The mega project „The NICA Complex“ — the accelerator complex of the megascience class — is aimed at reconstruction and studies of nuclear matter in extreme conditions that occurred in nature at early stages of the Universe evolution and inside neutron stars. At present the Booster–Nuclotron channel has been launched — a beam of iron ions extracted from the Booster and accelerated up to the project parameters (about 600 MeV/nucleon) has successfully passed through the channel.

At the cyclotron DC–280 of the accelerator complex **„The Superheavy Element Factory“**, record parameters of the beams of accelerated heavy ions have been achieved. Hundreds of events are obtained that allow for studying properties of SHE and coming closer to the synthesis of elements 119 and 120.

The scientific infrastructure of the **SHE Factory** is gradually improving: accelerators U–400 and U–400M are developing, a new facility DC–140 is under construction for applied research in the fields of track membranes and materials science.

118
Og
[294]
Oganesson

10
NEW
elements
in the Mendeleev's Periodic Table have been discovered at JINR

*Scientific Leader of FLNR JINR **Yuri Oganessian** is awarded the UNESCO–Russia Mendeleev International Prize*

The Baikal deep underwater neutrino telescope Baikal–GVD is a part of the global net for neutrino astrophysics, one of the three largest in the world in terms of efficient area and volume for observation of natural fluxes of neutrino. It is the largest in the Northern hemisphere. The telescope has reached the effective volume of 0.5 km^3.

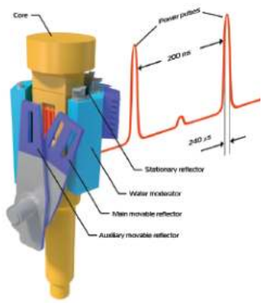
more than **70** scientists & engineers

from **11** international research centres

*An optical module of the **Baikal–GVD** deep-underwater neutrino telescope at Lake Baikal*

The scientific complex of the pulsed neutron source IBR–2 is under development.

The number of applications for experiments in the framework of its user programme has increased in a wide range of trends in the fields of condensed matter physics, nuclear medicine, and ecology.
An ambitious project to develop a new source of neutrons is being elaborated.



The achievements of JINR radiobiologists demonstrate unique opportunities of nuclear physics methods in the solution of neighbouring tasks of life sciences, radiation therapy of oncological diseases, in space radiobiology studies.

Work is actively progressing with the use of various nuclear physics methods to solve tasks in ecology, materials science, archeology, study of art, medicine, studies of extraterrestrial objects. Scientists of the Institute have achieved important results in a new field — research of biohybrid nanocomplexes to create remedies of a new generation to fight microorganisms resistant to antibiotics or those that have high potential against localized cancer tumours.

In information technologies efforts are focused on the advanced development of the Multifunctional Information and Computer Complex that combine all state-of-the-art information technologies, namely network infrastructure and the distributed data processing and storage system based on grid technologies, cloud computing, the HybriLIT heterogeneous computing platform, including the **„Govorun“** supercomputer, and robotic systems of data storage.

500+
scientific papers
per year

Pioneer results of the studies of Dubna theoreticians in the theory of fundamental particles and interactions, modern nuclear physics and condensed matter physics gained worldwide acknowledgement.

JINR, as a large multifaceted international scientific centre, aims at keeping its uniqueness, upgrading its experimental base and approaches to the development of fundamental scientific research, together with elaboration and application of new science intensive technologies, development of a strong educational component.

JINR Director, Academician
Grigory Trubnikov

The Institute ratified the JINR Long-Term Development Strategic Plan up to 2030 and beyond that is aimed at sustainable development of the Institute as a leading international intergovernmental organization and high impact scientific research for the benefit of the JINR Member States.

JINR IS A MEMBER OF **39** COLLABORATIONS AT SCIENTIFIC CENTRES AROUND THE WORLD

900+ PARTNER NETWORK ORGANIZATIONS

RESEARCH DIRECTIONS

Theoretical Physics
Relativistic Heavy Ion Physics
Spin Physics
Particle Physics
Low Energy Nuclear Physics
Nuclear Neutron Physics
Condensed Matter Physics
Neutrino & **Astroparticle Physics**

LIFE SCIENCES:
Radiobiology
Biomedicine
Structural Biology
Astrobiology
Ecology

IT & **High-performance computing**
Outreach & Education

The Committee of Plenipotentiaries of the Governments of the JINR Member States, which is the supreme governing body of JINR, takes main decisions on the Institute's activities.

The research policy of JINR is determined by the Scientific Council. It consists of eminent scientists from world-leading scientific organizations and universities.

JINR possesses a unique set of experimental physical facilities for research in elementary particle physics, nuclear physics, and condensed matter physics.

7 **JINR Laboratories, each being comparable with a large research institute in the scale of investigations performed**

Students from all over the world take part in the online programme of the JINR University Centre for students and post-graduates of scientific and technical specialties **INTEREST** — **INTE**rnational **RE**mote **S**tudent **T**raining at JINR.

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