

Electronic Supplementary Information

**Biaxially Extended Thiophene-Isoindigo Donor-Acceptor Conjugated
Polymers for High-Performance Flexible Field-Effect Transistors**

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Table S1. Relevant Crystallographic Properties for the Studied Polymer Thin Films

Polymer	Lamellar spacing (Å)	In-plane π - π stacking distance (Å)
PIIT4T	23.4	-
PIIT4TSi	26.5	3.59
PII2T4T	21.8	4.13
PII2T4TSi	23.9	3.58
PII2T8T	-	-
PII2T8TSi	29.4	-

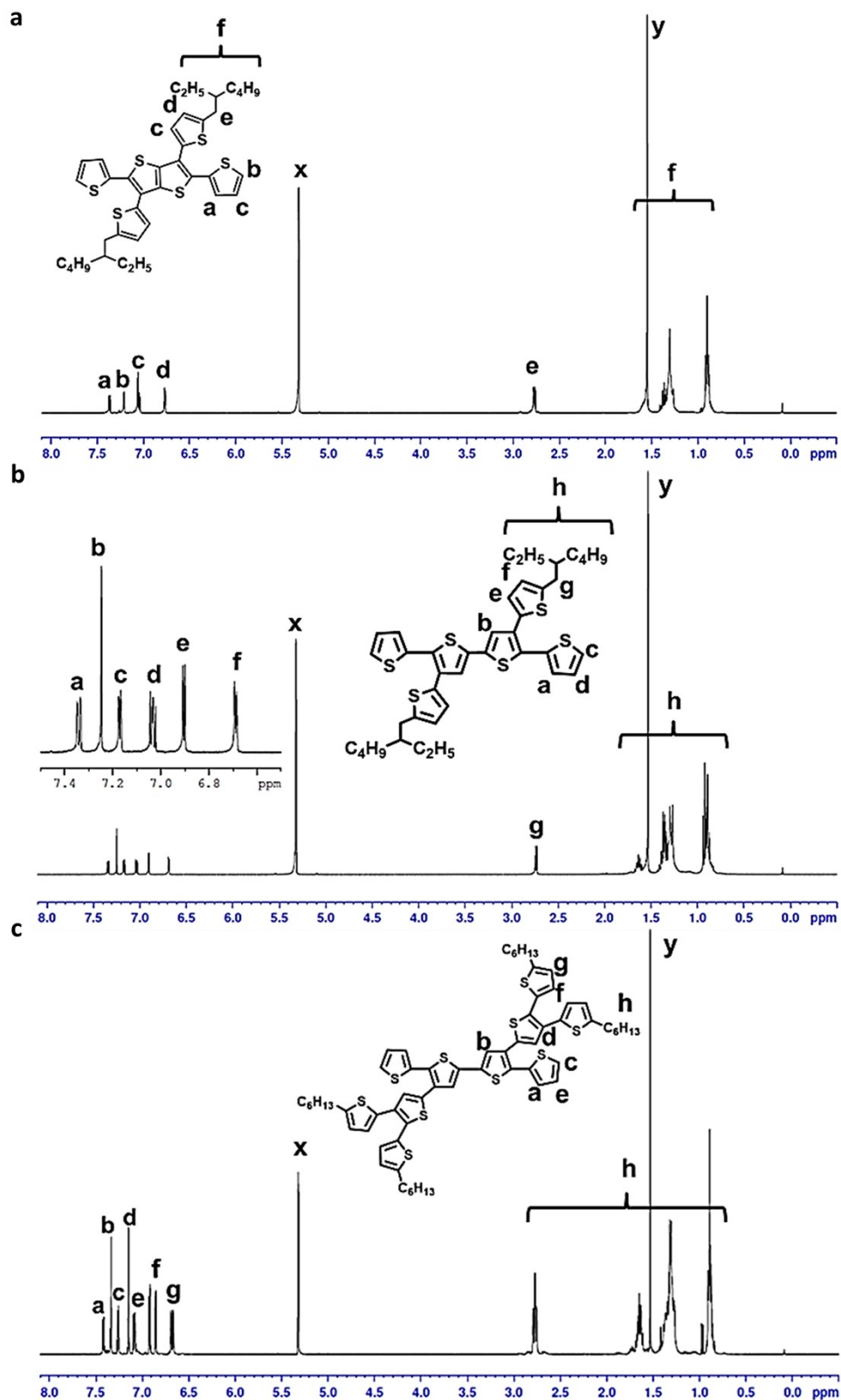


Fig. S1. $^1\text{H-NMR}$ spectrum of (a) TT4T, (b) 2T4T, and (c) 2T8T in CD_2Cl_2 (x: CD_2Cl_2 , y: H_2O).

