**Morphological Studies of Crystallization in Thin Films of PEO/PMMA Blends**

*Brian Okerberg and Hervé Marand*

Morphological development during crystallization of thin films of poly(ethylene oxide) (PEO) / poly(methyl methacrylate) (PMMA) blends has been reported. Studies focused on the effects of the blend composition, PMMA molecular weight, film thickness, and crystallization temperature on the observed crystal morphology. As the blend composition was varied from 90 -----Original Message---to 30 wt% PEO, the crystal morphology varied from spherulites to needles and dendrites. Variation of the crystallization temperature and PMMA molecular weight resulted in similar changes in morphology. A morphological map demonstrating the roles of the experimental controls on the observed crystal morphology has been developed. This map was used as a tool for more detailed studies of the observed morphologies and morphological transitions. The dendritic region of the map (~ 30 –--From: Linda Mennitt [ma 40 wt% PEO) was studied in detail, focusing on sidebranch formation and coarsening. In-situ observations of morpilto:felix.com@verizon.nehological transitions, such as dendrite/DBM and DBM/needle transitions, were also reported. The results of this work have helped to define new directions for the study of crystal morphologies, especially in the areas of spherulite formation and dendritic growth.

Author information:

Brian Okerberg

Mentor:  Christopher Soles

Polymers Division

Bldg 224, Room 230B, MS 8541

Phone: 5230

Fax: 301-975-3928

Brian.okerberg@nist.gov

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