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St. Petersburg National Research Academic University of RAS
Moscow Aviation Institute
Institute of Microelectronics Technology RAS
Yaroslavl State University
Yaroslavl branch of Institute of Physics and Technology RAS

PROGRAM

THE XXIV INTERNATIONAL CONFERENCE ON

ION - SURFACE INTERACTIONS

(ISI-2019)

19 – 23 August 2019

Moscow 2019

Sponsors of ISI - 2019

Russian Foundation for Basic Research
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SCIENTIFIC SECTIONS

1. Sputtering, surface structure, desorption.
2. Ion scattering and propagation.
3. Emission of ions, electrons, photons and X-rays under ion-surface interaction.
4. Ion implantation and surface modification.
5. Ion-assisted processes in thin films and nanostructures.
6. Plasma-surface interaction - physics and technology.

Oral reports will be held in the conference hall from 19 to 23 August from 9⁰⁰ to 18⁰⁰. Invited talks will be allowed 25 minutes and additional 5 minutes for discussion. Oral contributions will be 15 minutes and additional 5 minutes for discussion.

The working time of poster sessions is from 18⁰⁰ to 20⁰⁰. Poster reports should be put on board 60 cm x 80 cm in the evening *before* the working day of the respective poster section. Poster stands will be marked with numbers corresponding to the numbers of the poster reports in this program.

Poster schedule:

19 August – sections 1, 2 and 3;

20 August – sections 4 and 5;

22 August – section 6.

13⁰⁰-14⁰⁰ – Lunch, 20⁰⁰-20³⁰ – Dinner.

19 August, Monday

PLENARY SESSION

Chair: V. Kurnaev

- 8³⁰-10⁰⁰ REGISTRATION OF THE PARTICIPANTS
- 10⁰⁰-10¹⁰ OPENING OF THE CONFERENCE
- 10¹⁵-10⁴⁰ **Peter Bauer**, *Johannes Kepler Universität Linz, Institut für Experimentalphysik, Austria*
Electronic stopping of protons and He ions in solids: transmission versus backscattering.
- 10⁴⁵-11¹⁰ **Daniel Primetzhofer**, *Uppsala University, Sweden*
Ion-solid interaction studied by TOF-MEIS: electronic excitations, photon & particle emission.
- 11¹⁵-11³⁰ *Coffee break*
- 11³⁰-11⁵⁵ **Hans Hofsaess**, *Georg-August-Universität Göttingen, Germany*
Prediction of ion-induced surface pattern formation using Monte Carlo simulations and comparison with experiments.
- 12⁰⁰-12²⁵ **Steve Donnelly**, *University of Huddersfield Queensgate, UK*
The use of ion irradiation in-situ in a transmission electron microscope to gain insights into ion-solid interactions.
- 12³⁰-13⁰⁰ ***Taking a photo of the conference participants***
- 13⁰⁰-14⁰⁰ *Lunch*

19 August, Monday

Section 1. Sputtering, surface structure, desorption

Chairs: H. Hofsaess, L. Begrambekov

- 14⁰⁰-14²⁵ **Eli Kolodney**, *Israel Institute of Technology, Israel*
Emission of velocity correlated clusters in fullerene-solid single collision.
A new sputtering mechanism.
- 14³⁰-14⁵⁵ **Andre Galli**, *Physikalisches Institut, University of Bern, Switzerland*
Sputtering of water ice by sulfur ions.
- 15⁰⁰-15²⁵ **Paul Szabo**, *Technische Universität Wien, Austria*
Sputtering of mercury and moon analogues by solar wind ions.
- 15³⁰-15⁵⁵ **Natalya Andrianova**, *Moscow Aviation Institute (National Research University), Russia*
Corrugation of Carbon Fibers under High-Fluence Ion Irradiation:
Perspectives and Applications.
- 16⁰⁰-16¹⁵ *Tea break*
- 16¹⁵-16³⁰ **S. Krat, Yu. Gasparyan, Ya. Vasina, A. Prishvytsin, and A. Pisarev.**
Modeling of co-deposition of hydrogen with sputtered metals.
- 16³⁵-16⁵⁰ **Ya.S. Blyakharskii, A.B. Nadiradze.** Sputtering indicatrix for net surfaces.
- 16⁵⁵-17¹⁰ **L. Forlano and A. I. Tolmachev.** Dependence of the energy distribution of sputtered atoms on the type of atomic potential.
- 17¹⁵-17³⁰ **I. S. Vasil'evskii, A.N. Vinichenko, P.L. Donrokhov, V.V. Saraykin, N.I. Kargin.** Precise determination of the composition of Ax₁B_{1-x}A ternary semiconductor alloys by cluster ion SIMS.
- 17³⁵-17⁵⁰ **S.A. Ryabtsev, Yu. M. Gasparyan, Z.R. Harutyunyan, V.S. Efimov, A.S. Aksenova, A.A. Pisarev.** Helium thermal desorption from tungsten after ion beam irradiation at elevated temperatures.
- 17⁵⁵-18¹⁰ **Sh.T. Khojiev, D.A. Tashmukhamedova, I.O. Kosimov, I.T. Rakhimov, I.A. Ergashev.** Statistical mechanisms of formation of metal clusters of Nb_nO_m⁺.
- 18¹⁵-20⁰⁰ **POSTERS, 1, 2 and 3 sections**
- 20⁰⁰-20³⁰ *Dinner*

