

## ***Registration***

### **September 16, Sunday**

**16:00 — 19:00**, INTERNATIONAL CULTURE CENTER, 13, Usov St.

#### **REGISTRATION**

**18:00 — 20:00**, INTERNATIONAL CULTURE CENTER, 13, Usov St.

#### **WELCOME PARTY**

### **September 17, Monday**

**08:30 — 10:00**, INTERNATIONAL CULTURE CENTER, 13, Usov St.

#### **REGISTRATION**

## *Plenary sessions*

**September 17, Monday**

**10:00 — 10:30, INTERNATIONAL CULTURE CENTER, 13, Usov St.  
OPENING CEREMONY**

### **PLENARY SESSION**

**10:30 — 11:10**

**HARD NANOCOMPOSITE COATINGS. PRESENT STATUS AND  
TRENDS**

**J. Musil**

*University of West Bohemia, Czech Republic*

**11:10 — 11:50**

**OPERATING THE FIRST WATER-INSULATED MYKONOS II LTD  
VOLTAGE ADDER**

**M. G. Mazarakis**

*Sandia National Laboratorie, Albuquerque, USA*

**11:50 — 12:30**

**FORMATION AND EVOLUTION OF THE RADIATION DEFECT IN  
THE IONIC CRYSTAL**

**V.M. Lisitsyn**

*National Research Tomsk Polytechnic University, Tomsk, Russia*

**12:30 — 13:00**

**PHOTOGRAPHING**

**13:00 — 15:00**

**LUNCH BREAK**

**15:00**

**MAIN BUILDING OF TPU, 30, LENINA AVE  
Start of 15<sup>th</sup> RPC, 17<sup>th</sup> SHCE and 11<sup>th</sup> CMM Sessions  
September 17, Monday**

**15<sup>th</sup> International  
Conference on Radiation  
Physics and Chemistry  
of Condensed Matter**

**September 17, Monday**

15:00 – 17:40, room **310**

**Oral Session 1. Elementary processes**

**Chairman:** A.I. Nepomnyashikh

**Secretary:** S. A. Stepanov

15.00-15.30	<p><b>FLUORIDE CRYSTALS SCINTILLATION AT LOW TEMPERATURES</b></p> <p><b><u>A.I. Nepomnyashikh</u>, E.A. Radzabov, R. Shendrik, D. Abdurashitov</b></p> <p><i>Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia</i></p>
15.30-16.00	<p><b>A PULSED OPTICAL CHARACTERIZATION OF OPTICAL CRYSTALS WITH MOBILE CATIONS</b></p> <p><b><u>I. N. Ogorodnikov</u>, M. S. Kiseleva, V. Yu. Yakovlev<sup>1</sup></b></p> <p><i>Ural Federal University named after the First President of Russia B.N. Yeltsin, Ekaterinburg, Russia</i>  <sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
16.00-16.20	<p><b>COMPLEX EMISSION CENTERS IN SCINTILLATOR LiF(WO<sub>3</sub>)</b></p> <p><b><u>I.N. Dubtsov</u><sup>1</sup>, L.N. Trefilova<sup>1</sup>, L. A. Lisitsyna<sup>2</sup>, N. N. Timoshenko<sup>1</sup>, O.V. Zelenskaya<sup>1</sup>, L. V. Gudzenko<sup>3</sup>, D. S. Sofronov<sup>4</sup></b></p> <p><sup>1</sup> <i>Institute for Scintillation Materials of NASU, Kharkov, Ukraine</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>3</sup> <i>Institute for Single Crystals of NASU, Kharkov, Ukraine</i>  <sup>4</sup> <i>STC "Institute for single crystals" of NASU, Kharkov, Ukraine</i></p>
16.20-16.40	<p><b>PREPARATION AND OPTICAL PROPERTIES OF TITANIUM DIOXIDE NANOPOWDER</b></p> <p><b><u>Y. K. Abdel-Moneam</u><sup>1</sup>, E. F. Polisadova<sup>2</sup>, H. A. Othman<sup>1</sup>, M. M. Madkour<sup>3</sup></b></p> <p><sup>1</sup> <i>Faculty of Science, Menoufiya University, Shebin El-Kom, Egypt</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>3</sup> <i>Chemistry department, Faculty of Science, Kuwait University,</i></p>

	<i>Safat, Kuwait</i>
16.40-17.00	<p><b>SPECTROSCOPIC PROPERTIES OF LiF CRYSTALS DOPED WITH W, Ti AND Fe OXIDES</b></p> <p><b>L. Lisitsyna<sup>1</sup>, V. Korepanov<sup>2</sup>, V. Lisitsyn<sup>2</sup>, P. Petikar<sup>2</sup></b></p> <p><sup>1</sup> <i>State University of Architecture and Building, Tomsk, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
17.00-17.20	<p><b>RADIATION DEFECTS ON ALKALINE EARTH FLUORIDES DOPED WITH TRIVALENT IONS</b></p> <p><b>T. Yu. Sizova<sup>1</sup>, E. A. Radzhabov<sup>1,2</sup></b></p> <p><sup>1</sup> <i>Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia</i>  <sup>2</sup> <i>Irkutsk State University, Irkutsk, Russia</i></p>
17.20-17.40	<p><b>AB INITIO CALCULATIONS OF DEFECTS IN ALUMINA CRYSTALS</b></p> <p><b>A. Yu. Kuznetsov, A.B. Sobolev, A. S. Makarov, M. A. Botov</b></p> <p><i>Ural Federal University named after the first President of Russia B.N.Yeltsin, Ekaterinburg, Russia</i></p>

**September 18, Tuesday**

9:00 – 12:40, 15:00 – 18:00, room **310**

**Oral Session 1. Elementary processes**

**Chairman:** E.F. Martynovich, V.S. Kortov

**Secretary:** S. A. Stepanov

9.00-9.30	<p><b>LUMINESCENT HIGH-DOSE DETECTORS ON THE BASIS OF CRYSTALLINE AND NANOSTRUCTURED MATERIALS</b></p> <p><b><u>V.Kortov</u>, S.Nikiforov, S.Zvonarev, Yu.Ustyantsev</b></p> <p><i>Ural Federal University named after the first President of Russia B.N.Yeltsin, Ekaterinburg, Russia</i></p>
9.30-10.00	<p><b>RADIOLYSIS OF ALKALI-EARTH NITRATES</b></p> <p><b><u>M. B. Miklin</u><sup>1</sup>, L. D. Kriger<sup>1</sup>, S.Yu. Lyrshikov<sup>2</sup></b></p> <p><sup>1</sup><i>Kemerovo State University, Kemerovo, Russia</i> <sup>2</sup><i>Institute of Coal Chemistry and Material Science SB RAS, Kemerovo, Russia</i></p>
10.00-10.20	<p><b>OPTICAL SPECTROSCOPY OF ALKALINE EARTH METAL FLUORIDE CRYSTALS UNDER CASCADE AND SIMULTANEOUS PULSED EXCITATION</b></p> <p><b><u>E. P. Chinkov</u>, V. F. Shtan'ko, S. A. Stepanov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk , Russia</i></p>
10:20-10:40	<p><b>ELASTIC WAVES IN CRYSTALS WITH CHALCOPYRITE STRUCTURE</b></p> <p><b><u>A.V. Kopytov</u>, E.V. Antropova</b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p>
<b>10.40-11.00</b>	<b>COFFEE BREAK</b>
11.00-11.20	<p><b>RADIATION DAMAGE OF CSI AND CSI:TI CRYSTALS CONTAINING IMPURITIES OF CARBONATE AND HYDROXIDE</b></p> <p><b><u>L.N. Trefilova</u>, V.Yu. Yakovlev<sup>1</sup>, V.D. Alekseev<sup>2</sup>, A.N. Meleshko<sup>1</sup>, A.I. Mitichkin<sup>2</sup></b></p> <p><i>Institute for Scintillation Materials of NASU, Kharkov, Ukraine</i> <sup>1</sup><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>

	<sup>2</sup> <i>Institute for Scintillation Materials of NASU, Kharkov, Ukraine</i>
11.20-11.40	<p><b>ON THE QUESTION OF VARIETY OF RE IONS LOCAL ENVIRONMENTS IN OXIDE GLASSES</b></p> <p><b><u>E. Malchukova</u><sup>1</sup>, A. Nepomnyaschich<sup>2</sup>, B. Boizot<sup>3</sup></b></p> <p><sup>1</sup> <i>Ioffe Physical Technical Institute, Saint-Petersburg, Russia</i>  <sup>2</sup> <i>Geochemistry Institute, Irkutsk, Russia</i>  <sup>3</sup> <i>Laboratoire des Solides Irradiés, UMR 7642 CEA-CNRS-Ecole Polytechnique, Palaiseau, France</i></p>
11.40-12.00	<p><b>GENERAL INTERACTIVE TRAP SYSTEM MODEL FOR THERMOLUMINESCENCE OF Al<sub>2</sub>O<sub>3</sub>:C SINGLE CRYSTALS</b></p> <p><b>S.V. Nikiforov, V.S. Kortov</b></p> <p><i>Ural Federal University named after the first President of Russia B.N.Yeltsin, Ekaterinburg, Russia</i></p>
12.00-12.20	<p><b>SPECTRAL AND KINETIC CHARACTERISTICS OF LUMINESCENCE OF AlGaN/InGaN/GaN HETEROSTRUCTURES EXCITED BY HIGH-CURRENT ELECTRON BEAM</b></p> <p><b>V. I. Oleshko, <u>S. G. Gorina</u>, V. I. Korepanov, V. M. Lisitsyn</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
12.20-12.40	<p><b>SCINTILLATION RESPONSE OF CSi(WO<sub>4</sub>) TO IRRADIATION</b></p> <p><b><u>N.V. Ovcharenko</u><sup>2</sup>, V.Yu. Yakovlev<sup>1</sup>, Yu.S. Ganja<sup>1</sup>, L.N. Trefilova<sup>2</sup>, O.V. Zelenskaya<sup>2</sup>, T.P.Rebrova<sup>2</sup>, O. V. Gayduk<sup>3</sup>, D. S. Sofronov<sup>4</sup></b></p> <p><sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>2</sup> <i>Institute for Scintillation Materials, Kharkov, Ukraine</i>  <sup>3</sup> <i>Institute for Single Crystals of NASU, Kharkov, Ukraine</i>  <sup>4</sup> <i>STC "Institute for single crystals" of NASU, Kharkov, Ukraine</i></p>
<b>12:40-15:00</b>	<b>LUNCH</b>
15.00-15.20	<p><b>ENERGY TRANSFER PROCESSES IN Li<sub>6</sub>(Gd, Eu, Y)(BO<sub>3</sub>)<sub>3</sub> BULK CRYSTALS AND FIBERS</b></p> <p><b><u>I. N. Sedunova</u>, I. N. Ogorodnikov, V. Yu. Ivanov, V. A. Pustovarov</b></p> <p><i>Ural Federal University, Ekaterinburg, Russia</i></p>

15.20-15.40	<p><b>ENERGY TRANSFER MECHANISMS IN ALKALI-EARTH FLUORIDES DOPED WITH Pr<sup>3+</sup> IONS</b></p> <p><b><u>R. Y. Shendrik</u><sup>1,2</sup>, E. A. Radzhabov<sup>1,2</sup>, and A. I. Nepomnyashchikh<sup>1,2</sup></b></p> <p><sup>1</sup> <i>Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia</i>  <sup>2</sup> <i>Physics Department of Irkutsk State University, Irkutsk, Russia</i></p>
15.40-16.00	<p><b>STUDY OF SeH<sup>-</sup> - SeH<sup>-</sup> DIMERS IN KCl CRYSTAL</b></p> <p><b><u>E.A. Shteiner</u>, A.D. Afanasyev</b></p> <p><i>Irkutsk State Technical University, Irkutsk, Russia</i></p>
16.00-16.20	<p><b>OPTICALLY AND THERMALLY STIMULATED LUMINESCENCE OF NANOPOWDERS AND THIN FILMS OF ALUMINUM OXIDE</b></p> <p><b><u>A. I. Surdo</u><sup>1,2</sup>, S. Yu. Sokovnin<sup>3</sup>, I. I. Milman<sup>2</sup>, V. G. Il'ves<sup>3</sup>, M. I. Vlasov<sup>1</sup>, R. M. Abashev<sup>2</sup>, A. V. Boldesh<sup>2</sup></b></p> <p><sup>1</sup> <i>Institute of Industrial Ecology, UB RAS, Yekaterinburg, Russia</i>  <sup>2</sup> <i>Ural Federal University, Yekaterinburg, Russia</i>  <sup>3</sup> <i>Institute of Electrophysics, UB RAS, Yekaterinburg, Russia</i></p>
16.20-16.40	<p><b>THE MICROCENTER HEAT EXPLOSION MODEL MODERNIZATION</b></p> <p><b><u>A. V. Kalenskii</u>, V. G. Kriger, A. A. Zvekov<sup>1</sup>, E. A. Grishaeva, I. Yu. Zykov, A. P. Nikitin</b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i>  <sup>1</sup> <i>Institute of Coal Chemistry and Material Science, Russia</i></p>
16.40-17.00	<p><b>5d-4f LUMINESCENCE OF Nd<sup>3+</sup>, Er<sup>3+</sup> AND Tm<sup>3+</sup> IONS WITH SEVERAL CONCENTRATION IN FLUORIDES</b></p> <p><b><u>E.A. Prosekina</u>, E.A. Radzhabov</b></p> <p><i>Vinogradov Institute of Geochemistry SB RAS, Russia, Irkutsk</i></p>
17.00-17.20	<p><b>COPPER IMPURITY IN LiF AND NaF CRYSTALS FROM AB INITIO CALCULATION: STRUCTURE AND OPTICAL PROPERTIES</b></p> <p><b><u>A.Myasnikova</u>, A.Mysovsky, A.Paklin and A.Shalaev</b></p> <p><b>VINOGRADOV INSTITUTE OF GEOCHEMISTRY SB RAS, IRKUTSK, RUSSIA</b></p>
17.20-18.00	<p><b>POSTER DISCUSSION</b></p>



## Poster Session 1. Elementary processes

1	<p><b>ATOMISTIC SIMULATION OF STRUCTURE AND PROPERTIES OF SOLID AND LIQUID URANIUM</b></p> <p><b><u>D. E. Smirnova</u>, S. V. Starikov, V. V. Stegailov</b></p> <p><i>Joint Institute for High Temperatures RAS, Moscow, Russia</i></p>
2	<p><b>THE CRYSTAL STRUCTURE OF DINITIDE-NITRIDE N<sub>2</sub>Mn (M: Cu, Ag)</b></p> <p><b>J.N. Zhuravlev<sup>1</sup>, G. Damamme, V.M. Lisitsyn, D. Malys, <u>E.Ju. Morozova</u></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup> <i>Kemerovo State University, Kemerovo, Russia</i></p>
3	<p><b>GEOMETRIC ANHARMONICITY BY EXAMPLE OF MODEL CALCULATIONS POLYETHYLENE</b></p> <p><b><u>N. M. Badyrova</u>, K.V. Kazakov<sup>1</sup></b></p> <p><i>Irkutsk State Technical University, Irkutsk, Russia</i>  <sup>1</sup> <i>Irkutsk State Technical University, Irkutsk, Russia</i></p>
4	<p><b>COLORATION MECHANISM OF CSi(TI) UNDER IRRADIATION</b></p> <p><b><u>V.D. Alekseev</u>, L.N. Trefilova<sup>1</sup>, V. Yu. Yakovlev<sup>2</sup>, A.N. Meleshko<sup>2</sup>, T. A. Charkina</b></p> <p><i>Institute for Scintillation Materials of NASU, Kharkov, Ukraine</i>  <sup>1</sup> <i>Institute for Scintillation Materials of NASU, Kharkov, Ukraine</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
5	<p><b>THE IMPACT OF Ba<sup>2+</sup> AND SO<sub>4</sub><sup>2-</sup> ON THE EFFICIENCY OF PEROXYNITRITE FORMATION UNDER PHOTOLYSIS OF KNO<sub>3</sub></b></p> <p><b><u>V.A. Anan'ev</u>, L. D. Kriger, I. A. Sorokina, A. B. Belyh</b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p>
6	<p><b>PARTICLE-IN-CELL SIMULATION OF POLARIZATION RADIATION</b></p> <p><b><u>K. P. Artyomov</u><sup>1,2</sup>, V. V. Ryzhov<sup>1,2</sup>, V. P. Tarakanov<sup>3</sup></b></p> <p><sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>3</sup> <i>Joint Institute for High Temperatures of the Russian Academy of Sciences, Moscow, Russia</i></p>

7	<p><b>RADIATION-INDUCED ABSORPTION AT 15 K IN CRYSTALS LIYF<sub>4</sub></b>  <b>E.V. Bikhert<sup>1</sup>, V.I. Korepanov<sup>2</sup>, L. A. Lisitsyna<sup>2</sup>, A. Dauletbekova<sup>1</sup>,  V. M. Lisitsyn<sup>2</sup>, V.M. Reiterov<sup>3</sup></b>  <sup>1</sup><i>L.N.Gumilyov Eurasian National University, Astana, Kazakhstan,</i>  <sup>2</sup><i>Institute of High Technology Physics, Tomsk Polytechnic University,  Tomsk, Russia</i>  <sup>3</sup><i>«INKROM» St. Petersburg</i></p>
8	<p><b>OPTICAL AND ELECTRONIC PROPERTIES OF POINT DEFECTS IN  CALCIUM AND MAGNESIUM OXIDES</b>  <b>A. Yu. Kuznetsov, <u>M. A. Botov</u>, A. S. Makarov, A.B. Sobolev</b>  <i>Ural Federal University named after the first President of Russia  B.N.Yeltsin, Ekaterinburg, Russia</i></p>
9	<p><b>UV-LUMINESCENCE IN Lu<sub>2</sub>SiO<sub>5</sub>-Ce AND Lu<sub>2</sub>Si<sub>2</sub>O<sub>7</sub>-Ce CRYSTALS  AT VUV- AND SOFT X-RAY EXCITATION</b>  <b>V. Yu. Ivanov, I. N. Sedunova, I. V. Gerasymov<sup>1</sup>, O. Ts. Sidletskiy<sup>1</sup>,  V. A. Pustovarov</b>  <i>Yeltsin Ural Federal University, Yekaterinburg, Russia</i>  <sup>1</sup><i>Institute for Scintillation Materials NASU, Kharkiv, Ukraine</i></p>
10	<p><b>RADIATION-MODIFIED CONVERSION OF OXYGEN IMPURITIES IN  THE CRYSTALS OF LITHIUM FLUORIDE</b>  <b>L. A. Lisitsyna<sup>1</sup>, L.N. Trefilova<sup>2</sup>, R.N. Kasymkhanova<sup>3</sup>,  A. Dauletbekova<sup>3</sup></b>  <sup>1</sup><i>State University of Architecture and Building, Tomsk, Russia</i>  <sup>2</sup><i>Institute for Scintillation Materials of NASU, Kharkov, Ukraine</i>  <sup>3</sup><i>L.N.Gumilyov Eurasian National University, Astana, Kazakhstan</i></p>
11	<p><b>FIRST-PRINCIPLES MODELING OF THE SELF-TRAPPED EXCITON  NONRADIATIVE DECAY IN ALKALI HALIDES</b>  <b>A. S. Makarov, <u>A. Yu. Kuznetsov</u>, A.B. Sobolev, M. A. Botov</b>  <i>Ural Federal University named after the first President of Russia  B.N.Yeltsin, Ekaterinburg, Russia</i></p>
12	<p><b>THE MODELING OF INTRINSIC LUMINECSENCE IGNITION EFFECT  IN CRYSTAL KI AT LOW TEMPERATURE ELASTIK STRESS</b>  <b><u>L.N. Myasnikova</u>, N. N. Zhanturina<sup>1</sup>, K. Sh. Shunkeyev, B.A. Aliev<sup>1</sup>,  M. Grinberg<sup>2</sup>, V.S. Tkachenko</b>  <i>Aktobe State Pedagogical Institute, Aktobe, Kazakhstan</i>  <sup>1</sup><i>Al-Farabi Kazakh National University, Almaty, Kazakhstan</i>  <sup>2</sup><i>University of Gdansk, Gdansk, Poland</i></p>
13	<p><b>RECOMBINATIONAL AND RADIOSTIMULATED PROCESSES IN  SULPHATES WITH CORRELATED DEFECTS</b>  <b><u>T.N. Nurakhmetov</u>, A.Kainarbay, D.M.Salikhodja, A.Zhunusbekov,  Sadykova B.M., Pazylbek C., Karipbayev Zh.T.</b>  <i>L.N.Gumilyov Eurasian national university, Astana, St. Republic of  Kazakhstan</i></p>

14	<p><b>A LUMINESCENCE SPECTROSCOPY STUDY OF NON-LINEAR OPTICAL CRYSTALS <math>K_2Al_2B_2O_7</math></b></p> <p><b><u>I. N. Ogorodnikov</u>, V. A. Pustovarov, S. A. Yakovlev, L. I. Isaenko<sup>1</sup>, S. A. Zhurkov<sup>1</sup></b></p> <p><i>Ural Federal University, Yekaterinburg, Russia</i>  <sup>1</sup> <i>Institute of Geology and Mineralogy, SB RAS, Novosibirsk, Russia</i></p>
15	<p><b>LUMINESCENT PROPERTIES OF NEW ORGANIC LUMINOPHORES</b></p> <p><b><u>M. D. Petrenko</u>, D. S. Kopchuk, I. S. Kovalev, I. N. Ogorodnikov, D. V. Raykov, G. V. Zyryanov</b></p> <p><i>Ural Federal University, Yekaterinburg, Russia</i></p>
16	<p><b>ANDREEV REFLECTION OF PSEUDO-CORRELATED PAIRS ELECTRONS IN THE SYSTEM «SUPERCONDUCTOR–FLUCTUATION SUPERCONDUCTOR–SUPERCONDUCTOR»</b></p> <p><b><u>D. M. Sergeev</u>, K. Sh. Shunkeyev<sup>1</sup></b></p> <p><i>Military Institute of Air Defense Forces, Aktobe, Kazakhstan</i>  <sup>1</sup> <i>Aktobe State Pedagogical Institute, Aktobe, Kazakhstan</i></p>
17	<p><b>GROWTH AND OPTICAL CHARACTERIZATION OF COPPER-DOPED LITHIUM FLUORIDE SINGLE CRYSTALS</b></p> <p><b>A. Nepomnyashchikh<sup>1,2</sup>, <u>A. Shalaev</u><sup>1,2</sup>, A. Paklin<sup>1</sup>, R. Shendrik<sup>1,2</sup>, N. Bobina<sup>1</sup> and A. Myasnikova</b></p> <p><sup>1</sup> <i>Vinogradov Institute of Geochemistry SB RAS, Irkutsk, Russia</i>  <sup>2</sup> <i>Irkutsk State University, Faculty of Physics, Irkutsk, Russia</i></p>
18	<p><b>DIPOLE CURRENTS OF THERMOSTIMULATED DEPOLARIZATION IN ALKALI HALIDE CRYSTALS AT THE LATTICE SYMMETRY LOWERING</b></p> <p><b><u>K.Sh. Shunkeyev</u>, A.A. Barmina, K.B. Bizhanova, D.M. Sergeev, S.K. Shunkeyev</b></p> <p><i>Aktobe State Pedagogical Institute, Aktobe, Kazakhstan</i></p>
19	<p><b>EXPLANATION AND TESTING OF THE MODEL FOR COMPUTER CALCULATIONS OF LUMINESCENCE SPECTRA AND PHOTOLUMINESCENCE DECAY KINETICS UNDER PULSED LASER EXCITATION IN SILICON DIOXIDE CRYSTALS</b></p> <p><b><u>T. V. Spiridonova</u>, V. S. Kortov, S. V. Zvonarev</b></p> <p><i>Ural Federal University named after the first President of Russia B.N. Yeltsin, Ekaterinburg, Russia</i></p>
20	<p><b>LUMINESCENCE OF ZINC SELENIDE CRYSTALS EXCITED BY ELECTRON BEAM PULSE</b></p> <p><b>V.I. Oleshko, <u>S.S. Vil'chinskaya</u>, A.I. Kupchishin, S.G. Gorina</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>

21	<p><b>LUMINESCENCE AND DOSIMETRIC PROPERTIES OF THE (Er<sup>3+</sup>,Dy<sup>3+</sup>):YAG CRYSTALS</b></p> <p><b>M.I. Vlasov<sup>1</sup>, A.I. Surdo<sup>1,2</sup>, I.I. Milman<sup>2</sup>, V.I. Solomonov<sup>3</sup>, A.V. Spirina<sup>3</sup></b></p> <p><sup>1</sup> <i>Institute of Industrial Ecology, UB RAS, Yekaterinburg, Russia</i>  <sup>2</sup> <i>Ural Federal University, Yekaterinburg, Russia</i>  <sup>3</sup> <i>Institute of Electrophysics, UB RAS, Yekaterinburg, Russia</i></p>
22	<p><b>LUMINESCENCE OF Li<sub>6</sub>(Gd,Y)(BO<sub>3</sub>)<sub>3</sub>:Ce FIBERS</b></p> <p><b>D. O. Vostrov, I. N. Sedunova, I. N. Ogorodnikov, V. Yu. Ivanov</b></p> <p><i>Ural Federal University, Yekaterinburg, Russia</i></p>
23	<p><b>KINETICS OF SHORT-LIVING OPTICAL ABSORPTION IN BINARY LEAD SILICATE GLASSES</b></p> <p><b>I. S. Zhidkov, A. F. Zatsepin, A. I. Kukhareno, V. Yu. Yakovlev<sup>1</sup>, S. O. Cholakh</b></p> <p><i>Institute of Physics and Technology, Ural Federal University, Yekaterinburg, Russia</i>  <sup>1</sup> <i>Institute of High Technology Physics, Tomsk Polytechnic University, Tomsk, Russia</i></p>
24	<p><b>CORRELATING POLARIZED COMPONENTS OF ROTATING CRYSTAL COLOR CENTERS LUMINESCENCE</b></p> <p><b>D. B. Baskakov, S. A. Zilov, A. L. Rakewitch</b></p> <p><i>Irkutsk Branch of Institute of Laser Physics, Irkutsk, Russia</i></p>
25	<p><b>10.20-10.40 FIRST-PRINCIPLES CALCULATIONS OF RADIATION DEFECTS IN MAGNESIUM FLUORITE</b></p> <p><b>F.U.Abuova<sup>1</sup>, A.B.Useinov<sup>1</sup>, A.T. Akilbekov<sup>1</sup>, E.A. Kotomin<sup>2</sup>, S.Piskunov<sup>2</sup></b></p> <p><sup>1</sup> <i>L. N. Gumilyov Eurasian National University, Astana, Kazakhstan</i>  <sup>2</sup> <i>Institute of Solid State Physics, University of Latvia, Riga</i></p>
26	<p><b>QUANTUM-CHEMICAL MODELING OF RADIATION DEFECTS FORMATION PROCESSES IN CRYSTALS LiKSO<sub>4</sub>, LiNaSO<sub>4</sub>, CaSO<sub>4</sub></b></p> <p><b>Zh.M. Salikhoja, T.N. Nurakhmetov, A.Zh. Kainarbai, B.M. Sadykova, D. Mussakhanov, A. Dzhunusbekov, A. Agibetova</b></p> <p><i>L.N.Gumilyov Eurasian National University, Astana, Kazakhstan</i></p>

**September 19, Wednesday**

9:00 – 13:00, 15:00 – 18:30, room **310**

**Oral Session 2. Nonlinear effects**

**Chairman:** B.P. Aduiev, V.G. Kriger

**Secretary:** A. S. Skripin

9.00-9.30	<p><b>SOME PROGRESS IN EXPERIMENTAL CHARACTERIZATION OF CHARGE TRANSPORT AND TRAPPING IN INSULATORS ASSOCIATED WITH SECONDARY ELECTRON EMISSION</b></p> <p><b><u>G.Damamme</u>, K. Zarbout<sup>1</sup>, G. Moya<sup>2</sup>, A. Si-Ahmed<sup>2</sup></b></p> <p><i>CEA-DAM, France</i>  <sup>1</sup><i>LaMaCoP, Université de Sfax, Tunisie</i>  <sup>2</sup><i>Im2np, Université d'Aix-Marseille, France</i></p>
9.30-10.00	<p><b>FTZDO EXPLOSIVE DECOMPOSITION UNDER LASER AND ELECTRON BEAM ACTION</b></p> <p><b><u>V. Zarko</u><sup>1</sup>, V. Oleshko, V. Tsipilev</b></p> <p><i>Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup><i>Institute of Chemical Kinetics and Combustion of SB of RAS, Novosibirsk, Russia</i></p>
10.00-10.30	<p><b>INITIATION OF PENTAERYTHRITOL TETRANITRATE MONOCRYSTALS BY IMPULSE BEAM OF ELECTRONS</b></p> <p><b><u>B.P.Aduiev</u>, G.M.Belokurov, S.S.Grechin, I.Ju.Liskov</b></p> <p><i>Institute of Coal Chemistry and Material Science SB RAS, Russia, Kemerovo</i></p> <p><b>LASER INITIATION OF PENTAERYTHRITOL TETRANITRATE WITH ADDITIVES OF ALUMINIUM AND ALUMINA NANOPARTICLES</b></p> <p><b><u>B.P. Aduiev</u>, D.R. Nurmukhametov, R.I. Furega</b></p> <p><i>Institute of Coal Chemistry and Material Science SB RAS, Russia, Kemerovo</i></p>

