

Supporting Information

Comparison of the Photovoltaic Characteristics and Nanostructure of Fullerenes blended with Conjugated Polymers with Siloxane-Terminated and Branched Aliphatic Sidechains

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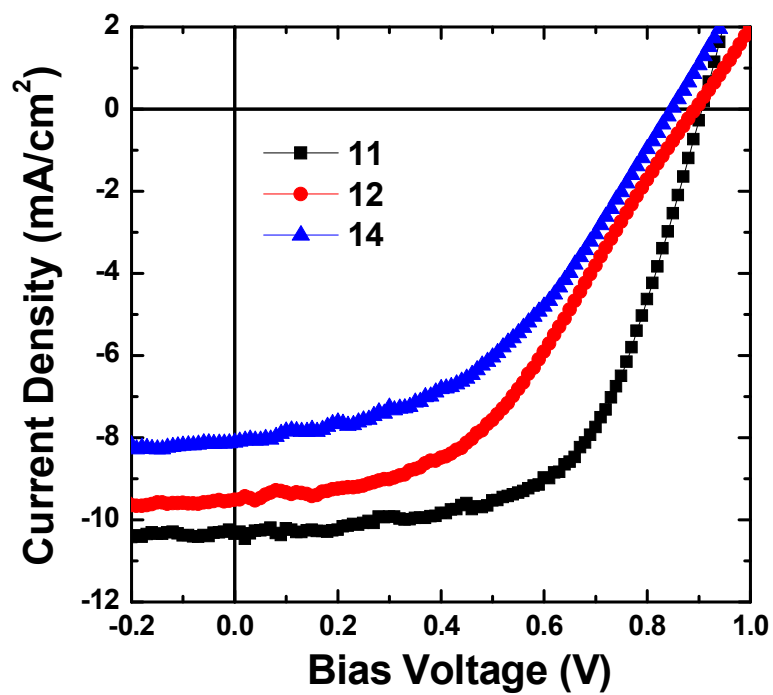
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Sample	J_{sc} (mA/cm ²)	V_{oc} (V)	FF	PCE (%)	R_s
1:1	-10.31	0.905	0.60	5.60	15.2
1:2	-9.63	0.895	0.45	3.74	41.2
1:4	-8.11	0.845	0.44	3.01	41.8

Figure S1. Effect of blending ratio of PII2T-Ref/PC₇₁BM OPV devices with 4% DIO.

