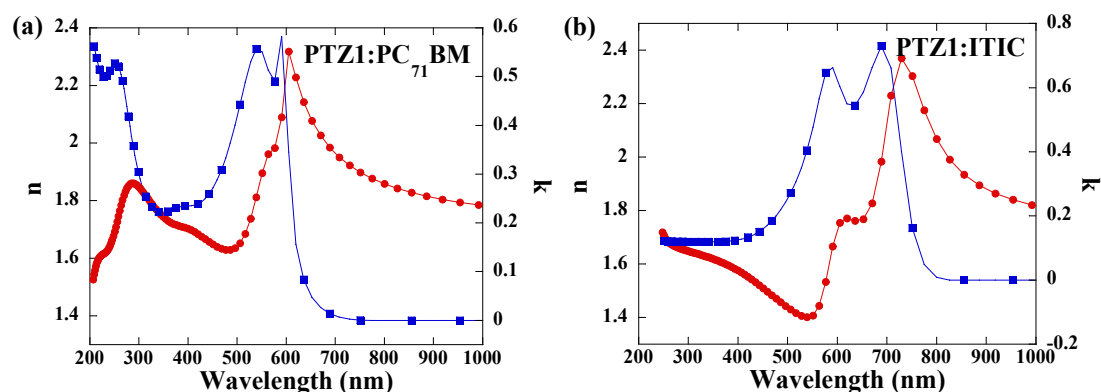


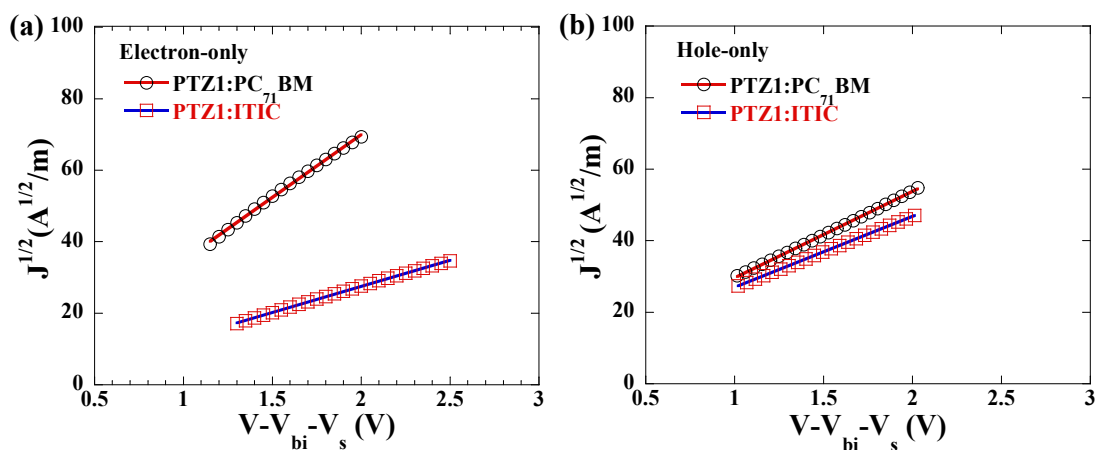
## Supporting Information

### Improved Photocurrent and Efficiency of Non-fullerene Organic Solar Cells Despite Higher Charge Recombination

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**Figure S1.** Optical constants of the PTZ1:PC<sub>71</sub>BM (a) and PTZ1:ITIC (b) blend layer.



**Figure S2.**  $J^{1/2}$ - $V_{\text{eff}}$  ( $V_{\text{eff}} = V - V_{\text{bi}} - V_{\text{s}}$ ) characteristics for electron-only (a) and hole-only (b) devices. The device configuration for electron-only and hole-only devices are ITO/ZnO/PFN/Active layer/Ca/Al and ITO/PEDOT:PSS/PTZ1:ITIC/MoO<sub>3</sub>/Al, respectively.