

# **VII International Conference**

## **Plasma Physics and Plasma Technology**

**Minsk, Belarus,  
September 17 – 21, 2012**

### **Program**

#### **CONFERENCE ORGANIZERS**

**The National Academy of Sciences of Belarus**  
The State Scientific Institution  
"B.I. Stepanov Institute of Physics of the National Academy  
of Sciences of Belarus"

**Russian Academy of Sciences**  
The Federal State Budget Institution of Science  
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## TOPICS

### **1. Electrical and optical discharges, near-electrode processes**

*(plasma accelerators; arc, spark, barrier, surface, and glow discharges; high-frequency and laser-induced plasma).*

### **2. Transporting, optical, and thermodynamic properties of plasma; plasma dynamics in electromagnetic fields of various configurations, plasma diagnostics**

### **3. Interaction of concentrated energy fluxes with a surface**

*(modification of surface properties of materials and coatings by electromagnetic radiation, cathode and ion beams; plasma treatment of materials; plasma deposition of coatings)*

### **4. Plasma in nanotechnology**

*(synthesis of nanoscale structures and fullerenes; formation of surface structures)*

### **5. Plasma applications**

*(in medicine and biology, in engineering industry, microelectronics, plasma chemistry, metallurgy, ecology, and in spectrochemical analysis)*

### **6. Non-ideal and dusty plasma, clusters**

## **Monday – September 17**

**7:00 – 22:00**                      **Arrival, registration, sightseeing tour of Minsk**

## **Tuesday – September 18, Morning**

*Hall I:*

**10:00 – 10:30**                      **Opening Ceremony**

**10:30 – 13:00**                      **Plenary Session**

1. **Mkrtchyan A.R.**, Mkrtchyan A.H., Abrahamyan A.S.

ACOUSTOPLASMA IS A NEW STATE OF PLASMAS

**11:15 – 11:30**      **Coffee Break**

2. **V.S.Burakov, N.V. Tarasenko**

PLASMAS IN LIQUIDS: CHARACTERIZATION AND APPLICATION FOR SYNTHESIS OF NANOPARTICLES

3. **Naidis G.V.**

MODELING OF COLD ATMOSPHERIC-PRESSURE PLASMA JETS

**13:00 – 14:00**      **Lunch**

## **Tuesday – September 18, Afternoon**

*Hall I*

**14:00 – 16:15**

### **Topical Session**

#### **SECTION 5. Plasma applications**

- 5.03 PLASMA TECHNOLOGIES AND PLASMA PROCESSING IN LITHUANIAN ENERGY INSTITUTE, V. Grigaitienė, V. Valinčius, P. Valatkevičius, A. Tamošiūnas
- 5.04 NEW TRENDS IN PLASMA MODIFICATION OF POLYMER MATERIALS  
V. Titov, B. Gorberg, A. Maximov, O. Mamontov, A. Ivanov, V. Stegnin
- 5.05 EFFECT OF PLASMA PROCESSES ON THE ELECTRON-OPTICAL PROPERTIES OF THE PLASMA EMITTER SOURCE, V. Gruzdev, O. Petrovich, V. Zalesski, V. Barchenko
- 5.06 INACTIVATION OF *E. COLI* AND *S. AUREUS* BY WATER FALLING FILM DBD  
Vesna V. Kovačević, Mareike Hänsch, Ronny Brandenburg, Thomas von Woedtke, Bratislav M. Obradović, Goran B. Sretenović and Milorad M. Kuraica
- 5.07 DEPOSITION OF POLY(ACRYLIC ACID) ON THE POLYPROPYLENE FIBERS USING A PULSED UNDERWATER PLASMA DISCHARGE  
O. Galmiz, Anna V. Khlyustova, A. Brablec, M. Cernak
- 5.54 LASER SPECTROCHEMICAL MICROANALYSIS OF MATERIALS OF HISTORIC AND ART VALUES, M.V.Belkov, E.M.Dovnar-Zapolskaya, V.V.Kiris, E.V.Klyachkovskaya, S.N.Raikov
- 5.13 FUNCTIONALIZATION OF TEXTILE MATERIALS BY DIELECTRIC BARRIER DISCHARGE PLASMA TREATMENT  
M. Kostic, B.M. Obradovic, M.M. Kuraica, N. Radic, B. Dojcinovic, A. Kramar, V. Prysiazhnyi
- 5.09 METHOD OF FAST DETERMINATION OF THE GAS PRESSURE OPTIMAL FOR MICROWAVE PLASMA CHEMICAL MATERIALS PROCESSING  
S.V. Bordusov, A.P. Dostanko, S.I. Madveika

**16:15 – 16:30      Coffee Break**

## **Tuesday – September 18, Afternoon**

*Hall II*

**14:00 – 16:15**

### **Topical Session**

#### **SECTION 4. Plasma in nanotechnology**

- 4.03      STRUCTURE AND SOME PROPERTIES OF DUST PARTICLES FROM A PLASMA ARC DISCHARGE IN A MAGNETIC FIELD  
N. A. Smolanov
- 4.04      THE EFFECT OF THIN SURFACE OXIDE LAYERS ON ION BEAM SYTHESIS OF InAs NANOCRYSTALS IN Si, F.F. Komarov, L.A. Vlasukova, O.V. Milchanin, M.V. Greben, A.F. Komarov, A.V. Mudryi, W. Wesch, E. Wendler, A.K. Togambaeva
- 4.05      NANOPARTICLE GENERATION BY PLASMA-EROSION DISCHARGE IN LIQUID ENVIRONMENT  
A.N. Veklich, K.G. Lopatko, Y.G. Aftandilyants, S.N. Zakharchenko, V.F. Boretskij
- 4.06      EFFECT OF COMPRESSION PLASMA FLOW ON STRUCTURE-PHASE TRANSFORMATIONS OF TANTALUM-SILICON SYSTEM  
V. M. Astashynski, A. H. Sari, A. M. Kuzmitski, Yu. A. Petukhou, V. V. Uglov
- 4.07      ULTRASONIC ASSISTED SPARK DISCHARGE PLASMA FOR GOLD NANO PARTICLE SYNTHESIS, M. Khoramabadi, H. Ghomi
- 4.08      SYNTHESIS OF SILICON NANOPARTICLES BY ELECTRICAL DISCHARGE IN LIQUIDS, A.A. Nevar, N.V. Tarasenko, V.S. Burakov, M. I. Nedelko, M.M. Mardanian
- 4.02      NANOPARTICLES FORMATION AND REDEPOSITION IN THE NEGATIVE CORONA DISCHARGE  
R.H. Amirov, A.A. Petrov, I.S. Samoilov
- 4.09      BISTABLE STATES OF DEFECTS IN GRAPHENE  
N.A. Poklonski, S.A. Vyrko, A.T. Vlassov
- 4.10      INVESTIGATION OF MECHANISMS OF SECONDARY NUCLEATION ON CARBON NANOWALLS IN PLASMA OF DIRECT CURRENT GLOW DISCHARGE  
K. Mironovich, V. Krivchenko, P. Voronin, A. Rakhimov

