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**Electrospinning Nanofiber Based Organic Solar Cell<sup>1</sup>** ZHENHUA YANG, YING LIU, STONY BROOK UNIVERSITY, MARIA MOFFA, CNR-Istituto Nanoscienze, CHANG-YONG NAM, Brookhaven National lab, DARIO PISIGNANO, CNR-Istituto Nanoscienze, MIRIAM RAFAILOVICH, STONY BROOK UNIVERSITY — Bulk heterojunction (BHJ) polymer solar cells are an area of intense interest due to their potential to result in printable, inexpensive solar cells which can be processed onto flexible substrates. The active layer is typically spin coated from the solution of polythiophene derivatives (donor) and fullerenes (acceptor) and interconnected domains are formed because of phase separation. However, the power conversion efficiency (PCE) of BHJ solar cell is restricted by the presence of unfavorable morphological features, including dead ends or isolated domains. Here we MEH-PPV:PVP:PCBM electrospun nanofiber into BHJ solar cell for the active layer morphology optimization. Larger interfacial area between donor and acceptor is obtained with electrospinning method and the high aspect ratio of the MEH-PPV:PVP:PCBM nanofibers allow them to easily form a continuous pathway. The surface morphology is investigated with atomic force microscopy (AFM) and scanning electron microscopy (SEM). Electrospun nanofibers are discussed as a favorable structure for application in bulk-heterojunction organic solar cells.

<sup>1</sup>Electrospinning Nanofiber Based Bulk Heterojunction Organic Solar Cell

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