

Viktor Mikhaïlovich Kolobashkin (Obituary)

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On September 23, 1984 Viktor Mikhaïlovich Kolobashkin, a prominent figure in the sphere of higher education, director of the Moscow Engineering Physics Institute, a well known experimental physicist, doctor of physical-mathematical sciences, in charge of the department of "Experimental methods in nuclear physics" died suddenly in his 54th year. All his scientific activity is a shining example of a skillful combination of the solution of important theoretical problems in nuclear physics and carrying them through to a practical application in different branches of science and technology. He died at the peak of his creative powers, imbued with brilliant scientific ideas and creative plans.

Viktor Mikhaïlovich Kolobashkin was born on February 15, 1931 in Moscow. In 1956 he graduated from the Moscow Engineering Physics Institute and began graduate work. Already at that time such basic traits of his scientific productivity became evident, as striving to obtain completed theoretical results on the basis of which one could construct simplified mathematical models capable of describing real physical processes in a sufficient degree of detail.

The first works of Kolobashkin in the field of theoretical and experimental physics are associated with an investigation of the migration of radionuclides in different media. He succeeded in obtaining a number of analytical solutions of self-perserving problems of filtration and adsorption of gases in porous materials at high Reynolds numbers. His subsequent papers were devoted to principles of a complex study of physical characteristics of processes of fission of heavy nuclei by neutrons. On this basis amplitude-time and cyclic methods of the analysis of γ -radiation of unfractionated mixtures of fission fragment nuclides were developed.

The rapid growth of nuclear power production in our country led to the necessity of a detailed study of radiation characteristics of irradiated nuclear fuel. Therefore under his guidance and with his direct participation important calculations were made of the radiation characteristics of fission products from ^{235}U , ^{238}U , and ^{239}U . On the basis of materials obtained a unique reference book was compiled on the radiation characteristics of irradiated nuclear fuel taking into account nuclear contacts for 58 actinides and 650 fission products. These results served as the basis for the creation of an automated system of information on non-neutron nuclear data (ASIND) and a system of forecasting radiation characteristics of irradiated nuclear fuel with the fullest constant rate of supply. Scientific research institutes investigating nuclear power production hold this work in high esteem and the reference handbook and the ASIND are widely used in their practical operations.



VIKTOR MIKHAÏLOVICH
KOLOBASHKIIN
(1931–1984)

As a prominent experimental physicist Kolobashkin devoted much attention to development of apparatus for laser adsorption gas analysis, spectrometric installations tied in with computers and to making it possible to automate the carrying out of a physics experiment. On this basis he succeeded in carrying out a series of original experiments and in obtaining fundamentally new scientific results on nuclear physical characteristics of fission products. As a result of this work a new scientific field was created concerned with the optimal planning of experiments with the aid of computers in the field of automation of physics experiments which at the present time has become exceptionally important. This method of carrying out experiments enables an experimental physicist in the course of carrying out his work on a research reactor, accelerator or a neutron generator to influence actively the course of processes altering them in the required direction based on his intuition and experience. This leads to a significant reduction in the time spent in car-

rying out experimental investigations and reduces material expenditures.

Kolobashkin had a remarkable ability of evaluating correctly the experimental results obtained by him in order to apply them to seismology, prediction of earthquakes, oceanology, conservation of the environment and extraction of minerals. For a series of papers on these subjects he, together with a group of his students was awarded in 1982 a State Prize of the USSR in the field of science and technology.

Because of his great erudition Kolobashkin worked productively also in other fields of theoretical and experimental nuclear physics. His ideas concerning the distribution of fission products in micro heat generating elements of high-temperature gas-cooled reactors made it possible to obtain important results concerning the mechanisms of transport of fission fragment nuclides in different materials of atomic technology and to increase the reliability of exploitation of nuclear reactors. He formulated a new problem concerning the calculation of β -spectra of cascade processes of allowed and unique transitions in the first and second orders of forbiddenness, taking into account in this connection the finite dimensions of the nucleus and the screening effect of the electron shells of atoms.

The entire scientific life of V. M. Kolobashkin had been associated with the Moscow Engineering Physics Institute where he defended both his candidate's and doctoral dissertations, had educated a large group of pupils, had given courses of lectures, had been a scientific director of the All-Union school on nuclear physics, had directed a laboratory dedicated to problems of nuclear physics, had served as a

member of specialized scientific councils, of the Organizing Committee of Gagarin Lectures sponsored by the Academy of Sciences of the USSR in the field of aviation and cosmonautics, had served as a member of a section of the committee on the award of Lenin and State prizes of the USSR in the field of science and technology.

During the time that he worked at the Moscow Engineering Physics Institute he was the author of 164 scientific publications including 4 books: "Products of Prompt Fissions of Uranium-235, Uranium-238, Plutonium-239 in the Time Interval of 0-1 hour" (Atomizdat, M., 1969), "Irradiation Characteristics of Fission Products" (Atomizdat, M., 1974), "Scientific Bases of Progressive Technology" (Mashinostroenie, M., 1982), "Radiation Characteristics of Irradiated Nuclear Fuel" (Energoatomizdat, M., 1983).

The great achievements of V. M. Kolobashkin have been highly appreciated by his motherland: he was awarded the Order of the October Revolution, two orders of the Red Banner of Labor, and several medals.

The last years of the scientific-pedagogical activity of V. M. Kolobashkin have been particularly fruitful. And although he died at an age of only slightly over fifty years, his brilliant life cannot be considered a short one, since he succeeded in achieving much for the development of theoretical and experimental nuclear physics and of higher education in our country.

The bright memory of Viktor Mikhaïlovich Kolobashkin, a talented and broadly educated man, will be retained by all those who knew him well.

Translated by G. M. Volkoff