

Schedule

21th International School-Conference

«Magnetic Resonance and its Applications.

Spinus-2024»

April 1 - 5, 2024

St. Petersburg



	MONDAY –April 1, 2024
Chairman	Professor Denis Markelov (Saint-Petersburg, Russia)
10:00 – 10:15	Opening
10:15– 11:00	Vladimir Chizhik (Saint-Petersburg, Russia) Lecture: 300 years of St. Petersburg State University and 80 years of radiospectroscopy in it
11:00 – 11:40	Janez Stepišnik (Ljubljana, Slovenia) Lecture: Why biopolymers fold in glycerol-water mixture: NMR study of diffusion in glycerol-water mixture
11:40 – 12:10	‘COFFEE’ BREAK
Chairman	
12:10 – 12:50	Yury Pirogov (Moscow, Russia) Lecture: Novel approaches in magnetic resonance imaging
12:50 – 13:05	Leila Sharipova (Saint-Petersburg, Russia) Oral report: Experimental investigation of a metasurface for cardiac magnetic resonance imaging at 3 T
13:05 – 13:20	Elizaveta Kononenko (Novosibirsk, Russia) Oral report: In vivo MR imaging of murine bronchial tree using hyperpolarized propane produced with parahydrogen
13:20 – 13:35	Anna Hurshkainen (Saint-Petersburg, Russia)

	Oral report: Ultra-low field portable MRI for a human head: preliminary results
13:35– 13:50	Vladimir Pugovkin (Saint-Petersburg, Russia) Oral report: An alternative proposal of gradient coils configuration for ultra-low field magnetic resonance imaging
13:50– 14:10	Nikolay Anisimov (Moscow, Russia) Oral report: Visualization of the internal structure of coils used in MRI studies
14:10 – 15:30	LUNCH
Chairman	
15:30 – 15:50	Carlos Cabal-Mirabal (Havana, Cuba) Oral report: Quantitative MRI studies of the kinetics of the wound healing process. Case of diabetic foot ulcer. Towards a model.
15:50 – 16:05	Timofei Taran (Moscow, Russia) Oral report: Non-contrast MRI for ventilation and perfusion study of the lungs
16:05 – 16:20	Dmitrii Luzik (Saint-Petersburg, Russia) Oral report: NMR study of small protein assymetric dimer
16:20 – 16:35	Vitaly Kozinenko (Novosibirsk, Russia) Oral report: Probing Weak Ligand-Protein Binding Using Long-Lived Spin Order Relaxometry
16:35 – 16:50	Polina Kononova (Novosibirsk, Russia) Oral report: spectroscopy in the study of the interaction of membrane proteins of enveloped viruses and potential antiviral agents
16:50– 17:10	Manuel Arsenio Lores Guevara (Santiago de Cuba, Cuba) Oral report: Blood dynamic viscosity measured using NMR
17:10 – 17:30	‘COFFEE’ BREAK
Chairman	
17:30 – 17:45	Manuel Arsenio Lores Guevara (Santiago de Cuba, Cuba) Oral report: Proposal for a detachable Phantom for MRI-qMRI
17:45 – 18:00	Zilya Badrieva (Saint-Petersburg, Russia) Oral report: Dictionary-based T ₂ -mapping with multi-echo turbo-spin echo
18:00–18:15	Eduardo Garea-Llano (Havana, Cuba) Oral report: Artificial Intelligence tools for the reconstruction and enhancement of MR imaging
18:15 – 18:30	Yamirka Alonso (Santiago de Cuba, Cuba) Oral report: Assessment of blood serum dynamic viscosity by NMR in sickle cell disease
18:30 – 18:45	Evelio Gonzalez-Dalmau (Havana, Cuba) Oral report: System to ensure the reproducibility of the legs positions during the Magnetic Resonance Imaging (MRI) studies
19:30 – 22:00	Welcome Party
	TUESDAY – April 2, 2024

