

CHEMISTRY Departmental Seminar

Spring 2019
CHEM 285/191 Schedule
Tuesdays at 4:30-5:45PM
Room Duncan Hall 250

February 5th, 2019

Professor Chester Simocko
San José State University

Controlling Polymer Morphology through the Primary Structure

Polymers are ubiquitous in modern society. They make up everything from plastic bags and bottles to fuel cell membranes and photovoltaics. The macroscopic properties of all polymers, regardless of their ultimate use or chemical composition, are governed by their morphology. The morphology of a polymer is the overall form of the polymer structure. In other words, this is how the polymer chains interact with each other. Morphology can be influenced by many factors such as molecular weight, branching, crosslinking, and more. Given the prevalence of polymers in the world, surprisingly little is known about the morphology of even common polymers. In the Simocko Research Group we study polymer morphology and self-assembly in two research thrusts: 1) the synthesis of precise homo- and block polymers and 2) the synthesis and self-assembly of mixed polymer brushes.

In this lecture, I will discuss the development of new monomers that undergo selective acyclic diene metathesis (SADMET) and how polymers created from these monomers will help us study the morphology of block polymer systems. I will also be discussing mixed polymer brushes and how we can control their self-assembly to create nanostructures and ongoing work of studying their thermal stability.