

## 5. EVENTS

### FLNP SEMINARS

- **I. Medhat** (Spectroscopy Department, National Research Center, Egypt) “*Spectroscopic Analyses of River Nile Sediment*” (27.01.2016)
- **Ch. Schanzer** (Swiss Neutronics, Switzerland) “*State-of-the-art neutron optics by Swiss Neutronics and their application*” (11.05.2016)



*E.P. Shabalin*

- **E.P. Shabalin, G.G. Komyshev, A.D. Rogov** (FLNP, JINR) “*High-flux pulsed neptunium reactor for beam investigations*” (12.05.2016)
- **V.K. Ignatovich, V.I. Bodnarchuk** (FLNP, JINR), “*О длине когерентности нейтрона*” (19.05.2016)
- **Yu.N. Peptyolyshev** (FLNP, JINR). “*Cascade booster-breeder – new possibilities for a high-flux neutron source*” (15.06.2016)
- **R. Wieczorek** (Faculty of Chemistry, Wroclaw University, Poland) “*The metal-peptide interactions, structural impact*” (20.07.2016)
- **M.V. Vener** (Dmitry Mendeleev University of Chemical Technology of Russia, Moscow, Russia) “*Toward a unified description of intermolecular (noncovalent) interactions in molecular crystals. Solid-state DFT computations*” (20.07.2016)
- **A.I. Frank** (FLNP, JINR) “*Same topical problems of neutron optics*” (29.09.2016)
- **R.B. Hoover** (Astrobiology Laboratory, Athens State Univ., Athens, Alabama USA, Buckingham Centre for Astrobiology, Univ. of Buckingham, Buckingham, UK) “*Perspectives in astrobiology: life in the cosmos*” (06.10.2016)
- **seminar dedicated to the 80th anniversary of E.P. Shabalin** (FLNP JINR) (17.10.2016)
- **J.R. Granada** (Neutron Physics Department and Instituto Balseiro, Centro Atomico Bariloche, CNEA, Argentina and CONICET, Argentina) “*New Neutron Scattering Kernels for Liquid Hydrogen and Deuterium*” (20.10.2016)



*M.V. Frontasyeva*

### CONFERENCES AND MEETINGS

- **The 24<sup>th</sup> International Seminar on Interaction of Neutrons with Nuclei: Fundamental Interactions & Neutrons, Nuclear Structure, Ultracold Neutrons, Related Topics (ISINN-24)** took place in Dubna in the JINR International Conference Hall from May 24 to May 27. The Seminar is organized every year at the end of May by the Frank Laboratory of Neutron Physics. This year it was dedicated to the 60<sup>th</sup> anniversary of JINR.

The Seminar was attended by about 70 researchers from different JINR laboratories, about 30 scientists from Russia and CIS, as well as around 30 representatives from a wide variety of countries including Bulgaria, Belgium, Vietnam, Germany, Egypt, Italy, China, Poland, Romania, France, USA and South Africa. During the four working days the participants presented a total of 50 oral and 50 poster reports on the themes of the Seminar. The scientific program included sessions traditional for ISINN: fundamental interactions and UCN physics, physics of nuclear fission, nuclear analytical techniques in biology and ecology, nuclear reactions with fast neutrons,

nuclear structure, methodological aspects of experiments with neutrons, accelerator-driven subcritical systems. The section devoted to the review of the available neutron sources, sources currently under construction and those that are planned, as well as to the research programs for them became a distinctive feature of this Seminar.

As before, ISINN remains a platform where participants can present their as-yet-unpublished and sometimes preliminary results, where in an informal and enjoyable atmosphere

in the breaks between sessions and during the traditional picnic one has a chance to discuss one's work with colleagues, get advice, and establish new scientific contacts and cooperation.

The presentations of ISINN-24 and materials of the previous seminars are available at the web page: [hppt:\visinn.jinr.ru](http://hppt:\visinn.jinr.ru).



