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Confined Crystallization in Poly(3-alkylthiophene)-containing Diblock Copolymers EMILY DAVIDSON, VICTOR HO, BRYAN BECKINGHAM, RACHEL SEGALMAN, Univ of California - Berkeley — Confined crystallization within a diblock copolymer of a conjugated, semiconducting poly(3-alkylthiophene) (P3AT) block has been achieved by selecting an alkyl side chain that significantly depresses the crystalline driving force relative to the self-assembly driving force. Here, we demonstrate flow alignment of these P3AT-containing diblocks. In addition, we show that the chain axis of the semicrystalline P3AT orients preferentially relative to domain interfaces; the degree of crystalline orientation may be controlled as a function of domain width. Further work will examine the role of thermal treatments on crystallite orientation and morphology within confinement.

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