MSN-2025 program

August 24, Sunday

Time zone: GMT+5 (Moscow time +2 hours)

Youth Conference
"Functional Imaging of Nanomaterials"

11.00-17.00	*Registration, Kuibysheva str. 48, 7th floor*
10.00-12.00	*Visit to Ural Center for Shared Use "Modern Nanotechnology" UrFU, Kuibysheva str. 48, 2nd floor*
13.00	**L1. Vladimir Shur,** *Ural Federal University, Ekaterinburg, Russia* Light-only domain switching in ferroelectrics
13.40	**L2. Aleksandr Kuntsevich**, *Higher School of Economics, Moscow, Russia* Ferroelectricity in the world of 2D materials
14.20	*Tea break*
14.40	**L3. Aleksey Volegov**, *Ural Federal University, Ekaterinburg, Russia* Magnetic functional materials produced by selective laser melting
15.20	**L4. Iurii Zhukov**, *Exiton Analytic Ltd., Saint-Petersburg, Russia* X-ray photoelectron spectroscopy: surface study
16.15-18.00	*Excursion*
19.00-21.00	*Welcome party* *Onegin restaurant, Rozy Luxemburg str. 49, 15th floor*

August 25, Monday

Time zone: GMT+5 (Moscow time +2 hours)

08.30	***Registration, Kuibysheva str. 48, 7th floor***
09.00	*Opening, Kuibysheva str. 48, 7th floor*
	Session 1. Application of ferroic materials I **Chair: Sergey Lushnikov**
09.15	**I1. Vladimir Shur**, *Ural Federal University, Ekaterinburg, Russia* Achievements and development prospects of nanodomain engineering in ferroelectrics
09.40	**I2. Anastasia Chouprik**, *Moscow Institute of Physics and Technology, Dolgoprudny, Russia* Demonstration of ferroelectric $Hf_{0.5}Zr_{0.5}O_2$-based 1T-1C FeFET integrated with 350 nm CMOS technology
10.05	**O1. Sergei Mikushev**, *St. Petersburg State University, St. Petersburg, Russia* Quantum dots in nanowires for sources of non-classical light
10.20	**O2. Fedor Fadeyev**, *Institute of Medical Cell Technologies, Ekaterinburg, Russia* Superparamagnetic γ-Fe_2O_3 nanoparticles influence the differentiation of dendritic cells from human blood monocytes
10.35	**O3. Victoria Pryakhina**, *Ural Federal University, Ekaterinburg, Russia* Laser hyperdoping of silicon by transition metals for enhanced NIR absorption
10.50	*Tea break*
	Session 2. Application of ferroic materials II **Chair: Anastasia Chouprik**
11.05 online	**I3. Vladimir Pavelyev**, *Samara University, Samara, Russia* Functional micro- and nanostructures for photonics of optical and terahertz ranges
11.30	**O4. Pavel Pankratiev**, *Ioffe Institute, Saint-Petersburg, Russia* Application and tuning of high-temperature $BiScO_3$-$PbTiO_3$ piezoceramics for ITER
11.45	**O5. Min Sun**, *Xi'an Jiaotong University, Xi'an, China* Application of energy-conversion functional crystal fibers
12.00 online	**I4. Pavel Zelenovskiy**, *University of Aveiro, Aveiro, Portugal* 1D and 2D peptide nanostructures for green energy harvesting and storage