20 August, Tuesday

Section 2. Ion scattering and propagation

Chairs: G. Kornich, V. Bachurin

- 9⁰⁰-9²⁵ **Arnaud Delcorte**, *Universite' Catholique de Louvain, Belgium*
Organic film analysis, molecular transfer and nanomechanics using large argon cluster beams.
- 9³⁰-9⁵⁵ **Srdjan Petrović**, *Vinča Institute of Nuclear Sciences, Serbia*
Universal rainbow channeling potential.
- 10⁰⁰-10²⁵ **Barbara Bruckner**, *Uppsala University, Sweden*
Electronic interactions of slow ions in transition metal oxides and nitrides.
- 10³⁰-10⁴⁵ **A.N. Zinoviev, P.Yu. Babenko, D.S. Meluzova, A.P. Shergin.**
Contribution of autoionization processes to the electronic stopping power.
- 10⁵⁰-11⁰⁵ *Coffee break*
- 11⁰⁵-11²⁰ **K. Motohashi.** Kinetic energy distribution of slow multiply charged argon ions transmitted through a cylindrical glass channel.
- 11²⁵-11⁴⁰ **I.K. Gainullin.** Charge exchange between ion beams and nanoclusters.
- 11⁴⁵-12⁰⁰ **D. Bulgadaryan, D. Sinelnikov, V. Kurnaev, N. Efimov.** Application of keV-energy proton scattering for surface analysis.
- 12⁰⁵-12²⁰ **N.V. Novikov, Ya A. Teplova.** Using the formalism of markov processes to describe the distributions of fast multiply charged ions on charges and energy.
- 12²⁵-12⁴⁰ **A.N. Zinoviev, P.Yu. Babenko.** Interrelation of electronic stopping power with elementary reactions at atomic collisions.
- 12⁴⁵-13⁰⁰ **A. Prima, R. Zyryanova, N. Pereday, V. Medvedsky.** Determination of radiation defects quantity in metals under irradiation by heavy carbon ions.
- 13⁰⁰-14⁰⁰ *Lunch*

20 August, Tuesday

Section 3. Emission of ions, electrons, photons and X-rays under ion-surface interaction

Chairs: P. Bauer, O. Trushin

- 14⁰⁰-14²⁵ **Kazumasa Narumi**, *Takasaki Advanced Radiation Research Institute JAEA*
Recent activities with the use of C₆₀ ion beams in TIARA, QST/Takasaki.
- 14³⁰-14⁵⁵ **Alexander Tolstoguzov**, *Ryazan State Radio Engineering University*
Ion-beam sources based on superionic conductors.
- 15⁰⁰-15²⁵ **Evgeny Buntov**, *Ural Federal University, Russia*
Atomic structure, bonding and morphology of carbyne-containing films.
- 15³⁰-15⁴⁵ **S. Belykh, A. Tolstogousov, A. Bekkerman, R. Yevtukhov, D.J. Fu.**
The metal ion source: results achieved and prospects for future applications.
- 15⁵⁰-16⁰⁵ *Tea break*
- 16⁰⁵ - 16²⁰ **E. Zykova, I. Ivanenko, K. Markovets, K. Minnebaev, E. Rau, A. Tatarintsev, V. Khvostov.** Charging of dielectrics under ion irradiation.
- 16²⁵-16⁴⁰ **O.L. Golubev, N.M. Blashenkov.** Regularities of field evaporation of tantalum ions at high emitter temperatures.
- 16⁴⁵-17⁰⁰ **A.Sh. Radjabov, S.S. Iskhakova, U.Kh. Rasulev.** Kinetics of heterogeneous processes in thermodesorption surface-ionization spectrometry of organic compounds.
- 17⁰⁵-17²⁰ **V.P. Afanas'ev, A.S. Gryazev, O.Yu. Ridzel, P.S. Kaplya, D. Naujoks, M. Mayer, M. Sauer, D.A.Burmistrov, A.V. Averin.** Analysis of carbon targets containing different hydrogen isotopes by means of angle-resolved elastic peak electron spectroscopy.
- 17²⁵-17⁴⁰ **Yu.N. Devyatko, V.V. Novikov, O.V. Khomyakov.** Radiation-induced densification of uranium-gadolinium fuel.
- 17⁴⁵-18⁰⁰ **I.A. Afanasieva, S.N. Afanasiev, V.V. Bobkov, V.V. Gritsyna, Yu.E. Logachev, I.I. Oksenyk, D.I. Shevchenko, A.A. Skrypnyk.** Optical diagnostics of magnetron discharge plasma using digital techniques.
- 18⁰⁵-20⁰⁰ **POSTERS, 4 and 5 sections**
- 20⁰⁰-20³⁰ *Dinner*

