Electronic Supplementary Information

Developing efficient small molecule-based organic photo-couplers by optimizing the cathode interfacial layer in the photodetector

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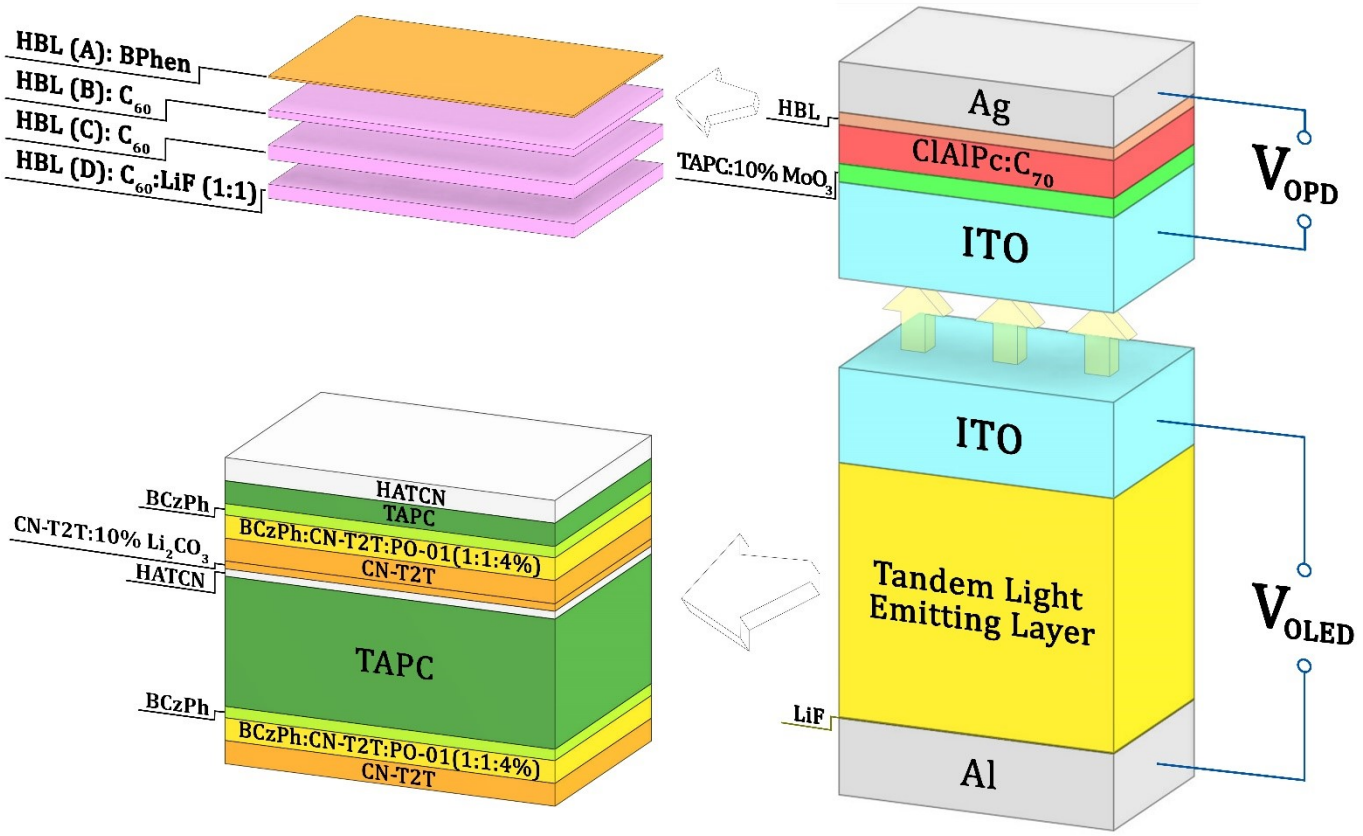

Fig. S1 Device configuration of an OPC.