10.30-10.50	<p><b>TO A QUESTION ABOUT PREDETONATION STAGE OF EXPLOSIVE DECOMPOSITION OF HEAVY METAL AZIDES</b></p> <p><b><u>V. Tsipilev</u>, A. Razin, A. Skripin, V. Lisitsyn, G. Damamme<sup>1</sup>, D. Malys<sup>1</sup></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup><i>French Alternative Energies and Atomic Energy Commission, Paris, France</i></p>
10.50-11.10	<b>COFFEE BREAK</b>
11.10-11.30	<p><b>MECHANISM OF THE HOT CENTERS FORMATION IN PETN MONOCRYSTALS AT THE EXPLOSION INITIATION BY HIGH-CURRENT ELECTRON BEAM</b></p> <p><b><u>V. I. Oleshko</u>, V. M. Lisitsyn, V.V. Lysyk, A. S. Skripin, V. P. Tsipilev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
11.30-11.50	<p><b>IMPACT OF HIGH INTENSITY FS AND NS OPTICAL PULSE EXPOSES UPON DOPED GASE</b></p> <p><b>V.V. Atuchin<sup>1</sup>, S.V. Alekseev<sup>2</sup>, <u>Yu.M. Andreev</u><sup>3</sup>, K.A. Kokh<sup>4</sup>, G.V. Lanskii<sup>3</sup>, V.F. Losev<sup>2,6</sup>, D.M. Lubenko<sup>2</sup>, Yu.N. Punchenko<sup>6</sup>, A.V. Shaiduko<sup>3</sup>, V.A. Svetlichnyi<sup>5</sup></b></p> <p><sup>1</sup><i>Semiconductor Physics Institute of SB RAS, Novosibirsk, Russia</i>  <sup>2</sup><i>High Current electronic Institute of SB RAS, Tomsk, Russia</i>  <sup>3</sup><i>Institute of Monitoring of Climatic and Ecological Systems of SB RAS, Tomsk, Russia</i>  <sup>4</sup><i>Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia</i>  <sup>5</sup><i>Siberian Physical-Technical Institute of Tomsk State University, Tomsk, Russia</i>  <sup>6</sup><i>High Current Electronic department of Tomsk Polytechnic University, Tomsk, Russia</i></p>
11.50-12.10	<p><b>CHARACTERIZATION OF GASE SOLID SOLUTIONS BY OPTICAL BEAMS</b></p> <p><b>L.-M. Zhang<sup>1</sup>, J. Guo<sup>1</sup>, J.-J. Xie<sup>1</sup>, F. Chen<sup>1</sup>, K. Jiang<sup>1</sup>, V.V. Atuchin<sup>2</sup>, <u>Yu.M. Andreev</u><sup>3</sup>, T.I. Izaak<sup>4</sup>, K.A. Kokh<sup>5</sup>, G.V. Lanskii<sup>3</sup>, V.F. Losev<sup>6</sup>, A.V. Shaiduko<sup>3</sup>, V.A. Svetlichnyi<sup>4</sup>, E.A. Vaitulevich<sup>4</sup></b></p> <p><sup>1</sup><i>Changchun Institute of Optics, Fine Mechanics and Physics, CAS, Changchun, China</i>  <sup>2</sup><i>Semiconductor Physics Institute of SB RAS, Novosibirsk, Russia</i></p>

	<p><sup>3</sup> <i>Institute of Monitoring of Climatic and Ecological Systems of SB RAS, Tomsk, Russia</i></p> <p><sup>4</sup> <i>Siberian Physical-Technical Institute of Tomsk State University, Tomsk, Russia</i></p> <p><sup>5</sup> <i>Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia</i></p> <p><sup>6</sup> <i>High Current Electronic Institute of SB RAS, Tomsk, Russia</i></p>
12.10-12.30	<p><b>GENERATION OF LASER LINES AND NON-LINEAR SELF-ADDITION THEIR FREQUENCIES AT POWERFUL ELECTRON-BEAM PUMPING OF Er:BaY<sub>2</sub>F<sub>8</sub> CRYSTALS</b></p> <p><b>V.I. Baryshnikov<sup>1-3</sup>, V.V. Krivorotova<sup>1</sup></b></p> <p><sup>1</sup> <i>Irkutsk State Railway University, Irkutsk, Russia.</i></p> <p><sup>2</sup> <i>Irkutsk Filial of Laser Physics Institute at SB RAS. Irkutsk, Russia.</i></p> <p><sup>3</sup> <i>Applied Physics Institute of Irkutsk State University, Irkutsk, Russia</i></p>
12.30-13.00	<p><b>THE TIME-SPACE PARAMETERS OF THE EXPLOSIVE DECOMPOSITION OF ENERGETIC MATERIALS MOVING REACTION WAVE</b></p> <p><b>A. P. Borovikova, V. G. Kriger, A.V. Kalenskii, M. V. Ananyeva, A. A. Zvekov<sup>1</sup></b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p> <p><sup>1</sup> <i>Institute of Coal Chemistry and Material Science, Russia</i></p> <p><b>COMPARATIVE ANALYSIS OF THE ENERGETIC MATERIALS EXPLOSION PROCESS'S CHAIN AND THERMAL MECHANISMS</b></p> <p><b>M. V. Ananyeva, V. G. Kriger, A. V. Kalenskii, A. A. Zvekov<sup>1</sup>, A. P. Borovikova, E. A. Grishaeva, I. Yu. Zykov</b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p> <p><sup>1</sup> <i>Institute of coal Chemistry and Materials Science, Kemerovo, Russia</i></p> <p><b>THE DEPENDENCE OF THE EXPLOSIVE DECOMPOSITION CRITICAL ENERGY DENSITY ON PULSE DURATION</b></p> <p><b>A. A. Zvecov<sup>1</sup>, V. G. Kriger, A. V. Kalenskii, B. P. Aduiev, I. Yu. Zycov, A. P. Nikitin</b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p> <p><sup>1</sup> <i>Institute of Coal Chemistry and Materials Science, Kemerovo, Russia</i></p>
13.00-15.00	<b>LUNCH</b>

15.00-15.20	<p><b>THE RELAXATION OF NONEQUILIBRIUM CARRIERS OF CHARGES IN PHOTO- AND ELECTRO-RAISED OF SILVER AZIDE</b></p> <p><b><u>V.I. Krasheninin</u>, E.G. Gazenaur, A.P. Rodzevich<sup>1</sup>, L.V. Kuzmina, V.G. Gritchina, E.V. Sugatov</b></p> <p><i>The Kemerovo State University, Kemerovo, Russia</i>  <sup>1</sup><i>Yurginskiy Technological Institute of the Tomsk Polytechnic University, Yurga, Russia</i></p>
15.20-15.40	<p><b>THE PERIODIC STRUCTURE OF COLOR CENTERS DISTRIBUTION IN FILAMENT FORMED BY FEMTOSECOND LASER IRRADIATION IN CRYSTAL MgF<sub>2</sub></b></p> <p><b><u>S. A. Zilov</u><sup>1,2</sup>, E. F. Martynovich<sup>1,2</sup>, L.I. Brykvina<sup>1</sup>, A. A. Starchenko<sup>1</sup></b></p> <p><sup>1</sup><i>Irkutsk Filial of Institute of Laser Physics SB RAS, Irkutsk, Russia</i>  <sup>2</sup><i>Institute of Applied Physics, Irkutsk State University, Irkutsk, Russia</i></p>
15.40-16.00	<p><b>SIMULATION OF FILAMENTATION OF EXTREMELY INTENSE FEMTOSECOND LASER PULSES IN CRYSTALLINE DIELECTRICS</b></p> <p><b><u>A. V. Kuznetsov</u>, E. F. Martynovich</b></p> <p><i>Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia</i></p>
16.00-16.20	<p><b>FORMATION OF STRATOSPHERIC OZONE FROM CARBON DIOXIDE, AMMONIA FROM METHANE AS A RESULT OF PHOTONUCLEAR REACTIONS</b></p> <p><b><u>E.E. Ramazanova</u>, A.L Shabanov, M.A. Huseynov</b></p> <p><i>Scientific Research Institute (SRI) Geotechnological problems of oil, gas and chemistry</i></p>
16.20-16.40	<p><b>INITIATION OF DETONATION OF HEAVY METALS AZIDE BY CO<sub>2</sub> LASER</b></p> <p><b><u>A. Razin</u>, V. Tspilev, E. Morozova</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>



16.40-17.00	<p><b>MICROSECOND ELECTRICAL BREAKDOWN INFLUENCE ON POLYMERIC ENERGY-INTENSIVE SYSTEMS FILLED WITH DISPERSED ALUMINUM</b></p> <p><b><u>D. N. Sadovnichij</u>, Yu. M. Milekhin, S. A. Lopatkin<sup>1</sup>, D. V. Zhgun<sup>1</sup>, V. F. Vazhov<sup>1</sup>, E. A. Butenko, S. A. Malinin</b></p> <p><i>Soyuz Federal Center of Dual-Use Technologies, Russia, Dzerzhinskii</i> <sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
17.00-17.20	<p><b>DEPENDENCE OF EXPLOSION INITIATION THRESHOLD OF PETN WITH ABSORPTIVE ADDITIVES ON UNIFORM COMPRESSIONPRESSURE OF THE SAMPLE</b></p> <p><b>V. Ovchinnikov, <u>A. Skripin</u>, V. Tsipilev, A. Yakovlev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
<b>Oral Session 5. Methods of testing</b>	
17.20-17.40	<p><b>SAFETY ASSURANCE FOR RESEARCH OF RADIATION HEATING OF MATERIALS UNDER EXPOSURE IN IGR REACTOR CORE</b></p> <p><b><u>A. T. Izbaskhanova</u>, K. K. Kadyrzhanov, E. A. Kenzhin</b></p> <p><i>Republican State Enterprise “National Nuclear Center of the Republic of Kazakhstan”, Kurchatov, Kazakhstan,</i></p>
17.40-18.30	<b>POSTER DISCUSSION</b>

## Poster Session 2. Nonlinear effects

1	<p><b>SIMULATION OF RADIATION DIFFUSION IN SCATTERING MEDIA OF DIFFERENT THICKNESS</b></p> <p><b><u>V. Ovchinnikov</u>, A. Skripin, V. Tsipilev, A. Yakovlev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
2	<p><b>THE TRANSITION FROM SLOW DECOMPOSITION PROCESS INTO THE SELF-ACCELERATED MODE IN THE ENERGETIC MATERIALS</b></p> <p><b><u>E. A. Grishaeva</u>, A. V. Kalenskii, A. A. Zvekov<sup>1</sup>, V. G. Kriger, M. V. Ananyeva, O N. Kolmogorova</b></p>

	<p><i>Kemerovo State University, Kemerovo, Russia</i>  <sup>1</sup> <i>Institute of Coal Chemistry and Materials Science, Kemerovo, Russia</i></p>
3	<p><b>LOW-TEMPERATURE STUDY OF MAGNETIC SUSCEPTIBILITY IN NONSTOICHIOMETRIC TITANIUM CARBONITRIDE</b></p> <p><b><u>Ismatov N.B.</u>, Tashmetov M.Yu.</b></p> <p><i>Institute of Nuclear Physics, Tashkent, Uzbekistan</i></p>
4	<p><b>THE CRITERION OF INITIATION FOR EXPLOSIVE MATERIALS WITH THE FUSING TEMPERATURE THAT IS LESS THAN THE IGNITION TEMPERATURE BY THE SHORT LASER BEAM</b></p> <p><b><u>A. V. Khaneft</u>, E. V. Duginov, V. A. Dolgachev, G. A. Ivanov</b></p> <p><i>Kemerovo State University, Russia</i></p>
5	<p><b>RADIATION-THERMAL MECHANISM OF INITIATION OF PETN IN THE ABSORPTION REGION OF THE ELECTRON PULSE</b></p> <p><b><u>A. V. Khaneft</u>, G. A. Ivanov</b></p> <p><i>Kemerovo State University, Russia</i></p>
6	<p><b>INVESTIGATIONS ON PYROLYTIC DECOMPOSITION OF OIL SHALE BY THE PLASMA CHANNEL</b></p> <p><b><u>S.M. Martemyanov</u>, V.V. Lopatin</b></p> <p><i>Tomsk Polytechnic University, Tomsk, Russia</i></p>
7	<p><b>DISCRETE BREATHERS ON THE 3D MODEL OF Pt<sub>3</sub>Al WITH L<sub>12</sub> ORDER</b></p> <p><b><u>N. N. Medvedev</u>, M. D. Starostenkov<sup>1</sup></b></p> <p><i>Altay State Academy of Education, Biysk, Russia</i>  <sup>1</sup> <i>Altay State Technical University, Barnaul, Russia</i></p>
8	<p><b>ATOM AND ION LUMINESCENCE OBSERVED DURING EXPLOSION OF HEAVY METAL AZIDES IN VACUUM</b></p> <p><b><u>V. I. Oleshko</u>, V.V. Lysyk</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
9	<p><b>TO A QUESTION ABOUT OPTICAL PROPERTIES OF PRESSED POWDERS OF PENTAERYTHRITOL TETRANITRATE</b></p> <p><b><u>V. Ovchinnikov</u>, V. Tspilev, A. Yakovlev</b></p> <p><i>Tomsk Polytechnic University, Tomsk, Russia</i></p>
10	<p><b>INITIATION OF PETN EXPLOSIVE DECOMPOSITION BY CO<sub>2</sub>-LASER</b></p> <p><b><u>A. Razin</u>, A. Skripin, V. Tspilev, A. Yakovlev, G. Damamme<sup>1</sup>, D. Malys<sup>1</sup></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup> <i>French Alternative Energies and Atomic Energy Commission, Paris, France</i></p>

## Poster Session 5. Methods of testing

1	<p><b>INVESTIGATION OF THE NANOSTRUCTURES FORMATION IN THE IRRADIATED BY <math>\Gamma</math> – QUANTA SINGLE-CRYSTAL SILICON WITH ULTRASONIC METHOD</b></p> <p><b>I.Kh. Abdukadirova, T. Khaydarov, <u>Yu. Karimov</u></b></p> <p><i>Institute of Nuclear Physics of Academy Sciences of Uzbekistan, Uzbekistan</i></p>
2	<p><b>RADIATION-INDUCED OF A DIELECTRIC ABSORPTION IN THE OXIDE ALUMINUM</b></p> <p><b>I.Kh. Abdukadirova</b></p> <p><i>Institute of Nuclear Physics Academy of Sciences of Uzbekistan, Uzbekistan</i></p>
3	<p><b>ANALYSIS OF ELASTIC CHARACTERISTICS STABILITY MADE FROM SAV-1 ALLOYS OF FUEL ELEMENTS AT THE WWR-SM REACTOR WITH ULTRASONIC METHOD</b></p> <p><b><u>I. Kh. Abdukadirova</u></b></p> <p><i>Institute of Nuclear Physics Academy of Sciences Uzbekistan, Uzbekistan</i></p>
4	<p><b>TO THE QUESTION OF THE ANALYSIS OF EXPERIMENTAL SPECTRA</b></p> <p><b><u>A. N. Cherepanov</u></b></p> <p><i>Ural Federal University named after the first President of Russia B.N.Yeltsin, Yekaterinburg, Russia</i></p>
5	<p><b>PULSED CATHODOLUMINESCENCE OF MINERALS EXCITED BY NANOSECOND AND SUBNANOSECOND ELECTRON BEAMS</b></p> <p><b>V. M. Lisitsyn<sup>1</sup>, V. F. Tarasenko<sup>2</sup>, <u>E. F. Polisadova<sup>1</sup></u>, E. H. Baksht<sup>2</sup>, D. T. Valiev<sup>1</sup>, A. G. Burachenko<sup>2</sup>, Lipatov E.I.<sup>2</sup></b></p> <p><sup>1</sup><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>2</sup><i>High Current Electronics Institute, SB RAS, Tomsk, Russia</i></p>
6	<p><b>THE INTERRELATION BETWEEN THE THERMODYNAMIC AND OPTICAL PARAMETERS OF DBD-DRIVEN XeCl-EXCILAMP: MODELING AND EXPERIMENT</b></p> <p><b><u>E. A. Sosnin<sup>1,2</sup></u>, S.V. Avtaeva<sup>3</sup>, V. A. Panarin<sup>1</sup>, S. M. Avdeev<sup>1</sup></b></p> <p><sup>1</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup><i>Tomsk State University, Tomsk, Russia</i>  <sup>3</sup><i>Kyrgyz-Russian Slavic University, Bishkek, Kyrgyz Republic</i></p>

7	<p><b>STUDY OF ACOUSTIC VIBRATIONS OF DBD-DRIVEN PLANAR KrCl-EXCILAMP</b></p> <p><b><u>E. A. Sosnin</u><sup>1</sup>, V. A. Panarin<sup>1</sup>, A. A. Pikulev<sup>2</sup>, V. F. Tarasenko<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk</i>  <sup>2</sup> <i>Russian Federal Nuclear Center-All-Russian Scientific-Research Institute of Experimental Physics, Sarov, Russia</i></p>
8	<p><b>MODELLING OF PASSAGE OF OPTICAL SIGNALS THROUGH RECORDING SYSTEM IN THE ENVIRONMENT OF LABVIEW</b></p> <p><b>V. M. Lisitsyn, E.F. Polisadova, <u>D.T. Valiev</u></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
9	<p><b>IDENTIFICATION METHOD OF EMISSION PEAKS FROM OXIDE FILM IN THE IR-RANGE WAVELENGTH</b></p> <p><b>E.Yu.Brikulya, B.A.Kalin, I.V.Oleynikov, <u>N.V.Volkov</u></b></p> <p><i>National Research Nuclear University MEPhI, Moscow, Russia</i></p>
10	<p><b>IMITATION EXPERIMENTS FOR INVESTIGATION OF REACTOR MATERIALS RADIATION HARDNESS</b></p> <p><b><u>T.V. Kulevoy</u>, B.B. Chalykh, R.P. Kuybeda, N.Yu. Grachev, A.A. Aleev, A.A. Nikitin, N.A. Iskanderov, N.N. Orlov, A.D. Fertman, S.V Rogozhkin</b></p> <p><i>Institute of Experimental and Theoretical Physics, Moscow, Russia</i></p>
11	<p><b>EXPERIMENTAL CHANNEL COMMISSIONING AND FIRST EXPERIMENTS FOR MATERIAL IRRADIATION AT HEAVY ION RFQ IN ITEP</b></p> <p><b><u>T.V. Kulevoy</u>, B.B. Chalykh, R.P. Kuybeda, A.A. Aleev, A.A. Nikitin, N.N. Orlov, S.V Rogozhkin</b></p> <p><i>Institute of Experimental and Theoretical Physics, Moscow, Russia</i></p>
12	<p><b>INSTITUTE OF HIGH TECHNOLOGY PHYSICS EXPERIENCE IN MASTERS OF ENGINEERING AND DOCTORAL TRAINING: THE PLATFORM FOR COOPERATION WITH RUSSIAN ACADEMY OF SCIENCES INSTITUTIONS IN THE DOMAIN OF MATERIAL SCIENCE AND PHYSICS OF HIGH ENERGY SYSTEMS</b></p> <p><b>Alexey N.Yakovlev, Kirill S. Kostikov, Nikita V. Martyushev, Natalia A. Shepotenko, Yulia V. Falkovich</b></p> <p><i>National Research Tomsk Polytechnic University</i></p>
13	<p><b>RESEARCH WORK OF STUDENTS AS THE PLATFORM FOR DOCTORAL EDUCATION</b></p> <p><b>Alexey N.Yakovlev, Kirill S. Kostikov, Nikita V. Martyushev, Natalia A. Shepotenko, Yulia V. Falkovich</b></p> <p><i>National Research Tomsk Polytechnic University</i></p>

September 20, Thursday

9:00 – 11:00, room 209

## Oral Session 3. Surface

Chairman: A.T. AkylbekovSecretary: A. Kamrikova

9.00-9.20	<p><b>SURFACE STRUCTURE FEATURES OF COMPOUNDS WITH MOVEABLE METALLC SUBLATTICE</b></p> <p><b><u>V.M. Berezin</u>, A.A.Troitskiy</b></p> <p><i>South Ural State University (SUSU) (National Research University), Chelyabinsk, Russia</i></p>
9.20-9.40	<p><b>CHEMILUMINESCENCE OF Zn<sub>2</sub>SiO<sub>4</sub>-Mn, EXCITED BY UV-RADIATION UNDER THE INFLUENCE OF H-ATOMS WITH THERMAL ENERGY</b></p> <p><b><u>D. V. Grankin</u></b></p> <p><i>Pryazovskyi State Technical University, Mariupol, Ukraine</i></p>
9.40-10.00	<p><b>STRUCTURE AND ELECTRONIC PROPERTIES OF THE MIXED HYDROGEN-HYDROCARBON COATED SILICON Si<sub>29</sub> NANOPARTICLES</b></p> <p><b>Sh. Makhkamov<sup>1</sup>, S.B. Khudayberganov<sup>1,2</sup>, A.B. Normurodov<sup>1</sup>, A.P. Mukhtarov<sup>1,2</sup></b></p> <p><sup>1</sup><i>Institute of Nuclear Physics of Uzbekistan Academy Sciences, Tashkent, Uzbekistan</i>  <sup>2</sup><i>National University of Uzbekistan named after Mirzo Ulugbek, Tashkent</i></p>
10.00-10.20	<p><b>THERMAL STABILIZATION OF FeSn-<i>l</i>a-Fe(Sn) LAYERED SYSTEM</b></p> <p><b><u>A. K. Zhubaev</u></b></p> <p><i>Aktobe State University, Aktobe, Kazakhstan</i></p>
10.20-10.40	<p><b>INVESTIGATION OF STEEL SURFACE IRRADIATED BY PROTONS IN IODINE MEDIUM</b></p> <p><b><u>O. V. Ryaboukhin<sup>1</sup></u>, S. S. Zyryanov<sup>1</sup>, A. V. Kruzhalov<sup>1</sup>,  <u>F. G. Neshov<sup>1</sup></u>, M. V Kuznetsov<sup>2</sup></b></p> <p><sup>1</sup><i>Ural Federal University, Ekaterinburg, Russia</i>  <sup>2</sup><i>Institute of Solid State Chemistry, Ekaterinburg, Russia</i></p>
10.40-11.00	<b>POSTER DISCUSSION</b>
11.00-11.20	<b>COFFEE BREAK</b>

## Poster Session 3. Surface

1	<p><b>STIMULATED BY IONIZING RADIATION ELECTRONIC ACCOMMODATION OF THE REACTION HEAT IN H-ZnS, ZnS,CdS-Ag SYSTEMS</b></p> <p><b><u>V.P. Grankin</u>, M.V. Grankin</b></p> <p><i>Priazovsky State Technical University, Mariupol, Ukraine</i></p>
2	<p><b>EFFECT OF SURFACE PASSIVATION BY HYDROGEN TO THE STRUCTURE AND ELECTRONIC PROPERTIES OF SILICON NANOPARTICLES</b></p> <p><b><u>S.B. Khudayberganov</u><sup>1,2</sup>, A.P. Mukhtarov<sup>1,2</sup>, N.T. Sulaymanov<sup>2</sup>, Kh.I. Akbarov<sup>1</sup></b></p> <p><sup>1</sup><i>National University of Uzbekistan named after Mirzo Ulugbek, Tashkent, Uzbekistan</i>  <sup>2</sup><i>Institute of Nuclear Physics of Uzbekistan Academy Sciences, Tashkent, Uzbekistan</i></p>
3	<p><b>COMPUTER MODELING OF ATOMIC AND ELECTRONIC STRUCTURE FOR SODIUM PERCHLORATE SURFACE</b></p> <p><b><u>D. V. Korabel'nikov</u></b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p>
4	<p><b>STUDY OF THERMAL STABILIZATION IN Zr-Fe LAYERED SYSTEM</b></p> <p><b>A. K. Zhubaev, <u>G. M. Mailybaeva</u></b></p> <p><i>Aktobe State University, Aktobe, Kazakhstan</i></p>
5	<p><b>THE NATURE OF RRL<sub>H</sub> CENTERS AT WILLEMITE SURFACE</b></p> <p><b><u>E. A. Sosnov</u>, A. A. Malkov, A. A. Malygin</b></p> <p><i>Saint-Petersburg State Institute of Technology, St.Petersburg, Russia</i></p>
6	<p><b>STRUCTURE-PHASE STATE OF TiZrSiN THIN FILMS IRRADIATED BY HYDROGEN AND XENON IONS.</b></p> <p><b><u>V.V. Uglov</u>, G. Abadias<sup>1</sup>, A. Michel<sup>1</sup>, S.V. Zlotski, N.A. Dolgolevich, I.A. Saladukhin</b></p> <p><i>Belarusian State University, Minsk, Belarus, Uglov@bsu.by</i>  <sup>1</sup><i>University of Poitiers, Poitiers, France</i></p>

**September 20, Thursday**

11:20-13.00, 15.00-17:50, room **209**

**Oral Session 4. Physical basis of radiation-related technologies**

**Chairman:** A.T. Akylbekov, S.A. Zilov

**Secretary:** D.T. Valiev

11.20-11.50	<p><b>DEFECTS CREATION IN WIDE BAND-GAP CRYSTALS BY AN INTENSE NEAR INFRARED LASER RADIATION</b></p> <p><b>E.F. Martynovich</b></p> <p><i>Irkutsk Branch of the Institute of Laser Physics SB RAS, Irkutsk, Russia</i></p>
11.50-12.20	<p><b>DETECTOR MATERIALS AND DEVICES FOR RADIATION MONITORING</b></p> <p><b><u>B. V. Shulgin</u>, A. V. Kruzhalov, V. L. Petrov, L. V. Victorov, A. S. Shein, V. S. Andreev, A. L. Krymov, V. Yu. Ivanov, A. N. Cherepanov, <u>A. V. Ishchenko</u>, A. Yu. Derstuganov, V. A. Terekhin<sup>1</sup>, Yu. I. Chernukhin<sup>1</sup>, O. N. Shutov<sup>2</sup>, M. N. Blagoveshchenskii<sup>2</sup>, V. G. Grebnyak<sup>2</sup>, T. S. Koroleva<sup>3</sup>, M. M. Kidibaev<sup>3</sup></b></p> <p><i>Ural Federal University named after the first President of Russia B.N.Yeltsin, Yekaterinburg, Russia</i></p> <p><sup>1</sup> <i>Snezhinsk Physics and Technology Institute, Snezhinsk, Russia</i></p> <p><sup>2</sup> <i>Gamma Ltd, Yekaterinburg, Russia</i></p> <p><sup>3</sup> <i>Institute of Physical &amp; Technical Problems and Materials Science of the National Academy of Sciences of the Kyrgyz Republic, Bishkek, Kyrgyzstan</i></p>
12.20-12.40	<p><b>THERMOSTIMULATED LUMINESCENCE OF LiF: Mg, Ti, IRRADIATED WITH FEMTOSECOND LASER PULSES IN MODE OF THE FILAMENTATION</b></p> <p><b><u>D.S. Glazunov</u><sup>1</sup>, V.P. Dresvyanskiy<sup>1</sup>, N.S. Bobina<sup>3</sup>, V.F. Ivashechkin<sup>3</sup>, A. V. Kirpichnikov<sup>2</sup>, A. V. Kuznetsov<sup>1</sup>, A. I. Nepomnyashchih<sup>3</sup>, E.V. Pestryakov<sup>2</sup>, E.F. Martynovich<sup>1</sup></b></p> <p><sup>1</sup> <i>Irkutsk Branch of the Institute of Laser Physics SB RAS, Irkutsk, Russia</i></p> <p><sup>2</sup> <i>Institute of Laser Physics SB RAS, Novosibirsk, Russia</i></p> <p><sup>3</sup> <i>Institute of Geochemistry. AP. Vinogradov, SB RAS, Irkutsk, Russia</i></p>

12.40-13.00	<p><b>RESEARCH OF ABLATION OF TARGETS FROM HEAT-RESISTANT OXIDES UNDER ACTION OF CO<sub>2</sub> AND FIBER LASERS</b></p> <p><b><u>V.V. Lisenkov</u>, V.V. Osipov, V.V. Platonov</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
<b>13.00-15.00</b>	<b>LUNCH</b>