21 August, Wednesday

Section 4. Ion implantation and surface modification

Chairs: S. Donnelly, A. Titov

- 9⁰⁰-9²⁵ **Daniela Gogova**, *University of Oslo, Norway*
A newly rediscovered wide band-gap semiconductor gallium oxide: in-situ and ex-situ doping.
- 9³⁰-9⁵⁵ **Sergei Dudarev**, *Culham Centre for Fusion Energy, UK*
Multiscale modeling of stresses and strains induced by irradiation.
- 10⁰⁰-10²⁵ **Alexander Lebedev**, *Ioffe Physical-Technical Institute, Russia*
Radiation resistance of Silicon Carbide and devices on its base.
- 10³⁰-10⁴⁵ *Coffee break*
- 10⁴⁵-11¹⁰ **Johan Malherbe**, *University of Pretoria, South Africa*
Microstructure of virgin and ion bombarded glassy carbon.
- 11¹⁵-11⁴⁰ **Marcos Moro**, *Uppsala University, Sweden*
Systematic analysis of electronic stopping for transition and rare-earth elements.
- 11⁴⁵-12⁰⁰ **D.V.Shyrokorad, G.V.Kornich, S.G.Buga.** Evolution of the Ni-Al Janus-like clusters under impacts of low energy argon clusters.
- 12⁰⁵-12²⁰ **N.N.Andrianova, A.M.Borisov, V.A.Kazakov, A.V.Makunin, E.S.Mashkova, M.A. Ovchinnikov.** Dynamic annealing effects under high-fluence ion irradiation of glassy carbon.
- 12²⁵-12⁴⁰ **A. Pushkarev, X.P. Zhu, A. Prima, C.C. Zhang, M.K. Lei.** Investigation of thermal annealing of radiation defects formed by high-intensity pulsed ion beam.
- 12⁴⁵-13⁴⁵ *Lunch*
- 14⁰⁰-19³⁰ *Excursions*
- 20⁰⁰-22⁰⁰ *Dinner*

22 August, Thursday

Section 4. Ion implantation and surface modification

Chairs: A. Delcorte, P. Karaseov

- 9⁰⁰-9²⁵ **Andres Redondo Cubero**, *Universidad Autonoma de Madrid Campus Cantoblanco, Spain*
Self-organized silicide nanodot patterns by medium-energy ion beam sputtering.
- 9³⁰-9⁵⁵ **Christian Linsmeier**, *Institut fur Energie- und Klimaforschung - Plasmaphysik, Germany*
Hydrogen interaction with fusion first wall materials.
- 10⁰⁰-10¹⁵ **A.I. Titov, K.V. Karabeshkin, P.A. Karaseov, A.I. Struchkov.**
Damage accumulation in GaN during successive co-implantation of fluorine ions with different energies.
- 10²⁰-10³⁵ **A.P. Solonitsyna, E.A. Makarevskaya, D.A. Novikov, V.M. Mikoushkin.**
Oxidation specific of the GaAs irradiated by ions.
- 10⁴⁵-11⁰⁵ *Coffee break*
- 11⁰⁵-11²⁰ **A.A. Sycheva, E.N. Voronina, A.T. Rakhimov.** Molecular dynamics simulation of Si/SiO₂-based nanoporous material irradiation by low-energy Ar and He ions.
- 11²⁵-11⁴⁰ **M.A. Makhavikou, F.F. Komarov, L.A. Vlasukova, I.N. Parkhomenko, O.V. Milchanin, E. Wendler, J. Zuk, A.V. Mudryi.** Effect of implantation temperature and annealing on synthesis of ZnO nanocrystals in silica by ion implantation.
- 11⁴⁵-12⁰⁰ **Satish Kumar, Ajit K. Mahapatro and Puspashree Mishra.**
Formation of interconnected network of nanofibers in oblique incident 100 keV Ar⁺-ion irradiated GaSb epilayers.
- 12⁰⁵-12²⁰ **A.F. Zatsepin, A.N. Kiryakov, D.A. Zatsepin, N.V. Gavrilov, Yu.V. Shchapova, T.V. Shtang, A. Sh. Vagapov.** Optical properties and electronic structure of transparent alumomagnesium spinel ceramics implanted with copper ions.
- 12²⁵-12⁴⁰ **A.S. Rysbaev, M.T. Normurodov, J.B. Khujaniyozov, D.A. Normurodov.** On the formation of metal silicide films (Li, Cs, Rb, Ba) with ionic implantation in Si and subsequent thermal annealing.
- 12⁴⁵-13⁰⁰ **I.P. Ivanenko, S.V. Krasnoshekov, A.V. Pavlikov, S.V. Dvoryak, V.V. Khvostov.** Structural and transport features of carbyne like films, synthesized by impulse plasma deposition on metal surfaces.
- 13⁰⁵-14⁰⁰ *Lunch*

22 August, Thursday

Section 5. Ion-assisted processes in thin films and nanostructures

Chairs: A.Pisarev, A.Borisov

- 14⁰⁰-14²⁵ **Marko Karlusic**, *Ruder Boskovic Institute, Croatia*
Swift heavy ions for nanopatterning surfaces and defects engineering.
- 14³⁰-14⁵⁵ **Jae-Sung Kim**, *Sook-Myung Women's University, Seoul, Korea*
Nanoscale pattern formation at surfaces in unconventional formats.
- 15⁰⁰-15²⁵ **Arkady Krasheninnikov**, *Helmholtz Zentrum Dresden-Rossendorf, Germany*
Effects of ion irradiation on two-dimensional targets: what is different from bulk materials?
- 15³⁰-15⁵⁵ **Philipp Valerius**, *University of Cologne, Germany*
Reversible crystalline-to-amorphous phase transition in monolayer MoS₂ on Gr/Ir (111) by Xe⁺ ion irradiation.
- 16⁰⁰-16¹⁵ *Tea break*
- 16¹⁵-16³⁰ **L. Repetto, R. Lo Savio, G. Firpo, P. Guida, D. Pezzuoli, D. Repetto, U. Valbusa**. Thin film surface coverage under ion irradiation.
- 16³⁵-16⁵⁰ **P.I. Gaiduk**. Irradiation induced nano-voids and dots in strained SiGe(Sn)/Si layers for plasmonic application.
- 16⁵⁵-17¹⁰ **L.V. Goncharova, C.C. Cadogan and P.J. Simpson**. Crystallinity and luminescence in Si-implanted thin films.
- 17¹⁵-17³⁰ **V.E. Pukha, R.R. Gabdullin, I.I. Khodos, A.S. Lazareva, E.N. Kabachkov, P.A. Karaseov, A.I. Titov, T.S. Kunkel, A.L. Shakhmin**. Formation of polymeric films from the molecular beam of fulleren in conditions of irradiation with C₆₀ ions.
- 17³⁰-19³⁰ **POSTERS, 6 section**
- 20⁰⁰-22⁰⁰ *Conference dinner*

