Electronic supporting information

Planar Heterojunction Perovskite/$PC_{71}BM$ Solar Cells with enhanced open-circuit voltage *via* (2/1)-step Spin-coating Process

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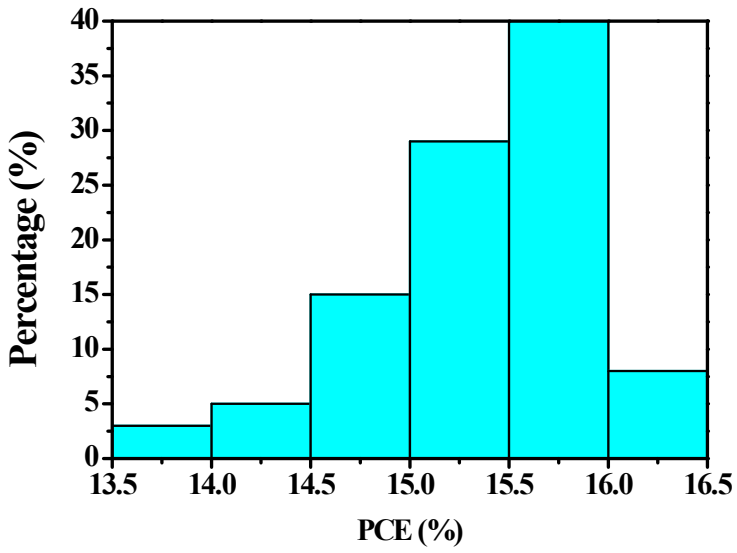

Figure S1: Device performance statistics based on 50 devices

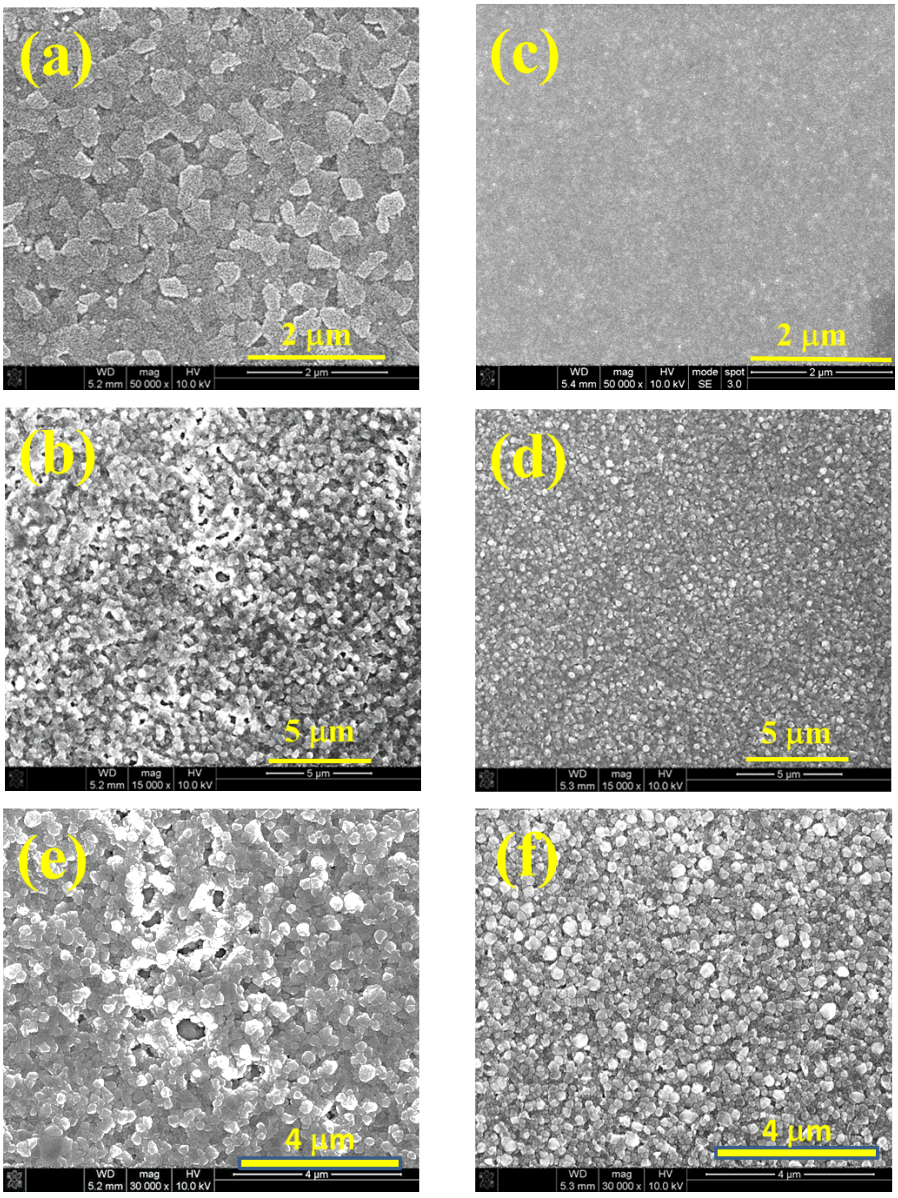

Figure S2: EM micrographs of PEDOT:PSS films and PEDOT:PSS/perovskite films obtained from different fabrication condition. (a) PEDOT:PSS film deposited on cold ITO; (b, e) Perovskite film deposited on (a) with different magnification; (c) PEDOT:PSS film deposited on preheated ITO; (d, f) Perovskite film deposited on (c) with different magnification.