*ISINN-24, Dubna, Russia*

- **III International Conference on Small Angle Neutron Scattering (YuMO2016)** took place at the Frank Laboratory of Neutron Physics (FLNP) on June 6-9, 2016. The meeting was dedicated to the 80th anniversary of *Yuriy Mechislavovich Ostanevich* (1936–1992), who has made a determinative and crucial contribution to the construction of spectrometers at the pulsed reactor IBR-2.



*YuMO 2016, Dubna, Russia*

He contributed in particular, to the development of time-of-flight SANS technique, and the selection of advanced scientific areas for its application. His leadership and outstanding scientific achievements in SANS studies of polyelectrolytes, small molecules, fractals, metallic glasses, macromolecules, polymers, etc., were recognized by a number of awards including the State Prize of the Russian Federation in 2000. The small-angle neutron scattering (SANS) instrument at the IBR-2 reactor is called YuMO in his honour.

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The YuMO2016 conference focused on providing opportunities to discuss various possibilities of exploiting the SANS technique in many aspects of condensed matter research. The FLNP had an opportunity to welcome more than 110 participants from 14 different countries and 3 continents comprising Europe, North America and Australia. The scientific program was filled with 43 oral presentations extending over 930 minutes, while more than 60 posters were presented during the poster sessions and breaks.

- **Workshop on small-angle neutron scattering MURomets 2016** was held in Gatchina on September 28-30, 2016. The exhibitions stand of Frank Laboratory of Neutron Physics provide the Conference participants with an opportunity to become acquainted with the operation and plans of development for the neutron sources in JINR. The presentation was primarily focused on the implementation of the user policy at the IBR-2 pulsed reactor and presentation of facilities dedicated for small angle and reflectometry investigations.

- **The 29th Task Force Meeting of the ICP Vegetation** organized by The Frank Laboratory of Neutron Physics, Dubna, Russia together with the ICP Vegetation Programme Coordination Centre Centre for Ecology & Hydrology Bangor, UK - was held in Dubna from 29 February until 5 March 2016 (UNECE ICP Vegetation Meeting – International Cooperative Programme in the frames of the United Nation Economic Commission for Europe Convention on Long-Range Transboundary Air Pollution). The meeting was dedicated to the 60th anniversary of JINR. The program of the meeting was divided to the two sections: Ozone and Heavy Metals. In the frame of this sections lectures covered such topics as: Ozone flux-effect relationships for vegetation;



*29<sup>th</sup> Task Force Meeting of UNECE ICP Vegetation, Dubna, Russia*

Identifying and mapping ozone-sensitive communities of (semi-)natural vegetation, impacts of ozone on biodiversity; current status of heavy metals in mosses survey 2015/2016, including participation of Eastern European Countries and countries in Asia; mosses as biomonitors of heavy metal, nitrogen, persistent organic pollutants (POPs) and radionuclide pollution.

A meeting from this series was held in JINR in 2007 (The 20th TFM of UNECE ICP Vegetation). The FLNP sector of neutron activation analysis and applied research has been taking part the Commission's activities on biomonitoring of atmospheric deposition using mosses as biomonitors and nuclear analytical methods for over 20 years. Coordination of the moss programme was transferred from UK to the Joint Institute for Nuclear Research in 2014.

- On 20.10.and 8-9.12. 2016 two **meetings of TANGRA project** organized by JINR and LLC "Diamant" were held in FLNP JINR. More than 25 scientists from Azerbaijan, Bulgaria, Croatia, India, Italy, Kazakhstan, Moldova, Russia, Serbia and Thailand took part in the meetings.

The two-day meeting working programs included:

- Visit of the JINR FNLP neutron-producing facilities: IBR-2, IREN, EG-5 and TANGRA;
- Presentations on nuclear physics with neutrons: theory, experiment, applications;
- Brain-ring: ideas & experience exchange;
- Presentation of the “COST” project: present status and proposal for improving;
- Plans for further collaboration & cooperation.

## EDUCATIONAL PROGRAM

- The FLNP successfully collaborates with the JINR University Centre in the organization of **summer practical work for students** from JINR Member States (Belarus, Czech Republic, Poland, Romania, Slovakia,) and Associated Members (Egypt, South Africa).