23 August, Friday

Section 6. Plasma-surface interaction - physics and technology

Chairs: V.Kurnaev, Yu. Gasparyan

- 9⁰⁰-9²⁵ **Olga Ogorodnikova**, *National Research Nuclear University MEPhI, Russia*
Ion-driven deuterium and helium retention and surface modification in Fe-
and W- based materials.
- 9³⁰-9⁵⁵ **L. Begrambekov, A. Kaplevsky, S. Dovganyuk, A. Airapetov.** Behavior of
hydrogen isotopes in deposited two components.
- 10⁰⁰-10¹⁵ **I.A. Sorokin, D.V. Kolodko, E.G. Shustin.** Plasma-processing reactor for
the production and treatment of nanoscale structures for nanoelectronics.
- 10²⁰-10³⁵ *Coffee break*
- 10⁴⁰-10⁵⁵ **Yu.V. Martynenko.** Metal behavior under plasma flow action typical for
transient processes in tokamaks.
- 10⁵⁵-11¹⁰ **D. Matveev, M. Al-Beruni, B. Unterberg, and Ch. Linsmeier.** Assessment
of a 3D FEM-based model for hydrogen outgassing from ion-irradiated
materials.
- 11²⁰-12³⁰ **Summary and closing**
- 12³⁰-13³⁰ *Lunch*
- 13³⁰
and later Departure of participants from Moscow

POSTER REPORTS

19 August, Monday

Section 1. Sputtering, surface structure, desorption

1. **A.A.Abduvaitov, Kh.Kh.Boltaev, A.Mavlonov.** Study of the composition of uncontrolled impurities and their distribution profiles at the Ni – CdS interface.
2. **V.I. Bachurin, I.V. Zhuravlev, D.E. Pukhov, A.S. Rudy, M.A. Smirnova, A.B. Churilov.** Angular dependencies of silicon sputtering by gallium focused ion beam.
3. **A.D. Bakun, A.S. Gusev, N.I. Kargin, S.M. Ryndya, N.V. Siglovaya.** Method of formation super-smooth sputtered surfaces by gas cluster ion beam and accelerated neutral atom beam of argon.
4. **A.D. Bakun, A.S. Gusev, N.I. Kargin, D.V.Kolodko, S.M. Ryndya, N.V. Siglovaya, D.G.Ageychenkov.** Numerical model of TOF analyzer for Ar gas cluster ion beam.
5. **R. Djabbaranov, B.G. Atabaev, U.B. Sharopov.** Diffusion of interstitial defects and their clusters on the surface of crystal silicon.
6. **R.Kh. Khisamov, R.U. Shayakhmetov, I.I. Musabirov, K.S. Nazarov, R.R. Timiryayev, Yu.M. Yumaguzin and R.R. Mulyukov.** Effect of nanostructuring of iron on the sputtering by Ar ions 5 keV.
7. **A.I. Musin, G.V. Kornich, V.N. Samoilo.** Sputtering of the Ni (100) surface by low energy Ar ions: molecular dynamics simulation.
8. **K.S. Nazarov, S.N. Sergeev, R.Kh. Khisamov, R.R. Timiryayev, Yu.M. Yumaguzin, R.R.Mulyukov.** Sputtering by focused ion beam Ga⁺ of nanostructured nickel.
9. **K.S. Nazarov, R.Kh. Khisamov, S.N. Sergeev, I.I. Musabirov, R.U. Shayakhmetov, R.R. Timiryayev, G.F. Korznikova, R.R. Mulyukov.** Ion sputtering of metal-matrix composite Al-Cu obtained by shearing deformation under pressure.
10. **B.L. Oksengendler, N.R.Ashurov, S.E.Maksimov, J.T.Azimov, V.Yu.Sokolov, I.N.Nurgaliev, O.V.Karpova.** Ion stimulated desorption from fractal surfaces of perovskites and related compounds.
11. **B.K. Rakhadilov, T.R. Tulenbergenov.** Changes in the beryllium structure under the irradiation by a plasma bunch.
12. **U.B. Sharopov, B.G. Atabaev, R. Djabbaranov.** Thermal and ion-etching cleaning of the surface SiO_x crystals.
13. **V.V. Sirotkin.** Molecular dynamics simulation of argon clusters interaction with a poly(ether ether ketone) surface.
14. **V.V. Sirotkin.** Molecular dynamics analysis of accelerated argon atoms interaction with a pyrolytic carbon surface.
15. **V.S. Sypchenko, Y.I. Tyurin, N.N. Nikitenkov, Hongru Zhang, I.P. Chernov.** Hydrogen isotopes yield from Pd with radiation, joylee and thermal exposure.
16. **K.A.Tolpin, K.F.Minnebaev, V.E.Yurasova.** Influence of binary alloy ordering on exit of its components.

