>  <i>Belarusian State University, Minsk, Belarus</i>  <i>*Research Institute of High Voltages of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
12:20 - 12:40	<p><b>CMM-5-1-00714</b> Mechanisms of Ultrafine Particles Generation in Products of Condensed Medium Evaporation under High-Powered Heating  <u>A. Sutvagin, E.L. Fenko, N.B. Volkov, A.P. Yalovets*</u>  <i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>  <i>*South-Ural State University, Chelyabinsk, Russia</i></p>
<b>12:40 – 14:00 Lunch</b>	
<b>14:00 – 15:00 Poster Session</b>	

### Oral Session 3. Modification of material properties

15:00 - 15:40 Invited	<p><b>CMM-3-1-90028</b> Dinamical Phenomena under the Action of Intence Energy Flows on Matter and their Role in Modification of Properties of Irradiated Materials  <u>A.P. Yalovets, N.B. Volkov*, V.S. Krasnikov**, A.Ya. Leivi, A.E. Mayer**, V.V. Pogorelko**, K.A. Talala</u>  <i>South-Ural State University, Chelyabinsk, Russia</i>  <i>*Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>  <i>**Chelyabinsk State University, Chelyabinsk, Russia</i></p>
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15:40 - 16:00	<p><b>CMM-3-1-01390</b> Influence of Plasma-Forming Gas Composition on Nitriding in Non-Self-Sustained Glow Discharge with Large Hollow Cathode</p> <p><u><b>Yu.H. Akhmadeev, I.V. Lopatin, N.N. Koval, P.M. Schanin, Yu.R. Kolobov*, D.S. Vershinin*, M.Yu. Smolyakova*</b></u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*Belgorod State University, Belgorod, Russia</i></p>
16:00 - 16:20	<p><b>CMM-3-1-00226</b> Modification of Optical Properties and Surface Structure of Thin Ni, Mo and Pd Films in Lithium Niobate by Ion Implantation</p> <p><u><b>V. Lysiuk, V. Staschuk*, M. Kluy</b></u></p> <p><i>Institute of Semiconductor Physics, National Academy of Sciences, Kyiv, Ukraine</i>  <i>*Taras Shevchenko National University, Kyiv, Ukraine</i></p>
<b>16:20 – 16:40 Coffee Break</b>	
16:40 - 17:00	<p><b>CMM-3-1-00518</b> Mathematical Modelling and Features of Electron Beam Boriding of Low Carbon Steels in Vacuum</p> <p><u><b>N.N. Smirnyagina, D.E. Dasheev, A.P. Semenov</b></u></p> <p><i>Department of Physical Problems of Buryat Scientific Center SB RAS, Ulan-Ude, Russia</i></p>
17:00 - 17:20	<p><b>CMM-3-1-00630</b> Investigation of Graphite Composites Structure and Properties for the Neutron Target Converter</p> <p><u><b>E. Zhmurikov, P.V. Logachev, S.V. Tsybulya*, A.T. Titov*</b></u></p> <p><i>G.I. Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia</i>  <i>*IG SB RAS, Novosibirsk, Russia</i></p>
17:20 - 17:40	<p><b>CMM-3-1-00858</b> Hardening of Metals Using Electron Beam</p> <p><u><b>A.G. Knyazeva, V.N. Demidov*</b></u></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <i>*National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
17:40 - 18:00	<p><b>CMM-3-1-00183</b> Formation of Microstructure on Liquid Metal Surface under Nanosecond Laser Ablation</p> <p><u><b>A. Panchenko, N.M. Bulgakova*, M.A. Shulepov, A.E. Tel'minov</b></u></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*S.S. Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia</i></p>

September 21, Tuesday

14:00 – 18:00

Poster Session 2. Modification of material properties

(Part 2)

1	<p><b>CMM-3-2-00826</b> Results of Tests of Vacuum Circuit Breaker Contacts Copper-Chromium, Produced by Electron-Beam Welding</p> <p><u>B. Ubiennykh</u>, V. Vasilenko</p> <p>"Elektrokomplex" OJSC, Minusinsk, Russia</p>
2	<p><b>CMM-3-2-00814</b> Repair of Gas Turbine Engine Blades with Intense Pulsed Ion Beams</p> <p><u>O.A. Bytzenko</u>, V.A. Shulov*, A.G. Paykin, K.V. Vertiy, D.A. Teryaev*, G.E. Remnev**</p> <p>Chernyshev Machine Building Enterprise, Moscow, Russia</p> <p>*Moscow Aviation Institute, Moscow, Russia</p> <p>*Research Institute of High Voltages of National Research Tomsk Polytechnic University, Tomsk, Russia</p>
3	<p><b>CMM-3-2-00804</b> The Results of Tests in Content of RD33 Gas Turbine Engine of EP866SH Steel Compressor Blades Irradiated with Intense Pulsed Electron Beams</p> <p><u>O.A. Bytzenko</u>, V.A. Shulov*, D.A. Teryaev, A.D. Teryaev*, V.I. Engelko**, K.I.Tkachenko**</p> <p>Moscow Aviation Institute, Moscow, Russia</p> <p>*Chernyshev Machine Building Enterprise, Moscow, Russia</p> <p>**Efremov Institute of Electro-physical Apparatus, St. Petersburg, Russia</p>
4	<p><b>CMM-3-2-00803</b> Technological Process Development of Repair and Property Recovery of Gas Turbine Engine Compressor Blades from EP866SH Steel with the Use of Intense Pulsed Electron Beams</p> <p><u>O.A. Bytzenko</u>, V.A. Shulov*, D.A. Teryaev, A.D. Teryaev*, V.I. Engelko**, K.I.Tkachenko**</p> <p>Chernyshev Machine Building Enterprise, Moscow, Russia</p> <p>*Moscow Aviation Institute, Moscow, Russia</p> <p>**Efremov Institute of Electro-physical Apparatus, St. Petersburg, Russia</p>
5	<p><b>CMM-3-2-00768</b> Modification of Nanostructured Ceramic Powders by Plasma of Non-Self-Sustained Low-Pressure Arc Discharge</p> <p><u>O.V. Krysin</u>a, Yu.H. Akhmadeev, M.V. Grigoriev*, A.V. Kanaki*, Yu.F. Ivanov, S.N. Kulkov*</p> <p>Institute of High Current Electronics SB RAS, Tomsk, Russia</p>



	<i>*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>
6	<b>CMM-3-2-00746</b> Effect of Surface Treatment of AlGaN/GaN Heterostructure in Cl <sub>2</sub> , Cl <sub>2</sub> /Ar, Cl <sub>2</sub> /BCl <sub>3</sub> ICP Plasmas on Contact Resistance <u>K. Osipov, L.E. Velikovskiy</u> <i>Research &amp; Production Company "Micran", Tomsk, Russia</i>
7	<b>CMM-3-1-00046</b> Investigation of Structure and Properties of Titanium VT1-0 after Low-Temperature Nitriding <u>M.Yu. Smolyakova, Yu.R. Kolobov, D.S. Vershinin</u> <i>Centre of Nanostructural Materials and Nanotechnologies of Belgorod State University, Belgorod, Russia</i>
8	<b>CMM-3-2-00718</b> On the Induced Ageing of Hydrophilic and Hydrophobic Properties of Polymer Films Treated by Non-Thermal Plasma <u>A.V. Petryakov, Yu.S. Akishev, A.A. Balakirev, M.E. Grushin, N.I. Trushkin</u> <i>SRC RF Troitsk Institute for Innovation and Fusion Research, Troitsk, Russia</i>
9	<b>CMM-3-2-00506</b> Surface Modification of Biological Implants by Diamond-Like (DLC) and Nanocomposite (CN <sub>0.25</sub> ) Carbon Films <u>I.Sh. Trakhtenberg, A.P. Rubshtein, E.B. Makarova*</u> <i>Institute of Metals Physics UD RAS, Ekaterinburg, Russia</i> <i>*Ural Scientific &amp; Research Institute of Traumatology and Orthopedics, Ekaterinburg, Russia</i>
10	<b>CMM-3-2-00487</b> Peculiarities of Pulsed Plasma Streams Influence on Materials Surfaces <u>A. Zhukeshov, A.T. Gabdullina, S.P. Pak</u> <i>SRIETP of KazNU, Almaty, Republic of Kazakhstan</i>
11	<b>CMM-3-2-00430</b> Improvement of Polyimide's Resistance to Atomic Oxygen by Silicasole Modification <u>K. Vernigorov, A.U. Alentiev, A.M. Muzafarov*, L.S. Novikov**, V.N. Chernik**, G.G. Bondarenko***</u> <i>M.V. Lomonosov Moscow State University, Moscow, Russia</i> <i>*Institute of Synthetic Polymeric Materials, Moscow, Russia,</i> <i>**Scobeltsyn Institute of Nuclear Physics of MSU, Moscow, Russia,</i> <i>***Research Institute of Advanced Materials and Technologies of MSIEM, Moscow, Russia</i>
12	<b>CMM-3-2-00386</b> Corrosion Investigations of Low-Carbon Structural Steel Surface Treated by Low-pressure Arc Discharge <u>V. Demidenko, G.V. Lyamina*, I.A. Kurzina**, G.E. Remnev</u> <i>Research Institute of High Voltages of National Research Tomsk Polytechnic University, Tomsk, Russia</i> <i>*National Research Tomsk Polytechnic University, Tomsk, Russia</i>

