

Electronic Supplementary Information

Efficient Ternary Bulk Heterojunction Solar Cells Based on Small Molecules Only

Tzu-Yen Huang^{a,b}, Dhananjaya Patra^b, Yu-Sheng Hsiao^c, Sheng Hsiung Chang^d,
Chun-Guey Wu^d, Kuo-Chuan Ho^{a,e,*}, Chih-Wei Chu^{b,*}

^a Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan (R.O.C.) 10617

^b Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan (R.O.C.) 11529

^c Department of Materials Engineering, Mingchi University of Technology, New Taipei City, Taiwan (R.O.C.) 24301

^d Research Center for New Generation Photovoltaics, Jhongli City, Taiwan (R.O.C.) 32001

^e Institute of Polymer Science and Engineering, National Taiwan University, Taipei, Taiwan (R.O.C.) 10617

*Corresponding authors. E-mail: kcho@ntu.edu.tw (K.-C.H.); gchu@gate.sinica.edu.tw (C.-W.C.). Telephone: +886-2-23660739 (K.-C.H.); +886-2-27187523 (C.-W.C.). Fax: +886-2-23623040 (K.-C.H.); +886-2-27873122 (C.-W.C.).

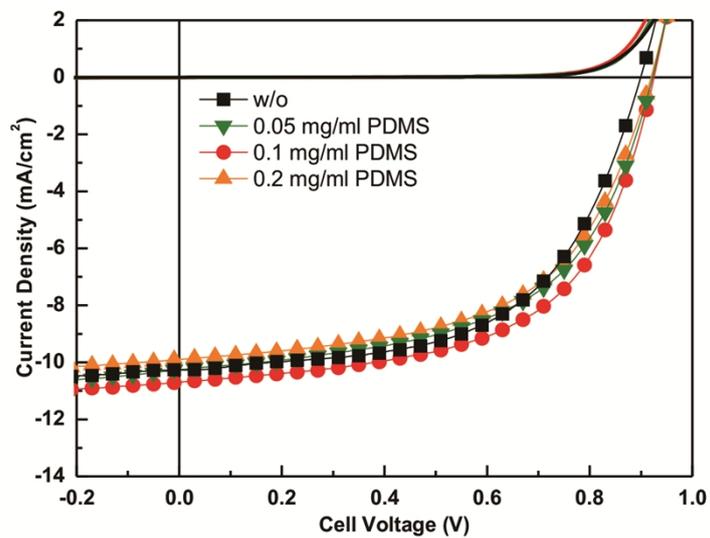


Fig. S1 J - V curves of BDT6T:PC₇₁BM films incorporating various concentrations of PDMS.

Table. S1 Device performance characteristics of BDT6T:PC₇₁BM films incorporating various concentrations of PDMS.

BDT6T:PC ₇₁ BM	V_{OC} (V)	J_{SC} (mA cm ⁻²)	FF	PCE (%)
w/o	0.89	10.30	0.56	5.13
0.05 mg mL ⁻¹ PDMS	0.92	10.30	0.56	5.30
0.1 mg mL ⁻¹ PDMS	0.92	10.70	0.57	5.61
0.2 mg mL ⁻¹ PDMS	0.91	9.89	0.56	5.03

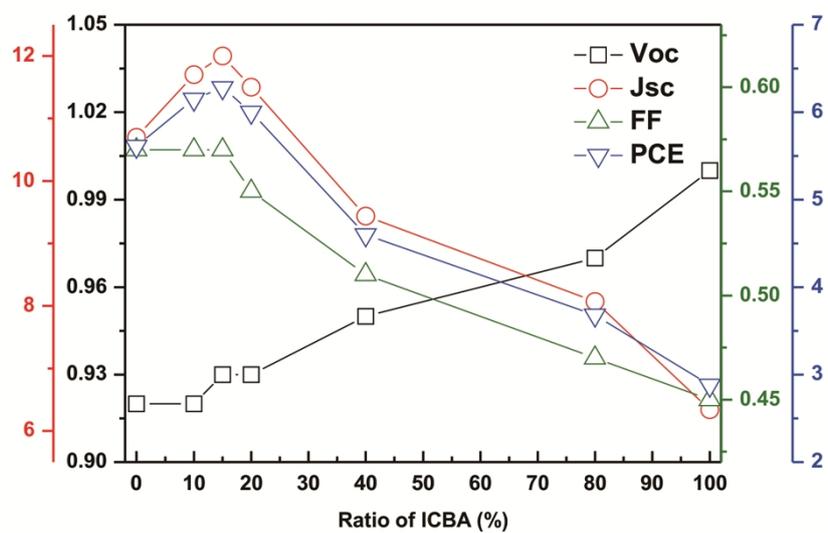


Fig. S2 Values of V_{OC} , J_{SC} , FF, and PCE for devices incorporating different weight ratios of ICBA in the fullerene.

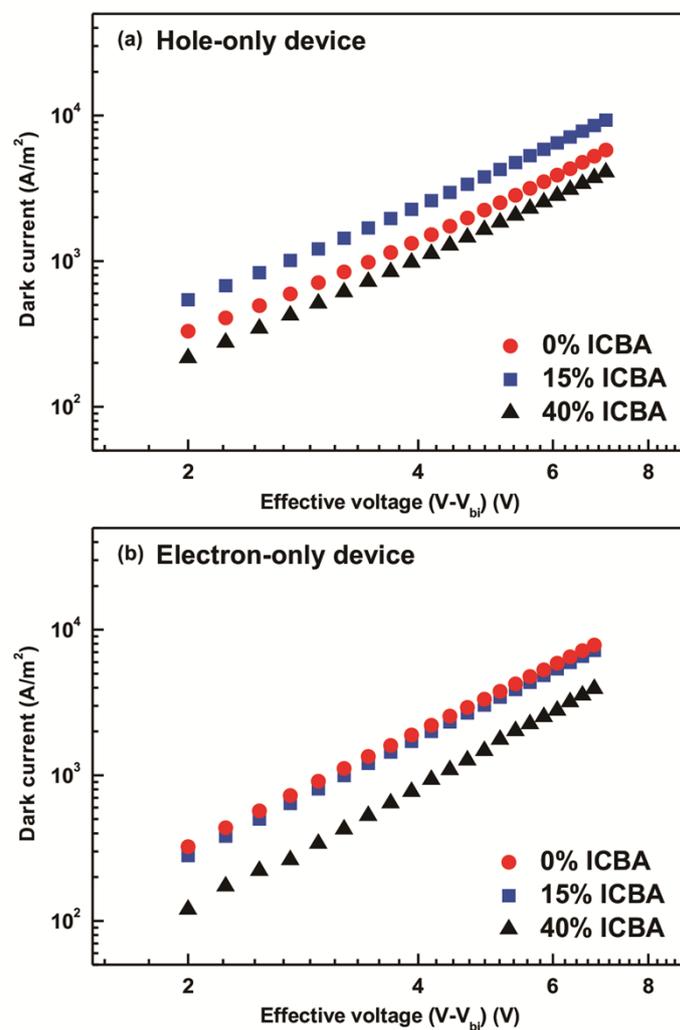


Fig. S3 Measured J - V characteristics under the dark for (a) hole and (b) electron-only devices of BDT6T:ICBA:PC₇₁BM films incorporating 0, 15, and 40% ICBA in the fullerene.