**16:15 – 16:30      Coffee Break**

## **Tuesday – September 18, Afternoon**

*Hall III*

**16:30 – 18:00**

### **Poster Sessions**

#### **SECTION 1. Electrical and optical discharges, near-electrode processes**

- 1.12 EVOLUTION OF LASER PLASMA IN ELECTRIC FIELD, Ivanov A.Yu., Vasiliev S.V.
- 1.13 NANOSECOND ELECTRICAL EXPLOSION OF TUNGSTEN WIRE Khattatov T.A., Tkachenko S.I., Romanova V.M., Ter-Oganesyan A.E., Mingaleev A.R., Shelkovenko T.A., Pikuz S.A.
- 1.14 CHARACTERISTICS OF MULTI-COMPONENT PLASMA SHEATH CONSISTING TWO SPECIES OF WARM POSITIVE IONS Hatami M. M., Niknam A. R.
- 1.15 THEORETICAL ANALYSIS OF PLASMA PARAMETERS UNDER DISCHARGE AND POST-DISCHARGE CONDITIONS APPLIED TO “MEMORY EFFECT” STUDIES, Dyatko N., Kurnosov K., Zanozina E.
- 1.16 EXPERIMENTAL STUDY OF A FLAT UNBALANCED MAGNETRON OPERATING AT ASSISTANCE OF EXTERNAL PLASMA Serov A.A., Muraviov S.V.
- 1.17 EFFECT OF GLOW DISCHARGE ON CYLINDERS – ROW WAKE, Gembarzhevskii G. V., Lednev A.K.
- 1.18 THE EXPERIMENTAL EQUIPMENT FOR INVESTIGATION OF ELECTRIC DISCHARGES WITH LIQUID ELECTRODES AT LOWER THAN ATMOSPHERIC PRESSURES, Abdullin I.Sh., Bagautdinova L.N., Basyrov R.Sh., Gaysin Al.F., Gaysin F.M., Mustafin T.B., Fakhrutdinova I.T.
- 1.19 EXPERIMENTAL STUDY OF GAS DISCHARGE WITH ELECTROLYTIC CATHODE, Tazmeev Kh., Arslanov I., Tazmeev G.
- 1.20 SIMULATION OF THE PINCH EFFECT IN HIGH-CURRENT DIODES, Anishchenko S. V., Baryshevsky V. G.
- 1.21 REGISTRATION OF SPARK PLASMA SINTERING TEMPERATURE OF TITANIUM POWDERS, Kuznechik O.O., Minko D.V., Beljavin K.E.
- 1.22 ELECTRIC DISCHARGES BETWEEN ELECTROLYTE ANODE AND METAL CATHODE, Afanas’eva N.A., Abdullin I.Sh., Basyrov R.Sh., Gasimova L.Sh., Gaysin Al.F.

- 1.23 PROBE STUDY OF A PULSED CATHODIC ARC IN ACETYLENE ATMOSPHERE, Smyaglikov I.P., Chekan N.M., Chubrik N.I., Goncharik S.V.
- 1.24 THE INFLUENCE OF VOLTAGE POLARITY ON BREAKDOWN IN A LONG DISCHARGE TUBE AT LOW GAS PRESSURE, Shishpanov A.I., Meshchanov A.V., Ionikh Y.Z.
- 1.25 FLOW OF SHOCK-COMPRESSED GASES IN THE CHANNELS OF ELECTROMAGNETIC RAILGUNS, Bobashev S.V., Zhukov B.G., Kurakin R.O., Ponyaev S.A., Reznikov B.I., Rozov S.I.
- 1.26 POLARIZATION MECHANISM OF PARTICULATE CHARGING IN STRONG ELECTRIC FIELD AT ATMOSPHERIC PRESSURE Molotkov V.I., Pecherkin V.Ya., Vasilyak L.M., Vetchinin S.P.
- 1.29 NUMERICAL SIMULATION OF GAS-PHASE COMPOSITION AT GLOW DISCHARGE WITH ELECTROLYTE CATHODE Sirotkin N.A., Khlyustova A.V., Maximov A.I.
- 1.30 NON LINEAR ASPECTS OF PULSED MAGNETIC FIELD INFLUENCE ON SURFACE LASER PLUME, Kuzenov V., Petrusev A.
- 1.31 THE INVESTIGATION OF THE CATHODE REGION OF A GLOW DISCHARGE IN NITROGEN, Platonov A.A., Slyshov A.G., Wagner S.D.
- 1.32 GENERALIZATION OF CURRENT-VOLTAGE CHARACTERISTICS OF ELECTRIC ARC IN A TWIN PLASMA TORCHES WITH HIGH ANGLES BETWEEN AXES OF ELECTRODE ASSEMBLIES Bublicevsky A., Gorbunov A., Bublicevsky D.
- 1.33 MODELING OF THE CATHODE REGION OF GLOW DISCHARGE WITH A NON-LOCAL IONIZATION, Sayfutdinov A.I., Timerkaev B.A.
- 1.34 COMPARATIVE STUDY OF OPTICAL AMPLIFICATION OF CU II 224.7 NM LINE IN MULTIPLE GRIMM DISCHARGE OPERATING IN DC AND PULSE MODE, Krstić I. B., Obradović B. M. and Kuraica M. M.
- 1.35 KINETIC OF GRAPHITE ELECTRODE DEPOSITION AT UNDERWATER FACE DISCHARGE, Silkin S.V., Maximov A.I.
- 1.36 EXPERIMENTAL OBSERVATION OF THE NEUTRAL GAS FLOW ALONG THE RACETRACK OF RUNNING PLANAR MAGNETRON Filippov A.V., Pal A.F., Ryabinkin A. N., Serov A.O.
- 1.38 SIMULATION OF EMISSION CHARACTERISTICS OF XeCl EXCILAMPS, Anufrik S., Volodenkov A., Znosko K.



- 1.39 MAGNETRON SPUTTERING OF MOSAIC COPPER-GRAPHITE CATHODES, Mankelevich Yu. A., Mitin V. S., Pal A. F., Rakhimova T. V., Ryabinkin A. N., Serov A. O.
- 1.40 XeCl-EXCILAMP WITH THE CAPACITANCE DISCHARGE, Anufrik S., Volodenkov A., Znosko K.
- 1.41 GENERATION CONTROL OF VACUUM-ARC PLASMA SOURCE WITH AN EXTENDED STRUCTURE, Brazgun S.S., Bystrov Yu.A., Vetrov N.Z., Lisenkov A.A.
- 1.42 A NOVEL DOUBLE STAGE HALL EFFECT THRUSTER WITH ROUNDED IONIZATION CHAMBER, Asgarli T., Yalcin O., Bilen H., Ibrahimoglu B.
- 1.43 THEORETICAL AND EXPERIMENTAL ESTIMATION OF INFLUENCE SKIN AND PINCH EFFECTS ON SPARK PLASMA SINTERING PROCESS OF POWDERS, Minko D., Beljavin K., Kuznechik O.
- 1.44 AMPLITUDE-FREQUENCY CHARACTERISTICS OF ELECTRIC BREAKDOWNS ON THE SURFACE OF LOW-ORBIT SPACECRAFTS, Korsun A., Homin T.
- 1.45 MATHEMATICAL SIMULATION OF THE ELECTRON NON-LOCAL KINETICS IN GLOW DISCHARGE AND HOLLOW CATHODE, Gorin V.V., Chernyak V.Ya.
- 1.46 ACCUMULATION OF HYDROGEN PEROXIDE IN ELECTROLYTE SOLUTIONS UNDER LONG-TERM ACTION OF GLOW DISCHARGE, Kuzmicheva L.A., Titova Yu.V., Maximov A.I.
- 1.47 REFORMING OF BIOETHANOL AND BIOGLYCEROL IN THE SYSTEM WITH REVERSE VORTEX AIR/CO<sub>2</sub> FLOW OF "TORNADO" TYPE WITH LIQUID ELECTRODE, Chernyak V., Nedybaliuk O., Solomenko OI., Simonchik L., Lisitchenko T., Liptuga A., Golub G., Dragnev S., Demchina V.
- 1.48 PLASMA-LIQUID SYSTEM WITH ROTATIONAL GLIDING ARC, Nedybaliuk O., Chernyak V., Martysh E., Lisitchenko T., Belenok N.
- 1.49 THE DEVELOPMENT OF THE DISCHARGE BETWEEN A JET ELECTROLYTE ANODE AND A METAL CATHODE Abdullin I.Sh., Mustafin T.B., Gaysin A.I.F., Basyrov R.Sh., Kasatkin M.B., Fakhrutdinova I.T. Gaysin F.M.,
- 1.51 THEORETICAL STUDY ON EVOLUTION OF THE PULSED PLASMA SHEATH AROUND A MICRO SIZED TIP H. Ghomi, A. Mahmoodpour and M. Khoramabadi

