

Benzo[1,2-*b*:4,5-*b'*]dithiophene-*alt*-Diketopyrrolopyrrole Alternating Copolymer: Optoelectronic Properties, Film Morphology and Photovoltaic Applications

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Supporting Information

1. ¹H NMR spectrum of **EDPP**.
2. FTIR spectrum of **EDPP**.
3. GPC curve of **EDPP**.
4. TGA curve of **EDPP** with a heating rate of 10 °C min⁻¹ under N₂.
5. DSC curves of **EDPP** with a heating rate of 10 °C min⁻¹ under N₂.
6. Table S1. Photovoltaic properties of ITO/PEDOT:PSS/**EDPP**:PC₇₁BM/LiF/Al solar cells with 1,8-diiodooctane (DIO).

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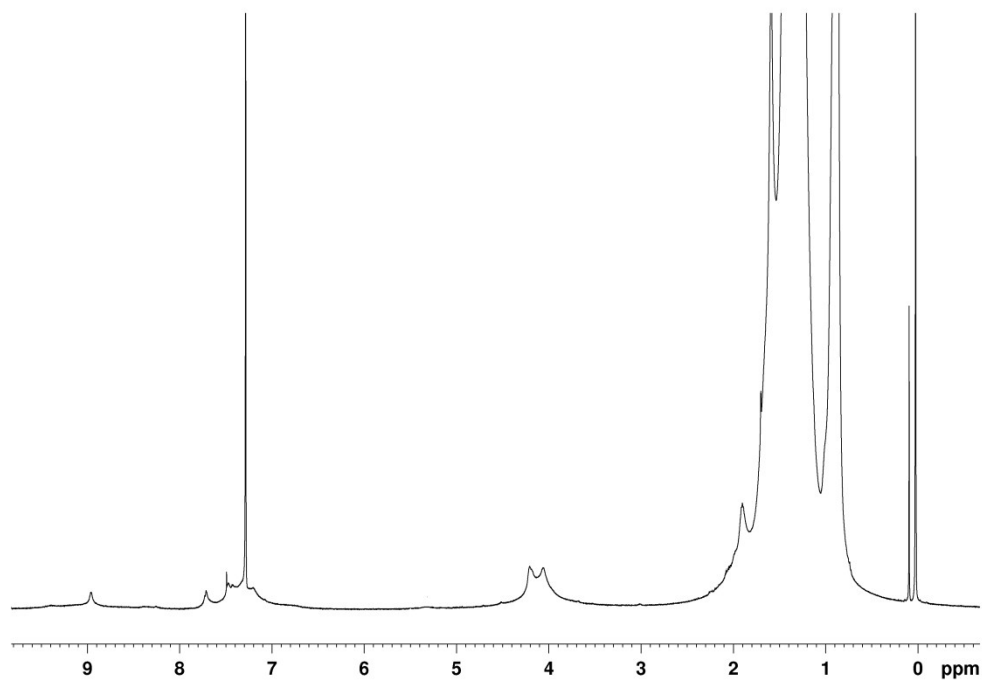


Figure S1. ^1H NMR spectrum of EDPP.