17. **S.V. Tomilin, T.V. Mikhailova, O.A. Tomilina, V.N. Berghansky, A.N. Shaposhnikov.** Synthesis of nanoporous Al₂O₃ template-matrix by method of ion etching.
18. **S.S. Volkov, S.V. Nikolin, T.I. Kitaeva, N.L. Puzevith.** Application of ion interaction for the analysis of the surface and directional motion of electrons in conductors.

Section 2. Ion scattering and propagation

1. **V.P. Afanas'ev, D.A. Burmistrov, P.S. Kaplya, O.Yu. Ridzel.** Determination of angular distributions of electrons and light ions elastically reflected from multicomponent samples.
2. **V.V.Evstifeev, N.V.Kostina.** Numerical study of the spraying thresholds for metals under bombarding by the low energy ions.
3. **G.M. Filippov, A.S.Sabirov, V.A. Aleksandrov, A.V.Stepanov.** Propagation of quantum particles through the pores.
4. **M.K.Karimov, Sh.R.Sadullaev, M.U.Otaboev, K.U.Otaboeva, U.O.Kutliev.** Energy distribution of small angle scattered ions from InP(001)<110> and <110> surfaces.
5. **V.P. Koshcheev, Yu.N. Shtanov.** Power of interaction of two atoms taking into account the Pauli principle.
6. **N.V. Mamedov, V.A. Kurnaev, D.N. Sinelnikov, I.M. Mamedov.** Estimates of He⁺ scattered from the surface survival probability using binary collisions codes.
7. **A.K. Mutali, M.M. Saifulin, V.A. Skuratov, A. Janse van Vuuren, J.H. O'Connell.** Investigation of damages in Y₃Fe₅O₁₂ single crystals irradiated with swift heavy ions using Raman spectroscopy.
8. **N.G. Savinski, N.S. Melesov, E.O. Parshin, V. I. Bachurin, A.B. Churilov.** Study of influence of graphite exfoliation parameters on the multigraphene composition by the Rutherford backscattering spectroscopy.
9. **A. Schinner, V.I. Shulga, P. Sigmund.** Effect of angular-dependent electronic energy loss on stopping measurements in reflection.
10. **I.D. Yadgarov, V.G. Stelmakh, A.A. Dzhurakhalov.** Modeling of scattering of hydrogen molecules on graphene.
11. **A.N. Zinoviev, P.Yu. Babenko, D.S. Meluzova, A.P. Shergin.** Reflection of hydrogen isotopes and helium atoms from beryllium, carbon and tungsten surface.

Section 3. Emission of ions, electrons, photons and X-rays under ion-surface interaction

1. **Sh.Dj. Akhunov, S.N. Morozov, U.Kh. Rasulev.** Secondary ion emission of silicon under bombardment by molecular ions.
2. **Sh.Dj. Akhunov, B.Sh. Kasimov, D.T. Usmanov.** Investigation of formation of multi-charged ions in the process of high-vacuum electrospray ionization.
3. **A.E. Anikeva, Yu.V. Petrov, O.F. Vyvenko.** Secondary electron emission from insulating films excited with a helium ion beam.

4. **S.B.Donaev, B.E.Umirzakov, N.M.Mustafayeva, A.Kh.Rakhimova.** Emission properties of Pd – Ba alloy activated by laser irradiation.
5. **N.Kh.Dzhemilev, S.E.Maksimov, S.F.Kovalenko, O.F.Tukfatullin, Sh.T.Khojiev, D.A.Tashmukhamedova.** Formation and monomolecular fragmentation of Si_nO_m^- clusters sputtered by ion bombardment.
6. **V.V. Kuzma, N.Yu. Matelega, I.E. Mitropolskiy, I.I. Shafranyosh.** Ionoluminescence in the solid state of uracil.
7. **V.A. Litvinov, I.I. Okseniuk, D.I. Shevchenko, V.V. Bobkov.** SIMS study of the interaction of intermetallic alloy LaNi_5 with oxygen.
8. **Y.Nakagawa, S.Nakano, I.Takagi.** Reflection of eV-energy hydrogen atom on hydrogen-covered surface.
9. **M.T. Normurodov, A.S. Rysbaev, D.A. Normurodov, J.B. Khujaniyozov, V.H. Kholmuhamedova.** Elastically scattered electron spectroscopy – new method for electronic diagnostics of surface.
10. **N.A. Nurmatov, Y.S. Ergashov, G.T. Raxmanov, I.X. Xamidjonov.** Formation of photoelectron spectra of alloys niobium-molybdenum-zirconium.
11. **A.Sh. Radjabov, A.S. Khalmatov.** Study of kinetics of thermodesorption and sublimation of particles by method of thermodesorption surface-ionization spectrometry.