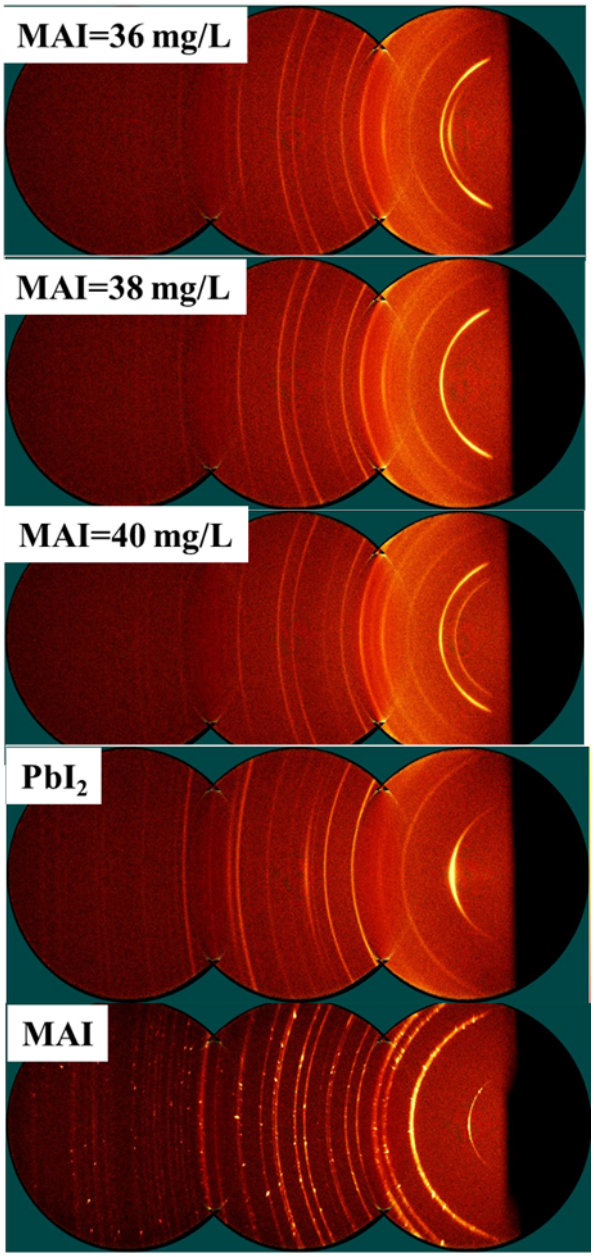

Figure S3: Original 2D XRD data of perovskite films and related compounds.

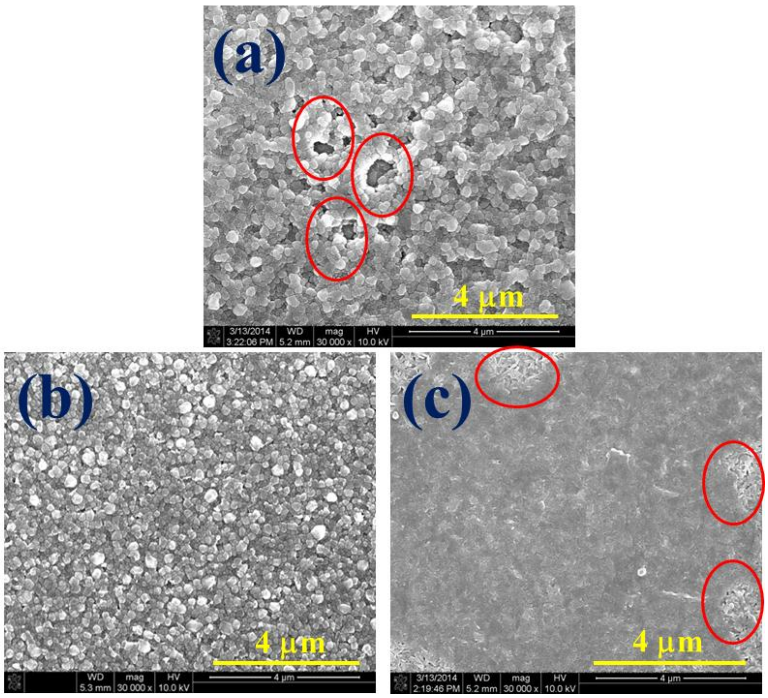

Figure S4: SEM micrographs of perovskite film prepared form different MAI concentration. (a) 36 mg/mL (b) 38 mg/mL (c) 40 mg/mL
(red circle is the defect sites)

S1: L. Etgar, P. Gao, Z. Xue, Q. Peng, A. K. Chandiran, B. Liu, M. K. Nazeeruddin, M. Grätzel, *J. Am. Chem. Soc.*2012, **134**, 17396.