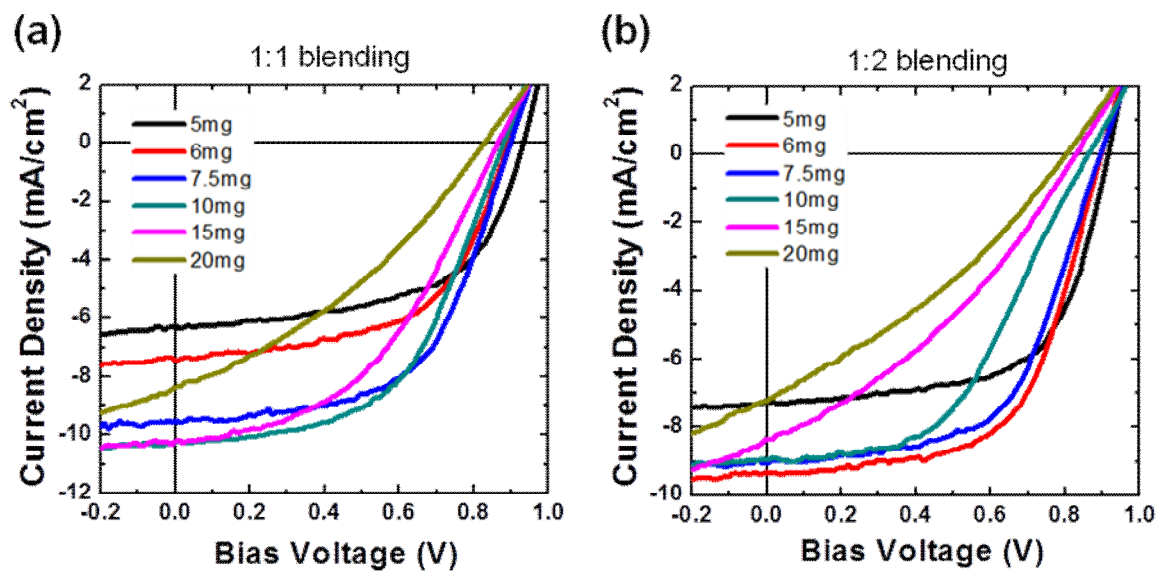


Figure S2. Effect of polymer concentration of PII2T-Ref/PC₇₁BM OPV devices.

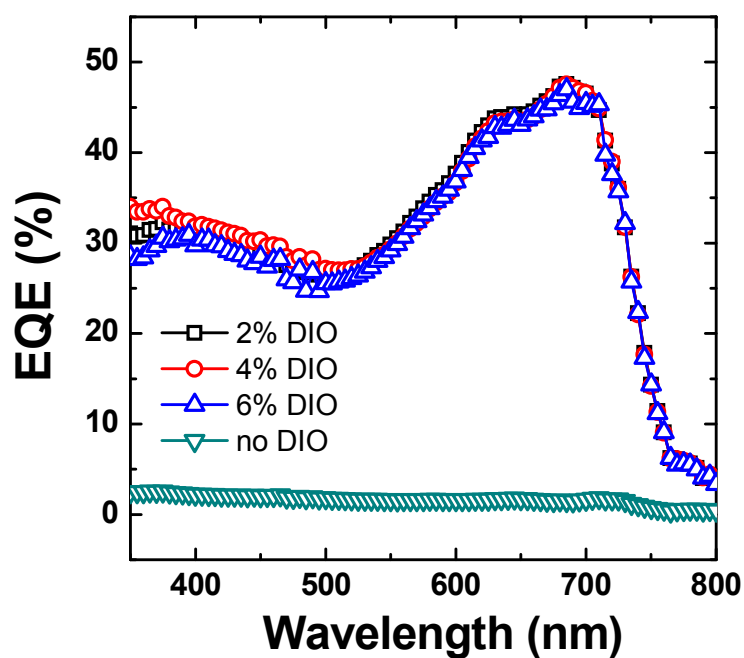


Figure S3. Characteristic external quantum efficiency (EQE) spectra of solar cells fabricated from PII2T-Ref:PC₇₁BM blends.

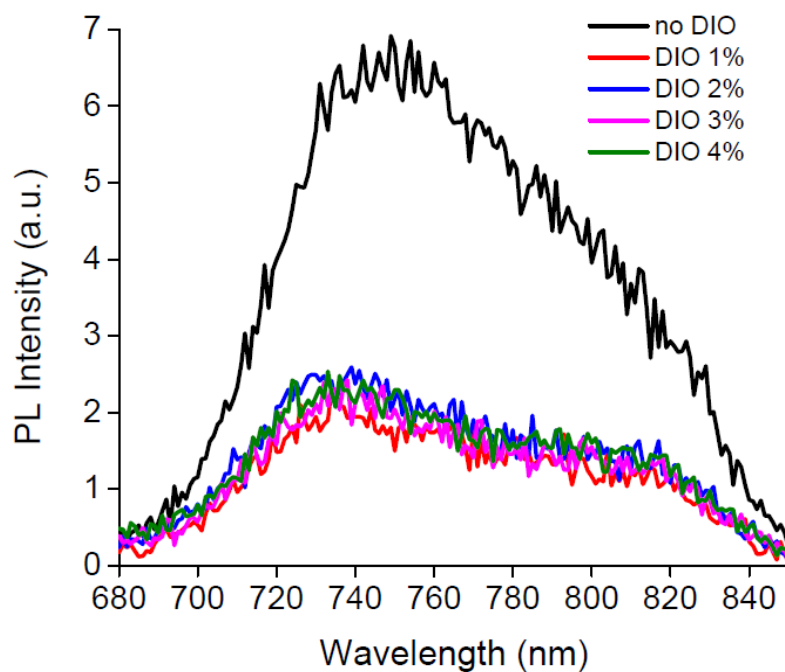


Figure S4. PL spectra of PII2T-Ref:PC₇₁BM blends as a function of DIO contents. Excitation is performed for an s-polarized 700nm light wave at 0° incidence.

