



RESEARCH AND INFRASTRUCTURE AT THE FRANK LABORATORY OF NEUTRON PHYSICS

N. Kučerka

Joint Institute for Nuclear Research, Dubna, Moscow Region, Russia

*E-mail: kucerka@nf.jinr.ru

The Frank Laboratory of Neutron Physics (FLNP) of the Joint Institute for Nuclear Research (JINR) is one of the leading centers for neutron physics in the member states of JINR. Its legacy lays for more than half a century in applying the results of nuclear physics using the pulsed reactors in particular, for materials and life science research. The basic facility of the laboratory is the unique periodic pulsed reactor IBR-2. Most modern research methods using neutron scattering are realized at neutron beams of the reactor, as well as neutron activation analysis and studies of the radiation effects from neutrons and gamma rays. FLNP has accumulated a significant amount of state-of-the-art beam-lines and end-stations, as well as many complementary laboratory instruments. This enables obtaining comprehensive information about the objects under study. The User Program implemented at the laboratory provides a unique opportunity for scientists from around the world to get access to the research infrastructure of the IBR-2 reactor. The advances achieved over past decades developed to an extent that our scientists employ diffraction approaches to successfully characterize the physical properties of a wide range of materials that assemble a base for further advancements. Owing to progress in research approaches, there is now a better understanding in aiding a design of new materials, or in relevant mechanisms for health protection and even its recovery. Establishing the regular monitoring of environmental pollution helps to alleviate its negative impact on people and the planet.