

Special Issue on Micro/Nanoscale Heat Transfer—Part II

Research and education on micro/nanoscale heat transfer have advanced rapidly over the last decade through many dedicated individuals and teams, with direct impact now extending into other fields in both science and engineering. Continuing the synergistic efforts in 2002 and 2007,¹ ASME Micro/Nanoscale Heat Transfer International Conference (MNHT08) was held in National Cheng Kung University, Tainan, Taiwan, during January 6–9, 2008: <http://www.asmeconferences.org/MNHT08/index.cfm>. The conference is dedicated to Dr. Chang-Lin Tien (1935–2002), a world renowned scholar and a leader in higher education, whose intellect and unique visions have continued to inspire our most serious efforts in expanding the frontiers of micro/nanoscale heat transfer. We continue the selected papers from MNHT08 in this issue of the *ASME Journal of Heat Transfer*. Part I appeared in the March 2009 issue.

MNHT08 is composed of 18 technical tracks, with 5 keynote lecturers and over 300 participants from 18 countries. The 257 technical papers cover the full spectrum from microscopic thermophysical processes and properties, microfluidics and nanofluidics, heat transfer in small scale, ultrafast heat transport, interfacial heat transfer, nanofluids, microchannels, micro/nanoscale experimental heat transfer, micro/miniature two-phase systems, thermophysical and mechanical properties, ultrafast coupling in small scales, nano-systems and engineering, nano/microscale thermal radiation, computational micro/nanoscale heat and mass transfer, to micro/nanoscale heat and mass transfer in bio/medical systems. The papers included in this issue are representatives selected from these areas of research. There are a few papers in this issue that are review in nature, for the purpose of capturing the progress being made in a field as well as for presenting new challenges for the future. There are also research papers reporting innovative approaches and new findings, aiming toward advancing the state-of-the-art development in micro/nanoscale heat and mass transfer. Two salient features combined, we hope this issue will not only serve the community well, but also provide a valuable collection for inspiring new researchers to join this fascinating area of research.

Researchers in micro/nanoscale heat and mass transfer have enjoyed strong growth of the field over the past decade. Many sophisticated physical phenomena in small scales have been unveiled by dedicated individuals and research teams. The rapid evolution and continued explorations into even finer scales of space and time, however, may often generate more profound physics to be better understood. This is particularly the case when

the thermal field is coupling with other fields in transporting mass, energy, momentum, and charges in micro/nanoscale. Combined approaches that integrate over analytical, experimental, and numerical phases have now become more important than ever in unveiling the interweaving physical phenomena in smaller scale. It is important to continue our endeavors in generating in-depth scientific understanding and enabling commercial technology for advancing micro/nanodevices, but it may be equally important to “wrap up” our knowledge by reviewing what we have tried to establish from time to time. This focus will remain as the ASME Micro/Nanoscale Heat Transfer International Conference continues into the future.

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Ping Cheng
Shanghai Jiaotong University, China

Steve Choi
University of Illinois at Chicago, USA

Yogesh Jaluria
Rutgers, The State University of New Jersey,
USA

Dongqing Li
University of Waterloo, Canada

Pamela Norris
University of Virginia, USA

“Robert” D. Y. Tzou
University of Missouri, USA

¹Special Issue: Micro/Nanoscale Heat Transfer, *ASME Journal of Heat Transfer*, Vol. 124, April 2002. Special Issue: Micro/Nanoscale Radiative Transfer, *ASME Journal of Heat Transfer*, Vol. 129, January 2007.