Journal of Heat Transfer

Heat Transfer Photogallery

The sixth ''Heat Transfer Photogallery'' was sponsored by the K-22 Heat Transfer Visualization Committee for the 2001 International Mechanical Engineering Congress and Exhibition in New York last November. Seven entries were selected for publication in this special section of the ASME JOURNAL OF HEAT TRANSFER.

The purpose of publishing these photographs is to draw attention to the innovative features of optical diagnostic techniques and aesthetic qualities of thermal processes. To focus on visualization, the text is kept to a minimum and further details should be found through the listed references or directly from the authors. The photographs include: (1) thermal tuft visualization of surface-coated thermochromic liquid crystals (TLC) for detecting flow direction, (2) surface-coated TLC visualization of heat transfer augmentation by perforated fin surfaces [1], (3) two-color laser induced fluorescence (LIF) visualization for micro-scale temperature field mapping of stratified thermal layers [2], (4) nano-scale thermal writing/erasing using a heated atomic force microscope cantilever [3], (5) Mach-Zehnder interferometric imaging of the free convection around a heated louvered blind near a vertical isothermal plate [4,5], (6) IR thermal imaging of thermocapillary driven flow by the laser heating of an acoustically levitated and flattened glycerin drop [6], and (7) Coherent Gradient Sensing Interferometry [7], visualization of iso-gradient contours in convective/diffusive glycerin-water mixtures.

I wish that the journal readers enjoy viewing these collections, acquire knowledge of the state-of-the-art features potentially applicable for their own research, and promote their participation in 2002-IMECE Photogallery session presentation (refer to the Call for Photogallery for 2002-IMECE announced in this volume).

References

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