

CMR@IBR2 Scientific Programme

JINR Club of Scientists (Joliot-Curie, 6)

Monday, October 9, 2017

8.30 – 9.30 Registration at the Conference Site (JINR Club of Scientists)

INTRODUCTORY SESSION

Chair: D.Kozlenko

9.30 – 9.40 Opening and Welcome

9.40 – 10.20 **Shvetsov V.** (FLNP JINR, Dubna). Neutron Physics at FLNP JINR.

10.20 – 11.00 **Aksenov V.** (FLNP JINR, Dubna). A proposal for Dubna neutron source of the fourth generation.

11.00 – 11.40 **Balagurov A.** (FLNP JINR, Dubna). Correlation Fourier diffractometry at long-pulse neutron sources: the 25th anniversary of the technique at the IBR-2 reactor.

11.40 - 12.10 *Coffee Break*
Conference Photo

PLENARY SESSION 1: FUNCTIONAL AND NANOSTRUCTURED MATERIALS

Chair: A.Balagurov

12.10 -12.50 **Golovin I.** (MISIS, Moscow). Study of Fe-based ordered alloys: results of cooperation between NUST MISIS and FLNP JINR.

12.50 – 13.30 **Antipov E.** (MSU, Moscow). Alkali and transition metal fluoride-phosphates as perspective cathode materials for metal-ion batteries.

13.30 – 15.00 *Lunch*

Chair: E.Antipov

15.00 –15.40 **Abakumov A.** (Skolkovo Institute of Science and Technology, Moscow). Anionic redox reactions in Li-ion battery cathodes.

15.40 – 16.00 Ivanishchev A. (Saratov State University). Structural transformation tracking in the lithium-ion battery prototypes of various electrochemical systems by neutron diffraction analysis.

16.00 – 16.20 Bobrikov I. (FLNP JINR, Dubna). Application of the high resolution Fourier diffractometer for studying battery materials.

16.20 - 16.40 *Coffee Break*

Chair: I.Golovin

- 16.40 – 17.00 Krezhov K. (Institute for Nuclear Research and Nuclear Energy BAS, Sofia, Bulgaria). Mixed ion conducting BCY15 based materials for clean energy applications: structural features.
- 17.00 – 17.20 Kholmurodov K. (FLNP JINR, Dubna). Molecular dynamics simulations and in situ small angle neutron scattering on electrolyte density distribution of lithium–air battery
- 17.20 – 17.40 Snegir S. (Chuiko Institute of Surface Chemistry NANU, Kyiv, Ukraine). Gold nanoparticles for design of downscaled contact electrodes
- 19.00 Welcome party (Restaurant in hotel «Dubna»)

Tuesday , October 10, 2017

**PLENARY SESSION 2: DEVELOPMENT OF NEUTRON SCATTERING
TECHNIQUES AND INSTRUMENTS**

Chair: G.Bokuchava

- 9.00 – 9.40 **Kozlenko D .** (FLNP, JINR, Dubna). Neutron scattering instruments of IBR-2 high flux pulsed reactor for condensed matter research: current state.
- 9.40 – 10.00 Schilling F. (Karlsruhe Institute of Technology, Germany). EPSILON @ JINR for geosciences.
- 10.00 – 10.20 Kuklin A. (FLNP, JINR, Dubna). New possibility for SANS study: methods and technique
- 10.20 – 10.40 Kichanov S. (FLNP, JINR, Dubna). Neutron radiography and tomography facility on the reactor IBR-2: applied research.
- 10.40 – 11.00 Sadykov R. (Institute for Nuclear Research RAS, Moscow). High pressure clamp cell piston-cylinder and toroid type.
- 11.00 – 11.30 *Coffee Break*
Poster Session I