15.00-15.20	<p><b>SIMULATION OF ELECTRON FIELD EMISSION FROM THE SURFACE OF IONIC CRYSTALS UNDER IRRADIATION BY A PULSED ELECTRON BEAM.</b></p> <p><b><u>S. A. Stepanov</u>, V. F. Shtan'ko, E. P. Chinkov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk , Russia</i></p>
15.20-16.00	<p><b>ON THE NATURE OF COLOR CENTERS IN OPTIC FIBERS AT LOW TEMPERATURES</b></p> <p><b>RADIATION OPTIC PROPERTIES OF ZrO<sub>2</sub>-Y<sub>2</sub>O<sub>3</sub> CRYSTALS EXPOSED OXIDATION RECOVER INFLUENCES</b></p> <p><b>RADIATION STIMULATED FORMATION OF DEFECT AND MASS SPREAD IN ZrO<sub>2</sub>-Y<sub>2</sub>O<sub>3</sub>P</b></p> <p><b>Amonov M.Z.</b></p> <p><i>Institute of Nuclear Physics AS RU, Tashkent</i></p>
16.00-16.20	<p><b>STUDY OF RADIATION OPTIC CHARACTERISTICS OF MONO-CRYSTALS OF SILICATE AND GADOLINIUM.</b></p> <p><b>Amonov M. Z., Ahsurov M. Kh., Nuritdinov I., Saidakhmedov K.</b></p> <p><i>Institute of Nuclear Physics AS RU, Tashkent</i></p>
16.20-16.40	<p><b>AGGREGATION AND TRANSFORMATION OF COLOR CENTERS UNDER <math>\Gamma</math> AND LASER RADIATION IN MAGNESIUM FLUORIDE</b></p> <p><b><u>L. I. Bryukvina</u>, A. L. Rakevich<sup>1</sup>, E. F. Martynovich<sup>1</sup></b></p> <p><i>Irkutsk Branch of the Institute of Laser Physics SB RAS, Irkutsk, Russia</i></p> <p><sup>1</sup><i>Irkutsk Branch of the Institute of Laser Physics SB RAS, Irkutsk, Russia</i></p>



16.40-17.00	<p><b>LUMINESCENT PROPERTIES OF NANOSTRUCTURED FILMS BASED ON LITHIUM FLUORIDE OBTAINED BY THE METHODS OF LASER TECHNOLOGY</b></p> <p><b><u>V.P. Dresvyanskiy</u>, A.L. Rakevich, S.N. Malov, E.F. Martynovich</b></p> <p><i>Irkutsk Branch of Institute of Laser Physics SB RAS, Irkutsk, Russia</i></p>
17.00-17.30	<p><b>RADIOLUMINESCENCE PROPERTIES OF Cs-METAVANADATES</b></p> <p><b>R. F. Samigullina, B. V. Slobodin, <u>A. V. Ishchenko</u><sup>1</sup>, B. V. Shulgin<sup>1</sup>, L. V. Victorov<sup>1</sup>, V. V. Vakhter<sup>1</sup>, E. A. Zhevak<sup>1</sup></b></p> <p><i>Institute of solid state chemistry of Ural branch of Russian Academy of Sciences, Yekaterinburg, Russia</i>  <sup>1</sup><i>Ural Federal University named after the first President of Russia B.N.Yeltsin, Yekaterinburg, Russia</i></p> <p><b>THE INTEGRATED GEOINFORMATION SYSTEM FOR REMOTE RADIATION MONITORING</b></p> <p><b>M. M. Kidibaev, <u>A. V. Ishchenko</u><sup>1</sup>, L. V. Victorov<sup>1</sup>, K. O. Khokhlov<sup>1</sup>, T. S. Koroleva, A. S. Bektashov, V. Yu. Ivanov<sup>1</sup>, B. V. Shulgin<sup>1</sup></b></p> <p><i>Institute of Physical &amp; Technical Problems and Materials Science of the National Academy of Sciences of the Kyrgyz Republic, Bishkek, Kyrgyzstan</i></p> <p><sup>1</sup><b>URAL FEDERAL UNIVERSITY NAMED AFTER THE FIRST PRESIDENT OF RUSSIA B.N.YELTSIN, YEKATERINBURG, RUSSIA</b></p>
17.30-17.50	<b>POSTER DISCUSSION</b>

## Poster Session 4. Physical basis of radiation-related technologies

1	<p><b>THERMOLUMINESCENCE PROPERTIES OF LITHIUM HAFNATE</b></p> <p><b>Ya. V. Baklanova, A. V. Ishchenko<sup>1</sup>, T. A. Denisova, L. G. Maksimova, B. V. Shulgin<sup>1</sup>, V. V. Yagodin<sup>1</sup></b></p> <p><i>Institute of solid state chemistry of Ural branch of Russian Academy of Sciences, Yekaterinburg, Russia</i>  <sup>1</sup><i>Ural Federal University named after the first President of Russia B.N. Yeltsin, Yekaterinburg, Russia</i></p>
2	<p><b>LUMINESCENT SPECTROSCOPY OF MOLYBDATE SOLID SOLUTIONS <math>A_{1-x}B_x(\text{MoO}_4)</math>, <math>A=(\text{Ca},\text{Pb})</math>, <math>B=(\text{Pb},\text{Sr},\text{Ba},\text{Cd})</math></b></p> <p><b>I.A. Gofman, V.D. Zhuravlev<sup>1</sup>, V.A. Pustovarov</b></p> <p><i>Ural Federal University, Ekaterinburg, Russia</i>  <sup>1</sup><i>Institute of Solid State Chemistry of RAS (UB), Ekaterinburg, Russia</i></p>
3	<p><b>APPLICATION OF ELECTRON ACCELERATORS FOR X-RAY FLUORESCENCE ELEMENT ANALYSIS</b></p> <p><b>V. I. Bepalov, Yu. F. Krechetov, S. E. Lazarenko, E. N. Shuvalov, S. R. Ugllov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
4	<p><b>INFLUENCE OF THERMOBEAM PROCESSING ON TL AND OSL PROPERTIES OF THE SOLID-STATE DETECTOR OF IONISING RADIATION ON THE BASIS OF ANION-DEFECTIVE CORUNDUM</b></p> <p><b>Litovchenko E.N., Soloviev S.V., Milman I.I., Moiseikin E.V., Surdo A.I.<sup>1</sup></b></p> <p><i>Ural Federal University, Ekaterinburg, Russia</i>  <sup>1</sup><i>Institute of industrial ecology of Ural branch of Russian Academy, Ekaterinburg, Russia</i></p>
5	<p><b>ATOMIC STRUCTURE OF SELF-ASSEMBLED InAs/AlAs QUANTUM DOTS: EFFECT OF ELECTRON IRRADIATION AND ANNEALING</b></p> <p><b>T.S. Shamirzaev<sup>1</sup>, A.K. Bakarov<sup>1</sup>, V.Yu. Yakovlev<sup>2</sup></b></p> <p><sup>1</sup><i>A.V. Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia</i>  <sup>2</sup><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>

6	<p><b>THE ENERGY BALANCE OF THE “CHARGED PARTICLE BEAM-TARGET” SYSTEM AT EROSION OF A METAL SURFACE</b></p> <p><b><u>O.M. Stepanova</u>, V.P. Krivobokov</b>  <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
7	<p><b>FORMATION AND THE TRANSFORMATION OF CONTAMINANT-DEFECTIVE COMPOSITIONS IN DOPED SILICON AT THERMAL RADIATION INFLUENCE</b></p> <p><b>Sh. Makhkamov, M. Karimov, <u>N.A.Tursunov</u>, A.R. Sattiev, M.N. Erdonov, Sh.A. Makhmudov, Kh.M. Kholmedov</b>  <i>Institute of Nuclear Physics AS RUz, Tashkent, Uzbekistan</i></p>
8	<p><b>HIGH INTENSIVE CHORT PULSED IONS IMPLANTATION EFFECT ON ELECTRICAL AND PHOTOELECTRICAL PROPERTIES OF POLYCRYSTALLINE SILICON</b></p> <p><b><u>F. V. Konusov</u>, A. V. Kabyshev, G. E. Remnev</b>  <i>Institute of Physics of High Technology, Tomsk, Russia</i></p>
9	<p><b>THE INFLUENCE OF ELECTRON IRRADIATION ON THE STRUCTURE OF NANOSIZED METAL PARTICLES</b></p> <p><b>B.A. Aliev, M.Zh. Buranbaev, U.P. Koztaeva, <u>G.Partizan</u>, Zh. Entibekov, Zh. Nakysbekov</b>  <i>Scientific-Research Institute of Experimental and Theoretical Physics, Al-Farabi Kazakh National University, Almaty, Kazakhstan</i></p>
10	<p><b>FIRMNESS OF LIGHT-EMITTING DIODES FOR THE SUPERFICIAL INSTALLATION OF WHITE COLOUR OF THE LUMINESCENCE TO ACTION OF FACTORS OF RADIATIVE ACTION</b>  <b>I.A.Asanov<sup>1</sup>, A.A.Vilisov<sup>2,3</sup>, A.V.Gradoboev<sup>1,2</sup>, <u>V.S. Soldatkin</u><sup>1,3</sup>, K.V.Tepljakov<sup>1</sup></b></p> <p><sup>1</sup> <i>Open Society «Scientific research institute of semiconductor devices» Tomsk, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk State University of Control systems and Radio electronics, Tomsk, Russia</i>  <sup>3</sup> <i>Tomsk State University of Control Systems and Radio Electronics, Tomsk, Russia</i></p>

**September 21, Friday**

9:00-10.40, room **209**

**Oral Session 4. Physical basis of radiation-related technologies**

**Chairman:** I. N. Ogorodnikov

**Secretary:** D.T. Valiev

9.00-9.20	<p><b>CALCULATION OF KINETIC PARAMETRES HIGH-TEMPERATURE TL PEAKS OF ANION-DEFECTIVE CORUNDUM</b></p> <p><u>Soloviev S.V.</u>, Milman I.I., Surdo A.I.<sup>1</sup></p> <p><i>Ural Federal University, Ekaterinburg, Russia</i></p> <p><sup>1</sup><i>Institute of Industrial Ecology of Ural Branch of Russian Academy, Ekaterinburg, Russia</i></p>
9.20-9.40	<p><b>LOCAL NONE QUILIBRIUM MASS TRANSFER IN BINARY SYSTEM UNDER CONCENTRATED ENERGY FLUX IRRADIATION</b></p> <p><u>G. A. Vershinin</u>, V.A. Volkov, G.L. Buchbinder</p> <p><i>Dostoevsky Omsk State University, Omsk, Russia</i></p>
9.40-10.00	<p><b>SYNTHESIS, CHARACTERIZATION AND LUMINESCENT PROPERTIES OF HIGH DOSE IRRADIATED NANOSTRUCTURED ALUMINA CERAMICS</b></p> <p><u>K.A. Petrovykh</u>, V.S. Kortov, S.V. Nikiforov, S.V. Zvonarev, Yu.G. Ustyantsev</p> <p><i>Ural Federal University named after first President of Russia B.N. Eltsyn, Ekaterinburg, Russia</i></p>
10.00-10.20	<p><b>PORTABLE GAMMA-RADIATION MONITOR ON THE BASIS OF PLASTIC SCINTILLATOR</b></p> <p><u>A. S. Shein</u>, A. Yu. Derstuganov, G. A. Kuntsevich, A. L. Krymov, L. V. Victorov, <u>V. L. Petrov</u>, <u>B. V. Shulgjn</u></p> <p><i>Ural Federal University named after the first President of Russia B.N. Yeltsin, Yekaterinburg, Russia</i></p>
10.20-10.40	<p><b>RESEARCHING X-RAY INFLUENCE ON THE HYDROGEN REDISTRIBUTION IN TITANIUM WITH THE HELP OF PROFILER 2 GLOW DISCHARGE OPTICAL EMISSION SPECTROMETER</b></p> <p><u>V. N. Kudiyarov</u>, A. M. Lider, N. S. Pushilina</p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
<b>10.40-11.00</b>	<b>COFFEE BREAK</b>

# **17<sup>th</sup> International Symposium on High Current Electronics**

**September 17, Monday**

15:00-19:20, room **204**

**Oral Session 5. Pulsed power applications**

**Chairman:** B.M.Kovalchuk, V.V. Lopatin

**Secretary:** M.I. Kaikanov

<p>Invited 15:00-15:30</p>	<p><b>DEVELOPMENT OF PULSED POWER EQUIPMENT FOR TECHNOLOGICAL APPLICATION IN PRODUCTION OF PURE QUARTZ</b></p> <p><u><b>E. G. Krastelev</b></u></p> <p><i>Quartz company LLC, Moscow, Russia</i></p>
<p>15:30-16:00</p>	<p><b>GUIDING 1-M SCALE DISCHARGE CREATED BY A TESLA GENERATOR TRIGGERED WITH FEMTOSECOND LASER FILAMENT IN AIR</b></p> <p><u><b>L. Arantchouk</b></u><sup>1</sup>, <b>Y. Brelet</b><sup>2</sup>, <b>A. Houard</b><sup>2</sup>, <b>Y-B André</b><sup>2</sup>, <b>B. Prade</b><sup>2</sup>, <b>J. Carbonnel</b><sup>2</sup>, <b>A. Mysyrowicz</b><sup>2</sup></p> <p><sup>1</sup><i>Laboratoire de Physique des Plasmas, Ecole Polytechnique, CNRS, Palaiseau, France</i>  <sup>2</sup><i>Laboratoire d'Optique Appliquée, ENSTA ParisTech, Ecole Polytechnique, CNRS, 91761, Palaiseau, France</i></p> <p><b>LOW JITTER, HIGH CURRENT SPARK GAP OPERATING WITH AIR AT NORMAL PRESSURE</b></p> <p><u><b>L. Arantchouk</b></u><sup>1</sup>, <b>A. Houard</b><sup>2</sup>, <b>Y. Brelet</b><sup>2</sup>, <b>B. Forestier</b><sup>2</sup>, <b>J. Carbonnel</b><sup>2</sup>, <b>J. Larour</b><sup>1</sup>, <b>A. Mysyrowicz</b><sup>2</sup></p> <p><sup>1</sup><i>Laboratoire de Physique des Plasmas, Ecole Polytechnique, CNRS, Palaiseau, France</i>  <sup>2</sup><i>Laboratoire d'Optique Appliquée, ENSTA ParisTech, Ecole Polytechnique, CNRS, 91761, Palaiseau, France</i></p>
<p>16:00-16:20</p>	<p><b>ACCELERATOR URT-1M FOR RADIATION TECHNOLOGIES</b></p> <p><u><b>S.Y.Sokovnin</b></u>, <b>M.E.Balezin</b>, <b>S.V.Scherbinin</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
<p>16:20-16:40</p>	<p><b>HYBRID FEMTOSECOND LASER SYSTEM ON BASE OF PHOTOCHEMICALLY DRIVEN XEF(C-A) AMPLIFIER</b></p>

	<p><b><u>V.F. Losev</u>, <u>S.V. Alekseev</u><sup>1</sup>, <u>N.G. Ivanov</u><sup>1</sup>, <u>B.N. Kovalchuk</u><sup>1</sup>, <u>G.A. Mesyats</u><sup>2</sup>, <u>L.D. Mikheev</u><sup>2</sup>, <u>Yu.N. Panchenko</u><sup>2</sup>, <u>N.A. Ratakhin</u><sup>1,3</sup></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup><i>Lebedev Physical Institute, Moscow, Russia</i>  <sup>3</sup><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
16:40-17:00	<b>COFFEE BREAK</b>
17:00-17:20	<p><b>X-RAYS NANOSECOND BLOOD IRRADIATOR</b></p> <p><b><u>A.A. Shverikas</u>, <u>M.E. Balezin</u>, <u>S.V. Scherbinin</u>, <u>S.Y. Sokovnin</u></b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
17:20-17:40	<p><b>POTENTIAL APPLICATION OF NANOSECOND PULSED X-RAY IN MEDICINE</b></p> <p><b><u>M.A. Buldakov</u><sup>1</sup>, <u>I.A. Klimov</u><sup>1</sup>, <u>O.P. Kutenkov</u><sup>2</sup>, <u>M.A. Bolshakov</u><sup>2</sup>, <u>N.V. Cherdyntseva</u><sup>1</sup>, <u>V.V. Rostov</u><sup>2</sup></b></p> <p><sup>1</sup><i>Tomsk cancer research Institute SB RAMS, Tomsk, Russia,</i>  <sup>2</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17:40-18:00	<p><b>PULSE PLASMA-CHEMICAL SYNTHESIS OF NANOSIZED SILICON DIOXIDE FROM METAL-ORGANIC PRECURSOR – TETRAETHOXYSILANE</b></p> <p><b><u>R.V. Sazonov</u>, <u>D.V. Ponomarev</u>, <u>G.E. Kholodnaya</u>, <u>G.E. Remnev</u></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
18:00-18:20	<p><b>TREATMENT OF INDUSTRIAL AND HOUSEHOLD WASTE WATER WITH THE PULSE ELECTRON ACCELERATOR-BASED SETUP</b></p> <p><b><u>D.Yu. Kolokolov</u><sup>1</sup>, <u>I.S. Egorov</u><sup>1</sup>, <u>M.I. Kaikanov</u><sup>1</sup>, <u>L.R. Merinova</u><sup>1</sup>, <u>G.E. Remnev</u><sup>1</sup>, <u>R.V. Sazonov</u><sup>1</sup>, <u>A.V. Stepanov</u><sup>1</sup>, <u>D.A. Voyno</u><sup>2</sup>, <u>A.S. Maslov</u><sup>2</sup>, <u>B.A. Siarg</u><sup>2</sup></b></p> <p><sup>1</sup><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>2</sup><i>LLC «Gazprom Transgas Tomsk», Tomsk, Russia</i></p>
18:20-19:20	<b>POSTER DISCUSSION</b>

September 17, Monday

15:00-19:20

## Poster Session 5. Pulsed power applications

1	<p><b>COAXIAL PULSED DISCHARGE GUN FOR SYNTHESIZING NANOPARTICLES</b></p> <p><b><u>I. V. Beketov</u>, A. V. Bagazeev, A. I. Medvedev, V. V. Ivanov, A. P. Safronov, O. R. Timoshenkova</b></p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
2	<p><b>DISCHARGE CHARACTERISTIC IN UNIFORM ELECTRIC-FIELD SF<sub>6</sub> GAP UNDER REPETITIVE NANOSECOND PULSES</b></p> <p><b><u>Cheng Zhang</u><sup>1,3</sup>, Huijuan Ran<sup>1,2</sup>, Jue Wang<sup>1,3</sup>, Tao Wang<sup>1,2</sup>, Tao Shao<sup>1,3</sup>, Ping Yan<sup>1,3</sup></b></p> <p><sup>1</sup> <i>Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China</i>  <sup>2</sup> <i>Graduate University of Chinese Academy of Sciences, Beijing, China</i>  <sup>3</sup> <i>Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China</i></p>
3	<p><b>SHOCK WAVES AND BUBBLE EXPANSION IN LOW ENERGY PULSED ELECTRIC DISCHARGE IN WATER</b></p> <p><b><u>R.V. Dolinovskaya</u>, Ph.G. Rutberg<sup>1</sup>, V.A. Kolikov<sup>1</sup>, M.E. Pinchuk<sup>1,2</sup>, A.G. Leks<sup>1</sup>, V.N. Snetov<sup>1</sup>, A.Yu. Stogov<sup>1</sup></b></p> <p><i>Institute for Electrophysics and Electric Power of Russian Academy of Sciences, St.-Petersburg State Polytechnic University, St.-Petersburg, Russia</i>  <sup>1</sup> <i>Institute for Electrophysics and Electric Power of Russian Academy of Sciences, St.-Petersburg, Russia</i>  <sup>2</sup> <i>St.-Petersburg State Polytechnic University, St.-Petersburg, Russia</i></p>
4	<p><b>DISCHARGE TEA CO<sub>2</sub> LASER WITH SHORT PULSE DURATION</b></p> <p><b><u>V. V. Dudarev</u>, I. N. Kononov, V. F. Losev, Yu. N. Panchenko, A. V. Pavlinsky, A. V. Puchikin</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
5	<p><b>ACTION OF HIGH-ENERGY ELECTRON BEAM ON POLYCHLORINATED COMPOUNDS ADSORBED ON SURFACES</b></p> <p><b><u>I.E.Filatov</u>, S.A. Nikiforov, Yu.S. Surkov, V.V. Uvarin</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>



6	<p><b>SPLITTING OFF CONCRETE LUMPS BY BOREHOLE ELECTROBLAST</b></p> <p><b><u>N.A. Ivanov</u>, N.S. Kuznetsova, V.V. Lopatin, A.S.Yudin, V. Golovanevskiy</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
7	<p><b>AN EFFECT OF HIGH CURRENT ELECTRON BEAM OF NANOSECOND DURATION ON N-DECANE</b></p> <p><b><u>M.I. Kaikanov</u>, G.E. Remnev, I.S. Egorov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
8	<p><b>PLASMA-CHEMICAL SULPHUR RECOVERY UNDER ACTION OF PULSE ELECTRON BEAM ON SULPHUR HEXAFLUORIDE</b></p> <p><b><u>G.E. Kholodnaya</u>, R.V. Sazonov, D.V. Ponomarev, G.E. Remnev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
9	<p><b>THE RESPONSES OF MICE LIVER MITOCHONDRIA TO THE REPETITIVE PULSED MICROWAVE AND X-RAY</b></p> <p><b><u>I. R. Knyazeva</u><sup>1,2</sup>, M. A. Bolshakov<sup>2,3</sup>, V. V. Ivanov<sup>1</sup>, L. P. Zharkova<sup>2,3</sup>, A. V. Kereya<sup>2,3</sup>, O. P. Kutenkov<sup>2</sup>, V. V. Rostov<sup>2</sup></b></p> <p><sup>1</sup><i>Siberian State Medical University, Tomsk, Russia</i>  <sup>2</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>3</sup><i>National Research Tomsk State University, Tomsk, Russia</i></p>
10	<p><b>LIMITATION OF AVERAGE POWER OF INFRARED LASING IN AR-XE MIXTURE DURING REP-RATED ELECTROIONIZATION PUMPING</b></p> <p><b><u>D. L. Kuznetsov</u>, Yu. S. Surkov, V. V. Uvarin</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
11	<p><b>PULSED ELECTROPHYSICAL METHODS OF TOXIC IMPURITIES CONVERSION IN AIR AND ON THE BORDER OF GAS AND ADSORBENT</b></p> <p><b><u>D. L. Kuznetsov</u>, I. E. Filatov, Yu. S. Surkov</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
12	<p><b>BLAST-HOLE ELECTRO FRACTURE OF OVERSIZE ROCKS</b></p> <p><b><u>N.S. Kuznetsova</u>, V.V. Lopatin, V.V.Burkin, V.A. Golovanevskiy<sup>1</sup>, Yu.P. Stefanov<sup>1</sup></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup><i>Western Australian School of Mines, Curtin University, Perth, Australia</i>  <sup>2</sup><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>

13	<p><b>NANOSECOND CURRENT GENERATOR BASED ON A SINGLE HCEicap 80-0.25 CAPACITOR-SWITCH ASSEMBLY</b></p> <p><b><u>I.V. Lavrinovich</u>, N.V. Zharova, M.G. Bykova</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
14	<p><b>RESEARCH OF ATMOSPHERIC PULSED-PERIODICAL DIFFUSE DISCHARGE</b></p> <p><b><u>S. P. Maslennikov</u>, E. G. Krastelev, E. Ya. Shcolnikov</b></p> <p><i>National Research Nuclear University "MEPhI", Moscow, Russia</i></p>
15	<p><b>COMPACT DISCHARGE KrF LASER SYSTEM WITH HIGH QUALITY BEAM</b></p> <p><b><u>Yu.N. Panchenko</u>, M.V. Andreev, V.V. Dudarev, N.G. Ivanov, V.F. Losev, A.V. Pavlinsky, A.V. Puchikin</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
16	<p><b>PULSE PLASMA-CHEMICAL SYNTHESIS OF AMORPHOUS PHASE OF NANOSIZE TITANIUM DIOXIDE</b></p> <p><b><u>D.V. Ponomarev</u>, R.V. Sazonov, G.E. Kholodnaya, G. E. Remnev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
17	<p><b>RESEARCH OF ULTRA-VIOLET RADIATION THE NANOSECOND GAS DISCHARGE INFLUENCE ON PATHOGENIC MICROORGANISMS</b></p> <p><b><u>S.Y.Sokovnin</u>, M.E.Balezin, V.V.Lisenkov, A.Bogun</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
18	<p><b>EXPERIMENT STUDY ON HIGH VOLTAGE DISCHARGES AND SOUND CHARACTERISTICS UNDER ATMOSPHERIC CONDITIONS</b></p> <p><b><u>Tao Shao</u><sup>1,2</sup>, Chengyan Ren<sup>1,2</sup>, Jue Wang<sup>1,2</sup>, Ping Yan<sup>1,2</sup>, Cheng Zhang<sup>1,2</sup>, Jiayu Xu<sup>3</sup>, Yuanqing Liu<sup>3</sup>, Huijuan Ran<sup>1</sup>, Tao Wang<sup>1</sup>, Wenfeng Li<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China</i>  <sup>2</sup> <i>Key Laboratory of Power Electronics and Electric Drive, Chinese Academy of Sciences, Beijing, China</i>  <sup>3</sup> <i>China Electric Power Research Institute, Beijing, China</i></p>
19	<p><b>CONVERSION OF CH<sub>4</sub>-CO<sub>2</sub> MIXTURE UNDER THE INFLUENCE OF NANOSECOND ELECTRON BEAM AND GAS DISCHARGE</b></p> <p><b><u>V.V. Uvarin</u>, D.L. Kuznetsov, I.E. Filatov</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>

**September 18, Tuesday**

9:00-15:00, **room 209**

**Oral Session 2. Pinches plasma focus and capillary discharge**

Chairman: N.A.Ratakhin, N.B. Volkov

Secretary: A.V. Nashilevsky

<p>Invited 9:00-9:30</p>	<p><b>ENERGY DENSITY INCREASING IN CHANNEL OF SUPER-HIGH PRESSURE MEGAAMPERE DISCHARGE DUE TO RESONANCE OF DIFFERENT TYPE OSCILLATIONS OF THE CHANNEL</b></p> <p><b><u>M.E. Pinchuk</u><sup>1,2</sup>, A.A. Bogomaz<sup>1</sup>, A.V. Budin<sup>1</sup>, Ph.G. Rutberg<sup>1</sup>, A.G. Leks<sup>1</sup>, V.Yu. Svetova<sup>1,2</sup>, S.Yu. Losev<sup>1</sup>, A.A.Pozubenkov<sup>1</sup></b></p> <p><sup>1</sup><i>Institute for Electrophysics and Electric Power of Russian Academy of Sciences (IEE RAS), St.Petersburg, Russia</i>  <sup>2</sup><i>St.Petersburg State Polytechnical University (SpbSPU) St.Petersburg, Russian Federation</i></p>
<p>9:30-9:50</p>	<p><b>DEUTERIUM GAS-PUFF DYNAMICS AND NEUTRON PRODUCTION IN EXPERIMENTS ON THE GIT-12 GENERATOR</b></p> <p><b><u>A. V. Shishlov</u><sup>1</sup>, F.I. Fursov<sup>1</sup>, B.M. Kovalchuk<sup>1</sup>, V.A. Kokshenev<sup>1</sup>, N. E. Kurmaev<sup>1</sup>, A.Yu. Labetsky<sup>1</sup>, N.A. Ratakhin<sup>1</sup>, D. Klir<sup>2</sup>, J. Cikhardt<sup>2</sup>, J. Kravarik<sup>2</sup>, P. Kubes<sup>2</sup>, K. Rezac<sup>2</sup></b></p> <p><sup>1</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup><i>Czech Technical University in Prague, Prague, Czech Republic</i></p>
<p>9:50-10:10</p>	<p><b>K-SHELL X-RAY AND NEUTRON EMISSION FROM A DOUBLE SHELL GAS-PUFF LINER</b></p> <p><b><u>S.A. Sorokin</u></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
<p>10:10-10:30</p>	<p><b>STABILITY OF NONLINEAR MAGNETIC FIELD DIFFUSION</b></p> <p><b><u>V.I.Oreshkin</u>, S.A.Chaykovsky, N.A.Labetskay, I.M.Datsko</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
<p>10:30-10:50</p>	<p><b>FEATURES OF THE PLASMA-CHANNEL FORMATION</b></p>