Chairman	
10:00 – 10:40	Roman Babunts (Saint-Petersburg, Russia) Lecture: Spin-dependent phenomena in wide-gap materials and based nanostructures and development of the instrumentation for these studies
10:40 – 10:55	Anastasia Batueva (Saint-Petersburg, Russia) Oral report: Mn Related Paramagnetic Centres in a Bulk GaS and GaSe Van der Waals Semiconductors with High-Frequency EPR Method
10:55 – 11:10	Ilya Kostyukov (Moscow, Russia) Oral report: Determination of crystallographic positions of aluminum atoms in BEA zeolites using high-quality ^{27}Al MAS NMR
11:10 – 11:25	Alexander Snadin (Novosibirsk, Russia) Oral report: Singlet-triplet conversion in molecular hydrogen on a homogeneous catalyst in parahydrogen induced polarization experiments
11:25 – 11:40	Sergey Sviyazov (Novosibirsk, Russia) Oral report: Manipulating Stereoselectivity of Parahydrogen Addition to Acetylene to Unravel Interconversion of Ethylene Nuclear Spin Isomers
11:40 – 12:10	‘COFFEE’ BREAK
Chairman	
12:10 – 12:40	Shutian Lu (CIQTEK Co. Ltd., Hefei, China) Ilya Chazov (sales director of the company "ELEMENT", Ekaterenburg, Russia) Lecture: The ZHONGTAI 94 GHz pulsed EPR spectrometer
12:40 – 12:55	Margarita Sadovnikova (Kazan, Russia) Oral report: Study of the hydroxyapatite doped with gadolinium and cerium ions using EPR spectroscopy
12:55 – 13:10	Valentina Yakovleva (Saint-Petersburg, Russia) Oral report: Scanning NV spectroscopy as a tool for the study of natural diamonds
13:10 – 13:25	Leonid Vedernikov (Saint-Petersburg, Russia) Oral report: Excitation of black spin wave solitons in an active ring resonator based on a ferromagnetic film
13:25– 14:05	Kev Salikhov (Kazan, Russia) Lecture: The effect of exchange narrowing of the electron paramagnetic resonance (EPR) spectra of dilute radical solutions indicates the formation of a Bose-Einstein condensate (BEC)
14:05 – 15:30	LUNCH
Chairman	
15:30 – 16:10	Leonid Grunin (Yoshkar-Ola, Russia) Lecture: Systematic View on the Dynamics and Structure Analysis of Solids by Time-Domain NMR
16:10– 16:30	Galina Kupriyanova (Kaliningrad, Russia) Oral report: ^{14}N magnetic relaxation in solids and liquids.

16:30– 16:50	Boris Kharkov (Saint-Petersburg, Russia) Oral report: The Role of Rotational Motion in Diffusion NMR Experiments on Supramolecular Assemblies
	CONFERENCE PHOTO
16:50– 18:50	Oral blitz reports of young scientists POSTER SESSION I
	WEDNESDAY – April 3, 2024
10:00 – 14:30	Excursion
14:30 – 15:30	LUNCH
Chairman	
15: 30 – 16:10	Suryaprakash Nagarajarao (Bangalore, India) Lecture: Clean Sequences for Complete Eradication of Unwanted Evolution and Accurate Determination of Spectral Parameters
16:10 – 16:40	Edward Fel'dman (Chernogolovka, Russia) Oral report: Multiple quantum NMR in problems of quantum informatics: many-spin entanglement and scrambling
16:40 – 16:55	Aleksandr Tomilov (Novosibirsk, Russia) Oral report: Nitroxide radical sorption on MOF-808 for quantum bits
16:55– 17:15	Sergey Vasil'ev (Chernogolovka, Russia) Oral report: Dissipative dynamics of multiple-quantum NMR coherences in two-spin systems
17:15– 17:35	‘COFFEE’ BREAK
17: 35 – 17: 55	Georgy Mozzhukhin (Gebze-Kocaeli, Turkey) Oral report: Design of large volume RF probe for NQR Detection applications
17: 55– 18:10	Sergei Bystrov (Batumi, Georgia) Oral report: NMR to Industry: Development of modern universal control software for TD-NMR spectrometers, validation using fertilizer samples as an example
18:10– 18:30	Alexander Sónora Mengana (Santiago de Cuba, Cuba) Oral report: Assessment of timing parameters of cuban NMR console
18:30– 18:50	Manuel Arsenio Lores Guevara (Santiago de Cuba, Cuba) Oral report: Modelling proton magnetic relaxation in hemoglobin solutions: spherical and ellipsoidal approaches

