

MODERN DEVELOPMENT OF MAGNETIC RESONANCE

program

2022

KAZAN * RUSSIA





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MODERN DEVELOPMENT OF MAGNETIC RESONANCE

PROGRAM OF THE
INTERNATIONAL CONFERENCE
AND WORKSHOP
"SENSING AND QUANTUM INFORMATION
IN FLUORISCENT NANOMATERIALS"

KAZAN, OCTOBER 3–7, 2022

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CONFERENCE LOCATION

Academy of Sciences of the Republic of Tatarstan (Kazan, Bauman Str. 20);
Zavoisky Physical-Technical Institute – Subdivision of the Federal Research Center “Kazan Scientific Center of Russian Academy of Sciences” (Kazan, Sibirsky trakt 10/7)

TIME SCHEDULE

MONDAY, October 3rd, 2022

*Academy of Sciences of the Republic of Tatarstan (Kazan, ul. Bau-
mana, 20)*

- 9:00–14:00 Registration
- 11:00–13:00 Excursion
- 13:00–14:00 Lunch
- 14:00 Zavoisky Award 2022 Ceremony
- 14:50 Zavoisky Award 2022 Lecture
- 15:30 Coffee Break
- 16:00 Opening of the Conference
- 16:05 Plenary Session
- 17:30 Welcome Party

TUESDAY, October 4th, 2022

*Zavoisky Physical-Technical Institute, FRC Kazan Scientific Center
of RAS (Kazan, Sibirsky trakt, 10/7)*

- 9:00–9:40 Plenary Lecture
- 9:40–11:30 Session: Theory of Magnetic Resonance
- 9:40–11:30 Session: Fullerenes and Fullerene-Based Materials
- 11:30–11:50 Coffee Break
- 11:50–12:50 Session: Chemical and Biological Systems
- 11:50–13:00 Session: Spin-Based Information Processing
- 13:00–13:10 Conference photo, in front Zavoisky Physical-Technical Institute
- 13:00–14:30 Lunch
- 14:30–15:10 Plenary Lecture
- 15:10–16:30 Session: New Trends in Spin Chemistry
- 15:10–16:30 Session: Modern Methods of Magnetic Resonance
- 16:30–16:50 Coffee Break
- 16:50–17:30 Plenary Lecture
- 17:30–18:20 Session: Chemical and Biological Systems
- 18:30–19:30 Round Table: Discussion “What is spin chemistry about?”
- 16:50–18:00 Workshop “Sensing and quantum information in fluorescent nanomaterials”

WEDNESDAY, October 5th, 2022

- 9:00–9:40 Plenary Lecture
9:40–11:10 Session: Low-Dimensional Systems and Nano-Systems
9:40–10:50 Session: Strongly Correlated Electron Systems
11:10–11:30 Coffee Break
11:30–13:00 Session: Low-Dimensional Systems and Nano-Systems
13:00–14:30 Lunch
14:30–15:50 Sessions: Low-dimensional Systems and Nano-Systems and Perspectives of Magnetic Resonance in Science and Spin Technology
16:00–16:30 Coffee Break
16:30–18:30 Poster Session

THURSDAY, October 6th, 2022

- 9:00–9:40 Plenary Lecture
9:40–11:10 Session: Magnetic resonance instrumentation
11:10–11:20 Coffee Break
11:20–13:00 Session: Electron Spin Based Methods for Electronic and Spatial Structure Determination in Physics, Chemistry and Biology
13:00–14:30 Lunch
14:30–15:10 Plenary Lecture
15:10–18:20 Session: Chemical and Biological Systems
14:30–15:50 Workshop “Sensing and quantum information in fluorescent nanomaterials”

FRIDAY, October 7th, 2022

- 9:00–9:40 Plenary Lecture
9:40–11:40 Session: Other Applications of Magnetic Resonance
11:40–12:00 Coffee Break
12:00 Closing of the Conference