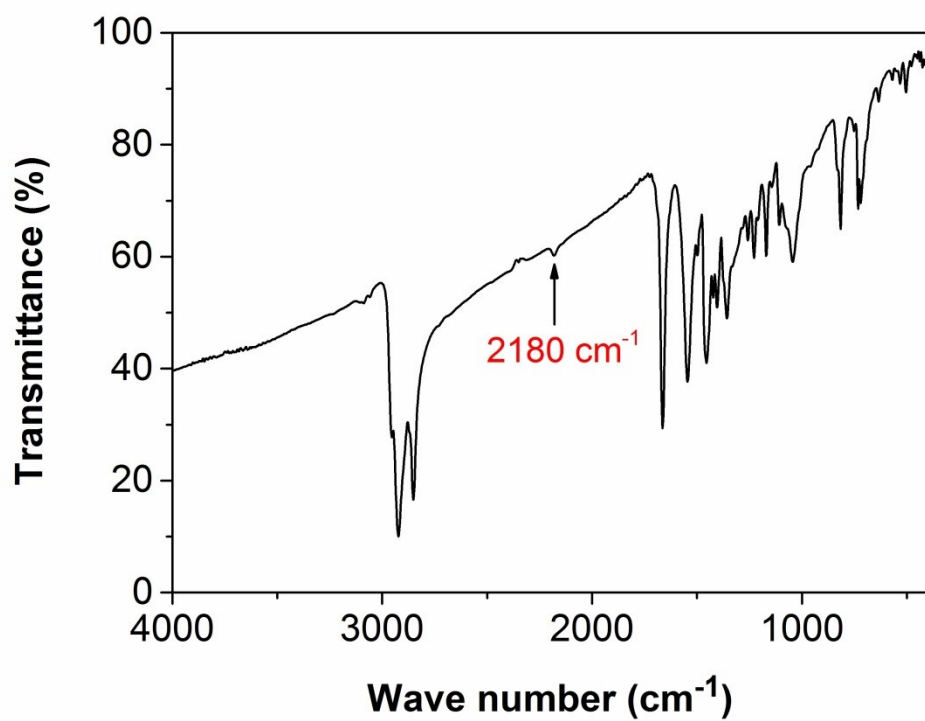
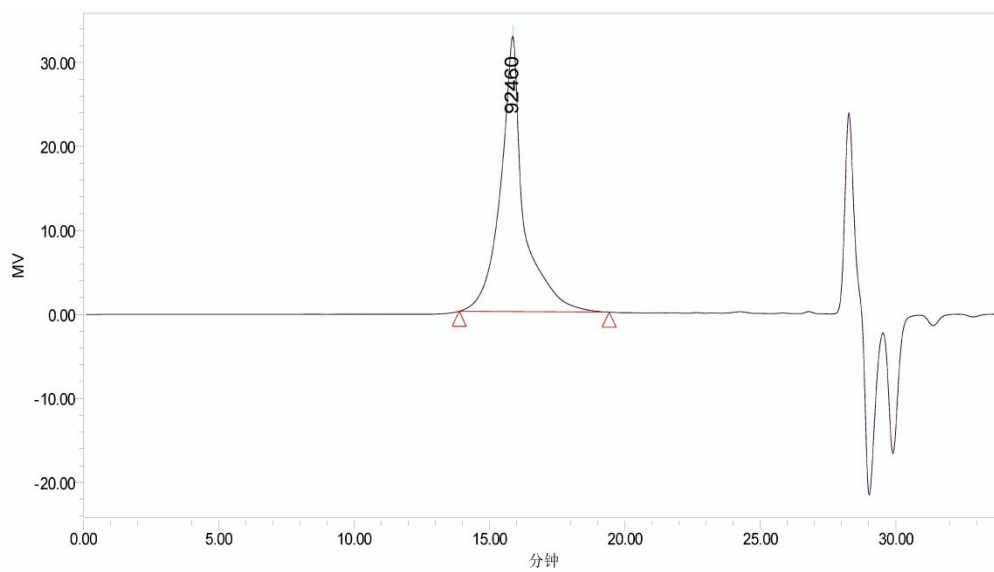


Figure S2. FTIR spectrum of EDPP.



GPC Results

Dist Name	Elution Volume (ml)	Retention Time (min)	Adjusted RT (min)	Mn	Mw	MP	Mz	Mz+1	Mz/Mw	Mz+1/Mw
1	15.858	15.858	15.858	46379	118607	92460	212724	309058	1.793519	2.605728

Figure S3. GPC curve of **EDPP**.