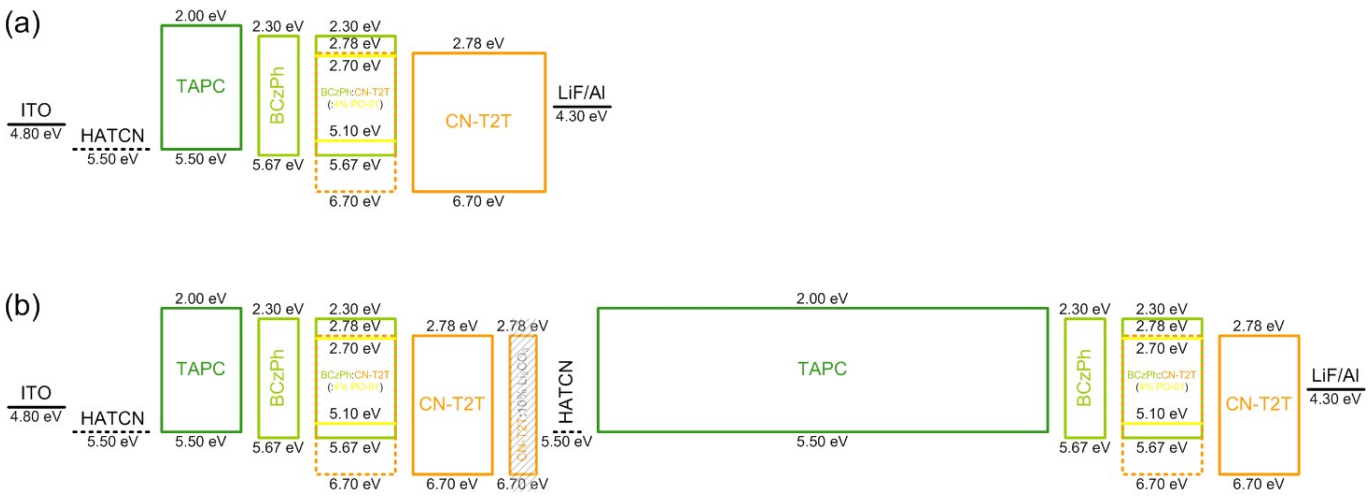

Fig. S2 Energy level diagram of (a) OLED S and (b) OLED T.

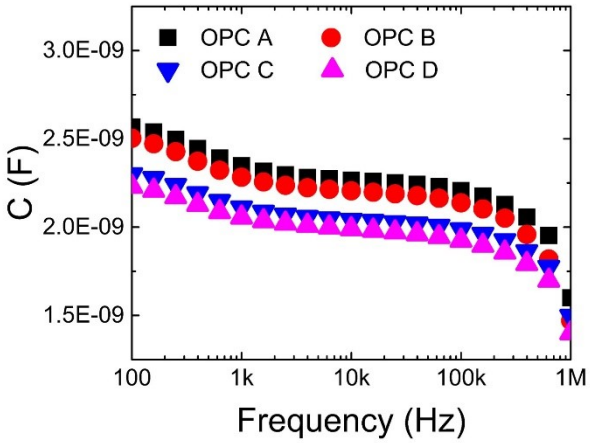

Fig. S3 The C-f characteristics of OPC A (black square), OPC B (red circle), OPC C (blue down-triangle), and OPC D (purple up-triangle) at a biased of -3 V and measured in the dark conditions.

