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

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Morphological development during crystallization of thin films of poly(ethylene oxide) (PEO) / poly(methyl methacryla--te) (PMMA) blends has been reported. Studies focused on the effects of the ble--nd composition, PMMA molecular weight, film thickness, and crystallizaOrtion temperature on the observed crystal morphology. As the blend composition was varied from 90 to 30 wt% PEO, the crystal morphology vigaried from spherulites to needles and dendrites. Variation of the crystinallization 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 developedal. This map Mwas 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-situes observations of morphological transitions, such as sadendrite/DBM and DgeBM/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 dendr--itic growth.

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