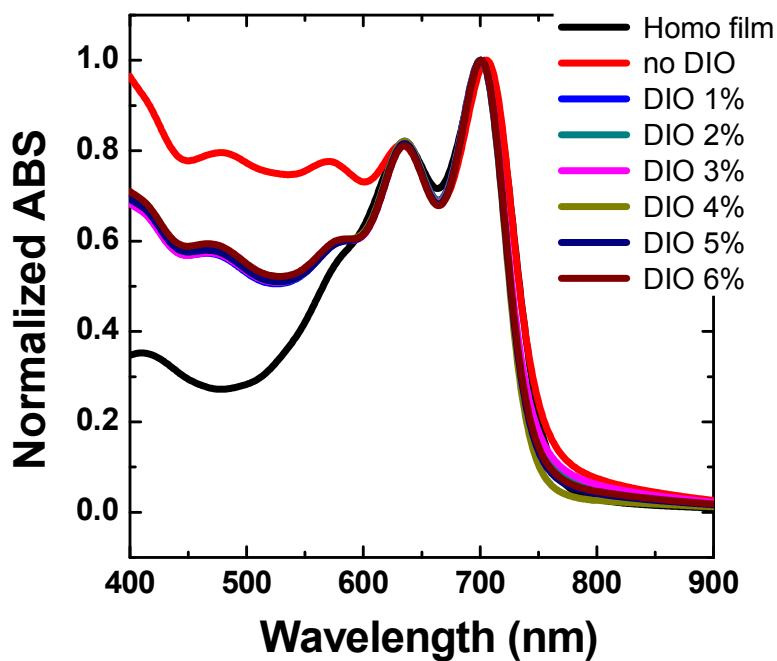


Figure S5. UV-visible absorption spectra of PII2T-Ref:PC₇₁BM films as a function of DIO amount.

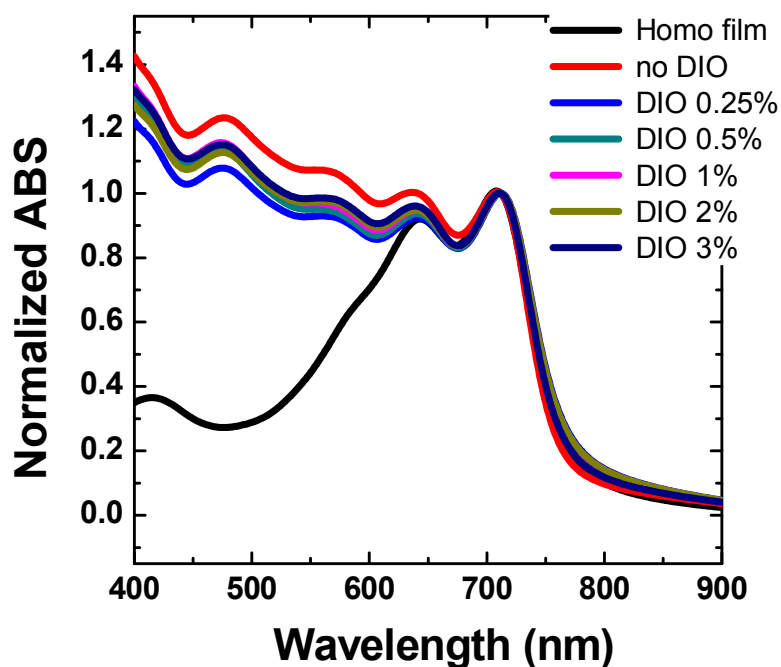


Figure S6. UV-visible absorption spectra of PII2T-Si:PC₇₁BM films as a function of DIO amount.

