

Foreword to Special Issue on Micro/Nanoscale Heat and Mass Transfer

The second ASME Micro/Nanoscale Heat and Mass Transfer International Conference (MNHMT09) was held in Shanghai on Dec. 18–21, 2009 (<http://www.asmeconference.org/MNHMT09>). The conference was intended to provide a forum for researchers around the world to exchange the state-of-the-art research and development and to identify research needs in this emerging field. It was a follow up conference from the successful first ASME Micro/Nanoscale Heat Transfer (MNHT08), which was held in Tainan on Jan. 8–11, 2008. The words “Mass Transfer” were added in the conference title (MNHMT09) to expand the scope of the conference.

This special issue consists of 25 papers chosen from 356 papers that were presented at MNHMT09. The conference was organized by Ping Cheng as Conference Chair, with Yildiz Bayazitoglu, Gang Chen, Stephen Choi, Yogesh Jaluria, Dongqing Li, Pamela Norris, Bud Peterson, and Bob Tzou as Conference Co-Chairs. The theme of the Conference focused on the following topics: Micro/nanofluidics and Lab-on-a-Chip; Nonfluids; Biomicrofluidics; Micro/nanoscale boiling and evaporation heat transfer; Micro/nanoscale condensation heat transfer; Microscale/nanoscale mass transfer with or without chemical reactions; Micro/nanoscale transport in porous media and in fuel cells and batteries; Micro/nanoscale thermal radiation; Ultrafast transport and ultrafast diagnostics; experimental and measurement technologies in micro/nanoscale transport; Heat and mass transfer in small scale; Micro/nanoscale interfacial transport phenomena; Micro/minature two-phase devices; Bio-medical applications of micro/nanoscale

transport. There were more than 330 participants from 21 countries and regions presenting their papers at MNHMT09. It was indeed a truly interdisciplinary conference as reflected by diversified academic backgrounds of the authors. The large number of participants in this conference also testified that microscale heat and mass transfer with applications to micro thermo-fluidics is one of most active research areas to-date.

Papers selected in these special issues were recommended by the 15 Track Chairs, which were subsequently reviewed by reviewers. I would like to take this opportunity to express my sincere appreciations to Conference Co-Chairs as well as members of International Advisory Committee and Technical Program Committee of MNHMT09 who had promoted the conference, and to the track chairs who had solicited papers for presentation at the conference. Thanks are due to all of the reviewers who had provided their critical reviews, to Editorial Assistant Lesley Hancock and Editors Terry Simon and Yogesh Jaluria for their assistance in making these special issues possible. I also wish to thank the National Natural Science Foundation of China and Shanghai Jiaotong University for partial financial support of the conference.

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