- 1.04 HYBRID MODELLING OF A DC GLOW DISCHARGE WITH ACCOUNT OF NONLOCAL IONIZATION BY FAST ELECTRONS  
I. Rafatov, E. A. Bogdanov, A. A. Kudryavtsev

*Hall III*

**16:30 – 18:00**

**Poster Sessions**

**SECTION 4. Plasma in nanotechnology**

- 4.11 SIMULATION OF SCATTERING ARGENTUM NANOPARTICLES BY LOW PRESSURE RF PLASMAS, I. Borodaev, V. Zheltukhin
- 4.12 LASER SYNTHESIS OF Pt NANOPARTICLES AT AIR  
V. Goncharov , K. Kozadaev, D. Shcherykovich
- 4.13 DEVELOPMENT OF COMBINED PLASMA TORCH FOR NANOPOWDER PRODUCTION  
V.Ya. Frolov, D.V. Ivanov
- 4.14 THE FORMATION OF ORIENTED MICROSTRUCTURES WITH LASER IRRADIATION ON THE LIQUID-METAL TARGET, F.N. Lyubchenko, Yu.P. Strykh, A.V.Fedenev, N.D. Danilov, V.V. Mataybaev, P.V. Motovnikov
- 4.15 PRODUCTION OF FULLERENE-CONTAINING SOOT IN ARC DISCHARGE PLASMA REACTORS, S.A. Poniaev, I.V. Basargin, V.G. de-Bur, A.A. Bogdanov, A.I. Sedov, A.I. Morozova, B.G. Zhukov, S.V. Bobashev
- 4.16 FORMATION OF NANOSTRUCTURES ON THE SURFACE OF GRAPHITE ELECTRODES IN ARC DISCHARGE, V.I. Kiselev, V.P. Polistchook, I.S. Samoylov
- 4.17 SECONDARY NUCLEATION ON CARBON NANOWALLS FOR SUPERCAPACITORS. P. Voronin, V. Krivchenko, K. Mironovich, D. Itkis, D. Semenenko, A. Rakhimov
- 4.18 LASER PLASMA DEPOSITION OF THE THIN ALUMINIUM FILMS IN VACUUM, V.K.Goncharov, G.A.Gusakov, M.V.Puzyrev
- 4.19 THE MATHEMATICAL JUSTIFICATION FOR PLASMA MODIFICATION OF CAPILLARY-POROUS MATERIALS  
I.Abdullin, R.Akhverdiev, G.Rakhmatullina, V.Tihonova
- 4.01 LASER TREATMENT OF NANOPARTICLES IN LIQUIDS: MODIFICATION OF STRUCTURE AND COMPOSITION  
Tarasenko N.N., Butsen A.V., Tarasenko N.V., Pankov V.V.

**18:30 – 21:00 Welcome Party**

## **Wednesday – September 19, Morning**

*Hall I*

**9:00 – 11:00**

### **Plenary Session**

1. **O. F. Petrov**, V.E. Fortov

STRONGLY COUPLED DISSIPATIVE SYSTEMS OF CHARGED DUST:  
ORDERING AND TRANSPORT PHENOMENA IN GROUND AND  
MICROGRAVITY EXPERIMENTS

2. **F. Krčma**, V. Sázavská, P. Fojtíková, L. Řádková, A. Kujawa, R. Přikryl, M.  
Procházka, R. Balašítková, P. Menčík, L. Blahová, J. Horák, M. Zmrzlý, D. Janová

APPLICATION OF LOW TEMPERATURE PLASMAS FOR THE TREATMENT  
OF ANCIENT ARCHAEOLOGICAL OBJECTS

3. **Yu. Akishev**, S.Ermolaeva, E.Sysolyatina, M.Yurova, A.Mukhachev, M.Grushin,  
V.Karalnik, A.Petryakov, N.Trushkin

ROLE OF UV, ELECTRICAL AND RADICAL EFFECTS IN INACTIVATION OF  
BACTERIA BY DC CORONA DISCHARGES

4. E. Gulevich, **I. Kalitukho**, S. Semchenkov, I. Spitsin

AUTOMATED EQUIPMENT FOR STUDYING SPECTRAL PROPERTIES OF  
PLASMA

5. **A. Babin**

DEVICES FOR PLASMA SPECTROSCOPY PRODUCED BY  
SOL INSTRUMENTS,LTD

**11:00 – 11:15      Coffee Break**

## **Wednesday – September 19, Morning**

*Hall I*

**11:15 – 13:00**

### **Topical Session**

#### **SECTION 1. Electrical and optical discharges, near-electrode processes**

- 1.28 SOME METHODS OF ENHANCEMENT OF ELECTRODE SERVICE LIFE IN HIGH-CURRENT ARC DISCHARGES, Anshakov A., Aliferov A., Urbakh E., Urbakh A., Faleev V., Cherednichenko V.
- 1.05 PLASMA GENERATION AT SELF-FOCUSSING OF OPTICAL VORTEX PULSES IN AIR, Vlasov R., Volkov V., Dedkov D.
- 1.06 LIQUID CATHODE DISCHARGE IN Ar IN THE PRESSURES RANGE OF 76-760 TORR: EXPERIMENT AND MODELLING, Shutov D.A., Konovalov A.S., Ivanov A.N., Smirnov S.A., Isakina A.A.
- 1.07 RESEARCH OF CHARACTERISTICS OF GLOW DISCHARGE IN A HOLLOW CATHODE AND PENNING CELL IN THE NON HOMOGENEOUS FIELD, Barchenko V.T., Krupovich N.V., Udovichenko S.Y.
- 1.08 ELECTRIC FIELD DISTRIBUTIONS IN MULTYPEAK MODE OF DIELECTRIC BARRIER DISCHARGE  
S S Ivković, B M Obradović and M. M. Kuraica
- 1.09 ON PRE-BREAKDOWN VOLT-AMPERE CHARACTERISTICS OF SLIGHTLY IONIZED MEDIUMS  
Apfelbaum M.S., Pecherkin V.Ya., Vladimirov V.I.
- 1.27 WEIBEL INSTABILITY IN OPTICAL BREAKDOWN OF A DILUTE NEUTRAL GAS, Ghorbanalilu M.
- 1.10 CORRELATION BETWEEN THE ANODE SPOTS BLINKING AND FLUCTUATIONS OF THE ATMOSPHERIC PRESSURE GLOW DISCHARGE PARAMETERS  
Arkhipenko V.I., Callegari Th., Safronau Y.A., Simonchik L.V., Tsuprik I.M.
- 1.11 PULSED ALTERNATING CORONA DISCHARGE OF POSITIVE POLARITY  
Lelevkin V.M., Tokarev A.V.

