

PREFACE: INTERNATIONAL WORKSHOP ON HEAT TRANSFER ADVANCES FOR ENERGY CONSERVATION AND POLLUTION CONTROL

The ever-growing energy consumption needs of the global economic engine, and the attendant environmental degradation concerns, have refocused the issues of energy conservation and effective pollution control. Over the last decade and more, there has been a worldwide effort to extensively embrace energy-efficient, cost-effective, renewable, and relatively cleaner technologies in a variety of energy conversion and pollution control devices and processes. In virtually all energy-related systems, heat transfer plays a central role and some typical applications include, among many others, heat exchangers, gas turbines, electrical machines, computers and electronic devices, fuel cells, solar energy harvesting and conversion systems, biofuel-producing reactors, etc. To provide an international platform for exchange of related scientific information and the latest technological development, with preponderance on recent advances on heat and/or mass transfer problems, the First International Workshop on Heat Transfer Advances for Energy Conservation and Pollution Control (IWHT2011) was held October 17–20, 2011 in Xi'an, China. The hosts were the Key Laboratory of Thermo-Fluid Science and Engineering, Ministry of Education, Xi'an Jiaotong University, China, and its sponsors were the National Natural Science Foundation of China, Chinese Society of Engineering Thermophysics, International Center for Heat and Mass Transfer, and Xi'an Jiaotong University. Its International Scientific and Advisory Committee was chaired by Professors Wenquan Tao (China), Bengt Sundén (Sweden), Afshin Ghajar (USA), and Petr Stehlik (Czech Republic). Over 150 researchers from 10 countries gave a large set of technical presentations, supplemented by several plenary and keynote lectures, covering broad issues relating to the oil and chemical engineering industry, engines and gas turbines, fuel cells, solar energy, etc., all of which can be found in the Proceedings of IWHT2011.

From the workshop presentations, based on their relevance and significance, several authors were invited to submit updated manuscripts for publication in this journal. These submissions were peer-reviewed, conform-

ing to archival publication standards, by a panel of referees and guest editors. The final 10 selected papers are being published starting with this issue (Vol. 19, No. 5), and culminating in the next issue (Vol. 19, No. 6). They address heat transfer enhancement in areas ranging from renewable and clean energy production, high-temperature systems, multiphase transport, compact heat exchangers, energy conservation and storage techniques, computational modeling, and experimentation; a couple of papers are of "allied" interest in high-performance heat transfer. We thank the authors for their contributions and hope readers find the reported work of interest. Also, the guest editors would like to acknowledge and thank the invaluable assistance provided by Dr. Jian Yang (IWHT2011 Secretariat), and Shiyang Li (PhD student, Xi'an Jiaotong University).

Guest Editors:

Bengt Sundén
Department of Energy Sciences,
Lund University, Lund, Sweden

Qiuwang Wang
Ministry of Education,
Xi'an Jiaotong University, Xi'an,
People's Republic of China

Yitung Chen
Department of Mechanical Engineering,
University of Nevada, Las Vegas, NV, USA

Zhixiong Guo
Department of Mechanical and Aerospace Engineering,
Rutgers University - New Brunswick, Piscataway, NJ,
USA

Petr Stehlik
Faculty of Mechanical Engineering,
Brno University of Technology, Brno, Czech Republic