

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Correlating polymer solution conformation and thin film nanostructure: Implications for BHJ processing¹ RAJEEV DATTANI, ALISYN NEDOMA, NATALIE STINGELIN, JENNY NELSON, JOAO CABRAL, Imperial College London — We study the solution properties of polymer-fullerene mixtures by a combination of dynamic light scattering, viscometry, small angle neutron scattering and microscopy. Specifically, the kinetics of polymer conformation (R_g and R_h) and interaction changes are mapped as function of polymer-particle concentration, overall concentration in solution and age. A model system of polystyrene and C60 fullerene was selected for this study, in addition to the P3HT/PCBM pair, which is currently explored in photovoltaic applications. The solution properties show a clear correlation to the resulting thin film nanostructured composite morphology. Our future work will further link it to bulk heterojunction solar cell performance.

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Date submitted: 09 Nov 2012

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