Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Graphene-Based Polymer Bulk Heterojunction Solar Cells FEI YU, VIKRAM KUPPA, University of Cincinnati — We propose and demonstrate BHJs that utilize pristine graphene in order to facilitate exciton dissociation and charge transfer in polymeric solar cells. Devices based on P3HT:PCBM:graphene were fabricated on patterned ITO glass, and the effect of graphene on performance was investigated. Various device parameters including short-circuit current density, open-circuit voltage, fill factor, power conversion efficiency, and external quantum efficiency are compared with traditional BHJs. Results are discussed in the context of the morphology of the active layer, and the distribution and orientation of graphene platelets, as characterized by GIXRD, and neutron reflectometry.

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Date submitted: 15 Nov 2013 Electronic form version 1.4