

# MODERN DEVELOPMENT OF MAGNETIC RESONANCE

**program**

**2016**

KAZAN \* RUSSIA









# MODERN DEVELOPMENT OF MAGNETIC RESONANCE

PROGRAM OF THE  
INTERNATIONAL CONFERENCE

KAZAN, OCTOBER 31 – NOVEMBER 4, 2016

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Laila V. Mosina  
Vlad A. Latypov  
Sufia A. Ziganshina

The conference is organized under the auspices of  
the AMPERE Society

## **ORGANIZERS**

Kazan E. K. Zavoisky Physical-Technical Institute  
The Academy of Sciences of the Republic of Tatarstan  
Kazan Federal University

## **SUPPORTED BY**

The Government of the Republic of Tatarstan  
The Russian Foundation for Basic Research  
Bruker BioSpin Moscow

## **CONFERENCE LOCATION**

On October 31 the conference will be held at the Academy of Sciences  
of the Republic of Tatarstan, Kazan, ul. Baumana, 20; on November  
1, 2 and 3 (morning) – at the Hotel Nogai (ulitsa Profsoyusnaya, 16B)



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## TIME SCHEDULE

### MONDAY, October 31st, 2016

09:00	Registration
11:00–13:00	Excursion
13:00–14:00	Lunch
14:00–14:15	Opening of the Week of Science “Horizons of Magnetic Resonance”
14:15–15:30	Zavoisky Award Ceremony
15:30–16:10	Zavoisky Award Lectures
16:10–16:30	Coffee Break
16:30–17:50	Plenary Lectures
18:00	Welcome Party

### TUESDAY, November 1st, 2016

09:00–10:20	Plenary Lectures
10:20–10:50	Coffee Break
10:50–13:00	Session: Chemical and Biological Systems Session: Strongly Correlated Electron Systems. Theory of Magnetic Resonance
13:00–14:30	Lunch
14:30–16:00	Workshop: Spin-Based Information Processing Session: Modern Methods of Magnetic Resonance. Related Phenomena
16:00–16:20	Coffee Break
16:20–18:20	Workshop: Spin-Based Information Processing Session: Modern Methods of Magnetic Resonance. Related Phenomena
19:00	Culture Program

### WEDNESDAY, November 2nd, 2016

09:00–10:20	Plenary Lectures
10:20–10:40	Coffee Break
10:40–13:00	Workshop: Spin-Based Information Processing Session: Electron Spin Based Methods for Electronic and Spatial Structure Determination in Physics, Chemistry and Biology

13:00–14:30	Lunch
14:30–16:00	Session: Low-Dimensional Systems and Nano-Systems
	Session: Other Applications of Magnetic Resonance
16:00–16:20	Coffee Break
16:20–18:00	Session: Low-Dimensional Systems and Nano-Systems
	Session: Other Applications of Magnetic Resonance
18:00–20:00	Poster Session

#### THURSDAY, November 3rd, 2016

09:00–10:40	Session: Perspective of Magnetic Resonance in Science and Spin-Technology. Theory of Magnetic Resonance
10:40–11:00	Coffee Break
11:00–12:40	Session: Perspective of Magnetic Resonance in Science and Spin-Technology. Theory of Magnetic Resonance
12:40	Closing of the Conference
12:50–14:00	Lunch
15:00–17:00	Celebration of Kev Salikhov's 80th Birthday
17:00	Party

#### FRIDAY, November 4th, 2016

10:00–13:00	Visit to Laboratories of the Kazan E. K. Zavoisky Physical-Technical Institute
13:00–14:30	Lunch

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## SCIENTIFIC PROGRAM

MONDAY, October 31st, 2016

- 14:00 Opening of the Week of Science “Horizons of Magnetic Resonance”
- 14:15 Zavoisky Award Ceremony and Zavoisky Award 2016 Lectures  
M. K. Bowman: Electron Transport and Energy Transduction: Lessons From Proteins  
A. Raitsimring: Practical Aspects of Multi-Frequency (from S Band to D Band) Pulsed EPR/ENDOR Spectroscopies for Biological Applications: Structure of Metalloenzymes, Characterization of MRI Contrast Agents, Distance Measurements with Gd(III) Tags and More...

