

## IN MEMORIAM OF ACADEMICIAN VALERIU KANTSER



When a good bright man leaves, the world becomes poorer. In April this year, the scientific community of Moldova lost an outstanding scientist, while the Moldavian Journal of the Physical Sciences lost its first editor-in-chief, founder, and „driving force” of our journal Academician Valeriu Kantser. I was lucky to work with this remarkable person for 36 years. In 1980, right after the graduation from postgraduate courses (me at the Kharkov Institute of Low Temperatures, while Valeriu at Lebedev Physical Institute in Moscow), both of us started working with great enthusiasm in the Laboratory for Semimetals of the Institute of Applied Physics of the Academy of Sciences of Moldova under the guidance of academician Dumitru Gitsu. Working in the same office with Valeriu for the next 8 years, I had an opportunity to fully appreciate the scientific horizon and the broadest range of scientific interests of this bright and very energetic scientist.

He was chairman of the National Council for Accreditation and Attestation, senior researcher of the Institute of Electronic Engineering and Nanotechnology "D. Ghițu," president of the Moldovan Physical Society, editor-in-chief of the Moldavian Journal of the Physical Sciences, chairman of the Association of the Inventors of the Republic of Moldova, and professor of the State University. This man had enough time, patience, and strength to do everything. It is unfortunate that all this ended abruptly and suddenly. On April 2, 2017, when morning lights up, at the age of 62, the heart of the famous academician physicist Valeriu Kantser stopped beating. Competence in physics and working capacity of an unrivaled strength always placed him in the forefront of the scientific community. He left us in the dawn of creative forces, with many unfulfilled plans concerning research, organizational, and scientific–didactic projects. He left an impressive scientific heritage for everybody; however, for those who knew and loved him, he left a great emptiness in the soul. In the near future, he was going for a trip to the Joint Institute for Nuclear Research in Dubna (Russia) to participate in a regular meeting of the International Committee for Expertise and Consulting in Condensed Matter Physics, the president of which he was since 2009.

Valeriu Kantser was born in 1955 in the village of Zakhorna, Sholdaneshti district. In 1972 he finished the secondary school of the village of Cotiujeii Mari with a gold medal and entered the physics faculty of the Kishinev State University (now Moldova State University). His desire to become a scientist began to take shape in senior school and especially in the faculty, when he was impressed by the outstanding achievements in the field of physics of that time, which step by step were changing the ideas of the world and the development of civilization. Being a second-year student, he was offered to work as a laboratory assistant in the laboratory for thermoplastic recording. At that time, the first scientific task was formulated for him. In 1977, when he was a fifth-year student, he was invited to take part in the conference of young scientists of the CMEA countries (Council for Mutual Economic Assistance) held in Plovdiv, Bulgaria. This was the debut of Valeriu Kantser with a scientific report at an international conference.

In the same year of 1977, Valeriu Kantser was enrolled in the postgraduate courses of the Lebedev Physical Institute of the Academy of Sciences of the USSR in the Department of Theoretical Physics of the Institute headed by Nobel Prize winner Acad. Vitaly Ginzburg, who became his research supervisor. Acad. Vitaly Ginzburg was also the head of scientific seminars. These seminars were the most effective scientific schools, where the participants learned what science is and how to conduct scientific research. This outstanding researcher has markedly affected the formation of Valeriu Kantser as a scientist. After the seminar at which postgraduate student Kantser presented his first research results, the distinguished academician kindly explained how to present scientific reports in the future. He demanded that the scientific works of the postgraduate students of the Lebedev Physical Institute met high standards, without any flaws. For postgraduate student Kantser, this was a lesson for a lifetime.

Another personality with whom Valeriu Kantser was lucky to contact during the postgraduate studies was Acad. Petr Leonidovich Kapitsa, Nobel laureate, director of the famous Institute of Physical Problems in Moscow, editor of the scientific journal *ZhETF* (Journal of Experimental and Theoretical Physics). The research supervisor instructed postgraduate student Kantser to come to the editorial office of the journal and submit the requested corrections to the manuscript that they sent to the editorial board. With great excitement, he appeared before the esteemed editor of the famous scientific journal. He expected the editor-in-chief to insist on objections from the editors; however, after postgraduate student Kantser presented the necessary arguments, P.I. Kapitsa agreed with the version of the presentation of the research results proposed by the authors of the manuscript.

