

Improving Electron Extraction Ability and Device Stability of Perovskite Solar Cells by Using a Compatible PCBM/AZO Electron Transporting Bilayer

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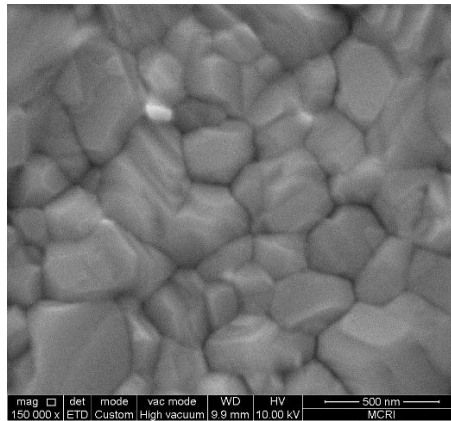


Figure S1. Top-view SEM image of the surface morphology of perovskite.

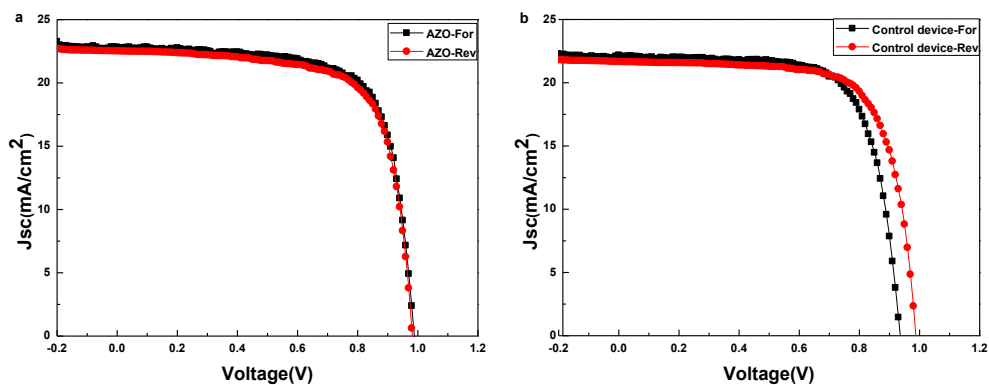


Figure S2. (a) J-V curves in forward and reverse scans of PSCs with AZO, (b) J-V curves in forward and reverse scans of PSCs without AZO.

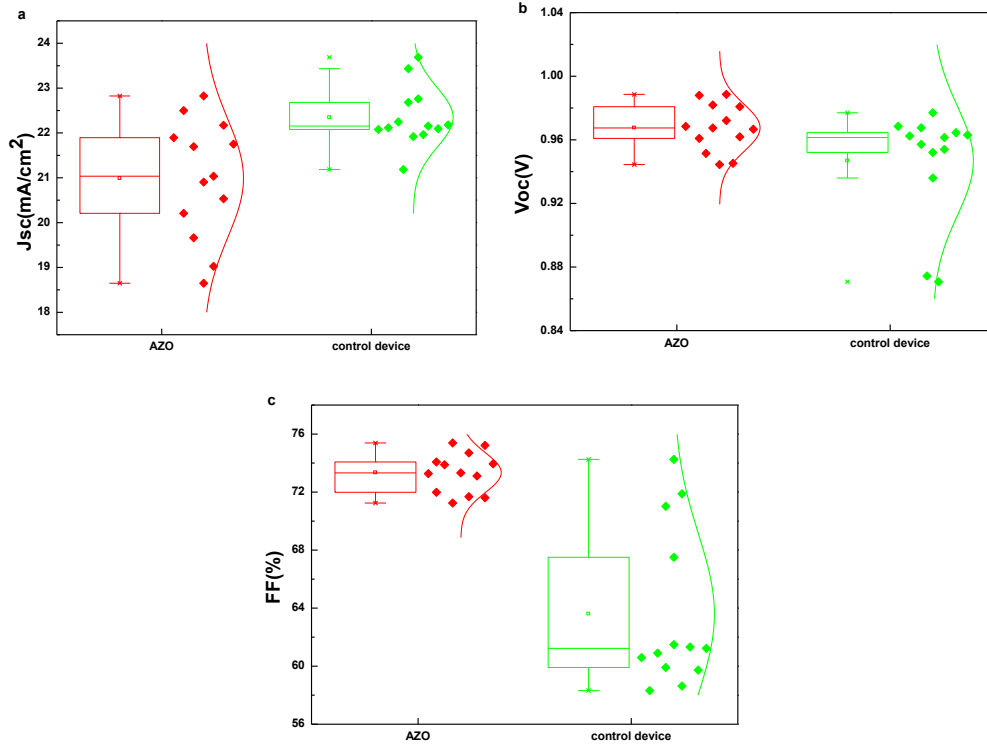


Figure S3. Statistics results of J_{sc} (a) V_{oc} (b) and FF (c) for PSCs with/without AZO.