12.25	**O6. Evgeny Lisov**, *Ostec, Moscow, Russia* New high resolution scanning electron microscope from Nanometric and Ostec
12.40	*Group photo and lunch* *Onegin restaurant, Rozy Luxemburg str. 49, 15th floor*
	Session 3. Fundamentals of ferroelectric and magnetic materials I **Chair: Vladimir Shur**
14.00	**I5. Sergey Lushnikov**, *Ioffe Institute, St.-Petersurg, Russia* Raman scattering in relaxor ferroelectrics with phase charge separation
14.25	**I6. Elena Mishina**, *MIREA - Russian Technological University, Moscow, Russia* The influence of depolarizing field on the polarization modulation in ferroelectric by terahertz pulse
14.50 online	**I7. Leonid Korotkov**, *Voronezh State Technical University, Voronezh, Russia* Dielectric relaxation in some ferroelectrics with diffuse phase transition
15.15	**O7. Vera Shikhova**, *Ural Federal University, Ekaterinburg, Russia* Influence of humidity on the domain evolution during local switching in strontium-barium niobate single crystals
15.30	*Tea break*
	Session 4. Fundamentals of ferroelectric and magnetic materials II **Chair: Elena Mishina**
15.45 online	**I8. Petr Yudin**, *Institute of Physics CAS, Prague, Czech Republic* Optically charged ferroelectric domain walls
16.10 online	**I9. Semyon Gorfman**, *Tel Aviv University, Tel Aviv, Israel* Twinning relationships in coexisting cubic and tetragonal phases of ferroelectrics
16.35	**O8. Yuri Vysokikh**, *MTEON, Moscow, Russia* Analytical and technological equipment for research and small-scale production
16.50 - 17.40	**Short oral talks** **Chair: Andrei Akhmatkhanov**
17.45 - 19.00	**Poster session**, Kuibysheva str. 48, 5th floor
19.00	*End of sessions*

August 26, Tuesday

Time zone: GMT+5 (Moscow time +2 hours)

	Session 5. Characterization of micro- and nano-materials **Chair: Alexei Pugachev**
09.00	**I10. Alexander Ankudinov**, *Ioffe Institute, Saint-Petersburg, Russia* Study of electric charge quantization of Au nanoparticles using Kelvin Probe Force Microscopy
09.25	**O9. Evgenii Alexandrov**, *Bauman Moscow State Technical University, Moscow, Russia* Application of ferroelectric metal-organic frameworks in adsorption technologies
09.40	**O10. Adeliya Garaeva**, *Kazan Federal University, Kazan, Russia* Study of ^{3}He nuclear relaxation in contact with PrF_3 nanoscale powders
09.55 online	**O11. Elena Sergienko**, *St. Petersburg University, St. Petersburg, Russia* Magnetic properties of Fe, Ni-doped TiO_2 layers formed on titanium by plasma-electrolytic oxidation: experiment and theoretical modeling
10.10 online	**I11. Dmitry Pelegov**, *Technion Israel Institute of Technology, Haifa, Israel* Mapping local structural and charge inhomogeneities in ferroelectric thin-film hafnia using 4D Transmission Electron Microscopy
10.35	*Tea break*
	Session 6. Micro- and nano-domain engineering **Chair: Oleksandr Ivasenko**
10.50 online	**I12. Nail Inogamov**, *Landau Institute for Theoretical Physics RAS, Moscow, Russia* A hybrid of photonics and optoacoustics in the visible part of the spectrum
11.15	**I13. Andrei Akhmatkhanov**, *Ural Federal University, Ekaterinburg, Russia* Forward growth of ferroelectric domains created by femtosecond laser irradiation in lithium niobate single crystals
11.40	**O12. Boris Sturman**, *Institute of Automation and Electromretry of RAS, Novisibirsk, Russia* Charge compensation model for the lateral expansion of ferroelectric domains during polarization reversal by force-microscope tips
11.55	**I14. Andrei Ushakov**, *Ural Federal University, Ekaterinburg, Russia* Fabrication of electrooptic deflectors and modulators based on domain engineered ferroelectrics