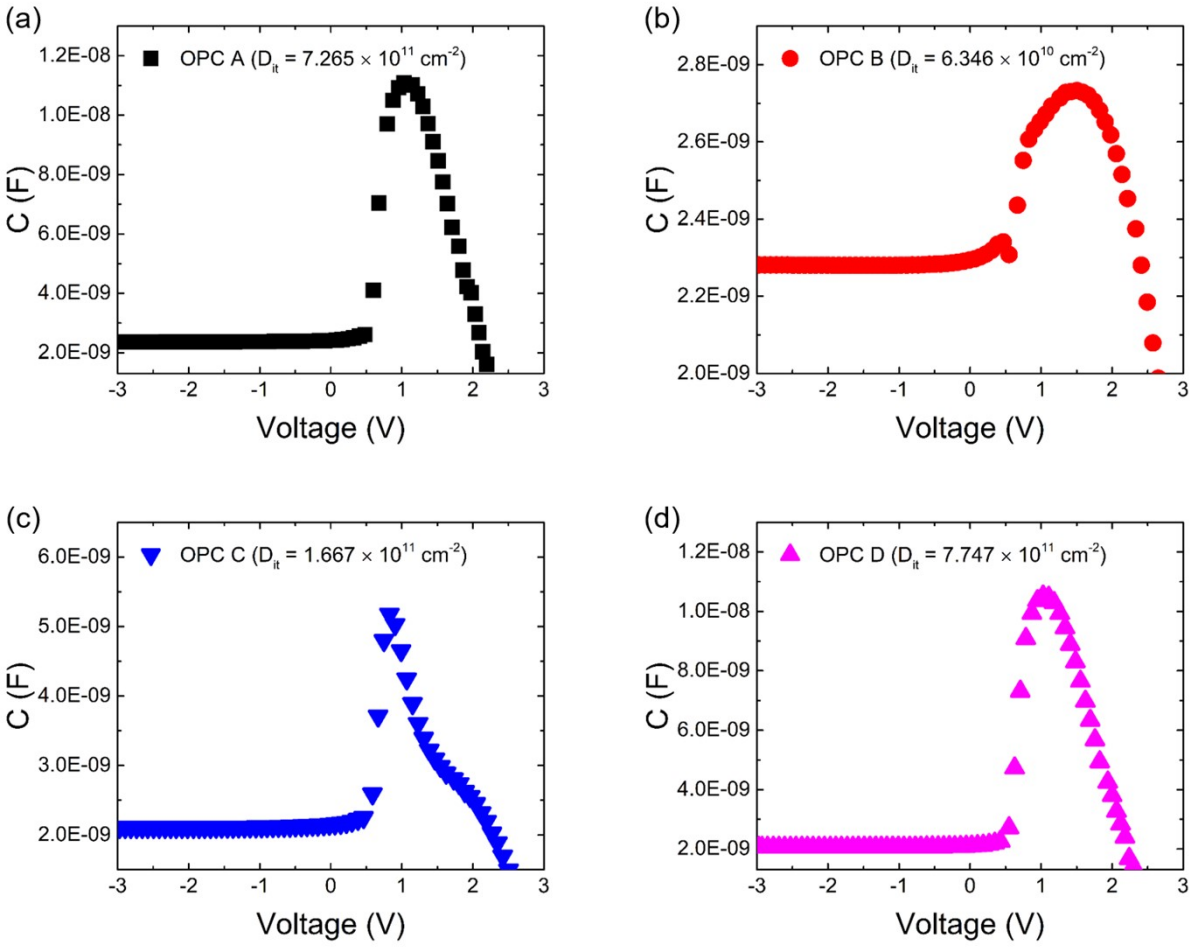

Fig. S4 The characteristics of C-V for the device of (a) OPC A, (b) OPC B, (c) OPC C, and (d) OPC D. All OPCs are tuned at a frequency of 1 kHz and measured in dark conditions.

