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Title: A strong regioregularity effect in self-organizing conjugated polymer films and high-efficiency polythiophene: fullerene solar cells


Authors: Choulis, Stelios A. 
Kim, Youngkyoo 
Cook, Steffan 

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Abstract: The influence of polymer regioregularity (RR) on the molecular nanostructure, and on the resulting material properties and device performance was analyzed. Annealed blend films show increased α regardless of RR, that indicates improved charge-carrier diffusion. It was found that the highest device efficiencies will be achieved with the highest RR P3HT. It was also found that the dark-current density of as-fabricated devices made with pristine P3HT increases with the RR of P3HT in the higher voltage regime

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