	<i>**Tomsk State University of Architecture and Building, Tomsk, Russia</i>
13	<b>CMM-3-2-00294</b> Photolysis at Deep Fractional Conversion Silver Azide <u>S. Sirik, L.N. Bugerko, T.U. Kojuhova</u> <i>Kemerovo State University, Kemerovo, Russia</i>
14	<b>CMM-3-2-00286</b> Interacting Nanosize of Films WO <sub>3</sub> with Ammonia <u>E.P. Surovoj, S.P. Govorina, T.M. Zaikonnikova</u> <i>Kemerovo State University, Kemerovo, Russia</i>
15	<b>CMM-3-2-00186</b> Electron Beam Anodization of Silicon and Aluminum Based on Fore-Pump Plasma Source <u>Yu.A. Burachevskiy, V.A. Burdovitsin, E.M. Oks, E.E. Pozdeev</u> <i>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i>
16	<b>CMM-3-2-00086</b> The Surface Erosion under Influence of the Fine-Focused Scanning Electron Beams <u>G.A. Bleykher, V.P. Krivobokov</u> <i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i>
17	<b>CMM-3-2-00082</b> Modification of the Textile Materials by Vacuum Arc Ion Source Implantation <u>A.G. Nikolaev, K.P. Savkin, G.Yu. Yushkov, E.M. Oks, A. Oztarhan*, A.Akpet*, E.H. Kocabas*, E.S. Urkac*, I.Cireli**</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Ege University, Bornova-Izmir, Turkey</i> <i>**Celalbayar University, Kula Leather Training School, Manisa, Turkey</i>
18	<b>CMM-3-2-00047</b> Influence of Low-Temperature Nitriding Parameters on Phase-Structure Composition of Modified Layers of Titanium Alloys <u>M. Smolyakova, D.S. Vershinin</u> <i>Centre of Nanostructural Materials and Nanotechnologies of Belgorod State University, Belgorod, Russia</i>
19	<b>CMM-3-2-00030</b> Photoelectrical Properties of Aluminum Oxide after Implantation with Cobalt Ions <u>F. Konusov, A.V. Kabyshev</u> <i>Research Institute of High Voltages of National Research Tomsk Polytechnic University, Tomsk, Russia</i>
20	<b>CMM-3-2-00022</b> Research of the Temperature Characteristics of Magnetostatic Spin Waves in the Inclined Magnetized Cubic Anisotropic Ferrites <u>G. Bondarenko, V. Shagaev</u> <i>Research Institute of Advanced Materials and Technology of</i>

	<i>MSIEM (TU), Moscow, Russia</i>
21	<p><b>CMM-3-0-01394</b> Microstructure and Properties of Ti-Al Surface Alloys, Formed by Pulsed Electron-Beam Melting of Film-Substrate Systems</p> <p><u>V.P. Rotshtein</u>, Yu.F. Ivanov, Yu.A. Kolubaeva, N.N. Koval, X. Mei*, A.B. Markov, E.P. Naiden**, K.V. Oskomov, E.L. Pryadko, A.D. Teresov, V.A. Shulov***</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*Dalian University of Technology, Dalian, China</i>  <i>**Tomsk State University, Tomsk, Russia</i>  <i>***Moscow State Aviation Institute, Moscow, Russia</i></p>
22	<p><b>CMM-3-0-01590</b> Modification of the Uranium Complexes under Electron Beam in LiF Crystals</p> <p><u>L. Lisitsyna</u>, S. Putintseva*</p> <p><i>Tomsk State University of Architecture and Building, Tomsk, Russia</i>  <i>*National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
23	<p><b>CMM-3-0-01467</b> Ion Irradiation Effect on Mechanical Properties and Microstructure of Deformed Alloy D16 (Al-Cu-Mg)</p> <p><u>A.A. Klepikova</u>, V.V. Ovchinnikov, N.V. Gushchina, S.M. Mozharovsky*, A.V. Filippov*</p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>  <i>*Kamensk-Uralsky Metallurgical Plant, Kamensk-Uralsky, Russia</i></p>
24	<p><b>CMM-3-0-01298</b> Modification Technology of Tools Using Low-temperature Plasma</p> <p><u>L.A. Dahno</u>, E.A. Yakovlev, O.A. Sharaya</p> <p><i>DGP KazNIIBGP, Karaganda, Republic of Kazakhstan</i></p>
25	<p><b>CMM-3-0-01006</b> Improvement of Fatigue Strength and Bending Strength of NiTi Shape Memory Alloy Wires with Ion Bombardment and Heat Treatment</p> <p><u>P. Raharjo</u>, A. Soldatov*, K. Uemura, H. Murayama**, R. Souba**</p> <p><i>ITAC Ltd., Niigata, Japan</i>  <i>*National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>**Terumo Corporation, Fujinomiya, Japan</i></p>
26	<p><b>CMM-3-0-00810</b> Oxidation Resistance of Refractory Alloys Modified by Ion Beams</p> <p><u>O.A. Bytzenko</u>, V.A. Shulov*, A.S. Novikov, A.G. Paykin, G.E. Remnev**</p> <p><i>Chernyshev Machine Building Enterprise, Moscow, Russia</i>  <i>*Moscow Aviation Institute, Moscow, Russia</i>  <i>**Research Institute of High Voltages of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
27	<p><b>CMM-3-0-00806</b> Excitation of Long Afterglow of Nanostructured Be<sub>2</sub>(Si<sub>0.8</sub>Ge<sub>0.2</sub>)O<sub>4</sub> Ceramic on Exposure to High-Current Electron Beam</p> <p><u>I.I. Milman</u>, A.I. Surdo*, A.F. Zatsepin</p>

	<p>Ural State Technical University, Ekaterinburg, Russia  <i>*Institute of Industrial Ecology UD RAS, Ekaterinburg, Russia</i></p>
28	<p><b>CMM-3-0-00754</b> Structure and Wear Resistance of the Coatings on the Basis of M2 Steel Obtained by Electron-Beam Deposition  <u>A.A. Ignatov, S.F. Gnyusov, V.G. Durakov*</u>  <i>National Research Tomsk Polytechnic University, Tomsk, Russia  *Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
29	<p><b>CMM-3-0-00310</b> The Influence of the Implant Dose of Double and Triple Charged Silicon Ions on Schottky Limiting Diode Characteristics  <u>V.A. Kagadei, V.S. Arykov*, O.A. Dedkova**, A.M. Gavrilova*</u>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia  *Research &amp; Production Company "Micran", Tomsk, Russia  **Scientific research institute of the semiconductor devices, Tomsk, Russia</i></p>
30	<p><b>CMM-3-1-00179</b> Capabilities of Steel Processing by Impulse Plasma, Formed in Air  <u>V.P. Poltavtseva, A.T. Gabdullina*</u>  <i>Institute of Nuclear Physics of NNC, Almaty, Kazakhstan  *Al-Faraby Kazakh National University, Almaty, Kazakhstan</i></p>
31	<p><b>CMM-3-1-00250</b> Influence of Thermal Activation on Optical Properties Tungsten (VI) Oxide  <u>E. Surovoi, S.V. Bin, N.V. Borisova, G.O. Ereemeeva</u>  <i>Kemerovo State University, Kemerovo, Russia</i></p>
32	<p><b>CMM-3-1-00438</b> Change of Properties of Molybdenum' Oxide (VI) in Ammonia Atmosphere  <u>L.N. Bugerko, E.P. Surovoi, V.E. Surovaja*</u>  <i>Kemerovo State University, Kemerovo, Russia  *Kuzbass State Technical University, Kemerovo, Russia</i></p>
33	<p><b>CMM-3-1-01630</b> Laws of Change of Topographical Parameters and Adhesive Properties of an TiNi Alloy with Mo Coatings, Modified by an Electronic Beam  <u>G. Arysheva, L.L. Meisner, A.I. Lotkov, N.D. Artyomova*</u>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia  *Tomsk State University, Tomsk, Russia</i></p>
34	<p><b>CMM-3-1-01042</b> Surface Modification of Titanium Alloys in a Non-Uniform Glow Discharge with Hollow Cathode  <u>D.Z. Ishmuhametov, K.N. Ramazanov</u>  <i>Ufa State Aviation Technical University, Ufa, Russia</i></p>

35	<p><b>CMM-3-1-01038 Surface Modification of Tool Steel during Ion Nitriding in Magnetic Field</b>  <u>R.K. Vafin, K.N. Ramazanov</u>  <i>Ufa State Aviation Technical University, Ufa, Russia</i></p>
36	<p><b>CMM-3-1-01034 Application of Non-Linear Optical Method for Crystal Structure Characterization of Modified Gase</b>  <u>Yu.M. Andreev, A.N. Morozov, V.V. Zuev</u>  <i>Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia</i></p>
37	<p><b>CMM-3-1-00043 Low-Temperature Nitriding of Titanium Alloys VT1-0 and VT16</b>  <u>D.S. Vershinin, Yu.H. Akhmadeev*, I.V. Lopatin*, A.S. Mamaev**, M.Yu. Smolyakova</u>  <i>Centre of Nanostructural Materials and Nanotechnologies of Belgorod State University, Belgorod, Russia</i>  <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>**Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
38	<p><b>CMM-3-1-01114 Influence of Thermal Treatment on Structure and Properties of Chrome-Vanadium White Iron Coatings Obtained by Electron-Beam Surfacing</b>  <u>B.V. Dampilon, V.G. Durakov, V.E. Panin</u>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
39	<p><b>CMM-3-1-01082 Near-Surface Layer Recrystallization of Ceramic Products by Means of Low-Energy Electron and Laser Exposure</b>  <u>E. Savruk</u>  <i>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i></p>
40	<p><b>CMM-3-1-00978 Wear Resistance Properties Modification of Novel Si<sub>3</sub>N<sub>4</sub> Base Composite Ceramics by Means of Combined Ion Implantation</b>  <u>K. Shalnov, A. Soldatov, V. Koukhta, K. Uemura, K. Komeya*</u>  <i>ITAC Ltd, Niigata, Japan</i>  <i>*Yokohama National University, Yokohama, Japan</i></p>
41	<p><b>CMM-3-2-90033 Change of the Properties of Alkali-Halide Crystals Irradiated with X, Gamma-Rays or Cold Air Plasma</b>  <u>T. Gubareva</u>  <i>Bratsk State University, Bratsk, Russia</i></p>
42	<p><b>CMM-3-2-90034 Change of the Properties of Alkali-Halide Crystals Irradiated with X-Rays and Visible Light</b>  <u>T. Gubareva</u>  <i>Bratsk State University, Bratsk, Russia</i></p>

