

**Andrey Stepanovich Drobyshv, scientist  
who developed cryophysics in Kazakstan, obituary  
(11.09.1950 – 20.12.2018)**



Andrey Stepanovich Drobyshv, physicist, doctor of physical and mathematical sciences, professor at al-Farabi Kazakh National University and chief researcher of the Institute of Experimental and Theoretical Physics (IETP) and National Nanotechnological Laboratory of Open Type (NNLOT). He was a remarkable man and a great developer of the scientific direction of “Cryophysics” in the Republic of Kazakhstan. He has passed away on 20th December, 2018 at the age of 68.

Andrey S. Drobyshv was born on September 11, 1950 in the village of Lukyanovka, Omsk Region. In 1959, his family moved to Kazakhstan and in 1967 he graduated from high school and entered the Department of Physics at S.M. Kirov Kazakh State University. In 1973 he graduated from the university with the qualification of “physicist, teacher of physics in German” and was distributed to the Department of Physical Hydrodynamics (later, the Department of Thermal Physics), which is still in operation.

Since 1975, he has been actively involved in research work, being the executor, and subsequently, the head of large contractual issues, commissioned by enterprises of the Ministry of General Engineering of the USSR. The main directions of the work that he carried out were space modeling in ground-based test facilities and thermal vacuum testing of materials and components of products intended for work in space conditions. The results of these studies became the basis of his PhD thesis: “Growth rate, density and thermal conductivity of cryocondensate gases”, which was defended in 1984, in the specialty “Thermal Physics and Molecular Physics”.

In March 1987, Drobyshv A.S. established a “Laboratory of Cryophysics and Cryotechnologies”. He was the head of this Laboratory until the last days of his life. In addition to the continuation of applied research, an important focus of the his Laboratory is the performance of fundamental researches related to the study of gas-solid phase transitions at low

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temperatures and the properties of cryovacuum gas condensates.

In 1991, Drobyshev A.S. became a member of the initiative group headed by Academician Kozhamkulov T.A., which was engaged in the development of regulatory documents on the creation of research institutes at the university. As a result, in 1992, based on the Faculty of Physics at al-Farabi Kazakh National University (KazNU) the Research Institute of Experimental and Theoretical Physics (IETP), was established. A.S. Drobyshev became the deputy director of this institute, and later a director between 1993 and 1996.

In 1997 he defended his Doctoral thesis on the topic of “Growth kinetics, structure and properties of real cryocrystals”, in the specialty “Solid State Physics”.

Professor Drobyshev continued research works in the field of low-temperature physics, as a head of scientific projects in a number of fundamental research programs of the National Academy of Sciences of Kazakhstan. At the same time, Laboratory of Cryophysics and Cryotechnologies carried out researches and production activities, introducing low-temperature technologies at enterprises in Kazakhstan. He also was engaged in activity related with establishment of close scientific, industrial and pedagogical relationships with leading universities in the former Soviet space and far abroad. Among them Institute of Solid State Physics (Russia), Physical-Technical Institute of Low Temperatures (Ukraine), M.V. Lomonosov Moscow State University, Texas Christian University (USA), Autonomous University of Madrid (Spain), University of Manchester (England), Munich Polytechnic Institute (Germany).

Some of the professional activities of the professor Drobyshev A.S were related to the preparation of new scientific and pedagogical stuff

in physical specialties. In 2000, he became a head of a creative team for the development of the State Standard in the specialty “Technique and Physics of Low Temperatures”. In the same year, the first enrollment in this specialty is carried out at the Department of Physics at al-Farabi KazNU. He has prepared and read the basic special courses on these specializations: “Cryophysics”, “Technique and Physics of Low Temperatures”, “Experimental Physics”, “Cryophysics of the Condensed State”, “Physics of Cryocrystals”, etc. He has supervised graduation and dissertations of bachelors and masters of the faculty. Under his leadership, have been defended PhD dissertations.

For several years, Drobyshev A.S. was a member of the academic council of the al-Farabi KazNU and the Faculty of Physics and Technology, a member of the dissertation council for defending doctoral dissertations, a member of the scientific and technical council of the IETP at Al-Farabi KazNU, an expert of the Ministry of Education and Science of the Republic of Kazakhstan. Since 2011, he was a member of the Council of the Institute of Oil and Gas of Kazakhstan. According to the materials of scientific research, more than 80 articles have been published in major international scientific journals, which reflect the main scientific results obtained by the group of professor Drobyshev.

**Al-Farabi Kazakh National University,  
Faculty of Physics and Technology**

**Institute of Experimental and  
Theoretical Physics**

**National Nanotechnological Laboratory  
of Open Type**