

The opening ceremony of the 13th International exhibition of vacuum technologies Vacuumtechexpo will take place on April 24 at 12.00 on the stage of Pavilion 2

Program of events of the international scientific and technical conference “Vacuum technology, materials and technology in the international exhibition “VacuumTechExpo 2018” April 24 - 26, 2018, Moscow, Sokolniki Exhibition Center

24 APRIL

- 10.00**
1. Opening remarks by the President of Russian Vacuum Society named after Academician S.A. Vekshinsky S.B. Nesterov
 2. Joint-stock company “Vacuummash” is 75 years old. Story essays. Part 1. E.N.Kastupin. JSC “Vacuummash”, Kazan.

10:30 **Section 1. Vacuum technology and equipment**

1. Development of a “large” domestic fluid-free spiral vacuum pump with a speed of 60 m³ / h. A.V.Burmystrov, S.Y.Salykeev, A.V. Tyurn, A.A.Raykov * E.N.Kapustyn. Kazan National Research Technological University, Kazan, * Vakuummash JSC, Kazan.
2. A group of plants for deep etching of silicon, fine-grained insulation, removal of photoresist and atomic-layer deposition. V.V.Odinokov, V.M. Dolgoplov, P.A.Irakin, V.V.Panin. JSC “Research Institute of Precision Engineering” Moscow, Zelenograd.
3. Provision of a qualified cycle of active soldering of metal-ceramic assemblies by solid solder in the innovative high-vacuum chamber electric furnace model SNVE-2.4.2 / 13-iop-nitin. V.M.Shulaev, D.A.Okovyty, M.B.Askretkov, Yu.K.Hruzevych ** Yu.N.Hordyenko, L.M.Balyasniy ** N.M.Nedoseka. SPE NITTIN, Belgorod, * SPA Geophysics-NV, Moscow.
4. Prospects for joint development of vacuum equipment MSTU named by N.E. Bauman and SPA Spetsyelectromechanika. SP Bychkov, L. L. Kolesnik, Yu.V.Panfilov, * Yu.M. Sarapulov, * MS Orphanage MGTU named after N.E. Bauman, Moscow, * SPA “Special electromechanics”, Bryansk.
5. Control of the frequency characteristic of the damper for active vibration isolation based on magnetorheological elastomers. A.M.Bazynenkov, Y.V.Makeev, A.P.Rotar, D.A.Yvanova, V.P.Myhaylov. Moscow, MGTU named after. N. E. Bauman, Moscow.
6. An X-ray tube for ionization of gases. E.P. Sheshin, Moscow Physics and Technology Institute (State University), Dolgoprudny.
7. Stand for the study of processes occurring in the failure of vacuum mechanisms. R. O. Emelianenko, E. R. Tutyukin, E. A. Deulin MGTU named after N.E. Bauman, Moscow.
8. Results of investigations of gas discharges from mica. S.A.Bushin Moscow, Federal State Unitary Enterprise “All-Russia Research Institute of Automation named after N.L. Dukhov, Moscow.

9. Development of super-high-vacuum welded large-dimensional switching devices with high reliability of sealing. A.E. Vyazovetskaya, V.V. Vyazovetskov. Kurchatov Institute, Moscow.

10. Modeling the flow of gas in the flow section of a combined turbo-molecular pump with a disk stage. Y.A. Shostak, N.K. Nikulin. MGТУ named after N. E. Bauman, Moscow.

11. Modeling the flow of a multicomponent gas through a system of threads of different temperatures. A.N. Yakunchikov, V.V. Kosyanchuk Mechanical-mathematical faculty of MSU named after M.V. Lomonosov, Moscow, Institute of Mechanics, Moscow State University. M.V. Lomonosov, Moscow Institute of Mechanical Engineering named after A.A. Blagonravova RAS, Moscow.