September 22, Wednesday

9:00 – 12:40, 15:00 – 18:20

**Oral Session 3 (continuation). Modification of material properties**

9:00 – 9:40 Invited	<p><b>CMM-3-1-00802</b> Technological Process Development of Property Recovery of Gas Turbine Engine Blades from GHS26NK Alloy with NiCrAlY Resistant Coating with Intense Pulsed Electron Beams</p> <p><u><b>O.A. Bytzenko, A.S. Novikov, A.G. Paikin, V.A. Shulov*, D.A. Teryaev*, A.D. Teryaev, V.I. Engelko**, K.I. Tkachenko**</b></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></p>
9:40 - 10:00	<p><b>CMM-3-1-00990</b> Features of Ceramic Material Welding by Ribbopn Electron Beam under Fore-Vacuum Pressure</p> <p><u><b>V.A. Burdovitsin, E.M. Oks, A.S. Klimov, A.K. Goreev</b></u></p> <p><i>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i></p>
10:00 - 10:20	<p><b>CMM-3-1-00178</b> Shape Memory Effect of Ni-Ti Alloy Implanted Heavy Ions</p> <p><u><b>V.P. Poltavtseva</b></u></p> <p><i>Institute of Nuclear Physics of NNC, Almaty, Republic of Kazakhstan</i></p>
10:20 - 10:40	<p><b>CMM-3-1-00642</b> Homogeneous Plasma Production at 0.01 – 1 Pa Nitrogen Pressure for Immersion Ion Implantation and/or Nitriding</p> <p><u><b>Yu.A. Melnik, I.V. Valueva, S.N. Grigoriev, A.S. Metel, V.V. Prudnikov</b></u></p> <p><i>Moscow State Technological University "Stankin", Moscow, Russia</i></p>
<b>10:40 – 11:00 Coffee Break</b>	
11:00 - 11:20	<p><b>CMM-3-1-00794</b> Physical Properties of Al Implanted and Doped Thin Films of GaSe</p> <p><u><b>Yu.M. Andreev, G.V. Lanskii, V. Svetlichniy*, T.I. Izaak*, E.A. Vaitulevich*, V.V. Zuev</b></u></p> <p><i>Institute of Monitoring of Climatic and Ecological Systems SB RAS, Tomsk, Russia</i>  <i>*Tomsk State University, Tomsk, Russia</i></p>
11:20 - 11:40	<p><b>CMM-3-1-00018</b> Electroexplosive Copper Coating and Electron Beam Treatment of Steel</p> <p><u><b>S. Filimonov, Yu.F. Ivanov, A.D. Teresov, Yu.A. Kolubaeva,</b></u></p>

	<p><b>V.E. Gromov*</b>, <b>E.A. Budovskih*</b>, <b>A.V. Vostretsova*</b>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*Siberian State Industrial University, Novokuznetsk, Russia</i></p>
11:40 - 12:00	<p><b>CMM-3-1-01522 Metastable Microstructure and Modified Properties Inducted by High Current Pulsed Electron Surface Treatment</b>  <b><u>Hao Shengzhi</u></b>, <b>Dongyun He*</b>, <b>Mincai Li**</b>, <b>Yang Xu**</b>, <b>Huihui Wang*</b>, <b>Chuang Dong**</b>  <i>Key laboratory of materials modification by laser, ion and electron beams, Dalian University of Technology, Dalian, China</i>  <i>*School of Physics and Optoelectronics, Dalian University of Technology, Dalian, China</i>  <i>**School of Material Science and Engineering, Dalian University of Technology, Dalian, China</i></p>
12:00 - 12:20	<p><b>CMM-3-1-00150 Radiation Swelling and Segregation of Elements in Multi-Component Alloys</b>  <b><u>V.L. Orlov</u></b>, <b>A.V. Orlov*</b>, <b>M.A. Gumirov</b>, <b>V.P. Krivobokov**</b>  <i>I.I. Polzunov Altay State Technical University, Barnaul, Russia</i>  <i>**Yugra State University, Khanty-Mansiysk, Russia</i>  <i>**Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
12:20 - 12:40	<p><b>CMM-3-2-00719 Non-Thermal Plasma Inactivation of Microorganisms in Model (Monoculture) and Natural (Multiple-Species) Biofilms</b>  <b><u>A.V. Petryakov</u></b>, <b>Yu.S. Akishev</b>, <b>V.A. Chugunov*</b>, <b>M.E. Grushin</b>, <b>I.A. Irkhina*</b>, <b>V.P. Kholodenko*</b>, <b>G.V. Kireev*</b>, <b>E.N. Kobzev*</b>, <b>N.I. Trushkin</b>, <b>N.A. Zhirkova*</b>  <i>SRC RF Troitsk Institute for Innovation and Fusion Research, Troitsk, Russia</i>  <i>*SRC RF for Applied Microbiology and Biotechnology, Obolensk, Russia</i></p>
<b>12:40 – 14:00 Lunch</b>	
<b>14:00 – 15:00 Poster Session</b>	
15:00 - 15:20	<p><b>CMM-3-1-01402 Formation of the Explosive Decomposition Hot Spot in Heavy Metal Azides under Influence of Laser and Electronic Impulses</b>  <b><u>V.M. Lisitsyn</u></b>, <b>E.P. Ageeva</b>, <b>A.N. Yakovlev</b>  <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
15:20 - 15:40	<p><b>CMM-3-1-01366 Swift-Heavy-Ion-Induced Synthesis of Si Nanostructures in SiO<sub>x</sub> with Variable X</b>  <b><u>G.A. Kachurin</u></b>, <b>S.G. Cherkova</b>, <b>D.V. Marin</b>, <b>V.G. Kesler</b>, <b>V.A. Skuratov*</b>, <b>A.G. Cherkov</b>  <i>Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i>,  <i>*Joint Institute for Nuclear Research, Dubna, Russia</i></p>

15:40 - 16:00	<p><b>CMM-3-1-01010</b> The Application of Combined Ion-Plasma (PINK) Systeem For Blades Sharpening</p> <p><u>V. Kukhta</u>, K. Uemura, K.V. Shalnov, I.V. Lopatin*, T. Tamaoki**</p> <p>ITAC Ltd., Niigata, Japan</p> <p>*Institute of High Current Electronics SB RAS, Tomsk, Russia</p> <p>**Kai Industries Co.,Ltd., Seki-city, Japan</p>
16:00 - 16:20	<p><b>SHCE-1-0-01007</b> Low Energy High Current Electron Beam Irradiation on Titanium Alloys for Inhibition of Blood Cell Adhesion</p> <p><u>P. Raharjo</u>, K. Shalnov*, K. Uemura, T. Mori**, A. Okawa**</p> <p>ITAC Ltd., Niigata, Japan</p> <p>*National Research Tomsk Polytechnic University, Tomsk, Russia</p> <p>**Terumo Corporation, Fujinomiya, Japan</p>
<b>16:20 – 16:40 Coffee Break</b>	
16:40 - 17:00	<p><b>CMM-3-1-00246</b> Influence of the Pulsed Electron Beam Treatments on the Structural-Phase Conditions Synthesized in the TiNi with Molybdenum Coatings</p> <p><u>M.G. Dementyeva</u>, L.L. Meisner, A.I. Lotkov, N.N. Koval*, V.P. Sergeev, A.R. Sungatulin, E.Ju. Gudimova**</p> <p>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</p> <p>*Institute of High Current Electronics SB RAS, Tomsk, Russia</p> <p>**Tomsk State University, Tomsk, Russia</p>
17:00 - 17:20	<p><b>CMM-3-1-01426</b> Modification of Liquid Hydrocarbons Irradiated by a Nanosecond E-Beam</p> <p><u>V.M. Orlovskii</u></p> <p>Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
17:20 - 17:40	<p><b>CMM-3-1-01450</b> Changes in Structure and Phase Composition of Low-Activated RUSFER-EK-181 Steel under the Influence of Electron and Ion Beams</p> <p><u>E.A. Melnikova</u>, A.R. Shugurov, A.V. Panin, O.B. Perevalova, V.P. Sergeev, N.N. Koval*, Yu.F. Ivanov*, A.D. Teresov*, P.V. Moskvina*, M.V. Leontyeva-Smirnova**</p> <p>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</p> <p>*Institute of High Current Electronics SB RAS, Tomsk, Russia</p> <p>**Institute of Inorganic Materials, Moscow, Russia</p>
17:40 - 18:00	<p><b>CMM-3-1-01130</b> Electron Beam and Ion-Plasma Treatment of Pain-Less Syringe Needle</p> <p><u>A.G. Remnev</u>, K. Uemura, K.V. Shalnov, V.R. Kukhta, R. Purwadi, T. Ochi*</p> <p>ITAC Ltd, Niigata, Japan</p> <p>*Terumo Corporation, Syowa-cho, Japan</p>



