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Keynote Lecturer Biography:

Prof. Issam Mudawar
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Prof. Mudawar received his M.S. and Ph.D. degrees in mechanical engineering from the Massachusetts Institute of Technology. He joined Purdue University in 1984, were he founded both the Purdue University Boiling and Two-Phase Flow Laboratory (PU-BTPFL) and International Electronic Cooling Alliance (PU-IECA). He has supervised over 65 Ph.D. and M.S. students and visiting scholars, and is the author of 4 handbooks, 185 archival journal papers, 9 book chapters, and numerous conference papers and topical reports. Prof. Mudawar is internationally recognized for his experimental and theoretical research on phase change mechanisms and applications in thermal management of electronics, intelligent materials processing, space and energy. He has played a critical role in NASA's shift from present mostly single-phase liquid-cooled thermal management systems for space missions to two-phase thermal management. These efforts are aimed at capitalizing upon the several orders-of-magnitude enhancement that is possible with flow boiling and condensing flows compared to their single-phase counterparts. He performed extensive microgravity flow boiling experiments in parabolic flight, and developed the first theoretical model for flow boiling critical heat flux in microgravity. He is presently partnering with the NASA Glenn Research Center on the design of the Flow Boiling and Condensation Experiment (FBCE) for the International Space Station (ISS). In a related series of studies, he developed a theoretical model for successful startup of capillary pumped loops used for thermal management in many types of satellites and space systems.

Prof. Mudawar's research contributions and innovations have been highly acknowledged worldwide. He earned the title of Fellow of ASME in 1997, and is a Senior Member of AIAA and Member of both ASM and ASGSR. He received numerous awards and recognitions for both research and teaching accomplishments, including the 2013 ASME Heat Transfer Memorial Award in Science Category, the 75th Anniversary Medal of the ASME Heat Transfer Division, and the 2013 Founder's Award of the ASGSR.