

## *In memoriam*

### **Eduard (Edik) Petrovich Volchkov, 1937-2013**

Academician Eduard Petrovich Volchkov, professor at the Novosibirsk State Technical University, and Head of Department and Deputy Director of the Institute of Thermophysics sadly died on February 8, 2013, in Novosibirsk, Russia.

Edik Petrovich Volchkov was a member of the International Advisory Board from the very beginning of the journal *Thermal Science*, and greatly contributed for the successful development of the journal.

Eduard P. Volchkov was born on May 6, 1937 in Izhevsk city. Having graduated from Moscow Power Engineering Institute in 1959 and after two years of work in Moscow, he bounds his career with the Institute of Thermophysics of Siberian Branch of the Russian Academy of Sciences, where he proceeded from Junior Researcher to the Head of Department and Deputy Director. Eduard P. Volchkov was one of the first progeny of academicians S. S. Kutateladze and A. I. Leontyev. Under their supervision, he defended M. Sc. thesis in 1964 and Ph. D. thesis in 1972. E. P. Volchkov was elected a Corresponding Member of Russian Academy of Sciences in 1997 and become a Full Member in 2008.

Both in his country and abroad, Eduard P. Volchkov was known as a specialist in turbulent heat and mass transfer under complex conditions. His first research activity was devoted to boundary layer flows, with suction and injection, near-wall gas shields for protection of heavy thermally loaded surfaces. The result of these studies was development of a phenomenological theory and methods for calculation of heat and mass transfer at surfaces exposed to high temperature flows. Further development of the proposed methods allowed calculating heat and mass transfer on porous and ablating surfaces, considering non-isothermality, compressibility, longitudinal pressure gradient, roughness, and other factors. These methods found wide application in practical calculations and energy equipment design in the leading scientific research institutes and design offices.

For his works in this field, E. P. Volchkov (jointly with other researchers) was awarded with the State Prize of the Russian Federation for Science and Technology in 1987.

Another important and complex research which was performed by Eduard P. Volchkov was in the area of aerodynamics and turbulent heat and mass transfer in single- and two-phase flows with phase transition and combustion and in vortex flows. The results obtained allowed description of the zones of turbulent exchange intensification and suppression in the field of mass forces that served as a basis for the development of a number of vortex apparatuses for intense heat and mass transfer. Investigation of combustion processes in the swirl fluidized beds were the continuation of his previous studies. E. P. Volchkov managed to obtain important results describing flame and surface combustion in the swirl fluidized beds of inert and catalytic particles.

In 2010, he was awarded by the Academician Lykov Prize of the Byelorussian Academy of Sciences for the cycle of research works in this area. In addition, E. P. Volchkov (together with other researchers) was awarded by the 2012 Russian Federation Government Prize in Science and Technology for the development of effective apparatuses and vortex technologies for power engineering.



E. P. Volchkov is the author and co-author of more than 300 scientific publications, including 7 monographs. He was the supervisor of the Russian leading scientific school in the field of thermochemical aerodynamics. Among his students there are 7 Doctors of Sciences and 24 Candidates for this prestigious title.

E. P. Volchkov successfully combined science research and teaching: he founded and headed the branch of the Chair of Technical Thermophysics in Novosibirsk State Technical University within the Institute of Thermophysics SB RAS.

He headed the journal "Thermophysics and Aeromechanics" from the moment of its foundation, and devoted 19 years to directing its activities and introducing it into the international arena. Also, he was a member of the Editorial Boards of the journal *Thermal Science*, journal of *Engineering Thermophysics* and *Heat Transfer Research* journal, a member of Advisory Board of the Russian Foundation for Basic Research, a member of the Council Expert Committee on Grants of the President of the Russian Federation, Joint Scientific Council on mechanics and power engineering of the Russian Academy of Sciences, and of the National Committee on Heat and Mass Transfer.

Edik Volchkov closely and fruitfully co-operated with researchers from many countries, and paid great attention to international co-operation. He was a great friend of the Laboratory for thermal engineering and energy, of the VINČA Institute of Nuclear Sciences, in Belgrade, from late 1960s, and contributed greatly to the initiating and development of the research of high temperature flows, vortex flows, and flows in low temperature plasma in this Laboratory. His contribution to the design and construction of the experimental facilities in this Laboratory was unprecedented. He often visited Serbia and former Yugoslavia and loved this country very much. Many specialists from the VINČA Institute have been trained at Volchkov's laboratory in Siberia. Without hesitation he accepted our invitation to help in editing the journal *Thermal Science* from the very beginning in early 1990s.

Edik Petrovich Volchkov was a remarkable, exceptionally friendly and charming person, who devoted his life to science. He had and will always have, many sincere and faithful friends in the VINČA Institute, and in whole scientific community in Serbia.

Edik Petrovich Volchkov will be remembered forever as an outstanding scientist and a remarkable person, and he will remain in our hearts as faithful, generous and reliable friend.

April 2013, Belgrade

Prof. Dr. Simeon Oka  
Scientific advisor at Vinča Institute of  
Nuclear Sciences (retired)  
Editor-in-chief of the journal *Thermal Science*