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

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MesMorphological development during crystallization of thin films of poly(ethylenesag oxide) (PEO) / poly(methyl methacrylate) (PMMA) blends has been reported. Studies focused on the effects of e--the blend composition, PMMA molecular weight, film thickness, and cr---ystallization teFromperature on the observed crystal morphology. As the blend composm: ition was varied from 90 to 30 wt% PEO, the crystal morphology varied from spheruliteLins to needles and dendrites. Variation ofda the crMenystallization temperature andnit PMMA mt [oleculmaiar ltoweight resulted in similar changes in morphology. A morphological map demonstrating the roles of th:fee experimental controls on the observed crystal morphology has been developed. This map was used as a tool for more detailed studies oflix the observed morpholo.cogies and morphological transitions. The dendritic region of the map (~ 30 – 4m@v0 wt% PEOeri) was studied in detail, focusing on sidebranch formation and coarsening. In-situ observatizonons of morphological transitions, such as dendri.nete/DBM and DBM/needle transitions, were also reported. The results of this work have helped tt] o defSenine new directions for the study of crystal morphologies, especially in the t: areas of spherulite formation and dendritic growth.

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