SCIENTIFIC PROGRAM

MONDAY, October 3rd, 2022

- 14:00 Zavoisky Award Ceremony
14:50 Zavoisky Award 2022 Lecture
S. Subramanian: The development of in vivo FT-EPR imaging at 300 MHz: Applications in cancer research
15:30 Coffee Break
16:00 Opening of the Conference

Plenary Session

Chair: S.M. Khantimerov

- 16:05 *A.F. Vanin*: Research into dinitrosyl iron complexes in living organisms through EPR as an example of applying this method in biology
16:45 *B. Hoffman*: How nature fertilizes the earth: Nitrogenase mechanism, and the roles of FeMo-cofactor CFe₆ core and “capping” Mo and Fe ions
17:30 Welcome Party

TUESDAY, October 4th, 2022

Zavoisky Physical-Technical Institute, FRC Kazan Scientific Center of RAS (Kazan, Sibirsky trakt, 10/7)

Hall A

Chair: S.A. Dzuba

Plenary Lecture

- 9:00 *H. Ohta, S. Okubo, E. Ohmichi, T. Sakurai, H. Takahashi, S. Hara*: New developments in multi-extreme THz ESR

Hall A

Chair: A.I. Smirnov

Session: Theory of Magnetic Resonance

Invited Talks

- 9:40 *T. Yamane, K. Sugisaki, K. Sato, K. Toyota, D. Shiomi, T. Takui*: Bridging the gap between fictitious spin-1/2 and

true spin Hamiltonian approaches for spin quartet states with sizable ZFS tensors

10:10 *A.G. Maryasov, M.K. Bowman*: Bloch-Siegert effect in anisotropic paramagnetic centers with effective spin of 1/2

10:40 *I.I. Geru*: A possible manifestation of superabsorption in EPR spectroscopy

Oral Talk

11:10 *V.E. Zobov, A.A. Lundin*: Multiple-quantum NMR spectral intensity profiles under decoherence effects

Hall B

Chair: R.V. Yusupov

Session: Fullerenes and Fullerene-Based Materials

Invited Talks

9:40 *V. Volkov, I. Avilova, A. Chernyak, P. Troshin*: Self-organization of fullerene derivatives in solutions and biological cells studied by pulsed field gradient NMR

10:10 *Yu.E. Kandrashkin, R.B. Zaripov*: Spin dynamics of endohedral fullerene $\text{Sc}_2@C_{80}(\text{CH}_2\text{Ph})$.

10:40 *R.B. Zaripov, Yu.E. Kandrashkin*: Application of endofullerene $\text{Sc}_2@C_{80}(\text{CH}_2\text{Ph})$ as a spectroscopic ruler

Oral Talk

11:10 *I.T. Khairutdinov, R.B. Zaripov, Yu.E. Kandrashkin*: Study of spin coherence processes of endohedral fullerene $\text{Sc}_2@C_{80}(\text{CH}_2\text{Ph})$

11:30–11:50 Coffee Break

Hall A

Chair: A.A. Sukhanov

Session: Chemical and Biological Systems

Invited Talks

11:50 *M.V. Fedin, A.S. Poryvaev, D.M. Polyukhov, O.A. Krumkacheva*: New applications of MOFs aided by EPR

12:20 *J. Zhao, X. Zhao, A.A. Sukhanov, V.K. Voronkova*: Observation of triplet charge separation state (^3CS) with time-resolved electron paramagnetic resonance spectra in compact electron donor-acceptor dyads

Hall B

Chair: *Yu.G. Kusrayev*

Session: Spin-Based Information Processing

Invited Talk

11:50 *Yu.M. Bunkov, V.I. Belotelov, P.O. Kapralov, G.A. Knyazev, A.N. Kuzmichev, P.E. Petrov, P.M. Vetoshko*: Magneto-optical imaging of coherent spin dynamics