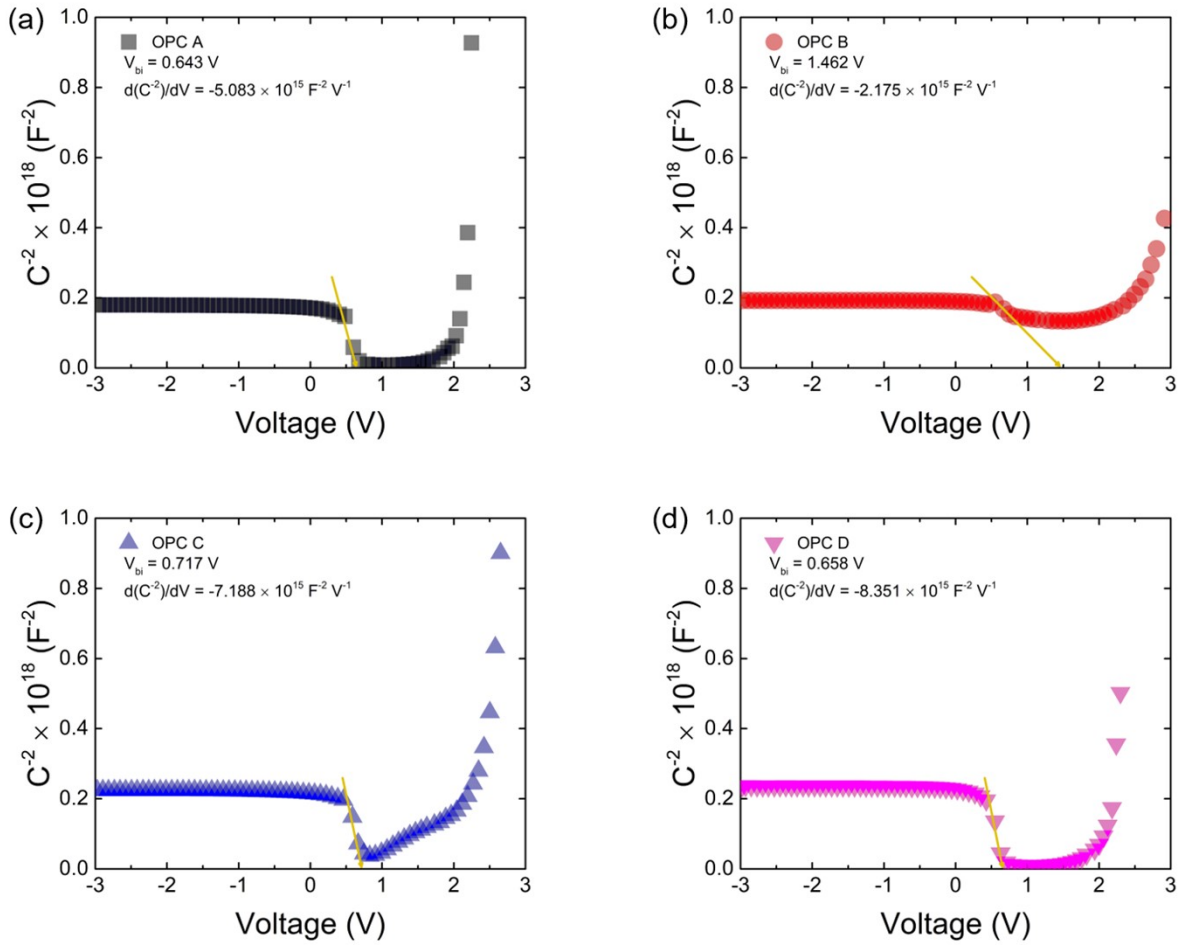

Fig. S5 The plots of C^{-2}-V (Mott-Schottky) for the device of (a) OPC A, (b) OPC B, (c) OPC C, and (d) OPC D. All OPCs are tuned at a frequency of 1 kHz and measured in dark conditions.