	<p><b>DURING THE VOLTAGE GENERATOR WITH THE 1-MV/NS-VOLTAGE-RISE-RATE DISCHARGE TO THE VACUUM COAXIAL LINE CONTAINING MICROCONDUCTOR ENCLOSED GAP</b></p> <p><b><u>K.A. Nagayev</u>, S.V. Barakhvostov, M.B. Bochkarev, N.B.Volkov</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
10:50-11:10	<b>COFFEE BREAK</b>
11:10-11:40	<p><b>DIFFERENT SCENARIOS OF FORMATION OF THE CORONA-CORE STRUCTURE DURING ALUMINUM WIRE EXPLOSION</b></p> <p><b><u>S.I. Tkachenko</u><sup>1,2</sup>, V. V. Zhakhovsky<sup>2,3</sup>, T.A. Shelkovenko<sup>4</sup>, S.A. Pikuz<sup>3</sup></b></p> <p><sup>1</sup><i>Moscow Institute of Physics and Technology, Dolgoprudny, Moscow Region, Russia</i>  <sup>2</sup><i>Joint Institute for High Temperatures, RAS, Moscow, Russia</i>  <sup>3</sup><i>University of South Florida, Tampa, FL, USA</i>  <sup>4</sup><i>Lebedev Physical Institute RAS, Moscow, Russia</i></p> <p><b>STUDY OF REGULAR STRIATIONS AND GAPS ACCIDENTALLY FORMED DURING WIRE EXPLOSION</b></p> <p><b><u>S.I. Tkachenko</u><sup>1,2</sup>, T.A. Khattatov<sup>1</sup>, V.M. Romanova<sup>3</sup>, A.R. Mingaleev<sup>3</sup>, R.B. Baksht<sup>4</sup>, V.I. Oreshkin<sup>4</sup>, T.A. Shelkovenko<sup>3</sup>, S.A. Pikuz<sup>3</sup></b></p> <p><sup>1</sup><i>Moscow Institute of Physics and Technology, Dolgoprudny, Moscow Region, Russia</i>  <sup>2</sup><i>Joint Institute for High Temperatures, RAS, Moscow, Russia</i>  <sup>3</sup><i>Lebedev Physical Institute RAS, Moscow, Russia</i>  <sup>4</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
11:40-12:00	<p><b>TWO-TEMPERATURE MODEL FOR THE SOLID METALS AT HIGH ENERGY DENSITIES</b></p> <p><b><u>N.B. Volkov</u><sup>1,2</sup>, E.A. Chingina<sup>1</sup>, A.P. Yalovets<sup>1,2</sup></b></p> <p><sup>1</sup><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>  <sup>2</sup><i>South-Ural State University, Chelyabinsk, Russia</i></p>
12:00-14:00	<b>LUNCH</b>
14:00-15:00	<b>POSTER DISCUSSION</b>

**September 18, Tuesday**

09:00-15:00

**Poster Session 2. Pinches plasma focus and capillary discharge**

1	<p><b>THE WIRE EXPLOSION STAGE DURING X-PINCH SOFT X-RAY SOURCE FORMATION</b></p> <p><u>A.P. Artyomov</u>, S.A. Chaikovsky, A.V. Fedunin, V.I. Oreshkin, S.V.Shljakhtun, I.V. Lavrinovich</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
2	<p><b>Efficiency OF THE ENERGY DELIVERY FROM VACUUM MITL OF THE GIT-12 GENERATOR TO THE WIRE ARRAY PLACED IN THE WATER</b></p> <p><u>S.A. Chaikovsky</u>, V.A. Kokshenev, A.Yu. Labetsky, A.V. Shishlov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
3	<p><b>A LOAD CURRENT MULTIPLIER FOR THE TERAWATT-LEVEL MIG GENERATOR</b></p> <p><u>I.M. Datsko</u><sup>1</sup>, S.A. Chaikovsky<sup>1</sup>, N.A. Labetskaya<sup>1</sup>, V.I. Oreshkin<sup>1</sup> A.S. Chuvatin<sup>2</sup></p> <p><sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>Ecole Polytechnique, Palaiseau, France</i></p>
4	<p><b>EXPERIMENTAL STUDY OF SURFACE STABILITY OF CYLINDRICAL CONDUCTORS IN THE FAST RISING MEGAGAUSS MAGNETIC FIELD</b></p> <p><u>N.A. Labetskaya</u>, V.I. Oreshkin, S.A. Chaikovsky, I. M. Datsko, N. A. Ratakhin, Y.A. Sukovatitsyn, E.N. Volkov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
5	<p><b>DETERMINATION OF THE CURRENT DISTRIBUTION IN A PLANE SHEATH USING B-DOT PROBES</b></p> <p><u>A.Yu. Labetsky</u>, V.A. Kokshenev, A.V. Shishlov</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

6	<p><b>SOME PRINCIPAL ISSUES OF PLASMA OPENING SWITCHES OPERATION</b></p> <p><b><u>S.V. Loginov</u></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
7	<p><b>EFFICIENCY OF MICROSECOND PLASMA OPENING SWITCHES</b></p> <p><b><u>S.V. Loginov</u></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
8	<p><b>FIRST RESULTS OF TUNGSTEN Z-PINCH WIRE-ARRAY LOADS ON THE MICRO-SECOND SPHINX GENERATOR</b></p> <p><b><u>T. d'Almeida</u>, P. Maury, J. Grunenwald, F. Zucchini, D. Plouhinec, F. Lassalle, A. Loyen, A. Morell</b></p> <p><i>CEA, DAM, GRAMAT, F-46500 Gramat, France</i></p>
9	<p><b>CURRENT PASSAGE MECHANISM IN A HIGH-CURRENT LOW-PRESSURE PULSED GLOW DISCHARGE</b></p> <p><b><u>I. A. Shemyakin</u>, Yu. D. Korolev, N. V. Landl, O. B. Frants</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
10	<p><b>HEATING OF HIGH-DENSITY HYDROGEN BY HIGH-CURRENT ARC RADIATION</b></p> <p><b><u>V.Yu.Svetova</u>, Ph.G. Rutberg<sup>1</sup>, M.E. Pinchuk<sup>1,2</sup>, A.A. Bogomaz<sup>1</sup>, A.V. Budin<sup>1</sup>, A.G. Leks<sup>1</sup>, S.Yu. Losev<sup>1</sup>, A.A. Pozubenkov<sup>1</sup></b></p> <p><i>Institute for Electrophysics and Electric Power of Russian Academy of Sciences, St.-Petersburg, Russia</i></p> <p><sup>1</sup> <i>Institute for Electrophysics and Electric Power of Russian Academy of Sciences, St.-Petersburg, Russia</i></p> <p><sup>2</sup> <i>Saint Petersburg State Polytechnic University, St.-Petersburg, Russia</i></p>

**September 18, Tuesday**

15:00-19:30, room 209

**Oral Session 6. Discharges with runaway electrons**

**Chairman:** V. F. Tarasenko, P.A. Bokhan

**Secretary:** M.V. Zhuravlev

<p>Invited 15:00 – 15:30</p>	<p><b>DIFFUSE DISCHARGE PRODUCED BY REPETITIVE NANOSECOND PULSES IN OPEN AIR</b> <b><u>Tao Shao</u><sup>1</sup>, Cheng Zhang<sup>1</sup>, Ping Yan<sup>1</sup></b> <i><sup>1</sup> Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China</i></p>
<p>15:30 – 15:50</p>	<p><b>GENERATION OF RUNAWAY ELECTRONS AND X-RAYS IN DIFFUSE DISCHARGES IN AN INHOMOGENEOUS ELECTRIC FIELD</b> <b><u>V.F. Tarasenko</u></b> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
<p>15:50 – 16:10</p>	<p><b>INSTABILITIES OF HIGH-CURRENT OPEN DISCHARGES AND THEIR CRITICAL PARAMETERS</b> <b><u>P.A. Bokhan</u>, P.P. Gugin, M.A. Lavrukhin, D.E. Zakrevsky</b> <i>A. V. Rzhanov Institute of Semiconductor Physics Siberian Branch of the RAS, Novosibirsk, Russia</i></p>
<p>16:10 – 16:30</p>	<p><b>NARROWBAND RADIATION IN VUV SPECTRAL REGION OF BINARY MIXTURES ARGON (HELIUM) – XENON PUMPED WITH HIGH-VOLTAGE NANOSECOND DISCHARGE</b> <b><u>M.I. Lomaev</u>, D.A. Sorokin, V.F. Tarasenko</b> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

16:30 – 16:50	<p><b>GENERATION OF FAST ELECTRONS AT ATMOSPHERIC PRESSURE AIR BREAKDOWN IN GAP WITH COMBINED PLANE-GRID CATHODE</b></p> <p><b><u>A.V. Kozyrev</u>, E.H. Baksht, I.D. Kostyrya, D.V. Rybka, V.F. Tarasenko</b>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
16:50-17:10	<b>COFFEE BREAK</b>
17:10 – 17:30	<p><b>PICOSECOND PROCESSES AT THE DELAY STAGE OF PULSE BREAKDOWN IN OVERVOLTAGE ATMOSPHERIC GAP</b></p> <p><b><u>A.G. Reutova</u>, S.A. Shunailov, V.G. Shpak, M.I.Yalandin, G. A. Mesyats<sup>1</sup></b>  <i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i>  <sup>1</sup><i>Lebedev Physical Institute RAS, Moscow, Russia</i></p>
17:30 – 17:50	<p><b>GENERATION AND MEASUREMENT OF SUPERSHORT AVALANCHE ELECTRON BEAMS IN ATMOSPHERIC PRESSURE AIR</b></p> <p><b><u>D.V. Rybka</u>, V.F. Tarasenko, E.Kh. Baksht, A.G. Burachenko, I.D. Kostyrya, M.I. Lomaev</b>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17:50 – 18:10	<p><b>NUMERICAL MODELING OF RUNAWAY ELECTRON BEAM FORMATION UNDER DEVELOPMENTAL GROWTH OF BREAKDOWN OF OVERSTRAINED AIR GAP</b></p> <p><b><u>V.A. Shklyayev</u>, S.Ya. Belomyttsev, V.V. Ryzhov</b>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
18:10 – 18:30	<p><b>GENERATION OF INTENSIVE ELECTRON BEAMS IN AN OPEN DISCHARGE WITH A PLANAR GEOMETRY</b></p> <p><b><u>M.A. Lavrukhin</u>, P.A. Bokhan, P.P. Gugin, D. E. Zakrevsky</b>  <i>A. V. Rzhanov Institute of Semiconductor Physics Siberian Branch of the RAS, Novosibirsk, Russia</i></p>



18:30 – 18:50	<p><b>RUNAWAY ELECTRON BEAM GENERATION IN HELIUM AND AIR AT NANOSECOND DISCHARGE IN NONUNIFORM ELECTRIC FIELD AT FREQUENCY UP TO 1000 HZ</b></p> <p><b><u>M.V. Erofeev</u>, E.Kh. Baksht, V.F. Tarasenko, Yu.V. Shutko</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia Tomsk, Russia</i></p>
18:50 – 19:10	<p><b>SIMULATION OF THE RUNAWAY ELECTRON BEAM FORMED IN A DISCHARGE AT ATMOSPHERIC PRESSURE</b></p> <p><b><u>E.V. Oreshkin</u>, S.A. Barendolts, S.A. Chaikovskiy, V.I. Oreshkin*</b></p> <p><i>P. N. Lebedev Physical Institute, Moscow, Russia * Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
19:10 – 19:30	<p><b>NUMERICAL MODELING OF GENERATION OF FAST ELECTRON BEAMS IN SUBNANOSECOND GAS DISCHARGE</b></p> <p><b><u>V.V. Lisenkov</u>, V.V. Osipov</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>

## September 18, Tuesday

14:00-19:30

### Poster Session 6. Discharges with runaway electrons

1	<p><b>X-RAY EMISSION FROM A NANOSECOND-PULSE DISCHARGE IN AN INHOMOGENEOUS ELECTRIC FIELD AT ATMOSPHERIC PRESSURE</b></p> <p><b><u>Cheng Zhang</u><sup>1</sup>, Tao Shao<sup>1</sup>, Victor F. Tarasenko<sup>2</sup>, Ma Hao<sup>1</sup>, <u>Evgeni Kh. Baksht</u><sup>2</sup>, Ping Yan<sup>1</sup>, Yuliya V. Shutko<sup>2</sup></b></p> <p><sup>1</sup> <i>Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China</i> <sup>2</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
2	<p><b>VUV AR2-EXILAMP OF ONE BARRIER DISCHARGE</b></p> <p><b><u>M.V. Erofeev</u>, D.V. Schitz, V.S. Skakun, V.F. Tarasenko</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

3	<p><b>PULSE CORONA AND DIFFUSE DISCHARGES WITH RUNAWAY ELECTRONS IN ATMOSPHERIC PRESSURED AIR</b></p> <p><b><u>M.I. Lomaev</u>, I.D. Kostyrya, D.V. Rybka, V.F. Tarasenko</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
4	<p><b>PULSE CORONA DISCHARGE IN ATMOSPHERIC PRESSURED AIR</b></p> <p><b><u>D.V. Rybka</u><sup>1</sup>, G.S. Evtushenko<sup>2</sup>, V.Yu. Kozhevnikov<sup>1</sup>, I.D. Kostyrya<sup>1</sup>, A.V. Kozyrev<sup>1</sup>, V.F. Tarasenko<sup>1</sup>, M.V. Trigub<sup>2</sup></b></p> <p><sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
5	<p><b>NANOSECOND CORONA DISCHARGE IN ATMOSPHERIC PRESSURE AIR: RUNAWAY ELECTRONS AND X-RAYS</b></p> <p><b><u>Tao Shao</u><sup>2</sup>, D.V. Rybka<sup>1</sup>, V.F. Tarasenko<sup>1</sup>, Cheng Zhang<sup>2</sup>, A.V. Kozyrev<sup>1</sup>, I.D. Kostyrya<sup>1</sup>, Ping Yan<sup>2</sup>, V.Yu. Kozhevnikov<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China</i></p>
6	<p><b>NUMERICAL SIMULATION OF FAST ELECTRONS GENERATION IN ATMOSPHERIC PRESSURE INHOMOGENEOUS GAS MEDIA</b></p> <p><b><u>V.A. Shklyayev</u>, V.V. Lisenkov<sup>1</sup>, V.V. Ryzhov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
7	<p><b>SPARK DISCHARGE FORMATION IN AN INHOMOGENEOUS ELECTRIC FIELD</b></p> <p><b><u>V.F. Tarasenko</u>, E.Kh. Baksht, M.V. Erofeev, M.I. Lomaev, .A. Sorokin, Yu.V. Shutko</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
8	<p><b>SPECTRUM OF RUNAWAY ELECTRONS IN ATMOSPHERIC PRESSURE AIR DURING SUBNANOSECOND BREAKDOWN</b></p> <p><b><u>V.F. Tarasenko</u>, E.Kh. Baksht, A.G. Burachenko, V.Yu. Kozhevnikov, A.V. Kozyrev, I.D. Kostyrya</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

**September 19, Wednesday**

9:00-15:00, room 209

**Oral Session 4. Pulsed power technology**

**Chairman:** M.G. Mazarakis, A.A. Kim

**Secretary:** I.S. Egorov

<p>Invited 9:00-9:30</p>	<p><b>CONCEPTUAL DESIGN OF A NEW MICROSECOND LTD STAGE FOR AN UPGRADE OF THE SPHINX Z-PINCH DRIVER</b> <b><u>A.Loyen</u>, F. Lassalle, B.Roques, T.Chanconie, F.Bayol<sup>1</sup></b> <i>CEA, DAM, GRAMAT, F-46500 Gramat, France</i> <sup>1</sup> <i>Int. Technologies for High Pulsed Power, Thegra, France</i></p>
<p>9:30-9:50</p>	<p><b>QUASI-LINEAR MODE OF HIGH POWER GAAS PCSSS</b> <b><u>Hongwei Liu</u>, Jianqiang Yuan, Jinfeng Liu, Hongtao Li, Weiping Xie</b> <i>Institute of Fluid Physics of CAEP, Mianyang, China</i></p>
<p>9:50-10:10</p>	<p><b>A FERROELECTRIC EXPLOSIVE GENERATOR COUPLED TO A COMMON MICROWAVE OVEN MAGNETRON</b> <b><u>D.J. Hemmert</u>, J.M. Mankowski<sup>1</sup>, L.L. Altgilbers<sup>2</sup></b> <i>HEM Technologies, Lubbock, TX, USA</i> <sup>1</sup> <i>Texas Tech University, Lubbock, TX, USA</i> <sup>2</sup> <i>US Army Space And Missile Defense Command, Huntsville, AL, USA</i></p>
<p>10:10-10:40</p>	<p><b>POWERFUL TWO-STAGE DC BREAKER</b> <b><u>O.G.Egorov</u></b> <i>TRINITI, Moscow reg., Troitsk</i></p> <p><b>THE GENERATOR OF HIGH-POWER NANOSECOND PULSES ON THE BASIS OF INDUCTIVE ENERGY STORAGE</b> <b><u>O.G.Egorov</u></b> <i>TRINITI, Moscow reg., Troitsk</i></p>

10:40-11:00	<p><b>EXPERIMENTAL INVESTIGATION ON ELECTRODE EROSION AND INSULATION RECOVERY OF HIGH CURRENT GAS SPARK GAP</b></p> <p><b><u>Liu Yu</u>, Chen Lin<sup>1</sup>, Zhou Liangji<sup>2</sup>, Zou Wenkang, Dai Yingmin</b></p> <p><i>Institute of Fluid Physics, CAEP, Sichuan, China</i>  <sup>1</sup> <i>Institute of Fluid Physics, CAEP, Sichuan, China</i>  <sup>2</sup> <i>Institute of Fluid Physics, CAEP, Sichuan, China</i></p>
11:00-11:20	<p><b>INSULATOR SUPPORT OF COAXIAL MAGNETICALLY-INSULATED TRANSMISSION LINE</b></p> <p><b><u>Zhang Le</u>, Wei Bing<sup>1</sup>, Zou Wenkang<sup>2</sup></b></p> <p><i>CAEP, Mianyang, China</i>  <sup>1</sup> <i>CAEP, Mianyang, China</i>  <sup>2</sup> <i>CAEP, Mianyang, China</i></p>
11:20-11:40	<b>COFFEE BREAK</b>
11:40-12:00	<p><b>A SIMPLE CLADDING TECHNIQUE FOR CONSTRUCTING FAST CVD</b></p> <p><b><u>K. Hojatzadeh</u></b></p> <p><i>Electronic&amp; Communication Research Center, Tehran, IRAN</i></p> <p><b>UWB PULSE COMPRESSORS BASED ON THE OVERVOLTING CHARGE TECHNIQUE</b></p> <p><b><u>K. Hojatzadeh</u></b></p> <p><i>Electronic&amp; Communication Research Center, Tehran, IRAN</i></p>
12:00-12:20	<p><b>CIRCUIT SIMULATION OF MAGNETICALLY-INSULATED INDUCTION VOLTAGE ADDER</b></p> <p><b><u>Guo Fan</u>, Zou Wenkang<sup>1</sup>, Chen Lin<sup>2</sup></b></p> <p><i>Institute of Fluid Physics, Mianyang, China</i>  <sup>1</sup> <i>Institute of Fluid Physics, Mianyang, China</i>  <sup>2</sup> <i>Institute of Fluid Physics, Mianyang, China</i></p>
13:00-14:00	<b>LUNCH</b>
14:00-15:00	<b>POSTER DISCUSSION</b>

**September 19, Wednesday**

15:00-18:30, room 209

**Oral Section 4. Pulsed power technology**

**Chairman:** S.N. Rukin, G.E. Remnev

**Secretary:** I.S. Egorov

<p>Invited 15:00-15:30</p>	<p><b>LTD DESIGN BASED ON PARAMETERS OF AVAILABLE SWITCHES</b> <b><u>K. W. Struve, M. G. Mazarakis<sup>1</sup>, M. E. Savage<sup>2</sup></u></b> <i>Sandia National Laboratories*, Albuquerque, NM, USA</i> <sup>1</sup><i>Sandia National Laboratories*, Albuquerque, NM, USA</i> <sup>2</sup><i>Sandia National Laboratories*, Albuquerque, NM, USA</i></p>
<p>15:30-15:50</p>	<p><b>LTD EFFICIENCY FOR Z-PINCH LOADS</b> <b><u>V.I. Oreshkin<sup>1</sup>, A. A. Kim<sup>1,2</sup>, L.G. Glazov<sup>1</sup></u></b> <sup>1</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <sup>2</sup><i>National Resears Tomsk Polytechnic University, Tomsk, Russia</i></p>
<p>15:50-16:10</p>	<p><b>PULSE SHAPING IN SQUARE PULSE LTD</b> <b><u>A.A. Kim<sup>1,2</sup>, V.A. Sinebryukhov<sup>1</sup>, S.N. Volkov<sup>1</sup>, S.S. Kondratiev<sup>1</sup>, V.M. Alexeenko<sup>1</sup>, F. Bayol<sup>3</sup>, G. Demol<sup>3</sup></u></b> <sup>1</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i> <sup>2</sup><i>National Resears Tomsk Polytechnic University, Tomsk, Russia</i> <sup>3</sup><i>International Technologies for High Pulsed Power, Thegra, France</i></p>
<p>16:10-16:30</p>	<p><b>SWITCHING OF HIGH-VOLTAGE PULSES WITH SUBNANOSECOND PULSE FRONTS USING AN OPEN DISCHARGE IN A COAXIAL AND PLANAR GEOMETRY</b> <b><u>P.P. Gugin, P.A. Bokhan, M. A. Lavrukhin, D.E. Zakrevsky</u></b> <i>A. V. Rzhanov Institute of Semiconductor Physics Siberian Branch of the RAS, Novosibirsk, Russia</i></p>

16:30-16:50	<p><b>GENERATION OF A FOCUSED ELECTRON BEAM IN A PLASMA-FILLED DIODE</b></p> <p><b><u>A.A. Zherlitsyn</u>, B.M. Kovalchuk, N.N. Pedin</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
16:50-17:10	<b>COFFEE BREAK</b>
17:10-17:30	<p><b>SOLID STATE HIGH-POWER GENERATOR BASED ON DOUBLE FORMING LINE AND SEMICONDUCTOR OPENING SWITCH</b></p> <p><b><u>S.N. Rukin</u>, A.I. Gusev, M.S. Pedos, A.V. Ponomarev, S.P. Timoshenkov, S.N. Tsyranov</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
17:30-17:50	<p><b>HARD X-RAY SOURCES BASED ON OF HIGH-CURRENT ACCELERATORS</b></p> <p><b><u>V.K. Petin</u>, A.A. Chertov, S.V. Shljakhtun</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17:50-18:10	<p><b>PHASE FIXATION OF POWER NANOSECOND GUNN OSCILLATORS</b></p> <p><b><u>V. Y. Konev</u>, A. I. Klimov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
18:10-18:30	<p><b>PULSED GENERATORS FOR DYNAMIC FRAGMENTATION OF ROCKS</b></p> <p><b><u>A.V. Kharlov</u>, B.M. Kovalchuk, E.V. Kumpyak, V.A. Sinebryukhov V.N. Kiselev</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

**September 19, Wednesday**

14:00-18:30

**Poster Session 4. Pulsed power technology**

1	<p><b>ULTRASHORT VOLTAGE RISE TIME FORMATION BY SEMICONDUCTOR SHARPENERS</b></p> <p><b><u>A.I. Gusev</u>, B.G. Slovikovsky, S.K. Lyubutin, S.N. Rukin, S.N. Tsyranov</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
2	<p><b>COMPACT HIGH-FREQUENCY SOLID-STATE GENERATOR WITH SUBNANOSECOND VOLTAGE RISE TIME</b></p> <p><b><u>A.I. Gusev</u>, A.V. Ponomarev, S.N. Rukin</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
3	<p><b>A SQUARE VOLTAGE PULSE FORMER WITH A PEAK VALUE UP TO 500 KV AND 200 NS DURATION</b></p> <p><b><u>B.A. Kablambaev</u>, N.A.Ratakhin</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
4	<p><b>NANOSECOND PULSED POWER GENERATOR FOR SELECTIVE DISINTEGRATION OF MINERAL QUARTZ</b></p> <p><b><u>E.G. Krastelev</u>, V.V. Stepnov</b></p> <p><i>Quartz company LLC., Moscow, Russia</i></p>
5	<p><b>HIGH-VOLTAGE SPARK GAP SWITCH WITH SUBNANOSECOND RISE TIME</b></p> <p><b><u>I.K.Kurkan</u>, N.M. Bykov, A.V. Gunin, V.V. Rostov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
6	<p><b>AN UNTRIGGERED GAS PULSE SWITCH WITH IMPROVED OPERATION (ACTUATION) STABILITY</b></p> <p><b><u>A.V. Lavrinovich</u>, A.A Kachalkov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

7	<p><b>HIGH FREQUENCY GENERATOR BASED ON THE SHOCK-EXCITED OSCILLATOR CIRCUIT</b></p> <p><b><u>A. V. Ponomarev</u>, D. A. Lipchak</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
8	<p><b>OPERATION OF A SEMICONDUCTOR OPENING SWITCH AT ULTRAHIGH CURRENT DENSITIES</b></p> <p><b><u>S.N. Rukin</u>, S.K. Lyubutin, B.G. Slovikovsky, S.N. Tsyranov</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
9	<p><b>THE VISUALIZATION AND ASSESSMENT OF THE PULSED ELECTRON BEAM CURRENT DENSITY DISTRIBUTION</b></p> <p><b><u>S.V. Scherbinin</u>, M.E. Balezin, S.Yu. Sokovnin, A.E. Surovtzev</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
10	<p><b>INCREASING STABILITY OF HIGH-VOLTAGE SUBNANOSECOND PULSE PARAMETERS</b></p> <p><b><u>K.A.Sharypov</u>, M.R.Ulmaskulov, V.G.Shpak, S.A.Shunailov, M.I.Yalandin</b></p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
11	<p><b>HIGH-VOLTAGE LOW-DISTORTION REFLECTOMETR BASED ON TWO VOLTAGE DIVIDERS WITH COUPLED LINES</b></p> <p><b><u>K.A. Sharypov</u>, S.A. Shunailov, V.G. Shpak, M.R. Ulmaskulov, M.I. Yalandin</b></p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
12	<p><b>HIGH-VOLTAGE FERRITE SHARPENING LINE WITH CONTROLLED DELAY TIME</b></p> <p><b><u>K.A.Sharypov</u><sup>1</sup>, M.R.Ulmaskulov<sup>1</sup>, V.G.Shpak<sup>1</sup>, S.A.Shunailov<sup>1</sup>, M.I.Yalandin<sup>1</sup>, V.V.Rostov<sup>2</sup>, S.N.Rukin<sup>1</sup></b></p> <p><sup>1</sup><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i>  <sup>2</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
13	<p><b>A COMBINED SHARPENING-CHOPPING SWITCH WITH OPERATING VOLTAGE ABOUT 1 MV</b></p> <p><b><u>S.V. Shljakhtun</u>, A.A. Kachalkov, A.V. Lavrinovich, V.K. Petin</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>



14	<p><b>NANOSECOND-PULSE SURFACE DIELECTRIC BARRIER DISCHARGE IN OPEN AIR</b></p> <p><b><u>Tao Shao</u><sup>1</sup>, Hui Jiang<sup>1</sup>, Cheng Zhang<sup>1</sup>, Xueke Che<sup>2</sup>, Wenfeng Li<sup>1</sup>, Ping Yan<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China</i>  <sup>2</sup> <i>Academy of Equipment, Beijing, China</i></p>
15	<p><b>A COMPACT AIR INSULATED GENERATOR FOR E-BEAM DIODE</b></p> <p><b><u>A.A. Zherlitsyn</u>, B.M. Kovalchuk, N.N. Pedin</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
16	<p><b>PLASMA-FILLED DIODE WITH USING LASER PRODUCED PLASMA</b></p> <p><b><u>A.A. Zherlitsyn</u>, B.M. Kovalchuk, V.M. Orlovskii, N.N. Pedin</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17	<p><b>THE SYSTEM FOR SPARK CLEANING OF LOW CARBON STEEL</b></p> <p><b><u>M.V. Zhuravlev</u>, M.S. Slobodyan, B.G. Shubin</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
18	<p><b>THE SYSTEM FOR ATMOSPHERE HF SPACE DISCHARGE</b></p> <p><b><u>M.V. Zhuravlev</u>, M.S. Slobodyan, B.G. Shubin</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
19	<p><b>A TERA-WATT-LEVEL POWER AMPLIFIER WITH A LOAD CURRENT MULTIPLIER LOCATED UPSTREAM OF THE POS</b></p> <p><b><u>V.A. Kokshenev</u>, F. I. Fursov, N. E. Kurmaev, A. Yu. Labetsky, A. P. Semenov, A. V. Shishlov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

