

National Science Center **“Kharkov Institute of Physics and Technology”**

Kharkov Institute of Physics and Technology (the KIPT, earlier referred to as Ukrainian Institute of Physics and Technology), being one of oldest and largest centers of physical science in Ukraine, was created in 1928 for the purpose of developing urgent lines of research (at that time - nuclear physics and solid-state physics). As soon as four years later, on October 10, 1932, an outstanding result was received by A.K.Val'ter, K.D.Sinelnikov, A.I.Lejpunsky, G.D.Latyshev, namely, the nucleus of lithium atom was caused to undergo fission. In 1931 L.V.Shubnikov organized the first cryogenic laboratory in the USSR. Liquid hydrogen and helium were obtained here for the first time in the USSR. The first school of cryogenic physics in the country was born. Practically at the same time the talented physicist-theorist, future Nobel Prize winner, L.D.Landau, who worked at the KIPT from 1932 to 1937, formed an internationally known school of theoretical physics and the first books of the Landau-Lifshits course of Theoretical Physics were written. N.Bohr, P.Dirac, R.Paierls and other famous foreign scientists visited the Institute. The known Soviet physicists I.V.Obreimov, I.V.Kurchatov, N.E.Alekseevsky, L.F.Vereshagin, E.M.Lifshits, I.M.Lifshits, A.A.Slutskin, V.E.Ivanov, B.I.Verkin, A.A.Galkin, I.Ya.Pomeranchuk, A.F.Prikhot'ko, A.Ya.Usikov, D.V.Volkov, A.I.Akhiezer, B.G.Lazarev, Ja.B.Fainberg and others worked here.

In succeeding years in the KIPT the first three-coordinate radar installation in the USSR was constructed. The institute has pioneered high vacuum engineering in the USSR, on the basis of which subsequently a new physico-technological direction - vacuum metallurgy - was advanced.

The distinctive properties of the Institute were always the combination of the fundamental approach to solving the problems with a practical orientation of work and a wide range of the studies done. The last circumstance has played an important role in formation of several large scientific institutions with the KIPT as the base: Institute of Radioelectronics of National Academy of Sciences of Ukraine (1955), Institute of Low Temperature Physics and Engineering of NAS of Ukraine (1960), and others.

In post-war years the KIPT was one of the active participants working on the problem of use of atomic energy in the USSR. Later the Institute was included in thermonuclear fusion investigations. In 60-70th many unique experimental installations were constructed. These installations are the national resource by the Decree of Cabinet of Ministers of Ukraine. A number of new materials, significant technological processes and installations were introduced into industry.

After disintegration of the USSR the Institute is actively comprised in the process of creation of research complex of Ukraine, as well as in shaping policy and corresponding institutes of Ukraine in the field of atomic industry, nuclear energy, in the determination of further fate of nuclear weapon of the Ukraine, in the development of material science, accelerator equipment and new sources of energy for demands of the State.

By the Decree of the President of Ukraine in 1993 the Institute was given the status of the first in Ukraine National Science Center (the NSC KIPT). According to the Decree, in the NSC KIPT on the basis of scientific departments there were formed the Institute of Plasma Physics, the Institute of Solid-state Physics, Materials Science and Technologies, the Institute of Plasma Electronics and New Methods of Acceleration, the Institute of Theoretical Physics named by A.I.Akhiezer, the Institute of High-energy Physics and Nuclear Physics. Also there were created R&D Complex "Accelerator", the Technological Complex "Nuclear Fuel Cycle", Center on design of active zones of nuclear reactors, Research-and-production Complex "Renewable Energy and Sustainable Technology" and others.

The NSC KIPT publishes the scientific journal "Problems of Atomic Science and Technology".

Significant part of research in the NSC KIPT is executed within the framework of international agreements, on contracts with foreign organizations and companies of the 15 countries. The Center supports and develops relations with many international organizations and centers of science (IAEA, CERN, JLAB (USA), Joint Institute of Nuclear Research in Dubna).

The NSC KIPT is a nuclear facility under IAEA safeguards. In the frames of nuclear weapons non-proliferation regime the Center carries out an international cooperation in the area of nuclear export control, particularly through scientific expertise fulfillment, and on nuclear materials accountancy, control and physical protection systems modernization.

During last years more than 100 projects of different scientific foundations were executed by the scientists of the Center for the whole sum about \$US 9 million. In the whole, more than 400 scientists carry out fundamental researches with support of various international foundations and organizations.

Nearly 300 Candidates and 80 Doctors of Sciences, 10 Members of National Academy of Sciences of Ukraine work here. More than 80 persons are the winners of State and Nominal Prizes. From 1992 the scientists of the NSC KIPT have got 9 State Prizes in science and technology.

From 2004 the NSC KIPT is under the management of National Academy of Sciences of Ukraine.