12.20	**O13. Stanislav Shandarov**, *Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia* Regular domain structures with the symmetrically twisted walls in 5% MgO:$LiNbO_3$
12.35	**O14. Anton Turygin**, *Ural Federal University, Ekaterinburg, Russia* Kinetics of domain structure in layered bismuth titanate $Bi_4Ti_3O_{12}$ single crystals
12.50	*Lunch* *Onegin restaurant, Rozy Luxemburg str. 49, 15th floor*
	Session 7. Ceramics and thin films I **Chair: Alexander Krylov**
14.00	**I15. Alexey Pugachev**, *Institute of automation and electrometry RAS, Novosibirsk, Russia* Spectroscopic investigations of dipole moment in $BaSrTiO_3$ thin films
14.25	**I16. Oleksandr Ivasenko**, *FUNSOM, Soochow University, Suzhou, China* Custom functionalization of monolayers and ultrathin films
14.50	**I17. Li Jin**, *Xi'an Jiaotong University, Xi'an, China* Advanced design and polarization regulation strategies in relaxor ferroelectric ceramics for enhanced energy storage performance
15.15	**O15. Larisa Fedorova**, *St. Petersburg Electrotechnical University "LETI", St. Petersburg, Russia* Shungite as a strengthening component of the thin polarizing polymer films
15.30	**O16. Elizaveta Kalika**, *Moscow Institute of Physics and Technology, Moscow, Russia* Polarization loss in partially switched thin ferroelectric films
15.45	**O17. Arseniy Kiryakov**, *Institute of Solid State Chemistry UB RAS, Ekaterinburg, Russia* Transparent $MgAl_2O_4$ nanoceramics with carbon quantum dots
16.00	*Tea break*
	Session 8. Ceramics and thin films II **Chair: Jin Li**
16.15	**O18. Gang Liu**, *Southwest University, Chongqing, China* Excellent dielectric energy storage properties of Pb-free BNT-based ceramic achieved via phase structure modification
16.30	**O19. Vladislav Yakushev**, *MIREA, Moscow, Russia* Control of mesoporous structure of PZT films prepared via self-assembly techniques

16.45 online	**I18. José Antonio Eiras**, *São Carlos Federal University, São Carlos, Brazil* Energy storage performance and bandgap tuning in $BaTiO_3$ and $Bi_4Ti_3O_{12}$ based ceramics
17.10 online	**I19. Eudes Araujo**, *São Paulo State University, Ilha Solteira, Brazil* Improving the stability of halide perovskites by mixed cation substitutions
17.35	**O20. Viktor Bykov**, *XYLLECT LLC, Moscow, Russia* Scanning Probe Microscopy today – from micro and nanoelectronics to molecular biology and medicine
17.50	*End of sessions*
19.00	*Banquet* *Onegin restaurant, Rozy Luxemburg str. 49, 15th floor*

August 27, Wednesday

Time zone: GMT+5 (Moscow time +2 hours)

	Session 9. Multiferroic and magnetic materials **Chair: Ilya Shnaidshtein**
09.00	**I20. Zukhra Gareeva**, *Institute of Molecule and Crystal Physics, Ufa, Russia* Magnetogalvanic effects in metallic tetragonal antiferromagnets
09.25	**I21. Alexander Krylov**, *Kirensky Institute of Physics SB RAS, Krasnoyarsk, Russia* Raman spectroscopy to study magnetic transitions in borate crystals
09.50	**I22. Roman Yusupov**, *Kazan Federal University, Kazan, Russia* Long-lived photoinduced nonthermal coercivity reduction of $L1_0$-FePt and FePtRh epitaxial thin films
10.15	**O21. Semyon Baidak**, *M.N. Mikheev Institute of Metal Physics UB RAS, Ekaterinburg, Russia* Novel half-metallic ferromagnet Gd_4Sb_3 with anomalous properties
10.30 online	**O22. Evgenii Chernov**, *M.N. Mikheev Institute of Metal Physics, UB RAS, Ekaterinburg, Russia* Topological spin semimetal band structure of $Co_{1.5}Mn_{1.5}Al$ compound
10.45	**O23. Kamil Gareev**, *Saint Petersburg Electrotechnical University "LETI", Saint Petersburg, Russia* Hysteresis characteristics and frequency-field dependencies of magnetic susceptibility for Fe75Ga25 alloy
11.00	**O24. Sergey Pamyatnykh**, *Ural Federal University, Ekaterinburg, Russia* Oscillations and drift of domain walls in iron garnet plates in harmonic magnetic field
11.15	*Tea break*
	Session 10. Fundamentals of ferroelectric and magnetic materials III **Chair: Zukhra Gareeva**
11.30	**I23. Ilya Shnaidshtein**, *Moscow State University, Moscow, Russia* Specific heat behavior in real ferroelectric crystals
11.55	**I24. Alexander Vtyurin**, *Kirensky Institute of Physics, SB RAS, Krasnoyarsk, Russia* Disorder effects and line shapes in Raman spectra of multiferroic crystals
12.20	**O25. Svetlana Krylova**, *Kirensky Institute of Physics FRC KSC SB RAS, Krasnoyarsk, Russia* Optical properties of the tetraborate family crystals: DFT simulations