**September 20, Thursday**

9:00-15:00, room 204

**Oral Session 3. High power microwaves**

**Chairman:** V.P. Grigoriev, V.I. Koshelev

**Secretary:** S.K. Pavlov

<p>Invited 9:00-9:30</p>	<p><b>HIGH-POWER SOURCE OF ULTRAWIDEBAND RADIATION WITH WAVE BEAM STEERING</b> <u>V.I. Koshelev, A.M. Efremov, B.M. Kovalchuk, V.V. Plisko</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p> <p><b>LINEAR POLARIZED RADIATION IN MULTIWAVE CHERENKOV GENERATOR</b> <u>V.I. Koshelev, M. P. Deichuly</u> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
<p>9:30-9:50</p>	<p><b>PATTERNS OF PEAK POWER AND ENERGY OF ULTRAWIDEBAND PULSE RADIATION FROM APERTURE ANTENNAS</b> <u>V.M. Fedorov, V.Ye. Ostashev, A. V. Ul'yanov</u> <i>Joint Institute for High Energy Densities of RAS, Moscow, Russia</i></p>
<p>9:50-10:10</p>	<p><b>DESIGN OF L BAND 20 KW HIGH POWER SOLID STATE AMPLIFIER FOR TARLA / TAC PROJECT</b> <u>O.Karsli, O.Yavas<sup>1</sup>, M. Dogan<sup>2</sup></u> <i>Institute of Accelerator Technologies, Ankara University, Gölbaşı, Ankara</i> <sup>1</sup> <i>Department of Physics Engineering, Ankara University, Tandoğan, Ankara</i> <sup>2</sup> <i>Department of Control Engineering, Dogus University, Kadıkoy, Istanbul</i></p>

10:10-10:30	<p><b>CONTROL OF HIGH-POWER ULTRAWIDEBAND RADIATION PULSE SPECTRUM</b></p> <p><b><u>Yu. A. Andreev</u>, V.I. Koshelev, I.V. Romanchenko, V.V. Rostov, K.N. Sukhushin</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
10:30-10:50	<p><b>THE COMMUTATION OF RESONANCE MICROWAVE COMPRESSORS BY LASER RADIATION</b></p> <p><b><u>M.S. Arteev</u>, S.N. Artemenko, Yu.G. Yushkov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
10:50-11:10	<p><b>HIGH POWER 4 CHANNEL GYROMAGNETIC RF SOURCE</b></p> <p><b><u>I. V. Romanchenko</u>, V. V. Rostov, A. I. Klimov, I. K. Kurkan, A. V. Gunin, K. N. Sukhushin, V. V. Plisko, A. N. Sinyakov, V. O. Kutenkov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
<b>11:10-11:30</b>	<b>COFFEE BREAK</b>
11:30-11:50	<p><b>SINGLE CAVITY MICROWAVE COMPRESSOR WITH TWO PARALLEL OUTPUTS</b></p> <p><b><u>S.A. Novikov</u>, V.A. Avgustinovich, S.N. Artemenko, V.L. Kaminsky, Yu.G. Yushkov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
11:50-12:10	<p><b>EXCITATION OF ELECTROMAGNETIC OSCILLAIONS OF THE LOWEST TYPES IN A FLAT-COAXIAL REFLEX TRIODE</b></p> <p><b><u>A.L. Marchenko</u>, T.V. Koval</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
12:10-12:30	<p><b>COAXIAL MODERATELY RELATIVISTIC L-BAND BACKWARD WAVE OSCILLATOR</b></p> <p><b><u>R.V. Tsygankov</u>, V.Y. Konev, E.M. Totmeninov, V.V. Rostov, I.V. Pegel, S.A. Kitsanov, A.I. Klimov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

12:30-12:50	<p><b>THE LOW SCALE SOFT X-RAY NANOSECOND PULSE RADIOGRAPH BASED ON THE X-PINCH</b></p> <p><b><u>S.A. Chaikovsky</u>, A.P. Artyomov, M.G. Bykova, A.A. Erfort, V.F. Feduschak, A.V. Fedunin, I. V. Lavrinovich, V.I. Oreshkin, N.A. Ratakhin, A.G. Rousskikh, A.S. Zhigalin, N.V. Zharova</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
13:00-14:00	<b>LUNCH</b>
14:00-15:00	<b>POSTER DISCUSSION</b>

**September 20, Thursday**

9:00-15:00

**Poster Session 3. High power microwaves**

1	<p><b>OPERATION OF TWO OVERSIZED CAVITIES IN MICROWAVE COMPRESSOR CONNECTED IN PARALLEL</b></p> <p><b><u>A. Yu. Arbuzov.</u>, V. A. Avgustinovich, S. N. Artemenko, V. L. Kaminsky, S. A. Novikov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
2	<p><b>GASEOUS NITROGEN LASER IN SYSTEM OF MICROWAVE SWITCH TRIGGERING</b></p> <p><b><u>M. S. Arteev</u>, V. A. Avgustinovich, S. N. Artemenko, V. L. Kaminsky, S. A. Novikov, Yu. G. Yushkov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
3	<p><b>THE FORMATION OF A RESONANT MICROWAVE PULSE COMPRESSOR WITH ADJUSTABLE PARAMETERS</b></p> <p><b><u>S.N. Artemenko</u><sup>1</sup>, V.A. Avgustinovich<sup>1</sup>, A. Shlapakovskiy<sup>2</sup></b></p> <p><sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>2</sup> <i>Teknion, Haifa, Israel</i></p>

4	<p><b>SIMULATION OF COMPRESSION IN THE CAVITY OF THE MICROWAVE PULSES WITH OUTPUT ENERGY OF THE OSCILLATIONS TRANSFORMATION</b></p> <p><b><u>V.S. Igumnov</u><sup>1</sup>, V.A. Avgustinovich<sup>1</sup>, S.N. Artemenko<sup>1</sup>, S.A. Novikov<sup>1</sup>, Yu.G. Yushkov<sup>1</sup></b></p> <p><sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
5	<p><b>CALORIMETER FOR MEASURING HIGH POWER MICROWAVE PULSE ENERGY</b></p> <p><b><u>A. I. Klimov</u><sup>1,2</sup>, P. V. Vykhodtsev<sup>1</sup>, O. B. Kovalchuk<sup>1</sup>, A. N. Sinyakov<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
6	<p><b>TEST MEASUREMENTS FOR THE TRANSMITTING ANTENNA OF A RELATIVISTIC BWO</b></p> <p><b><u>A. I. Klimov</u>, V. V. Rostov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
7	<p><b>SPECTRAL MEASUREMENTS OF HIGH POWER MICROWAVE SUPERRADIATIVE PULSES</b></p> <p><b><u>A.I. Klimov</u><sup>1,2</sup>, O.B. Kovalchuk, A.N. Sinyakov</b></p> <p><sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
8	<p><b>TESTING OF THE TRANSMITTING ANTENNA OF A SUPERRADIATIVE BWO</b></p> <p><b><u>A.I. Klimov</u><sup>1,2</sup>, O.B. Kovalchuk<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
9	<p><b>THE INFLUENCE OF THE TRANSVERSE DIMENSION OF MULTI-WAVE CERENKOV OSCILLATOR ON THE SPATIAL STRUCTURE OF THE RADIATION FIELD</b></p> <p><b><u>V.N.Kornienko</u>, V.A.Cherepenin</b></p> <p><i>Kotel'nikov Institute of Radio-engineering and Electronics of RAS, Moscow, Russia</i></p>

10	<p><b>INVESTIGATION OF THE INFLUENCE OF THE ANODE CURRENTMAGNETIC FIELD ON THEBEAM ELECTRONS MOVEMENT IN REFLEX TRIODES</b></p> <p><b><u>A.L. Marchenko</u>, T.V. Koval</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
11	<p><b>STUDY OF ELECTRODYNAMIC AND RADIATION CHARACTERISTICS OF A COAXIAL AND A PLANAR-COAXIAL VIRCATOR</b></p> <p><b><u>M.T. Nguyen</u>, T.V. Koval, A.G. Zherlitsyn, G.G. Kanaev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
12	<p><b>EXCITATION OFTE11MODE IN THE PLANAR-COAXIAL TRIODE WITHVIRTUAL CATHODE</b></p> <p><b><u>M.T. Nguyen</u>, T.V. Koval, A.G. Zherlitsyn, G.G. Kanaev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
13	<p><b>HIGH POWER MICROWAVE GENERATION IN SEMICONDUCTOR DIODE</b></p> <p><b><u>S.N. Rukin</u>, S.K. Lyubutin, B.G. Slovikovsky, S.N. Tsyranov</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
14	<p><b>THE COMPRESSION OF MICROWAVE PULSES IN SUPERCONDUCTING RESONATORS</b></p> <p><b><u>G.M. Samoylenko</u>, S.N. Artemenko, V.L. Kaminsky</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
15	<p><b>SWITCHING OF H11-MODE WAVE OF 0.5 GW POWER IN CIRCULAR WAVEGUIDE</b></p> <p><b><u>Zhukov A.A.</u>, Avgustinovich V.A., Artemenko S.A., Kaminsky V.L., Novikov S.A.</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>

September 20, Thursday

14:00-15:00

## Poster Session 1. Intense electron and ion beams

1	<p><b>GENERATION OF ELECTRON BEAMS WITH CURRENT PULSE DURATION OF <math>10^{-5}</math> s IN VACUUM DIODE WITH PLASMA ANODE</b></p> <p><b><u>E. N. Abdullin</u>, A.V. Morozov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
2	<p><b>MODELING OF MAGNETIC FIELD OF VACUUM DIODE WITH RETURN CURRENT CONDUCTORS</b></p> <p><b><u>E. N. Abdullin</u>, A.V. Morozov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
3	<p><b>INVESTIGATION OF THE PLASMA EMITTER BASED ON THE REFLEX DISCHARGE WITH A CATHODE SPOT FOR INTENSE SUB-MILLISECOND ELECTRON BEAM</b></p> <p><b><u>S. V. Grigoryev</u>, P. V. Moskvina, A. D. Teresov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
4	<p><b>HIGH POWER (10 MW), LONG PULSE MULTIAPERTURE ELECTRON BEAM INJECTOR WITH PLASMA EMITTER DESIGNED FOR BEAM-PLASMA EXPERIMENTS</b></p> <p><b><u>I. V. Kandaurov</u>, V. T. Astrelina, A. P. Avrorov, A. V. Burdakov, P. V. Bykov, G. E. Derevyankina, A. A. Ivanov, I. A. Ivanov, V. V. Kurkuchekov<sup>1</sup>, S. V. Polosatkin, A. F. Rovenskikh, Yu. A. Trunev</b></p> <p><i>Budker Institute of Nuclear Physics of SB RAS, Novosibirsk, Russia</i> <sup>1</sup><i>Novosibirsk State University, Novosibirsk, Russia</i></p>
5	<p><b>THE USE OF FERROMAGNETIC INSERTS FOR CONTROL OF THE ENERGY DENSITY PROFILE OF HIGH-CURRENT ELECTRON BEAM</b></p> <p><b><u>K.V. Karlik</u>, L.A. Zyl'kova, G.E. Ozur</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
6	<p><b>A COMPACT CALORIMETER BASED ON A MAGNETICALLY INSULATED FARADAY CUP FOR INTENSE ION BEAM DIAGNOSTIC</b></p> <p><b><u>I.P. Khailov</u>, Yu.I. Isakova, A.I. Pushkarev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>

7	<p><b>HIGH-CURRENT ELECTRON GUN WITH PLASMA ANODE BASED ON COMBINED DISCHARGE</b></p> <p><b><u>P.P. Kiziridi</u>, G.E. Ozur</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
8	<p><b>MODELING OF THE AC STARK EFFECT OF THE THE KR<sup>+</sup> ION</b></p> <p><b><u>E.V. Koryukina</u>, V.I. Koryukin<sup>1</sup></b></p> <p><i>National Research Tomsk State University, Tomsk, Russia</i>  <sup>1</sup> <i>Siberian State Medical University, Tomsk, Russia</i></p>
9	<p><b>REPRATE ION BEAM ACCELERATOR WITH INTERMEDIATE LINEAR STEP-UP TRANSFORMER</b></p> <p><b><u>A.V.Petrov</u>, P.S. Anan'in, *V. Bystritskii, **J. Yampolsky, *I.F. Isakov, V.B. Karpov, *V.M. Matvienko, N.M. Polkovnikova, A.A. Sinebryukhov, Yu.P. Surikov, Yu.P. Usov, **K. Walters</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  *<i>University of California at Irvine, Irvine, CA</i>  **<i>TriAlpha Energy, Inc., Foothill Ranch, CA</i></p>
10	<p><b>ION Br – DIODE WITH THE ACTIVE ANODE</b></p> <p><b><u>A.V. Stepanov</u>, V.S. Lopatin<sup>1</sup>, G.E. Remnev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup> <i>Lipetsk, Russia</i></p>
11	<p><b>COMPACT NANOSECOND ELECTRON BEAM SOURCE BASED ON 200 KV SOS GENERATOR</b></p> <p><b><u>V.V. Uvarin</u>, D.L.Kuznetsov, S.K.Lyubutin, B.G.Slovikovskii</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
12	<p><b>THE ION-BEAM INSTALLATION FOR FINISH TREATMENT OF DISPERSION FUEL CLADDINGS</b></p> <p><b><u>N.V.Volkov</u><sup>1</sup>, B.A.Kalin<sup>1</sup>, V.P.Krivobokov<sup>2</sup></b></p> <p><sup>1</sup> <i>National Research Nuclear University MEPhI, Moscow, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>



**September 21, Friday**

9:00-12:30, room 204

**Oral Session 1. Intense electron and ion beams**

**Chairman:** E.M. Oks, N.V.Gavrilov

**Secretary:** Yu.I. Isakova

<p>Invited 09:00-09:30</p>	<p><b>CONCEPTUAL DESIGN AND NUMERICAL SIMULATION OF LONG-PULSED 1-kA ELECTRON BEAM SOURCE FOR OPEN MAGNETIC TRAPS</b> <b><u>V.T. Astrelin</u><sup>1,2</sup>, A.V. Burdakov<sup>1,3</sup>, I.V. Kandaurov<sup>1</sup>, I.E. Karpov<sup>2</sup>, Yu.A. Trunev<sup>1</sup></b> <i><sup>1</sup>Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia</i> <i><sup>2</sup>Novosibirsk State University, Novosibirsk, Russia</i></p>
<p>09:30-09:50</p>	<p><b>SELF-OSCILLATORY MODE OF ELECTRON BEAM GENERATION IN A SOURCE WITH A GRIDDED PLASMA CATHODE</b> <b><u>A.S.Kamenetskikh</u>, N.V.Gavrilov</b> <i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
<p>09:50-10:10</p>	<p><b>THERMOCHEMICAL SELF-HEATED HOLLOW CATHODE FROM A TITANIUM NITRIDE</b> <b><u>A.I. Menshakov</u>, N.V. Gavrilov</b> <i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>
<p>10:10-10:30</p>	<p><b>LOW-IMPEDANCE ROD-PINCH DIODES AS INTENSE X-RAY SOURCES</b> <b><u>S.A. Sorokin</u></b> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
<p>10:30-10:50</p>	<p><b>CAPACITOR BLOCKS FOR AIR INSULATED LTD STAGES</b> <b><u>A.V. Kharlov</u>, B.M. Kovalchuk, E.V. Kumpyak, N.V. Tsoy, G.V. Smorudov</b> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

10:50-11:10	<b>COFFEE BREAK</b>
11:10-11:30	<p><b>INVESTIGATION OF TRANSFER HIGH-CURRENT ELECTRON BEAM IN PLASMA CHANNEL</b></p> <p><b><u>E.S. Vagin</u><sup>1</sup>, V.P. Grigoriev, V.V. Ofitserov<sup>2</sup></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
11:30-11:50	<p><b>CHARGE NEUTRALIZATION AND RISE-UP PORTION EROSION OF LOW-ENERGY ELECTRON BEAM WHEN INJECTING INTO NEUTRAL GAS</b></p> <p><b><u>I.L. Zvigintsev</u>, V.P. Grigoriev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
11:50-12:10	<p><b>A REPETITIVE SOURCE OF PULSED ELECTRON BEAMS</b></p> <p><b><u>I.S. Egorov</u>, G.E. Remnev, M.I. Kaikanov, E.I. Lukonin, V.S. Esipov, A.V. Poloskov, D.Yu. Kolokolov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
12:10-12:30	<p><b>FORMATION OF CHARGE – EXCHANGE NEUTRAL ATOMS IN A DIODE WITH PASSIVE ANODE</b></p> <p><b><u>Yu.I. Isakova</u>, A.I. Pushkarev, I.P. Khaylov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>

12:30 – 13:30, room 234, MAIN BUILDING OF TPU, 30, LENINA AVE.

## CLOSING CEREMONY

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

**September 17, Monday**  
**15:00-17:30, room 234**

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

Chairman: **Georgi Yushkov**, *Institute of High Current Electronics SB RAS, Tomsk, Russia*

<p>15:00 - 15:30 <i>Extended</i></p>	<p><b>PULSED ELECTRON GUNS ON THE BASE OF GLOW DISCHARGE WITH ELECTROSTATIC ELECTRON CONFINEMENT</b></p> <p><b><u>A.S. Metel</u></b>, Yu.A. Melnik</p> <p><i>Moscow State University of Technology "Stankin", Russia</i></p> <p><b>PLASMA IMMERSION BROAD BEAM SOURCES OF FAST ATOMS AND MOLECULES</b></p> <p><b><u>A.S. Metel</u></b></p> <p><i>Moscow State University of Technology "Stankin", Russia</i></p>
<p>15:30 - 15:50</p>	<p><b>INDUSTRIAL ELECTRON BEAM FACILITY FOR MODIFICATION OF GAS TURBINE ENGINE BLADES</b></p> <p><b><u>E.P. Pavlov</u><sup>1</sup></b>, V.I. Engelko<sup>1</sup>, V.A. Shulov<sup>2</sup>, A.S. Novikov<sup>3</sup>, K.I. Tkachenko<sup>1</sup>, N.P. Shchegolikhin<sup>1</sup>, V.G. Kovalev<sup>1</sup>, A.A. Petukhov<sup>1</sup>, N.G. Beruchev<sup>1</sup>, A.V. Pavlenko<sup>1</sup>, V.A. Chumichev<sup>1</sup>, V.M. Baev<sup>1</sup>, A.N. Daniltsev<sup>1</sup>, V.L. Demidov<sup>1</sup>, M.A. Latmanizova<sup>1</sup>, Yu.G. Cherepanov<sup>1</sup>, T.N. Makarova<sup>1</sup></p> <p><sup>1</sup> <i>Efremov Institute of Electrophysical Apparatus, St.Petersburg, Russia</i>  <sup>2</sup> <i>Moscow Aviation Institute, Moscow, Russia</i>  <sup>3</sup> <i>Central Institute of Aviation Motors, Moscow, Russia</i></p>
<p>15:50 - 16:10</p>	<p><b>BEAM-ASSISTED DEPOSITION USING A SOURCE OF METAL VAPOR MIXED WITH FAST GAS MOLECULES</b></p> <p><b><u>Yu.A. Melnik</u></b>, V.P. Bolbukov, S.N. Grigoriev, A.S. Metel</p> <p><i>Moscow State University of Technology "Stankin", Russia,</i></p>
<p>16:10 - 16:30</p>	<p><b>MODEL OF THE ELECTRIC DISCHARGE IN THE CROSSED ELECTRIC AND MAGNETIC FIELDS</b></p> <p><b><u>D.V. Korzhenko</u></b>, V.P. Krivobokov, S.N. Yanin</p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
<p><b>16:30 – 16:50 Coffee break</b></p>	

16:50 - 17:10	<p><b>GENERATION OF ARK PLASMA FOR MATERIAL PROCESSING</b>  <u>A.S. Anshakov</u><sup>1,2</sup>, E.K. Urbakh<sup>1</sup>, O.G. Volokitin<sup>3</sup>, A.E. Urbakh<sup>1</sup>  and V.S. Cherednichenko<sup>2</sup></p> <p><sup>1</sup> <i>Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia</i>  <sup>2</sup> <i>Novosibirsk State Technical University, Novosibirsk, Russia,</i>  <sup>3</sup> <i>Tomsk State University of Architecture and Building, Tomsk, Russia</i></p>
17:10 - 17:30	<p><b>STUDY OF PLASMA PARAMETERS OF NON-SELF SUSTAINED ARC DISCHARGE OF " PINK " PLAZMOGENERATOR</b>  <u>I.V. Lopatin</u>, N.N. Koval, S.S. Kovalsky, P.M. Schanin</p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

**September 18, Tuesday**

09:00-15:00, room 234

**Oral Session 1. Beam and plasma sources (continuation)**

09:00 - 09:30 <i>Extended</i>	<p><b>INVESTIGATION OF BEHAVIOUR OF THE VACUUM ARC MICRODROPLETS NEAR AND ON THE SURFACE OF THE POTENTIAL ELECTRODE DURING SHORT-PULSED HIGH-FREQUENCY PLASMA-IMMERSION ION IMPLANTATION</b>  <u>A.I. Ryabchikov</u>, D.O. Sivin, A.I. Bumagina</p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p> <p><b>BEHAVIOR OF MACROPARTICLES NEAR AND ON A SUBSTRATE IMMERSSED IN VACUUM ARC PLASMA AT NEGATIVE HIGH-FREQUENCY SHORT-PULSED BIASING</b>  <u>A.I. Ryabchikov</u>, D.O. Sivin, A.I. Bumagina</p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p> <p><b>MECHANISMS AND REGULARITIES OF THE VACUUM ARC MACROPARTICLES BEHAVIOR NEAR AND ON A SUBSTRATE, IMMERSSED IN PLASMA</b>  <u>A.I. Ryabchikov</u>, D.O. Sivin, A.I. Bumagina, V.K. Struts</p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
09:30 - 09:50	<p><b>ADVANCED ICP PLASMA SOURCE FOR HIGH DENSITY PLASMA GENERATION</b>  <u>E.V. Berlin</u>, V.U. Grigoriev, I.A. Shchelkanov</p> <p><i>Laboratory of Vacuum Technologies, Zelenograd, Russia</i></p>

09:50 - 10:10	<p><b>AUTOMATIC VACUUM ION-PLASMA SETUP</b></p> <p><b><u>A.A. Kalushevich</u>, V.V. Shugurov, N.N. Koval, V.V. Denisov, V.V. Yakovlev</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
10:10 - 10:30	<p><b>ADVANCED SOURCES FOR PLASMA AND ION-BEAM SURFACE MODIFICATION TECHNOLOGIES</b></p> <p><b><u>E.A.Kralkina</u>, A.F. Alexandrov, V.B.Pavlov, A.K.Petrov, K.V.Vavilin</b></p> <p><i>Moscow State University, Moscow, Russia</i></p>
<b>10:30 – 10:50 Coffee break</b>	
10:50 - 11:10	<p><b>INVESTIGATION OF THE INFLUENCE OF GUIDING MAGNETIC FIELD AND MAGNETIC FIELD OF THE BUS-BARS ON LOW-ENERGY ELECTRON BEAM DENSITY DISTRIBUTION</b></p> <p><b><u>Le Huy Dung</u>, T.V. Koval</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
11:10 - 11:30	<p><b>POTENTIAL OF CERAMICS SURFACE AT PULSE ELECTRON IMPACT</b></p> <p><b><u>Yu.G. Yushkov</u>, A.V. Medovnik, E.M. Oks, V.A. Burdovitsin</b></p> <p><i>Tomsk State University of Control System and Radioelectronics, Tomsk, Russia</i></p>
11:30 – 11:50	<p><b>THERMAL EXPANSION OF ARTIFICIAL GRAPHITES IN THE TEMPERATURE RANGE OF 293-1650K</b></p> <p><b><u>E.I. Zhmurikov</u><sup>1</sup>, <u>S.V.Stankus</u><sup>2</sup>, <u>O.S.Yatsuk</u><sup>2</sup>, <u>L.B. Tecchio</u><sup>3</sup></b></p> <p><sup>1</sup> <i>Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia</i></p> <p><sup>2</sup> <i>Kutateladze Institute of Thermal Physics SB RAS, Novosibirsk, Russia</i></p> <p><sup>3</sup> <i>Istituto Nazionale di Fisica Nucleare, Legnaro, Italy</i></p>
<b>11:50 – 14:00 Lunch break</b>	
<b>14:00 - 15:00 Poster Discussion</b>	

September 18, Tuesday

09:00 - 15:00

Poster Session 1. Beam and plasma sources.

1	<p><b>MULTI-TURN TIME-OF-FLIGHT MASS SPECTROMETERS ON THE BASIS OF THE CYLINDRICAL ELECTRIC SECTORS</b></p> <p><b><u>O.A. Baisanov</u>, I.F.Spivak-Lavrov<sup>1</sup>, A.Zh. Imangazina<sup>1</sup>,G.A. Doskeev</b>  <i>Air Forces Defense Institute named after T.Ya. Begeldinov, Aktobe, Kazakhstan</i>  <sup>1</sup><i>Aktobe's State Zhubanov University named after K.Zhubanov, Aktobe, Kazakhstan</i></p>
2	<p><b>EFFECTIVE VOLUMINOUS PLASMA ARC SOURCES IN TECHNOLOGICAL VACUUM-PLASMA SETUPS</b></p> <p><b><u>D.P. Borisov</u><sup>1</sup>, N.N. Koval<sup>1,2</sup>, A.D. Korotaev<sup>1</sup>, V.M. Kuznetsov<sup>1</sup>, V.Ya. Romanov<sup>1</sup>, P.A. Terekhov<sup>1</sup>, and</b>  <b>E.V. Chulkov<sup>1</sup></b>  <sup>1</sup><i>National Research Tomsk State University, Tomsk, Russia</i>  <sup>2</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
3	<p><b>AUTOMATED SETUP OF HF MAGNETRON DEPOSITION OF BIOCOMPATIBLE COATINGS</b></p> <p><b><u>V.V. Denisov</u>, V.V. Shugurov, A.A. Kalushevich,R.A. Surmenev<sup>1</sup>, M.A. Surmeneva<sup>1</sup>, A.A. Ivanova<sup>1</sup>,</b>  <b>I.Yu. Grubova<sup>1</sup>, V.F. Pichugin</b>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
4	<p><b>SCALING OF DLC CHEMICAL VAPOR DEPOSITION METHOD WITH THE USE OF PLASMA CATHODE</b></p> <p><b><u>D.R. Emlin</u>, S.A. Plotnikov<sup>1</sup>, N.V. Gavrilov, I.S. Trachtenberg<sup>1</sup>, I.G. Khatmullin</b>  <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i>  <sup>1</sup><i>Institute of Metal Physics UB RAS, Ekaterinburg, Russia</i></p>
5	<p><b>ELECTRON BEAM FACILITY FOR IMPROVMENT OF CORROSION RESISTANCE OF FUEL ELEMENT CLADDINGS</b></p> <p><b><u>V.G. Kovalev</u>, V.I. Engelko, K.I. Tkachenko, E.P. Pavlov, A.A. Petukhov, N.P. Shchegolikhin</b>  <i>Efremov Institute of Electrophysical Apparatus, St.Petersburg, Russia</i></p>

6	<p><b>GASEOUS PHOSPHOROUS SOURCE FOR GENERATION OF MOLECULAR PHOSPHOROUS ION BEAMS FOR ION IMPLANTATION</b></p> <p><b><u>V.I. Gushenets</u>, A.S. Bugaev, E.M. Oks, A. Hershcovitch<sup>1</sup> and T.V. Kulevoy<sup>2</sup></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup><i>Brookhaven National Laboratory, Upton, New York, USA</i>  <sup>2</sup><i>Institute for Theoretical and Experimental Physics, Moscow Russia</i></p>
7	<p><b>FEATURES OF THE FUNCTIONING PLASMA ELECTRON SOURCE BASED ON DISCHARGE WITH HOLLOW CATHODE AT HIGH PRESSURES</b></p> <p><b><u>A.S. Klimov</u>, A.A. Zenin, A.V. Kazakov, V.A. Burdovitsin, E.M. Oks</b></p> <p><i>Tomsk State University of Control System and Radioelectronics, Tomsk, Russia</i></p>
8	<p><b>THE INFLUENCE OF ANTENNA SYSTEM CONFIGURATION ON THE DISCHARGE PARAMETERS OF THE INDUCTIVELY-COUPLED PLASMA SOURCE</b></p> <p><b><u>D. Kotov</u>, A. Yasunas</b></p> <p><i>Izovac Ltd., Minsk, Belarus</i></p>
9	<p><b>INVESTIGATION OF INFLUENCE OF THE PLASMA CHANNEL INHOMOGENEITY ON CURRENT- PASSAGE OF THE LOW-ENERGY HIGH-CURRENT ELECTRON BEAM</b></p> <p><b><u>Le Huy Dung</u>, T.V. Koval</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
10	<p><b>DISTRIBUTIONS OF ELECTRIC POTENTIAL AND PLASMA CONCENTRATION IN THE ANODE REGION OF A LOW PRESSURE GAS DISCHARGE</b></p> <p><b><u>V.Ya. Martens</u>, S.V. Moiseev</b></p> <p><i>North Caucasus Federal University, Stavropol, Russia</i></p>
11	<p><b>INSTALLATION FOR MAGNETRON SPUTTERING OF MULTILAYER LOW-EMISSION COATINGS ON A POLYMER ROLL FILM</b></p> <p><b><u>S.V. Rabotkin</u>, N.S. Sochugov, N.F. Kovsharov, M.M. Pugovkin</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
12	<p><b>MULTIFUNCTIONAL PLASMA SOURCE WITH HIGH LIFETIME TWO-LAYER ELECTRON EMITTER</b></p> <p><b><u>M.V. Shandrikov</u><sup>1</sup>, A.V. Tyunkov<sup>2</sup>, A.V. Vizir<sup>1</sup>, G.Yu. Yushkov<sup>1</sup> and E.M. Oks<sup>1,2</sup></b></p>