12. Modeling the flow of rarefied gas in devices with rapidly oscillating elements. V.V. Kosyanchuk, A.N. Yakunchikov Mechanical-mathematical faculty of MSU named after M.V. Lomonosov, Moscow, Institute of Mechanics, Moscow State University named after M.V. Lomonosov, Moscow Institute of Mechanical Engineering named after A.A. Blagonravova RAS, Moscow.

14:00

Section 2. New Technologies for the Formation of Thin Films. Methods and research. Technological equipment.

1. The possibilities of the new technology of mineral coatings to increase the wear resistance of the metal surface when creating parts of vacuum technology. A.V. Skazochkin, * G.G. Bondarenko, ** S.V. Kislov. Kaluzhskyy branch of the RANEPА under the President of the Russian Federation, Kaluga, Higher School of Economics, Moscow, ** SPC «Technologies of mineral coating», Moscow.

2. Study of epitaxial correspondence of silicon carbide to silicon. V.K. Egorov, * E.V. Egorov, ** S.A. Kukushkin, ** A.V. Osipov. RAS, Chernogolovka, Moscow region, * RUDN, Moscow, ** RAS, St. Petersburg.

3. Development of inverse integrated coatings using a photonic crystal structure. E.N. Galaganova, E.V. Panfilova. MGТУ named after N.E. Bauman, Moscow.

4. Investigation of technological and structural features of maments made by magnetron sputtering. A.V. Moroz, N.I. Sushchentsov. Volga State Technological University, Yoshkar-Ola.

5. Investigation of optical characteristics of thin films of titanium dioxide obtained by magnetron sputtering. N.I. Sushentsov, S.A. Stepanov, D.E. Shashin Volga State Technological University, Yoshkar-Ola city.

6. Synthesis and structure of nanopowders, ceramics and thin layers based on ZnO-C system. A. Kh. Abduyev, A.K. Ahmedov, A.Sh. Asvarov, * K.Sh. Rabadanov. Institute of Physics, Dagestan Scientific Center, Russian Academy of Sciences, Makhachkala, * Analytical Center for Collective Use of the RAS, Makhachkala.

7. Formation of SiC / Si structures by the method of substitution of atoms and their use for growth of III-nitrides. A.V. Redkov, A.V. Osipov, S.A. Kukushkin. IPMash RAS, St. Petersburg.

8. Investigation of the effect of the thickness of the thin-film layer MoS₂ on the wear resistance of the TiC-MoS₂ system coating. V.V. Petrov, A.I. Belikov, E.A. Ivchenko. MGТУ named after N. E. Bauman, Moscow.

9. Source of electrons for the installation of a secondary emission study. A.N. Kozlov Moscow.

10. Power supply systems for HIPIMS high-power impulse magnetron sputtering. V.S. Machikin LLC "PLASMA-TEKH". Moscow.

11. Optical spectroscopy of MoS₂ semiconductor films. A.I. Belikov, Zhou Zin Pyo, A.I. Semokkin. MGТУ named after N. E. Bauman, Moscow.

12. Modernization of the magnetic system of the liquid phase magnetron to increase the discharge power. A.A.Hramova, A.R.Matanin, D. A.Polin, D.D. Vasiliev, K.M.Moiseev. MGТУ named after N. E. Bauman, Moscow.

25 APRIL

10:00

Section 3. Nanotechnology and Biotechnology

1. Thin film technologies for the formation of electrode materials for chemical current sources and superconducting capacitor structures. V.V.Sleptsov, D.Yu. Kukushkin, A.O.Ditelev. MAI, Moscow.

2. Results of experimental investigations of the influence of different composition of electrode structures on the characteristics of the converter and the surfactant of the device. A.T. Garifulin, A.S. Gruzdev, T.V.Sinitsyna, * A.S. Baghdasaryan. BOUTIS Ltd., Moscow, * Institute of Radio Engineering and Electronics, Russian Academy of Sciences. V.A. Kotelnikova, Moscow.

3. PAV-devices on thermosetting plates. Problems and prospects. S. S. Dorofeev, T. V. Sinitsyna, * AS Baghdasaryan. BOUTIS Ltd., Moscow, * Institute of Radio Engineering and Electronics, Russian Academy of Sciences. V.A.