September 22, Wednesday

14:00 – 18:00

## Poster Session 3. Coating deposition

1	<p><b>CMM-4-1-00762</b> Strengthening Coverings of TiN Formed by the Combined Method of Magnetron Sputtering and Arc Evaporation</p> <p><b><u>D. Tsyrenov, A.P. Semenov, N.N. Smirnyagina</u></b></p> <p><i>Department of Physical Problems of Buryat Scientific Center SB RAS, Ulan-Ude, Russia</i></p>
2	<p><b>CMM-4-0-00634</b> Physical and Chemical Processes at Nanolocalisation of High-Energy Flows on Solid-Liquid Interface. Theory, Research Results and Application</p> <p><b><u>A. Mamaev, V.A. Mamaeva</u></b></p> <p><i>Tomsk State University, Sibspark Ltd, Tomsk, Russia</i></p>
3	<p><b>CMM-4-1-00306</b> Cyclic Voltammetric Dependences during Formation of Heat-Resistant Oxide Ceramic Coatings Obtained by Pulse Microplasma Processes on Zirconium</p> <p><b><u>T. Dorofeeva, V.A. Mamaeva, A.I. Mamaev*</u></b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i> *Tomsk State University, Tomsk, Russia</p>
4	<p><b>CMM-4-1-00478</b> Vacuum Arcs Deposition of Zinc Coatings</p> <p><b><u>V.P. Yanovskii, O.S. Kuzmin, T.I. Dorofeeva, M.P. Kalashnikov</u></b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
5	<p><b>CMM-4-1-00530</b> Feature of Formation, Phase Structure and a Structure TiB<sub>2</sub> Layers on Carbonaceous Steels S20 and U8A at Processing by Electron Beams in Vacuum</p> <p><b><u>Z.M. Khaltarov, A.S. Milonov, A.D. Teresov*, N.N. Koval*, N.N. Smirnjagina, A.P. Semenov</u></b></p> <p><i>Buryat Scientific Center SB RAS, Ulan-Ude, Russia</i> *Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
6	<p><b>CMM-4-1-00534</b> Thermodynamic Modelling and Studying of Process of a Self-Extending High-Temperature Synthesis of Carbides and Borides Chrome, Tungsten and Molybdenum in Vacuum</p> <p><b><u>V.M. Khaltanova, A.N. Chagdurov, T.B. Kim, T.B. Tsyrenov, B.B. Dorzhiev, N.N. Smirnjagina</u></b></p> <p><i>Buryat Scientific Center SD RAS, Ulan-Ude, Russia</i></p>
7	<p><b>CMM-4-1-00546</b> Phase Formation Feature in System V-B-C-O and Borides Vanadium Layers Formation at Electron Beam Surfacing of Self High Temperature Synthesis Products in Vacuum</p>

	<p><b><u>A.S. Milonov, N.N. Smirnjagina</u></b>  <i>Buryat Scientific Center SD RAS, Ulan-Ude, Russia</i></p>
8	<p><b>CMM-4-1-00782 Structure and Properties of Fe-Cr-C-N-Mn Coating Obtained by the Electron-Beam Surfacing</b>  <b><u>N. Narkevich, E.A. Ivanona*</u></b>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <i>*National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
9	<p><b>CMM-4-1-00982 Modeling of Crystalline Structure of Coat Formation in Magnetron Sputtering</b>  <b><u>M. Mikolaychuk, A.G. Knyazeva</u></b>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
10	<p><b>CMM-4-1-01554 Development and Research of Multicomponent Cathode Materials for Ion-Plasma Technologies</b>  <b><u>A. Tabachenko, V.A. Kudrjavitsev, A.V. Malzeva, V.M. Savostikov*, S.M. Sergeev*</u></b>  <i>Siberian Physical-Technical Institute of Tomsk State University, Tomsk, Russia</i>  <i>*Organization «Tehnotron», Tomsk, Russia</i></p>
11	<p><b>CMM-4-1-00823 Versatile Device for in-Situ Multiple Coatings of Long, Small Diameter Tubes</b>  <b><u>A. Hershcovitch, M. Blaskiewicz, J.M. Brennan, A. Custer, M. Erickson**, W. Fischer*, N. Jamshidi, C-J. Liaw, W. Meng, H.J. Poole, N. Sochugov*</u></b>  <i>Brookhaven National Laboratory, Upton, USA</i>  <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
12	<p><b>CMM-4-1-01090 Simulation of the Coating Growing on the Surface of Flat Plate under the Magnetron Deposition</b>  <b><u>S. Sorokova, A.G. Knyazeva</u></b>  <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
13	<p><b>CMM-4-0-00655 Cu/Ge Ohmic Contacts to the Sulfur and UV Treated n-GaAs Surface</b>  <b><u>V.A. Kagadei, E.V. Erofeev*, S.M. Avdeev</u></b>  <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>Research &amp; Production Company "Micran", Tomsk, Russia</i></p>
14	<p><b>CMM-4-2-00026 Optical Properties and Urbach Rule of GaAs Films Deposited on Polycor by Pulsed Ions Ablation</b>  <b><u>A.V. Kabyshev, F.V. Konusov, S.N. Lozhnikov, G.E. Remnev, M.S. Saltymakov</u></b>  <i>Research Institute of High Voltages of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>

15	<p><b>CMM-4-2-00126</b> Identification of Factors Affecting the Contamination of the Target (Substrate) Using the Quartz Resonator</p> <p><b><u>B.A. Nechaev</u>, G.N. Dudkin, V.N. Padalko, S.E. Romanenko, V.M. Bystritsky*, S.S. Parzhitskii*</b></p> <p><i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>*Joint Institute for Nuclear Research, Dubna, Russia</i></p>
16	<p><b>CMM-4-2-00127</b> Investigation of the Conditions of Dynamic Equilibrium of Sorption and Desorption Processes on the Target Surface</p> <p><b><u>B.A. Nechaev</u>, G.N. Dudkin, V.N. Padalko, V.I. Veretel'nik*, V.M. Bystritsky**, S.S. Parzhitskii**, J. Wozniak***, Y.Zh. Tuleushev****</b></p> <p><i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>*National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>**Joint Institute for Nuclear Research, Dubna, Russia</i>  <i>***Faculty of Physics and Applied Computer Sciences, AGH, University of Science and Technology, Cracow, Poland</i>  <i>****Institute of Nuclear Physics NNC, Almaty, Kazakhstan</i></p>
17	<p><b>CMM-4-2-00166</b> Investigations of Electrical Resistivity of Cu-Films, Produced by Vacuum-Arc Evaporation on Dielectric Substrates</p> <p><b><u>G. Samoylenko</u>, Yu.G. Yushkov, P.Yu. Chumerin, A.I. Ryabchikov, I.B. Stepanov, I.A. Shulepov</b></p> <p><i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
18	<p><b>CMM-4-2-00227</b> Ion Implantation Enhanced Adhesion of Thin Metallic Films on Semiconductors</p> <p><b><u>V. Lysiuk</u></b></p> <p><i>Institute of Semiconductor Physics, National academy of sciences of Ukraine, Kyiv, Ukraine</i></p>
19	<p><b>CMM-4-2-00482</b> Results of Long-Term Tests of "LSM Cathode/Coated Steel Interconnect" Structure</p> <p><b><u>A. Kamenetskikh</u>, N.V. Gavrilov, A.S. Lipilin, A.S. Mamaev, A.V. Nikonov</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
20	<p><b>CMM-4-2-00494</b> Optical Properties of Magnetron Deposited SiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub> Films</p> <p><b><u>A. Zakharov</u>, K.V. Oskomov, N.S. Sochugov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
21	<p><b>CMM-4-2-00554</b> Development of the Universal Programmable Logical Controller "Megaraduga" for Modules and Units of the Ion-Plasma Installations</p>

	<p><b><u>S. Dektyarev</u></b>  <i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
22	<p><b>CMM-4-2-00555 Automated Control System of the Ion-Plasma Installation for Coating Deposition in Vacuum on the PLC TSX Quantum Basis</b>  <b><u>S. Dektyarev, I.B. Stepanov</u></b>  <i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
23	<p><b>CMM-4-2-00562 Investigation of Properties of Multilayer Film Structure for Creation of Hydrogenselective Membrane</b>  <b><u>I.A. Shulepov, A.I. Ryabchikov, V.M. Golovkov, I.B. Stepanov, V.V. Sohoreva</u></b>  <i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
24	<p><b>CMM-4-2-00602 Discharge System with Electron Injection for Formation of Composite Metal-Oxide Hydrophobic Coatings</b>  <b><u>A.V. Tyunkov, M.V. Shandrikov, A.V. Vizir, K.P. Savkin, A.G. Nikolaev, N.S. Sochugov</u></b>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
25	<p><b>CMM-4-2-00658 The Influence of Sulfur Modification of Preliminary Oxidized GaAs Surface on the Ohmic Contacts Parameters</b>  <b><u>K. Nosaeva, E.V. Erofeev, S.V. Ishutkin*, V.A. Kagadei**</u></b>  <i>Research &amp; Production Company "Micran", Tomsk, Russia</i>  <i>*Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i>  <i>**Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
26	<p><b>CMM-4-2-00747 Novel Ta/Ti/Al/Ni/Au Metalisation Scheme for Low Resistance Ohmic Contact Formation on Undoped AlGaIn/GaN Heterostructure</b>  <b><u>K. Osipov, L.E. Velikovskiy</u></b>  <i>Research &amp; Production Company "Micran", Tomsk, Russia</i></p>
27	<p><b>CMM-4-2-00750 Tribological Properties and a Structurally-Phase State of Multilevel Nanocomposite Coatings on the Basis of Cr-Al-N System</b>  <b><u>A. Voronov, V.P. Sergeev, M.V. Fedorishcheva, O.V. Sergeev</u></b>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
28	<p><b>CMM-4-2-00766 Admixture Influence on Structure and Properties of Titanium Nitride Coatings</b>  <b><u>O.V. Krygina, Yu.F. Ivanov, N.N. Koval, T. Baumbach*, S. Doyle*, T. Slobodskyy*, N.A. Timchenko**, R.M. Galimov**, I.P. Chernov**, A.N. Shmakov***</u></b></p>