	<sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia,</i> <sup>2</sup> <i>Tomsk State University of Control System and Radioelectronics, Tomsk, Russia</i>
13	<b>INVESTIGATION OF NON STEADY STATE LOW-CURRENT DISCHARGES FOR DIELECTRIC ADHESION INCREASING</b> <b><u>I.A. Shemyakin</u>, Yu.D. Korolev, O.B. Frants, N.V. Landl, V.S. Kasyanov, A.V. Bolotov and V.G. Geiman</b> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
14	<b>PLASMA GENERATION COMPLEX FOR EXTENDED DETAILS TREATMENT</b> <b><u>V.V. Shugurov</u>, A.A. Kalushevich, V.V. Denisov, V.V. Yakovlev</b> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>
15	<b>SIMULATION OF THE MAGNETIC TRAP BASED ON MAGNETIC FIELDS WITH AXIS OF SYMMETRY</b> <b><u>I.F. Spivak-Lavrov</u>, O.A. Baisanov<sup>1</sup></b> <i>Aktobe's State Zhubanov University named after K.Zhubanov, Aktobe, Kazakhstan</i> <sup>1</sup> <i>Air Forces Defense Institute named after T.Ya. Begeldinov, Aktobe, Kazakhstan</i>
16	<b>MODELING OF A SHIELDED INDUCTIVELY COUPLED PLASMA SOURCE FOR ITS DESIGN OPTIMIZATION</b> <b><u>A.A. Uvarov</u>, S.E. Alexandrov</b> <i>Saint-Petersburg State Polytechnical University, Saint-Petersburg, Russia</i>
17	<b>CONDITION BURNING FOR LAYER OF PLASMA CESIUM ARC WITH RECOMBINATION</b> <b><u>V.P. Zimin</u></b> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>
18	<b>APPLICATION OF HIGH-FREQUENCY SHORT-PULSED PLASMA-IMMERSION ION IMPLANTATION OR DEPOSITION METHOD FOR DIELECTRIC MATERIALS PROCESSING USING GAS, METAL AND GAS - METAL PLASMA</b> <b><u>I.B. Stepanov</u>, A.I. Ryabchikov, D.O. Sivin, A.I. Bumagina</b> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>
19	<b>EXPERIMENTAL STUDY ON A MICROWAVE PLASMATRON WITH A HYDROCARBON - CONTAINING PLASMA-FORMING MEDIUM</b> <b><u>A.G. Zherlitsyn</u>, V.P. Shiyan, V.S. Kositsyn</b> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>

**September 18, Tuesday**

14:00 – 18:40, **room 234**

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

Chairman: **Alexandr Korotaev**, *National Research Tomsk State University, Tomsk, Russia*

14:00 - 15:00 Poster Discussion	
15:00 - 15:20	<p><b>NUMERICAL SIMULATION OF THE INTERACTION BETWEEN HIGH INTENSE PULSED ION BEAM AND TI TARGET</b></p> <p><b>Xiao YU<sup>1</sup></b>, Yang LI<sup>1</sup>, Xiaoyun LE<sup>1</sup>, Gaolong ZHANG<sup>1</sup>, Jie ZHANG<sup>1</sup>, Jie SHEN<sup>1</sup>, Huaizhe XU<sup>1</sup>, Weijiang ZHAO<sup>2</sup></p> <p><sup>1</sup> <i>Beihang University, Beijing, China</i>  <sup>2</sup> <i>Peking University, Beijing, China</i></p>
15:20 - 15:40	<p><b>PERFORMANCE OF RODS W UNDER TRANSIENT HIGH THERMAL LOAD</b></p> <p><b>S. Yan, S.K. He, Y.Z. Zhu, B.Y. Zhang, J.M. Xue, Y.G. Wang</b></p> <p><i>Institute of Heavy Ion Physics, State Key Laboratory of Nuclear Physics and Technology, Peking University, Beijing, China</i></p>
15:40 - 16:00	<p><b>THE INFLUENCE OF RELAXATION PROCESSES ON EFFECTIVENESS OF PARTS SURFACE TREATMENT WITH INTENSE PULSED ELECTRON BEAMS</b></p> <p><b>O.A. Bytzenko<sup>2</sup></b>, V.A. Shulov<sup>1</sup>, A.N. Gromov<sup>2</sup>, D.A. Teryaev<sup>1</sup>,  <b>V.I. Engelko<sup>3</sup></b>, K.I. Tkachenko<sup>3</sup></p> <p><sup>1</sup> <i>Moscow Aviation Institute, Moscow, Russia</i>  <sup>2</sup> <i>Chernyshev Machine-Building Enterprise, Moscow, Russia</i>  <sup>3</sup> <i>Efremov Institute of Electro-Physical Apparatus, St. Peterburg, Russia</i></p>
16:00 – 16:20	<p><b>PHASE TRANSFORMATIONS IN BINARY “METAL-SILICON” SYSTEMS UNDER THE ACTION OF DENSE COMPRESSION PLASMA</b></p> <p><b>Yu.A. Petukhou, N.T. Kvasov, V.V. Uglov<sup>1</sup>, V.M. Astashynski<sup>2</sup>, A.M. Kuzmitski</b></p> <p><i>Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus</i>  <sup>1</sup> <i>Belarusian State University, Minsk, Belarus</i>  <sup>2</sup> <i>B.I. Stepanov Institute of Physics, National Academy of Sciences of Belarus, Minsk, Belarus</i></p>
16:20-16:40 Coffee Break	

16:40 - 17:00	<p><b>DEFORMATION BEHAVIOR AND SPALL FRACTURE OF Cu-Al-Ni ALLOYS WITH SUBMICROCRYSTALLINE AND COARSE-GRAIN STRUCTURE IRRADIATED WITH A NANOSECOND RELATIVISTIC HIGH-CURRENT ELECTRON BEAM</b></p> <p><b><u>A.B. Markov</u><sup>1</sup>, E.F. Dudarev<sup>2</sup>, O.A. Kashin,<sup>3</sup> A.E. Mayer, E.V. Yakovlev, A.N. Tabachenko<sup>2</sup></b>  <i>Chelyabinsk State University, Chelyabinsk, Russia</i>  <sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>Siberian Physical Technical Institute at Tomsk State University, Tomsk, Russia</i>  <sup>3</sup> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
17:00 - 17:20	<p><b>PREDICTION OF TEMPERATURE FIELDS IN STAINLESS STEEL AND NiTi TARGETS CONTAINING INCLUSIONS IRRADIATED BY A LOW-ENERGY HIGH CURRENT PULSED ELECTRON BEAM</b></p> <p><b><u>D.A. Shepel</u>, A.B. Markov</b>  <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17:20 - 17:40	<p><b>ATOMISTIC SIMULATION OF SWIFT HEAVY ION-INDUCED MODIFICATION AND TRACK FORMATION IN NUCLEAR MATERIALS</b></p> <p><b><u>S.V. Starikov</u>, V.V. Pisarev<sup>1</sup></b>  <i>Joint Institute for High Temperatures RAS, Moscow, Russia</i>  <sup>1</sup> <i>Nuclear Safety Institute RAS, Moscow, Russia</i></p>
17:40 - 18:00	<p><b>MODELING OF RESIDUAL STRESS FORMATION IN METALLS AFTER IRRADIATION BY INTENSIVE ENERGY FLOWS</b></p> <p><b><u>E.I. Bakin</u>, V.S. Krasnikov, A.P. Yalovets</b>  <i>South Ural State University, Chelyabinsk, Russia</i></p>
18:00 - 18:20	<p><b>COMPUTER SIMULATION OF SPECTRAL-KINETIC CHARACTERISTICS IN NANOSTRUCTURED ALUMINA UNDER PULSED ELECTRON BEAM EXCITATION</b></p> <p><b><u>T.V. Spiridonova</u>, V.S. Kortov, S.V. Zvonarev</b>  <i>Ural Federal University named after the First President of Russia B.N. Yeltsin, Ekaterinburg, Russia</i></p>
18:20 – 18:40	<p><b>MEASUREMENT OF PRE-BREAKDOWN CURRENT IN ALKALI-HALIDE MONOCRYSTALS UNDER NANOSECOND PULSED VOLTAGE CONDITIONS</b></p> <p><b><u>I.F. Punanov</u>, R.V. Emlin, V.D. Kulikov<sup>1</sup>, S.O. Cholakh<sup>2</sup></b>  <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>

	<sup>1</sup> Tomsk Argicultural Institute, Tomsk, Russia <sup>2</sup> Ural Federal University named after the First President of Russia B.N. Yeltsin, Ekaterinburg, Russia
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**September 18, Tuesday**

14:00 - 18:40

Poster Session 2. Fundamentals of modification processes

1	<p><b>SOLID SURFACE EROSION PROPERTIES UNDER THE ACTION OF POWERFUL CHARGED PARTICLE BEAMS</b></p> <p><b><u>G.A. Bleykher</u>, V.P. Krivobokov</b></p> <p><i>Institute of Physics and Technology, National Research Tomsk Polytechnic University, Tomsk, Russia,</i></p>
2	<p><b>MODELING OF INITIAL STAGE OF ION IMPLANTATION PROCESS. ISOTHERMAL APPROXIMATION</b></p> <p><b><u>E.S. Iliina</u>, A.G. Knyazeva, V.N. Demidov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
3	<p><b>ELEMENTAL COMPOSITION OF SURFACE LAYERS OF “METAL-ON-SILICON” SYSTEMS TREATED BY LOW-ENERGY HIGH-CURRENT ELECTRON BEAMS</b></p> <p><b><u>Yu.A. Petukhou</u><sup>2</sup>, N.N. Koval, Yu.F. Ivanov, V.V. Uglov<sup>1</sup>, A.D. Teresov, A.V. Kalin</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>Belarusian State University, Minsk, Belarus</i>  <sup>2</sup> <i>Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus</i></p>
4	<p><b>DISLOCATION DENSITY AND MICROHARDNESS CHANGE IN SURFACE LAYER OF IRON TARGET UNDER ION- AND ELECTRON-BEAM TREATMENT: NUMERICAL INVESTIGATION</b></p> <p><b><u>V.S. Krasnikov</u>, A.E. Mayer<sup>1</sup></b></p> <p><i>South-Ural State University, Chelyabinsk, Russia</i>  <sup>1</sup> <i>Chelyabinsk State University, Chelyabinsk, Russia</i></p>
5	<p><b>MECHANISMS OF METAL SURFACE MODIFICATION UNDER PROCESSING BY COMPRESSION PLASMA FLOWS</b></p> <p><b><u>A.Ya. Levyi</u>, M.Yu. Zotova, N.N. Cherenda<sup>1</sup>, V.V. Uglov<sup>1</sup>, A.P. Yalovets</b></p> <p><i>South-Ural State University, Physical Department, Chelyabinsk, Russia</i>  <sup>1</sup> <i>Belarusian State University, Minsk, Belarus</i></p>
6	<p><b>CALCULATION OF STRESS FIELDS IN COMPOSITE AT</b></p>

	<p><b>INFLUENCE OF THE HIGH-CURRENT ELECTRONIC BEAM</b></p> <p><b><u>V.V. Pogorelko</u>, A.P. Yalovets</b></p> <p><i>South Ural State University, Chelyabinsk, Russia</i></p>
7	<p><b>QUANTUM-MECHANICAL CALCULATION OF THE INTERMEDIATE PRODUCTS OF RADIOLYSIS OF POTASSIUM PICRATE</b></p> <p><b><u>D.G. Yakubik</u>, V.Kh. Pak</b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p>
8	<p><b>MODIFICATION OF THE STRUCTURAL-PHASE STATE OF FERRITIC-MARTENSITIC STEELS BY HIGH-TEMPERATURE PULSED PLASMA FLOWS</b></p> <p><b><u>V.L. Yakushin</u>, P.S. Dzhumaev, B.A. Kalin, Aung Thurein Hein, M.G. Isaenkova, M.V. Leontyeva-Smirnova<sup>1</sup>, V.I. Polsky, Yu.A. Perlovich, O.V. Emelyanova and I.A. Naumenko</b></p> <p><i>National Research Nuclear University «MEPhI», Moscow, Russia</i>  <sup>1</sup><i>Academician A.A. Bochvar High-Tech Research Institute of Inorganic Materials, Moscow, Russia</i></p>
9	<p><b>FRICTIONAL PROPERTIES OF OXIDE FILMS OF LASER TREATMENT ZONE OF THE TOOL STEELS</b></p> <p><b><u>S.I. Yaresko</u></b></p> <p><i>Samara Branch of P. N. Lebedev Physical Institute of the Russian Academy of Sciences, Samara, Russia</i></p>
10	<p><b>THEORETICAL DESCRIPTION OF MULTIPLE SCATTERING PROCESSES IN THE ION BEAM BASED METHODS</b></p> <p><b><u>A.I. Kul'ment'ev</u></b></p> <p><i>Institute of Applied Physics National Academy of Science of Ukraine, Sumy, Ukraine</i></p>
11	<p><b>FEATURES OF THE PROCESS OF SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS, A STRUCTURE AND STRONG PROPERTIES OF BORIDES IRON LAYERS ON THE CARBONACEOUS STEEL 3, GENERATED UNDER A POWERFUL ELECTRON BEAM IN VACUUM</b></p> <p><b><u>D.E. Dasheev</u>, N.N. Smirnyagina</b></p> <p><i>Institute of Physical Material Science SB RAS, Ulan-Ude, Russia</i></p>
12	<p><b>THERMODYNAMIC MODELING OF BORIDES AND CARBIDES TUNGSTEN FORMATION, SELF-EXTENDING HIGH-TEMPERATURE SYNTHESIS, STRUCTURE AND PHASE COMPOSITION OF W<sub>2</sub>B<sub>5</sub> AND WC LAYERS, GENERATED AT ELECTRON BEAM PROCESSING IN VACUUM</b></p> <p><b>N.N. Smirnyagina<sup>1,2</sup>, V.M. Khaltanova<sup>1,2</sup>, T.B. Kim<sup>2</sup>, A.S. Milonov</b></p> <p><sup>1</sup><i>Institute of Physical Material Science SB RAS, Ulan-Ude, Russia</i>  <sup>2</sup><i>Buryat State University, Ulan-Ude, Russia</i></p>

**September 19, Wednesday**

09:00 – 13:00, 14:00 – 19:10, **room 234**

**Oral Session 3. Modification of material properties**

Chairman: **Valery Krivobokov**, *National Research Tomsk Polytechnic University, Tomsk, Russia*

09:00 - 09:20	<p><b>ARC PLASMA-ASSISTED NITRIDING OF HIGH-SPEED-STEEL</b></p> <p><b><u>Y. H. Zhao</u>, B. H. Yu, L. M. Dong, H. Du</b></p> <p><i>Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China</i></p>
09:20 - 09:40	<p><b>INTERMETALLIC PHASES SYNTHESIS IN THE SURFACE LAYER OF AL-SI ALLOY BY COMPRESSION PLASMA FLOWS IMPACT</b></p> <p><b><u>N.N. Cherenda</u>, N.V. Bibik, V.V. Uglov, V.M. Astashynski<sup>1</sup>, A.M. Kuzmitski<sup>1</sup></b></p> <p><i>Belarusian State University, Minsk, Belarus</i>  <sup>1</sup><i>B.I.Stepanov Institute of Physics of the National Academy of Sciences of Belarus, Minsk, Belarus</i></p>
09:40 - 10:00	<p><b>ION-BEAM TREATMENT THE OUTER SURFACE OF FUEL CLADDING FROM ZIRCONIUM ALLOYS BY RADIAL ION BEAM Ar<sup>+</sup></b></p> <p><b><u>N.V. Volkov</u>, B.A. Kalin, R.A. Valikov, A.S. Yashin, V.N. Yalcev</b></p> <p><i>National Research Nuclear University MEPhI, Moscow, Russia</i></p>
10:00 - 10:20	<p><b>INFLUENCE OF THE PULSED ELECTRON BEAM TREATMENTS ON THE STRUCTURAL-PHASE CONDITIONS AND RESIDUAL STRESSES IN THE TiNi SURFACE LAYERS</b></p> <p><b><u>M.G. Ostapenko</u><sup>1</sup>, L.L. Meisner<sup>1,2</sup>, A.I. Lotkov<sup>1</sup>, N.N. Koval<sup>3</sup>, E.Yu. Gudimova<sup>1</sup></b></p> <p><sup>1</sup><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>2</sup><i>National Research Tomsk State University, Tomsk, Russia</i>  <sup>3</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
10:20 – 10:40	<p><b>THE INFLUENCE OF THE SURFACE MODIFICATION AND BULK STRUCTURE MODIFICATION OF PURE TITANIUM VT1-0 AND TITANIUM ALLOY VT6 ON THEIR WEAR RESISTANCE</b></p> <p><b><u>B.P. Gritsenko</u><sup>1</sup>, U.F. Ivanov<sup>2,3</sup>, N.N. Koval<sup>2,3</sup>, K.V. Krukovskiy<sup>1</sup>,</b></p>

	<p><b>N.V. Girsova<sup>1</sup>, A.D. Teresov<sup>2</sup>, I.V. Lopatin<sup>2</sup></b></p> <p><sup>1</sup> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>3</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
<b>10:40 - 11:00 Coffee break</b>	
11:00 - 11:20	<p><b>EFFECT OF PAPAMETERS OF PULSED ELECTRON-BEAM MELTING OF AI (FILM)/Ti (SUBSTRATE) SYSTEMS ON PHASE FORMATION AND PROPERTIES OF Ti-AI SURFASE ALLOYS</b></p> <p><b><u>V.P. Rotshtein</u>, Yu.A. Kolubaeva, X. Mei<sup>1</sup>, A.B. Markov, E.P. Naiden<sup>2</sup>, K.V. Oskomov, E.L. Pryadko, A.D. Teresov, I.A. Shulepov<sup>3</sup>, V.A. Shulov<sup>4</sup></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>Dalian University of Technology, Dalian, China</i>  <sup>2</sup> <i>National Research Tomsk State University, Tomsk, Russia</i>  <sup>3</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>4</sup> <i>Moscow State Aviation Institute, Moscow, Russia</i></p>
11:20 - 11:40	<p><b>SHOCK-WAVE SPALL FRACTURE OF AUSTENITIC STEELS UNDER THE ACTION OF A NANOSECOND RELATIVISTIC HIGH-CURRENT ELECTRON BEAM</b></p> <p><b><u>S.F. Gnusov</u>, V.P. Rotshtein<sup>1</sup>, S.A. Kitsanov<sup>1</sup>, A.E. Mayer<sup>2</sup>, K.V. Khishchenko<sup>3</sup>, P.R. Levashov<sup>3</sup></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>Chelyabinsk State University, Russia</i>  <sup>3</sup> <i>Institute of Thermophysics of Extreme States of the Joint Institute for High Temperatures RAS, Moscow, Russia</i></p>
11:40 – 12:00	<p><b>EFFECT OF PLASMA PROPERTIES AND SET-UP GEOMETRY ON THE MEDICAL NEEDLE ION PLASMA SPUTTERING PROCESS</b></p> <p><b><u>A.G. Remnev</u>, K.V. Shalnov, K. Uemura</b></p> <p><i>Nagata Seiki Co. Ltd., Niigata, Japan</i></p>
12:00 - 12:20	<p><b>MODIFICATION OF STRUCTURE AND PROPERTIES OF TITANIUM SURFACE LAYER BY ELECTROEXPLOSIVE ALLOYING AND ELECTRON-BEAM TREATMENT</b></p> <p><b><u>Yu.F. Ivanov</u>, A.D. Teresov, N.A. Soskova<sup>1</sup>, S.V. Raykov<sup>1</sup>, E.A. Budovskikh<sup>1</sup>, V.E. Gromov<sup>1</sup></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>Siberian State Industrial University, Novokuznetsk, Russia</i></p>

12:20 – 12:40	<p><b>RADICAL PRODUCTE IN IRRADIATED CRYSTAL HYDRATE OF MAGNESIUM NITRATE</b></p> <p><b><u>D.V. Balikov</u>, V.Kh. Pak, M.B. Miklin, V.A. Nevostruev</b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p>
12:40 – 13:00	<p><b>THE MODIFICATION OF THE GRAPHITE SURFACE BY POWERFUL PULSED BEAMS OF C AND H IONS</b></p> <p><b><u>A.E. Ligachev</u><sup>4</sup>, O.A. Golosova<sup>1</sup>, E.A. Ligacheva<sup>3</sup>, N.I. Polushin<sup>5</sup>, G.V. Potemkin<sup>2</sup>, A.I. Pushkarev<sup>2</sup>, G.E. Remnev<sup>2</sup></b></p> <p><sup>1</sup> <i>National Research Belgorod State University, Belgorod, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>3</sup> <i>Tsiolkovsky Moscow Aviation Technological Institute, Moscow, Russia</i>  <sup>4</sup> <i>General Physics Institute RAS, Moscow, Russia</i>  <sup>5</sup> <i>National Research Moscow Institute of Steel and Alloys, Moscow, Russia</i></p>
<b>13:00 - 14:00 Lunch</b>	
<b>14:00 – 15:00 Poster Discussion</b>	
15:00 - 15:20	<p><b>MODIFICATION OF STRUSTURE AND MECHANICAL PROPERTIES OF TITANIUM ALLOYS BY COMPRESSION PLASMA FLOWS INFLUENCE</b></p> <p><b><u>V.I. Shymanski</u>, V.V. Uglov, N.N. Cherenda, V.M. Astashynski<sup>1</sup>, A.M. Kuzmitski<sup>1</sup></b></p> <p><i>Belarusian State University, Minsk, Belarus</i>  <sup>1</sup> <i>B.I. Stepanov's Institute of Physics of National Academy of Science of Belarus, Minsk, Belarus</i></p>
15:20 - 15:40	<p><b>INCREASE OF THE CORROSION RESISTANCE OF LOW-ALLOY STEELS BY PULSED PLASMA FLOWS TREATMENT</b></p> <p><b><u>P.S. Dzhumaev</u>, V.L. Yakushin, B.A. Kalin, Aung Thurein Hein, V.I. Polsky, M.S. Yurlova</b></p> <p><i>National Research Nuclear University «MEPhI», Moscow, Russia</i></p>
15:40 – 16:00	<p><b>MODIFICATION OF CHROME-VANADIUM WHITE IRON COATINGS BY IMPULSIVE ELECTRON-BEAM PROCESSING</b></p> <p><b><u>B.V. Dampilon</u><sup>1,2</sup>, V.G. Durakov<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>



16:00 - 16:20	<p><b>MICROSTRUCTURE AND PROPERTIES OF VACUUM ELECTRON BEAM FACING CuCr25 ALLOYS</b></p> <p><b><u>V.G. Durakov</u><sup>1</sup>, S.F. Gnyusov<sup>2</sup>, B.V. Dampilon<sup>1,2</sup>, S.Z. Dehonova<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
<b>16:20 - 16:40 Coffee break</b>	
16:40 - 17:10 Extended	<p><b>NITRIDING OF TITANIUM ALLOY VT16 (Ti-3Al-4.5V-5Mo) IN PLASMA OF NON-SELFSUSTAINED ARC DISCHARGE</b></p> <p><b><u>D.S. Vershinin</u>, M.Yu. Smolyakova, T.N. Vershinina</b></p> <p><i>Scientific-Educational and Innovative Centre "Nanostructured Materials and Nanotechnologies", National Research Belgorod State University, Belgorod, Russia</i></p> <p><b>LOW-TEMPERATURE NITRIDING OF AUSTENITE STAINLESS STEEL IN PLASMA OF NON-SELFSUSTAINED ARC DISCHARGE</b></p> <p><b><u>D.S. Vershinin</u><sup>1</sup>, M.Yu. Smolyakova<sup>1</sup>, I.M. Tregubov<sup>2</sup></b></p> <p><sup>1</sup> <i>Scientific-Educational and Innovative Centre "Nanostructured Materials and Nanotechnologies", National Research Belgorod State University, Belgorod, Russia</i>  <sup>2</sup> <i>Voronezh State Technical University, Voronezh, Russia</i></p>
17:10 - 17:30	<p><b>FEARURES OF FORMING OF MYLTYLAERD NANOSTRUCTURING COATINGS ON THE BASIS OF Ni-Al</b></p> <p><b><u>M.V. Fedorishcheva</u>, V.P. Sergeev, M.P. Kalashnikov, A.V. Voronov</b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
17:30 - 17:50	<p><b>Zr+ ION BEAM SURFACE LAYER STRUCTURE MODIFICATION IN 12Cr1MoV STEEL AS A WAY TO IMPROVE ITS FATIGUE DURABILITY</b></p> <p><b><u>I.V. Vlasov</u><sup>1,2</sup>, S.V. Panin<sup>1,2</sup>, V.P. Sergeev<sup>2</sup>, A.R. Sungatulin<sup>2</sup>, M.P. Kalashnikov<sup>2</sup>, and V.E. Panin<sup>1,2</sup></b></p> <p><sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>2</sup> <i>Institute of Strength Physics and Materials Sciences SB RAS, Tomsk, Russia</i></p>
17:50 - 18:10	<p><b>ESTIMATION OF THE STRESSES IN THE COATING GROWING THE DEPOSITION OF METAL IONS AND CARBON FROM THE ELECTRIC ARC PLASMA IMPULSE</b></p>

	<p><b><u>S.N. Sorokova</u><sup>1</sup>, A.G. Knyazeva<sup>1</sup>, I.L. Pobal<sup>2</sup>, A.R. Denizhenko<sup>2</sup></b></p> <p><sup>1</sup> National Research Tomsk Polytechnic University, Tomsk, Russia  <sup>2</sup> Physical-Technical Institute, National Academy of Sciences of Belarus, Minsk, Belarus</p>
18:10 - 18:30	<p><b>OPTIMIZATION OF STEEL SPARK CLEANING TECHNOLOGY</b></p> <p><b><u>M.S. Slobodyan</u>, G.E. Remnev, B.G. Shubin, M.V. Zhuravlev</b></p> <p>National Research Tomsk Polytechnic University, Tomsk, Russia</p>
18:30 - 18:50	<p><b>CONTROLLABLE MICROSTRUCTURE GROWTH ON LIQUID METAL SURFACES IN REACTIVE ATMOSPHERES: EXPERIMENT AND THEORY</b></p> <p><b><u>A.N. Panchenko</u>, S.V. Alekseev, N.M. Bulgakova<sup>1,2</sup>, D.E. Genin, V.F. Losev, Yu.N. Panchenko</b></p> <p>Institute of High Current Electronics SB RAS, Tomsk, Russia  <sup>1</sup> Institute of Thermophysics SB RAS, Novosibirsk, Russia  <sup>2</sup> Optoelectronics Research Centre, University of Southampton, United Kingdom</p>
18:50 - 19:10	<p><b>PECULIARITIES OF HIGH-CURRENT ELECTRON BEAM EFFECT ON THE STRUCTURE OF Ni-Ti ALLOY SURFACE IMPLANTED BY KRYPTON IONS</b></p> <p><b><u>V.P. Poltavtseva</u>, S.B. Kislitsin, N.N. Koval<sup>1</sup>, K.V. Oskomov<sup>1</sup></b></p> <p>Institute of Nuclear Physics, Almaty, Kazakhstan  <sup>1</sup> Institute of High Current Electronics SB RAS, Tomsk, Russia</p>

## September 19, Wednesday

### Poster Session 3. Modification of material properties

14:00 - 19:10

1	<p><b>THE MODIFICATION OF METALS AND ALLOYS PROCESSES IN LOW-TEMPERATURE DISCHARGE PLASMA</b></p> <p><b><u>V. Abidzina</u>, I. Tereshko, V. Red'ko</b></p> <p>Belarusian-Russian University, Mogilev, Belarus</p>
2	<p><b>INCREASED ULTRAVIOLET REFLECTIVITY OF MAGNETRON DEPOSITED Al FILMS</b></p> <p><b><u>O.Kh. Asainov</u>, S.P. Umnov</b></p> <p>National Research Tomsk Polytechnic University, Tomsk, Russia</p>
3	<p><b>VACUUM-PLASMA TECHNIQUES OF HIGH-QUALITY PRODUCT SURFACE TREATMENT</b></p>