Oral Talks

12:20 *A. Gumarov, I. Yanilkin, I. Golovchanskiy, B. Gabbasov, A. Kiiamov, R. Yusupov, L. Tagirov*: Engineering of exchange spin-waves spectra in ferromagnetic alloys with spatially variable composition

12:40 *I.S. Pichkovskiy, V.E. Zobov*: Clustering into three groups on a quantum processor of five spins $S = 1$, controlled by pulses of resonant RF fields

13:00–14:30 Lunch

Hall A

Chair: *E.A. Konstantinova*

Plenary Lecture

14:30 *K.M. Salikhov*: Current state of the theory of spin chemistry

Session: New Trends in Spin Chemistry

Invited Talks

15:10 *K. Maeda*: Probing coherent spin dynamics in low field regime by transient absorption detected pulsed magnetic field effect

15:40 *D. Stass, E.M. Glebov, R.G. Fedunov, L.V. Kuibida, P.V. Nikul'shin*: New polyfluorinated systems producing X-ray generated exciplexes with magnetosensitive emission due to spin control of recombination

Oral Talk

16:10 *D. Mims, J. Herpich, N.N. Lukzen, U.E. Steiner, Ch. Lambert*: Readout of spin quantum beats in a charge-separated radical pair by pump-push spectroscopy

Hall B*Chair: A.A. Kamashev***Session: Modern Methods of Magnetic Resonance**

Oral Talks

- 15:10 *V.V. Soshenko, S.V. Bolshedvorskii, O.R. Rubinas, I.S. Cojocar, V.N. Sorokin, A.N. Smolyaninov, A.V. Akimov*: Gyroscope based on NV color center in diamond
- 15:30 *I. Kochetkov, V. Davydov, R. Davydov*: Formation of nutation line in powerful non-uniform field in nuclear magnetic measurers with flowing liquid
- 15:50 *M. Davydov, V. Davydov, A. Goldberg, R. Davydov*: Features of longitudinal relaxation time T_1 measuring in condensed media by nuclear magnetic resonance method with using a modulation technique in weak magnetic fields
- 16:10 *S.G. Vasil'ev, G.A. Bochkin, E.B. Fel'dman, D.P. Kiryukhin, P.P. Kushch*: Experimental investigation of free induction decay in zigzag spin chains of hambergite in multiple quantum NMR

16:30–16:50 Coffee Break

Hall A*Chair: Yu.E. Kandrashkin***Plenary Lecture**

- 16:50 *M.K. Bowman, A.G. Maryasov*: Strange forms of magnetic dipole interactions for anisotropic spins

Session: Chemical and Biological Systems

Invited Talk

- 17:30 *S.A. Dzuba, E.A. Golysheva*: Probing small-angle molecular motions with EPR spectroscopy: Dynamical transition and molecular packing in disordered solids

Oral Talk

- 18:00 *Kh.L. Gainutdinov, V.V. Andrianov, A.A. Suhanov, R.B. Zaripov, L.V. Bazan, N.G. Shayakhmetov, M.M. Bakirov, G.G. Yafarova*: Application of EPR spectroscopy to determine the content of nitric oxide in the brain and heart of rats
- 18:30 **Round Table**: Discussion “What is spin chemistry about?”

Hall B*Chair: V.G. Nikiforov***Workshop “Sensing and quantum information in fluorescent nanomaterials”** in the framework of Agreement No. 075-15-2021-623 with the FRC Kazan Scientific Center of RAS

- 16:50 *P. Hemmer*: Opportunities for biosensing with fluorescent diamond and phosphor nanoparticles
- 17:10 *A.V. Leontyev, D.K. Zharkov, A.G. Shmelev, V.G. Nikiforov, V.S. Lobkov, E.O. Mityushkin, M.H. Alkahtani*: Optical magnetometry with home-synthesized fluorescent nanodiamonds
- 17:30 *A.G. Shmelev, D.K. Zharkov, A.V. Leontyev, V.G. Nikiforov, D.N. Petrov, M.F. Krylov, J.E. Clavijo, E.O. Mityushkin, V.S. Lobkov*: YVO₄:Yb, Er UCNP – insight to the nano thermosensor

