Note and references:
Electronic Supplementary Information (ESI) available. See DOI:

Highly Efficient Printed Polymer Solar Cells: Rational Process Transfer from Spin-Coating

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Table S1. Typical figures of merit for devices fabricated by blade-coating methods in ambient air with respect to the blade-coating speed (slow and high-speed range) at a fixed angle of attack (45°) using the same formulation (25 mg/mL of PTB7:$PC_{71}BM$ in CB with 3 v/v% DIO). Blade-coating experiments were performed in air.

PTB7:$PC_{71}BM$		**J_{sc} [mA/cm^2]**	**V_{oc} [V]**	**FF [%]**	**PCE_{ave} [%]**	**PCE_{max} [%]**	**Thickness [nm]**
Blade-coating (speed [mm/s])	0.5	5.72±0.39	0.70±0.01	59.2±2.0	2.4±0.21	2.7	23
	1	6.61±0.71	0.63±0.01	47.1±1.8	2.0±0.19	2.3	18
	3	6.51±0.50	0.69±0.01	61.5±1.9	2.7±0.11	3.0	20
	75	17.58±0.53	0.69±0.01	52.1±2.4	6.4±0.17	6.6	223
	100	9.72±0.39	0.61±0.02	34.5±2.3	2.1±0.10	2.3	430

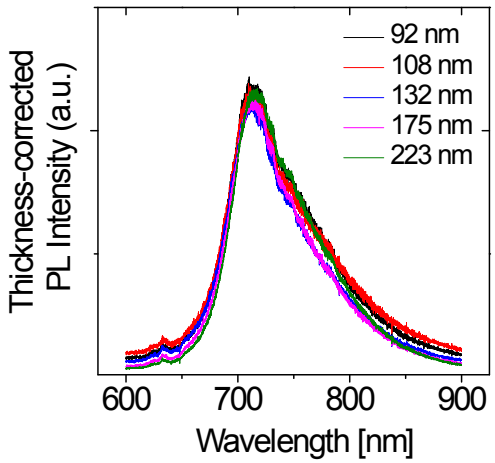

Figure S1. Thickness-corrected photoluminescence spectra (PL) of PTB7:$PC_{71}BM$ films with different thickness fabricated by blade-coating.

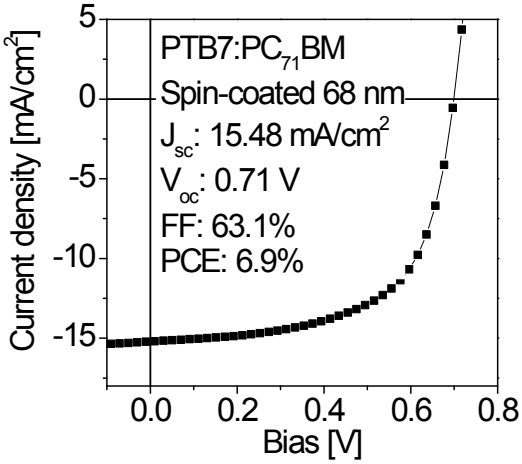

Figure S2. *J-V* characteristic of the spin-coated PTB7:$PC_{71}BM$ device fabricated at a fast spin-speed 3500 rpm.

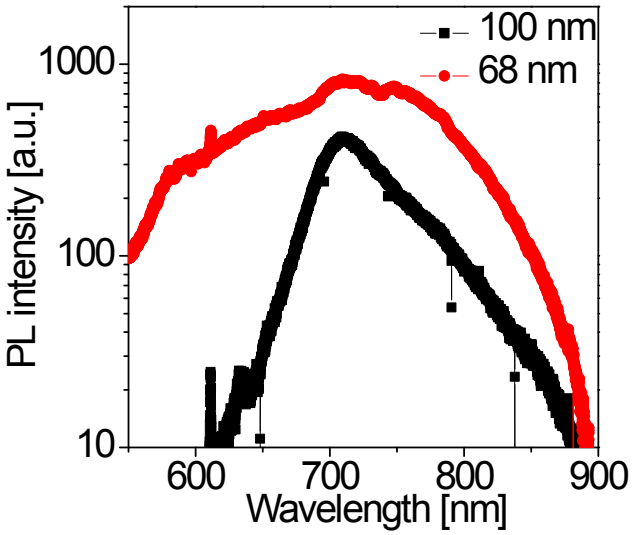

Figure S3. Thickness-corrected photoluminescence spectra (PL) of PTB7:$PC_{71}BM$ films fabricated at an optimum spin-speed 1000 rpm and a fast spin-speed 3500 rpm.

