
ILYA IVANOVYCH ZALYUBOVSKYI (to the 80th anniversary of his birthday)



On June 15, 2009, the outstanding physicist and organizer of the Ukrainian science, the Honored Worker in science and engineering of Ukraine, the winner of the State Prizes of Ukraine, Corresponding member of the National Academy of Sciences of Ukraine, Professor Ilya Ivanovich Zalyubovskiy became 80 years of age. His personal contribution to the development of nuclear physics, radiation physics of solids, cosmic-ray physics, and biophysics crucially affected the level of researches in the whole domain of experimental physics.

I.I. Zalyubovskiy was born in the Poltava region in 1929. In 1949, he entered the Faculty of Physics and Mathematics at the Kharkiv State University (now, the V.N. Karazin National University). Since then and till now, the destiny of Ilya Ivanovich has been inseparably linked with the University. Here, in 1952, he began his scientific activity under the direction of Academi-

cian A.K. Val'ter. First, Ilya Ivanovich combined his scientific work with postgraduate study, then with lecturing. In 1963–1965, he headed a group of scientists that were engaged in the scientific work and the training of top-skill experts at the Atomic Center of the Arab Republic of Egypt. In 1966, he defended the dissertation for the doctoral degree, and, since 1967, he had the rank of Professor. In 1968, Ilya Ivanovich participated in scientific researches and lectured at the Manchester (formerly, Rutherford's) laboratory in England. From 1965, he headed the Faculty of Experimental Nuclear Physics, being the Vice-President of the University for scientific research since 1967.

The first cycle of scientific works by I.I. Zalyubovskiy was connected with the research of the processes of interaction between accelerated particles and atomic nuclei. The results of those researches, which were distinguished by their systematic character and ingenuity, not only stimulated the development of new theoretical models, but also essentially extended possibilities to use nuclear reactions for experimental researches of atomic nuclear structures. I.I. Zalyubovskiy succeeded in resolving the problem dealing with the measurements of static electromagnetic moments of atomic nuclei by using the methods that were based on the effect of perturbation of angular correlations. Those works, which were awarded with the K.D. Sinelnikov Prize of the Academy of Sciences of Ukraine in 1983, find the further development, when being applied to modern accelerators.

After Ilya Ivanovich had headed the Faculty of Experimental Nuclear Physics, the scope of his scientific interests extended drastically. He started new—both for himself and the faculty staff—directions of researches associated with space physics, radiation physics of solids, and biophysics.

Owing to I.I. Zalyubovskiy's initiative, intensively developed are experimental methods of researches of cosmic ray interaction with the Earth atmosphere and magnetosphere. As early as at the beginning of those re-

searches, a new physical phenomenon—the effect of radioemission by an extensive air shower of cosmic rays—was discovered as a result of a series of precision experiments carried out under Zalyubovskiy's direction; afterwards, the mechanism of its emergence was studied in detail. Those works were awarded in 1971 with the State Prize of the UkrSSR in science and engineering.

Under the direction of Ilya Ivanovych, a powerful experimental basis has been created at the V.N. Karazin Kharkiv National University for the solution of fundamental problems in radiation physics of solids, radiation materials science, biological and medical physics, radiation tests and technologies, as well as substance microanalysis. Owing to complex experimental researches of the interaction between the radiation of various origins and energies, on the one hand, and various substances and materials, on the other hand, which were organized by him, some new earlier unknown regularities and effects associated with the radiation influence on physical properties of metals, alloys, semiconducting and polymeric substances, and biological objects were found. In particular, the amplification effect for an acoustic signal excited by radiation fluxes in metals subjected to the action of static tensile stresses has been revealed. It was established that this phenomenon is a common property of radiation-acoustic effects for any combination of substances and materials, and that the mechanism of sound generation by radiation fluxes is universal. The cycle of works on the comprehensive analysis of atomic nuclei and the processes of interaction between particles, nuclei, and radiations of various energies with a substance was awarded in 1994 with the Yaroslav Mudryi Prize.

The scientific style of I.I. Zalyubovskiy, which has already been formed at the first stage of his entrance into science, is characterized not only by the depth and fundamentality of approaches used, but also by an intimate connection with applied studies. One of the most active periods of Ilya Ivanovych's scientific work is associated with the realization of his scientific achievements by military defense orders.

I.I. Zalyubovskiy pays a huge attention to the improvement of the scientific research management. Currently, the structural subdivisions, which have been created owing to Ilya Ivanovych's initiative and now are headed by highly skilled experts trained by him, continue the started earlier researches in cooperation with the institutions of the NASU and the National Space Agency of Ukraine, as well as with the leading scientific nuclear physics centers in other countries. In the framework of the international cooperation, the structures of exotic atomic nuclei are studied on heavy ion accelera-

tors. Under low-background conditions of the Baksan neutrino observatory on experimental installations created together with the Institute of Nuclear Researches of the Russian Academy of Science, the nature of neutrino is studied, and the preparation to the experiments on dark matter search is carried on. A satellite-borne telescope of high-energy charged particles, which successfully passes tests on a Russian satellite in the framework of the KORONA-FOTON project, has been created.

The total number of scientific works published by I.I. Zalyubovskiy exceeds 400. Among them, there are 5 monographies, the textbook "Nuclear Physics" (its fourth edition was awarded with the State Prize of Ukraine in 1993), and the manual "Nuclear Spectroscopy"—unique in our country—for university students.

The problem of professional training for new branches of physics has always been perceived by I.I. Zalyubovskiy as the major task. He played one of the key roles in the creation and the subsequent development of the Faculty of Physics and Engineering at the Kharkiv State University. Moreover, he was the first dean of this faculty. The chair of experimental nuclear physics, headed by Ilya Ivanovych now, constantly searches for new approaches in the improvement of the expert training in nuclear physics. Among I.I. Zalyubovskiy's disciples, there are 8 Doctors and about 40 Candidates of science.

Plenty of his forces and energy is given by Ilya Ivanovych to scientific management and public activity. He was a member of the Committee on State Prizes of Ukraine, an authorized representative of the Ukrainian government at the Joint Institute for Nuclear Research and a Vice-President of the Ukrainian Physical Society. For many years, he has been the chairman of the Council of Vice-Presidents on Scientific Research at the Ministry of Education and Science (MES) of Ukraine, the chairman of the Scientific-Expert Council in the professional direction "Physics" of the Branch of Scientific Issues at the Scientific and Methodical Council of the MES of Ukraine, the chairman of the Professional Council on licensing and accreditation of the institutes of higher education of Ukraine in natural sciences, the member of Scientific Councils of the NAS of Ukraine on nuclear physics and high-energy physics, the chairman of Specialized Council on doctor's and candidate's dissertation defense in the fields of nuclear physics and physics of elementary particles, physics and chemistry of plasma, the Editor-in-Chief of the journal "Nuclei, Particles, Fields", and the editorial-board member of the "Ukrainian Physical Journal".

The Honored Worker of Ukraine in science and engineering, the High Achiever in Education of Ukraine, the winner (twice) of the State Prize of Ukraine, he was also awarded with two Orders of Labor Red Flag, all three grades of the Order “For Merits”, and medals.

The fruitful scientific, pedagogical, and management activity of I.I. Zalyubovskiy, his sincere goodwill, his willingness to always come to the rescue have won him

the deep respect and the love of his colleagues and disciples.

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