Chair: R. Sadykov

- 11.30 – 11.50 Lukin E. (FLNP JINR, Dubna). High-pressure DAC based neutron diffraction methods and technics at IBR-2 reactor.
- 11.50 – 12.10 **Pokotilovsky Yu.** (FLNP, JINR, Dubna). On the possible study of very cold neutrons at the IBR-2.
- 12.10 – 12.30 Lebedev V. (PNPI, Gatchina). Spin-Echo spectrometry using very cold neutrons

12.30 – 12.50	Milkov V. (FLNP, JINR, Dubna). New ring detector for measuring of small-angle scattering of thermal neutrons by real-time diffractometer (RTD).
12.50 – 13.10	Litvin V. (Institute for Nuclear Research RAS, Moscow). A new scintillation detectors based on SiPM and lightguides.
13.10 – 15.00	<i>Lunch</i>

PLENARY SESSION 3: DYNAMICS OF MATERIALS AND MAGNETIC PROPERTIES

Chair: E.Clementyev

15.00 – 15.40	Alekseev P. (NRC "Kurchatov Institute", Moscow). Spin-fluctuations and magnetism in rare-Earth based compounds with f -electron instability.
15.40 – 16.00	Sheka E. (Peoples's Friendship University of Russia, Moscow). Graphene and its derivatives in light of neutron scattering.
16.00 – 16.30	<i>Coffee Break</i> <i>Poster Session I</i>

Chair: P.Alekseev

16.30 – 17.10	Burzo E. (Romanian Academy of Sciences). Exchange interactions and transition metal moments in rare-Earth compounds.
17.10 – 17.30	Hetmanczyk J. (Jagiellonian University, Krakow, Poland). Changes of crystal structure, ligand and anion dynamics in $[Mn(H_2O)_2](ReO_4)_2$ studied by IR, RS and neutron scattering methods
17.30 – 17.50	Clementyev E. (I. Kant Baltic Federal University, Kaliningrad). Lattice dynamics in monosilicides of 3d metals.

Wednesday, October 11, 2017

PLENARY SESSION 4: SOFT CONDENSED MATTER AND COMPLEX NANOSTRUCTURES

Chairman: P.Balgavy

9.00 – 9.40	Uhrikova D. (Comenius University, Bratislava, Slovakia). Phospholipid bilayer in model membranes and drug delivery systems: SANS and SAXS.
9.40 – 10.00	Pieper J. (University of Tartu, Estonia). Solution structure and excitation energy transfer in phycobiliproteins of a cyanobacterium.
10.00 – 10.20	Kiselev M. (FLNP JINR, Dubna). Structure of the nanodrugs based on the soybean phosphatidylcholine.

- 10.20 – 10.40 Balasoiu M. (FLNP JINR, Dubna/IFIN-HH, Bucharest, Romania). Structural investigations on magnetic and magnetorheological elastomers
- 10.40 – 11.00 Creanga D. (Alexandru Ioan Cuza University Iasi, Romania). Gold nanoparticles and some bioeffects.
- 11.00 – 11.30 *Coffee Break*
Poster Session II

Chair: M.Avdeev

- 11.30 – 12.10 **Konevega A.** (PNPI, Gatchina). Antibiotics inhibiting the prokaryotic ribosomes: structural and functional studies.
- 12.10 – 12.30 Erhan R. (FLNP JINR, Dubna / IFIN – HH, Bucharest-Magurele, Romania). Probing the β -lactoglobulin / polysaccharides interactions using small angle neutron scattering.
- 12.30 – 12.50 Tropin T. (FLNP JINR, Dubna). Neutron reflectometry study of glass transition in thin films of polymer nanocomposites.
- 12.50 – 13.10 Molchanov V. (MSU, Moscow). Networks of wormlike complexes based on ionic surfactant.
- 13.10 – 13.30 Suyasova M. (PNPI, Gatchina). Structural features of fullerenols' aqueous solutions.
- 13.30 – 15.00 *Lunch*
- 15.00 – 15.20 Ohl M. (Forschungszentrum Jülich, Germany). Understanding the role of the PEO polymer in the conductivity process of Li-ions therein.
- 15.20 – 15.40 Smislov R. (Institute of Macromolecular Compounds RAS, St. Petersburg). Towards the structure of native bacterial cellulose.
- 15.40 – 16.10 *Coffee Break*
Poster Session II

