TCSUH SPECIAL SEMINAR

Yiyang Li

Assistant Professor of Materials Science and Engineering
University of Michigan

Wednesday, December 4, 2024

1:00 p.m. – 2:00 p.m. *Sandwiches provided.*
In Person: Houston Science Center (HSC), Room 102

Ionic Transport in Li-ion Batteries and Oxide Memory Devices

ABSTRACT: Energy storage and semiconductor microelectronics are two critical strategic technologies for the United States. Ceramic materials play a critical role in enabling the functionality of both technologies. In this talk, I will present our recent research on the transport of ions within these systems. I will first discuss how composition phase separation controls the direction of oxygen diffusion in resistive memory and how this mechanism, in turn, enables long-term information storage. I will then discuss how microfabrication enables the electrochemical cycling of individual Li-ion battery particles; this single-particle device measurement reveals the importance of cracking in enabling fast charge and discharge. Such works show the broad relevance of ionic transport in critical materials for industry.

BRIEF BIO: Yiyang Li is an Assistant Professor of Materials Science and Engineering at the University of Michigan. His group studies ion transport mechanisms in materials for energy storage and microelectronic applications. He received his PhD in Materials Science and Engineering from Stanford University in 2016 and was a Harry Truman Postdoctoral Fellow at Sandia National Laboratories from 2017 to 2020

Host: Prof. Yan Yao, yyao4@central.uh.edu

Persons with disabilities who require special accommodations to attend this lecture should call 713-498-9703.