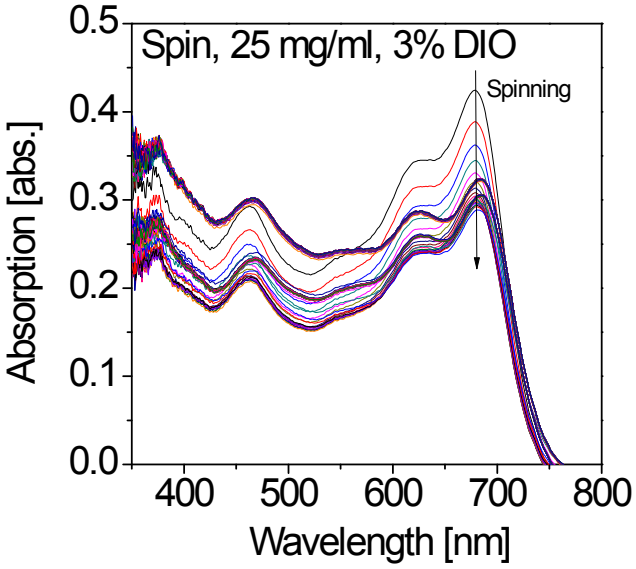

Figure S4. Evolution of UV-Vis absorption of PTB7:$PC_{71}BM$ blends during spin-coating.

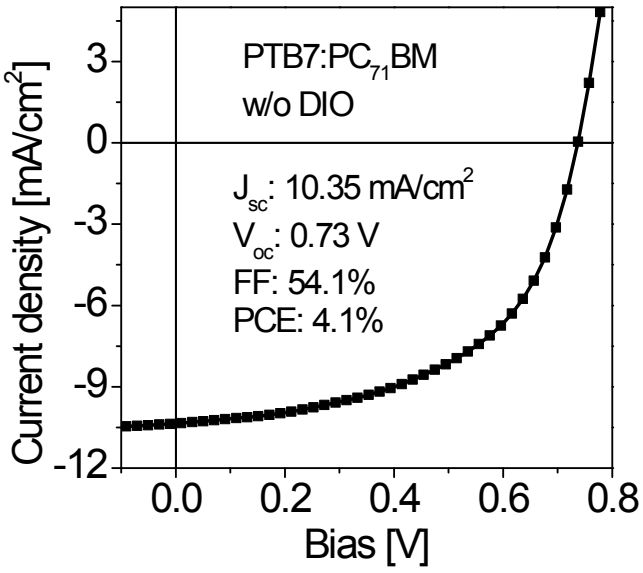

Figure S5. *J-V* characteristic of the spin-coated PTB7:$PC_{71}BM$ device fabricated without DIO.

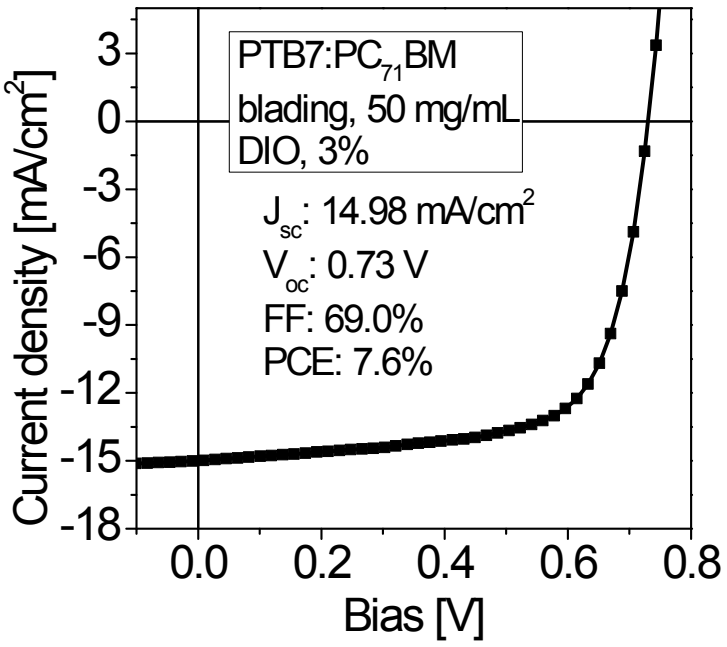

Figure S6. *J-V* characteristic of the blade-coated PTB7:$PC_{71}BM$ device fabricated with solute concentration of 50 mg/mL, 3% DIO and at base temperature 60 °C.

