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Morphology and Crystallization Behavior of Poly(3-(2'-ethyl)hexlthiophene) (P3EHT) Containing Diblock Copolymers EMILY DAVIDSON, BRYAN BECKINGHAM, VICTOR HO, UC Berkeley, RACHEL SEGALMAN, UC Santa Barbara — Poly(3-alkylthiophene) crystallites are confined within classical diblock copolymer microphase separated domains by substituting the alkyl side chain to reduce the crystalline driving force. Previously, we determined that the P3AT chain axis is oriented perpendicular to the domain interface within crystallites. Here, we find that following block copolymer self-assembly in the melt, crystallite growth drives expansion of microdomains, indicating that chains adopt an extended conformation within confined crystallites. In addition, we demonstrate that the degree of perfection of crystallites confined within lamellae may be tuned via the degree of undercooling.

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