	THURSDAY – April 4, 2024
Chairman	
10:00 – 10:40	Elena Charnaya (Saint-Petersburg, Russia) Lecture: Liquid-liquid phase transition in metallic melts
10:40 – 11:00	Polina Skvortsova (Kazan, Russia) Oral report: NMR study of liquid–liquid phase separation in pillar[5]arene-oligonucleotide system
11:00– 11:15	Allisher Vasilev (Kazan, Russia) Oral report: Liquid-liquid phase transition in the nanoconfined Ga-In-Sn eutectic alloy
11:15 – 11:40	Marina Shelyapina (Saint-Petersburg, Russia) Lecture: Nanoconfined water in zeolites with hierarchical porosity probed
11:40 – 12:10	‘COFFEE’ BREAK
Chairman	
12:10 – 12:50	Yury Bunkov (Moscow, Russia) Oral report: Qubit on magnon BEC state
12:50 – 13:05	Alexey Kuzmichev (Moscow, Russia) Oral report: Improved Low-Temperature Damping of Epitaxial Yttrium Iron Garnet Film
13:05– 13:25	Alexey Kiryutin (Novosibirsk, Russia) Oral report: SLIC-SABRE at Earth’s Magnetic fields: Simple and Effective Method of getting Strong ^{15}N NMR Polarization
13:25 – 13:40	Danil Markelov (Novosibirsk, Russia) Oral report: New methods for SABRE hyperpolarization at high magnetic field
13:40– 13:55	Anna Yi (Novosibirsk, Russia) Oral report: Solvent effects in hyperpolarization of ^{15}N nuclei in metronidazole and nimorazole antibiotics via SABRE-SHEATH
13:55 – 14: 10	Leonid Skripnikov (Saint-Petersburg, Russia) Oral report: Use of molecules to measure the parity conserving and parity violating nuclear moments
14:10 – 15:30	LUNCH
Chairman	
15: 30 – 15:50	Ilya Yakovlev (Novosibirsk, Russia) Oral report: Ordering of water molecules in hydrated aluminophosphate AIPO-11 according to ^{27}Al solid-state NMR and DFT calculations
15: 50 – 16:05	Naira Gromova (Saint-Petersburg, Russia) Oral report: Cell size dependence of hydrodynamic radius of carbosilane dendrimers in chloroform
16:05– 16:20	Anna Titova (Saint-Petersburg, Russia) Oral report: Investigation of the use of hydrogen bonds for association of polymer blocks with different substituents by means of quantum chemistry

16:20– 16:35	Vladimir Bazaikin (Ufa, Russia) Oral report: Investigation of poly-m-phenylene isophthalamide polymer membrane modified by UiO-66 (NH ₂) MOF for separation of toluene/methanol mixture using molecular dynamics method
16:35– 16:55	Eugeny Pestryaev (Saint-Petersburg, Russia) Oral report: Applicability limits of the Anderson-Weiss approach to polymer melts
16:55– 18:50	Oral blitz reports of young scientists POSTER SESSION II
20:00– 23:00	Conference Dinner
	FRIDAY – April 5, 2024
Chairman	
10:45 – 11:05	Alina Arkhipova (Novosibirsk, Russia) Oral report: Interaction of the anthraquinone derivative and its chelate complexes with nucleic bases in dark and photoinduced processes
11:05 – 11:25	Sabina Eldarova (Baku, Azerbaijan) Oral report: Study of the chemical composition of azerbaijani crude oil using infrared spectroscopy and nuclear magnetic resonance methods.
11:25– 11:40	Vladimir Koshman (Novosibirsk, Russia) Oral report: Redox activity and membrane interaction of novel thiosemicarbazones
11:40 – 12:10	‘COFFEE’ BREAK
Chairman	
12:10 – 12:50	Pavel Yushmanov (Stockholm, Sweden) Lecture: Electrophoretic NMR and applications
12:50– 13:05	Petr Fetin (Saint-Petersburg, Russia) Oral report: Polymerization kinetics and catalytic properties of resulted comb-like polyelectrolytes by ¹ H NMR
13:05 – 13:20	Milosh Ubovich (Saint-Petersburg, Russia) Oral report: Ionic Liquid Systems “[bmim]Cl/AlCl ₃ /H ₂ O” Studied by NMR and Quantum Chemistry
13:20 – 13:35	Kirill Mukhin (Saint-Petersburg, Russia) Oral report: NMR Study of Ion Behavior in lithium acetate – cesium acetate aqueous solutions
13:35– 13:55	Alexandr Ievlev (Saint-Petersburg, Russia) Oral report: Molecular and ionic mobility of ionic liquids with complex anions containing metals
13:55– 16:00	MEETING OF AWARDING COMMISSION
16:00– 16:30	Awarding, Closing and “Related Phenomena”

POSTER SESSION I (TUESDAY, 16:50 – 18:50)