In 1980, six months before the completion of the postgraduate studies, he presented a thesis in the department where it was developed. He brilliantly defended his candidate of science dissertation (now doctoral dissertation) and returned to Chisinau.

Since 1980 Valeriu Kantser has continued his scientific research in the laboratory for semimetal physics under the guidance of academician Dumitru Gitsu. He passed all the steps of the scientific hierarchy from a junior researcher to a senior researcher, a coordinating researcher, a chief researcher, a head of a laboratory, a deputy director of the Institute of Applied Physics, and later a coordinating academician of the Department of Mathematical, Physics and Technical Sciences of the Academy of Sciences of Moldova.

From 2006 until his last days, V. Kantser was the chief researcher of the Solid State Laboratory of the Ghitu Institute of Electronic Engineering and Nanotechnologies. In 2009, he was appointed chairman of the National Council for the Accreditation and Attestation of Moldova. Talent, proficiency, and broad horizon of knowledge allowed Valeriu Kantser to achieve high results in the field of physics and engineering of materials, nanoengineering, and solid state electronics. Being sensitive to everything new in science, he easily passed from one area of research to another. His scientific research included a broad range of physical phenomena under discussion, such as ordering and electronic phase transitions, topological insulators, anisotropy phenomena, transport phenomena and tunnel effects, quantization and interface effects, thermoelectricity, and many other directions. His scientific results were published in more than 500 scientific papers and textbooks, including 8 monographs and 30 patents. His developments were awarded ten medals at international inventions exhibitions. He was invited with reports to many international conferences; he presented results of research in physics as competently as no one else in our country.

Since 1981, Valeriu Kantser has constantly visited university departments as an assistant professor with various courses and lectures; since 1997, as a professor at the University of Tiraspol, the State University of Moldova, the Technical University of Moldova, the University of the Academy of Sciences of Moldova, and also some universities abroad—in Augsburg, Osnabrück (Germany), Warwick, Loughborough (Great Britain), Iasi and Cluj Napoca (Romania). He was firmly convinced that a person engaged in science has a moral obligation to contribute to the training of students and post-graduate students and introduce them to innovations in science and research elements. He himself lived his life with maximum intensity, being incomparably thirsty for new knowledge.

In the National Council for Accreditation and Attestation, Acad. Valeriu Kantser continued the modernization of research institutions of the system of accreditation and training of scientific and scientific-pedagogical personnel. Under his leadership, the system of accreditation and scientific attestation of Moldova has managed to find an intermediate format to combine the best practice in the European concept of certification and support of the doctorate and the model that existed in the former USSR.

Valeriu Kantser was a member of the International Academy of Thermoelectricity, the Executive Committee of the European Physical Society, and the Executive Council of the Balkan Physical Union; an honorary member of the International Institute of Physics of the United Kingdom and the Romanian-American (USA) Academy of Arts and Sciences; Doctor Honoris Causa of the International Academy of Informatics, Tiraspol State University, and Free International University of Moldova; and President of the

Physical Society of Moldova. The results of the activity of Acad. Valeriu Kantser were awarded: he was Laureate of the Republican Youth Prize in Science and Technology (1983), Laureate of the National Prize of the Republic of Moldova in Science and Technology (2004), a Prize of the Presidium of the Academy of Sciences of Moldova for scientific activity (1992), "Om Emerit" title (2005), "Gloria Muncii" Order (2010), and "Dimitrie Cantemir" medal of the Academy of Sciences of Moldova (2012).

How much more could he do in science, how many ideas he expressed should have been implemented in projects and new engineering developments! The departure from life of physicist Acad. Valeriu Kantser is a huge loss for the scientific community of Moldova. In memory of the scientist, his name was given to the scientific Laboratory for Solid State Structures of the Ghitu Institute of Electronic Engineering and Nanotechnologies, which was organized and headed by him in the last years.

A true scientist, a man of humanity, a prominent personality of the Republic of Moldova, a model of creative devotion to research Valeriu Kantser will remain in the history of research in our country and in the memory of those who worked together with him; he was a real guide and friend. Let us remember this great man of the nation with gratitude, while keeping his memory alive.

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