

Supplementary Information

Photomultiplication photodetectors with P3HT:fullerene-free as the active layers exhibiting broad response

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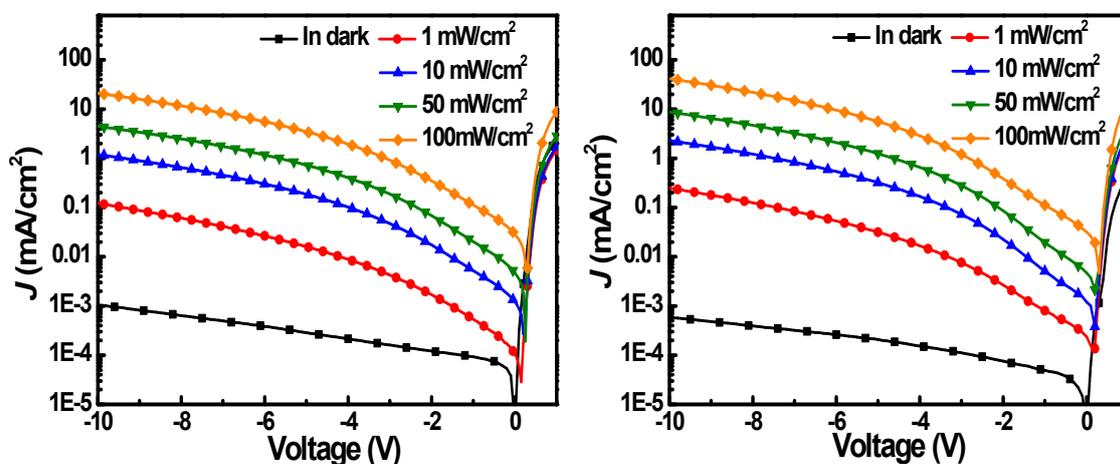


Fig. S1. (a) Current density versus bias of PPDs with P3HT: DC-IDT2T (50:1, w/w) as the active layers in dark and under illumination with intensity of 1, 10, 50 and 100 mW/cm², respectively; (b) current density versus bias of PPDs with P3HT: DC-IDT2T (150:1, w/w) as the active layers in dark and under illumination with intensity of 1, 10, 50 and 100 mW/cm², respectively.

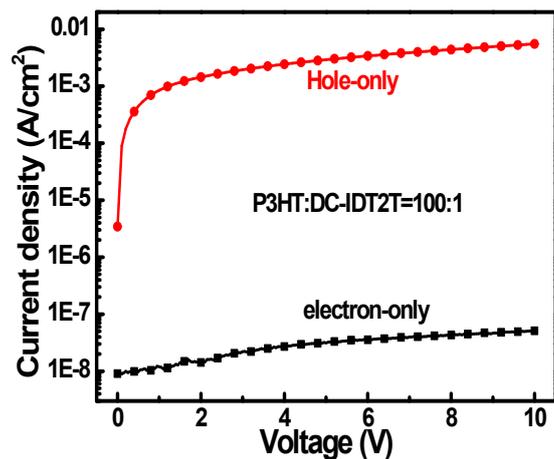


Fig. S2. J - V curves of electron-only (ITO/Al/LiF/P3HT:DC-IDT2T/LiF/Al) and hole-only (ITO/PEDOT:PSS/P3HT:DC-IDT2T/MoO₃/Ag) devices with P3HT:DC-IDT2T (100:1, w/w) as active layers.

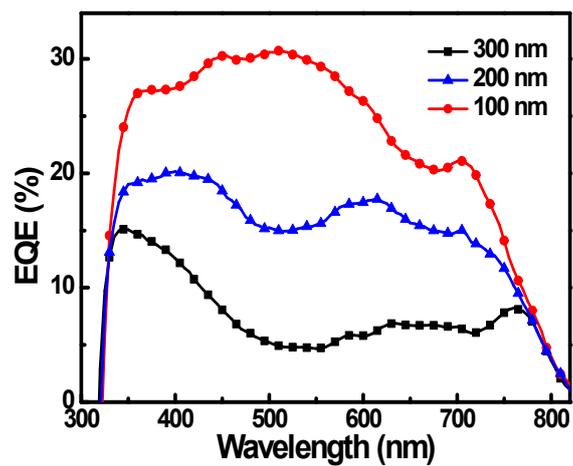


Fig. S3. EQE spectra of PPDs with different thickness of P3HT:DC-IDT2T (2:1, w/w) as the active layers under -10 V bias,