1	Ivan	Adyukov	The geometric configuration determination of 2-(1-aryl-1-oxopropan-2-ylidene)hydrazinecarboxamides with ^1H - ^1H NOESY
2	Arseniy	Alekseev	Behavior of magnetic nanoparticles of ferrofluid in a focused laser beam
3	Dmitry	Alimov	UiO-66 framework with encapsulated spin probe: mechanistic study of sensitivity to mechanical pressure and guest molecules
4	Omar	Alkhuder	Using NMR to establish experimental correlations between hydrogen bond strength and the chemical shift of the ^{31}P in complexes with phosphine oxide.
5	Ekaterina	Batueva	The effect of the counterion and substituent in the ligand on the properties of the Fe(II)–Fe(III) heptanuclear complex
6	Valerii	Bezrodnyi	Molecular dynamic simulation of complexes lysine-based dendrimers with fullerenes
7	Sergey	Cheremensky	Microstructure and molecular mobility in the LiCl-CsCl-H ₂ O system according to molecular dynamics simulations
8	Mariia	Dmitrenko	Preparation and characterization of pervaporation membranes based on sodium alginate modified by Zn(BIM)
9	Anastasia	Dmitrieva	Low-field bench-top NMR study of magnetic cellulose microspheres for spiking of circulating tumor cells
10	Roman	Dubovenko	Structure and physicochemical properties of carboxymethyl cellulose/Zn-based MOF membrane
11	Anna	Dyatlovich	Device for determining the characteristics of the magnetic field of a permanent magnet. Preliminary results.
12	Maria	Egorova	Local ordering and mobility of water molecules in the micropores of a 3D zeolite with mordenite structure by molecular dynamics simulation
13	Adeliya	Garaeva	The effect of DyF ₃ particles on the magnetic relaxation of ^3He nuclei
14	Dilyara	Gareeva	Segmentation of MRI images of the spine using ML
15	Kirill	Gomonov	Nuclear Overhauser effect in determining the configuration of nitrofur-3-carboxylates semicarbazones
16	Timur	Islamov	Investigation of Lovastatin with transition metal by NMR
17	Matvei	Kadnikov	Synthesis and macromonomer structure analysis by ^1H NMR spectroscopy
18	Anna	Kariakina	Synthesis and characterization of membranes based on polyether block amide modified by MIL-125
19	Mamedgasanov	Kenan	Molecular dynamics simulation of sulfur compound extraction from a model fuel.
20	Amina	Muratova	Cell size dependence of hydrodynamic radius of PAMAM dendrimers G2 in methanol
21	Dariya	Kolosova	Structural transformations of pore water based on NMR in the consolidation theory of fine-grained soils.
22	Ekaterina	Krivosheeva	Identification of glucofrangulin A in Rhamnus frangula L. by ^1H NMR spectroscopy.
23	Anna	Kuzminova	Novel membranes based on poly(ester-block-amide) modified with Ho-MOFs
24	Olga	Lezova	Investigation of the interaction of polyvinyl alcohol and tetraethoxysilane in dimethyl sulfoxide by NMR spectroscopy
25	Kirill	Likhachev	All-optical scanning spectroscopy of anti-crossing of electron and nuclear spin levels in a SiC crystal of hexagonal polytype
26	Anastasia	Lobova	Synthesis and ^1H - ^1H spectroscopy NOESY studies of (E)-(2-chloro-2-phenylvinyl)diaminophosphine oxide
27	Olga	Mikhailovskaya	Study of pervaporation membranes based on polyelectrolyte complex of sodium alginate/polyethylenimine modified with graphene oxide

28	Anna	Mikulan	Novel composite carboxymethyl cellulose/MIL-125 pervaporation membranes: synthesis and characterization
29	Guzel	Minnullina	Cis-Trans Isomerization in Cyclosporin C Dissolved in Acetonitrile
30	Viktor	Demidov	^1H and ^{13}C NMR spectra of bioactive glassy polymorphic N-heterobiphenylene acetate binuclear complexes of Zn^{2+} and Cd^{2+}
31	Viktor	Demidov	Effect of the coordination centers and the solvents on the parameters of the ^1H and ^{13}C NMR spectra of bioactive Zn^{+2} and Cd^{2+} acetate mononuclear complexes with 1,10-phenanthroline
32	Alexey	Salin	Organocatalytic synthesis of Michael adducts of the sesquiterpene lactone arglabin and their 2D NMR structural analysis
33	Anastasia	Nikitina	Studies of EPR relaxation of NV centers in diamonds
34	Anastasia	Nikitina	EPR of magnetic nanoparticles in water dispersions
35	Nikolay	Anisimov	Study of the gastrointestinal tract using ^{19}F MRI
36	Dmitry	Cheshkov	ANATOLIA: NMR Software for Total Lineshape Analysis
37	Ruslan	Zaripov	Using Microwave and Field Gradient Pulses for binary coding of the Transverse Magnetization
38	Ilya	Ozhogin	Study of the thermochromic behavior of nitro-substituted symmetric bis-spiropyran of the indoline series using dynamic NMR methods
39	Ilya	Grishanovich	The detectig of correlations between NMR spectra of ligno-carbohydrate complexes in dissolved and solid state
40	Alexandr	Kondrashov	Influence of the operating regime on performances of the magnonic reservoir computer