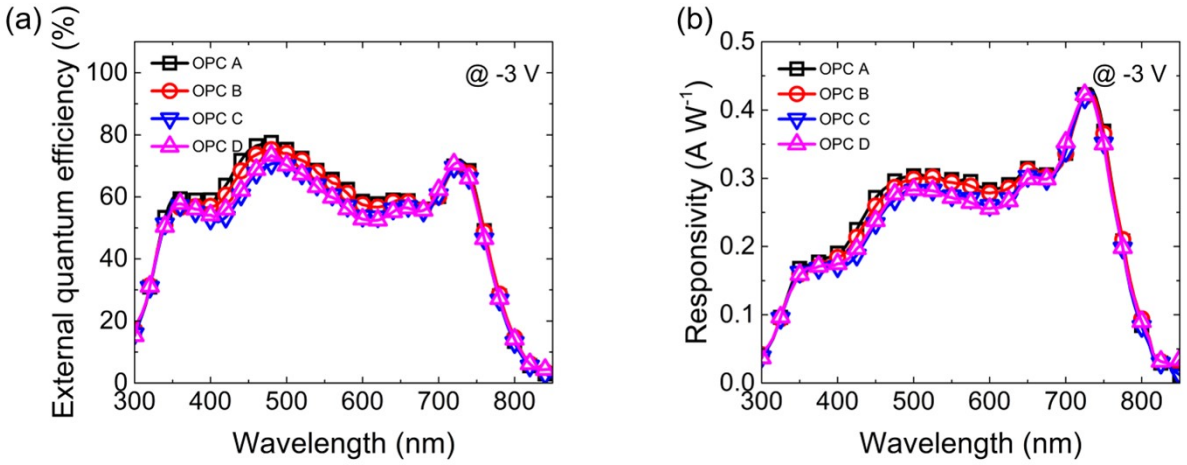

Fig. S6 The spectral response of the OPC devices under a reverse bias voltage of -3 V. (a) EQE. (b) Responsivity.

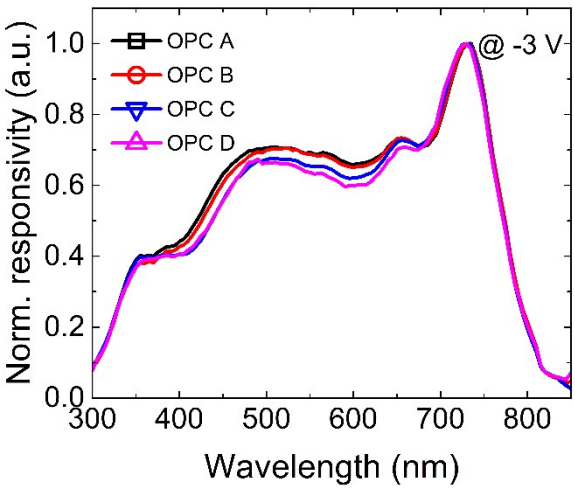

Fig. S7 The normalized spectral responsivity of the OPC devices under a reverse bias voltage of -3 V.