WEDNESDAY, October 5th, 2022

Hall A*Chair: Yu.N. Proshin***Plenary Lecture**

- 9:00 *S.V. Demishev*: Modified Landau-Lifshitz equation of motion for description of the spin dynamics in strongly correlated materials

Session: Low-Dimensional Systems and Nano-Systems

Invited Talk

- 9:40 *A.I. Smirnov, K.Yu. Povarov, T.A. Soldatov, Ren-Bo Wang, A. Zheludev, O.A. Starykh*: Electron spin resonance of spinon liquid with interaction

Oral Talks

- 10:10 *R.M. Eremina, I.V. Yatsyk, T.I. Chupakhina*: Observation of skyrmions by magnetic resonance method in Sr₂MnTiO₆
- 10:30 *N.A. Chumakova*: Spin probe technique for investigation of inner structure of graphene oxide membranes – possibilities and prospects
- 10:50 *D.A. Saritsky, A.M. Ziatdinov, D.P. Opra, V.V. Zheleznov*: Electron paramagnetic resonance of nanocrystalline titanium dioxide containing manganese and its changes under the influence of ultraviolet irradiation

Hall B*Chair: E.L. Vavilova***Session: Strongly Correlated Electron Systems**

Invited Talk

- 9:40 *V.R. Shaginyan*: Peculiar physics of heavy fermion metals: Theory versus experimental facts

Oral Talks

- 10:10 *V. Sakhin, L. Morgun, V. Pudalov, G. Teitel'baum*: Zeeman coupling in the $\text{Bi}_{1.08}\text{Sn}_{0.02}\text{Sb}_{0.9}\text{Te}_2\text{S}$ topological insulator as revealed from the quantum oscillations
- 10:30 *R.V. Yusupov, M.A. Cherosov, B.F. Gabbasov, K.V. Vasin, R.G. Batulin, A.G. Kiiamov, A.L. Zinnatullin, M.V. Eremin*: Magnetic irreversibilities and nonreciprocity of the microwave absorption of FeCr_2O_4 spinel

11:10–11:30 Coffee Break

Hall A*Chair: L.R. Tagirov***Session: Low-Dimensional Systems and Nano-Systems**

Invited Talk

- 11:30 *E. Kirstein, N.V. Kozyrev, M.M. Afanasiev, V.K. Kalevich, M. Salewski, Yu.G. Kusrayev, E.A. Zhukov, D.R. Yakovlev, M. Bayer*: Short range proximity effect in tunnel-coupled magnetic and nonmagnetic quantum wells

Oral Talks

- 12:00 *D.A. Astvatsaturov, N.A. Chumakova*: EPR investigation of acetonitrile intercalated into the inter-plane space of graphite oxide
- 12:20 *A.B. Drovosekov, N.M. Kreines, A.V. Sitnikov, S.N. Nikolaev, V.V. Rylkov*: Magnetic resonance in metal-insulator nanogranular composites with paramagnetic ions in insulating matrix
- 12:40 *A. Khisameeva, S.A. Lopatina, G.A. Nikolaev, A.V. Shchepetilnikov, I.V. Kukushkin*: Spin and pseudo-spin ferromagnetic phase transitions in the regime of quantum Hall effect

13:00–14:30 Lunch

Hall A*Chair: R.I. Khaibullin***Sessions: Low-Dimensional Systems and Nano-Systems; Perspectives of Magnetic Resonance in Science and Spin Technology**

