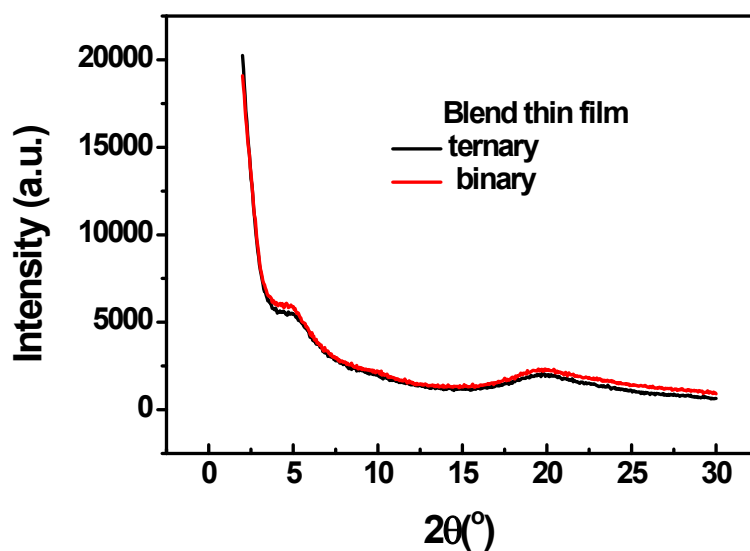
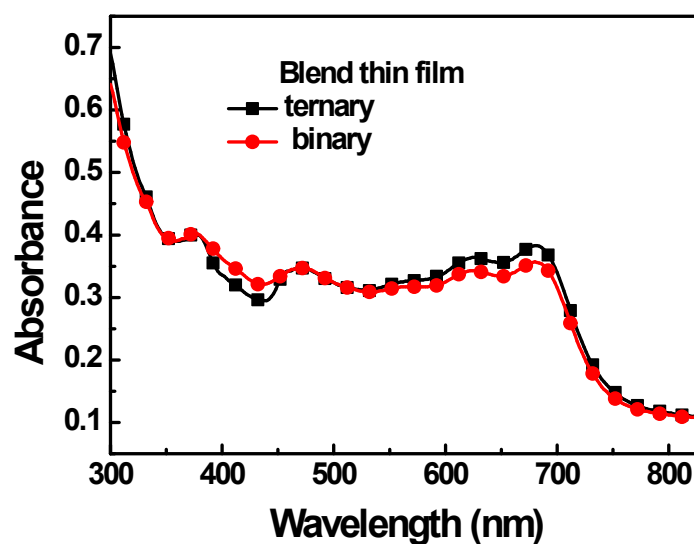


Electronic Supplementary Information for  
**Electron-transporting third component modifying cathode for simplified inverted ternary blend solar cells**

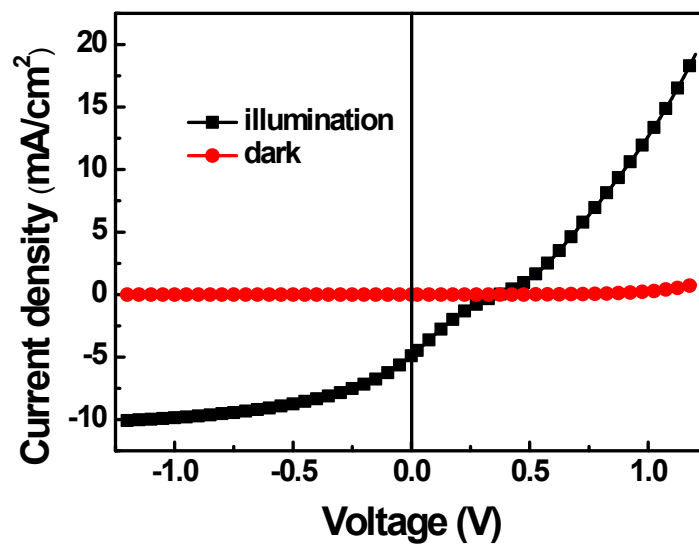
Dashan Qin, Pei Cheng, Yifan Wang, Yan Fan, and Xiaowei Zhan\*



