

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Crystallization of Propylene-Hexene Random Copolymer YIMIN MAO, FENG ZUO, JONGKAHK KEUM, BENJAMIN HSIAO, Department of Chemistry, Stony Brook University, Stony Brook, NY 11794-3400 — Time resolved small- and wide-angle x-ray scattering (SAXS/WAXS) were used to study the crystallization behavior of propylene-hexene random copolymer containing non-crystallizable hexene segments and crystallizable propylene segments. It was found that the copolymer would follow two crystallization paths depending on temperature, resulting in two distinct crystalline structures. At high crystallization temperatures (e.g. 100°C), the combined effects of phase separation and high chain mobility greatly enhance the formation of lamellar structure consisting of the alpha-form of isotactic polypropylene (iPP) crystal. At low temperature (e.g. 40°C), the lack of phase separation and the low chain mobility mainly result in the formation of fringe-micelle structure also with the alpha-form of iPP.

Benjamin Hsiao
Department of Chemistry, Stony Brook University,
Stony Brook, NY 11794-3400

Date submitted: 20 Nov 2007

Electronic form version 1.4