IN MEMORIAM

Academician Vladimir E. Nakoryakov

(July 26, 1935 – April 1, 2018)

Vladimir NAKORYAKOV is an outstanding scientist in the field of thermophysics and physical hydrodynamics and an author of more than 600 scientific publications, including 12 monographs. He made a great contribution to the development of gas-liquid flow hydrodynamics, electro-diffusion method of two-phase flow diagnostics, wave dynamics of two-phase media, film flow, unsteady processes in multiphase systems, convective heat and mass transfer in porous media, combustion, and heat and mass transfer in the acoustic field.

Vladimir Nakoryakov's works initiated the new research fields, which are now being actively developed in Russia and abroad. Under his supervision and direct participation, the existence of rarefaction shock waves in a homogeneous medium was discovered experimentally for the first time. He laid the foundations of absorption theory, which is used in heat pump engineering, and developed several research avenues in renewable energy and energy efficiency technologies.

In recent years, his interests were focused on the development of shock wave methods to produce gas hydrates used in the accumulation, transportation, and storage of natural gas, the research in the promising areas of hydrogen energy, theoretical and experimental studies of proton-exchange membrane fuel cells, and heat and mass transfer enhancement in the power and refrigeration equipment, including space power engineering.

Since 1958 Vladimir Nakoryakov's life and creative path were closely associated with Novosibirsk Scientific Center (Akademgorodok), the Siberian Branch of the USSR (Russian) Academy of Sciences, and the Institute of Thermophysics later named after S. S. Kutateladze. From 1986 to 1997 Nakoryakov was a Director of the Institute of Thermophysics SB RAS. He was a Deputy Chairman of the Siberian Branch of the Academy of Sciences, Chancellor of Novosibirsk State University, and then a Chairman of University Board of Trustees. He also headed the departments at the University and Novosibirsk Electrotechnical Institute. Over a long time Vladimir Nakoryakov was a Member of the International Committee for Heat and Mass Transfer. On behalf of the Expert Council of the Nobel Committee, he repeatedly nominated candidates for the Nobel Prize in Physics. For many years Vladimir Nakoryakov headed the Institute of Advanced Studies, where new designs of heat pumps, fuel cells, and other energy devices for various purposes were developed and commercialized. In the recent years of his activities Nakoryakov held position of an Advisor to the Russian Academy of Sciences.

Vladimir Nakoryakov was a Full Member of the Russian Academy of Sciences, a Member of the Engineering Academy of the Russian Federation, the International Energy Academy, National Committee for Heat and Mass Transfer, National Committee on Theoreti-

cal and Applied Mechanics, American Society of Mechanical Engineers, and American Physical Society, many other national and foreign scientific societies and committees. Vladimir Nakoryakov has founded the Russian Journal of Engineering Thermophysics, later entitled the Journal of Engineering Thermophysics. As an Editor-in-Chief he made a significant contribution to the development of the journal, raising its scientific rating, and popularizing the most relevant power engineering and environmental aspects of thermophysics. He was also a member of editorial boards of 20 scientific journals, chairman of two specialized doctoral councils, as well as a chairman and member of organizing committees of national and international conferences.

Vladimir Nakoryakov gave a lot of efforts and energy to training the young researchers, his successors. Among his disciples are two Full Members and three Corresponding Members of the Russian Academy of Sciences, over 50 professors and 260 Ph. Ds.

For his scientific contribution Vladimir Nakoryakov was awarded State Prizes of the USSR and Russian Federation, Russian Government Prize, The International Center for Heat and Mass Transfer's Lykov Medal, many state orders and medals, including the order "For Merits before Fatherland" of the III and IV degree, orders "Badge of Honor", the "Red Banner of Labor", "Order of Friendship", and the "Order of Saint Stanislaus of the III degree". In 2007, Vladimir Nakoryakov was one of the first scientists, awarded with the Global Energy International Prize, which is one of the most prestigious international awards granted for outstanding scientific achievements in the field of energy.

Colleagues, disciples and friends, everyone, who knew Vladimir Nakoryakov will forever remember him as a distinguished scholar and outstanding personality.

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Vladimir Nakoryakov's personal and scientific profile would not be complete if we forget his international co-operation and influence in the field of development and research in many countries and many scientific institutions. We were honored that Laboratory for Thermal Engineering and Energy, of the Vinča Institute of Nuclear Sciences, Belgrade, had special relationship and friendship with Academician Vladimir Nakoryakov, for many of us simply Volodya, from his young days. It was 1966 when he, then a young scientist, but already with a Ph. D. degree, visited the Laboratory for Thermal Engineering and Energy for the first time, with Director of the Institute of Themphysics, famous scientist Academician Samson Semenovich Kutateladze. His close friendship with the young scientists of the Laboratory started then and lasted their whole life. As well, it was the time when the close scientific co-operation between the Laboratory for Thermal Engineering and the Energy and Institute of Themophisics in Novosibirsk also started.

Firstly as a leader of the Laboratory, and after that as the Director of the Institute, Vladimir Nakoryakov initiated, supported and actively participated in the scientific co--operation between the Laboratory and his Institute in many fields – turbulence research, two-phase flows and use of low-temperature plasma. Many researchers from the Laboratory went to long-term research studies to Novosibirsk, and mutual visits of researchers from both institutes were often realized. Also, joint scientific workshops or meetings were carried on both in Novosibirsk and in Belgrade. Significant contribution to co-operation and joint research has been given also by Prof. Anatloii P. Burdukov, Prof. Edik P. Volchkov, Prof. Boris Pokusaev, Prof. Viktor Terekhov, and many others. Such a close co-operation resulted in publishing three books of selected papers: *Transfer processes in high temperature and chemically react-*

ing flows, edited by Academician S. S. Kutateladze and S. Oka, 1982, *Transport processes in single and two-phase flows***,** edited by Academician S. S. Kutateladze and S. Oka, 1986, and *Flow and heat transfer at high temperatures***,** edited by Academician V. E. Nakoryakov and S. Oka, 1990, all published by Siberian Branch of the USSR Academy of Sciences, Novosibirsk.

The research and development of the low-temperature plasma and use of generators of low-temperature plasma (plasmatrons) in the industry in the Laboratory of Thermal Engineering and Energy was greatly supported by researchers from the Institute of Thermophysics and personally by Academician M. F. Zhukov and Academician Vladimir Nakoryakov.

From the very beginning of publishing journal THERMAL SCIENCE, Acad. Vladimir Nakoryakov was a member of the International Advisory Board. His influence on the scientific policy was of a great help, and his already globally famous name was recognized and presented important support. With such highly recognized scientists in the Advisory Board, as Acad. Vladimir Nakoryakov and other members from the Institute of Thermlophysics, the introduction of a new scientific journal to the world's "scientific market" was much easier and faster.

The researchers of the Laboratory of Thermal Engineering and Energy will always remember the friendship and cordial professional relationship with Academician Vladimir (Volodya) Nakoryakov.

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