

Nature-Inspired Nanoengineered Surfaces for Energy-Water-Environment-Health Nexus

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Date: Friday, September 16, 2022 16:00-17:00

**Venue: 31A, 3F Faculty of Engineering Bldg. 2 /
Online (hybrid)**

Abstract:

Energy-Water-Environment-Health Nexus refers to connections between the essential components for human. Each component and nexus between them cast uncountable research questions and engineering problems to engineer human life safer and more convenient. To address these problems, numerous efforts have been made across the disciplines. Particularly, we can easily find thermofluidic transport phenomena in a wide variety of engineering applications related to the nexus. In several decades, the advent and development of nanotechnology envisioned a novel approach to enhance thermofluidic transport phenomena. To control thermofluidic transport at interfaces, it is important to understand the underlying sciences, yet fully unveiled.

Interestingly, interfacial phenomena tailored for the manipulation of water can be found in nature. Many natural plant and insect surfaces have evolved to repel or attract water in order to adapt to external evolutionary pressures and to help them survive. This talk introduces nature-inspired approach to understand nature and to adapt the lessons from nature to nanoengineered surfaces and engineering systems for solving Energy-Water-Environment-Health nexus problems. This talk mainly focuses on phase change heat transfer on a surface with the desired wettability for the advanced thermal management and microfluidic systems. This talk includes interfacial phenomena such as droplet jumping, liquid bridge formation, droplet impact as well as surface chemistries for environment-friendly hydrophobic coatings and methods.



Registration (Venue/Online)
<https://forms.gle/oJRhF7sp1H57zMv4A>
Please register by Sep. 12.