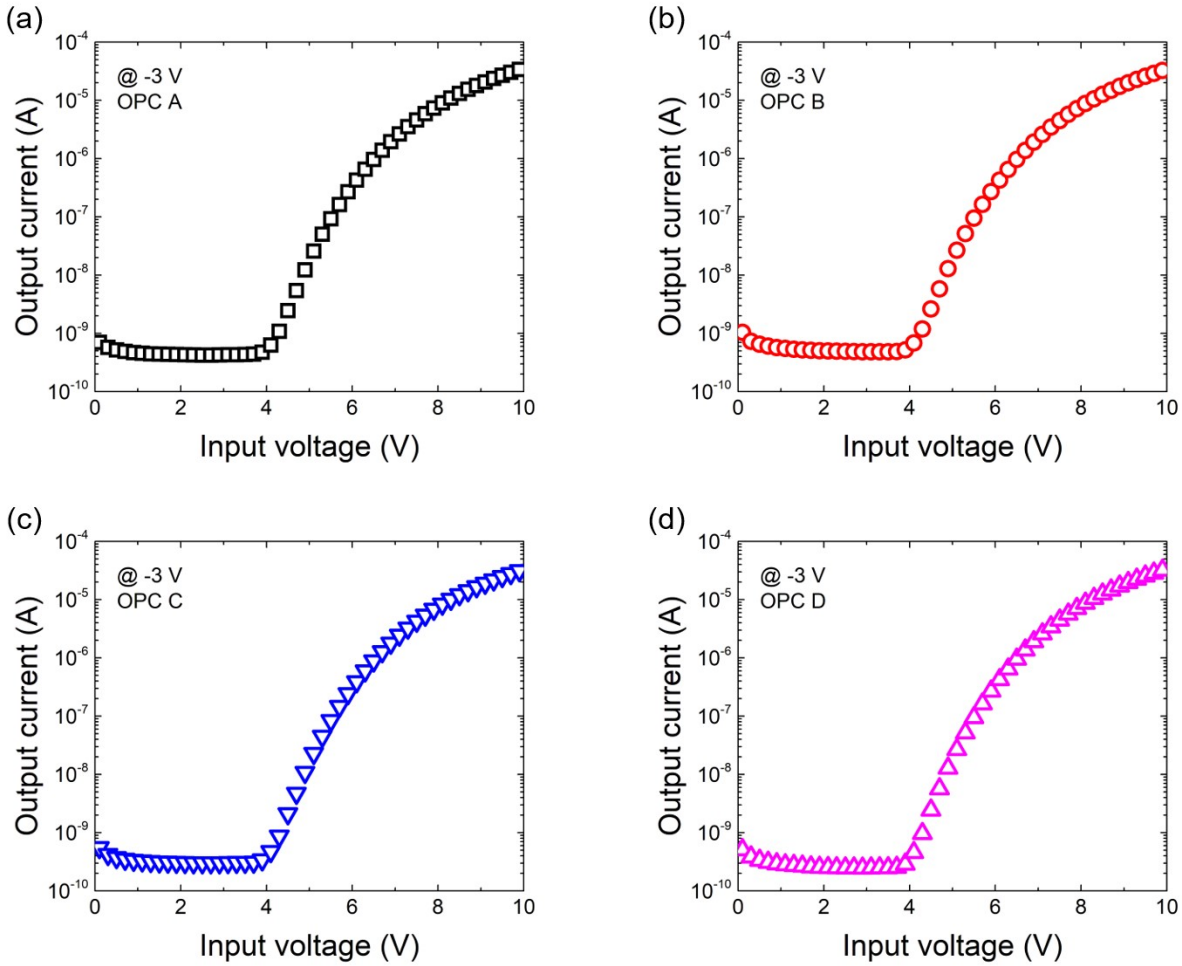

Fig. S8 The current transfer characteristics of the (a) OPC A, (b) OPC B, (c) OPC C, and (d) OPC D at a biased of -3 V and illuminated with a varied voltage bias.

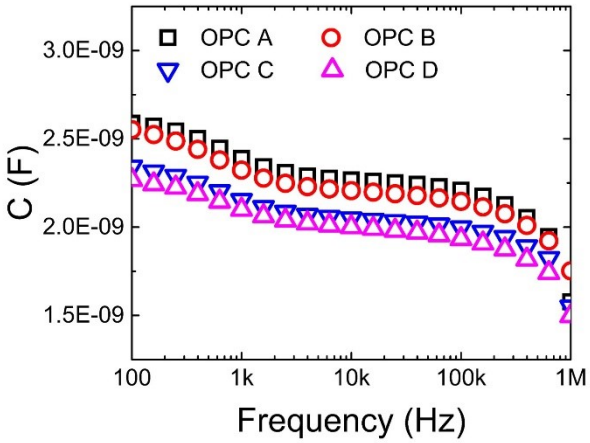

Fig. S9 The C-f characteristics of OPC A (black square), OPC B (red circle), OPC C (blue down-triangle), and OPC D (purple up-triangle) at a biased of -3 V and measured in the illumination of 1000 cd m^{-2}.