	<p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*Institute for Synchrotron radiation, Karlsruhe, Germany</i>  <i>**National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>***Siberian Synchrotron Radiation Centre, BINP, Novosibirsk, Russia</i></p>
29	<p><b>CMM-4-2-00798 Nanostructured Bioactive Coatings on the Titanium Implants Complex Surface to Stimulating Osteosynthesis</b>  <u>V.A. Mamaeva, A.I. Mamaev, T.I. Dorofeeva, V.I. Kalita*</u>,  <u>D.I. Komlev*, F.G. Gnedovetz*, D.A. Malanin**, L.I. Snigur**, E.A. Krainov**</u>  <i>Tomsk State University, Tomsk, Russia</i>  <i>*A.A. Baikov's Institute of Metallurgy and Materials Science of Russian Academy of Sciences, Moscow, Russia</i>  <i>**Vologograd Scientific Centre of the Russian Academy of Sciences and Vologograd State Medical University, Vologograd, Russia</i></p>
30	<p><b>CMM-4-2-00870 Silicon Depleted Coatings Deposited at Arc Sputtering of Sintered Ti-Si Cathodes</b>  <u>G. Pribytkov, A.V. Gurskih, V.V. Korzhova, V.M. Shulaev*, A.A. Andreev*</u>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <i>*National Scientific Center "Kharkov physics-technical institute", Kharkov, Ukraine</i></p>
31	<p><b>CMM-4-2-00954 Nanostructural Dielectric Ceramic Coating on Aluminum, Titanium and Zirconium Alloys</b>  <u>A.I. Mamaev, V.A. Mamaeva, E.Yu. Emelyanova</u>  <i>Tomsk State University, Tomsk, Russia</i></p>
32	<p><b>CMM-4-2-01107 Formation of Alloyed Layer of Ta-Nb-Ti System on the Titanium Substrate with Using of Focused Electron Beam Injected in Atmosphere</b>  <u>M.G. Golkovski, T.V. Zhuravina*, A.A. Bataev*, V.A. Bataev*</u>  <i>G.I. Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia</i>  <i>*Novosibirsk State Technical University, Novosibirsk, Russia</i></p>
33	<p><b>CMM-4-2-01162 Emission of SiH in Free Jet of Helium-Argon-Silane Mixture Activated by Electron Beam</b>  <u>E.A. Baranov, S.Ya. Khmel</u>  <i>S.S. Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia</i></p>
34	<p><b>CMM-4-2-01167 Structure and Mechanical Properties of Copper-Carbon Nanostructured Films Formed by Compression Erosion Plasma Flows</b>  <u>V.V. Uglov, M.V. Astashynskaya, M.P. Samtsov, V.M. Astashynski*, A.V. Punko**</u>  <i>Belarusian State University, Minsk, Belarus</i></p>

	<p><i>*B.I. Stepanov Institute of Physics of NASB, Minsk, Belarus</i>  <i>**Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus</i></p>
35	<p><b>CMM-4-2-01202</b> Effect of High Intense Pulsed Ion Beam Irradiation on Microstructure of DZ4 Superalloy  <u>X.X. Mei, C.X. Wang, W. Qu, Y. Qin, Y.N. Wang, V.P. Rotshtein*, N.N. Koval*</u>  <i>Key Laboratory of Materials Modification by Laser, Ion and Electron Beams (DLUT), Ministry of Education, Dalian, China</i>  <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
36	<p><b>CMM-4-2-01242</b> Study of the Adhesive Strength of Wear-Resistant Nanocomposite Films of Enhanced Hardness Obtained by Arc Discharges  <u>M.I. Lobach, I.M. Goncharenko, S.V. Grigoriev, K.A. Koshkin, E.A. Markova, A.D. Teresov</u>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
37	<p><b>CMM-4-2-01270</b> Research of Covering ZrO<sub>2</sub> Received on the Copper Sample  <u>T. Gubajdulina, V.P. Sergeev, N.A. Budareva</u>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
38	<p><b>CMM-4-2-01278</b> Investigating the Single Cell of Solid Oxide Fuel Cell with Thin Film Electrolyte Fabricated by Magnetron Sputtering and Pulsed Electron-Beam Treatment  <u>A.V. Shipilova, A.A. Soloviev, N.S. Sochugov, V.P. Rotshtein, K.V. Karlik</u>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
39	<p><b>CMM-4-2-01330</b> Electrochromic Properties of WO<sub>3</sub> and NiO Films Obtained by Reactive Magnetron Sputtering Method  <u>S.V. Rabotkin, A.N. Zaharov, A.A. Soloviev, N.S. Sochugov</u>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
40	<p><b>CMM-4-2-01334</b> Synthesis of Superhard Nanocomposite Ceramic Ti-Si-N and Al-Si-N Coatings by Methods of Pulsed Unbalanced Reactive Magnetron Sputtering  <u>K.V. Oskomov, A.N. Odivanova, N.S. Sochugov, V.G. Podkovyrov, G.A. Pribytkov*</u>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
41	<p><b>CMM-4-2-01410</b> Investigation of Characteristics of the Anode-Supported Solid Oxide Fuel Cells with Thin-Film Electrolyte Deposited by Electron-Ion-Plasma Methods  <u>A.A. Soloviev, N.S. Sochugov, A.V. Shipilova, S.V. Rabotkin, K.B. Efimova*, A.E. Tumashevskaya*</u>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>

42	<p><b>CMM-4-2-01442</b> Formation of Nanosized Electrocatalytic Coatings on Carbon Substrates with Application of Catalytic Metals Ion Beam Deposition from Pulsed Arc-Discharge Plasma</p> <p><u>V.V. Poplavsky</u>, <u>A.V. Dorozhko</u>, <u>V.G. Matys</u>, <u>T.S. Stelmah</u>  <i>Belarusian State University of Technology, Minsk, Belarus</i></p>
43	<p><b>CMM-4-2-01474</b> Formation of Surface Copper-Based Alloys by Electron-Beam Mixing</p> <p><u>E. Yakovlev</u>, <u>A.B. Markov*</u>  <i>Tomsk State University, Tomsk, Russia</i>  <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
44	<p><b>CMM-4-2-01570</b> Synthesis Features and Properties of Carbide Compounds Obtained from Vacuum-Arc Plasma Flow</p> <p><u>A. Lienkov</u>, <u>I.V. Saburov</u>  <i>Saint Petersburg Electrotechnical University "LETI", St. Petersburg, Russia</i></p>
45	<p><b>CMM-4-1-90009</b> Reflecting Properties of an Ion-Modified Metal Surface in the Infrared Range</p> <p><u>N.V. Volkov</u>, <u>I.V. Oleynikov</u>, <u>E.A. Ananieva</u>  <i>National Research Nuclear University "MEPhI", Moscow, Russia</i></p>
46	<p><b>CMM-4-1-90011</b> Wear Features under the Regime of Dry Friction of Tubular Samples from Alloy E110 with Oxide Films</p> <p><u>N.V. Volkov</u>, <u>B.A. Kalin</u>, <u>I.V. Oleynikov</u>, <u>E.A. Ananieva</u>, <u>Aung Khtai Lin</u>  <i>National Research Nuclear University "MEPhI", Moscow, Russia</i></p>
47	<p><b>CMM-4-0-00210</b> Effect of Nitrogen Implantation into Tool Steel (R6M5) on Abrasive Wear Resistance of Diamond-Like Coatings (DLCs)</p> <p><u>A.B. Vladimirov</u>, <u>I.Sh. Trakhtenberg</u>, <u>A.P. Rubshtein</u>,  <u>S.A. Plotnikov</u>, <u>N.V. Gavrillov</u>, <u>D.R. Emlin</u>  <i>Institute of Metals Physics UD RAS, Ekaterinburg, Russia</i></p>
48	<p><b>CMM-4-0-00282</b> Properties of Hard a-C: H, ta-C and Multilayer (a-C: H and ta-C) Diamond-Like Films</p> <p><u>I.Sh. Trakhtenberg</u>, <u>A.P. Rubshtein</u>, <u>S.A. Plotnikov</u>,  <u>N.V. Gavrillov*</u>, <u>S.A. Mamaev</u>  <i>Institute of Metals Physics UD RAS, Ekaterinburg, Russia</i>  <i>*Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
49	<p><b>CMM-4-0-00662</b> Deposition of Oxides and Oxinitrid Thin Films for Medical Grafts by Method of Pulsed Magnetron Sputtering</p> <p><u>V. Pichugin</u>, <u>V.P. Yanovskiy*</u>, <u>N.S. Morosova</u>, <u>I.M. Yermolovich</u>  <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>