Oral Talk

- 14:30 *I. Gracheva, M. Sadovnikova, G. Mamin, R. Yusupov, F. Murzakhanov*: Coherent control of optically polarized V_B^- spin sublevels in hBN
- 14:50 *N. Slesarenko, A. Chernyak, V. Volkov*: Peculiarities of the ion transport of water molecules and alkali metal cations in sulfonic cation-exchange membranes studied by NMR
- 15:10 *I. Gracheva, M. Sadovnikova, G. Mamin, F. Murzakhanov*: Electron-nuclear interactions and coherent properties of axial and basal NV centers in $^4\text{H-SiC}$ crystal
- 15:30 *R.A. Babunts, A.S. Gurin, E.V. Edinach, H.-J. Drouhin, V.I. Safarov, P.G. Baranov*: Non-Kramers iron $S = 2$ ions in $\beta\text{-Ga}_2\text{O}_3$ crystals: high-frequency low temperature EPR study

16:00–16:30 **Coffee Break**16:30–18:30 **Poster Session**

THURSDAY, October 6th, 2022

Hall A*Chair: V.F. Tarasov***Plenary Lecture**

- 9:00 *G. Jeschke, S.P. Schmid, M. Agrachev, J. Fischer, A. Ashuiev, D. Klose*: Combining operando CW EPR and pulsed EPR spectroscopy for understanding heterogeneous catalysis

Session: Magnetic Resonance Instrumentation

Invited Talk

- 9:40 *F. Yingying, T. Yulan, Q. Zirui, L. Wenyu, L. Yong, S. Zhifu, Y. Haijun*: Construction and application of dry 6 K ultra-low temperature continuous wave and pulsed EPR

Oral Talk

- 10:10 *I. Mershiey, G. Kupriyanova, S. Wurmehl*: Use of adiabatic pulses for spin-echo experiments in magnetic materials

- 10:30 *K. Lomanovich, E. Bagryanskaya, S. Veber, N. Isaev, A. Melnikov, M. Dugin, M. Bowman, M. Ivanov, D. Polovyanenko*: Pulse X-band EPR-spectrometer with microwave digital synthesizer, 300W solid-state power amplifier, and AWG unit
- 10:50 *M. Kuklinov, A.S. Petrov, A.I. Chazov* (Element company representative – Gold Sponsor of the conference), *Eric Xu* (Director of Magnetic Resonance of ZHONGTAI): A new player in the EPR spectroscopy market: high-tech solutions for X- and W-bands from ZHONGTAI

11:10–11:20 Coffee Break

Hall A

Chair: *S.V. Demishev*

Session: Electron Spin Based Methods for Electronic and Spatial Structure Determination in Physics, Chemistry and Biology

Invited Talks

- 11:20 *N.G. Romanov*: Spin-dependent afterglow of irradiated crystals: an ODMR study
- 11:50 *V. Tarasov, A. Sukhanov, K. Salikhov, E. Zharikov, K. Subbotin, V. Dudnikova*: EPR spectroscopy of ytterbium dimer associates in synthetic forsterite Mg_2SiO_4
- 12:20 *A. Rebrikova, A. Kaplin, M. Matveev, N. Chumakova, M. Korobov*: Graphite oxide membranes: the connection between inner structure and sorption properties

Oral Talks

- 12:40 *B. Gabbasov, R. Yusupov, D. Zverev, A. Rodionov, L. Jastrabik, V. Trepakov*: Manganese impurity dynamic polar centres in SrTiO_3

13:00–14:30 Lunch

Hall A

Chair: *M.R. Gafurov*

Plenary Lecture

- 14:30 *P. Baranov*: Spin phenomena in wide-gap semiconductors and their nanostructures

Session: Chemical and Biological Systems

Invited Talks

- 15:10 *E.A. Konstantinova, E.V. Kytina, T.P. Savchuk*: Dynamics of spin centers in TiO₂ nanotubes/Cu_xO composites
- 15:40 *E. Skorb*: Supramolecular materials: design, application, and perspectives
- 16:10 *A.I. Kokorin, N.A. Chumakova, Yu.N. Kozlov, A.A. Shubin*: Structure and catalytic properties of Cu(II) complexes with fluorinated ligands

