



# Heat Transfer Photogallery

The Ninth “Heat Transfer Photogallery” was sponsored by the K-22 Heat Transfer Visualization Committee for the 2004 International Mechanical Engineering Congress and Exhibition (IMECE) held in Anaheim in California, on November 13–19, 2004. The peer-reviewed evaluation process for the presented entries identified the thirteen entries for publication in the *ASME Journal of Heat Transfer*.

The purpose of publishing these entries is to draw attention to the innovative features of optical diagnostic techniques and aesthetic qualities of thermal processes. To focus on visualization images and schematics, the text is kept to a minimum and further details should be found directly from the authors. My wish is that the journal readers enjoy viewing these collections, acquire knowledge of the state-of-the-art features, and promote their participation in the 2005-IMECE Photogallery session presentation (<http://www.asmeconferences.org/congress05>). The Call for Photos for the 2005-IMECE is also announced in this issue of *ASME Journal of Heat Transfer*.

The photogallery entries are listed based on their technical topics as briefly summarized:

## Natural Convection Phenomena

- Multi-Scale Natural Convection Problem (A. K. da Silva and A. Bejan, Duke University)
- Temperature-Velocity Measurements for Transient Natural Convection (I. Nakane, A. Narumi, and K. Fukuda, Kanagawa Institute of Technology, Japan)
- Dual-Wave Holographic Interferometry for Solidification and Mass Convection (N. Tsushima, Tokyo A&T, A. Narumi and I. Nakane, Kanagawa Institute of Technology, T. Kashiwagi and A. Akisawa, Tokyo A&T)

## Boiling

- Bubble Formation and Surrounding Flow From a Heated Wire (H. Wang, Tsinghua University, China, and X. Peng, D. M. Christopher, and S. V. Garimella, Purdue University)
- Single, Twin and Multiple Bubble Agglomeration for Nucleate Boiling in Microchannels (D. Liu, P.-S. Lee, and S. V. Garimella, Purdue University)

- Bubble Formation Under Variable Gravity (C. Herman, E. Iacona, Z. Liu, and S. Chang, Johns Hopkins University)

## Forced Heat and Mass Convection

- Simultaneous Measurements of Flow/Concentration by PIV/LIF (E. H. Jeong, S. Y. Yoon, and K. C. Kim, Pusan National University, Korea)
- Temperature Gradient Measurements for Electrophoretic Convection Flow in a Microfluidic Device (D. Huber and J. G. Santiago, Stanford University)
- CFD Visualization Results for Continuous Caster of Steel Slab (B. Zhao, B. G. Thomas, S. P. Vanka, UIUC., and R. J. O'Malley, Nucor Steel)

## Nano-Scale Transport and Phenomena

- Optical Resonance in Microcavity (250 nm) (Z. Guo and H. Quan, Rutgers University, and S. Pau, Lucent Technology/Bell Laboratory)
- Joule Expansion Coefficient Measurements for Thin Metallic Film (100 nm) (S. P. Gurrum, Y. K. Joshi, W. P. King, and K. Ramakrishna, Georgia Institute of Technology)
- Thermal Conductivity of Nanoparticles (11 nm ~ 150 nm) in Suspension (C. H. Chon and K. D. Kihm, University of Tennessee)

## Combustion

- Non-Piloted Ignition on a PMMA Surface (S. L. Mannello, H. Gotoda, and T. Kashiwagi, NIST)

It has been my pleasure to present entries submitted from a number of outstanding research groups across the nation.

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