### Hall A

#### Plenary Session

Chair: *H. Ohta*

- 16:30 V. A. Atsarkin: Electron Spin Resonance on the Border between Para- and Ferromagnetism: Quantum *versus* Classical
- 17:10 *K. Sato, S. Yamamoto, T. Shibata, E. Hosseini, N. Mori, T. Yamane, T. Nakagawa, S. Sawada, K. Sugisaki, S. Nakazawa, K. Maryama, K. Toyota, D. Shiomi, Y. Morita, S. Nishida, S. Suzuki, K. Okada, T. Takui*: Molecular Spin Technology for Quantum Computers and Quantum Information Processing

TUESDAY, November 1st, 2016

### Hall A

#### Plenary Session

Chair: *S. V. Demishev*

- 09:00 *M. Srivastava, E. R. Georgieva, B. Dzikovski, J. H. Freed*: Overcoming Insufficient Signal Strength in ESR
- 09:40 H. Ohta, S. Okubo, E. Ohmichi, T. Sakurai, S. Hara, H. Takahashi: Multi-Extreme THz ESR: Recent Developments and Future

**Hall A****Session: Chemical and Biological Systems***Chair: H. W. Spiess*

## Invited Talks

- 10:50 *G. Grampp, B. Mladenova, K. Rasmussen, D. Kattwig*: ESR-Spectroscopy in Ionic Liquids: High Pressure Investigations on the Dynamics and Kinetics of Organic Radicals
- 11:20 *E. Bagryanskaya*: Application of Trytil Radicals in Biology and Materials Science
- 11:50 *A. Savitsky*: ELDOR-Detected NMR: a Powerful EPR Technique for Hyperfine and Polarization Transfer Studies

## Oral Talks

- 12:20 *G. Audran, P. Brémond, S. Marque*: Intramolecular Hydrogen Bonding and Solvent Effect in  $\beta$ -Phosphorylated Nitroxides
- 12:40 *V. I. Volkov*: Ionic and Molecular Transport in Ion Exchange Systems Studied by NMR

**Hall B****Session: Strongly Correlated Electron Systems***Chair: G. B. Teitelbaum*

## Invited Talk

- 10:50 *H.-H. Klaus*: Complex Electronic Order in Fe-Based Superconductors Studied by Nuclear Probe Spectroscopy

## Oral Talks

- 11:20 *S. V. Demishev, A. V. Semeno, M. I. Gilmanov, A. V. Bogach, V. V. Glushkov, V. N. Krasnorussky, A. N. Samarin, N. A. Samarin, N. E. Sluchanko, N. Yu. Shitsevalova, V. B. Filipov*: Magnetic Resonance Anisotropy in  $\text{CeB}_6$
- 11:40 *A. V. Semeno, M. I. Gilmanov, V. N. Krasnorusski, N. Yu. Shitsevalova, V. B. Filipov, A. N. Samarin, S. V. Demishev*: Anomalous ESR Behavior of Lanthanum Doped  $\text{CeB}_6$
- 12:00 *M. Iakovleva, E. Vavilova, H.-J. Grafe, V. Kataev, M. Kaustuv, M. Vogl, T. Dey, S. Wurmehl, B. Büchner*: NMR Investigation of Ir-Based Double Perovskites

**Hall B****Session: Theory of Magnetic Resonance***Chair: E. B. Fel'dman*

## Oral Talks

- 12:20 F. S. Dzheparov, D. V. Lvov: Impurity Spin in Normal Stochastic Field: Basic Model of Magnetic Resonance
- 12:40 A. G. Maryasov, M. K. Bowman: Relaxation and Coherence Transfer in Radicals in Liquids