Oral Talks

- 16:40 *E.V. Kytina, E.A. Konstantinova, A.V. Marikutsa*: Photoinduced reactions of spin centers in Nb and N doped titania nanocrystals
- 17:00 *I. Moskalenko, V. Shilovskikh, A. Timralieva, P. Nesterov, E. Skorb, A. Kokorin*: Structure-dependent functional self-assemblies based on a thiobarbiturate-barbiturate-melamine three-component system
- 17:20 *D. Alimov, M. Ivanov, S. Pylaeva*: Investigation of structural rearrangements of ionic liquids during glass transition by EPR and MD methods
- 17:40 *A. Kondratenko, N. Alexandrova, N. Lobova*: Study of crown-containing styryl dyes and peculiarities of their photoreactions
- 18:00 *A. Timralieva, P. Nesterov, I. Moskalenko, A. Kokorin*: “Smart” supramolecular materials for reactive oxygen species trap and storage

Hall B

Workshop “Sensing and quantum information in fluorescent-nanomaterials” in the framework of Agreement No. 075-15-2021-623 with the FRC Kazan Scientific Center of RAS

Chair: R.I. Khaibullin

- 14:30 *A.R. Matanin, K.I. Gerasimov, E.S. Moiseev, N.S. Smirnov, A.I. Ivanov, E.I. Malevannaya, V.I. Polozov, E.V. Zikiy, A.A. Samoilov, I.A. Rodionov, S.A. Moiseev*: Towards highly efficient broadband superconducting quantum memory
- 14:50 *R.A. Akhmedzhanov, L.A. Gushchin, N.A. Nizov, V.A. Nizov, D.A. Sobgayda, I.V. Zelensky*: Atomic frequency comb memory for polarization state of light in a ¹⁵³Eu:Y₂SiO₅ crystal

- 15:10 *A.V. Akimov*: Photonic crystal cavities for GeV&SnV diamond
15:30 *A.D. Berezhnoi, A.A. Kalachev*: Quantum memory in nano-diamonds with color centers

FRIDAY, October 7th, 2022

Hall A

Chair: *N.G. Romanov*

Plenary Lecture

- 9:00 *D. Majhi, J. Dai, S.V. Dvinskikh*: Insights into cation-anion hydrogen bonding in mesogenic ionic liquids from solid-state NMR

Session: Other Applications of Magnetic Resonance

Oral Talks

- 9:40 *K.M. Salikhov, M.M. Bakirov, R.B. Zaripov, I.T. Khairutdinov*: Experimental manifestation of spin polariton in dilute solutions of nitroxyl radicals.
10:00 *A. Bayazitov, A. Fakhrutdinov, Ya. Fattakhov, V. Odivanov, V. Shagalov*: Development of sensors for the study of agricultural objects in an MRI system with a field of 0.4 T
10:20 *G. Mozzhukhin, E. Doğan, A. Cakal, B. Colak, P. Kupriyanov, R. Khusnutdinov, B. Rameev*: The detection of nitrogen compounds in big volume
10:40 *R.B. Zaripov, V.A. Ulanov, I.V. Yazyk, G.S. Shakurov*: Molecular structure and parameters of magnetic interactions in Ni-F_{int} paramagnetic centers synthesized in BaF₂ crystal: EPR data
11:00 *K. Sannikov, I. Gracheva, G. Mamin, F. Murzakanov, V. Soltamov*: Room temperature coherent control of negatively charged NV defect in silicon carbide
11:20 *M. Fattakhova, R. Khabipov, V. Krasnozhon, V. Fedorova, E. Bekmacheva, A. Akhatov*: Voice diseases diagnostics using 3T dynamic MRI and original vocal tests
11:40 *V.R. Polishchuk, A.M. Ziatdinov*: Spin and valence states of ions in nanosized bimetallic coordination compounds and their changes upon immobilization in polymer matrix