	<p><b><u>D.P. Borisov</u><sup>1</sup>, <u>N.N. Koval</u><sup>1,2</sup>, <u>A.D. Korotaev</u><sup>1</sup>, <u>V.M. Kuznetsov</u><sup>1</sup>, <u>V.Ya. Romanov</u><sup>1</sup>, <u>P.A. Terekhov</u><sup>1</sup> and <u>E.V. Chulkov</u><sup>1</sup></b></p> <p><sup>1</sup> National Research Tomsk State University, Tomsk, Russia  <sup>2</sup> Institute of High Current Electronics SB RAS, Tomsk, Russia</p>
4	<p><b>REMOVAL OF OXIDE LAYERS FROM A STEEL SURFACE BY COMPRESSION PLASMA FLOWS</b></p> <p><b><u>N.N. Cherenda</u>, <u>V.V. Uglov</u>, <u>A.A. Smilgin</u>, <u>V.M. Astashynski</u><sup>1</sup>, <u>A.M. Kuzmitscki</u><sup>1</sup>, <u>G.E. Remnev</u><sup>2</sup></b></p> <p><i>Belarusian State University, Minsk, Belarus</i>  <sup>1</sup> B.I. Stepanov Institute of Physics of the National Academy of Sciences of Belarus, Minsk, Belarus  <sup>2</sup> National Research Tomsk Polytechnic University, Tomsk, Russia</p>
5	<p><b>STRUCTURAL DAMAGE IN LiF CRYSTALS IRRADIATED WITH FAST IONS</b></p> <p><b><u>A. Dauletbekova</u>, <u>J. Maniks</u><sup>1</sup>, <u>I. Manika</u><sup>1</sup>, <u>A. Russakova</u>, <u>R. Zabels</u><sup>1</sup>, <u>A. Akilbekov</u>, <u>M. Zdorovets</u><sup>2</sup>, <u>A. Muhyshbayeva</u><sup>1</sup>, <u>Z. Umatova</u><sup>1</sup>, <u>A. Zhumazhanova</u><sup>1</sup></b></p> <p><i>L.N. Gumilyov Eurasian National University, Astana, Kazakhstan</i>  <sup>1</sup> Institute of Solid State Physics University of Latvia, Riga, Latvia  <sup>2</sup> Astana Branch of Institute of Nuclear Physics, Astana, Kazakhstan</p>
6	<p><b>MODIFICATION OF HARD ALLOYS BASED ON TUNGSTEN CARBIDE BY PULSED ELECTRON BEAM MELTING OF Ti COATING/WC-8%CO SUBSTRATE SYSTEM</b></p> <p><b><u>Yu.A. Denisova</u>, <u>Yu.F. Ivanov</u>, <u>P.V. Moskvina</u>, <u>A.D. Teresov</u>, <u>N.N. Koval</u></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
7	<p><b>OPTICAL CONTROL OF A METAL SURFACE MELTING UNDER ITS IRRADIATION BY PULSED INTENSE ELECTRON BEAM</b></p> <p><b><u>V.A. Kubasov</u>, <u>V.I. Engelko</u>, <u>V.G. Kovalev</u></b></p> <p><i>Efremov Institute of Electrophysical Apparatus, St.Petersburg, Russia</i></p>
8	<p><b>ZEOLITE-CONTAINING CATALYST TREATED WITH UV AND LOW- TEMPERATURE PLASMA</b></p> <p><b><u>M.V. Erofeev</u><sup>1</sup>, <u>V.F. Tarasenko</u><sup>1</sup>, <u>I.S. Khomjakov</u><sup>2</sup>, <u>A.S. Medvedev</u><sup>2</sup>, <u>V.I. Erofeev</u><sup>2</sup></b></p> <p><sup>1</sup> Institute of High Current Electronics SB RAS, Tomsk, Russia  <sup>2</sup> National Research Tomsk Polytechnic University, Tomsk, Russia</p>
9	<p><b>THE MODIFICATION OF THE MATERIAL SURFACE UNDER THE PULSE IMPACT OF THE PLASMA FLOWS</b></p>

	<p><b><u>A.T. Gabdullina</u>, A.M. Zhukeshov, A.U. Amrenova, M. Mukhamedryskyzy</b></p> <p><i>Physical and Technical Department of Al-Faraby Kazakhstan National University, Almaty, Kazakhstan</i></p>
10	<p><b>FORMATION OF PARAMAGNETIC CENTERS IN <math>\gamma</math>-IRRADIATED BARIUM NITRATE AT 300 AND 77K.</b></p> <p><b><u>A.O. Gavrilyuck</u>, V.Kh. Pak, M.B. Miklin, V.A. Nevostruev</b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p>
11	<p><b>MODELS OF NON-ISOTHERMAL DIFFUSION UNDER SURFACE TREATMENT USING PARTICLE BEAMS</b></p> <p><b><u>M.V. Gizbrekht</u>, A.G. Knyazeva, M.A. Micolaichuk</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
12	<p><b>FEATURES FORMING OF MULTILAYERED NANOSTRUCTURING COATINGS ON THE BASIS OF Si-Al-N/ Zr-Y-O SYSTEM, GENERATED BY MAGNETRON DEPOSITION METHOD</b></p> <p><b><u>M.P. Kalashnikov</u>, V.P. Sergeev, M.V. Fedorishcheva, V.V. Neyfeld</b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
13	<p><b>CHANGES IN THE STRUCTURE AND MECHANICAL PROPERTIES OF COMMERCIAL PURE TITANIUM UNDER THE INFLUENCE OF ELECTRON-BEAM PROCESSING</b></p> <p><b><u>O.M. Kretova</u>, A.V. Panin, M.S. Kazachenok, O.B. Perevalova, A.D. Teresov<sup>1</sup></b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
14	<p><b>PROPERTIES NANOCRYSTALLINE NITRIDE COATINGS, OBTAINED BY DIFFERENT REJIME</b></p> <p><b><u>O.P. Kul'ment'eva</u><sup>1</sup>, A.M. Mahmood<sup>2</sup>, A.A. Andreev<sup>3</sup></b></p> <p><sup>1</sup> <i>Biyovis Holding, Sumy, Ukraine</i>  <sup>2</sup> <i>Sumy State University, Sumy, Ukraine</i>  <sup>3</sup> <i>NSC "Kharkov Physico-Technical Institute", Kharkov, Ukraine</i></p>
15	<p><b>ELECTRICAL SURFACE CONDUCTIVITY IN DIELECTRIC MATERIALS INDUCED BY ION-THERMAL MODIFICATION</b></p> <p><b><u>K.V. Lebed</u>, A.V. Kabyshev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>

16	<p><b>INFLUENCE OF GENERAL ABSORBED DOSE ON THE CONTENT OF THE GEL-FRACTION IN THE ION-EXCHANGE POLYMER HYDROGELS</b></p> <p><b><u>V.M. Le</u>, V.D. Zhevnyak, V.H. Pak, V.A. Nevostruev</b></p> <p><i>Kemerovo State University, Kemerovo, Russia</i></p>
17	<p><b>LOW-TEMPERATURE (400 °C) NITRIDING OF 12KH18N10T STEEL IN ELECTRON BEAM PLASMA</b></p> <p><b><u>A.I. MENSHAKOV</u>, N.V. Gavrilov</b></p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
18	<p><b>RESEARCHING OF HYDROGEN ACCUMULATION IN THE SAMPLES OF PALLADIUM, SILVER AND SILVER-PALLADIUM ALLOY</b></p> <p><b><u>N.N. Nikitenkov</u>, I.T. Sigfusson<sup>1</sup>, Yu.I. Tyurin, V.S. Sypchenko, A.O. Saprykina, O.V. Vilkhivskaya</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup><i>University of Iceland, Innovation Centre, Keldnaholt, Reykjavik, Iceland</i></p>
19	<p><b>LONG-RANGE EFFECT OF ION IMPLANTATION AND ITS INFLUENCE ON CHEMICAL COMPOSITION OF ROLLED COPPER-NICKEL FOILS</b></p> <p><b><u>A.A. Novoselov</u>, V.Ya. Bayankin, F.Z. Gilmutdinov</b></p> <p><i>Physical-Technical Institute UB RAS, Izhevsk, Russia</i></p>
20	<p><b>HYDRODYNAMIC INSTABILITY IN METALS SUBJECTED TO STRONG BEAMS OF CHARGED PARTICLES</b></p> <p><b><u>V.L. Orlov</u><sup>2</sup>, A.V. Orlov<sup>1</sup>, M.A. Gumirov<sup>2</sup></b></p> <p><sup>1</sup><i>Yugra State University, Khanty-Mansiysk, Russia</i>  <sup>2</sup><i>Polzunov Altai State Technical University, Barnaul, Russia</i></p>
21	<p><b>RESEARCH MODIFICATION OF LIQUID HUDROCARBONS IRRADIATED BY A NANOSECOND E-BEAM</b></p> <p><b><u>V.M. Orlovskij</u>, Yu.V. Savinykh</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <i>Institute of Petroleum Chemistry SB RAS, Tomsk, Russia</i></p>
22	<p><b>MODIFICATION OF THE STRUCTURE AND PROPERTIES OF SILUMIN BY COMBINED METHOD INCLUDING ELECTROEXPLOSIVE ALLOYING FOLLOWED BY ELECTRON-BEAM TREATMENT</b></p> <p><b><u>E.A. Petrikova</u><sup>1</sup>, Yu.F. Ivanov<sup>1</sup>, V.E. Gromov<sup>2</sup>, E.A. Budovskih<sup>2</sup>,</b></p>

	<p><b>N.V. Bibik<sup>3</sup>, N.N. Cherenda<sup>3</sup></b></p> <p><sup>1</sup> Institute of High Current Electronics SB RAS, Tomsk, Russia  <sup>2</sup> Siberian State Industrial University, Novokuznetsk, Russia  <sup>3</sup> Belarussian State University, Minsk, Belarus</p>
23	<p><b>FREAK STRUCTURES ON THE SURFACE OF COPPER TARGET IRRADIATED BY ION BEAM</b></p> <p><b><u>S.V. Polosatkin</u><sup>1,2</sup>, A.V. Burdakov<sup>1,3</sup>, E.S. Grishnyaev<sup>3</sup>, S.G. Konstantinov<sup>1</sup>, A.A. Shoshin<sup>1,2</sup></b></p> <p><sup>1</sup> Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia  <sup>2</sup> Novosibirsk State University, Novosibirsk, Russia  <sup>3</sup> Novosibirsk State Technical University, Novosibirsk, Russia</p>
24	<p><b>COMPOSITION AND ELECTROCATALYTIC PROPERTIES OF SURFACE LAYERS PRODUCED ON CARBON SUBSTRATES WITH USE OF PLATINUM ION BEAM DEPOSITION FROM PULSED ARC-DISCHARGE PLASMA</b></p> <p><b><u>V.V. Poplavsky</u>, V.G. Matys, A.V. Dorozhko</b></p> <p><i>Belarussian State University of Technology, Minsk, Belarus</i></p>
25	<p><b>CORROSIVE PROPERTIES OF COATINGS PRODUCED ON ALUMINIUM AND STEELS SUBSTRATES WITH USE OF CHROMIUM ION BEAM DEPOSITION</b></p> <p><b><u>V.V. Poplavsky</u>, V.G. Matys, I.M. Bely</b></p> <p><i>Belarussian State University of Technology, Minsk, Belarus</i></p>
26	<p><b>FORMATION OF THE CONDUCTIVE LAYERS WITH HIGH RESISTANCE IN THE SURFACE OF ALUMINA BY METAL ION IMPLANTATION</b></p> <p><b><u>K.P. Savkin</u><sup>1</sup>, Ju.A. Burachevsky<sup>2</sup>, A.G. Nikolaev<sup>1</sup>, E.M. Oks<sup>1</sup>, A.V. Tyunkov<sup>2</sup>, and G.Yu. Yushkov<sup>1</sup></b></p> <p><sup>1</sup> Institute of High Current Electronics SB RAS, Tomsk, Russia  <sup>2</sup> Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</p>
27	<p><b>THE METHOD OF SURFACE MODIFICATION OF METALS AND ALLOYS, INCLUDING OF THE ELECTROEROSION ALLOYING FOLLOWED BY ELECTRON-BEAM TREATMENT</b></p> <p><b><u>V.V. Shugurov</u>, A.D. Teresov, Yu.A. Denisova, E.A. Petrikova, Yu.F. Ivanov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
28	<p><b>THE INFLUENCE OF EXPOSURE TO INTENSE PULSED ELECTRON BEAMS ON NiCrAlY VACUUM-ARC COATINGS ADHESION TO GAS TURBINE ENGINE BLADES MADE OF</b></p>

	<p><b>GHS26NK ALLOY</b></p> <p><b><u>V.A. Shulov</u><sup>1</sup>, O.A. Bytzenko<sup>2</sup>, D.A. Teryaev<sup>1</sup>, V.I. Engelko<sup>3</sup>, K.I. Tkachenko<sup>3</sup></b></p> <p><sup>1</sup> <i>Moscow Aviation Institute, Moscow, Russia</i>  <sup>2</sup> <i>Chernyshev Machine-Building Enterprise, Moscow, Russia</i>  <sup>3</sup> <i>Efremov Institute of Electro-Physical Apparatus, St. Peterburg Russia</i></p>
29	<p><b>TEXTURE FORMATION IN SUPERFICIAL LAYERS OF TARGETS MADE OF VT9 ALLOY DURING THEIR IRRADIATION WITH INTENSE PULSED ELECTRON BEAMS</b></p> <p><b><u>D.A. Teryaev</u><sup>1</sup>, V.A. Shulov<sup>1</sup>, O.A. Bytzenko<sup>2</sup>, V.I. Engelko<sup>3</sup>, K.I. Tkachenko<sup>3</sup>, Yu.A. Perlovich<sup>4</sup>, M.G. Isaenkova<sup>4</sup>,  V.A. Fesenko<sup>4</sup></b></p> <p><sup>1</sup> <i>Moscow Aviation Institute, Moscow, Russia</i>  <sup>2</sup> <i>Chernyshev Machine-Building Enterprise, Moscow, Russia</i>  <sup>3</sup> <i>Efremov Institute of Electro-Physical Apparatus, St. Peterburg, Russia</i>  <sup>4</sup> <i>Moscow Engineering Physics Institute, Moscow, Russia</i></p>
30	<p><b>EFFECT OF PULSED ELECTRON BEAMS EXPOSURE ON STRUCTURAL AND PHASE STATES OF SUBMICROCRYSTALLINE Ti-6Al-4V-H ALLOY</b></p> <p><b><u>E.N. Stepanova</u>, G.P. Grabovetskaya<sup>1</sup>, I.P. Mishin<sup>1</sup>, A.D. Teresov<sup>2</sup>, S.V. Grigoryev<sup>2</sup></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
31	<p><b>RADIATION-STIMULATED RELEASE OF HYDROGEN FROM NANOCRYSTALLINE TITANIUM OXIDE COATED BY ALUMINIUM OXIDE</b></p> <p><b><u>V.S. Sypchenko</u>, N.N. Nikitenkov, T.I. Sigfusson<sup>1</sup>, Y.I. Tyurin, O.V. Vilkhivskaya</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup> <i>University of Iceland, Innovation Centre, Keldnaholt, Reykjavik, Iceland</i></p>
32	<p><b>QUENCH OF THE RADICAL-RECOMBINATION LUMINESCENCE OF CRYSTALLINE PHOSPHORS BY OXYGEN</b></p> <p><b><u>Yu.I. Tyurin</u>, Yu.A. Sivov, I.T. Sigfusson<sup>1</sup>, V.D. Khoruzhii, E.Yu. Plotnikova and L.I. Syumkina</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup> <i>University of Iceland, Innovation Centre, Keldnaholt, Reykjavik,</i></p>

	<i>Iceland</i>
33	<p><b>CHANGES OF T15K6 HARD ALLOY STRUCTURE AND PHASE COMPOSITION AS A RESULT OF NITRIDING BY COMPRESSIVE PLASMA FLOWS</b></p> <p><b><u>V.V. Uglov</u><sup>1</sup>, A.K. Kuleshov<sup>1</sup>, E.A. Krutasilina<sup>1</sup>, V.M. Astashynski<sup>2</sup>, A.M. Kuzmitski<sup>2</sup></b></p> <p><sup>1</sup><i>Belarusian State University, Minsk, Belarus</i>  <sup>2</sup><i>The B.I. Stepanov Institute of Physics, Minsk, Belarus</i></p>
34	<p><b>STRUCTURE AND PROPERTIES OF ZIRCONIUM-TITANIUM SURFACE ALLOY FORMED WITH A LOW-ENERGY HIGH-CURRENT ELECTRON BEAM</b></p> <p><b><u>E.V. Yakovlev</u>, A.B. Markov, M. Bestetti<sup>1</sup>, M.F. Brunella<sup>1</sup>, V.I. Petrov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup><i>Politecnico di Milano, Milan, Italy</i></p>
35	<p><b>PLASMA-IMMERSION ELECTRON SURFACE TREATMENT OF METAL SAMPLES</b></p> <p><b><u>A.N. Zakharov</u>, N.S. Sochugov, A.V. Kozyrev, V.A. Semenov<sup>1</sup></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup><i>National Research Tomsk State University, Tomsk, Russia,</i></p>
36	<p><b>SINTERING OF ALUMINA CERAMICS USING PLASMA ELECTRON SOURCE</b></p> <p><b><u>A.A. Zenin</u><sup>1</sup>, A.S. Klimov<sup>1</sup>, A.V. Kazakov<sup>1</sup>, E.S. Dvilis<sup>2</sup>, O.L. Khasanov<sup>2</sup>, E.M. Oks<sup>1</sup></b></p> <p><sup>1</sup><i>Tomsk State University of Control System and Radioelectronics, Tomsk, Russia,</i>  <sup>2</sup><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
37	<p><b>INFLUENCE OF THE LOW ENERGY ION IRRADIATION ON THE CONDUCTIVITY AND DOMAIN STRUCTURE EVOLUTION IN LiNbO<sub>3</sub></b></p> <p><b><u>D.O. Alikin</u><sup>1</sup>, V.Ya. Shur<sup>1</sup>, S.A. Negashev<sup>1</sup>, V.I. Pryakhina<sup>1</sup>, A.V. Ilevlev<sup>1</sup>, P.S. Zelenovskiy<sup>1</sup>, M.A. Dolbilov<sup>1</sup>, N.V. Gavrilov<sup>2</sup></b></p> <p><sup>1</sup><i>Ferroelectric Laboratory, Ural Federal University, Ekaterinburg, Russia</i>  <sup>2</sup><i>Charged-Particle Beams Laboratory, Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
38	<p><b>SURFACE MODIFICATION OF MAGNESIUM ALLOYS UNDER THE ACTION OF PULSED ELECTRON BEAMS OF NANOSECOND DURATION</b></p>



	<p><b><u>A.E. Ligachev</u><sup>3</sup>, B.L. Bobryshev<sup>1</sup>, D.B. Bobryshev<sup>2</sup>, G.Ya. Earth<sup>2</sup>, M.I. Kaykanov<sup>4</sup>, A.Kh. Mukhametov<sup>2</sup>, D.V. Ponomarev<sup>4</sup>, G.V. Potemkin<sup>4</sup>, G.E. Remnev<sup>4</sup></b></p> <p><sup>1</sup> <i>Tsiolkovsky Moscow Aviation Technological Institute, Moscow, Russia</i>  <sup>2</sup> <i>JSC «AVANGARD», Moscow, Russia</i>  <sup>3</sup> <i>A.M. Prokhorov General Physics Institute RAS, Moscow, Russia</i>  <sup>4</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
39	<p><b>STRUCTURE AND MECHANICAL PROPERTIES MODIFICATION OF INSTRUMENTAL MATERIALS SURFACE LAYERS BY COATING DEPOSITION AND HIGH INTENSITY ION BEAMS ACTION</b></p> <p><b><u>V.V. Uglov</u><sup>1</sup>, G.E. Remnev<sup>2</sup>, A.K. Kuleshov<sup>1</sup>, D.P. Rusalskiy<sup>1</sup></b></p> <p><sup>1</sup> <i>Belarusian State University, Minsk, Belarus</i>  <sup>2</sup> <i>Nuclear Physics Institute, Tomsk, Russia</i></p>
40	<p><b>MEASUREMENT OF IMPULSE FOR PULSED ELECTRON BEAM ABLATION</b></p> <p><b><u>Yang Li</u><sup>1</sup>, Jie Zhang<sup>1</sup>, Xiaoyun Le<sup>1</sup>, Gaolong Zhang<sup>1</sup>, Xiao Yu<sup>1</sup>, Jie Shen<sup>1</sup>, Huaizhe Xu<sup>1</sup>, Weijiang Zhao<sup>2</sup></b></p> <p><sup>1</sup> <i>Beihang University, Beijing, 100191, China,</i>  <sup>2</sup> <i>Peking University, Beijing, 100871, China,</i></p>
41	<p><b>COPPER GERMANIUM ALLOYS FORMATION BY THE LOW TEMPERATURE ATOMIC HYDROGEN TREATMENT</b></p> <p><b><u>A.I. Kazimirov</u>, E.V. Erofeev<sup>1</sup>, V.A. Kagadei<sup>2</sup></b></p> <p><i>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i>  <sup>1</sup> <i>Research &amp; Production Company "Micran", Tomsk, Russia</i>  <sup>2</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
42	<p><b>DYNAMIC SIMULATION OF THE TEMPERATURE FIELD OF POLYCRYSTALLINE IRON UNDER THE ACTION OF COMPRESSION PLASMA FLOWS</b></p> <p><b><u>V. V. Astashynski</u>, N. N. Cherenda, S. O. Gluchko</b></p> <p><i>Belarusian State University, Minsk, Belarus</i></p>
43	<p><b>NANOSTRUCTURAL POWDERS BASED ON ZIRCONIUM OXIDE: REGULARITIES AND MECHANISMS OF FORMATION OF PHASE COMPOSITION</b></p> <p><b>Yu. F. Ivanov, E. A. Petrikova, Yu. A. Kolubaeva, A. D. Teresov, S. Yu. Filimonov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

44	<p><b>ELECTRON-BEAM SURFACE MODIFICATION OF MEDICAL SUPPLIES</b></p> <p><b><u>A.D. Teresov</u>, Yu.Kh. Akhmadeev, N.N. Koval, Yu.A. Denisova, E.A. Petrikova, A.V. Shteynle<sup>1</sup></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>Siberian State Medical University, Tomsk, Russia</i></p>
45	<p><b>STRUCTURE AND PROPERTIES OF IRON-COPPER SYSTEM, FORMED BY ELECTRON-ION-PLASMA METHODS</b></p> <p><b><u>Yu.F. Ivanov</u>, S.Yu. Filimonov, A.D. Teresov, E.A. Budovskikh<sup>1</sup>, V.E. Gromov<sup>1</sup></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>Siberian State University of Industry, Novokuznetsk, Russia</i></p>
46	<p><b>THE SYNTHESIS OF GALLIUM ARSENIDE FILMS ON THE SILICON SUBSTRATE BY IONIC ABLATION</b></p> <p><b><u>A.V. Kabyshev</u>, F.V. Konusov, G.E. Remnev</b></p> <p><i>Institute of Physics of High Technology, Tomsk, Russia</i></p>
47	<p><b>THREE-DIMENSIONAL MODIFICATION OF THE SURFACE BY THE PLASMA CATHODE ELECTRON GUN</b></p> <p><b><u>I.V. Osipov</u>, A.G. Rau<sup>1</sup>, S.I. Belyuk<sup>2</sup></b></p> <p><sup>1</sup> <i>TETA Corp., Loskutovo, Tomsk, Russia</i>  <sup>2</sup> <i>Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i>  <i>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia</i></p>
48	<p><b>NANOSTRUCTURED LAYERS OF TRANSITIVE METALS BORIDES ON FAST-CUTTING STEELS R18 AND R6M5, GENERATED AT ELECTRON BEAM TREATMENT IN VACUUM</b></p> <p><b>A.D. Dorzhiev, N.N. Smirnyagina, A.S. Milonov, A.P. Semenov</b></p> <p><i>Institute of Physical Material Science SB RAS, Ulan-Ude</i></p>
49	<p><b>STRUCTURE, PHASE COMPOSITION, HEAT RESISTANCE, PLASTICITY AND THERMAL STABILITY NANOSTRUCTURAL BORIDES TRANSITIVE METALS LAYERS ON CARBON STEEL S45 AFTER ELECTRON BEAM PROCESSING IN VACUUM</b></p> <p><b>N.N. Smirnyagina, B.V. Radnaev, B.V. Radnaev, A.S. Milonov, D.E. Dashev</b></p> <p><i>Institute of Physical Material Science SB RAS, Ulan-Ude</i></p>

**September 20, Thursday**9:00 – 12:30, 14:00 – 16:40, **room 234****Oral Session 4. Coatings deposition**Chairman: **Nikolai Koval**, *Institute of High Current Electronics SB RAS, Tomsk, Russia*

09:00 - 09:30 Invited	<p><b>EVOLUTION OF PHASE COMPOSITION AND CRYSTAL STRUCTURE OF TiZrAIN COATINGS AT ITS DEPOSITION AND IRRADIATION</b></p> <p><b><u>V.V. Uglov</u>, G. Abadias<sup>1</sup>, A. Michel<sup>1</sup>, S.V. Zlotski, I.A. Saladukhin, A.Y. Rovbut</b></p> <p><i>Belarusian State University, Minsk, Belarus</i> <sup>1</sup><i>University of Poitiers, Poitiers, France</i></p>
09:30 - 10:00 Invited	<p><b>THE CONCEPTS OF DESIGN, THE FEATURES OF STRUCTURAL-PHASE AND ELASTIC STRESS STATE, PROPERTIES OF SUPERHARD AND ANTI-FRICTION COATINGS</b></p> <p><b><u>A.D. Korotaev</u>, S.V. Ovchinnikov<sup>1</sup>, D.P. Borisov</b></p> <p><i>National Research Tomsk State University, Tomsk, Russia</i> <sup>1</sup><i>Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i></p>
10:00 - 10:20	<p><b>INVESTIGATION OF THE FEATURES OF STRUCTURAL STATE IN THE AREAS OF DEFORMATION AND FRACTURE IN SCRATCH TESTING AND NANOINDENTATION DOPED COATINGS BASED ON TITANIUM NITRIDE</b></p> <p><b><u>S.V. Ovchinnikov</u>, A.D. Korotaev<sup>1</sup>, Yu.P. Pinzhin, S.V. Popov<sup>1</sup></b></p> <p><i>Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i> <sup>1</sup><i>National Research Tomsk State University, Tomsk, Russia</i></p>
10:20 - 10:40	<p><b>NITRIDE AND OXIDE FILM DEPOSITION IN HIGH DENSITY PLASMA OF A RADIO FREQUENCY PLASMA GENERATOR</b></p> <p><b><u>V.U. Grigoriev</u>, E.V. Berlin, I.A. Shchelkanov</b></p> <p><i>“Laboratory of Vacuum Technologies”, Zelenograd, Russia</i></p>
<b>10:40-11:00 Coffee break</b>	
11:00 - 11:30 invited	<p><b>EQUIPMENT AND PROCESSES OF COMPLEX ELECTRON-ION-PLASMA MODIFICATION OF MATERIALS AND ARTICLES SURFACE</b></p> <p><b><u>N.N. Koval</u></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

11:30 - 11:50	<p><b>EFFECT OF HEAVY ION IRRADIATION ON STRUCTURE AND PROPERTIES COATING BASED ON NITRIDE OF TRANSITION METALS</b></p> <p><b><u>S.B. Kislitsin</u><sup>1</sup>, K.K. Kadyrzhanov, V.V. Uglov</b><sup>2</sup></p> <p><i>National Nuclear Center of Republic of Kazakhstan, Kurchatov, Kazakhstan</i>  <sup>1</sup> <i>Institute of Nuclear Physics of National Nuclear Center of Republic of Kazakhstan, Almaty, Kazakhstan</i>  <sup>2</sup> <i>Belarusian State University, Minsk, Belarus</i></p>
11:50 – 12:10	<p><b>INVESTIGATION OF TiC/a-C:H COATINGS DEPOSITED BY MAGNETRON SPUTTERING OF TITANIUM IN Ar-C<sub>2</sub>H<sub>2</sub> GAS MIXTURE, IONIZED BY ELECTRON BEAM</b></p> <p><b><u>A.S. Kamenetskih</u>, N.V. Gavrilov, M.V. Kuznetsov</b><sup>1</sup>,  <b>A.V. Chukin</b><sup>2</sup>, <b>E.V. Shishkina</b><sup>3</sup></p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i>  <sup>1</sup> <i>Institute of Solid State Chemistry UB RAS, Ekaterinburg, Russia</i>  <sup>2</sup> <i>Ural Federal University, Institute of Physics and Technology, Ekaterinburg, Russia</i>  <sup>3</sup> <i>Ural Federal University, Institute of Natural Sciences, Ekaterinburg, Russia</i></p>
12:10 - 12:30	<p><b>OPTICAL PROPERTIES AND GROWTH RATES OF SILICON FILMS SYNTHESIZED BY GAS-JET ELECTRON BEAM PLASMA CVD METHOD</b></p> <p><b><u>S.Ya. Khmel</u></b></p> <p><i>Institute of Thermophysics SB RAS, Novosibirsk, Russia</i></p>
<b>12:30 - 14:00 Lunch</b>	
<b>14:00 - 15:00 Poster Discussion</b>	
15:00-15:20	<p><b>MULTILAYER HEAT-SHIELDING COATINGS ON THE BASIS OF Zr-Y-O/Si-Al-N WITH HIGH THERMAL-CYCLE DURABILITY</b></p> <p><b><u>V.P. Sergeev</u>, V.E. Panin, R.N. Rizakhanov</b><sup>1</sup>, <b>A.S. Koroteev</b><sup>1</sup></p> <p><i>Institute of Strength Physics and Materials Sciences SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>State Scientific Center «Keldysh Research Center», Moscow, Russia</i></p>
15:20 - 15:40	<p><b>MULTICOMPONENT NITRIDE COATINGS DEPOSITED AT VACUUM ARC EVAPORATION OF POWDER CATHODES</b></p> <p><b><u>G.A. Pribytkov</u>, V.V. Korzhova, I.A. Firsina, E.N. Korosteleva, A.V. Gurskih</b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>