Table S1. Statistical results of perovskite solar cells under AM 1.5G illumination (100 mW/cm²). The standard deviation results are derived from 12 perovskite solar cells.

	J_{sc} (mA/cm ²)	V_{oc} (V)	FF (%)	PCE (%)
AZO	20.99 ± 1.32	0.97 ± 0.014	73.34 ± 1.3	14.89 ± 0.84 (16.19)
Control device	22.35 ± 0.66	0.95 ± 0.033	63.60 ± 5.3	13.42 ± 0.72 (14.75)

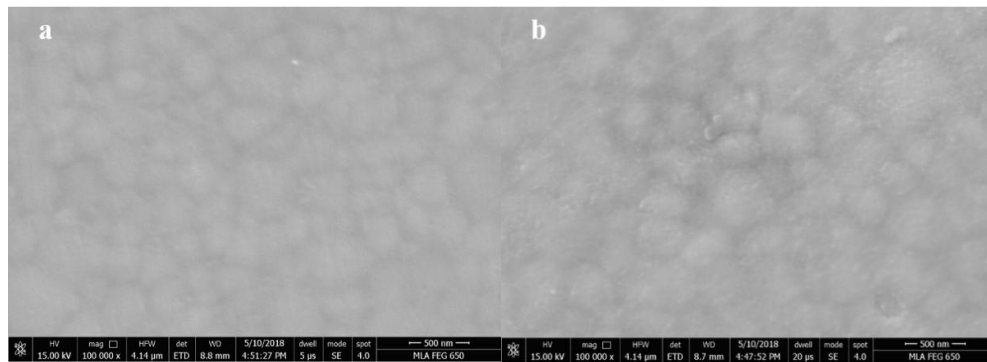


Figure S4. SEM graphs of (a) ITO/PEDOT:PSS/perovskite/PCBM and (b) ITO/PEDOT:PSS/perovskite/PCBM/AZO.

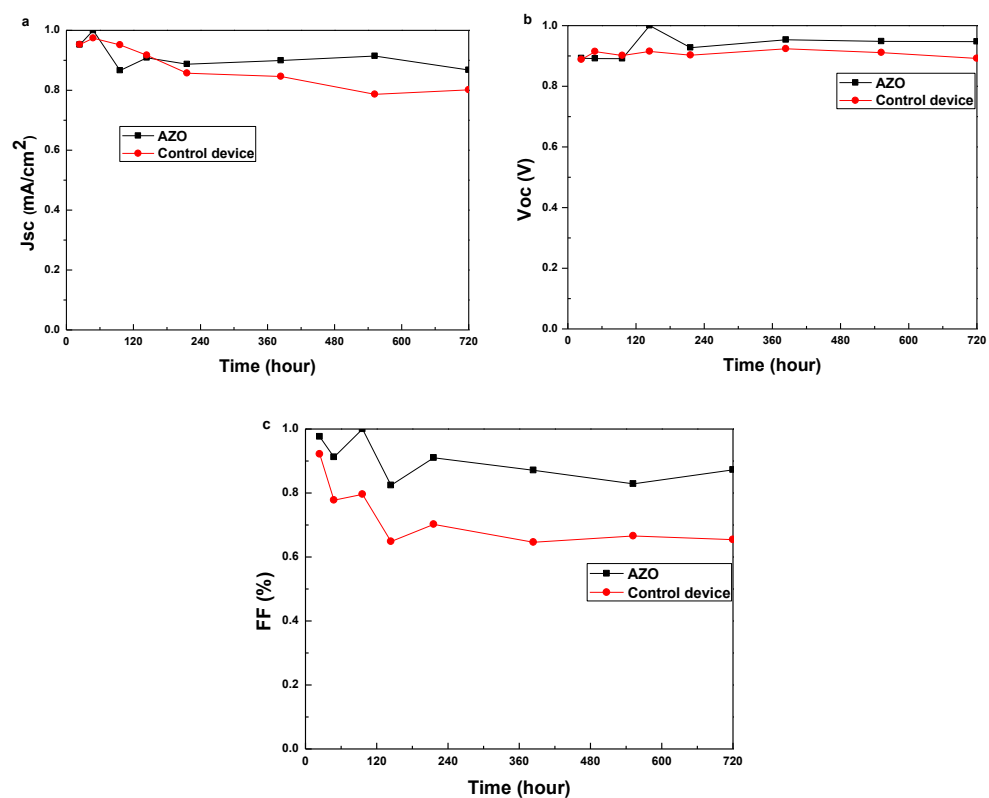


Figure S5. Stability of (a) Jsc (b) Voc and (c) FF for unencapsulated devices with/without AZO.