**Hall B****Session: Modern Methods of Magnetic Resonance.****Related Phenomena***Chair: M. S. Tagirov*

## Invited Talks

- 14:30 F. Zong, N. Spindler, L. R. Ancelet, I. F. Hermans, P. Galvosas: Recent Advances in NMR Diffusometry
- 15:00 U. Eichhoff: Novel Applications of MRI: Structural and Functional Connectivity in Brain. Can MRI Contribute to the Understanding of Mental Disorders?
- 15:30 K. A. Earle: Graphical Methods for Spectral Simulation

*Chair: P. Galvosas*

## Oral Talks

- 16:20 N. A. Chumakova, A. Kh. Vorobiev, D. A. Pomogailo, N. A. Paramonov, S. V. Kuzin: Capability of Modern X-EPR Spectroscopy in Determining Characteristics of Rotational Mobility of Nitroxide Radicals
- 16:40 N. N. Lukzen, J. H. Klein, C. Lambert, U. E. Steiner: The Quantum Dynamical Basis of a Classical Kinetic Scheme Describing Coherent and Incoherent Regimes of Radical Pair Recombination
- 17:00 V. V. Kuzmin, G. Tastevin, P.-J. Nacher: Nonlinear Spin Dynamics in Highly Polarised Liquids
- 17:20 A. Vyalikh: Operando NMR Studies of Electrochemical Systems

- 17:40 A. Semenov, I. Shelaev, M. Gorka, A. Savitsky, V. Kurashov, F. Gostev, V. Nadtochenko, K. Möbius, J. Golbeck: Effect of Dry Trehalose Glassy Matrix on the Forward Electron Transfer in Photosystem I from Cyanobacteria *Synechocystis* sp. PCC 6803
- 18:00 R. Weber, I. Gromov, P. Carl, M. Mokeev: Bruker BioSpin Latest EPR Developments: Rapid Scan Unit and Fitting Software Anisotropic-SpinFit

## Hall A

### Workshop: Spin-Based Information Processing

Chairs: *P. Bushev, A. Kalachev*

#### Invited Talks

- 14:30 A. Bienfait, J. J. Pla, X. Zhou, C. C. Lo, C. D. Weis, T. Schenkel, D. Vion, D. Esteve, J. J. L. Morton, K. Mølmer, P. Bertet: Magnetic Resonance at the Quantum Limit and Beyond
- 15:00 J. Morton, S. Nur, P. Ross, H. Lim: Spin Qubits Based on Donors in Silicon
- 15:30 J. Majer: Hybrid Quantum Systems – Coupling Color Centers to Superconducting Cavities

Chair: *T. Takui*

#### Invited Talks

- 16:20 M. Tobar: High-Q and Novel Cavity Structures for Photon-Spin Strong Coupling
- 16:50 A. M. Tyryshkin, E. S. Petersen, A. J. Sigillito, J. Jhaveri, J. C. Sturm, S. A. Lyon, M. House, M. Simmons, C. C. Lo, J. J. L. Morton: Electron Spin Decoherence of J-Coupled Donor Dimers in Two-Dimensional  $\delta$ -Layers, 50 nm below Surface in Silicon
- 17:20 R. A. Akhmedzhanov, L. A. Gushchin, N. A. Nizov, V. A. Nizov, D. A. Sobgayda, I. V. Zelensky: Optically Detected Magnetic Resonance in Diamond NV-Centers under Resonant Optical Excitation at Cryogenic Temperatures
- 17:50 D. Suter: Spins as Qubits: Quantum Information Processing by Magnetic Resonance

WEDNESDAY, November 2nd, 2016

## Hall A

### Plenary Lectures

Chair: *W. Lubitz*

- 09:00 *K. Möbius*: New Porphyrin Molecules with Möbius-Strip Topology as Studied by Modern Magnetic Resonance Methods  
09:40 *K. Salikhov*: Why EPR Will Save the World?

