

Abstract Submitted  
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**Influence of Annealing and Blending of Photoactive Polymers on Their Crystalline Structure** MATTHIAS A. RUDERER, STEFAN M. PRAMS, MONIKA RAWOLLE, QI ZHONG, PETER MUELLER-BUSCHBAUM, TU Muenchen, Physik-Department LS E13, Chair of Functional Materials, James-Franck-Str. 1, 85747 Garching (Germany), JAN PERLICH, STEPHAN V. ROTH, HASYLAB at DESY, Notkestr. 85, 22603 Hamburg (Germany) — Thin photoactive polymer films of poly(3-octylthiophene-2,5-diyl) (P3OT) and poly(2,5-di(hexyloxy)cyanoterephthalylidene) (CN-PPV) are investigated. With X-ray reflectivity measurements, linear concentration-thickness dependence is found for both. Grazing incidence wide-angle X-ray scattering (GIWAXS) is used to probe the crystallinity of thin films and to determine characteristic length scales of the crystalline structure. Moreover, the orientation of the crystalline parts regarding the substrate of both the homopolymer and the blended films is probed with GIWAXS. Temperature annealing is found to improve the crystallization for both homopolymers. In addition, reorientation of the predominant crystalline structures takes place. Blending both polymers reduces or even suppresses the crystallization during spin coating as well as temperature annealing. Absorption measurements complement the structural investigations [1].

[1] M.A. Ruderer et al. J. Phys. Chem. B (2010), doi:10.1021/jp106972s.

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