## **Wednesday – September 19, Morning**

*Hall II*

**11:15 – 13:00**

### **Topical Session**

#### **SECTION 2. Transporting, optical, and thermodynamic properties of plasma; plasma dynamics in electromagnetic fields of various configurations, plasma diagnostics**

- 2.01 CATASTROPHE THEORY AND PHASE TRANSITIONS STUDY IN ACOUSTOPLASMA  
Abrahamyan A.S., Chilingaryan R.Yu., Sahakyan K.G.
- 2.02 IMPACT OF LOW-FREQUENCY MODULATION ON INSTABILITIES IN THERMAL PLASMA, Gruber J., Hlína J., Šonský J.
- 2.03 INFLUENCE ON SUPERSONIC FLOW AROUND BODY OF ELECTRICAL AND MAGNETIC FIELD ACTIONS ORGANIZED IN THE NEAR SURFACE REGION, Lapushkina T.A., Erofeev A.V., Poniaev S.A.
- 2.04 INVESTIGATION OF ELECTRIC AND SPECTRAL CHARACTERISTICS OF THE LOW-PRESSURE GLOWING DISCHARGE IN LONGITUDINAL MAGNETIC FIELD, Ulanov I.M., Pinaev V. A.
- 2.05 HIGH-SPEED FLOW GENERATION OF CLUSTER-CARBON PLASMAS IN RAILGUN WITH GRAPHITE ELECTRODES, Bobashev S.V., Zhukov B.G., Kurakin R.O., Ponyaev S.A., Reznikov B.I., Rozov S.I., Sedov A.I.
- 2.06 THE INVESTIGATION OF A COMPLEX DISCHARGE WITH PLASMA STREAM NONUNIFORMITIES, Ivanov V.
- 2.07 SPECTROSCOPIC CHARACTERIZATION OF LASER ABLATION PLASMA IN LIQUIDS, A. Butsen, V. Burakov, V.Kiris, N. Tarasenko
- 2.08 EMISSION SPECTROCHEMICAL ANALYSIS USING He-INDUCED EXCITATION PROCESS IN COOLED LASER PLASMA  
K.H. Kurniawan, A.N. Chumakov and K. Kagawa
- 2.09 THE CALCULATION OF COMPOSITION AND ELECTRONIC TRANSPORT COEFFICIENTS OF NOBLE METALS PLASMA  
E. M. Apfelbaum
- 2.25 SPATIAL DISTRIBUTIONS OF ATOMIC AND MOLECULAR EMISSION SPECTRUM CHARACTERISTICS OF MAGNETRON DISCHARGE IN DEUTERIUM, V.M. Gradov, S.E. Krivitsky, V.I. Troynov, A.M. Zimin

**13:00 – 14:00 Lunch**

## **Wednesday – September 19, Afternoon**

*Hall I*

**14:00 – 16:15**

### **Topical Session**

#### **SECTION 3. Interaction of concentrated energy fluxes with a surface**

- 3.02      MODIFICATION OF WC-TiC-Co HARD ALLOY SURFACE LAYERS BY COMPRESSIVE PLASMA FLOWS AND LOW-ENERGY HIGH-CURRENT ELECTRON BEAMS ACTION  
V.V. Uglov, A.K. Kuleshov, V.M. Anishchik, E.A. Krutasilina, V.M. Astashynski, A.M. Kuzmitski, N.N. Koval, Yu.F. Ivanov
- 3.03      ION-PLASMA SURFACE TREATMENT WITH THE USE OF LOW PRESSURE NITROGEN TRANSFORMER COUPLED DISCHARGE  
I. M. Ulanov, M. V. Isupov, Aleshina L.A., Glazkova S.V., Loginov D.V.
- 3.04      SYNTHESIS OF N-DOPED TiO<sub>2</sub> FILMS BY REACTIVE MAGNETRON SPUTTERING AND STABILITY OF THEIR STRUCTURE UNDER ANNEALING IN AIR  
I.A. Saladukhin, G. Abadias, N. Alonso-Vante
- 3.05      PULSED PLASMA MODIFICATION OF THE WORKING SURFACES OF CAST IRON TOOLS  
Y. Tyurin, O. Kolisnichenko, V. Kazachenko, R. Pankov, A. Dvorak
- 3.06      NUMERICAL MODELING THE DYNAMICS OF METEORITE IMPACT ON PROTECTION SHIELDS WITH HIGH VELOCITIES  
A. Smetannikov
- 3.07      ANODE COATING AND LIFETIME OF SILVER-COPPER WIRE ELECTRODES IN AN ULTRACORONA IN AIR  
R.Sh. Islamov, Yu.A. Krishtafovich
- 3.40      ELECTRON IRRADIATION EFFECTS ON H-BN AND H-BN-TiB<sub>2</sub> COMPOSITES  
Uglov V.V., Buyuk B., Tugrul A.B., Lastovski S.B., Zlotski S.V., Addemir A.O., Ay N., Bogatyrev Yu. V., Shymanski V.I.
- 3.14      PROPOSED MATHEMATICAL MODEL FOR THE INTERACTION OF CONCENTRATED ENERGY FLOWS WITH SUBSTANCE  
V.D. Sarychev, A.U. Granovskiy, V.E. Gromov

**16:15 – 16:30      Coffee Break**

## **Wednesday – September 19, Afternoon**

*Hall II*

**14:00 – 16:15**

### **Topical Session**

#### **SECTION 5. Plasma applications**

- 5.45 ELECTRIC-ARC STEAM HEATER WITH COPPER TUBULAR ELECTRODES  
A. Anshakov, E.K. Urbakh, S.I. Rad'ko, A.E. Urbakh, V.A. Faleev, T. Ma, and F. Xin
- 5.44 STEAM PLASMA TORCH WITH REGENERATIVE COOLING  
L. Charakhovski, A. Marquesi, C. Otani, G. P. Filho, R. Bicudo, A. S. da Silva Sobrinho, M. Massi, A. Gorbunov, H. S. Maciel
- 5.10 THIN FILMS OF POLYSACCHARIDES SYNTHESIZED IN SEMI-SELF-MAINTAINED DISCHARGE INITIATED IN THE VOLATILE PRODUCTS OF CELLULOSE ELECTRON-BEAM DISPERSION  
I. Razanau, V. Kazachenko
- 5.11 PLASMA UNITS AND TECHNOLOGIES FOR TOXIC WASTE DESTRUCTION  
A. Mosse, V. Sauchyn
- 5.12 POWER STATIONS WASTE UTILIZATION USING PLASMA TECHNOLOGIES  
O.G. Volokitin, G.G. Volokitin, N.K. Skripnikova
- 5.08 TECHNOLOGY OF PLASMA TREATMENT OF SOLID RADIOACTIVE WASTE  
Valeriy A. Gorbunov, Mikhail A. Polkanov, Fedor A. Lifanov, Sergey A. Dmitriev
- 5.16 BIOCOMPATIBLE COATINGS ON BASIS OF DIAMOND-LIKE CARBON AND TITANIUM OXIDE FOR PROTECTION OF SURGICAL IMPLANTS  
I.P. Smyaglikov, S.I. Bahayeu, E.K. Sergeeva, S.E. Sergeenko, V.V. Kazbanov
- 5.30 THE INFLUENCE OF ADDITIONAL ACTIVATION ON PLASMA CHEMICAL DEPOSITION OF SILICON LAYERS  
V.O. Konstantinov, R.G. Sharafutdinov, V.G. Shchukin
- 5.25 SURFACE DECONTAMINATION BY LOW TEMPERATURE PLASMA  
H. Ghomi, S. Zahedi Azad, N. Navab Safa, Sh.R. Mohammadi

**16:15 – 16:30 Coffee Break**

## Wednesday – September 19, Afternoon

*Hall III*

16:30 – 18:00

### Poster Sessions

#### **SECTION 2. Transporting, optical, and thermodynamic properties of plasma; plasma dynamics in electromagnetic fields of various configurations, plasma diagnostics**