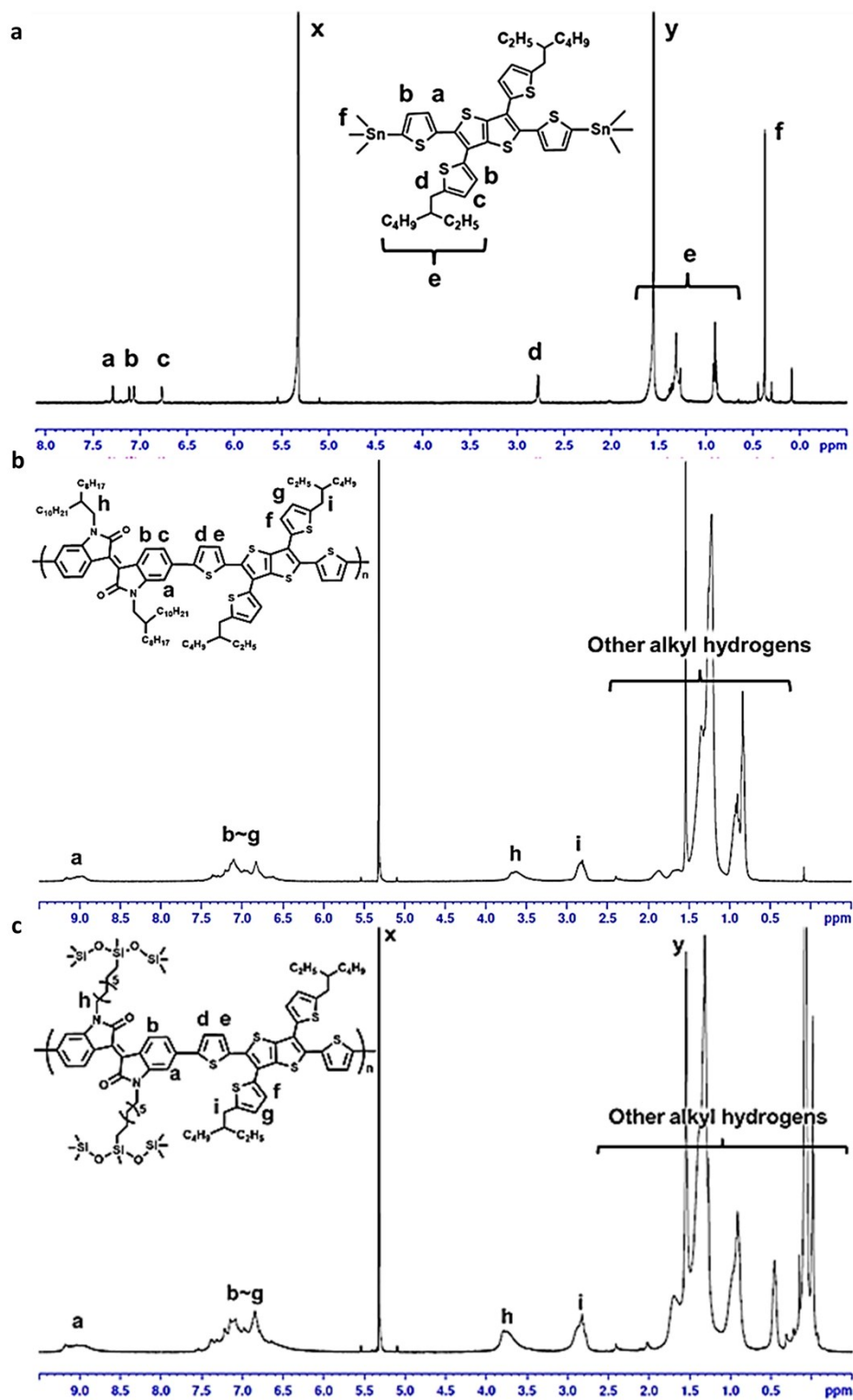


Fig. S2. $^1\text{H-NMR}$ spectrum of (a) TT4T-ditin, (b) PIITT4T, and (c) PIITT4TSi in CD_2Cl_2 (x: CD_2Cl_2 ; y: H_2O).

