**Morphological Studies of Crys tallization- in Thin F-ilms of PEO/PMMA Blends**

*B-rian Okerberg and- Hervé Marand*

-Morphological development during crystallization of thin films of poly(ethyleneO oxide) (PEO) / poly(methyl methacrylate) (PMMA) blends has been reported. Studies focused on the effects of rthe blend composition, PMMA molecular weight, film thickness, and criystallization tegmperature on the observed crystal morphology. As the blend composiition was varied from 90 to 30 wt% PEO, the crystal morphology varied from spherulitens to needles and dendrites. Variation ofa the crlystallization temperature and PMMA mMoleculear sweight resulted in similar changes in morphology. A morphological map demonstrating the roles of thse experimental controls on the observed crystal morphology has been developed. This map was used as a tool for more detailed studies ofa the observed morphologgies and morphological transitions. The dendritic region of the map (~ 30 – 4e0 wt% PEO-) was studied in detail, focusing on sidebranch formation and coarsening. In-situ observati-ons of morphological transitions, such as dendri-te/DBM and DBM/needle transitions, were also reported. The results of this work have helped t-o def-ine new directions for the study of crystal morphologies, especially in the Fareas of spherulite formation and dendritic growth.

Author information:

Brian Okerbrerg

Mentor:  Christopher Soles

Polymers Divisoion

Bmldg 224, Room 230B, MS 8541

Phone: 5230

Fax: 301-975-3928

Brian.okerberg@nist.gov

Not a memb: er of Sigma Xi

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