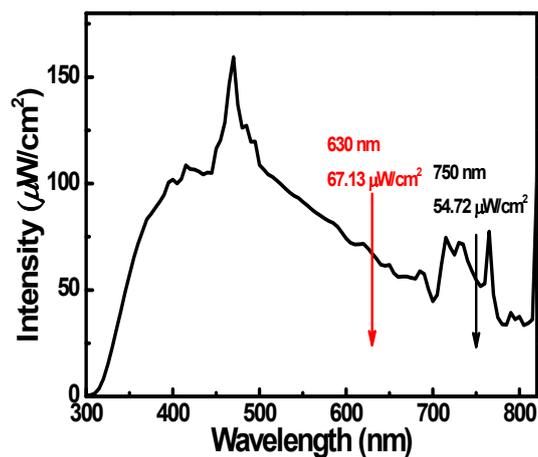


Fig. S4. Light intensity spectrum of the monochromatic light through a monochromator.

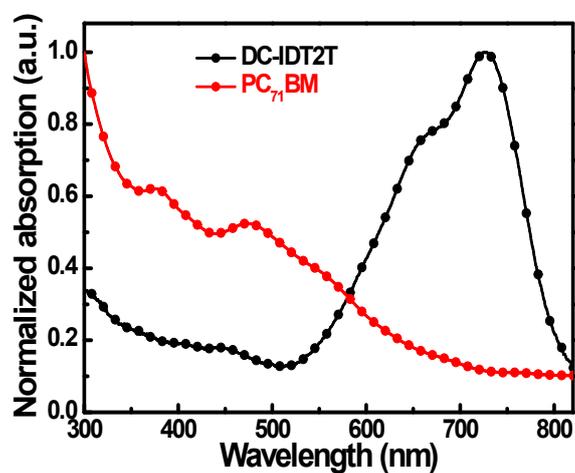


Fig. S5. Normalized absorption spectra of DC-IDT2T and PC₇₁BM films.

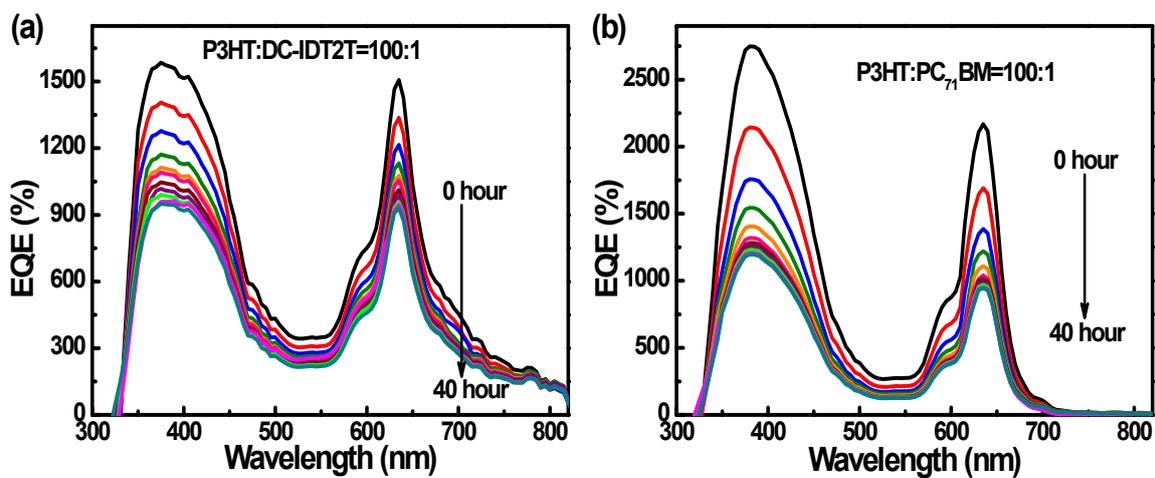


Fig. S6. EQE spectra of the PPDs measured under -10 V bias after different storage time, (a) P3HT:DC-IDT2T (100:1, w/w) as the active layer and (b) P3HT:PC₇₁BM (100:1, w/w) as the active layer.