

Abstract Submitted  
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**Deformation-induced structure changes in olefin block copolymer** FENG ZUO, YIMIN MAO, JONGKAHK KEUM, CHRISTIAN BURGER, BENJAMIN HSIAO, Stony Brook University, HONGYU CHEN, DEBBIE CHIU, SHIH-YAW LAI, The Dow Chemical Company — Uniaxial tensile deformation was applied on two olefin block copolymer (OBC) samples to investigate the structure, morphology and orientation development using in-situ small-angle X-ray scattering and wide-angle X-ray diffraction techniques. Two samples have similar molecular characteristics but different chain architectures due to the different content of chain shuttling agent in production. The samples behave alike at room temperature, but the difference becomes distinct at high temperatures, such as fracture strain and crystal orientation. As more chain shuttling agents was used, the more frequently the growing chains transferred between catalysts; shorter block segments are produced. The block length has a strong effect on the crystallization kinetics, resulting microstructures (lamellae versus fringe-micelle) and deformation-induced structure changes.

Benjamin Hsiao  
Stony Brook University

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