

Abstract Submitted
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Structure development of bilayer PCDTBT and PCBM films HSIN-WEI WANG, THOMAS RUSSELL, TODD EMRICK, UMass Amherst — Poly[N-9"-hepta-decanyl-2,7-carbazole-alt- 5,5-(4',7'-di- 2-thienyl-2',1',3'-benzothiadiazole)] (PCDTBT) is a promising low band gap material. with power conversion efficiency approaching 6% when blended with PCBM₇₀. However, unlike the benchmark P3HT:PCBM system, annealing at high temperature results in performance reduction. To gain a deeper understanding of this material, bilayer films of crystalline PCDTBT and PCBM were prepared, and the kinetics associated with the structure development were investigated. It was found that the diffusion of PCBM disturbs the ordering of PCDTBT along (100) direction. A decrease in domain size was also observed by transmission electron microscopy..

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