12.35	**O26. Vitaly Demin**, *Perm State National Research University, Perm, Russia* On the nature of transport phenomena during proton exchange technological process
12.50	*Lunch* *Onegin restaurant, Rozy Luxemburg str. 49, 15th floor*
	Session 11. Fundamentals of ferroelectric and magnetic materials IV **Chair: Alexander Vtyurin**
14.00	**O27. Evgeny Savelyev**, *Ural Federal University, Ekaterinburg, Russia* Reflection of the stripe domains during polarization reversal process in lithium niobate crystal modified by soft proton exchange
14.15	**O28. Nikita Derets**, *Ioffe Institute, Saint Petersburg, Russia* Raman scattering study of phase transformations in $PbCo_{1/3}Nb_{2/3}O_3$ relaxor ferroelectrics
14.30 online	**O29. Hemaprabha**, *Indian Institute of Technology Madras, Chennai, India* Are oxygen vacancies driving ferroelectric domain repeatability?
14.45	**O30. Alla Lebedinskaya**, *Southern Federal University, Rostov on Don, Russia* Modeling of cation disorder and distribution of anion vacancies in non-stoichiometric solid solutions based on lead magnoniobate
15.00	**O31. Vladimir Bystrov**, *Institute of Mathematical Problems of Biology, RAS, Pushchino, Russia* Features of synthetic hydroxyapatite with substitution of calcium cations by magnetic manganese and iron ions
15.15	**Vladimir Shur**, Chinese tea
15.40	*Closing*

Short oral talks, August 25

SO1/P3. **Vladislav Umylin**, *NUST MISIS, Moscow, Russia*
Features of the conduct of near-electrode processes in lithium niobate crystals $LiNbO_3$ with different domain structures

SO2/P12. **Elena Abramova**, *Ural Federal University, Ekaterinburg, Russia*
Formation of self-organized domain pattern in polydomain near-stoichiometric lithium tantalate crystals by electron beam irradiation

SO3/P13. **Antonina Bayankina**, *Ural Federal University, Ekaterinburg, Russia*
Hatched domain walls in potassium titanyl phosphate crystals

SO4/P16. **Ilya Kipenko**, *Ural Federal University, Ekaterinburg, Russia*
Motion of fast and superfast domain walls during polarization reversal in crystals of lithium niobate family

SO5/P17. **Semyon Melnikov**, *Ural Federal University, Ekaterinburg, Russia*
Dynamics of the charge injected by SPM tip into ferroelectric

SO6/P20. **Vladimir Yuzhakov**, *Ural Federal University, Ekaterinburg, Russia*
Evolution of as-grown domain structure in calcium orthovanadate crystals

SO7/P29. **Sergey Ilyev**, *Moscow Institute of Physics and Technology, Dolgoprudny, Russia*
Effect of top electrode grain size on the remanent polarization of ferroelectric capacitors

SO8/P30. **Anelya Kadikova**, *Institute of Physics, Kazan Federal University, Kazan, Russia*
Magnetic inhomogeneities in Fe_3Al epitaxial thin films probed by FMR and time-resolved magnetooptics