15:40 – 16:00	<p><b>THE INFLUENCE OF THE ELECTRICAL PARAMETERS OF MAO-PROCESS ON PROPERTIES OF OBTAINED COATINGS</b></p> <p><b><u>M.M. Yasyukevich</u>, T.I. Odnostoronceva, P.I. Butyagin</b></p> <p><i>CJSC MANEL, Tomsk, Russia</i></p>
16:00 - 16:20	<p><b>THERMAL STABILITY OF NANOCRYSTALLINE TERNARY SYSTEM COATINGS BASED ON TiN</b></p> <p><b><u>O.V. Krygina</u><sup>1</sup>, Yu.F. Ivanov<sup>1</sup>, N.N. Koval<sup>1</sup>, S. Doyle<sup>2</sup>, T. Baumbach<sup>2</sup>, N.A. Timchenko<sup>3</sup>, R.M. Galimov<sup>3</sup></b></p> <p><sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>Institute for Synchrotron Radiation, KIT, Karlsruhe, Germany</i>  <sup>3</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
16:20 - 16:40	<p><b>EXTENDED MAGNETRON SPUTTERING SYSTEM PLASMA EFFECTS THAT LIMITING TARGET UTILIZATION</b></p> <p><b><u>D. Kotov</u>, A. Khissamov, V. Shiripov, A. Yasunas</b></p> <p><i>Izovac Ltd., Minsk, Belarus</i></p>
<b>16:40 - 17:00 Coffee break</b>	

## September 20, Thursday

17:00 – 17:50, room 234

### Oral Session 5. Nanoscience and nanotechnology

Chairman: **Yuriy Sharkeev**, *Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*

17:00 - 17:20	<p><b>IMPROVEMENT of FATIGUE LIFE OF NANOSTRUCTURED TITANIUM with ION IMPLANTATION AND ELECTRON BEAM TREATMENT</b></p> <p><b><u>Yu.P. Sharkeev</u>, V.A. Kukarenko<sup>1</sup>, A.V. Byeli<sup>2</sup>, N.N. Koval<sup>3</sup>, Yu.F. Ivanov<sup>3</sup>, A.Yu. Eroshenko</b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>Joint Institute of Mechanical Engineering of National Academy of</i></p>
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	<p><i>Sciences of Belarus, Minsk, Belarus</i>  <sup>2</sup> <i>Physical-Technical Institute of National Academy of Sciences of Belarus, Minsk, Belarus</i>  <sup>3</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
17:20 – 17:50 Extended	<p><b>STRUCTURAL REGULARITIES OF FORMATION OF GRADIENTE SURFACE LAYERS ON BASE OF INTERMETALLIC NANODIMENSIONAL PHASES AT ION IMPLANTATION</b></p> <p><b><u>I.A. Kurzina</u><sup>1</sup>, Yu.P. Sharkeev<sup>2</sup>, E.V. Kozlov<sup>3</sup></b></p> <p><sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>2</sup> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>3</sup> <i>Tomsk State University of Architecture &amp; Building, Tomsk, Russia</i></p> <p><b>STRUCTURAL STATE AND PHASE COMPOSITION OF THE FINE-GRAINED TITANIUM IMPLANTAD BY ALUMINIUM IONS</b></p> <p><b><u>I.A. Kurzina</u><sup>1</sup>, N.A. Popova<sup>2</sup>, E.L. Nikonenko<sup>2</sup>, M.P. Kalashnikov<sup>3</sup>, K.P. Savkin<sup>4</sup>, G.Yu. Yushkov<sup>4</sup>, E.M. Oks<sup>4</sup>, Yu.P. Sharkeev<sup>3</sup></b></p> <p><sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>2</sup> <i>Tomsk State University of Architecture &amp; Building, Tomsk, Russia</i>  <sup>3</sup> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>4</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

## September 20, Thursday

14:00 - 16:40

### Poster Session 4. Coatings deposition

1	<p><b>EMISSION OF SiH IN FREE JET ACTIVATED BY ELECTRON-BEAM PLASMA</b></p> <p><b><u>E.A. Baranov</u>, S.Ya. Khmel</b></p> <p><i>Institute of Thermophysics SB RAS, Novosibirsk, Russia</i></p>
2	<p><b>OPTICAL STUDIES OF AMORPHOUS SILICON FILMS</b></p> <p><b><u>A.O. Zamchiy</u>, E.A. Baranov, S.Ya. Khmel</b></p> <p><i>Institute of Thermophysics SB RAS, Novosibirsk, Russia</i></p>

3	<p><b>THE AMORPHOUS-NANOCRYSTALLINE COATING CARBON-TiC ON THE SUBSTRUCTURAL STRENGTHENING TITANIUM</b></p> <p><b><u>A.D. Korotaev</u>, D.P. Borisov, I.Yu. Litovchenko<sup>1</sup>, A.V. Andreev, V.Ya. Romanov, P.A. Terekhov<sup>1</sup></b></p> <p><i>National Research Tomsk State University, Tomsk, Russia</i>  <sup>1</sup> <i>Institute of Strength Physics and Material Science SB RAS, Tomsk, Russia</i></p>
4	<p><b>A SILICON FILMS DEPOSITION IN THE PROCESSES OF SiF<sub>4</sub> DECOMPOSITION IN PULSED GLOW DISCHARGE AND UNDER THE ACTION OF PULSED E-BEAM</b></p> <p><b><u>V.V. Denisov</u>, V.V. Shugurov, A.A. Kalushevich, V.V. Yakovlev, M.S. Vorobyov, A.I. Suslov, N.N. Koval</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
5	<p><b>HEAT-RESISTANT OXIDE CERAMIC NANOPOROUS COATINGS OBTAINED BY PULSE MICROPLASMA PROCESSES ON ZIRCONIUM</b></p> <p><b><u>T.I. Dorofeeva</u>, V.A. Mamaeva</b></p> <p><i>Institute of Strength Physics and Materials Sciences SB RAS, Tomsk, Russia</i></p>
6	<p><b>MULTILAYER FILM-TYPE STRUCTURES FOR RADIATION PROTECTION OF SEMICONDUCTOR DEVICES</b></p> <p><b><u>V.V. Uglov</u><sup>2</sup>, S.S. Grabchikov<sup>1</sup>, S.B. Lastovski<sup>1</sup>, Yu.V. Bogatyrov<sup>1</sup>, P.V. Pankratov<sup>1</sup>, A.G. Pyatkevich<sup>1</sup></b></p> <p><sup>1</sup> <i>Scientific-Practical Materials Research Centre NAS of Belarus, Minsk, Belarus</i>  <sup>2</sup> <i>Belarusian State University, Minsk, Belarus</i></p>
7	<p><b>SOLID OXIDE FUEL CELLS WITH THIN Ni-YSZ ANODES FABRICATED BY MAGNETRON CO-SPUTTERING</b></p> <p><b><u>I.V. Ionov</u><sup>1</sup>, N.S. Sochugov<sup>1</sup>, A.A. Soloviev<sup>1</sup>, A.N. Kovalchuk<sup>1</sup>, A.O. Tcybenko<sup>1</sup>, T.I. Sigfusson<sup>2</sup></b></p> <p><sup>1</sup> <i>Department of Hydrogen Energy and Plasma Technologies, National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>2</sup> <i>Innovation Centre Iceland, Reykjavik, Iceland</i></p>
8	<p><b>SYNTHESIS, STRUCTURE AND CHARACTERISTICS OF Al-Si-N COATINGS PREPARED BY VACUUM ARC PLASMA-ASSISTED METHOD</b></p> <p><b><u>O.V. Krygina</u>, Yu.F. Ivanov, N.N. Koval</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>

9	<p><b>TI-SI-N SUPERHARD NANOCRYSTALLINE COATING SYNTHESIZED BY VACUUM-ARC DEPOSITION WITH PLASMA ASSISTANCE</b></p> <p><b><u>O.V. Krygina</u>, Yu.F. Ivanov, N.N. Koval, P.V. Moskvina</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
10	<p><b>PHYSICAL AND CHEMICAL CHARACTERISTICS FORMATION OF MULTICOMPONENT COATINGS IN ARC VAPOR DEPOSITION CONDITIONS</b></p> <p><b><u>M.V. Kripakova</u>, A.G. Knyazeva<sup>1</sup>, I.M. Goncharenko<sup>2</sup></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup> <i>Institute of Strength Physics and Materials Sciences SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
11	<p><b>MODELING OF THE PROCESS OF TIN COATING MODIFICATION UNDER AI+ AND B+ ION BEAMS IMPLANTATION</b></p> <p><b><u>O.N. Kryukova</u>, A.G. Knyazeva<sup>1</sup>, V.P. Sergeev<sup>1</sup>, A.G. Linyev<sup>1</sup></b></p> <p><i>Institute of Strength Physics and Materials Sciences SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
12	<p><b>INVESTIGATIONS ON THE EFFECT OF NITROGEN LASER BEAM ON THIN COATINGS</b></p> <p><b><u>D.M. Lubenko</u><sup>1</sup>, Yu.Kh. Akhmadeev<sup>1</sup>, O.V. Krygina<sup>1</sup>, Yu.A. Chumakov<sup>2</sup></b></p> <p><sup>1</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
13	<p><b>IONIC NANO STRUCTURING OF COPPER SUBSTRATE AND THERMOCYCLIC STABILITY OF HEAT-RESISTING SI-AI-N COATINGS</b></p> <p><b><u>V.V. Neyfeld</u>, V.P. Sergeev, M.V. Fedorishcheva, M.P. Kalashnikov</b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
14	<p><b>DEPOSITION OF TiC/a-C:H COATINGS BY ACETYLENE DECOMPOSITION IN TITANIUM ARC PLASMA</b></p> <p><b><u>S.A. Plotnikov</u>, D.R. Emlin<sup>1</sup>, I.S. Trachtenberg, N.V. Gavrilov<sup>1</sup></b></p> <p><i>Institute of Metal Physics UB RAS, Ekaterinburg, Russia</i>  <sup>1</sup> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>



15	<p><b>POLYMER FILMS WITH LOW-E COATING TO REDUCE HEAT LOSS THROUGH WINDOWS</b></p> <p><b><u>S.V. Rabotkin</u>, N.S. Sochugov, N.F. Kovsharov, A.A. Soloviev, K.V. Oskomov</b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i></p>
16	<p><b>INVESTIGATION PROPERTIES OF COPPER COATINGS OBTAINED PLASMODYNAMIC METHOD</b></p> <p><b><u>A.A. Sivkov</u>, A.S. Saigash, D.Yu. Gerasimov, A.A. Evdokimov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
17	<p><b>ON POSSIBILITY OF REGULATING THE HARDNESS OF COATINGS BASED ON TITANIUM NITRIDE, IN THE PROCESS OF DEPOSITING THEM TO METALLIC SUBSTRATES</b></p> <p><b><u>A.A. Sivkov</u>, A.S. Saigash, D.Yu. Gerasimov, A.A. Evdokimov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
18	<p><b>FORMATION OF GRADIENT COATINGS ON THE BASIS OF Ti–Al–B–N SYSTEM BY METHOD OF MAGNETRON DISPUTTERING AND ION BEAM BOMBARDMENT</b></p> <p><b><u>O.V. Sergeev</u>, V.P. Sergeev, M.V. Fedorischeva, M.P. Kalashnikov, A.V. Voronov, A.R. Sungatulin</b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
19	<p><b>FORMATION OF COMPOSITE COATINGS WITH ADJUSTABLE RATIO OF COMPONENTS</b></p> <p><b><u>M.V. Shandrikov</u><sup>1</sup>, A.V. Tyunkov<sup>2</sup></b></p> <p><sup>1</sup><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>2</sup><i>Tomsk State University of Control System and Radioelectronics, Tomsk, Russia</i></p>
20	<p><b>TITANIUM NICKELIDE FORMATION BY COMPRESSION PLASMA FLOWS</b></p> <p><b><u>V.I. Shymanski</u>, V.V. Uglov, N.N. Cherenda, V.A. Lushkevich, V.M. Astashynski<sup>1</sup>, A.M. Kuzmitski<sup>1</sup></b></p> <p><i>Belarusian State University, Minsk, Belarus</i>  <sup>1</sup><i>B.I. Stepanov's Institute of Physics of National Academy of Science of Belarus, Minsk, Belarus</i></p>

21	<p><b>THE DEPOSITION THIN FILMS OF DIOXIDE TITANIUM BY MEANS OF DUAL MAGNETRON SPUTTERING</b></p> <p><b><u>D.V. Sidelev</u>, Y.N. Yuryev</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
22	<p><b>FABRICATION OF METAL-SUPPORTED SOLID OXIDE FUEL CELLS</b></p> <p><b><u>A.A. Soloviev</u>, N.S. Sochugov, I.V. Ionov, A.I. Kirdyashkin<sup>1</sup>, V.D. Kitler<sup>1</sup>, A.S. Maznoy<sup>1</sup>, T.I. Sigfusson<sup>2</sup></b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>1</sup> Dept. of Structural Macrokinetics of Tomsk Science Centre SB RAS, Tomsk, Russia  <sup>2</sup> Innovation Center Iceland, Reykjavik, Iceland</p>
23	<p><b>DEPOSITION OF DLC FILMS FROM THE MAGNETRON DISCHARGE PLASMA</b></p> <p><b><u>Yu. Yuryev</u>, A. Yuryeva, D. Korzhenko and O. Stepanova</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
24	<p><b>RESEARCH OF PROPERTIES OF COPPER COATINGS OBTAINED BY THE PLASMODYNAMIC METHOD</b></p> <p><b><u>A.A. Sivkov</u>, A.S. Saigash, Yu.L. Kolganova, M.E. Nazarova</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
25	<p><b>A NEW METHOD FOR THE METALLIZATION OF CERAMIC SUBSTRATES FOR THE NEEDS OF POWER ELECTRONICS</b></p> <p><b><u>A. Yuryeva</u>, V. Krivobokov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
26	<p><b>PHASE COMPOSITION, STRUCTURE AND MICROHARDNESS OF TiB<sub>2</sub> LAYERS ON CARBONACEOUS STEELS S20 AND U8A AT PROCESSING BY POWERFUL ELECTRON BEAMS IN VACUUM</b></p> <p><b><u>Z.M. Khaltarov</u><sup>1</sup>, A.S. Milonov<sup>1</sup>, A.D. Teresov<sup>2</sup>, N.N.Koval<sup>2</sup>, A.P. Semenov<sup>1</sup>, N.N. Smirnyagina<sup>1</sup></b></p> <p><sup>1</sup> Institute of Physical Material Science SB RAS, Ulan-Ude, Russia  <sup>2</sup> Institute of High Current Electronics SB RAS</p>

September 21, Friday

09:00 – 12:30, room 227

Oral Session 5. Nanoscience and nanotechnology  
(continuation)

09:00 - 09:30 Invited	<p><b>PRODUCTION OF PHOTON CRYSTAL STRUCTURES: SILICON DIOXIDE - SILVER BY ION BEAM SPUTTERING OF SILVER</b></p> <p><b><u>A.P. Semenov</u>, A.A. Semenova<sup>1</sup>, E.A. Goodilin<sup>1,2</sup>, I.A. Semenova, V.K. Ivanov<sup>3</sup>, Yu.D. Tretyakov<sup>1,2</sup></b></p> <p><i>Institute of Physical Materials Science SB RAS, Ulan-Ude, Russia,</i>  <sup>1</sup> <i>Faculty of Materials Science, Moscow State University, Moscow, Russia</i>  <sup>2</sup> <i>Faculty of Chemistry, Moscow State University, Moscow, Russia</i>  <sup>3</sup> <i>Kurnakov Institute of General and Inorganic Chemistry RAS, Moscow, Russia</i></p>
09:30 - 09:50	<p><b>RESEARCH OF NANOPOWDERS PROPERTIES PURE AND DOPED METAL OXIDES PRODUCED BY A METHOD OF PULSED ELECTRON BEAM EVAPORATION</b></p> <p><b><u>S.Y. Sokovnin</u>, A.M. Murzakaev, V.G. Il'ves, A.V. Spirina</b></p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
09:50 - 10:10	<p><b>NANODIMENSIONAL INTERNAL STRUCTURE FORMATION IN METALS UNDER THE ACTION OF PULSED ELECTRIC-EXPLOSION-INDUCED PLASMA JETS</b></p> <p><b><u>V.D. Sarychev</u>, A.U. Granovskiy, V.E. Gromov</b></p> <p><i>Siberian State Industrial University, Novokuznetsk, Russia</i></p>
10:10 - 10:30	<p><b>THE MORPHOLOGY, PHYSICO-MECHANICAL AND ELECTROCHEMICAL PROPERTIES OF MICRO-ARC CALCIUM-PHOSPHATE COATINGS ON NANOSTRUCTURED TITANIUM SURFACE</b></p> <p><b><u>E.V. Legostaeva</u><sup>1</sup>, Yu.P. Sharkeev<sup>1</sup>, S.V. Gnedenkov<sup>2</sup>, E.G. Komarova<sup>1</sup>, V.S. Egorkin<sup>2</sup>, S.L. Sinebryukhov<sup>2</sup>, G.V. Lyamina<sup>3</sup>, I.A. Khlusov<sup>4</sup></b></p> <p><sup>1</sup> <i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i>  <sup>2</sup> <i>Institute of Chemistry FEB RAS, Vladivostok, Russia</i>  <sup>3</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>4</sup> <i>Scientific Educational Center «Biocompatible Materials and Bioengineering» at National Research Tomsk Polytechnic University and Siberian State Medical University, Tomsk, Russia</i></p>

10:30 – 10:50	<p><b>PET TRACK ETCH MEMBRANES IN ELECTROLESS TEMPLATE-ASSISTED SYNTHESIS OF SILVER NANOSTRUCTURES</b></p> <p><b><u>A.A. Mashentseva</u>, M.V. Zdorovets, A.V. Russakova, B.N. Aubakirov, D.B. Borgekov</b></p> <p><i>Astana Branch of the Institute of Nuclear Physics, National Nuclear Center of Kazakhstan, Astana, Kazakhstan</i></p>
10:50 -11:10	<p><b>PROPERTIES OF THE ZIRCONIUM ALLOY SURFACE MODIFIED BY PULSED ELECTRON AND ION BEAMS</b></p> <p><b><u>I.P. Chernov</u><sup>1</sup>, E.V. Beresneeva<sup>1</sup>, S.V. Ivanova<sup>3</sup>, N.N. Koval<sup>2</sup>, A.M. Lider<sup>1</sup>, N.S. Pushlina<sup>1</sup>, G.E. Remnev<sup>1</sup></b></p> <p><sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i>  <sup>2</sup> <i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>3</sup> <i>National Research Nuclear University «MEPhI», Moscow, Russia</i></p>
11:10 -11:30	<p><b>ON BOUNDLESS WIRE MESH RESISTANCE COMPUTATION</b></p> <p><b>I.F. Spivak-Lavrov, <u>M.S. Kurmanbai</u></b></p> <p><i>Aktobe's State Zhubanov University Named After K.Zhubanov, Aktobe, Kazakhstan</i></p>
11:30 - 11:50 Coffee Break	
11:50 - 12:30 Poster Discussion	

## Poster Session 5. Nanoscience and nanotechnology

09:00 - 12:30

1	<p><b>SORPTION CAPACITY INVESTIGATION OF CARBON NANOSTRUCTURE MATERIALS</b></p> <p><b><u>L.V. Gulidova</u></b></p> <p><i>Department of General Physics, Institute of Physics and Technology, National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
2	<p><b>THE PLASMADYNAMIC SYNTHESIS OF SILICON CARBIDE</b></p> <p><b><u>D.S. Nikitin</u>, A.A. Sivkov<sup>1</sup>, A.Ja. Pak</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>

3	<p><b>PLASMODYNAMIC SYNTHESIS OF B-C-N SYSTEM CRYSTALLINE PHASES IN HYPERHIGH SPEED ELECTRODISCHARGED PLASMA JET</b></p> <p><b><u>I.A. Rakhmatullin</u>, A.A. Sivkov, A.Ya. Pak, I.I. Shanenkov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
4	<p><b>CARBON NANOCLUSTERS FORMATION INTO THE SILICON AFTER HIGH INTENSE PULSED ION BEAMS INFLUENCE IN NITROGEN ATMOSPHERE</b></p> <p><b><u>V.I. Shymanski</u>, G.E. Remnev<sup>1</sup>, V.V. Uglov, M.P. Samtsov<sup>1</sup></b></p> <p><i>Belarusian State University, Minsk, Belarus</i>  <sup>1</sup> <i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
5	<p><b>COMPACTION OF POWDERS OF TITANIUM NITRIDE NANOPOWDER SYNTHESIS PLASMODYNAMIC BY SPARK PLASMA SINTERING</b></p> <p><b><u>A.A. Sivkov</u>, D.Yu. Gerasimov, A.A. Evdokimov, A.I. Usikov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
6	<p><b>DEPENDENCE OF THE SIZE OF TITANIUM NITRIDE PARTICLES AND THEIR AGGLOMERATION PROPERTIES FROM PARAMETERS PLASMODYNAMIC SYNTHESIS</b></p> <p><b><u>A.A. Sivkov</u>, D.Yu. Gerasimov, A.A. Evdokimov, A.I. Usikov</b></p> <p><i>National Research Tomsk Polytechnic University, Tomsk, Russia</i></p>
7	<p><b>RESEARCH OF NANOPOWDERS PROPERTIES OF NEW X-RAY CONTRAST SUBSTANCES AND THE PHOSPHORS PRODUCED BY A METHOD OF PULSED ELECTRON BEAM EVAPORATION</b></p> <p><b><u>S.Y. Sokovnin</u><sup>1</sup>, M.G. Zuev<sup>2</sup>, V.G. Il'ves<sup>1</sup>, A.V. Spirina<sup>1</sup></b></p> <p><sup>1</sup> <i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i>  <sup>2</sup> <i>Institute of Solid State Chemistry UB RAS, Ekaterinburg, Russia</i></p>
8	<p><b>RESEARCH OF PROPERTIES NANOPOWDERS AND COVERINGS FROM ALUMINA IRON DOPED, PRODUCED BY A METHOD OF PULSED ELECTRON BEAM EVAPORATION</b></p> <p><b><u>S.Y. Sokovnin</u>, A.M. Murzakaev, V.G. Il'ves, A.V. Spirina</b></p> <p><i>Institute of Electrophysics UB RAS, Ekaterinburg, Russia</i></p>
9	<p><b>RESEARCHES OF THE NANO-STRUCTURED GLASS-CRYSTALLINE MATERIALS PRODUCED BY PLASMA TECHNOLOGY</b></p> <p><b><u>O.G. Volokitin</u>, A.V. Lucenko, V.V. Shehovcov</b></p> <p><i>Tomsk State University of Architecture and Building, Tomsk, Russia</i></p>

10	<p><b>FORMATION OF MULTILAYERED COATINGS ON THE BASIS OF ALTERNATING NANOLAYERS CrN/AIN AND THEIR TRIBOLOGICAL PROPERTIES</b></p> <p><b><u>A.V. Voronov</u>, V.P. Sergeev, M.V. Fedorishcheva, M.P. Kalashnikov</b></p> <p><i>Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia</i></p>
11	<p><b>SPRAY PYROLYSIS TECHNIQUE FOR CERAMIC POWDERS SYNTHESIS</b></p> <p><b><u>A.S. Zhukov</u><sup>1</sup>, V.A. Arkhipov<sup>1,2</sup>, S.V. Zmanovsky<sup>3</sup>, S.S. Bondarchuk<sup>1,2</sup></b></p> <p><sup>1</sup> <i>National Research Tomsk State University, Tomsk, Russia</i>  <sup>2</sup> <i>Institute for Problems of Chemical and Energetic Technologies, SB RAS, Biisk, Russia</i>  <sup>3</sup> <i>Limited Liability Company "SUAL-PM", Shelekhov, Russia</i></p>
12	<p><b>STRUCTURAL TRANSFORMATIONS OF TECHNICAL CARBON BLACK T900 UNDER THE ACTION OF A HIGH-ENERGY-DENSITY PULSED ELECTRON BEAM</b></p> <p><b><u>A.D. Teresov</u>, Yu.G. Kryazhev<sup>1</sup>, N.N. Koval, V.A. Likholobov<sup>2</sup>, V.A. Drozdov<sup>2</sup>, M.V. Trenikhin<sup>2</sup></b></p> <p><i>Institute of High Current Electronics SB RAS, Tomsk, Russia</i>  <sup>1</sup> <i>Omsk Scientific Center SB RAS, Omsk, Russia</i>  <sup>2</sup> <i>Institute of Hydrocarbon Processing, Omsk, Russia</i></p>
13	<p><b>MEASUREMENT IN COMPUTER SIMULATION INTEGRAL CHARACTERISTICS OF COMPACT ATOMIC NANOCLUSTERS</b></p> <p><b><u>A.I. Kul'ment'ev</u></b></p> <p><i>Institute of Applied Physics National Academy of Science of Ukraine, Sumy, Ukraine</i></p>
14	<p><b>SYNTHESIS OF SUPERHARD NANOSTRUCTURED COATINGS Ti-HF-Si-N AND ANALYSIS OF THEIR PROPERTIES</b></p> <p><b><u>A.D. Pogrebniak</u><sup>1</sup>, B.R. Zhollybekov<sup>2</sup>, V.M. Beresnev<sup>3</sup>, F.F. Komarov<sup>4</sup>, P. Konarski<sup>6</sup>, V.V. Uglov<sup>4</sup>, M.V. Kaverin<sup>1</sup>, D.A. Kolesnikov<sup>5</sup>, N.A. Makhmudov<sup>7</sup>, V.V. Grudnitskii<sup>3</sup>, S.V. Plotnikov<sup>8</sup></b></p> <p><sup>1</sup> <i>Sumy State University, Sumy Institute for Surface Modification, Sumy, Ukraine</i>  <sup>2</sup> <i>Karakalpak State University, Nukus, Uzbekistan.</i>  <sup>3</sup> <i>Kharkov National University, Kharkov, Ukraine</i>  <sup>4</sup> <i>Belarus State University, Minsk, Belarus</i>  <sup>5</sup> <i>Belgorod State University, Belgorod, Russia</i>  <sup>6</sup> <i>Tele-Radio Research Institute, Warszawa, Poland</i>  <sup>7</sup> <i>Samarkand Branch of Tashkent University of Information, Samarkand, Uzbekistan</i></p>

	<sup>8</sup> <i>East-Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan</i>
15	<p><b>PRODUCTION OF HYDROGEN AND CARBON NANOMATERIALS FROM NATURAL GAS FOR HYDROGEN STORAGE DEVICES</b></p> <p><b><u>A.G. Zherlitsyn</u>, V.P. Shiyan, V.S. Kositsyn, L.V. Gulidova, A.M. Lider, P.S. Postnikov, M.E. Trusova</b></p> <p><i>National Research Tomsk State University, Tomsk, Russia</i></p>
16	<p><b>INVESTIGATION OF FIELD EMISSION PROCESS FOR ULTRATHIN FILMS OF ZIRCONIA: VOLT-AMPERE DEPENDENCES AND SPECTRA FINE STRUCTURE</b></p> <p><b><u>I.S. Turmyshev</u>, O.R. Timoshenkova, A. M. Murzakaev</b></p> <p><i>Institute of Electrophysics UD RAS, Ekaterinburg, Russia</i></p>

### September 20, Thursday

19:00 — 23:00, INTERNATIONAL CULTURE CENTER, 13, Usov St.  
**BANQUET**

### September 21, Friday

12:30 — 13:30, MAIN BUILDING OF TPU, 30, LENINA AVE., ROOM 234  
**CLOSING CEREMONY**