12:00–12:20 Coffee Break

12:20 Closing of the conference

POSTER SESSION

1. M.M. Akhmetov, G.G. Gumarov, R.B. Zaripov, G.N. Konygin, D.S. Rybin: W-band EPR and quantum-chemical calculation of radicals in calcium gluconate
2. V.V. Andrianov, G.G. Yafarova, A.S. Zamaro, Y.P. Tokalchik, L.V. Bazan, T.Kh. Bogodvid, V.S. Iyudin, V.A. Kulchitchky, Kh.L. Gainutdinov: EPR study of the content of nitric oxide and copper in the hippocampus of rats after brain injury and hemorrhagic stroke
3. M.M. Bakirov, K.M. Salikhov, R.B. Zaripov, I.T. Khairutdinov: Experimental observation of spin polariton in dilute solutions of nitroxide radicals
4. H. Cao, A.A. Sukhanov, M.M. Bakirov, Yu.E. Kandrashkin, J. Zhao, V.K. Voronkova: Electron spin dynamics of photoexcited bodipy dimers
5. A. Bayazitov, A. Fakhrutdinov, Ya. Fattakhov, V. Odivanov, V. Shagalov: Development of sensors for the study of small animals in an MRI system with a field of 0.4 T
6. A.V. Borodulina, A.R. Melnikov, S.L. Veber: Determination of the zero field splitting parameters of the cobalt(II) ion in diamagnetically diluted samples using circularly polarized radiation
7. A.O. Chibirev, A.V. Leontyev, N.N. Garif'yanov, R.F. Mamin: Photoresistivity of the film heterostructure $\text{Ba}_{0.8}\text{Sr}_{0.2}\text{TiO}_3/\text{Ba}_{0.8}\text{Sr}_{0.2}\text{TiO}_3$ on MgO substrate
8. A.A. Efremov, A.S. Poryvaev, D.M. Polyukhov, M.V. Fedin: Anisotropic rotation of nitroxide radical in the pore system of metal-organic framework induced by guest solvents
9. M.L. Falin, V.A. Latypov, N.M. Khaidukov: ESR of Dy^{3+} ion at cubic sites in Cs_2KYF_6 crystals
10. B.F. Farrakhov, Ya.V. Fattakhov: An estimate of the activation energy of the solid-phase recrystallization of ion implanted Si
11. E. Frolova, A. Sharipova, L. Bazan, O. Turanova, I. Ovchinnikov: Effect of the anion nature on the spin properties of new Fe (III) complexes with tridentate ligands
12. A.R. Gafarova, G.G. Gumarov, R.B. Zaripov, D.S. Rybin, G.N. Konygin: W-band EPR investigation of mechanoactivated and γ -irradiated calcium gluconate

13. *T.P. Gavrilova, I.V. Yatsyk, J.A. Deeva, T.I. Chupakhina, N.M. Suleimanov, S.M. Khantimerov*: Reversible intercalation of lithium ions into the structure of $\text{Li}_3\text{V}_2(\text{PO}_4)_3$ cathode material for lithium-ion batteries: ESR measurements
14. *Yu. Goryunov, A. Nateprov*: Features of the temperature behavior of the ESR spectra of Cr^{3+} ions in the 3D Dirac semimetal Cd_3As_2
15. *A.Hh. Kadikova*: Synthesis and investigation of magnetic properties of thin film systems Fe_3Al and $\text{Fe}_3\text{Al/Pt}$
16. *A.A. Kamashev, A.V. Leontyev, R.F. Mamin, I.A. Garifullin*: Study of the features direction of the magnetization vector in two-layer system Fe/LiNbO_3
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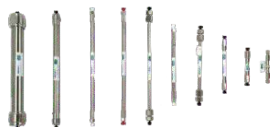


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