



Houk-Jung Organic Colloquium

Investigating Aldehydes and Ketones as Monomers for Sustainable Polymers

Abstract: Chain polymerization of carbonyl compounds results in polymers with acetal linkages in the backbone that have potential as degradable or recyclable materials. The wide variety of aldehydes and ketones that occur naturally or through sustainable transformations of naturally occurring compounds suggests that they also have promise as sustainable materials. There are many challenges associated with purifying aldehyde and ketone monomers and with controlling their polymerization. Glyoxylate esters are one such class of monomers that can be polymerized by treatment with bases, but monomer purification is a critical issue and the polymerization mechanism has not been studied in detail. We will discuss our efforts to control the polymerization of glyoxylate esters from hydroxyl-terminated macroinitiators and to prepare a range of block copolymers with degradable polyglyoxylate blocks, including polymers that form hydrogels. Efforts toward expanding these polymerization methods to include other monomers and investigating the sustainability of these methods will also be discussed.

Prof. Robert Grubbs
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Thursday, Nov 3, 2022

4:00 PM | YH 4222

Yoo Seminar & Conference Room

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