## Hall A

### Workshop: Spin-Based Information Processing

Chair: *D. Suter*

#### Invited Talks

- 10:40 *R. Akhmedzhanov, L. Gushchin, A. Kalachev, S. Korableva, D. Sobgayda, I. Zelensky*: Optical Quantum Memory in Isotopically Pure Crystals Doped by Rare-Earth Ions  
11:10 *S. A. Moiseev, F. F. Gubaidullin, R. S. Kirillov, R. R. Latypov, N. S. Perminov, K. V. Petrovnin, O. N. Sherstyukov*: Impedance-Matched Bragg-Type Microwave Quantum Memory  
11:40 *P. Bushev*: Microwave and Optical Coherence of Erbium Doped Crystals below 1 K

#### Oral Talks

- 12:10 *R. Eremina, T. Gavrilova, I. Yatsyk, I. Fazlizhanov, R. Likеров, V. Shustov, Yu. Zavartsev, A. Zagumennyi, S. Kutovoi*: Investigations of  $\text{Y}_2\text{SiO}_5:\text{Nd}^{143}$  Isotopically Pure Impurity Crystals for Quantum Memory by ESR Method  
12:30 *G. A. Bochkin, E. B. Fel'dman, S. G. Vasil'ev*: Dipolar Relaxation of Multiple Quantum Coherences of One-Dimensional Systems in Multiple Quantum NMR  
12:50 *K. I. Gerasimov, S. A. Moiseev, V. I. Morozov, R. B. Zaripov*: Microwave Pulses Storage by Using Spin-Frequency Comb Protocol Combined with Gradient Pulses of Magnetic Field

**Hall B****Session: Electron Spin Based Methods for Electronic and Spatial Structure Determination in Physics, Chemistry and Biology***Chair: E. G. Bagryanskaya*

## Invited Talks

- 10:40 *M. K. Bowman*: Spin Interactions and Structure in the Condensed Phase
- 11:10 *A. I. Kokorin, A. I. Kulak*: EPR Studies of Doped TiO<sub>2</sub> Photocatalysts: Structures, Properties and Dynamics of Paramagnetic Centers in the Lattice and on the Surface

## Oral Talks

- 11:40 *E. Golubeva*: EPR Spectroscopy for Studying the Structure and Dynamics of Supercritical Fluids
- 12:00 *A. Kh. Vorobiev, N. A. Chumakova*: The Development of Nitroxide Spin Probe Technique for Determination of Molecular Orientation Distribution Function
- 12:20 *V. Tarasov, A. Sukhanov, E. Zharikov*: Determining the Structure and Magnetic Properties of Ytterbium Impurity Centers in Synthetic Forsterite by X-band EPR Spectroscopy
- 12:40 *A. M. Ziatdinov*: Spins of Current Carriers as a Probe of Physical and Chemical Transformations in Conductors

**Hall A****Session: Low-Dimensional Systems and Nano-Systems***Chair: V. A. Atsarkin*

## Invited Talk

- 14:30 *N. G. Romanov, A. N. Anisimov, V. A. Soltamov, P. G. Baranov*: Level-Anticrossing Spectroscopy of Excited States in Semiconductors and Semiconductor Nanostructures

## Oral Talks

- 15:00 *M. Asada, T. Nakamura*: Magnetic Investigation of One-Dimensional Organic Conductors, (TMTTF)<sub>2</sub>X
- 15:20 *A. I. Smirnov, T. A. Soldatov, T. Kida, A. Takata, M. Hagiwara, O. Petrenko, M. Zhitomirsky*: ESR Reveals Doping-Induced Change of Spin Structure in a “Triangular” Antiferromagnet



- 15:40 S. S. Sosin, E. G. Sergeicheva, I. A. Zaliznyak: Unusual Magnetic Excitations in a Weakly Ordered Spin-1/2 Chain Antiferromagnet  $\text{Sr}_2\text{CuO}_3$ : Possible Evidence for the Goldstone-Higgs Interaction