- 2.10 STARK PARAMETERS DEPENDENCES ON THE EMITTER REST CORE CHARGE WITHIN TRANSITION ARRAYS OF MULTIPLY CHARGED IONS, Šćepanović M., I. Dojčinović P., Tapalaga I., Milosavljević M. K. and Purić J.
- 2.11 ION TEMPERATURE PROFILE MEASUREMENTS OF PLASMA WITH CXRS DIAGNOSTICS AT T-10  
A. Barsukov, K. Vukolov, A. Dnestrovskij, L. Klyuchnikov, K. Korobov, V. Krupin, N. Naumenko, A. Nemets, S. Tugarinov
- 2.12 PHOTOMETRIC MEASUREMENTS OF THE SHADOW PATTERNS OF THE COLLIDING COMPRESSED PLASMA COUNTER-FLOWS  
P. Khramtsov, O. Penyazkov, V. Grishchenko, M. Chernik, I. Shikh
- 2.13 STUDY OF MODULATION OF THE DISCHARGE CURRENT IN ACOUSTOPLASMA  
A.S.Abrahamyan, A.H.Mkrtchyan, Q.G.Sahakyan
- 2.14 STUDY MODULATION OF THE DISCHARGE CURRENT IN THE LOW-PRESSURE ACOUSTOPLASMA  
A.R.Mkrtchyan,, A.S.Abrahamyan, A.H.Mkrtchyan, V.P.Krivobokov, S.N.Yanin
- 2.15 ELECTRON TEMPERATURE OF THE PLASMA PRODUCED BY INFARED RADIATION ACTION ON THE CuSbSe<sub>2</sub> TARGET, Laslov G.E., Chuchman M.P., Shuaibov A.K.
- 2.16 PLASMA PLUMES OF ELECTRIC PROPULSION: MATHEMATICAL MODELS, Korsun A.G., Tverdokhlebova E.M., Gabdullin F.F.
- 2.17 INFLUENCE OF POROSITY OF MATERIAL ON THE EFFICIENCY OF LASER EMISSION SPECTRAL ANALYSIS, V.I. Zhuravleva
- 2.18 MAGNETIC FIELD INFLUENCE ON HIGH-VOLTAGE GAS DISCHARGE USED FOR AIR PLASMA CREATION  
Erofeev A., Lapushkina T., Poniaev S., Zhukov B.



- 2.19 THE PRINCIPLES OF CREATING HARDWARE AND SOFTWARE COMPLEX FOR ROCKET ENGINE NON-CONTACT STAND DIAGNOSTICS, Hryshyn S.A., Petsiuk A.L., Yagodnikov D.A., Antonov Y.V.
- 2.20 LASER PLASMA SPECTRAL CHARACTERISTICS FOR COMBINED MAGNETRON AND LASER DEPOSITION  
Burmakou A, Lyudchik O, Kuleshov V, Saladukha D.
- 2.21 NONLINEAR PROPAGATION OF AN INTENSE MICROWAVE BEAM IN AN INHOMOGENEOUS PLASMA, Niknam A. R., Akhlaghipoor N.
- 2.22 BREAKDOWN IN LONG UNSHIELDED DISCHARGE TUBE IN NITROGEN UNDER LOW PRESSURE  
Shishpanov A.I., Meshchanov A.V., Kuchugura M.D., Ionikh Y.Z.
- 2.23 SIMULATION OF RF PLASMA STREAMS AT LOW PRESSURE  
Zheltukhin V., Shemakhin A.
- 2.24 TESTING THE EQUATION OF STATE AND ELECTRICAL CONDUCTIVITY OF COPPER BY THE ELECTRICAL WIRE EXPLOSION IN AIR: EXPERIMENT AND MAGNETOHYDRODYNAMIC SIMULATION  
A.E. Barysevich, S.L. Cherkas
- 2.26 SPECTROSCOPY OF FREE-BURNING ELECTRIC ARC BETWEEN BRASS ELECTRODES  
A. Veklich, S. Fesenko, A. Lebid, R. Semenyshyn, V. Boretskij, I. Babich
- 2.27 STARK BROADENING REGULARITIES WITHIN SEVERAL SPECTRAL SERIES OF NEUTRAL MAGNESIUM  
I. P. Dojčinović, I. Tapalaga and J. Purić
- 2.28 STARK BROADENING REGULARITIES WITHIN SEVERAL SPECTRAL SERIES OF NEUTRAL HELIUM  
I. P. Dojčinović, I. Tapalaga and J. Purić
- 2.29 OSCILLATIONS OF WORKING MEDIUM PRESSURE AND INTENSITY OF CW CO<sub>2</sub> LASER INDUCED BY CURRENT PULSATIONS  
V.V. Azharonok, A.S. Abrahamyan, S.V. Goncharik, A.A. Kusmitskaya, A.R. Mkrtchyan, I.I. Filatova, N.I. Chubrik
- 2.30 ELEMENTAL ANALYSIS OF POTASSIUM ORES USING LASER INDUCED PLASMA SPECTROSCOPY  
E. Ershov-Pavlov, K. Katsalap, A. Maloshtan, N. Tarasenko
- 2.31 DETECTION OF WATER MICROLEAKAGES IN PLASMA VACUUM CHAMBERS BY USING THE HYDROXYL SPECTRUM  
O. N. Afonin, A. V. Bernatskiy, V. N. Ochkin, S. Yu. Savinov, S. N. Tskhai

## **Wednesday – September 19, Afternoon**

*Hall III*

**16:30 – 18:00**

### **Poster Sessions**

#### **SECTION 3. Interaction of concentrated energy fluxes with a surface**

- 3.08 THE STUDY OF ANODIC MICRODISCHARGES IN PLASMA-ELECTROLYTE PROCESSING, N. Kashapov, R. Kashapov
- 3.09 CHARACTERISTICS OF ATMOSPHERIC PRESSURE DC DISCHARGE IN AIR FLOW AND ITS APPLICATION FOR SURFACE MODIFICATION OF POLYMER FILMS  
A. Petrov, A. Ermakov, D. Nikitin, T. Shikova, V. Titov
- 3.10 213 NM CORNEA LASER ABLATION MECHANISMS  
S. Batishche, S. Bushuk, A. Kouzmouk, A. Savitch, H. Tatur, G. Grabner, and W. Kautek
- 3.11 METHODS OF ETCHING MATERIALS BY LOCALIZED GAS DISCHARGE, Abramov A.V., Pankratova E.A., Surovtsev I.S.
- 3.12 MICROSTRUCTURE TRANSFORMATION OF ELECTROCHEMICAL ALLOYS OF NICKEL-BORON SYSTEM AFTER NITROGEN ION IMPLANTATION  
A. M. Kuzey, I. I. Taran, V. A. Filimonov, S. V. Yakubovskaya\*
- 3.13 SURFACE MODIFICATION OF METALS BY RADIO-FREQUENCY PLASMA OF REDUCED PRESSURE  
A. Hubathuzin, I.Sh. Abdullin, A. Bashkirtsev
- 3.14 PROPOSED MATHEMATICAL MODEL FOR THE INTERACTION OF CONCENTRATED ENERGY FLOWS WITH SUBSTANCE  
V.D. Sarychev, A.U. Granovskiy, V.E. Gromov
- 3.15 MICROSTRUCTURE OF MOLYBDENUM-SILICON SURFACE LAYERS FORMED BY COMPRESSION PLASMA FLOWS  
V.M. Astashynski, V.V. Uglov, N.T.Kvasov, Yu.A. Petukhou, A.A. Azhoichyk, R.S. Kudaktsin, A.M. Kuzmitski, A.A. Mishchuk
- 3.16 MICROSTRUCTURE OF BINARY “METAL-SILICON” SYSTEMS TREATED BY LOW-ENERGY HIGH-CURRENT ELECTRON BEAMS  
N.N. Koval, V.V. Uglov, Yu.F. Ivanov, Yu.A. Petukhou, R.S. Kudaktsin, A.D. Teresov, A.V. Kalin

