Supporting Information

Ambipolar Organic Field-Effect Transistors Based on

Diketopyrrolopyrrole Derivatives Containing Different π-Conjugating

Spacers

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Thermal properties



Fig. S1 TGA curves for compounds BTDPPCN and TTDPPCN.



Fig. S2 DSC heating and cooling curves for compounds BTDPPCN and TTDPPCN.

Thermogravimetric analysis (TGA) and differential scanning calorimetry (DSC) were performed on both compounds. TGA showed thermal decomposition temperatures of 390 and 360 °C for BTDPPCN and

TTDPPCN, respectively. Two endothermic peaks at 197 °C and at 207 °C were observed for BTDPPCN. A small endothermic peak at 143 °C and an obvious endothermic peak at 265 °C were observed for TTDPPCN.



Fig. S3 The UV-vis absorption spectra of TTDPPCN in thin films annealed at different temperatures.



Fig. S4 UV-Vis absorption spectra of TTDPPCN (2.4×10⁻⁶ mol/L) and BTDPPCN (2.04×10⁻⁶ mol/L) in DCM solution.



Fig. S5 Output and transfer characteristics of TTDPPCN and BTDPPCN measured in inert atmosphere. (a) Output and (b) transfer characteristics of OFETs based on TTDPPCN film annealed at 90°C in the n-channel operation mode. (c) Output and (d) transfer based on BTDPPCN annealed at 150°C in the n-channel operation mode. (e) Output and (f) transfer based on BTDPPCN annealed at 150°C in the p-channel operation mode Device dimensions: channel length L =50 μ m; channel width W =1400 μ m.



Fig. S6 Forward and reverse sweeps of TTDPPCN and BTDPPCN in the n-channel operation mode. ¹H NMR and ¹³C NMR spectra



Fig. S8 ¹³C NMR spectrum of TTDPPCN.