*Chair: A. I. Smirnov*

#### Oral Talks

- 16:20 R. V. Gorev, M. V. Sapozhnikov, E. V. Skorohodov, V. L. Mironov: Ferromagnetic Resonance of Localized Nonuniform States in Magnetic Nanostructures
- 16:40 A. A. Fraerman, E. V. Skorohodov, S. N. Vdovichev, R. V. Gorev, E. S. Demidov: Ferromagnetic Resonance in Exchange-Related Ferromagnet-Paramagnet Multilayer Structures
- 17:00 A. F. Zinovieva, V. A. Zinovyev, A. V. Nenashev, L. V. Kulik, A. V. Dvurechenskii: ESR Study of Electron States in Ge/Si Heterostructures with Nanodisc Shaped Quantum Dots
- 17:20 E. Vavilova, Y. Krupskaya, M. Schäpers, A. U. B. Wolter, H.-J. Grafe, A. Möller, B. Büchner, V. Kataev: Spin-1/2 Chain Magnet  $\text{BaAg}_2\text{Cu}[\text{VO}_4]_2$  Studied by Magnetic Resonance Technique
- 17:40 D. A. Biziyayev, A. A. Bukharaev, Yu. E. Kandrashkin, T. F. Khanipov, L. V. Mingalieva, N. I. Nurgazizov: Application of Ferromagnetic Resonance for Investigation of Magnetic Properties of Strained Permalloy Microparticles

## Hall B

### Session: Other Applications of Magnetic Resonance

*Chair: A. A. Bukharaev*

#### Invited Talk

- 14:30 A. Volodin: Nanoscale Magnetic Resonance Microscopy

#### Oral Talks

- 15:00 B. Z. Rameev, B. Çolak, İ. S. Ünver, G. V. Mozzhukhin: Recent Developments in Microwave & Magnetic Resonance Detection of Explosive/Illicit Materials
- 15:20 K. Safiullin, P.-J. Nacher, C. Talbot: Advantages of SLASH (Slow Low Angle SHot) Sequence in Low-Field MRI of Hyperpolarised Gases

15:40 G. V. Mozzhukhin, D. A. Shulgin, I. G. Mershiey, B. Z. Rameev: Double NMR-NQR for Studies of N-14 Nuclei

*Chair: B. Z. Rameev*

#### Oral Talks

16:20 V. A. Ulanov: EPR Study of Special Cases of the Jahn-Teller Effect Realized in the Fluorite Type Crystals with d-Ion Dopants

16:40 A. Lozovoi, C. Mattea, N. Fatkullin, S. Stapf: Proton NMR Dipolar-Correlation Effect as a Method for Investigating Segmental Diffusion in Polymer Melts

17:00 Yu. E. Kandrashkin, P. K. Poddutoori, A. van der Est: Electron Transfer Pathways in Molecular Triads Centered by Aluminum Porphyrin

17:20 V. N. Lisin, A. M. Shegeda, V. V. Samartsev: Beating of Light During Photon Echo. Observation and Application

17:40 D. S. Rybin: Conversions and Transformations: Deformation-Induced Chemical Bonding in Pharmaceuticals

THURSDAY, November 3rd, 2016

#### Hall A

##### **Session: Perspectives of Magnetic Resonance in Science and Spin-Technology. Theory of Magnetic Resonance**

*Chair: G. Buntkovsky*

#### Invited Talks

09:00 W. Lubitz: Advanced Pulse EPR Studies of the Water Oxidation Cycle in Photosynthesis

09:25 R. Kaptein: Perspectives of Hyperpolarization and its Role in Structural Biology

09:50 A. Raitsimring: Gd(III) Based Markers for Pulsed Dipolar Spectroscopy: Features, Theory, Instrumentation and Optimization of Measurements

10:15 G. I. Likhtenshtein: Can Spin Chemistry Explain all Effects of Electromagnetic Fields on Living Organisms?

