Mechanical & Aerospace Engineering Colloquium Series
Spring 2018 Program

Wednesday, April 25, 2018
3:30 – 4:30 p.m. (refreshments/social hour at 4:30)
Easton Hub Auditorium (in the Fiber Optics Building)

Two-phase Change Heat Transfer on Multiscale Characteristic Lengths: Redefining Phase Change through Multiscale Control

Professor Calvin Hong Li

Villanova University

Abstract: In recent years nanoengineered structures have been one of the most important and exciting forefront research topics in energy, medical, and security. The structures have demonstrated, and promised even greater breakthroughs in the fundamentals that will change the directions of the technological advances in a wide range of applications. This talk will emphasize on the nano-/multiscale engineered structures that facility the timely utilizations in two-phase change heat transfer for ultra-high heat flux thermal management and energy conversion systems, and discuss multifold benefits in boiling heat transfer coefficient and critical heat flux enhancements. Some latest experimental and theoretical study in Dr. Li's lab will be presented and discussed with the focus of the induced liquid wicking, bubble nucleation, and critical wavelength controls at multiscale characteristic lengths.

Bio: Dr. Li is an associate professor at the Department of Mechanical Engineering, Villanova University, and was an assistance professor from 2011 to 2017, where he is establishing the NanoEngineered Interfacial and Phase Change Transfer Laboratory (NovaNano Lab). Previously Dr. Li was an assistant professor at the University of Toledo, Ohio, leading the Nanoscale Thermal and Fluidics Engineering Laboratory for three and a half years. Dr. Li has 2 pending patents and 35 book, book chapters, and journal papers. Dr. Li also has worked in DoE National Renewable Energy Laboratory, Golden CO, and U.S. Air Force Wright Patterson Research Laboratory, OH, as a visiting scientist. Dr. Li has received the DoE Summer Fellowship, deArce Memorial Endorsement Award, UT Strategic Enhancement Award (former Research Excellent Award) and nominated for College of Engineering Excellent Undergraduate Researcher Mentor, and was invited to the DoE 2010 Science and Energy Research Challenge (SERCh) at Argonne National Laboratory. Dr. Li's research interests are in thermo-fluidics (boiling), renewable energy (fuel cell and concentrating solar power), nanotechnology (nanofluids and nanoscale thermal transport) and Human Health (nanodrug delivery).

Contact Professor Zhixiong Guo at guo@jove.rutgers.edu
Phone: (848) 445-2024 | Fax: (732) 445-3124