POSTER SESSION II (THURSDAY, 16:55 – 18:50)

1	Luiza	Miridonova	Determination of diosmin in <i>Hyssopus officinalis</i> L.: opportunity of ^1H NMR spectroscopy.
2	Artemiy	Nichugovskiy	From Theory to Practice: Extracting spin-spin coupling constants from highly complex NMR multiplets
3	Daria	Novikova	Analysis of NOESY spectra to obtain accurate information on the structure and dynamics of some 5,7-substituted pyrazolo[1,5-a]pyrimidine derivatives in solution
4	Daria	Osetrina	Structural studies of fibril-forming peptide fragments of the semenogelin1 protein using NMR spectroscopy and molecular modeling
5	Ksenia	Panicheva	Relaxation of the ^1H multiple-quantum (MQ) NMR coherences during the excitation period in gypsum single crystal.
6	Vasillii	Pelipko	Determination of regio- and stereochemistry of spiropyrrolizine oxindoles using NMR spectroscopy methods
7	Alina	Petrova	Investigation of polyvinylpyrrolidone—hydroxyapatite composites by NMR and EPR methods
8	Ilya	Pilipenko	Application of 2D NMR experiments for identification of alkyl 5-nitro-7,12-dioxo-7,12-dihydroindeno[1,2-a]fluorene-6-carboxylates
9	Margarita	Puzikova	Development and characterization of novel nanofiltration membranes based on polyacrylonitrile modified with Zr-MOFs.
10	Andrej	Rochev	Temperature evolution of spin-phonon coupling efficiency under magnetic saturation for sodium quadrupole nuclei in a NaF crystal
11	Kirill	Salomatin	Characterization of novel dense membranes based on chitosan modified by MIL-125
12	Aleksandra	Sashina	Structure and mobility of the lipid system in water-ionic liquid mixtures: magnetic resonance measurements and molecular dynamics simulations
13	Sabina	Seyidova	Study of ionic-liquid extraction of arenes from petroleum fractions by UV spectroscopy method.
14	Amina	Shaidullina	Study of intramolecular dynamics of β -enaminone using NMR, UV and DFT methods
15	Xeniya	Sushkova	Study on biodegradability of carrageenan/starch/nanocellulose food films
16	Artyom	Tarasov	Spectral characteristics of the complex of cyclosporin C (CsC) with Dy^{3+} ions and DPC micelles in aqueous solution determined by NMR spectroscopy
17	Roman	Terekhov	Spatial structure of taxifolin's diastereomers via NMR analysis
18	Anastasia	Troshkina	Structure of the amyloidogenic peptide SEM2(49-107) by NMR spectroscopy
19	Daria	Tsukhlova	Investigation of the features of the interaction of water molecules and saccharides in aqueous solutions by NMR
20	Milosh	Ubovich	Molecular Mobility in Mixtures of Ethylammonium and Aluminum Nitrates by Molecular Dynamics Simulations in Interests of Interpreting NMR Data
21	Yulia	Uspenskaya	Transition metals in wide-band-gap semiconductor $\beta\text{-Ga}_2\text{O}_3$ identified by high-frequency electron paramagnetic resonance
22	Azamat	Yerlanuly	Formation of 2-aminospiropyrazolinium and linear compounds at β -aminopropioamidoximes alkylsulfochlorination
23	Ivan	Zhukov	Relaxation dispersion of water protons in magnetic fields ranging from 10 mT to 16.4 T for Gd-containing materials proposed as new MRI contrast agents.
24	Marcel	Bakirov	Manifestations of spin coherence transfer in EPR spectra of nitroxide free radical solutions
25	Yaroslav	Marchenko	Magnetic parameters of magnetosomes inside Magnetotactic Bacteria <i>Magnetospirillum</i> spp.
26	Marina	Shelyapina	Adsorption of glycerol at Brønsted sites in mordenite: A density functional theory study
27	Yulianela	Mengana	Theoretical relationship between proton spin-spin magnetic relaxation time (T_2) and dynamic viscosity.

28	Anatoly	Ivanov	Multi-point magnetic field mapping device to passive shimming of NMR permanent magnet
29	Konstantin	Bozhenko	Spin-Dependent Interactions of Fe_2O_n (n=1-6) Clusters with H_2 and O_2 Molecules