SO9/P32. **Artyom Shcherbakov**, *Moscow Institute of Physics and Technology, Dolgoprudny, Russia*
Time dependence of coercive voltages of FeRAM cell based on $Hf_{0.5}Zr_{0.5}O_2$

SO10/P38. **Dmitry Masalkin**, *Perm State University, Perm, Russia*
Oxygen plasma surface-activated lithium niobate for controlling protons diffusion rate

Poster session, August 25

Section 1. Fundamentals of ferroelectric and magnetic materials

P1. Yury Panov, *Ural Federal University, Ekaterinburg, Russia*
Pseudo-transitions in one-dimensional anisotropic spin models

P2. Nikita Solovyev, *Ural Federal University, Ekaterinburg, Russia*
First-principles study of magnetic and half-metallic properties of $Mn_2Co_{1-x}Ni_xSn$ alloys with spin polarization

P3. Vladislav Umylin, *NUST MISIS, Moscow, Russia*
Features of the conduct of near-electrode processes in lithium niobate crystals $LiNbO_3$ with different domain structures

P4. Evgeny Rumyantsev, *Ural Federal University, Ekaterinburg, Russia*
Phenomenological theory of a single domain wall in lithium niobate and lithium tantalate

Section 2. Characterization of micro- and nano-materials

P5. Evgenii Buntov, *Ural Federal University, Ekaterinburg, Russia*
Raman identification of rare earth oxide phases in high-entropy ceramics: DFT approach

P6. Ivan Yatsyk, *Zavoisky Physical-Technical Institute, Kazan, Russia*
Magnetic properties of $Ca_{0.3}Sr_{0.3}La_{0.3}Mn_{0.5}Ti_{0.5}O_3$

P7. Elena Pelegova, *Tel Aviv University, Tel Aviv, Israel*
Investigation of phase transitions in PMN-PT using Birefringence Microscopy

P8. Gregory Shnaidshtein, *Tver State University, Tver, Russia*
Features of pyroelectric and dielectric properties of PVDF-based composites obtained by crystallization in a corona discharge field

P9. Daria Tkachuk, *Ural Federal University, Ekaterinburg, Russia*
Obtaining of hyperdoped Si surface layer via pulsed laser melting

P10. Polina Paletskikh, *Ural Federal University, Ekaterinburg, Russia*
Visible-blind near-infrared photodiode based on hyperdoped silicon

P11. Daria Shivarova, *Ural Federal University, Ekaterinburg, Russia*
Investigation of capillary rise on the aluminum substrates structured by nanosecond laser irradiation

Section 3. Micro- and nano-domain engineering

P12. Elena Abramova, *Ural Federal University, Ekaterinburg, Russia*
Formation of self-organized domain pattern in polydomain near-stoichiometric lithium tantalate crystals by electron beam irradiation

P13. Antonina Bayankina, *Ural Federal University, Ekaterinburg, Russia*
Hatched domain walls in potassium titanyl phosphate crystals

P14. Kirill Brekhov, *MIREA - Russian Technological University, Moscow, Russia*
Ferroelectric polarization switching by a strong THz field in $BaTiO_3$ crystal

P15. Maria Chuvakova, *Ural Federal University, Ekaterinburg, Russia*
Domain kinetics and periodical poling in single crystals of potassium titanyl-phosphate family for light frequency conversion

P16. Ilya Kipenko, *Ural Federal University, Ekaterinburg, Russia*
Motion of fast and superfast domain walls during polarization reversal in crystals of lithium niobate family

P17. Semyon Melnikov, *Ural Federal University, Ekaterinburg, Russia*
Dynamics of the charge injected by SPM tip into ferroelectric

P18. Anton Turygin, *Ural Federal University, Ekaterinburg, Russia*
Creation of the cogged charged domain wall by local switching in lithium niobate

P19. Vladimir Vasipullin, *Ural Federal University, Ekaterinburg, Russia*
Surface charge dynamics at the non-polar cut of lithium niobate

P20. Vladimir Yuzhakov, *Ural Federal University, Ekaterinburg, Russia*
Evolution of as-grown domain structure in calcium orthovanadate crystals