**Lectures and excursions to the FLNP** facilities were organized for **teachers of physics** from Russia and JINR Member States.



*Summer practice, 2016, Dubna, Russia*

- The **Student Training Course: «Advanced Materials Investigation by Means of Neutron Scattering Methods»** organized by the Joint Institute for Nuclear Research together with the West University of Timisoara and University Ovidius from Constanta (Romania) took place in JINR from August 27 to September 4, 2016. The program of the course, which included 9 lectures delivered by FLNP specialists and 4 practical works, covered such topics as neutron diffraction on pulsed sources, neutron scattering in Earth sciences, structural aspects of functional properties

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forming in materials by means of neutron studies, introduction to texture analysis, determination of nanoparticle structure parameters using small-angle scattering, studies of perspective biophysical membranes by neutron optics, introduction to inelastic neutron scattering, small-angle neutron scattering investigations of ferrofluids and magnetic elastomers, basics of diffraction data refinement, experimental work with the MAUD program. The participants also visited the IBR-2 reactor and a number of neutron scattering instruments.

Among the participants were students and professors from the West University of Timisoara and Ovidius University from Constanta, Romania, several students from Moscow Physics and Engineering Institute, Moscow State University, Dubna University.



*AMIMNSM, 2016, Dubna, Russia*

- **The VII International School for Young Scientists and Students “Instruments and Methods of Experimental Nuclear Physics. Electronics and Automatics of Experimental Facilities”** was held on November 7-11, 2016 in Dubna. The School was organized by the Frank Laboratory of Neutron Physics with the support of the JINR Directorate. Seventy nine attendees from the JINR Member States (Belarus, Kazakhstan, Russia, Ukraine) took part in the School. School members arrived from 11 cities. The most representative group of participants came from Dubna, Obninsk, Yekaterinburg, Astana, Moscow and Almaty. Among them were students, PhD students and junior researchers.



*VII IMENP 2016, Dubna, Russia*

The topics of the School include neutron sources, neutron detectors, spectrometers, sample environment systems, detector electronics and data acquisition and electronics, automation of experiments on spectrometers, information technologies. Leading scientists and specialists from JINR have read 13 lectures and have conducted eight different laboratory works (8 hours each) in the framework of these lectures. During the School young scientists and students visited the IBR-2 reactor and IREN and got acquainted with the operation of the IBR-2 Spectrometers' complex.

## VISITS AT OUR FACILITIES

- I. Medhat, Spectroscopy Department, National Research Center, Egypt (27.01.2016)
- Members of the Commission of the JINR Plenipotentiary Representative of the Polish Republic (17.02.2016)
- F. Carsughi, Heinz Maier-Leibnitz Zentrum (MLZ), Germany (24.02.2016)
- J. Kulda, Institut Laue-Langevin, France (21.04.2016)
- Ch.Schanzer, Swiss Neutronics, Switzerland (11.05.2016)
- Group of foreign journalists from Great Britain and Germany ("New Scientist", "Gizmag", "Physics World", "WeltTrends", "VDI Nachrichten", "The Independent" , German Radio) (16.06.2016)
- Members of the PAC for Nuclear Physics (23.06.2016)
- Chao-Ming Fu, Director of the Department of Science and Technology of the representative office of the Taipei-Moscow Coordination Commission on Economic and Cultural Cooperation under the Ministry of Science and Technology of Taiwan (01.07.2016)
- R. Wieczorek, Wroclaw University, Poland (17-22.07.2016)
- M.V. Vener, Dmitry Mendeleev University of Chemical Technology of Russia, Moscow, Russia (20.07.2016)
- Delegation of the Korean Institute of Industrial Technology-KITECH (06.10.2016)
- R.B. Hoover, Athens State University, USA (06.10.2016)
- J.R. Granada, Centro Atomico Bariloche, CNEA, Argentina (20.10.2016)



STRUCTURE OF LABORATORY AND SCIENTIFIC DEPARTMENTS