4. Investigation of the surface morphology and contact properties of polytetrafluoroethylene films deposited on the surface of the track membrane in vacuum. L.I.Krovets, * R.V.Gainutdinov, ** A.B.Gilman, ** M.Yu. Yablokov ***V. Satulu, ***B.Mitu, ***G.Dinescu. Joint Institute for Nuclear Research, Dubna, * Crystallography and Photonics, Moscow, ** Institute of Synthetic Polymer Materials. N.S. Enikolopovaran, Moscow, *** National Institute for Laser, Plasma and Radiation Physics, Bucharest.

5. Deposition on the surface of the track membrane of nanosized ultrahigh-molecular-weight polyethylene films by electron-beam dispersion. L.I.Krovets, N.E.Lizunov, * M.A.Yarmolenko, * A.A.Rogachev, ** R.V.Gainutdinov, *** M.Yu.Yablokov. Joint Institute for Nuclear Research, Dubna, * Gomel State University named after. F. Skoryna, Gomel, ** Crystallography and Photonics, Russian Academy of Sciences, Moscow, *** Institute of Synthetic Polymer Materials named after. N.S. Enikolopov RAS, Moscow.

6. Formation of nano-composites based on opal matrices. A.F. Belyanin, * V.V. Borisov, **, *** A.S. Baghdasaryan, **** G.V. Chucheva, ***** B.V. Khlopov. JSC Tekhnomash, Moscow, * Research Institute named after D.V. Skobel'tsyna, Moscow, ** RPE "Technologies of Radio Frequency Identification and Communication", Moscow, *** Institute of Radio Engineering and Electronics. V.A. Kotelnikov RAS, Moscow, **** Fryazinsky Branch of the Institute of Radioengineering and Electronics. V.A. Kotelnikov RAS, Fryazino, Moscow Region, ***** Central Scientific-Research Radiotechnical Institute named after. academician AI Berg, Moscow.

7. Protective nanostructured films of metal nitrides (TiN, ZrN, AlN) and carbon materials. S.A.Nalimov, * S.A. Baghdasaryan, ** A.I.Yurin, *** V.V.Borisov. Moscow Institute of Electronics and Mathematics, Moscow Institute of Electronics and Mathematics, Moscow Institute of Electronics and Mathematics, Moscow, Russia *** Research Institute of named after D.V. Skobeltsyna, Moscow.
8. PECVD equipment for application of Si₃N₄ - SiO₂. A.A. Yasjunas, E.A. Khokhlov, A.S.Myslyvets, V.Ya.Shiripov, Izovac Ltd., Minsk.
9. Systems of automatic optical control for the stable production of optical structures with the number of layers up to 150 in a matched stack. A.A. Tarban, A.M. Artamonov, E.A. Khokhlov, A.S.Muslyvets. Izovac Ltd., Minsk.
10. Vacuum equipment of "Izovac Ltd." for optical applications based on ion-beam technology. E.A. Khokhlov, A.A. Turban, A.M. Artamonov, A.S. Hunter Izovac Ltd., Minsk.
11. Experience of exploitation of the plant for the synthesis of synthesized nanolayers on optical production of OOO Izovac Technologies. EA Khokhlov, AA Turban, AM Artamonov, AS Hunter Izovac Ltd., Minsk.
12. Investigation of the formation of films obtained in matrix mode with the help of the LF-plasmatron of atmospheric pressure. A.V. Shvedov, A.N. Lyan, V.M. Elinson. MAI, Moscow.
13. Investigation of the relief parameters of nanostructured fluorocarbon coatings formed from a plasma-forming mixture of C₄F₈ + C₆H₁₂ in polyethylene terephthalate. V. M. Elison, P. A. Shchur, O. A. Sillnitskaya. MAI, Moscow.
14. Comparative analysis of the surface charge of fluorine-containing films formed by using gas mixtures CF₄ + C₆H₁₂ and C₄F₈ + C₆H₁₂ on polyethylene terephthalate. P.A. Shchur, A.T. Galyaumova, V.M. Elinson MAI, Moscow.
15. Contact and adhesion properties of polyethylene terephthalate films modified in DC discharge. M.S.Piskarev, A.B.Gilman, A.S.Keccheyan, A.A.Kuznetsov. ISPM them N.S. Enikolopov RAS, Moscow.