Section 4. Multiferroic and magnetic materials

P21. Nariman Alikhanov, *Dagestan State University, Makhachkala, Russia*
Effect of Gd substitution on the structure, dielectric and magnetic properties of $BiFeO_3$

P22. Yuliya Perevozchikova, *M. N. Mikheev Institute of Metal Physics UB RAS, Ekaterinburg, Russia*
Comparison of electron transport properties of bulk and rapid melt quenched $(Cu_{1-x}Co_x)_2MnAl$ $(0 \leq x \leq 1)$ Heusler alloys

P23. Sergey Platonov, *M. N. Mikheev Institute of Metal Physics UB RAS, Ekaterinburg, Russia*
Enhancement of the magnetocaloric effect in the room temperature region in alloys of the GdTSi type

Section 5. Ceramics and thin films

P24. Sfaih Rahim Al-Saedi, *Volgograd State Technical University, Volgograd, Russia*
Dielectric and acoustic response of KNN-based ceramics with $BaTiO_3$ additive

P25. Sfaih Rahim Al-Saedi, *Volgograd State Technical University, Volgograd, Russia*
Effect of barium titanate addition on the photoelectric response of KNN-based ceramics

P26. Siarhei Baraishuk, *Belarusian State Agrarian Technical University, Minsk, Belarus*
Control of wettability of contacts of sensor elements obtained by deposition of Mo by the SAID method

P27. Anastasia Chouprik, *Moscow Institute of Physics and Technology, Dolgoprudny, Russia*
Electromechanical effects in freestanding piezoelectric membranes

P28. Roman Dikov, *Volgograd State Technical University, Volgograd, Russia*
Influence of prehistory on the character of reversing dielectric permittivity in cobalt-containing ferroelectric ceramics $(1-x)Ba_{0.95}Pb_{0.05}TiO_3 + xCo_2O_3$

P29. Sergey Ilyev, *Moscow Institute of Physics and Technology, Dolgoprudny, Russia*
Effect of top electrode grain size on the remanent polarization of ferroelectric capacitors

P30. Anelya Kadikova, *Institute of Physics, Kazan Federal University, Kazan, Russia*
Magnetic inhomogeneities in Fe_3Al epitaxial thin films probed by FMR and time-resolved magnetooptics

P31. Alexey Pugachev, *Institute of Automation and Electrometry RAS, Novosibirsk, Russia*
The abnormally high thermoelectric response in thin-film structures based on Strontium-Barium Niobate

P32. Artyom Shcherbakov, *Moscow Institute of Physics and Technology, Dolgoprudny, Russia*
Time dependence of coercive voltages of FeRAM cell based on $Hf_{0.5}Zr_{0.5}O_2$

P33. Vladimir Yuzhakov, *Ural Federal University, Ekaterinburg, Russia*
Micro-structure and polarization reversal in PVDF-TrFE films

P34. Tarek Soliman, *Benha University, Benha, Egypt*
Effect of Er_2O_3 ceramic nanoparticles on the optical properties of PVDF membranes

P35. Vladislav Yakushev, *MIREA - Russian Technological University, Moscow, Russia*
Properties of annealed Ni thin films prepared by atomic layer deposition

Section 6. Bioinspired materials

P36. Vladimir Bystrov, *Institute of Mathematical Problems of Biology RAS, Pushchino, Russia*
Diphenylalanine peptide nanotubes for bio-based optical and photonic applications

Section 7. Application of ferroic materials

P37. Igor Petukhov, *Perm State University, Perm, Russia*
Effect of oxygen plasma pretreatment on surface properties of lithium niobate and the proton exchange process

P38. Dmitry Masalkin, *Perm State University, Perm, Russia*
Oxygen plasma surface-activated lithium niobate for controlling protons diffusion rate

P39. Evgeny Greshnyakov, *Ural Federal University, Ekaterinburg, Russia*
Perovskite films in solar cells