- 3.17 INVESTIGATION OF STRUCTURE OF IRON SURFACE LAYER FORMED BY PLASMA NITRIDING, A. G. Anisovich, I. N. Rumyantseva, T. P. Urban, V. V. Astashinsky, V. V. Uglov
- 3.18 213 NM CORNEA ABLATION THRESHOLD DEPENDENCE ON INTENSITY  
S. Batishche, S. Bushuk, A. Kouzmouk, A. Savitch, H. Tatur, G. Grabner, and W. Kautek
- 3.19 COMPARING 213 NM AND COMBINED 213 NM+1440 NM LASER ABLATION TREATMENT OF BOVINE CORNEA  
S. Batishche, S. Bushuk, A. Kouzmouk, A. Savitch, H. Tatur, G. Grabner, W. Kautek
- 3.20 CHANGE OF CHROME ELECTROLYTIC COATING SURFACE UNDER ITS EXPOSURE PULSED MAGNETIC FIELD  
Bologa M. K., Anisovich A. G., Gologan V. F., Azharonok V. V., Bislyuk L. V.
- 3.21 APPLICATION OF THE KELVIN METHOD TO THE STUDY OF MODIFIED SURFACES' WORK FUNCTION  
A. Tyavlovsky, A. Zharin, V. Azharonok, A. Anisovich
- 3.22 THE CALCULATION OF DYNAMIC PARAMETERS OF PLASMA FLOW BY TEST PARTICLE METHOD, I.A. Ivanou, I.V. Misnik
- 3.23 SYNTHESIS OF Al<sub>3</sub>Zr PRECIPITATES IN ALUMINIUM AND ITS ALLOY BY MEANS OF COMPRESSION PLASMA FLOWS  
N.N. Cherenda, N.V. Bibik, J.V. Amyaga, V.V. Uglov, V.M. Astashynski, A.M. Kuzmitski
- 3.24 CHANGES IN THE SURFACE PROPERTIES OF DC DISCHARGE-MODIFIED TETRAFLUOROETHYLENE WITH PERFLUOROPROPYLVINYLETHYER COPOLYMER FILMS  
M. Piskarev, A. Gilman, M. Yablokov, N. Surin, and A. Kuznetsov
- 3.25 ELECTROFRICTION DISCHARGE HARDENING OF FE-C ALLOYS IN WATER MEDIUM  
V. Kazachenko, Y. Tyurin, A. Egorov, S. Divak, S. Shmachkov, E. Tarasovets
- 3.26 PARTICULARITIES OF STRUCTURING IN THE HIGH-STRENGHT CAST IRON UNDER THE HIGHLY CONCENTRATED SOURCES OF HEATING  
Gourinovich V.I., Golubev V.S., Betenya G.F., Anyskovich G.I.
- 3.27 THE ROLE OF PLASMA FLAME IN THE RADIATION REFLECTION DYNAMICS AT ACTION OF QUASI-CONTINUOUS LASER PULSE ON TITANIUM IN THE ATMOSPHERE OF AIR, V.I. Nasonov

- 3.28 NANOSECOND LASER-INDUCED SURFACE STRUCTURES ON STAINLESS STEEL  
J. Hu, Y. Wang, Z. Guo, C. Cui, A.N. Chumakov, N.A. Bosak
- 3.29 STRUCTURE AND TRIBOLOGICAL PROPERTIES OF TIN+C COATINGS DEPOSITED USING CATHODIC-ARC AND PULSED-ARC METHODS  
A. Dvorak, V. Kazachenko, A. Popov, I. Razanau
- 3.30 COMPRESSION PLASMA FLOWS APPLICATION FOR TITANIUM NICKELIDE SYNTHESIS  
V.I. Shymanski, V.A. Lyushkevich, V.V. Uglov, N.N. Cherenda, V.M. Astashynski, A.M. Kuzmitski
- 3.31 PULSED PLASMA SURFACE TREATMENT OF CONSTRUCTIONAL STEEL IN THE AIR  
I.S. Nikonchuk, A.N. Chumakov, O.O. Kuznechik, D.V. Minko
- 3.32 STRUCTURE AND MECHANICAL PROPERTIES MODIFICATION OF HARD ALLOY BY MULTIELEMENT ION IMPLANTATION  
V.V. Uglov, V.V. Bruhov, A.K. Kuleshov, E.A. Krutnilina, V.M. Anischik
- 3.33 MODEL OF MASS TRANSFER IN THE TITANIUM SURFACE LAYER AFTER COMPRESSION PLASMA FLOWS INFLUENCE  
V.I. Shymanski, V.V. Uglov, N.N. Cherenda, V.M. Astashynski
- 3.34 INTERACTION PROCESSES OF LASER RADIATION WITH METALLIC NANOPARTICLES, V.K. Pustovalov 1, A.N. Chumakov
- 3.35 A RELATION BETWEEN BEHAVIOR OF RADIATION REFLECTION AND KINETICS OF PROCESSES AT A SURFACE OF TITANIUM HEATED BY QUASI-CONTINUOUS LASER PULSE IN AIR, V.I. Nasonov
- 3.36 BILAYER COMPOSITION ON THE HARDENING OF COLD WORK TOOLS STEELS, I. Vasiliev, I. Abdullin, M. Mironov
- 3.37 BIOCOMPATIBLE BACTERICIDAL DEPOSITION COATING ON THE SURFACE HIP JOINT BY CONDENSATION FROM THE PLASMA PHASE  
I.Sh. Abdullin, E.B. Gatina, F.F. Kadyrov, M.F. Shaechov
- 3.38 THE CALCULATION OF THE TEMPERATURE FIELD OF POLYCRYSTALLINE IRON UNDER THE ACTION OF COMPRESSION PLASMA FLOWS, Astashynski V.V., Rumiantseva I.N.
- 3.39 STRUCTURE AND PROPERTIES OF DETONATION COATINGS PROCESSED BY COMPRESSION PLASMA FLOW PULSES, Iljushchenko A.F., Shevtsov A.I., Kuzmitskij A.M., Kostyukevich E.A., Markova L.V., Fomikhina I.V.

**19:00 – 21:30 Ballet Performance**

## **Thursday – September 20, Morning**

*Hall I*

**9:00 – 11:15**

### **Topical Session**

#### **SECTION 6. Non-ideal and dusty plasma, clusters**

- 6.02 THE PROPERTIES OF A GLOW DISCHARGE IN NEON WITH DUST PARTICLES  
D. Polyakov, V. Shumova, L. Vasilyak
- 6.03 THE MICROPARTICLE CRYSTAL FORMATION IN DYNAMIC TRAP AT ATMOSPHERIC PRESSURE  
L.V. Deputatova, V.I. Molotkov, V.N. Naumkin, V.Ya. Pecherkin, L.M. Vasilyak, V.I. Vladimirov, V.E. Fortov
- 6.04 INTERACTION POTENTIALS OF THE PARTICLES AND PHYSICAL PROPERTIES OF THE STRONGLY COUPLED PLASMAS  
K.N. Dzhumagulova, T.S. Ramazanov, Zh.A. Moldabekov, G.S. Dyhambaeva
- 6.05 OSCILLATIONS OF COULOMB CLUSTERS OF DUST PARTICLES IN A CUSP MAGNETIC TRAP UNDER MICROGRAVITY CONDITIONS  
L.G. D'yachkov, S.F. Savin, M.I. Myasnikov, O.F. Petrov, V.E. Fortov, A.Yu. Kaleri, A.I. Borisenko
- 6.06 SPECTRAL DIAGNOSTICS OF COMPLEX PLASMA IN GETTING OF CARBON NANOFILMS  
S.A. Orazbayev, M. Silamiya, R.K. Tentekova, D.G. Batryshev, M.K. Dosbolayev, M.T. Gabdullin, T.S. Ramazanov
- 6.07 ANALYSIS OF MOVEMENT OF A DUST PARTICLE IN THE PLASMA FORMED BY A FOCUSED PROTON BEAM  
P. Prudnikov, V. Rykov, V. Zherebtsov, V. Meshakin, V. Vladimirov, L. Deputatova, I. Andryushin
- 6.08 INFLUENCE OF ELECTRON EMISSION PROCESSES ON THE CHARGE OF DUST PARTICLES IN ORDERED PLASMA-DUST STRUCTURES  
S.I. Mol'kov, V.N. Savin
- 6.09 THE BEHAVIOUR OF DUST IN CRYOGENIC DC DISCHARGE  
S. Antipov, M. Vasiliev, O. Petrov