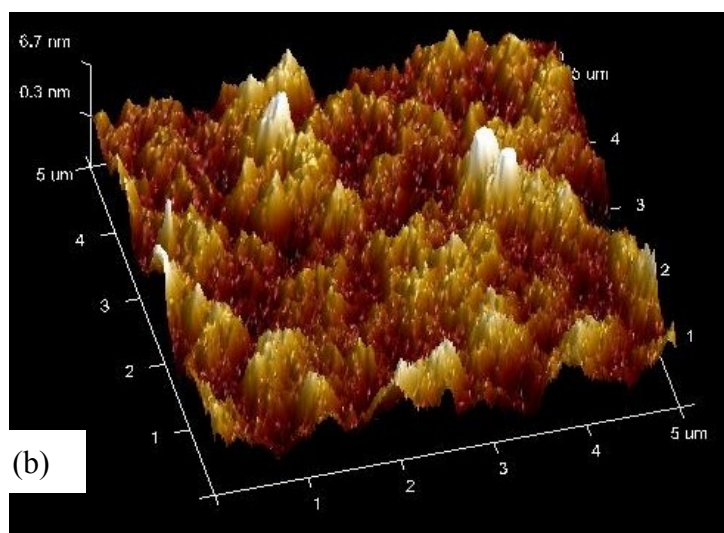
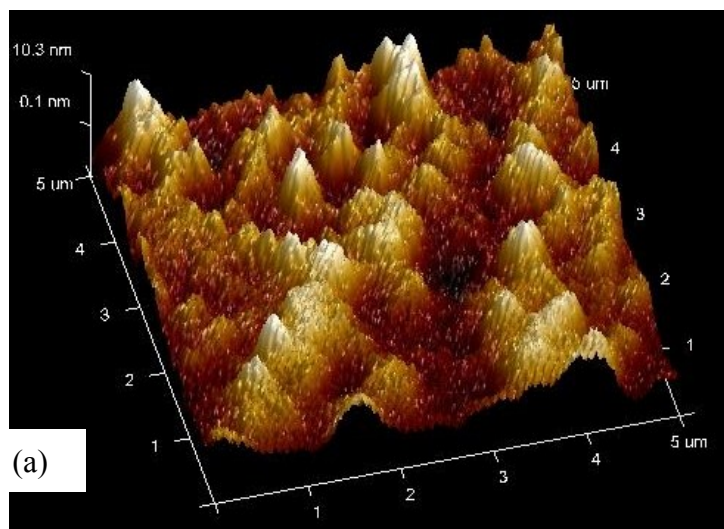
**Fig. S1** XRD patterns of PTB7:PC<sub>71</sub>BM and PTB7:PC<sub>71</sub>BM:Bphen (0.10 mg/ml) blends.



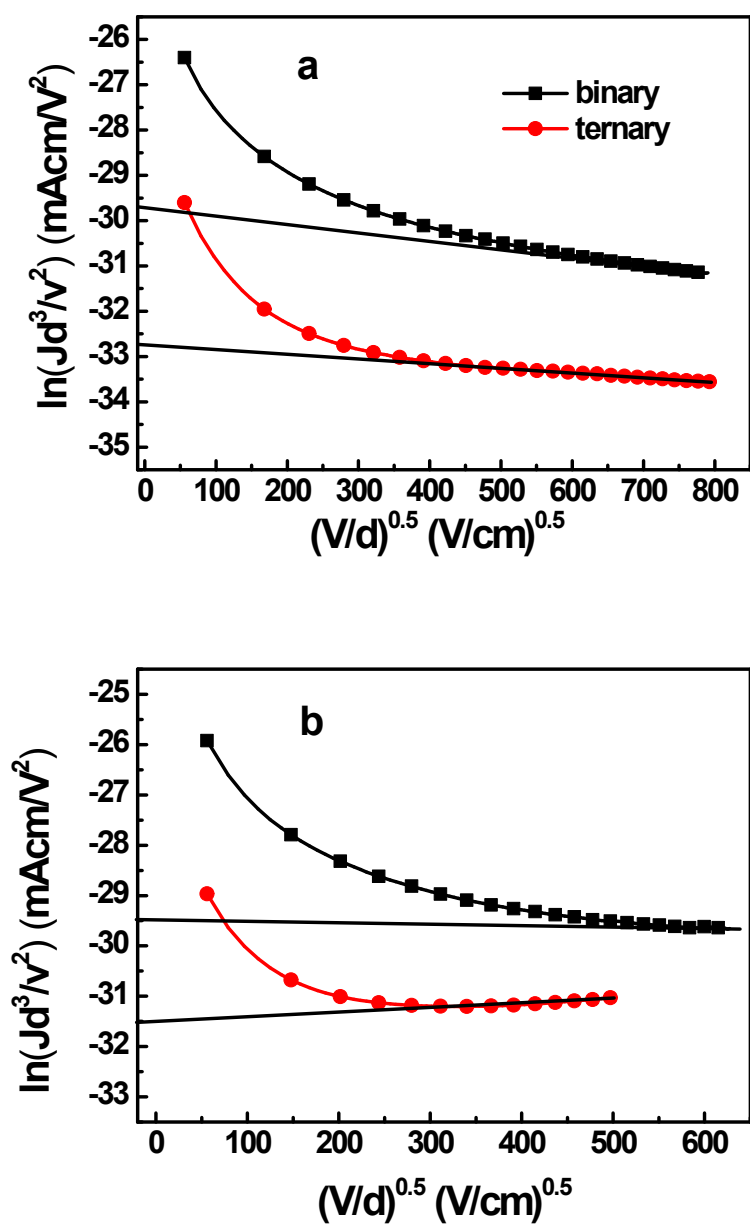
**Fig. S2** Absorption spectra of PTB7:PC<sub>71</sub>BM and PTB7:PC<sub>71</sub>BM:Bphen (0.10 mg/ml) blends.



**Fig. S3**  $J$ - $V$  curves of regular solar cell with structure of ITO/PEDOT:PSS/PTB7:PC<sub>71</sub>BM:Bphen (0.10 mg/ml)/Ca/Al.



**Fig. S4** AFM height images for PTB7:PC<sub>71</sub>BM (a) and PTB7:PC<sub>71</sub>BM:Bphen (0.10 mg/ml) films (b) spin-coated on the ITO substrates.



**Fig. S5**  $J$ - $V$  characteristics measured under dark for hole-only (a) and electron-only (b) devices based on PTB7:PC<sub>71</sub>BM and PTB7:PC<sub>71</sub>BM:Bphen (0.10 mg/ml) blends.