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

*Brian Okerberg and Hervé Marand*

Morphological development during crystallization of thin films of poly(ethylene oxide) (PEO) / poly(methyl methacryla--Orte) (PMMA) blends has been reported. Studies focused on the effects of the bleiginnd composition, PMMA molecular weight, film thickness, and crystallizaal Mtion temperature on the observed crystal morphology. As the blend composition was varied from 90 to 30 wt% PEO, the crystal morphology vessaaried from spherulites to needles and dendrites. Variation of the crystge--allization 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---F. This map rom:was used as a tool for more detailed studies of the observed morphologies and morphological transitions. The dendritic region of the map (~ 30 – 40 wt% PEO) was studied in detail, focusing on sidebranch formation and coarsening. In-situ Lin observations of morphological transitions, such as da Mdendrite/DBM and DenniBM/needle transitions, were also reported. The results of this work tt [have helped to define new directions for the study of crystal morphologies, especially in the areas of spherulite formation and dendrmailitic growth.

Authto:for information:

Brian Okerberg

Mentor:  Christopher Soles

Polymers Division

Bldg 224, Room 23elix0B, MS 8541

Phone: 5230

Fax: 30.com@ver1-975-3928

Brian.okerberg@nist.gov

Not a member of Sigma Xi

Poster Category:  Materials