

Supporting Information

Modulating the Molecular Packing and Distribution Enables Fullerene-free Ternary Organic Solar Cells with High Efficiency and Long Shelf-Life

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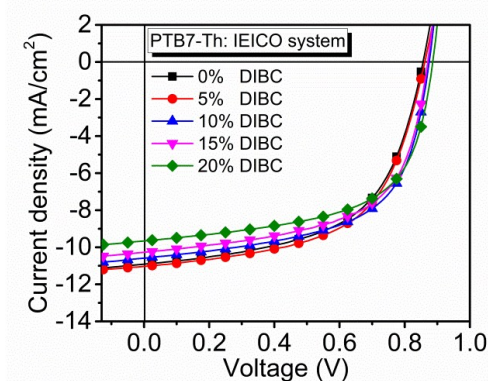


Figure S1. J-V properties of PTB7-Th:IEICO:DIBC containing devices with different DIBC content

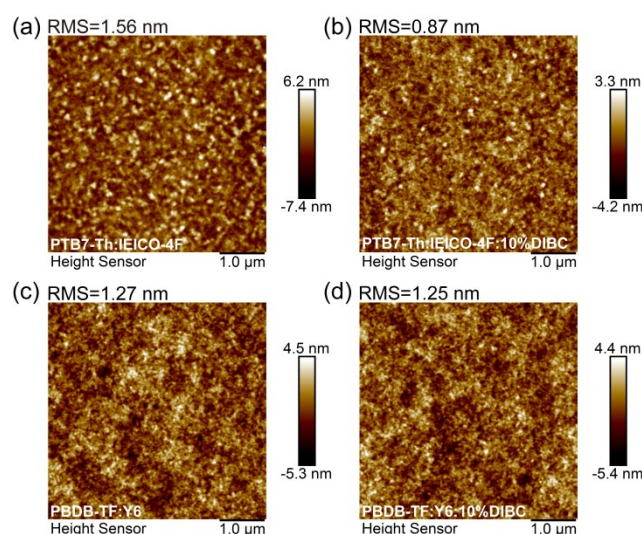


Figure S2. AFM images of (a) PTB7-Th: IEICO-4F, (b) PTB7-Th: IEICO-4F:10% DIBC, (c) PBDB-TF: Y6 and (d) PBDB-TF: Y6: 10% DIBC based films

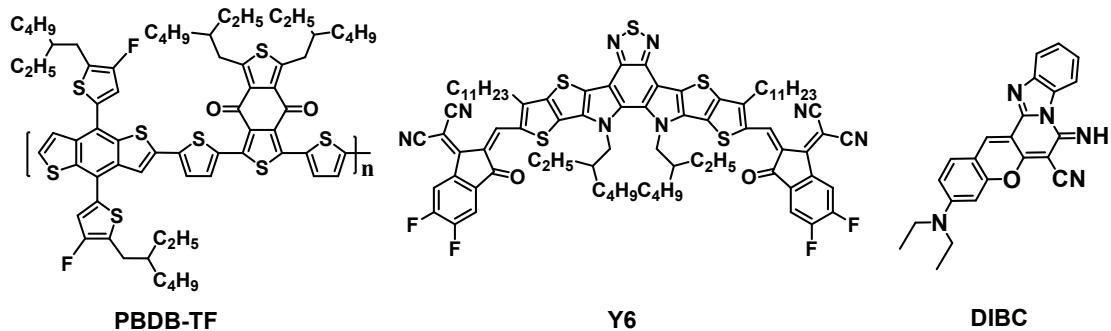


Figure S3. Molecular structures of PBDB-TF, Y6 and DIBC

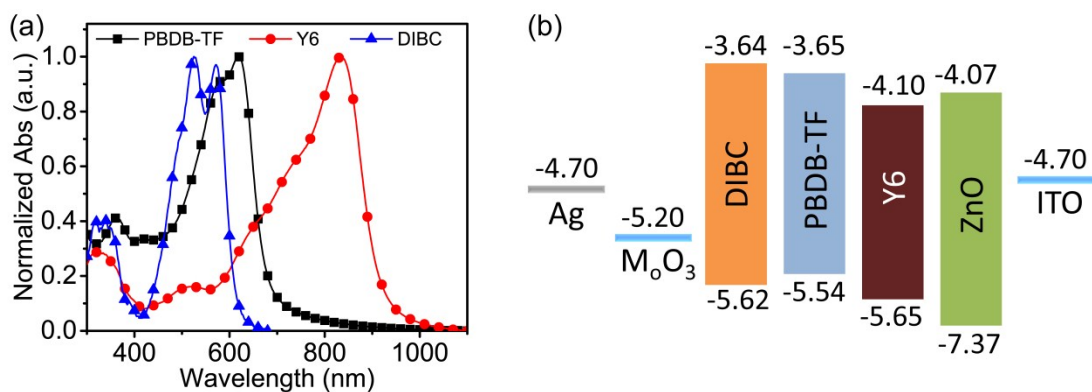


Figure S4. (a) Absorption spectra and (b) energy levels of PBDB-TF, Y6 and DIBC

Table S1. Performance summary of PTB7-Th: IEICO: DIBC containing devices with different DIBC content.

DIBC content	V_{oc} (V)	J_{sc} (mA/cm ²)	FF (%)	$PCE_{max/avg}$ (%) ^a
0%	0.86	10.89	57.00	5.31 (5.09)
5%	0.86	11.00	57.75	5.47 (5.29)
10%	0.87	10.57	59.90	5.54 (5.31)
15%	0.87	10.26	59.86	5.34 (5.26)
20%	0.88	9.65	60.34	5.16 (5.03)

^a Statistical data obtained from 5 devices.