

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Polymer crystallization in thin films: morphology and physical properties** GIOVANNI KELLY, JULIE ALBERT, Tulane University — Polymer crystallization has been studied both computationally and experimentally for decades, elucidating many of the mysteries surrounding crystallization kinetics and thermodynamics. However, many unanswered questions remain pertaining to the relationships between crystallization phenomena and material properties needed for specific applications that range from drug delivery and tissue engineering to optical devices and mechanically robust membranes. One of the especially interesting facets of polymer crystallization is the behavior observed when these long chain molecules are spatially confined in thin and ultrathin films. Confined geometry leads to chain configurations, and therefore thermal, mechanical, and optical properties, sometimes far removed from reported bulk values. This project aims to study the phenomena exhibited by linear semi-crystalline polymers in thin films as well as the way in which blending with homopolymers, block copolymers, and novel polymer chain architectures affect morphology, biodegradation, optical, thermal, and mechanical properties.

Giovanni Kelly  
Tulane University

Date submitted: 06 Nov 2015

Electronic form version 1.4