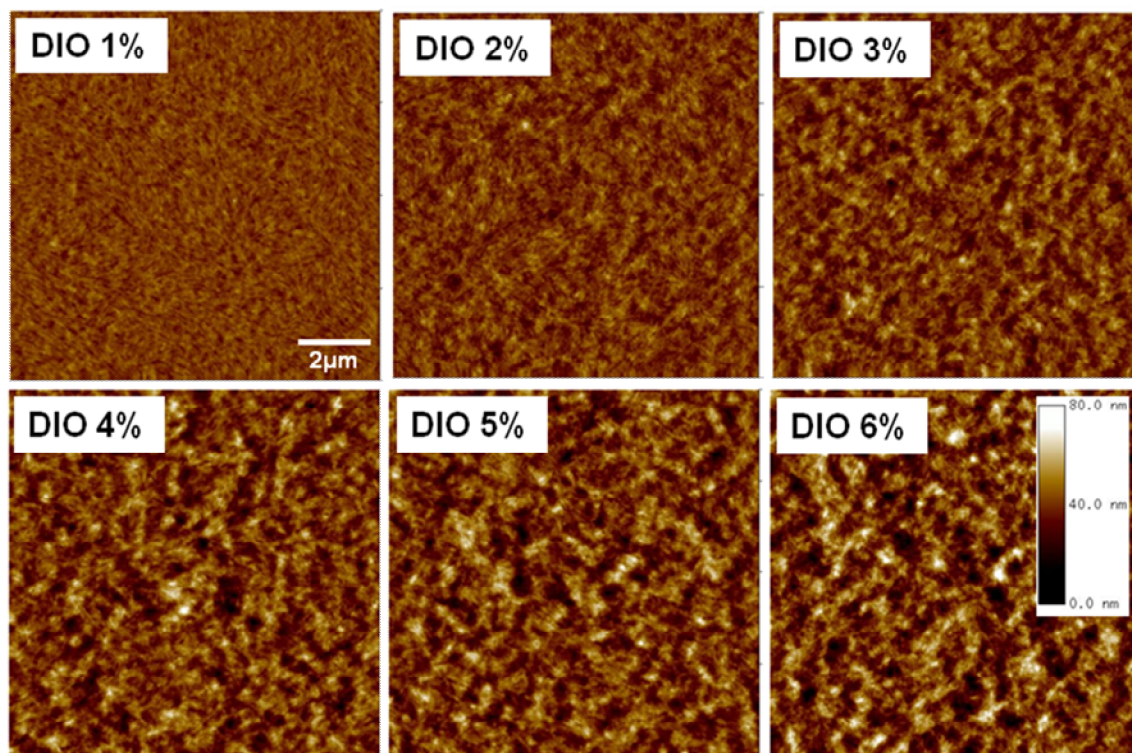


Figure S7. AFM topographs of the PII2T-Ref/PC₇₁BM blend films with 1:1 ratio as a function of DIO amount.

