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# An ester-functionalized diketopyrrolopyrrole molecule with appropriate energy levels for the application in solution-processed organic solar cells

**Meirong Chen, Weifei Fu, Minmin Shi,* Xiaolian Hu, Junying Pan, Jun Ling, Hanying Li and Hongzheng Chen***

*MOE Key Laboratory of Macromolecular Synthesis and Functionalization, State Key Laboratory of Silicon Materials, & Department of Polymer Science and Engineering, Zhejiang University, Hangzhou 310027, P. R. China. Fax: +86 571 87953733; Tel: +86 571 87952557; E-mail: minminshi@zju.edu.cn, hzchen@zju.edu.cn*

***Supporting Information***

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## UV-vis absorption spectra of DPP(CT)$_2$:PC$_{71}$BM blended films

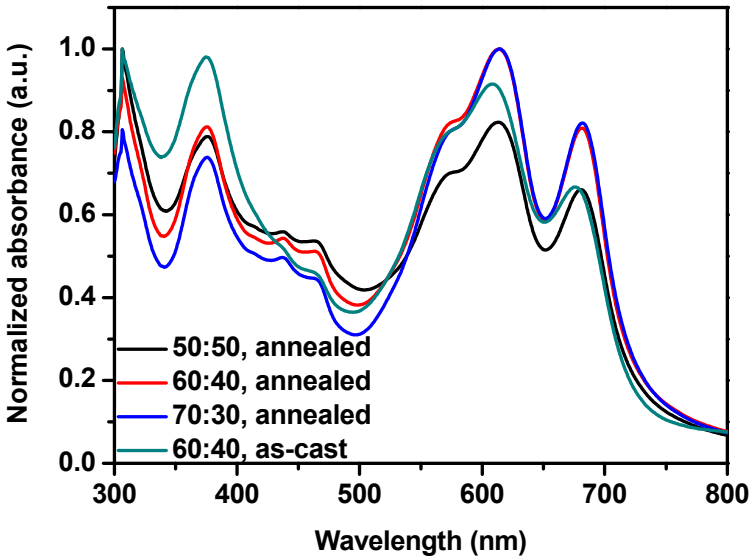


**Fig. S1** UV-vis absorption spectra of DPP(CT)$_2$:PC$_{71}$BM blended films.

**Effects of additive and annealing temperature on the photovoltaic property of the 60:40 DPP(CT)$_2$:PC$_{71}$BM blended film**

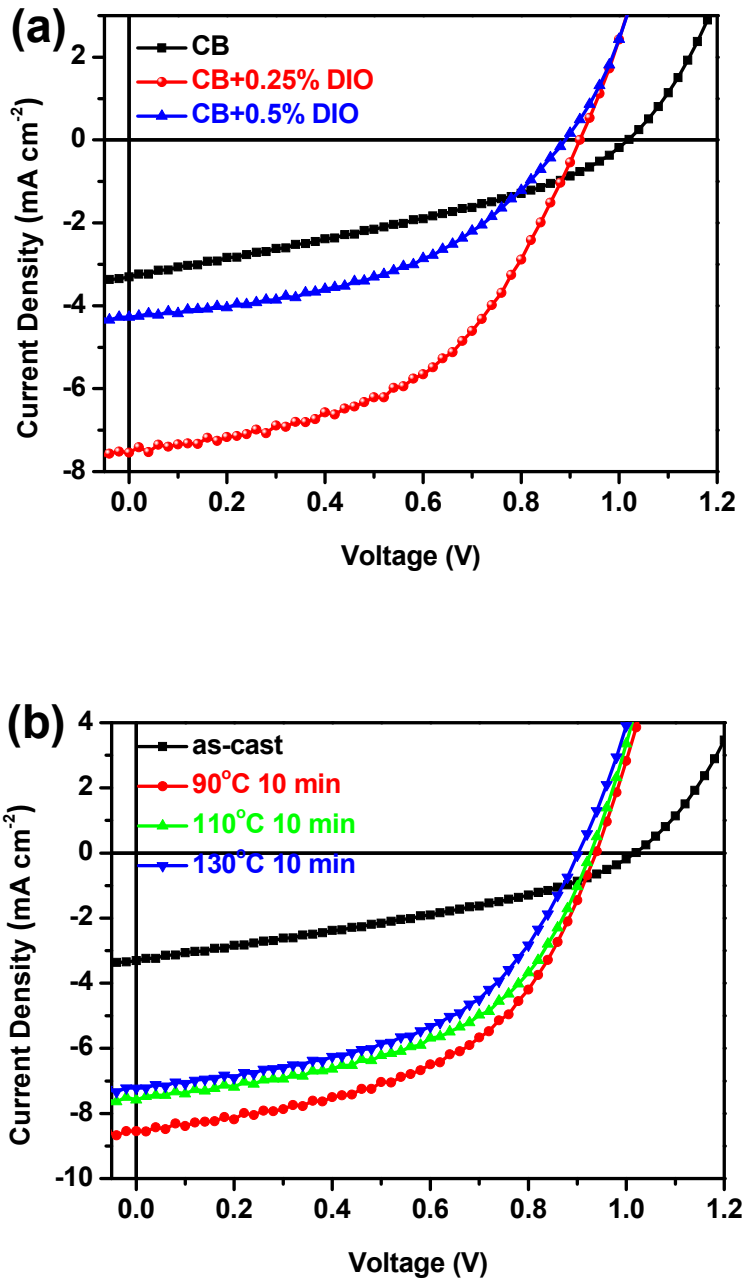


**Fig. S2** (a) *J-V* characteristics of the as-cast 60:40 DPP(CT)$_2$:PC$_{71}$BM blended film with various concentrations of 1,8-diiodooctane (DIO); (b) *J-V* characteristics of the 60:40 DPP(CT)$_2$:PC$_{71}$BM blended film annealed at different temperatures.

**Table S1** Effects of additive and annealing temperature on the photovoltaic property of the 60:40 DPP(CT)$_2$:PC$_{71}$BM blended film.

| DIO (v/v, %) | Annealing Temp ($^o$C) | $V_{OC}$ (V) | $J_{SC}$ (mA cm$^{-2}$) | *FF* | PCE (%) |
|---|---|---|---|---|---|
| 0 | As-cast | 1.02 | 3.31 | 0.34 | 1.14 |
| 0.25 | As-cast | 0.92 | 7.55 | 0.49 | 3.40 |
| 0.50 | As-cast | 0.89 | 4.28 | 0.46 | 1.75 |
| 0 | As-cast | 1.02 | 3.31 | 0.34 | 1.14 |
| 0 | 90 | 0.94 | 8.55 | 0.50 | 4.02 |
| 0 | 110 | 0.94 | 7.59 | 0.50 | 3.54 |
| 0 | 130 | 0.90 | 7.22 | 0.50 | 3.24 |