13:00

Presentation of equipment and technologies

1. Development of critical types of vacuum-technological equipment for semiconductor technologies as the basis of national security of the country. S.I. Petrov CJSC "NTO".
2. Presentation of the new device - a series of helium leak detectors Phoenix quadro from Leybold GmbH: demonstration of the device, description of design changes, new features of the device, new models. E.V.Blohin, A.Ahlestin. LLC "Leificon Vacuum Service".
3. The method of calculation of vacuum systems in the company Leificon Vacuum Service, implemented in a publicly available free-of-charge calculation service for vacuum systems. Story about mathematical model, accepted assumptions, limits of application of service. - E.V. Blokhin, A.O. Achlestin LLC "Leificon Vacuum Service"
4. Recent developments of the VTO in IZOVAC and the state of the industry in the region of South Asia by the results of 2017 V.Ya.Shiripov. OOO "IZOVAK", Minsk.

15:00

Section 4. Vacuum technologies and aerospace complex

1. Determination of the heat-generating capacity of the total heat flux of the FOA-020 after prolonged storage. A.Y. Kochetkov, E.V.Shemetova. JSC "SPA named after SA Lavochkin", Khimki.
2. Experimental study of geometric characteristics of monodisperse granules. V.B. Ankudinov, Y.A. Marukhin, V.P. Ogorodnikov, V.A. Ryzhkov. Moscow Power Engineering Institute (MEI), Moscow.
3. Simulating of solar radiation during conducting of thermal-vacuum tests with large-scale solar simulators and methods of its solution. S.B. Nesterov, A.A. Filatov, Russian Scientific and Technical Vacuum Society named after Academician S.A.Vekshinsky, Moscow.

16:00

Section 5. Vacuum-levitation transport systems

1. Aerodynamic resistance to the movement of a high-speed train in a vacuum tube. S.B. Nesterov, A.I. Kholopkin, R.O. Kondratenko Russian Scientific and Technical Vacuum Society named after Academician S.A. Vekshinsky, Moscow.
2. International transport corridors as the basis for the cargo version of the vacuum-levitation transport system. R.O.Kondratenko, * S.S. Semenov, S. B. Nesterov, A.I. Kholopkin, ** E.N.Kapustin. Russian Scientific and Technical Vacuum Society named after Academician S.A. Vekshinsky. Moscow, * Kriomash-BZKM LLC, Balashikha, ** Vakuummash JSC, Kazan.
3. High-speed transport corridors as one of the mechanisms for implementing the national idea of Russia. V.V. Filimonov, 1G.G.Maly'netsky, 1V.S.Smolin, 2V.G.Shavrov, 2V.V.Koledov, 2S.V.Fongradovsky, 3K.L.Kovalyov, 3R.I.Ilyasov, 3B. N. Polvaevets, 4P.V.Kurenkov, 5P.V.Kryukov, 5A.V.Alfimov, 5D.A.Karpukhin, 6B.V.Drozhdov, 7V.S. Kropushin, 7M.Y.Semionov, 7N.A. Nizhelsky, 8V.A.Solomin, 2D.A.Suslov, 8V.A. Bogachev, 9V.M.Fomin, 9D.G.Nalivaychenko, 10T.V.Bogachev, 11Y.A.Terent'ev. SPA "AST", 11PM them. MV Keldysh RAS, 2IRE them. VA Kotelnikov RAS, 3MAI, 4MIT, 5Expert, 6 Research Institute of IAT, 7MSTU named after N. E. Bauman, 8RGUPS, 9ITPM named after S.A. Khristianovich SB RAS, 10RGEU (RINCH).11Independent expert.