50	<p><b>CMM-4-0-90001</b> Effect of Electron-Beam Irradiation on Structural-Phase State of Surface Layer, Strength, and Ductility of Ni<sub>3</sub>Al Intermetallic Compound</p> <p><u>V.E. Ovcharenko, Yu.F. Ivanov*</u>, E.N. Boyangin, Yu Bao Hai**</p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>**Institute of Metals Research Chinese Academy of Sciences, Shenyang, China</i></p>
51	<p><b>CMM-4-0-90004</b> The Application of High Current Low-Energy Electron Beam for Brazing of Materials</p> <p><u>V.V. Kvasnytskyy, N.N. Koval*</u>, Yu.F. Ivanov*, L.I. Markashova**, V.D. Kuznecov, V.F. Kvasnytskyy***</p> <p><i>National Technical University of Ukraine – Kyiv Polytechnic Institute, Kyiv, Ukraine</i>  <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>**The E.O. Paton Electric Welding Institute of the NAS of Ukraine, Kyiv, Ukraine</i>  <i>***Admiral Makarov National University of Shipbuilding, Mykolaiv, Ukraine</i></p>
52	<p><b>CMM-4-0-90005</b> Application of High Current Low-Energy Electron Beam in Diffusion Welding of Materials</p> <p><u>V.F. Kvasnytskyy, V.V. Kvasnytskyy*</u>, N.N. Koval**, Yu.F. Ivanov**, L.I. Markashova***, V.D. Kuznecov*</p> <p><i>Admiral Makarov National University of Shipbuilding, Mykolayiv, 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>***The E.O. Paton Electric Welding Institute of the NAS of Ukraine, Kyiv, Ukraine</i></p>
53	<p><b>CMM-4-0-90018</b> A Study of Si Film Deposition under the Action of a Pulsed e-Beam</p> <p><u>V.V. Denisov, G.P. Khandorin*</u>, A.K. Ledovskih*, A.A. Galata*, A.P. Murlashev*, V.S. Volchkov*, N.N. Koval, V.V. Shugurov, A.I. Suslov, V.V. Yakovlev</p> <p><i>*Siberian Chemical Plant, Seversk, Russia</i>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
54	<p><b>SHCE-1-0-01618</b> Deposition of C and C+W Films Using HF Source with Magnetic Field</p> <p><u>V.S. Taran, V.V. Gasilin, R.M. Muratov, Yu.N. Nezovibat'ko, O.M. Shvez, V.I. Tereshin</u></p> <p><i>Kharkov Institute of Plasma Physics of the NSC KIPT, Kharkov, Ukraine</i></p>



September 23, Thursday

9:00 – 12:40, 15:00 – 18:20

## Oral Session 4. Coating deposition

9:00 - 9:30 Invited	<p><b>CMM-4-0-90000</b> Hard Nanocomposite Coatings: Mechanical and Tribological Properties, Thermal Stability and Protection against Oxidation above 1000°C</p> <p><b><u>J. Musil</u></b> <i>University of West Bohemia, Czech Republic Institute of Physics, Academy of Sciences of the Czech Republic, Praha, Czech Republic</i></p>
9:30 - 10:00 Invited	<p><b>CMM-4-1-00498</b> Hard Diamond-Like Coatings and Aspects of Their Practical Applications</p> <p><b><u>I.Sh. Trakhtenberg</u></b> <i>Institute of Metals Physics UD RAS, Ekaterinburg, Russia</i></p>
10:00 - 10:20	<p><b>CMM-4-1-00011</b> Nano and Microcomposite Coatings on Base Ti-Si-N/WC-Co-Cr/steel and Ti-Si-N/(Cr<sub>3</sub>C<sub>2</sub>)<sub>75</sub>-(NiCr)<sub>25</sub>, Their Structure and Properties</p> <p><b><u>A.D. Pogrebnyak</u></b>, <b>A.P. Shypulyenko</b>, <b>M.V. Kaverin</b><sup>*</sup>, <b>Yu.A. Kunitskiy</b>, <b>N.A. Makhmudov</b><sup>***</sup>, <b>A.P. Shpak</b><sup>**</sup>, <b>M.V. Il'yashenko</b>, <b>V.S. Baidak</b><sup>*</sup>, <b>A.O. Demianenko</b><sup>*</sup> <i>Sumy Institute for Surface Modification, Sumy, Ukraine, *Sumy State University, Sumy, Ukraine **Institute of Metal Physics G.V.Kurdyumova NAS of Ukraine, Kiev, Ukraine ***Samarkand State University, Samarkand, Uzbekistan</i></p>
10:20 - 10:40	<p><b>CMM-4-1-90012</b> Magnetron Deposition of Surface Layers for Materials with Shape Memory</p> <p><b><u>J.M. Blednova</u></b>, <b>P.O. Rusinov</b>, <b>T.V. Kononenko</b> <i>Kuban State University of Technology, Krasnodar, Russia</i></p>
<b>10:40 – 11:00 Coffee Break</b>	
11:00 - 11:20	<p><b>CMM-4-1-00418</b> The Structure and Properties of the Multicomponent Nanocomposite Coatings of System Ti-C-Ni-Cr-Al-Si-Cu-N</p> <p><b><u>S. Ovchinnikov</u></b>, <b>A.D. Korotaev</b><sup>*</sup>, <b>Yu.P. Pinzhin</b>, <b>V.Yu. Moshkov</b>, <b>A.N. Tyumentsev</b>, <b>D.V. Koshevoy</b><sup>*</sup> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia *Tomsk State University, Tomsk, Russia</i></p>
11:20 - 11:40	<p><b>CMM-4-1-00995</b> Molecular Properties Characterization of PTFE Films Deposited by Hot Wire CVD</p> <p><b><u>A. Uvarov</u></b>, <b>K. Uemura</b><sup>*</sup>, <b>S. Alexandrov</b><sup>**</sup>, <b>H. Murayama</b><sup>***</sup>, <b>R. Soba</b><sup>***</sup></p>

	<p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>*ITAC Ltd, Niigata, Japan</i>  <i>**St. Petersburg State Polytechnic University, St. Petersburg, Russia</i>  <i>***Terumo Corporation, Fujinomiya, Japan</i></p>
11:40 - 12:00	<p><b>CMM-4-1-01086 Investigation of Silicon Film Deposition by Gas-Jet Electron Beam Plasma CVD Method</b>  <b><u>S.Ya. Khmel</u>, A.V. Fedoseev, G.I. Sukhinin</b>  <i>S.S. Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia</i></p>
12:00 - 12:20	<p><b>CMM-4-1-01106 Vacuum Free Electron Beam Fused Deposition of Multifunctional Coatings on Steel Substrates</b>  <b><u>M.G. Golkovski</u>, I.M. Poletika*, T.A. Krilova*, M.V. Tetiutskaya, S.A. Makarov</b>  <i>G.I. Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia</i>  <i>*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
12:20 - 12:40	<p><b>CMM-5-1-00606 Synchrotron Radiation for Investigation of Nanocrystalline Layers and Coatings Formed by Use of Plasma and Beams Technologies</b>  <b><u>N.A. Timchenko</u>, N.N. Koval*, Yu.F. Ivanov*, O.V. Krysin*</b>  <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
<b>12:40 – 14:00 Lunch</b>	
<b>14:00 – 15:00 Poster Session</b>	
15:00 - 15:30 Invited	<p><b>CMM-4-1-90029 Structure-Phase Transformations in Materials under the Action of Compression Plasma Flows</b>  <b><u>V.V. Ugllov</u></b>  <i>Belarusian State University, Minsk, Belarus</i></p>
15:30 - 15:50	<p><b>CMM-4-1-90035 Plasma Ion Source and Production of the Carbon Layers by Deposition of the Vapor and Ion of Carbon at the Direct Influence by Ions of the Plasma-Forming Inert Gas</b>  <b><u>A.P. Semenov</u>, I.A. Semenova</b>  <i>Department of Physical Problems of Buryat Scientific Center SB RAS, Ulan-Ude, Russia</i></p>
15:50 - 16:10	<p><b>CMM-4-1-00483 Deposition of Conductive Oxide Coatings on Steel Interconnects of Solid Oxide Fuel Cell</b>  <b><u>A. Kamenetskikh</u>, V.F. Chukharev*, N.V. Gavrilov, V.V. Kulaev*, A.S. Lipilin, A.V. Nikonov</b>  <i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>  <i>*RFNC Zababakhin All-Russia Research Institute of Technical Physics, Snezhinsk, Russia</i></p>
<b>16:20 – 16:40 Coffee Break</b>	

16:40 - 17:00	<p><b>CMM-4-1-90010</b> Modification of Thin Oxide Films of Be, Si, Al, Ti, Zr and W under Irradiation by He<sup>+</sup> and Ar<sup>+</sup> Ion Beams with a Wide Energy Spectrum</p> <p><b><u>N.V. Volkov</u></b> National Research Nuclear University "MEPhI", Moscow, Russia</p>
17:00 - 17:20	<p><b>CMM-4-1-00582</b> Investigated Structure the Diffusion Layers Obtained at a Low Temperature Nitration of High-Chromium Steel</p> <p><b><u>Zh.G. Kovalevskaya</u>, Yu.F. Ivanov**</b>, <b><u>I.M. Goncharenko**</u></b>, <b><u>K.A. Koshkin**</u></b>, <b><u>V.A. Klimenov</u></b></p> <p>National Research Tomsk Polytechnic University, Tomsk, Russia *Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia **Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
17:20 - 17:40	<p><b>CMM-4-1-00950</b> Thermal-Cycle Durability and Phase-Structural State of Thermal-Resistant Coatings on the Basis of Zr-Y-O, Deposited by Impulse Magnetron Sputtering</p> <p><b><u>V.P. Sergeev</u>, M.V. Fedorisheva</b>, <b><u>A.R. Sungatulin</u></b>, <b><u>O.V. Sergeev</u>, V.V. Neyfeld</b></p> <p>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</p>
17:40 - 18:00	<p><b>CMM-4-1-00946</b> Investigation of Properties of Composite Tribological Coatings TiC+MoS<sub>2</sub> Formed by Magnetron, Vacuum-Arc and Combine Evaporation Methods</p> <p><b><u>V. Savostikov</u>, A.I. Potekaev*</b>, <b><u>A.N. Tabachenko*</u></b>, <b><u>I.A. Shulepov**</u></b>, <b><u>A.A. Didenko**</u></b></p> <p>Organisation «Technotron», Tomsk, Russia *Siberian Physical-Technical Institute of Tomsk State University, Tomsk, Russia **National Research Tomsk Polytechnic University, Tomsk, Russia</p>
18:00 - 18:20	<p><b>CMM-4-1-01646</b> Generator of Plasma with Liquid Anod for Coating Deposition</p> <p><b><u>A. Tikhomirov</u></b> Petrozavodsk State University, Petrozavodsk, Russia</p>

