

# Central Hall Plenary Session



September 6 (Monday)

Chairman: *Stanislav A. Chaikovsky*

|  |   |
|--|---|
| 9.00-9.35                                | <b>Opening ceremony</b>   |
| Plenary Lecture<br>Online<br>09:35-10:20 | <b>Nanosecond diffuse-channel discharge in air</b><br><b><i>Gennady A. Mesyats</i></b><br>P.N. Lebedev Physical Institute RAS, Moscow, Russia   |
| 10:20-10:40                              | Coffee break  |
| Plenary Lecture<br>Online<br>10:40-11:25 | <b>Pulsed power generation for gas discharge and plasma applications</b><br><b><i>Weihua Jiang</i></b><br>Extreme Energy-Density Research Institute Nagaoka University of Technology, Nagaoka, Niigata, Japan |
| Invited Lecture<br>11:25-12:00           | <b>Different modes of runaway electron beams in high-pressure gases</b><br><b><i>Victor F. Tarasenko</i></b><br>Institute of High Current Electronics SB RAS, Tomsk, Russia                                   |

# Hall A

## Section 1.



# Fundamental processes in low-temperature plasma: low and high pressure discharges, near-electrode phenomena, radiation, ultrafast processes, diagnostics.

|             |                        |                                      |
|-------------|------------------------|--------------------------------------|
| 13.30-15.35 | Oral Session (OS-1-1). | Chairman: <i>Victor F. Tarasenko</i> |
|-------------|------------------------|--------------------------------------|

|   |                               |   |
|---|-------------------------------|---|
| 1 | Invited report<br>13.30-14.05 | <p><b>Runaway electron flows in magnetized coaxial gas diodes</b><br/> <i>Michael I. Yalandin, G.A. Mesyats, N.M. Zubarev, S.A. Shunaylov, V.G. Shpak, K.A. Sharypov</i><br/>                     Institute of Electrophysics UB RAS, Ekaterinburg, Russia</p>  |
| 2 | Oral<br>14.05-14.25           | <p><b>Subnanosecond breakdown of air-insulated coaxial line initiated by runaway electrons in the presence of strong axial magnetic field</b><br/> <i>Sergey A. Shunaylov, G.A. Mesyats, N.M. Zubarev, E.A. Osipenko, K.A. Sharypov, V.G. Shpak, M.I. Yalandin</i><br/>                     Institute of Electrophysics UB RAS, Ekaterinburg, Russia</p>          |
| 3 | Oral<br>14.25-14.45           | <p><b>Study of the generation of runaway electrons with reference to the formation of a streamer in a sharply inhomogeneous electric field</b><br/> <i>D.Beloplotov, V.F. Tarasenko, V. Shklyayev, Dmitry A. Sorokin</i><br/>                     Institute of High Current Electronics SB RAS, Tomsk, Russia</p>   |
| 4 | Oral<br>14.45-15.05           | <p><b>Features of the ionization wave development preceding the breakdown in a long capillary tube surrounded by a continuous or sectioned electrode</b><br/> <i>Yuri S. Akishev, V.B. Karalnik, A.V. Petryakov</i><br/>                     State Research Center of Russian Federation Troitsk Institute for Innovation and Fusion Research, Moscow, Russia</p> |
| 5 | Oral<br>15.05-15.25           | <p><b>Simulation of negative corona discharge in atmospheric air: from mode of trichel pulses to stationary discharge</b><br/> <i>Alexandr O. Kokovin, A.V. Kozyrev, V.Y. Kozhevnikov</i><br/>                     Institute of High Current Electronics SB RAS, Tomsk, Russia</p>  |



## Hall A

### Section 4.

# Sources of low-temperature plasma: generators of continuous, pulse-periodic and pulsed action, gas switches, power supply.

|             |                        |                                      |
|-------------|------------------------|--------------------------------------|
| 15.55-18.00 | Oral Session (OS-4-1). | Chairman: <i>Nikolay V. Gavrilov</i> |
|-------------|------------------------|--------------------------------------|