PLENARY SESSION 5: LAYERED MAGNETIC NANOSTRUCTURES

Chair: V.Bodnarchuk

- 16.10 – 16.30 Nikitenko Yu. (FLNP JINR, Dubna). Review of neutron investigations on problem of ferromagnetism and superconductivity coexistence in layered structures.
- 16.30 – 16.50 Kravtsov E. (Institute of Metal Physics, Ekaterinburg, Russia). Magnetism of rare-earth multilayers.
- 16.50 – 17.10 Zhaketov V. (FLNP JINR, Dubna). Magnetic domain structure's investigation of

- thin ferromagnetic layer NiCu under influence of superconductivity.
- 17.10 – 17.30 Syromyatnikov V. (PNPI, Gatchina). Neutron multimonochromator-bipolarizer on the base magnetic multilayer Fe/Co and new scheme for total neutron polarization analysis.
- 17.30 – 17.50 Gapon I. (Taras Shevchenko University of Kyiv, Ukraine/FLNP JINR, Dubna). Structure of magnetic fluids at interface with silicon by neutron reflectometry.

Thursday , October 12, 2017

PLENARY SESSIONS 6: TEXTURE AND STRESS INVESTIGATIONS OF MATERIALS

Chair: T.Ivankina

- 9.00 – 9.20 Behrman J. (GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany). Elastic anisotropy of subducted oceanic crust constrained from eclogite and blueschist textures (Syros Island, Greece).
- 9.20 – 9.40 Zel I. (FLNP JINR, Dubna). Constrains on seismic anisotropy of layered rocks: experimental and theoretical studies on biotite gneiss sample.
- 9.40 – 10.00 Keppler R. (Bonn University, Germany). Elastic anisotropies of high- to ultrahigh-pressure units in the Alps modelled with crystallographic preferred orientations (CPO) of rocks from the Adula Nappe (Switzerland).
- 10.00 – 10.20 Kuehn R. (GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany). Texture and physical properties of Naxos white marbles: consequences from the use as stone for antique sculptures.
- 10.20 -10.40 Scheffzueck K. (Karlsruhe Institute of Technology, Germany/FLNP JINR, Dubna). EPSILON @ JINR: study of the strain and Kaiser effect in Forsmark granite, Sweden.
- 10.40 – 11.00 Mueller B. (Karlsruhe Institute of Technology, Germany). EPSILON @ JINR: reducing the risk of subsidence and induced seismicity through gas production.
- 11.00 – 11.30 *Coffee Break*

PLENARY SESSIONS 7: FUNCTIONAL MATERIALS AND APPLIED RESEARCH

Chair: J.Behrman

- 11.30 – 11.50 Lychagina T. (FLNP JINR, Dubna). Neutron diffraction calibration technique to determine retained austenite in textured steels.
- 11.50 – 12.10 Sumin V. (FLNP, Dubna). Problems of measuring interface stresses by neutron scattering.
- 12.10 – 12.30 Schreiber J. (Fraunhofer Institute IKTS Dresden, Germany). Determination of

	bulk residual stress distribution of superhardSiC-diamond samples.
12.30 – 12.50	Petrov P. (Institute of Electronics, Sofia, Bulgaria). Application of HfN, VN and ZrN coating on stainless steel: composition and mechanical reliability.
12.50 – 13.10	Iacomi F. (Alexandru Ioan Cuza University Iasi, Romania). Structural and functional properties of magnesium ferrite nanoparticles.
13.10 – 13.20	Waliszewski J. (FLNP JINR, Dubna). Magnetization distribution in some noncollinear systems.
13.20 – 13.40	Closing
13.40 – 15.00	<i>lunch</i>