Controlling Phase Change with Engineered Surfaces

Speaker: Dr. Amy Betz

Associate Professor, Department of Mechanical and Nuclear Engineering, Kansas State University

ME Graduate Seminar, 09/21/2018, 3:00-4:00 pm, JB 128

Abstract: During phase change processes such as boiling and condensation, surface characteristics can have a profound impact on heat transfer performance due to the change in nucleation and transport phenomena. Recently, biphilic (combined hydrophilic and hydrophobic) surfaces have received increased attention as a way to simultaneously enhance nucleation and transport. In this seminar, Dr. Betz will discuss fundamental mechanisms and insights from engineered wettability and surface structure used in phase change processes. She will explain why the same type of surface that enhances boiling can suppress the freezing temperatures by 6 K. She will also briefly discuss her educational research to study student beliefs' about their own intelligence.

About the Speaker: Dr. Amy Betz is an Associate Professor at Kansas State University and the director of the Multiphase Microfluidics Laboratory. She received her PhD from Columbia University and her B.S. from the George Washington University. Since coming to Kansas State University, she has received the Kansas State University Mentoring Fellowship, the Kansas State Office for the Advancement of Women in Science and Engineering Recognition Award, and the Multicultural Engineering Program Faculty Engagement Award. She is the currently PI on two National Science Foundation Awards and has received funding from NASA and the NRC. She has published 35 peer-reviewed manuscripts. She is currently Chair for the ASME International Conference on Mini, Micro, and Nanochannels in St. John's Canada this June and will most likely ask you to attend this amazing conference!