20 August, Tuesday

Section 4. Ion implantation and surface modification

1. **Z.A.Y. Abdalla, T.T. Hlatshwayo, E.G. Njoroge, M. Mlambo, E. Wendler, J.B. Malherbe.** Diffusion behaviour of selenium implanted into 6H-SiC single crystal and polycrystalline SiC.
2. **V.A. Andrianov, K.A. Bedelbekova, A.N. Ozernoy, M.F. Vereshchak, I.A. Manakova, A.S. Dektereva.** Mossbauer study of the implantation of Fe-57 ions into metallic Ta and Mo.
3. **L.Kh. Antonova, A.V. Troitskii, V.A. Skuratov, V.K. Semina, G.N. Mikhailova.** Modification of HTSC-2 GdBCO by irradiation of Xe (80 MeV, 167 MeV) ions
4. **V.V. Bobkov, L.P. Tishchenko, Yu.I. Kovtunenkov, Yu.E. Logachev, A.B. Tsapenko, A.A. Skrypnik, and L.A. Gamayunova.** Temperature dependence of deuterium and helium retention in W and Ta coatings during irradiation with D^+ or He^+ ions.
5. **L.I. Bryukvina, N. A. Ivanov.** Implantation of magnesium ions in LiF crystal and their effect on the distribution and properties of metal nanoparticles and color centers.
6. **Y.S. Ergashov, B.E. Umirzakov.** Electron spectroscopy of CdMeTe nanostructures created on CdTe surface under ion bombardment.
7. **B.F. Farrakhov, Ya.V. Fattakhov, and M. F. Galyautdinov.** Solid-phase recrystallization of implanted silicon controlled by optical diffraction method.
8. **Z.A. Isakhanov, I.O. Kosimov, B.E. Umirzakov, A.E. Narbaev, Sh.F. Khudayberdieva.** Surface properties modification of free Si-Cu films by implantation ion of active metals.

9. **E.B. Kashkarov, A.I. Ryabchikov, M.S. Syrtanov, A. Obrosov, S.A. Zakharchenko.** Formation of deep modified TiZr layers on the surface of zirconium E110 alloy using high-intensity ion implantation.
10. **E. Khramov, V. Privezentsev, and A. Palagushkin.** XAFS study of Zn ion implanted and thermo oxidized sapphire.
11. **D.S. Korolev, A.N. Tereschenko, A.A. Nikolskaya, A.N. Mikhaylov, A.I. Belov, D.I. Tetelbaum.** Influence of ion implantation and heat treatment regimes on dislocation-related photoluminescence in self-implanted silicon.
12. **M.N. Koryazhkina, E.V. Okulich, D.S. Korolev, M.E. Shenina, A.N. Mikhaylov, D.I. Tetelbaum, O.N. Gorshkov, I.N. Antonov, Yu.A. Dudin, Yu.I. Chigirinsky.** The influence of irradiation on the parameters of resistive switching in memristive structures based on yttria stabilized zirconia.
13. **D.F. Langa, J.B. Malherbe, T.T. Hlatshwayo, A. Botha, T.T. Thabethe, O.S. Odutemowo.** The effects of ion implantation and subsequent annealing on the surface topography of glassy carbon.
14. **O.A. Laput, I.V. Vasenina, D.A. Zuza, I.A. Kurzina.** Polyvinyl alcohol surface treatment by Ar ion implantation and argon flow low-temperature plasma.
15. **Le Zhang, N.N. Nikitenkov, V.S. Sypchenko, O.S. Korneva, E. B. Kashkarov.** Ion-plasma methods in creating thin-film coatings to protect materials from hydrogen embrittlement.
16. **V.M. Mikoushkin, A.P. Solonitsyna, E.A. Makarevskaya, M.M. Brzhezinskaya.** Molecular nitrogen in GaAs implantated with N_2^+ ions.
17. **T.M. Mohlala, T.T. Hlatshwayo, E. Wendler, J.B. Malherbe.** Effect of radiation damage and migration behaviour of europium implanted into polycrystalline SiC at RT and 350 °C.
18. **S.J. Nimatov, B.E. Umirzakov, D.S. Rumi, F.Ya. Hudaykulov.** Study of the changes of crystalline structure of Si(111) surface during ion bombardment and subsequent annealing.
19. **V.V. Poplavsky, A.V. Dorozhko, F.F. Komarov.** Study of catalytic layers prepared by ion beam assisted deposition of platinum and ytterbium onto carbon carries with use of Rutherford backscattering spectrometry.
20. **N.P. Pron, S.A. Krivelevich.** Decay of nonequilibrium solid solution and formation of silicate clusters.
21. **A.V. Rumyantsev, A.S. Prikhodko, N.I. Borgardt.** Investigation of silicon near-surface layer amorphization induced by low-energy gallium ion bombardment.
22. **D.A. Tashmukhamedova, M.B. Yusupjanova, D.M. Muradkabilov, D.A. Mirzaev, B.E. Umirzakov.** Electronic structure of surfaces of semiconductors modified by ion-bombardment.
23. **A.A. Tatarintsev, A.E. Ieshkin, D.S. Kireev, K.E. Markovets.** Electron-beam charging of sapphire preirradiated by Ar_N^+ clusters.
24. **A.I. Titov, K.V. Karabeshkin, P.A. Karaseov, A.I. Struchkov.** Radiation damage in gallium nitride during implantation of F and Ne ions.
25. **T.R. Tulenbergenov, M.K. Skakov, A.Zh. Miniyazov, I.A. Sokolov, G.K. Kaiyrdy, O.S. Bukina.** The formation of carbides in the surface layer of tungsten on an imitation stand with a plasma-beam installation.

26. **B.E. Umirzakov, D.A. Tashmukhamedova, J.Sh. Sodikjanov, A.N. Uroqov, B.V. Ibragimova.** Influence of Ba⁺ ion implantation on composition, structure, and electronic properties of CdS.
27. **D.Yu. Zudin, N.D. Abrosimova.** The hydrogen implantation dose effect on the cut location and its geometrical parameters of SOI active device layer.