**11:15 – 11:30      Coffee Break**

## **Thursday – September 20, Morning**

*Hall III*

**11:30 – 13:00**

**Poster Session**

### **SECTION 5. Plasma applications**

- 5.14 AIR-PLASMA TECHNOLOGIES OF SPRAYING OF COATINGS  
V.Ya. Frolov, G.K. Petrov, B.A. Ushin, D.V. Ivanov, S.G. Zverev
- 5.15 CATHODIC ARC DEPOSITION OF PROTECTIVE-DECORATIVE  
Ti/C COATINGS  
S.E. Sergeenko, E.K. Sergeeva, I.P. Smyaglikov, I.A. Lychkovskaya
- 5.17 ARC PLASMA APPLICATION FOR TOXIC ASH PROCESSING  
V. Sauchyn, I. Khvedchyn, A. Mosse, Hr. Dalholenka, A. Olenovich
- 5.18 ATMOSPHERIC PRESSURE GLOW DISCHARGE AS CONTROL  
ELEMENT OF 10-CENTIMETER WAVEGUIDE FILTER AT HIGH  
MICROWAVE POWER  
Y.A. Safronau, L.V. Simonchik, M.S. Usachonak
- 5.19 APPLICATION OF He MICRODISCHARGE WITH NONLOCAL PLASMA  
AS A GAS ANALYSIS SENSOR, Kudryavtsev  
A., Stefanova M., Pramatarov P., Khromov N., Peyeva R. and Patrikov T.
- 5.20 CLEANING THE SURFACE WITH THE HELP OF VACUUM-ARC  
DISCHARGE WITH POSITIVE ANODIC DROP VOLTAGE, Brazgun S.,  
Goncharov V., Lisenkov A.
- 5.21 INFLUENCE OF MAGNETIC FIELD NONUNIFORMITY ON THE USING  
OF THE TARGET MATERIAL IN A MAGNETRON SPUTTERING  
SYSTEM  
A. Yasunas, D. Kotov, A. Khissamov, V. Shiripov, U. Radzionau
- 5.22 THE INFLUENCE OF ANTENNA SYSTEM CONFIGURATION ON THE  
PARAMETERS OF THE INDUCTIVELY-COUPLED PLASMA  
A. Yasunas, D. Kotov
- 5.23 PLASMA ASSISTED COMBUSTION OF PARAFFIN  
Oleg Nedybaliuk, Valeriy Chernyak, Serge Olszewski, Eugene Martysh, Olena  
Aktan, Svetlana Orlovska, T. Lisitchenko
- 5.24 APPLICATION OF UNDERWATER DISCHARGE FOR THE  
DELIGNIFICATION OF CELLULOSE MATERIALS  
Yu. V. Titova, V. G. Stokozenko, A. I. Maximov, A.P. Moryganov

- 5.26 NUMERICAL MODELLING OF THE DECAYING ARC  
Averianova S., Akatnov N., Tonkonogov E.
- 5.27 ACTIVE OXYGEN GENERATOR  
V.A. Gostev, E.G. Lekhto, G.B. Stefanovich
- 5.28 APPLICATION OF ELECTRON BEAM PLASMA FOR  
POLYSACCHARIDE MODIFICATION  
T. Vasilieva
- 5.29 MODIFICATION OF THE SURFACE PROPERTIES OF TEXTILE FIBERS  
AND MATERIALS USING PLASMA TREATMENT  
E.Sergeeva, Y.Bukina, A.Ibatullina
- 5.31 EXPANSION OF ALUMINIUM LASER PLASMA PLUME AT THE  
DIFFERENT PRESSURES OF AMBIENT GASES  
L. V. Mesarosh, M. P. Chuchman, A. K. Shuaibov
- 5.32 ELECTRON BEAM PLASMA GENERATION INSIDE A CYLINDRICAL  
CONTAINER  
M.N. Vasiliev, T.M. Vasilieva, S.L. Lysenko, Aung Tun Win
- 5.33 THE INVESTIGATION OF CARBON OXIDATION PROCESS IN ARGON  
PLASMA UNDER MAGNETIC FIELD  
V.F. Myshkin, V.A. Vlasov, D.A. Izhoykin, I.A. Ushakov, V.A. Khan
- 5.34 EFFECT OF SPARK PLASMA AND CORONA DISCHARGE ON FREE  
RADICAL PROCESSES AND MAJOR PHYSIOLOGICAL SYSTEMS OF  
RATS  
I.Ivanova, S. Trofimova, D.Knyazev
- 5.35 THE INFLUENCE OF THE MAIN FACTORS OF PLASMA SPARK  
RADIATION ON THE FUNCTIONAL STATE OF CELLS  
S.V. Trofimova, I. P. Ivanova, I. M. Piskarev
- 5.36 LIFETIME AND EROSION OF SILVER-BASED WIRE ELECTRODES IN  
AN ULTRACORONA IN AIR  
R.Sh. Islamov, Yu.A. Krishtafovich
- 5.37 THE REGULATOR OF MOMENTARY OUTPUT POWER OF A  
MICROWAVE MAGNETRON INCLUDED IN THE TECHNOLOGICAL  
PLASMA EQUIPMENT  
S. V. Bordusov, S. I. Madveiko
- 5.38 INVESTIGATION OF THE PROCESSES OF BIOMEDICAL WASTE  
PROCESSING IN PLASMA SET  
A. Nikanchuk, A. Mosse, I. Khvedchyn V. Sauchyn, A. Lozhachnik

- 5.39 PECULIARITIES OF USING OF PULSED PLASMA GUN IN CONTINUOUSLY REGIME  
A.M. Zhukeshov, A.T.Gabdullina, A.U.Amrenova, S.P.Pak
- 5.40 THE WORK OF PULSED PLASMA ACCELERATOR AT CONTINUOUSLY FILLED MODE  
A.M. Zhukeshov, A.U.Amrenova, A.T. Gabdullina
- 5.41 THE USE OF SURFACE LASER BREAKDOWN TO CALIBRATE THE PULSE PRESSURE SENSORS  
A.M. Petrenko, P.V. Chekan, A.N. Chumakov
- 5.42 MODIFICATION OF COTTON FLOW OF PLASMA HIGH-FREQUENCY LOW-PRESSURE CAPACITIVE DISCHARGE  
A. Azanova, G. Nurullina, I. Abdullin
- 5.43 THE TRANSFORMATIVE CASCADE CONTROL OF THE POWERFUL SOFTWARE-CONTROLLED PULSE CONVERTER FOR THE EXCITATION OF THE GLOW DISCHARGE PLASMA FOR TECHNOLOGICAL APPLICATIONS  
Godun D.V., Bordusov S.V., Dostanko A.P.
- 5.46 LOW VOLTAGE ELECTRICAL DISCHARGES APPLICATIONS  
A. Khlyustova, A. Maximov, I. Naumova
- 5.47 ELECTRON PARAMAGNETIC RESONANCE STUDY OF THE EFFICIENCY OF RF ELECTROMAGNETIC FIELD AND RF PLASMA SEED PRETREATMENTS FOR GERMINATION STIMULATION OF CARROT SEEDS  
V.V. Azharonok, I.I. Filatova, N.A. Poklonski, N.M. Lapchuk, A.G. Gajdarov
- 5.48 APPLICATION OF THE COMPUTER COMPLEX OF SYNTHESIS TECHNOLOGIES TO RESEARCH OF PLASMO-TECHNOLOGICAL SYSTEMS  
A.N.Laktjushin, T.V.Laktjushina
- 5.49 ELECTROLYTIC PLASMA AS AN INSTRUMENT TO POLISH LIGHT METALS AND ALLOYS  
S.I. Bahayeu, A.A. Parshuto
- 5.50 GENERATION OF X-RAYS USING A HIGH-INTENSITY ULTRA-SHORT LASER PULSE AND NANO-SIZED AND SHAPED TARGET  
Andrey Goryaev, Maxim Sedov, I. Mashek, A. Andreev, V. Venediktov
- 5.51 213 NM CORNEA ABSORPTION ESTIMATION FROM ABLATION MEASUREMENTS  
S. Batishche, S. Bushuk, A. Kouzmouk, A. Savitch, H. Tatur, G. Grabner, and W. Kautek