September 23, Thursday

14:00 – 18:00

## Poster Session 4.1. Beam and plasma sources

1	<p><b>CMM-1-2-00638</b> Electron-Beam Facility "RITM-SP" for Surface Alloying</p> <p><u>G.E. Ozur</u>, A.V. Batrakov, A.B. Markov, A.V. Mikov, A.G. Padey</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
2	<p><b>CMM-1-1-00254</b> Source of Radially Divergent Electron Beam Based on Self-Heating Hollow Cathode Discharge</p> <p><u>N.V. Gavrilov</u>, A.I. Menshakov</p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
3	<p><b>CMM-1-2-00034</b> Measurements of Plasma and Ion Flow Parameters in Modified Gaseous Discharge System with Electron Injection</p> <p><u>A.V. Vizir</u>, A.S. Bugaev, V.I. Gushenets, E.M. Oks, M.V. Shandrikov, A.V. Tyunkov, G.Yu. Yushkov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
4	<p><b>CMM-1-0-01350</b> Generation of Plasma of Non-Self-Sustained Glow Discharge with Hollow Cathode</p> <p><u>I.V. Lopatin</u>, Yu.H. Akhmadeev, N.N. Koval, S.S. Kovalskiy, P.M. Schanin, V.V. Yakovlev</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
5	<p><b>CMM-1-2-00603</b> The Measurements of Electron Temperature in Gaseous Bulk Plasma with Electron Injection</p> <p><u>A.V. Tyunkov</u>, A.V. Vizir, M.V. Shandrikov, E.M. Oks</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
6	<p><b>CMM-1-2-00042</b> Generation of Bulk Gas-Discharge Plasma by Plasmagenerators Based on Non-Selfsustained Low-Pressure Arc Discharge</p> <p><u>D.S. Vershinin</u>, M.Yu. Smolyakova, S.N. Saenko*, M.V. Poltaratskii*</p> <p><i>Centre of Nanostructural Materials and Nanotechnologies of Belgorod State University, Belgorod, Russia</i>  <i>"Elpron" company, Belgorod, Russia</i></p>
7	<p><b>CMM-1-1-01431</b> Plasma Source, Based on the Two-Step Arc Discharge with Hollow Cathode</p> <p><u>V.V. Shugurov</u>, M.S Vorobyov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
8	<p><b>CMM-1-2-01430</b> Extended Generators of Gas-Discharge Plasma "PINK-P" Series</p> <p><u>V.V. Shugurov</u>, N.N. Koval</p>

	<i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
9	<b>CMM-1-2-01566 Fast Neutrals Beam Source Based on the Non-Self Glow Discharge</b> <b><u>V.T. Barchenko, A.A. Zharov, A.I. Utkin</u></b> <i>Saint Petersburg Electrotechnical University "LETI", St. Petersburg, Russia</i>
10	<b>CMM-1-2-01568 Control of Operating Conditions of an Extended Vacuum Arc Device</b> <b><u>V.T. Barchenko, A.A. Lisenkov</u></b> <i>Saint Petersburg Electrotechnical University "LETI", St. Petersburg, Russia</i>
11	<b>CMM-1-2-01567 Simulation Process in the Magnetron Sputtering System under Big Current Density</b> <b><u>V.T. Barchenko, O.I. Grebnev, E.N. Moskovkina, N.V. Nikitina</u></b> <i>Saint Petersburg Electrotechnical University "LETI", St. Petersburg, Russia</i>
12	<b>CMM-1-2-01406 Design, Parameters, and Application Features of the DC-Pulsed Power Supply for Magnetron Sputtering System</b> <b><u>N.S. Sochugov, V.G. Podkovirov*, R.E. Spirin*, V.O. Oskirko</u></b> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Applied Electronics Ltd, Tomsk, Russia</i>
13	<b>CMM-1-2-00479 Vacuum Installation of Magnetron Coating Deposition on Polymer Materials</b> <b><u>V.P. Yanovskij, O.S. Kuzmin</u></b> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>
14	<b>CMM-1-1-01294 Study of Microarc Initiation on the Surface of Biased Electrodes Placed in Low Pressure Arc Discharge Plasma</b> <b><u>V.V. Denisov, N.N. Koval, V.V. Shugurov</u></b> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
15	<b>CMM-1-2-00107 Molecular Phosphorus Ion Source for Semiconductor Technology</b> <b><u>V.I. Gushenets, E.M. Oks, A. Hershcovitch*, T.V. Kulevoy**</u></b> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <i>*Brookhaven National Laboratory, Upton, USA</i> <i>**SSC RF Institute for Theoretical and Experimental Physics, Moscow, Russia</i>
16	<b>CMM-1-2-00542 Investigation of Regularity of Plasma Formation in Large Volume on the Basis of the Hollow Cathode Effect Using High-Frequency Short-Pulsed Voltage</b> <b><u>D.O. Sivin, A.I. Ryabchikov, I.B. Stepanov, K.Yu. Dodorin</u></b> <i>Research Institute of Nuclear Physics of National Research Tomsk</i>

	<i>Polytechnic University, Tomsk, Russia</i>
17	<p><b>CMM-1-2-00550 Formation of the Plasma Flow of Conductive Materials Filtered from Microparticle Fraction by the Extended Vacuum-Arc Generator</b></p> <p><b><u>S.E. Eremin</u>, A.I. Ryabchikov, I.B. Stepanov</b></p> <p><i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
18	<p><b>CMM-1-2-00566 High-Frequency Short-Pulsed Bias Source for the Ion - Plasma Material Treatment</b></p> <p><b><u>V.I. Tolmachev</u>, A.I. Ryabchikov</b></p> <p><i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
19	<p><b>CMM-1-0-01386 Nanopowders of the Rare Refractory Metals Production on the Basis of Plasma Technology</b></p> <p><b><u>E. Yakovlev</u></b></p> <p><i>DGP KazNIIBGP, Republic of Kazakhstan</i></p>
20	<p><b>CMM-1-0-00062 Ionic Sources for Processing of Piezoelectric</b></p> <p><b><u>L.N. Orlikov</u>, N.L. Orlikov, S.M. Shandarov, S.I. Arestov, A.S. Shangin</b></p> <p><i>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i></p>
21	<p><b>CMM-1-2-00830 Application of High-Voltage Vacuum Devices as Electron Scattering and Indispersible Loads</b></p> <p><b><u>B. Ubiennykh</u></b></p> <p><i>"Elektrokompleks" OJSC, Minusinsk, Russia</i></p>
22	<p><b>CMM-1-2-01650 Modeling of High-Current Reflective Gas Discharge</b></p> <p><b><u>L.A. Ziulkova</u>, A.V. Kozyrev</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
23	<p><b>CMM-1-2-00994 Langmuir Probe Diagnostic of Microwave and Electron Cyclotron Resonance Plasmas</b></p> <p><b><u>A. Uvarov</u>, K. Uemura*, S. Alexandrov**</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>*ITAC Ltd, Niigata, Japan</i>  <i>**St. Petersburg State Polytechnic University, St. Petersburg, Russia</i></p>
24	<p><b>CMM-1-2-00278 Generation of Gaseous and Metal Ions in Vacuum Arc Discharge with the Longitudinal Hollow Anode in a Magnetic Field</b></p> <p><b><u>K.P. Savkin</u>, Yu.G. Yushkov, A.G. Nikolaev, E.M. Oks, G.Yu. Yushkov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

25	<p><b>CMM-1-2-00174 Pulsed Low Pressure ECR Discharge for Gaseous Ion Sources</b></p> <p><b><u>G.Yu. Yushkov</u>, A.G. Nikolaev, K.P. Savkin, E.M. Oks, A.V. Vodopyanov*, I.V. Izotov*, D.A. Mansfeld*, S.V. Golubev*</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*Institute of Applied Physics RAS, Nizhny Novgorod, Russia</i></p>
26	<p><b>CMM-1-2-90032 High Charge State Metal Ion Beams from Vacuum Arc Plasma with Gyrotron Heating</b></p> <p><b><u>G.Yu. Yushkov</u>, K.P. Savkin, A.G. Nikolaev, A.V. Vizir, E.M. Oks*, A.V. Vodopianov*, I.V. Izotov*, D.A. Mansfeld*, S.V. Golubev*</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*Institute of Applied Physics RAS, Nizhny Novgorod, Russia</i></p>
27	<p><b>CMM-1-2-90040 Radio Frequency Plasma Generator for Technological Purposes</b></p> <p><b>E.V. Berlin, V.U. Grigoriev*</b></p> <p><i>ESTO-Vacuum Ltd. Zelenograd, Russia</i>  <i>*Vacuum Technology Laboratory Ltd., Zelenograd, Russia,</i></p>

