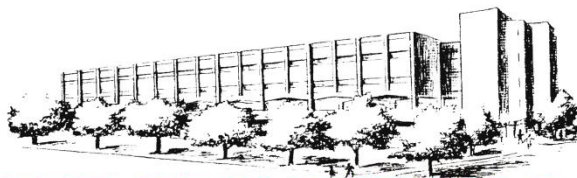


UNIVERSITY OF CONNECTICUT



INSTITUTE OF MATERIALS SCIENCE

POLYMER PROGRAM SEMINAR

“Controlling Ion Transport in Solid Polymer Electrolytes”

**Prof. Christopher Li
Drexel University**

**Friday, October 2, 2015
11:00 AM, IMS Room 20**

ABSTRACT

Solid polymer electrolytes (SPEs) with high ionic conductivity are important for energy-related applications, such as solid state batteries and fuel cells. In this talk, I will discuss our two new approaches of guiding ion transport in SPEs. The first one is to use holographic photopolymerization to fabricate long-range, defect-free, ordered PEMs with tunable ion conducting pathways. We introduce the name holographic polymer electrolyte membranes (hPEM) for these unique membranes. By incorporating polymer electrolytes into the carefully selected HP system, electrolyte layers/ion channels with length scales of a few tens of nanometers to micrometers can be formed. The second approach involves re-examining the effect of crystalline lamellae on SPE ion conductivity. By controlling the polymer crystal orientation, we discovered that crystal lamellae can guide ion transport. We believe this finding can lead to new design strategies for manufacturing next generation SPEs.

**For further information, please contact YH Chudy at younghee.chudy@uconn.edu.*