# Supporting Information for

# Solution-processed copper iodide as an inexpensive and effective anode buffer layer for polymer solar cells

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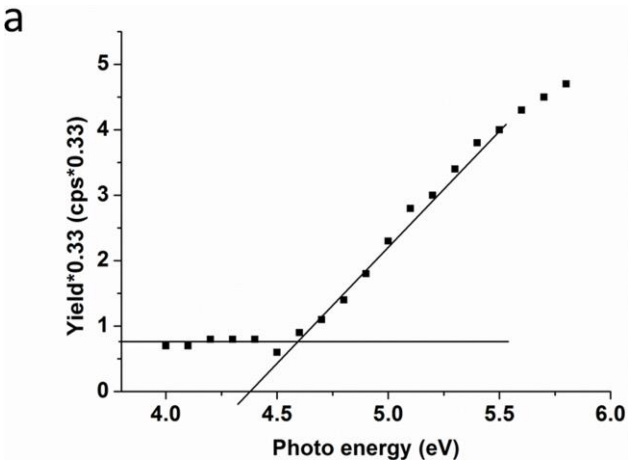
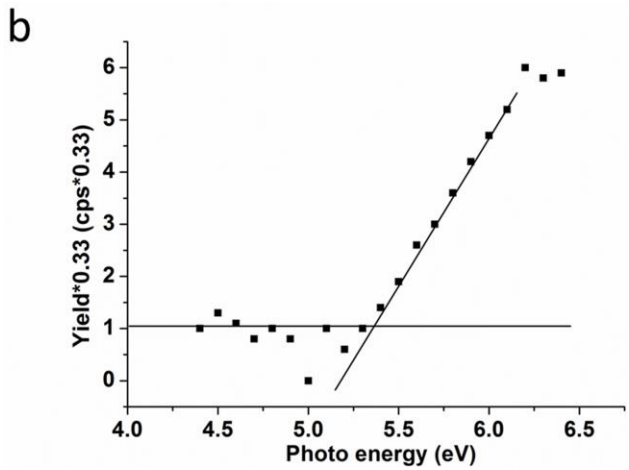
The UPS of bare ITO, PEDOT/PSS and CuI layers, water contact angle of PEDOT/PSS and CuI layers, AFM images of the three-dimensional structure of ITO and different anode buffer layers, SEM images of CuI films obtained at different rates.



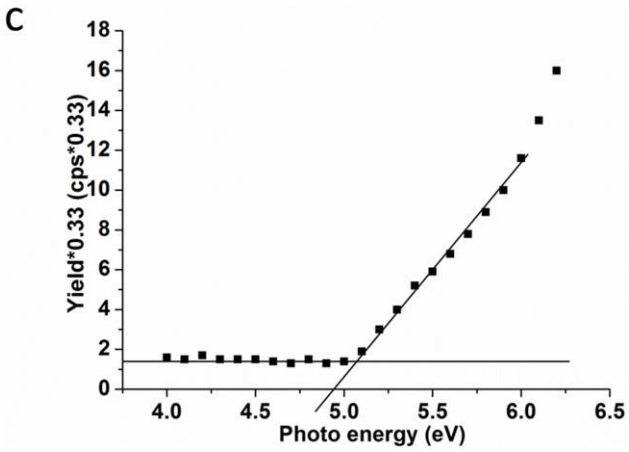



**Fig. S1.** The ultraviolet photoelectron yield spectroscopy of the different anode interfacial layers: (a) ITO; (b) PEDOT/PSS; (c) CuI-3000.