Section 5. Ion-assisted processes in thin films and nanostructures

1. **V.A. Aleksandrov, D.A. Romanova, A.S. Sabirov, A.V. Stepanov, G.M. Filippov.** Influence of magnetic field on the clustering of moving dispersed fuel.
2. **I.I. Amirov, S.P. Zimin, V.V. Naumov, K.E. Guseva.** Surface modification of the Pb_{1-x}Sn_xSe films during plasma treatment near the threshold energy of sputtering.
3. **B.G. Atabaev, U.B. Sharopov, R. Djabbarganov.** Formation of defects and clusters on the surface LiF crystals at irradiation by electrons and ions.
4. **A.S. Babushkin.** A kinetic model of the effect of low energy ion-plasma treatment on residual stress in thin metal films.
5. **A.I. Bazhin, G.V. Kornich, A.A. Goncharov, A.N. Yunda.** Diffusion growth model of the columnar structure of transition metals diboride nanocoatings.
6. **V.K. Egorov, E.V. Egorov.** Principle chance for the cold fusion reaction in frame of ion-assistance process.
7. **A.P. Evseev, A.V. Kozhemiako, Yu.V. Balakshin, A.A. Shemukhin, V.S. Chernysh.** Radiation-induced defects in silicon nanomaterials.
8. **A.P. Evseev, E.A. Vorobyeva, Yu.V. Balakshin, A.A. Shemukhin, V.S. Chernysh.** A change in wettability of carbon nanotubes induced by ion irradiation.
9. **Gusev S.A., Sapozhnikov M.V., Tatarskiy D.A, V.Yu. Mikhailovskii, Yu. V. Petrov.** Helium ion beam engineering of magnetic nanostructures.
10. **E.V. Kalinina, I.P. Nikitina, E.V. Ivanova, V.V. Kozlovski, V.V. Zabrodski, A.A. Lebedev.** Influence of proton irradiation on properties of 4H-SiC photodetectors with Schottky barrier.
11. **S.V. Konstantinov, F.F. Komarov, V.E. Strel'nitskiy.** Effects of flaking and nitrogen selective sputtering of nanostructured coating TiAlN, TiAlYN, TiCrN, (TiHfZrVNb)N under helium ion irradiation.
12. **G.V. Kornich, E.V. Duda.** Simulation of vacancy diffusion in metal by methods of accelerated molecular dynamics.
13. **A.I. Mikhalev, O.K. Alekseeva, B.L. Shapir, V.N. Fateev, I.V. Pushkareva.** Modification of nanocarbon carries with nitrogen. Preparation and investigation.
14. **S.A. Miskiewicz, F.F. Komarov, A.F. Komarov, V.N. Yuvchenko, G.M. Zayats, A.A. Tsivako, V.A. Bozhatkin.** Effect of ionizing radiation on the characteristics of semiconductor devices: simulation and experiment.
15. **E.V. Okulich, V.I. Okulich, D.I. Tetelbaum, A.N. Mikhaylov.** Modeling the effect of vacancy-type defects on the structure of amorphous silicon dioxide.

16. **Yu.V. Petrov, E.A. Grigoryev, T.V. Sharov, A.P. Baraban.** Helium ion irradiation for the fabrication of nanostructures by means of wet etching.
17. **S.S. Popova, I.I. Frolova, H.A. Hussein.** The influence of nanostructuring processes in aqueous phosphate-molybdate solutions of chitosan on the morphology of the surface of a titanium cathode.
18. **I.V. Puzynin, T.P. Puzynina, I.G. Hristov, R.D. Hristova, Z.K. Tukhliev, Z.A. Sharipov.** Molecular dynamic simulation of interacting processes of impulse ion beams with metals.
19. **A. M. Rasulov, N. I. Ibroximov, I.A. Juraev.** The growth of thin films at the deposition of metal clusters on the surface of crystals by computer simulation.
20. **R.Kh. Saydakhmedov, K.K. Kadirbekova, G.R. Saidakhmedova.** Nanostructural coatings based on chrome modified by PVD methods.
21. **R.V. Selyukov, V.V. Naumov, M.O. Izyumov, L.A. Mazaletskiy.** Microstructure dependent influence of ion-plasma treatment on PT film texture.
22. **V.I. Shymanski, V.S. Pigasova, V.V. Uglov, N.N. Cherenda, V.M. Astashynski, A.M. Kuzmitski, H.W. Zhong, S.J. Zhang, X.Y. Le.** Surface erosion of tungsten alloys treated by compression plasma flows and high-intense pulsed ion beams.
23. **N.A. Smolanov.** Dusty fractal aggregates from arc discharge plasma: production and properties.
24. **T.T. Thabethe, T.T. Hlatshwayo, V.A. Skuratov, J.B. Malherbe.** Structural Modification of W, Pd and Ti films deposited on Silicon carbide substrate induced by swift heavy ions irradiation.
25. **O.A. Tomilina, V.N. Berzhansky, S.V. Tomilin.** Electrophysical and optical properties of ultrathin metallic films at percolation transition.
26. **I.A. Zavidovskiy, O.A. Streletskiy, O.Yu. Nischak.** Size control of silver nanoclusters during ion-assisted deposition of carbon-silver composite thin films.

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Section 6. Plasma-surface interaction - physics and technology

1. **V.K. Abgaryan, K.I. Kruglov, A.Yu. Kupreeeva.** Ion-electron recombination and heat fluxes in high-frequency ion sources.
2. **V.P. Afanas'ev, A.S. Gryazev, P.S. Kaplya, O.Yu. Ridzel, M. Köppen.** Analysis of XPS and REELS spectra of beryllium.
3. **I.I. Amirov, R.V. Selyukov, V.V. Naumov.** Effect of ion-plasma and vacuum annealing on electrical resistance of thin cobalt films.
4. **U.S. Andropova, E.N. Voronina, A.V. Kononenko, L.S. Novikov, O.A. Serenko, V.N. Chernik.** Durability of polyimide-based metalloalkoxysiloxane nanocomposites to atomic oxygen impact.
5. **V.N. Arustamov, K.B. Ashurov, I.Kh. Khudaykulov.** To the question of realization of the vacuum electric arc with the distributed cathode spot.

