Panel Discussions

Panel Discussion 1 “Emerging Topics in Nanoscale Thermal Transport”

Saturday, December 14, 2019 **13:20-15:00** (Monarchy 4) Moderator: Xiulin Ruan (Purdue University, USA)

Nanoscale thermal transport has seen rapid progress in the last three decades. Besides exciting new fundamental science, it has significantly impacted important applications including thermal management of electronics, thermoelectric energy conversion, renewable energy, nanomanufacturing and additive manufacturing, etc. Meanwhile, new topics continue to emerge. This panel will bring several early to mid-career panelists working at the forefront of nanoscale thermal transport, to cover a range of emerging topics such as thermal transport in polymers, coherence and localization of thermal transport using nanostructures, high and low thermal transport limits, and machine learning in nanoscale thermal transport. The panelists will each make a presentation of ~15 minutes to share their work and thoughts, followed by a 40-minute panel discussion between the audience and panelists on the emerging and future directions of nanoscale thermal transport.

Panelists

Prof. Tengfei Luo, University of Notre Dame, South Bend, IN, USA
Prof. Yan Wang, University of Nevada, Reno, NV, USA
Prof. Yongjie Hu, University of California, Los Angeles, CA, USA
Prof. Junichiro Shiomi, The University of Tokyo, Japan

Panel Discussion 2: “Response of Thermal Engineering to Global Challenges”

Monday, December 16, 2019 **10:10-11:50** (Monarchy 4) Moderator: Yogesh Jaluria (Rutgers University of Piscataway, USA)

The world is facing many significant challenges. Several of these are related to thermal science and engineering. Some of the areas in which thermal engineering plays a major role are water, food, environment, energy, manufacturing, information technology, education and safety. This panel is designed to discuss how the community of thermal engineers is addressing these global challenges. In some cases, such as energy, water and education, we have responded quite well. But areas like environment and global climate change, which are clearly a domain of this field, have received much less attention. Similarly, manufacturing has been ignored, though some recent work in materials processing is promising. The panelists will highlight the global challenges we face today and whether we have responded adequately. What more needs to be done and how we should proceed in the future? Are there other important emerging areas that need a concentrated effort? The panelists are experts in these areas and will present their thoughts on these important aspects. Discussions will follow the presentations by the panelists. Each panelist will make a 10 to 15 minute presentation and participate in the discussions at the end of the presentations.

Panelists

Prof. Yogesh Jaluria, Rutgers University of Piscataway, NJ, USA
Prof. James Klausner, Michigan State University, East Lansing, MI, USA
Prof. John Lienhard, Massachusetts Institute of Technology, Cambridge, MA, USA
Prof. Dereje Agonafer, University of Texas at Arlington, TX, USA
Prof. Choongsik Bae, Korea Advanced Institute of Science and Technology, Daejeon, Korea