

PREFACE

The articles that have been prepared by thermal physics researchers of the Lithuanian Energy Institute and Kaunas University of Technology are presented in this issue of the journal. The results of heat transfer research in flat channels at different boundary conditions, mainly under mixed convection, i.e., free and forced convection with coinciding or opposing directions, are widely covered in the articles. Convective heat transfer in low-temperature plasma flows in channels and in high-temperature gas flows are analyzed in more detail. Heat transfer processes in foam cross flow in tube bundles and two-phase mass transfer in a flow with vaporizing droplets are analyzed. Experimental and numerical research results in wide ranges of geometric and aerodynamic parameters and flow regimes are presented.

We would like to emphasize that in the past, when the title of the journal was *Heat Transfer — Soviet Research* (supervised by Hemisphere Publishing Corp., Washington) and at the present time (published by Begell House Inc., New York) the Journal translated and published over 30 articles of research institutions of Lithuania which belonged to the former Soviet Union. This was a wide window for acquainting the worldwide scientific society with our results of scientific research. This significantly widened the access to worldwide-known books on thermal physics and aerohydrodynamics (e.g., HEDH, VDI Wärmeatlas, etc.), heat transfer and thermal technology textbooks of higher educational schools. This was important and relevant information on the Lithuanian research activities in thermal physics and heat transfer. The research performed in Lithuania covered almost all fields of convective heat transfer, hydrodynamics, radiation heat transfer, and transport processes in chemical reactions. A great deal of attention was given to the research of vibrations in heat exchangers.

Since 1968, on the initiative of Academician Algirdas Žukauskas a monograph series "Thermal Physics" has been launched, 29 books of which have already been published and 14 books of the series have been translated into English and published in the USA by the Publishing House of Dr. William Begell. Further cooperation is also foreseen.

Highlighting the most significant stages of the thermal physics research, the generalizations are made reflected in three monographs of the series: A. Žukauskas High-Performance Single-Phase Heat Exchangers, Hemisphere Publ. Corp., New York, 1989; Jurgis Vilemas and Povilas Poškas Effect of Body Forces on Turbulent Heat Transfer in Channels, Begell House Inc. and Lithuanian Energy Institute, New York–Kaunas, 1999; Sigitas Rimkevičius and Eugenijus Ušpuras Modeling of Thermal Hy-

draulic Transient Processes in Nuclear Power Plants; Ignalina Compartments, Begell House Inc. and Lithuanian Energy Institute, New York–Kaunas, 2007.

The Lithuanian Energy Institute, which has recently celebrated its 50th anniversary, today is successfully implementing the activities in gas dynamics heat transfer, material science, nanotechnologies, combustion and plasma processes, nuclear power safety, metrology, renewable energy sources, hydrogen energy and energy conservation. As can be seen, from the listed spectrum of research activities at the present time the thermal physics research is not so broadly represented in the institute as it used to be.

Acknowledging the cohesive cooperation of Lithuanian thermal physics researchers of 40 year standing, we express our deep gratitude to Dr. William Begell for his support in dealing with scientific information promotion issues, which are relevant to us, we also express our deep gratitude to Ms. Yelena Shafeyeva for her present cooperation.

We also acknowledge Ms. Natalia Shveyeva (A. V. Luikov Heat and Mass Transfer Institute, Minsk, Belarus) for her support in preparing our articles for the Heat Transfer Research journal.

We hope that the articles published in the journal will be of great interest to researchers who are active in the field of thermal physics.

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