*Chair: J. H. Freed*

Invited Talks

- 11:00 Yu. D. Tsvetkov: EPR Spectroscopy of Pulse Double Electron-Electron Resonance (PELDOR). Some Results and Prospects
- 11:25 G. Buntkowsky: Revealing Structures of Immobilized Catalysts by Solid State NMR
- 11:50 H. W. Spiess: Supramolecular Organization: What Can We Learn from Magnetic Resonance
- 12:15 A. Kokorin: Unexpected Changes in EPR Spectra of Liquid Solutions of Nitroxide Biradicals

## POSTER SESSIONS

1. M. M. Akhmetov, G. G. Gumarov, V. Yu. Petukhov, G. N. Konygin, D. S. Rybin, A. B. Konov: NMR Investigation of Conformational Changes in Calcium Gluconate
2. M. M. Bakirov, K. M. Salikhov, R. T. Galeev: Analysis of Manifestations of the Spin Coherence Transfer in EPR Spectra of Nitroxyl Radicals in Liquids
3. T. Biktagirov, M. Gafurov, G. Mamin, S. Orlinskii: First-Principles Solid-State Calculations and Pulsed EPR Measurements: a Study of Ionic Substitutions in Hydroxyapatite
4. A. Bogaychuk, M. Dambieva, G. Kupriyanova, S. Babak: Compare Acetonitrile and Solid-Phase Extractions for Sample Preparation of Plasma at Metabolom Study by NMR
5. A. V. Bogdanov, A. Kh. Vorobiev: Orientation Order and Rotation Mobility of Nitroxide Biradicals Determined by Quantitative Simulation of EPR Spectra
6. P. Dvořák, J. Lang: Chemical Exchange in Water
7. R. M. Eremina, I. V. Yatsyk, E. M. Moshkina, M. V. Rautskii, L. N. Bezmaternykh, H.-A. Krug von Nidda, A. Liodl: ESR Study of Mn-Heterovalent Ludwigite  $Mn_{3-x}Cu_xBO_5$
8. M. L. Falin, V. A. Latypov, A. M. Leushin, S. L. Korableva: Electron Paramagnetic Resonance of  $Ce^+$  Ion in  $Rb_2NaYF_6$  Single Crystal: Experiment and Theoretical Calculations of the Optical Spectra
9. M. L. Falin, V. A. Latypov, G. M. Safiullin, A. M. Leushin, S. V. Petrov: EPR and Optical Spectroscopy of  $Yb^+$  in Hexagonal Perovskite  $RbMgF_3$  Single Crystal
10. R. T. Galeev: Spin Dynamics in the Vicinity of Levels Anticrossing
11. S. A. Gavrilova, O. G. Deryagin, Kh. L. Gainutdinov, V. V. Andrianov, A. V. Golubeva, G. G. Yafarova, V. S. Iyudin, A. V. Buravkov, V. B. Koshelev: Effect of Activation and Inhibition of  $K_{ATP}^+$ -Channels on the NO Production in the Blood of Rats with Ischemic Stroke
12. T. Gavrilova, I. Yatsyk, R. Eremina, I. Gilmudinov, Y. Kabirov, J. Nikitina: Magnetic Resonance Investigations of Core-Shell Composites Based on  $CaCu_3Ti_4O_{12}$