## Poster Session 4.2. Beam and plasma nanoscience and nanotechnology

28	<p><b>CMM-5-2-00142 Investigation of Characteristics of Titanium Coatings Deposited by Powerful Ion Beams</b></p> <p><b><u>V.K. Struts</u>, V.M. Matvienko, A.V. Petrov, A.I. Ryabchikov, T.J. Renk*</b></p> <p><i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <i>*Sandia National Laboratories, Albuquerque, USA</i></p>
29	<p><b>CMM-5-2-00270 The Synthesis of Carbon Nanostructures at Graphite Evaporation by Electron Beam</b></p> <p><b><u>V. Burdovitsin</u>, A. Medovnik, E.M. Oks*</b></p> <p><i>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i>  <i>*Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
30	<p><b>CMM-5-2-00454 Structure of Amorphous Carbon Produced by Electric Discharge Technology from Organic Liquids</b></p> <p><b><u>A. Rud</u>, G.V. Kurdyumov, N.I. Kuskova, L.I. Ivaschuk, G.M. Zelinskaya, N.M. Belyi</b></p> <p><i>Institute of Pulse Research and Engineering of NASU, Nikolaev, Ukraine</i>  <i>T. Shevchenko National University, Kiev, Ukraine</i></p>

	<i>Institute for Metal Physics of NAS of Ukraine</i>
31	<p><b>CMM-5-2-00466</b> Microwave Plasma-Chemical Reactor for the Natural Gas Conversion into Nanocarbon Material and Hydrogen</p> <p><u><b>A.G. Zherlitsyn</b></u>, <b>V.P. Shiyan</b>, <b>Yu.V. Medvedev</b>, <b>S.I. Galanov</b>, <b>O.I. Sidorova</b></p> <p><i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
32	<p><b>CMM-5-2-00730</b> Metal Ablation under the Powerful Electron Beam Action: Numerical Simulation</p> <p><u><b>P. Mayer</b></u>, <b>A.E. Mayer</b></p> <p><i>Chelyabinsk State University, Chelyabinsk, Russia</i></p>
33	<p><b>CMM-5-2-01074</b> FTIR-DTA Studies of Ultradispersed C-N System's Crystalline Phases</p> <p><u><b>A.A. Sivkov</b></u>, <b>A.J. Pak</b>, <b>I.A. Rakhmatullin</b>, <b>V.A. Tarbokov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
34	<p><b>CMM-5-2-01435</b> Comparative Investigations of the Influence of Electrical and Physical Parameters of Micro-Arc Oxidation on the Physical and Mechanical Properties of Coatings Based on Calcium Phosphates on Titanium and Zirconium Surfaces</p> <p><u><b>E.V. Legostaeva</b></u>, <b>E.G. Kryazheva</b>, <b>K.S. Kulyashova</b>, <b>P.V. Uvarkin</b>, <b>Yu.P. Sharkeev</b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
35	<p><b>CMM-5-1-00010</b> Phase Composition, Thermal Stability, Physical and Mechanical Properties of Superhard on Base Zr-Ti-Si-N Nanocomposite Coatings</p> <p><u><b>A.D. Pogrebnjak</b></u>, <b>O.V. Sobol**</b>, <b>V.M. Beresnev***</b>, <b>P.V. Turbin***</b>, <b>G.V. Kirik****</b>, <b>N.A. Makhmudov</b>, <b>M.V. Il'yashenko</b>, <b>A.P. Shypylenko</b>, <b>M.V. Kaverin*</b>, <b>V.N. Rogoz</b>, <b>M.Yu. Tashmetov*****</b>, <b>A.V. Pshyk</b></p> <p><i>Sumy Institute for Surface Modification, Sumy, Ukraine</i>  <i>*Sumy State University, Sumy, Ukraine</i>  <i>**National Technical University, Kharkov, Ukraine</i>  <i>***Science Center for Physics and Technology, Kharkov, Ukraine</i>  <i>****Concern "UKRROSMETAL", Sumy, Ukraine</i>  <i>*****Samarkand Branch of Tashkent Information Technology University, Samarkand, Uzbekistan</i>  <i>*****Institute of Nuclear Physics, UAS, Tashkent, Uzbekistan</i></p>
36	<p><b>CMM-5-1-00654</b> Copper Metalized GaAs pHEMT with 150 nm T-Gate</p> <p><u><b>V.A. Kagadei</b></u>, <b>E.V. Erofeev*</b>, <b>V.A. Arykov</b>, <b>E.V. Anichenko*</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>*Research &amp; Production Company "Micran", Tomsk, Russia</i></p>



37	<p><b>CMM-5-2-01462 Influence of Ionizing Radiation on Structural and Phase States of Nanostructured Ti-6Al-4V-H Alloy</b>  <u>E.N. Stepanova</u>, G.P. Grabovetskaya*, I.P. Chernov, N.N. Nikitenkov  National Research Tomsk Polytechnic University, Tomsk, Russia  *Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</p>
38	<p><b>CMM-5-1-00202 Dissociation of Nitrogen in the Anode Region of Non-Self-Sustained Low Pressure Arc Discharge</b>  <u>K.A. Koshkin</u>  Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
39	<p><b>SHCE-5-2-90042 Removing Concrete Surface by Electric Discharge</b>  <u>A.V. Nashilevskiy</u>, G.G. Kanaev*, V.R. Kukhta**, V.V. Lopatin, G.E. Remnev, K. Uemura**  Research Institute of High Voltages of National Research Tomsk Polytechnic University, Tomsk, Russia  *Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia  **ITAC Ltd, Niigata, Japan</p>
40	<p><b>CMM-5-0-01387 Electrophysical Qualities of the Plasma Jets</b>  <u>E.A. Yakovlev</u>  DGP KazNIIBGP, Karaganda, Kazakhstan</p>

September 24, Friday

9:00 - 13:00

## Oral Session 5. Beam and plasma nanoscience and nanotechnology

9:00 - 9:20	<p><b>CMM-5-1-90030</b> Electron-Ion-Plasma Methods for Nanostructuring of Surface of Materials and Articles  <u>N.N. Koval</u>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
9:20 - 9:40	<p><b>CMM-5-1-00098</b> Technological Parameters Effect on Structure and Phase Composition of Intermetallic Coating on the Basis Of Ni-Al  <u>M.V. Fedorisheva, V.P. Sergeev, A.R. Sungatulin, O.V. Sergeev, M.P. Kalashnikov</u>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
9:40 - 10:00	<p><b>CMM-5-1-01003</b> Modification of Nanostructure Materials by High-Power Ion Beam Irradiation  <u>V.S. Kovivchak, T.V. Panova*, O.V. Krivozubov, N.A. Davletkildeev</u>  <i>Omsk Branch of the Institute of Semiconductor Physics SB RAS, Omsk, Russia</i>  <i>*Omsk State University, Omsk, Russia</i></p>
10:00 - 10:20	<p><b>CMM-5-1-01122</b> Plasma-Arc Reactor for Processing of Powder Materials  <u>A.S. Anshakov, E.K. Urbakh, A.E. Urbakh, V.A. Faleev, V.S. Cherednichenko*</u>  <i>S.S. Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia</i>  <i>*Novosibirsk State Technical University, Novosibirsk, Russia</i></p>
10:20 - 10:40	<p><b>CMM-5-1-00758</b> Production of Al<sub>2</sub>O<sub>3</sub>-Al(Cu) Nanopowders by Pulsed Electron Beam Evaporation and Their Basic Characteristics  <u>S.Yu. Sokovnin, V.G. Ilves, A.I. Medvedev, A.M. Murzakaev, A.V. Spirina, M.A. Uimin*</u>  <i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>  <i>*Institute of Metals Physics UD RAS, Ekaterinburg, Russia</i></p>
<b>10:40 – 11:00 Coffee Break</b>	
11:00 - 11:20	<p><b>CMM-5-1-01362</b> Influence of the Target Grain Size on Structural-Phased State of Titanium Implanted with Aluminum Ions  <u>Yu.P. Sharkeev, I.A. Kurzina*, I.A. Bozhko*, A.Yu. Eroshenko</u></p>

	<p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <i>*Tomsk State University of Architecture and Building, Tomsk, Russia</i></p>
11:20 - 11:40	<p><b>CMM-5-1-00558 Development of Technologies of Multilayer Nanostructure TiN/TiAlN Coatings Formation on Titanium Alloys</b>  <b><u>I.B. Stepanov</u>, A.I. Ryabchikov, D.O. Sivin</b>  <i>Research Institute of Nuclear Physics of National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
11:40 - 12:00	<p><b>CMM-5-1-01434 Physical and Chemical, Tribological and Biological Aspects of Micro-Arc Calcium Phosphate Coatings</b>  <b><u>E.V. Legostaeva</u>, Yu.P. Sharkeev, I.A. Khlusov*, V.A. Kukareko**, I.A. Kursina***</b>  <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <i>*Siberian State Medical University, Tomsk, Russia</i>  <i>**Joined Institute of Mechanical Engineering of NASB, Belarus</i>  <i>***Tomsk State University of Architecture and Building, Tomsk, Russia</i></p>
12:20 - 12:40	<p><b>CMM-5-1-00678 Experimental Simulation of Nanoscale Modification of Reactor Materials under Irradiation at Linac Tipr-1</b>  <b><u>T.V. Kulevoy</u>, A.A. Aleev, G.N. Kropachev, R.P. Kuibeda, A.A. Nikitin, N.N. Orlov, S.V. Rogozhkin, A.I. Semennikov, A.D. Fertman, A.L. Sitnikov, B.B. Chalyh</b>  <i>SSC RF Institute for Theoretical and Experimental Physics, Moscow, Russia</i></p>
12:40 - 13:00 Invited	<p><b>CMM-5-1-01486 Achieved Synthesis of Nanodiamond by High-Energy Electron Impact on Carbon Nano-Onions Outside Tem</b>  <b><u>G. Yurjev</u>, E. Osawa*, K. Uemura**, N.N. Koval***, P. Raharjo**</b>  <i>Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia</i>  <i>*NanoCarbon Research Institute Ltd., Ueda, Japan,</i>  <i>**ITAC Ltd, Niigata, Japan</i>  <i>***Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
<b>13:00 – 13:30 Closing Ceremony (Rubin Hotel)</b>	