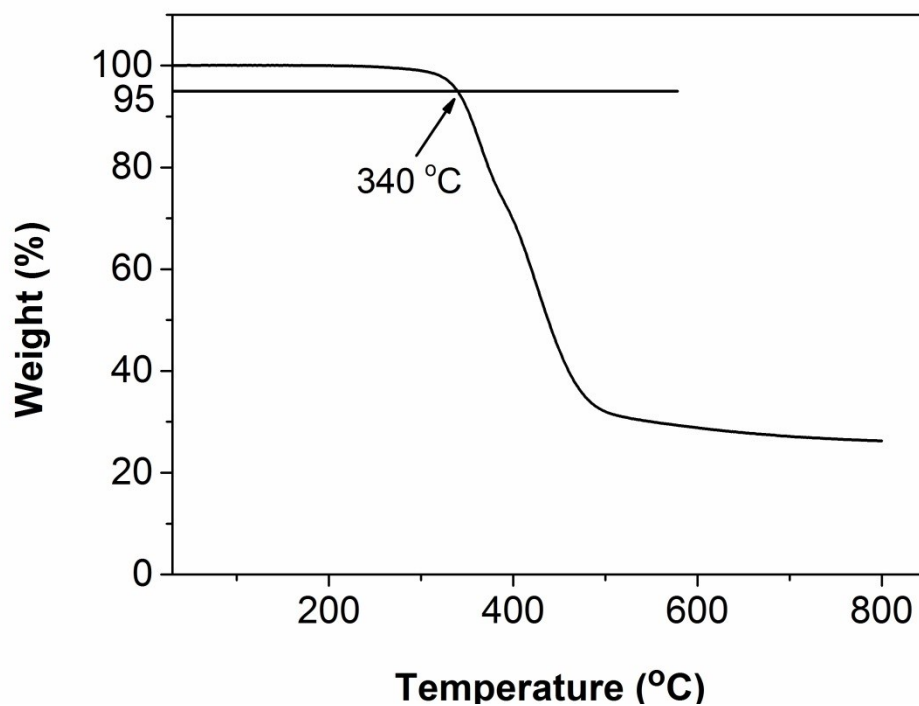


Figure S4. TGA curve of **EDPP** with a heating rate of $10\text{ }^{\circ}\text{C min}^{-1}$ under N_2 .

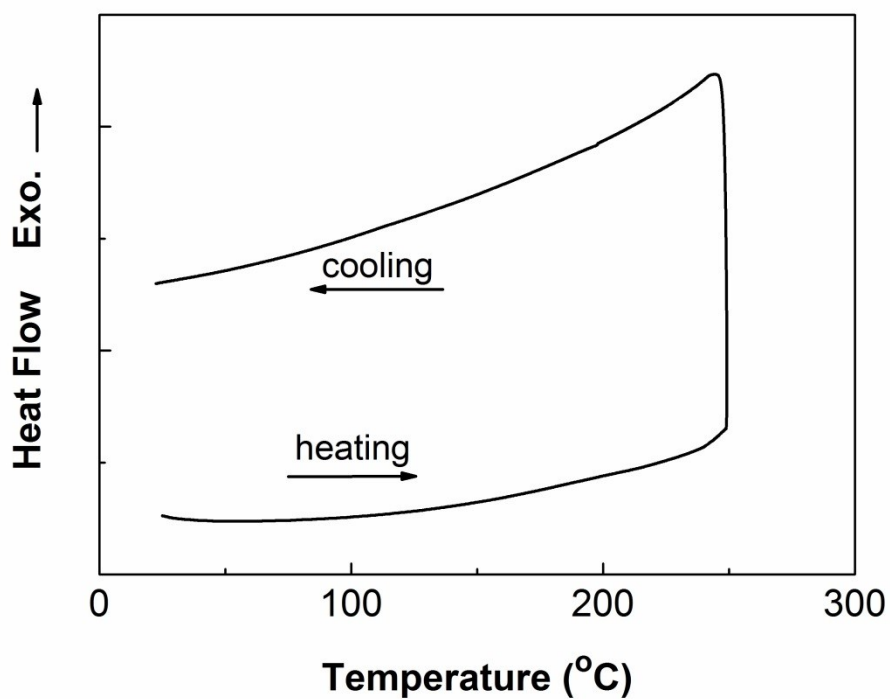


Figure S5. DSC curves of **EDPP** with a heating rate of 10 °C min⁻¹ under N₂.

Table S1. Photovoltaic properties of ITO/PEDOT:PSS/**EDPP**:PC₇₁BM/LiF/Al solar cells with 1,8-diiodooctane (DIO).

Blend ratios of	Solvent	V_{oc}	J_{sc}	FF	PCE
EDPP :PC ₇₁ BM		(V)	(mA cm ⁻²)	(%)	(%)
EDPP:PCBM=1:1	DCB + 3 v% DIO	0.665	0.765	45	0.879
EDPP:PCBM=1:2	DCB + 3 v% DIO	0.565	0.650	38	0.747