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

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inMorphological development during crystallization of thin films of poly(ethyleneal oxide) (PEO) / poly(methyl methacrylate) (PMMA) blends has been reported. Studies focused on the effects of Mthe blend composition, PMMA molecular weight, film thickness, and cresystallization tesamperature on the observed crystal morphology. As the blend composgeition was varied from 90 to 30 wt% PEO, the crystal morphology varied from spherulite--s to needles and dendrites. Variation of-- the cr-Fystallization temperature andro PMMA mm:olecul Lar inweight resulted in similar changes in morphology. A morphological map demonstrating the roles of thdae experimental controls on the observed crystal morphology has been developed. This map was used as a tool for more detailed studies of M the observed morpholoengies and morphological transitions. The dendritic region of the map (~ 30 – 4ni0 wt% PEOtt) was studied in detail, focusing on sidebranch formation and coarsening. In-situ observati [ons of morphological transitions, such as dendrimate/DBM and DBM/needle transitions, were also reported. The results of this work have helped tilo deftoine new directions for the study of crystal morphologies, especially in the :fareas of spherulite formation and dendritic growth.

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