



**Leveraging the Functionality of Cyclic
Poly(Methacrylic Anhydride) and its Copolymers**
Dr. Devon A. Shipp/Clarkson University
Thursday, March 27, 2025, 2:30pm
Dupuis Hall, Room 217

Cyclopolymerization of methacrylic anhydride (MAA) by conventional radical polymerization using cobaloxime boron fluoride (CoBF) as a chain transfer agent allows high conversion synthesis of fully soluble cyclo-poly(methacrylic anhydride) (PMAA). Specifically, soluble PMAA was attainable even at moderate MAA concentrations with no crosslinking in the presence of CoBF. This was achieved by studying various MAA concentrations and temperatures with and without CoBF and examining the impact these parameters have on the PMAA microstructure, including the acyclic, cyclic, and crosslinked forms. Furthermore, one intriguing property of these polymers is the ability of the anhydride moiety to undergo dynamic covalent exchange, thus allowing PMAA to form the basis of potential covalent adaptable network (CAN) systems.

