

In memoriam

**Professor ALGIRDAS ŽUKAUSKAS
1923–1997**

On August 2, 1997 a tragic accident ended the life of a prominent Person, a well-known scientist, an associate, public figure in Lithuania, Member of the Lithuanian Academy of Sciences, Professor Algirdas Žukauskas.

The life of the academician Algirdas Žukauskas was both fruitful and diverse. His talent, combined with an analytical mind and an exceptional industries, persistence and consistence in the direction, was in an exceptional degree exhibited both in scientific research and in everyday research with a strategic leadership of large institutions and societies.

Prof. A. Žukauskas was the initiator of investigations on heat transfer in Lithuania, the founder and the head of the Lithuanian School of thermal physics, which became known all over the world. He was the Member of the Lithuanian Academy of Sciences, its long-term vice-president. Doc. Habil., Professor, Merit Scientist. A. Žukauskas was born of February 2, 1923 in Lithuania. A. Žukauskas graduated in 1947 the Department of Mechanics at the Vylaulas Magnos University in Kaunas as a mechanical engineer in thermal engineering. As a post graduate he worked as an assistant lecturer, and continued the scientific work. Here he became interested in one specific problem, very important at that time, namely, heat transfer by convection in flows of different fluids over transverse single cylinders and bundles of tubes. During 1952 and 1953 he resided at the Moscow Energy Institute (MEI), at the Department of Fundamental Thermal Engineering. He defended with a high success in 1953 his Cand. of Tech. Sci. Thesis. In Moscow at the ENIN A. Žukauskas defended in 1963 his Doctor's Thesis. This was an extended study and interpretation of heat transfer by convection in flows of viscous fluids with variable physical properties.

In 1953 A. Žukauskas was offered a job at the Lithuanian Academy of Sciences and was soon elected Director of the Institute of Physics and Engineering. He initiated here investigations of power generation, technologies of metals, construction technologies and electrification of agriculture and research in applied physics. It was by his efforts and initiative that the Institute of Energetic and Electrotechnics, was founded in 1956 and later developed thanks to him, where the foundations of research in thermal physics were laid. He also founded and headed for a number of years the Laboratory of Thermal

Engineering, later renamed the Laboratory of Analytical Thermophysics. In 1967 the Institute was reorganized into the Institute of Physical and Technical Problems of Energetic, to become with time a prominent multi-branched scientific center at the Lithuanian Academy of Sciences and in the Soviet Union. Prof. A. Žukauskas provided important support and assistance in founding research and experimental facilities for the solution of fundamental problems in thermal physics. Thanks to the important and serious works and solutions in those fields, the Institute acquired a worldwide fame.

In 1966 Prof. A. Žukauskas was elected vice president of the Lithuanian academy of sciences and in its staff worked more than 35 years. He worked as a Head of Division of Technical Sciences since 1992. With his inborn energy, creativeness and scrupulousness he performed his obligations up to his unexpected death.

As the founder of studies on heat transfer and thermal physics in Lithuania, Prof. A. Žukauskas concentrated his efforts on convection in single-phase flows. For a number of years he worked in following fields: fluid dynamics and heat transfer in laminar and turbulent boundary layers, fluid flow structure and heat transfer of single cylinders and transverse banks of tubes, fluid dynamics and heat exchange over rough-surface and finned tubes, vibration of tubes in heat exchangers, heat transfer in channels, combined heat transfer of simultaneous convection and radiation. He paid a lot of attention to thermal dynamics and ecology of cooling ponds of the large energy objects, the Lithuanian Thermal Power Plant and Ignalina Nuclear PP included. He studied in the recent years the regularities of augmenting heat transfer processes, as well the effects of power plants of their environment, and the problems of atmosphere pollution.

Regularities of convection and prediction formulas suggested by Prof. A. Žukauskas apply to various problems in thermal physics, his techniques are widely used in the design of various heat exchangers. The results of his studies are included in text books and handbooks on thermal physics of University of many states that constitute over 89 fundamental publications.

Alone and with co-authors Prof. A. Žukauskas has published over 550 journal articles including about 170 that have been translated into English, German and other languages in numerous foreign journals. He is also the author of 15 books, that are known all over the world in Russian and in English. These are "High Performance Single-Phase Heat Exchangers" 1987 (and in China), and numerous monographs of "Thermophysics". Prof. A. Žukauskas was the founder, and was since 1988 for many years the member and the Head of the Board of editors of this famous series of books. The series consists at present of 26 books and these include 12 books translated in English and published by Hemisphere PC and Begell House Inc. in the USA. He was either the editor or a member of the board of editors of numerous journals: "International Journal Heat and Mass Transfer", "Power Engineering", "Advances in Heat Transfer" and others.

He was co-editor of the Heat Exchanger Design Book, which is familiar among specialists in thermal physics all over the world and he has made an important contribution in the international cooperation of researchers in thermal physics. He was also active in various Committees on heat-and mass transfer and power generation both in Lithuania and in other states. He worked for a number years in Assembly International Conference of Heat Transfer, International Heat and Mass Transfer Center in Yugoslavia and others.

Prof. A. Žukauskas is well known among specialists on heat and mass transfer, his works constitute an important contribution to the progress of studies in thermal and fluid dynamics and of heat exchangers.

He has been tutor and consultant in preparing over 50 Theses, including 10 Doc. Habil. Theses. His efforts in research and management have been highly esteemed by electing him in 1962 Member of the Lithuanian Academy of Sciences. He was also awarded the National Prize in Science and Technology (1975), the titles of Marked Science Activist (1974), the prize of the International Center of Heat and Mass Transfer (1986), Member of Society of Mechanical Engineers (UK) (1992) and the Russian Academy of Natural Sciences (1994). Prof. A. Žukauskas has visited and lectured in numerous Research Centers and Universities of the world.

Prof. A. Žukauskas has made important contributions to the progress of science and technologies in Lithuania, to the promotion of his achievements in science, to developments of power generating facilities and electrification of the agriculture. He was the head in developing prospective plans on energy generation, in the design of the Lithuanian Thermal Power Plants. He was also an important person in coordination the works of scientific research in various institutions, and in implementing modern technologies and experimental results in various industries.

We, his colleagues continue his works, disrupted by the sudden death, and cherish his ideas as of a sincere person and as of a prominent, persistent research.

Prof. J. Vilemas
Dr. V. Žiugžda