O-I-M Seminar Series

Organic/Inorganic/Materials • https://chemistry.uoregon.edu/

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Hosted by Ramesh Jasti

Masquerading Soft Materials: Anomalous Behavior in Macromolecular Design

In the first half of this talk, the control of basic structural features in polymers, such as topology and chain conformation, will be discussed within the context of downstream physical properties. Sometimes these properties are unanticipated based on the chemical structures alone. For example, removal of chain ends transforms linear polymers into cyclic polymers; the consequences of architectural disparities manifest themselves across materials science applications. In another example, fluxional reorganization via Cope rearrangements provides unexpected flexibility into seemingly rigid polymer backbones. In the second half of this talk, mechanical force will be utilized as a constructive methodology, rather than a destructive stimulus, to counterintuitively drive macromolecular growth. Overall, the vignettes presented will culminate with the union of polymer methodology and macromolecular structure fueled by an innovation in synthetic chemistry.