13. *M. I. Gilmanov, A. V. Semeno, A. N. Samarin, S. V. Demishev*: Measurement of ESR Oscillating Magnetization Value in Strongly-Correlated Metals
14. *I. A. Goenko, V. Yu. Petukhov, I. V. Yatzyk, G. N. Konygin, D. S. Rybin, I. N. Andreeva, A. V. Anisimov, D. R. Sharafutdinova*: EPR Investigation of the Radiation-Induced Transformation in Calcium Gluconate
15. *Yu. V. Goryunov, A. N. Nateprov*: Electron Spin Resonance on  $\text{Eu}^+$  Impurities in 3D Topological Semimetal
16. *M. I. Ibragimova, A. I. Chushnikov, G. V. Cherepnev, V. Yu. Petukhov*: Correlation of EPR and Biochemical Results of Iron Metabolism Study in Serum of Professional Athletes
17. *T. V. Ischenko, A. N. Samarin, S. V. Demishev*: Magnetic Susceptibility of an Antiferromagnetic System with Disorder: Griffiths Phase and Phases with an Intermediate Magnetic Order
18. *T. A. Ivanova, I. V. Ovchinnikov, O. A. Turanova, L. V. Mingalieva, I. F. Gilmutdinov, V. A. Shustov*: Influence of the Outer-Sphere Anion on Electronic and Magnetic Properties of  $[\text{Fe}(\text{3-CH}_3\text{O-Qsal})_2]\text{Y} \cdot n$  Solvent ( $n = 0, 1$ ) Complexes
19. *A. V. Izotov, B. A. Belyaev, P. N. Solovev*: Determination of Magnetic Anisotropies Parameters and Miscut Angles for Epitaxial Thin Films Grown on Vicinal (111) Substrates Using Ferromagnetic Resonance
20. *O. N. Kadkin, N. R. Khafizov, T. I. Madzhidov, I. S. Antipin*: Elucidating Mechanisms of Intramolecular Exchange Interaction in Substituted  $\text{N,N}'$ -Dioxy-2,6-Diazaadamantane Biradicals
21. *R. Khabipov, I. Sitdikov, Ya. Fattakhov*: Cloud Project for Storage and Processing of Medical Images Obtained by MRI of Zavoisky Kazan Physical Technical Institute
22. *I. T. Khairuzhdinov, R. B. Zaripov, K. M. Salikhov, V. P. Gubskaya, I. A. Nuretdinov*: Modeling of the Temperature Dependence of the EPR Spectra of Fullerene  $\text{C}_{60}$  Nitroxide Derivatives in Liquid
23. *A. Lozovoi, M. Hurlimann, R. Kausik, S. Stapf, C. Mattea*: High Temperature Fast Field Cycling Study of Crude Oil
24. *N. N. Lukzen, K. L. Ivanov*: Manipulating Electron Spin Hyperpolarization by Means of Adiabatic Switching of a Spin-Locking MW Field

25. *S. Lvoy, E. Kukovitsky*: Hyperfine Structure of Er<sup>+</sup> Ion in Bulk Copper
26. *S. Mamadazizov, G. Kupriyanova*: NQR Relaxation Times Distribution of 5-Aminotetrazole Monohydrate
27. *A. Mamatova, L. Savostina*: Investigation of Influence Conformations of Nitroxyl Radicals on EPR Parameters by DFT Method
28. *A. Maraşlı, M. Maksutoğlu, Y. Öztürk, B. Z. Rameev*: Development of Permanent Magnet System for Time-Domain NMR
29. *D. L. Melnikova, T. V. Shipunov, M. N. Makarov, H. Zhou, B. I. Gizatullin*: Molecular Mobility of n-Hexane in Silicailte-1 by 2D NMR Relaxo- and Diffusometry
30. *V. Murzakaev, A. Bragin, D. Kirgizov, D. Nurgaliev, A. Alexandrov, A. Ivanov, M. Doroginitcky, V. Skirda, Ya. Fattakhov, V. Shagalov, A. Fakhrudinov, R. Khabipov, A. Anikin*: Complex Downhole Apparatus for Magnetic Resonance Logging
31. *I. Ovchinnikov, T. Ivanova, A. Suhanov, E. Frolova, O. Turanova, L. Mingalieva, L. Gafiyatullin*: EPR Investigation of Some Complexes of Fe(III) with Pentadentate Ligand
32. *O. V. Petrov, S. Stapf*: Development of New Approaches to NMR Data Processing in Time-Domain NMR
33. *I. Popov, N. Vashurin, A. Bahodurov*: Effects of Femtosecond Magneto-optics Based on Photon Echo and Practical Significance
34. *K. M. Salikhov*: Consistent Paradigm of the Spectra Decomposition into Independent Resonance Lines
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