

# Structural Characterization of Bulk Heterojunction Solar Cells



## ConvEne IGERT

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The bulk heterojunction (BHJ) morphology of certain polymer-fullerene blends has enabled the development of a class of solution processable plastic solar cells which promise to make solar energy an economically viable renewable energy source. Although BHJ forming P3HT/PC<sub>60</sub>BM blends represent a well understood system, P3HT based devices exhibit low open circuit voltages ( $V_{oc}$ ) and an absorption spectra which poorly overlaps the solar spectrum. Thus, in order to maximize solar cell performance, a new class of donor material has recently been synthesized. This project studies the relationships which exist between chain architecture, film morphology, and ultimately device performance in this novel class of donor-acceptor type polymer.