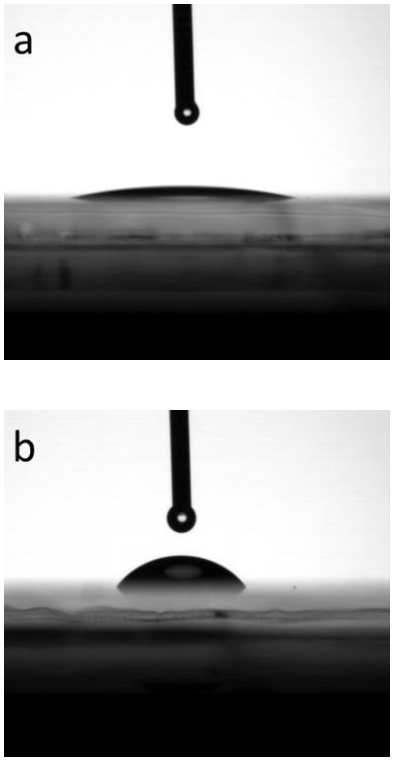
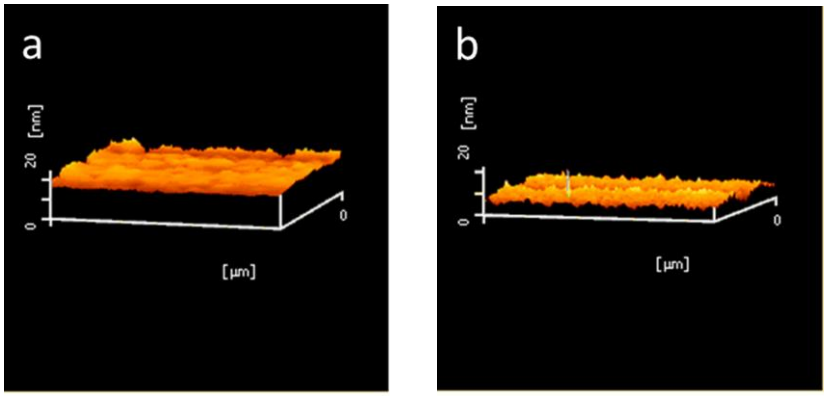



**Fig. S2.** Water contact angles of (a) PEDOT/PSS on ITO, and (b) CuI-3000 on ITO.



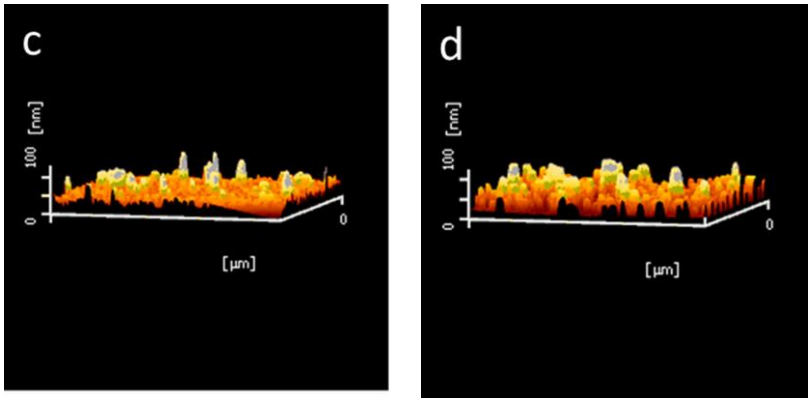



**Fig. S3.** AFM images of the three-dimensional structure of (a) ITO, (b) ITO/PEDOT/PSS, (c) ITO/CuI-3000 and (d) ITO/a-CuI-3000.

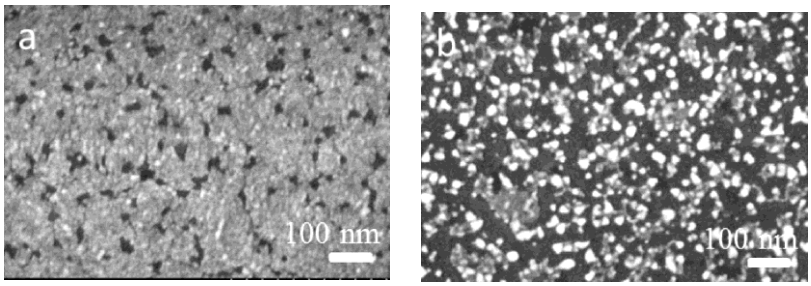



**Fig. S4.** SEM images in high resolution of CuI films on ITO spin-cast at a low rpm of 1000 (a) and a high rpm of 5000 (b).

**Table S1.** Pairwise T-tests Comparing the PCE Data of Device B (CuI) and Device D (PEDOT/PSS)

| Device | PEDOT/PSS | CuI |
|---|---|---|
| Mean | 2.820 | 3.415 |
| Standard Deviation | 0.114 | 0.130 |
| Observations | 16 | 16 |
| df | 15 | |
| t | -11.747 | |
| P(T<=t) two-tail | 0 | |

**Table S2.** Photovoltaic Parameters of PEDOT/PSS and CuI Devices with the Doubled P3HT/PCBM Concentration.

| Device | $V_{oc}$ (V) | $J_{sc}$ (mA/cm$^2$) | FF (%) | PCE (%) | Best PCE (%) |
|---|---|---|---|---|---|
| PEDOT/PSS | 0.632 ±0.004 | 9.20 ±0.21 | 46.6 ±1.0 | 2.71 ±0.08 | 2.83 |
| CuI | 0.602 ±0.008 | 11.61 ±0.27 | 58.2 ±1.7 | 4.04 ±0.12 | 4.15 |