

Figure S1 DSC curve of PDTB (a) and PDFTB (b)

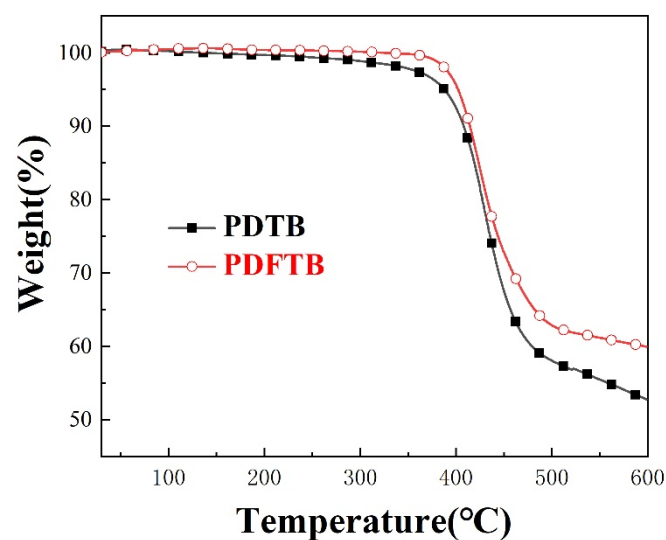


Figure S2 TGA curve of PDTB and PDFTB

Table S1 Photovoltaic parameters of polymer: ITIC based PSC devices with the D:A weight ratios from 1 : 0.8 to 1 : 1.2

Polymer	D:A	V_{OC} (V)	J_{SC} (mA cm ⁻²)	FF(%)	PCE(%) ^a
PDTB	1:0.8	0.62	7.43	52.2	2.40/2.21
	1:1	0.63	8.15	50.0	2.56/2.32
	1:1.2	0.63	6.14	56.2	2.17/2.05
	1:0.8	0.81	10.61	32.4	2.78/2.55

1:1	0.84	11.04	39.6	3.67/3.39
1:1.2	0.86	10.82	35.7	3.32/3.09

^a The value stands for the maximum/average PCE obtained from no less than 6 devices.

Table S2 Photovoltaic parameters of polymer: ITIC based PSC devices with different amount of DIO and thermal annealing based devices

Polymer	DIO (%)	V_{OC} (V)	J_{SC} (mA cm ⁻²)	FF(%)	PCE(%) ^b
PDTB	0.25	0.64	8.17	51.3	2.71/2.55
	0.50	0.65	9.15	60.1	3.59/3.22
	0.50 ^a	0.64	9.91	60.1	3.81/3.58
	0.75	0.64	9.24	56.1	3.30/3.12
PDFTB	0.25	0.83	12.01	40.7	4.07/3.88
	0.25 ^a	0.86	12.28	41.5	4.39/4.11
	0.50	0.83	12.40	37.0	3.82/3.45
	0.75	0.86	11.66	40.1	4.01/3.86

^a The BHJ was annealed for 10 min at 100 °C after spin-coating. ^b The value stands for the maximum/average PCE obtained from no less than 6 devices.