|   |                               |  |
|---|-------------------------------|--|
| 1 | Invited report<br>15.55-16.30 | <b>Generation of ion and electron beams and plasma flows in special conditions with "extreme" parameters and some examples of its applications</b><br><u><i>Efim M. Oks</i></u><br>High Current Electronics Institute SB RAS, Tomsk, Russia  |
| 2 | Oral<br>16.30-16.50           | <b>Influence of accelerating gap configuration on parameters of a forevacuum plasma-cathode source of pulsed electron beam</b><br><u><i>A. V. Kazakov, Alexandr V. Medovnik, E.M. Oks, N.A. Panchenko</i></u><br>Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia                   |
| 3 | Oral<br>16.50-17.10           | <b>Efficiency of electron beam extraction to the ambient atmosphere in an electron accelerator based on ion-electron emission</b><br><u><i>Sergey Yu. Doroshkevich, M.S. Vorobyov, M.S. Torba, N.N. Koval, S.A. Sulakshin, V.A. Levanisov</i></u><br>Institute of High Current Electronics SB RAS, Tomsk, Russia |
| 4 | Oral<br>Online<br>17.10-17.30 | <b>Suppression of the generation of heavy ions in vacuum diode with passive anode</b><br><u><i>Alexandr I. Pushkarev, A.I. Prima, X.P. Zhu, C.C. Zhang, Y. Li, Yu. Egorova, M.K. Lei</i></u><br>Tomsk Polytechnic University, Tomsk, Russia  |
| 5 | Oral<br>17.30-17.50           | <b>Simulation of charged particle beam dynamics extracted from a plasma source</b><br><u><i>Iliia A. Kanshin</i></u><br>Dukhov Automatics Research Institute (VNIIA), Moscow, Russia   |



## Hall B

### Section 2.

# Gas-discharge methods for surface modification and coating deposition: surface modification, ion implantation, combined methods of surface treatment.

|             |                        |  |
|-------------|------------------------|--|
| 13.30-15.35 | Oral Session (OS-2-1). | Chairman: <i>Vladimir V. Ovchinnikov</i> |
|-------------|------------------------|--|

|   |                               |   |
|---|-------------------------------|---|
| 1 | Invited report<br>13.30-14.05 | <p><b>Ti-W surface alloys synthesized by PVD-LEHCEB and oxidized by PEO</b><br/> <i>Federico Morini, A. Palmeri, S. Franz, A. Vincenzo, M. Bestetti</i><br/>                     Politecnico di Milano, Milano, Italy</p>   |
| 2 | Oral<br>14.05-14.30           | <p><b>Structure and mechanical properties of stainless-steel specimens, made by additive method, after pulsed electron beam treatment</b><br/> <i>Anton D. Teresov, Yu.H. Akhmadeev, E.A. Petrikova, O.V. Krysina, Yu.F. Ivanov, G.V.Semenov</i><br/>                     Institute of High Current Electronics SB RAS, Tomsk, Russia</p> |
| 3 | Oral<br>14.30-14.55           | <p><b>Formation of a Cr-Zr surface alloy using a low-energy high-current electron beam</b><br/> <i>A.B. Markov, E.V. Yakovlev, A.V. Solovov, Evgenii A. Pesterev, M.S. Slobodyan, V.I. Petrov</i><br/>                     Tomsk Scientific Centre SB RAS, Tomsk, Russia</p>  |
| 4 | Oral<br>14.55-15.20           | <p><b>Processing of the titanium alloy by high-speed steel tools with combine surface treatment</b><br/> <i>Sergey V. Fedorov, Tet Oo, E. S. Mustafaev</i><br/>                     Moscow State University of Technology «STANKIN», Moscow, Russia</p>   |



## Hall B

## Section 3.

# Plasma-chemical, electrophysical and laser technologies: environmental applications, production of nanopowders and functional materials.

|             |                        |                                  |
|-------------|------------------------|----------------------------------|
| 15.55-18.00 | Oral Session (OS-3-1). | Chairman: <i>Igor E. Filatov</i> |
|-------------|------------------------|----------------------------------|

|   |                               |  |
|---|-------------------------------|--|
| 1 | Invited report<br>15.55-16.30 | <b>Plasma-solution synthesis of transition metal oxides</b><br><i>Kristina V. Smirnova, V.V. Rybkin, D.A. Shutov, A.N. Ivanov</i><br>Ivanovo State University of Chemistry and Technology, Ivanovo, Russia   |
| 2 | Oral<br>16.30-16.55           | <b>Creating nanoscale luminescence centres in silver halides suitable for infrared application</b><br><i>Elena A. Korsakova, V.V. Lisenkov, L.V. Zhukova, A.N. Orlov, A.S. Korsakov, V.V. Osipov, V.V. Platonov, D.D. Salimgareev</i><br>Ural Federal University, Ekaterinburg, Russia |
| 3 | Invited report<br>16.55-17.30 | <b>Conversion of methane in plasma generated by pulsed electron beams and nanosecond discharges</b><br><i>Dmytrii L. Kuznetsov, V.V. Uvarin, I.E. Filatov</i><br>Institute of Electrophysics UB RAS, Ekaterinburg, Russia  |
| 4 | Oral Online<br>17.30-17.55    | <b>Influence of the catalyst packing configuration on the discharge characteristics and CO<sub>2</sub> reduction in a packed bed plasma reactor</b><br><i>Min Zhu, F.F. Wu, H. Ma, S.Y. Xie, C.H. Zhang</i><br>Nanjing University of Aeronautics and Astronautics, Nanjing, China      |