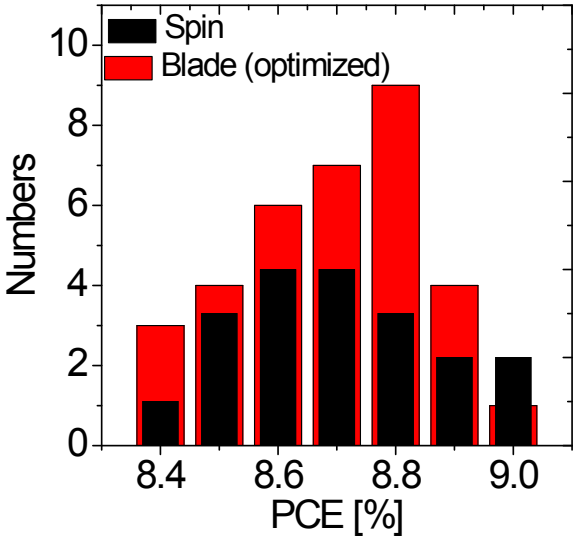

Figure S7. The power conversion efficiency (PCE) distribution of the blade-cast and spin-cast PTB7:$PC_{71}BM$ devices using the optimal formation.

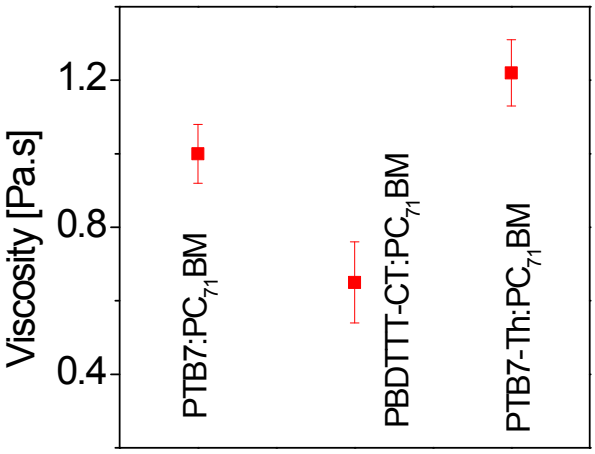

Figure S8. The viscosity of three blends solutions with concentration of 25 mg/mL and 3% DIO as additive measured under ambient condition.

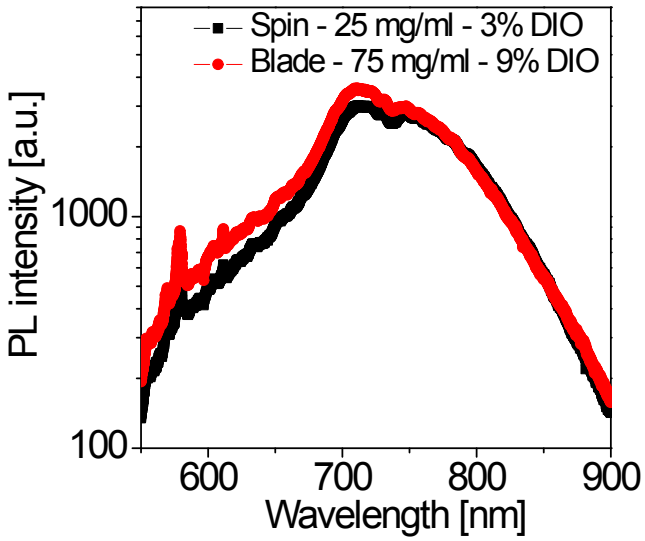

Figure S9. Thickness-corrected photoluminescence spectra (PL) of the optimal spin-cast and blade-cast PBDTTT-CT:$PC_{71}BM$ films.