- 5.52 TREATMENT OF CAPILLARY AND POROUS DIELECTRIC MATERIALS BY CCP OPERATING AT LOW PRESSURE  
I.Sh. Abdullin, M.F. Shaekhov, L.R. Dzhanbekova, R.F. Sharafiev
- 5.53 INACTIVATION OF STAPHYLOCOCCUS AUREUS BY DC ATMOSPHERIC PRESSURE GLOW DISCHARGE PLASMA JET  
A. A. Kirillov, Y. A. Safronau, L. V. Simonchik, N. V. Dudchik

*Hall III*

**11:30 – 13:00**

**Poster Session**

**SECTION 6. Non-ideal and dusty plasma, clusters**

- 6.10 NONSPHERICAL DUST GRAINS IN WEAKLY MAGNETIC FIELD  
V.Yu. Karasev, E.S. Dзлиeva, L.A. Novikov
- 6.11 NON-SELF-MAINTAINED DISCHARGE IN INERT GAS WITH DUST PARTICLES  
I. Andryushin, V. Zherebtsov, V. Meshakin, P. Prudnikov, V. Rykov, V. Vladimirov, L. Deputatova,
- 6.12 EFFECT OF THE CONCENTRATION OF PARTICLES IN THE DUST STRUCTURE ON THE STRUCTURE ANGULAR VELOCITY  
V.Yu. Karasev, S.I. Pavlov, E.S. Dзлиeva.
- 6.13 SHIELDING OF THE MICROPARTICLE CHARGE WITHIN THE NONLOCAL CHARGING THEORY  
I.N. Derbenev, A.V. Filippov
- 6.14 INFLUENCE OF MAGNETRON DISCHARGE ONTO THE PARTICLE CLOUD TRAPPED IN PLASMA, A.F. Pal, A. N. Ryabinkin, A.O. Serov
- 6.15 ELECTROSTATIC INTERACTION OF A CHARGED DIELECTRIC SPHERICAL PARTICLE WITH A POINT CHARGE IN PLASMAS  
A.V. Filippov, V.R. Munirov
- 6.16 FLOATING POTENTIAL OF DUST PARTICLES IN ELECTROPOSITIVE GASES  
A.S. Kostenko, A.V. Filippov, N.A. Dyatko
- 6.17 CALCULATION OF THE COMPOSITION OF THE EQUILIBRIUM DUSTY PLASMA  
I.I. Fairushin, G.Yu. Dautov, A.N. Galiev
- 6.18 INTERACTION OF ATOMIC CLUSTERS WITH INTENSE ATTOSECOND PULSES, A.V. Gets, V.P. Krainov

- 6.19 DUST PARTICLE CONFINEMENT WITH ELECTRODYNAMIC TRAP  
V.S. Filinov, D.S. Lapitsky
- 6.20 DUST STRUCTURES FORMED IN THE GLOW DISCHARGE OUT OF THE  
CURRENT CHANNEL  
V.Yu. Karasev, M.A. Ermolenko, E.S. Dzljeva.
- 6.21 INVESTIGATION OF OSCILLATING PROCESSES IN DUST-PLASMA  
STRUCTURES OF DIRECT CURRENT GLOW DISCHARGE  
Davalov Y.B., Ussenov Y.A., Ramazanov T.S.
- 6.22 THE INFLUENCE OF THE TRACK EFFECTS ON KINETIC PROCESSES IN  
THE ARGON-XENON PLASMA CONTAINING NANOPARTICLES  
I. Alexeeva, A. Budnik, L. Deputatova, V. Fortov, V. Vladimirov
- 6.23 DISTRIBUTION OF CONCENTRATION OF ELECTRONS IN A TWO-  
COMPONENT DUSTY PLASMA CONSIST FROM SPHERICAL MACRO-  
PARTICLES AND ELECTRONS  
I.I. Fairushin, I.G. Dautov, E.A. Egorova

**13:00 – 14:00      Lunch**

## **Thursday – September 20, Afternoon**

*Hall I*

**14:00 – 16:00**

### **Plenary Sessions**

1. **Fortov V.E.**

DENSITY AND CHARGE COUPLING OF STRONGLY NONIDEAL PLASMA

2. **Chernyak V.,** Nedybalyuk O., Sidoruk S., Yukhymenko V., Martysh Eu., Prysiazhnevych I., Veremij Yu., Solomenko Ol., Yukhymenko K., Levko D., Tsimbaliuk A., Fedorovich O., Liptuga A., Bogaenko N., Popkov V., Marchuk V.

DYNAMIC PLASMA–LIQUID SYSTEMS AND ITS APPLICATIONS

**16:15 – 16:30      Coffee Break**

*Hall I*

**16:30 – 17:00**

### **Closing Ceremony**

## **Friday – September 21**

**Excursions, Post Symposium tours**

## SCHEDULE OF THE PPPT-7 CONFERENCE

Start Time	Monday September 17 7:00 – 22:00	Tuesday September 18	Wednesday September 19	Thursday September 20	Friday September 21			
9:00	<b>Arrival, registration, Sightseeing tour of Minsk</b>	<b>Opening Ceremony Plenary Session (Hall I)</b>	<b>Plenary Session (Hall I)</b>	<b>Topical Session: Section 6 (Hall I)</b>	<b>Excursions, Post Symposium tours</b>			
10:00 - 10:30 10:30 - 11:15			<b>Plenary Session (Hall I)</b>			<b>Coffee Break</b>	<b>Coffee Break</b>	
11:15 - 11:30						<b>Plenary Session (Hall I)</b>	<b>Topical Sessions: Section 1 (Hall I) Sections 2 (Hall II)</b>	<b>Poster Session Sections 5, 6 (Hall III)</b>
11:30 - 13:00						<b>Lunch</b>	<b>Lunch</b>	<b>Lunch</b>
13:00 – 14:00						<b>Topical Sessions: Section 5 (Hall I) Section 4 (Hall II)</b>	<b>Topical Sessions: Section 3 (Hall I) Section 5 (Hall II)</b>	<b>Plenary Session (Hall I)</b>
14:00 – 16:15						<b>Coffee Break</b>	<b>Coffee Break</b>	<b>Coffee Break</b>
16:15 - 16:30						<b>Poster Session Sections 1, 4 (Hall III)</b>	<b>Poster Session Sections 2, 3 (Hall III)</b>	<b>Closing Ceremony (Hall I)</b>
16:30 - 18:00						<b>Welcome Party</b>	<b>Ballet Performance</b>	
18:30 – 21:30								