MONASH University

Monash Centre for Electron Microscopy

Seminar

2D materials: a platform for atom-by-atom electron microscopy from molecules to nanoelectronics

Wednesday May 26, 2021

9.00 am (AEST)

ZOOM – Register in advance for this meeting:

https://monash.zoom.us/meeting/register/tZMpdeyvqTgqH9BvGFyJfQCYchj7jmBNPJce

Passcode: 111111

Pinshane Y. Huang Assistant Professor, Department of Materials Science and Engineering at the University of Illinois, Urbana-Champaign.

Because they are atomically thin, 2D materials offer a uniquely powerful platform for electron microscopy to extract the structure and properties of materials with single-atom or even picometer precision. This utility even reaches beyond 2D materials—graphene can also as ultra-low background substrates that enable new studies of organic crystals and soft-hard interfaces. In this talk, I will discuss how my group combines 2D materials and electron microscopy to provide a new window into questions ranging from how a single substitution impacts the lattice of a 2D materials to how organic ligands guide the growth of anisotropic nanocrystals. I will also discuss how our work studying the bending stiffness of 2D materials and heterostructures, an area that is crucial for the development of next-generation electronics including deformable electronics, biosensors, and nanoelectromechanical systems.

The Presenter

Pinshane Y. Huang is an Assistant Professor in the Department of Materials Science and Engineering at the University of Illinois, Urbana-Champaign. Pinshane holds a Ph.D. and an M.S. in Applied and Engineering Physics from Cornell University, and B.A in Physics from Carleton College. Her research is focused around transmission electron microscopy and spectroscopy of two-dimensional materials and soft-hard interfaces. Her awards include a Presidential Early Career Award for Scientists and Engineers (PECASE), a Packard Fellowship, a Sloan Fellowship, as well as Air Force Young Investigator and NSF CAREER awards. Her research has been featured in Nova, National Geographic, BusinessWeek, CBS News, Discover Magazine, and the Guinness Book of World Records.

Convener

Professor Joanne Etheridge
Director, Monash Centre for Electron Microscopy, Monash University