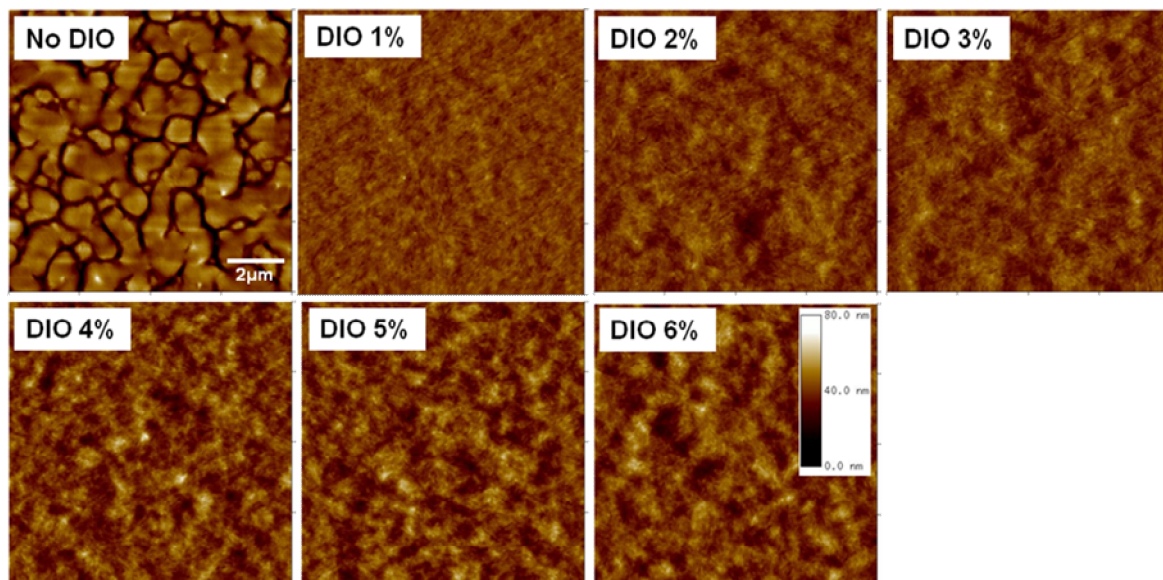


Figure S8. AFM topographs of the PII2T-Ref/PC₇₁BM blend films with 1:2 ratio as a function of DIO amount.

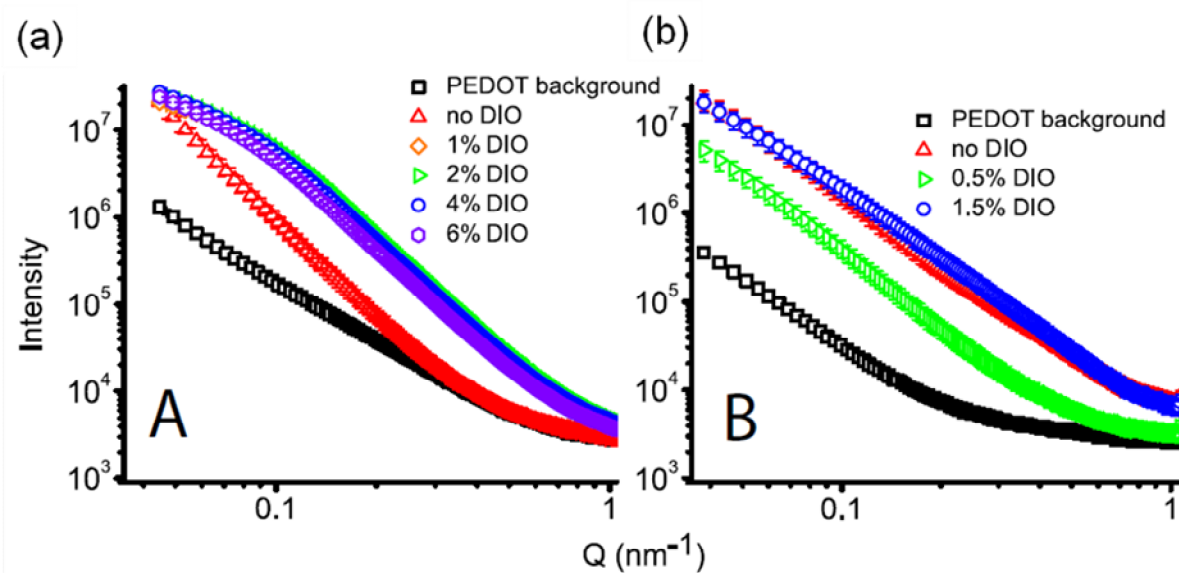


Figure S9. GISAXS profiles for all DIO ratio for a) PII2T-Ref blends, and b) PII2T-Si blends.