6. **V.N.Arustamov, K.B.Ashurov, I.Kh.Khudaykulov, B. R Kakhramonov.** Effect of vacuum arc plasma on pipe inner surface in coaxial electrode system.
7. **V.N.Arustamov, K.B.Ashurov, I.Kh.Khudaykulov B. R Kakhramonov.** Critical parameters of vacuum arc anode voltage drop in interaction of plasma with a surface.
8. **V.N.Arustamov, K.B.Ashurov, I.Kh. Khudaykulov, B.R Kakhramonov.** Plasma flow generation by vacuum arc and deposition of coatings in the conditions of inno-immensional impact on the surface.
9. **Yu.V. Borisjuk, N.M. Mikhailitsyna, V.E. Drobinin, M.M. Berdnikova, and A.A. Pisarev.** Nitriding steel 30CrMnSi and 30Ni2CrMoV in abnormal glow discharge.
10. **E.R. Burmistrov.** Electrode surface modification in vacuum tube by spontaneously formed low dimensional structure.
11. **N.N. Cherenda, V.V. Uglov, V.I. Shymanski, V.M. Astashynski, A.M. Kuzmitski.** Structure and phase composition of anodic aluminum oxide surface layer treated by compression plasma flows.
12. **D.V. Danilyuk, M.M. Kharkov, A.V. Kaziev, M.S. Kukushkina.** Development of titanium surface topography under argon ions from the plasma of the RFI discharge.
13. **Yu.N. Devyatko, B.V.Ivanov, A.s.Anikin, A.N.Bukin, Ya.V. Sergeecheva, I.G.Lesina, N.S.Saburov, O.V. Khomyakov.** Determination of hydrogen diffusion coefficient in zirconium alloys by means of radioluminography.
14. **F.A. Doronin, M.A. Saveliev, O.V. Lazareva, A.G. Evdokimov, N.A. Kiy, V.G. Nazarov.** Plasma-chemical surface treatment of polymeric films, using in printing and packaging industry.
15. **A.E. Evsin, L.B. Begrambekov, A.V. Grunin, A.S. Drozd, V.A. Kurnaev, Ya.A. Sadovskiy, I.A. Sorokin, A.V. Gavrikov, A.O. Serov, V.P. Smirnov.** Features of ceria reduction under thermal and plasma impact.
16. **G.P. Gololobov, A.N. Vlasov, M.V. Dubkov, M.A. Burobin, D.V. Suvorov, E.V. Slivkin, M.A. Serpova.** Effect of phase shift pulse of external magnetic field at coating deposition by electric explosion.
17. **D.V. Grankin, A.I. Bazhin, V.P. Grankin.** Generation of electronic excitations in a crystal in the acts of chemical interaction of atoms from plasma on the surface.
18. **A.I. Kamardin, B.D.Igamov, T.S.Kamilov, T.D.Radjabov.** Ion-plasma deposition of coatings of silicide manganese for temperature detectors.
19. **O.Komleva, D.Fominski, V.Nevolin, V.Fominski.** Adjustments of laser plasma propagation and deposition for preparation of effective thin-film MoS_x catalysts for hydrogen evolution.
20. **N.G. Korobeishchikov, I.V. Nikolaev, M.A. Roenko.** Surface polishing of a KTP single crystals by argon cluster ions.
21. **V.I. Kristya, Myo Thi Ha.** Modeling of the effect of thin insulating film on the cathode surface on the voltage-current characteristic of low-current gas discharge.
22. **A.I. Kudyukin, M.N. Makhmudov, E.N. Moos, VA. Stepanov.** Erosion of vacuum interrupter electrodes.

23. **D.S. Meluzova, P.Yu. Babenko, M.I. Mironov, V.S. Mikhailov, A.P. Shergin, A.N. Zinoviev.** Projected energy losses of hydrogen isotopes bombarding Be, C and W surfaces.
24. **E.N. Moos, I.F. Zeltser.** Electrode nanostructuring in nitrogen plasma.
25. **S.V. Nikolin, S.S. Volkov, T.I. Kitaeva.** Electric arc discharger reusable.
26. **T.D. Radjabov, Sh.U. Pulatov, A.I. Kamardin.** Action of oxygen plasma on vacuum coatings from resistance alloys.
27. **T.D. Radjabov, A.M. Nazarov, S.V. Koveshnikov, M.M.Khasanov, B.H.Ochilov.** Application of "spiral" electrode systems to improve the stability of the γ -form of HF-frequency capacitive discharge.
28. **A.I. Saifutdinov, B.A. Timerkaev.** Modeling of transition modes in DC micro discharges.
29. **A.A.Simonov, K.E.Vasilkovskiy.** Vacuum coatings of electrodes for ozone generator on corona discharge.
30. **A.Soloviev, R.Romanov, V.Fominski.** Structure and properties of B-C films obtained under conditions of standard and shadow-mask deposition of pulsed laser plasma.
31. **Z.A. Zackletskii, V.P. Budaev, S.D. Fedorovich.** Study of the thermal electron emission of the cathode having the nanostructured «fuzz» tungsten surface.