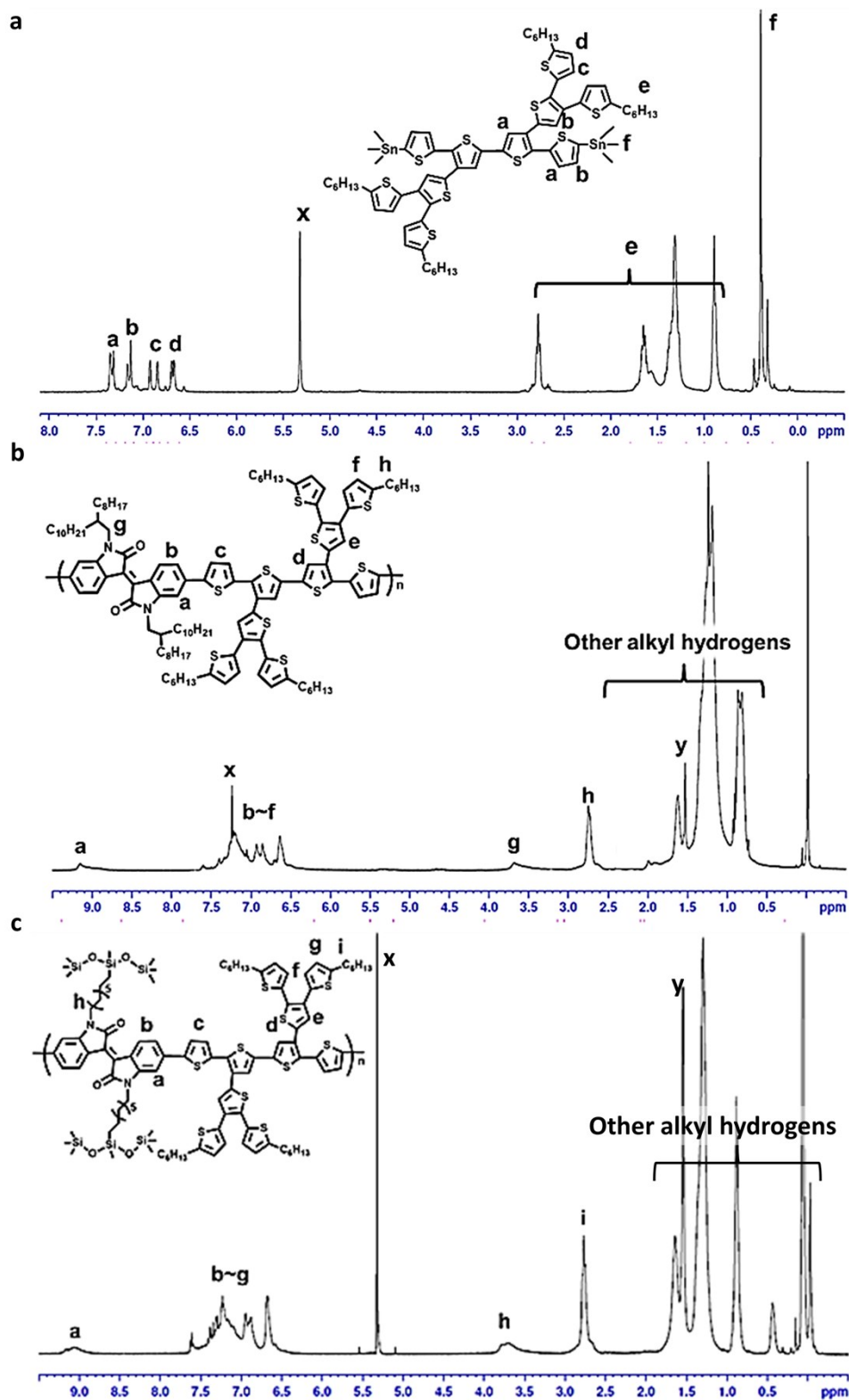


Fig. S3. $^1\text{H-NMR}$ spectrum of (a) 2T8T-ditin in CD_2Cl_2 (x: CD_2Cl_2 ; y: H_2O), (b) PII2T8T in CDCl_3 (x: CDCl_3 ; y: H_2O), and (c) PII2T8TSi in CD_2Cl_2 (x: CD_2Cl_2 ; y: H_2O).

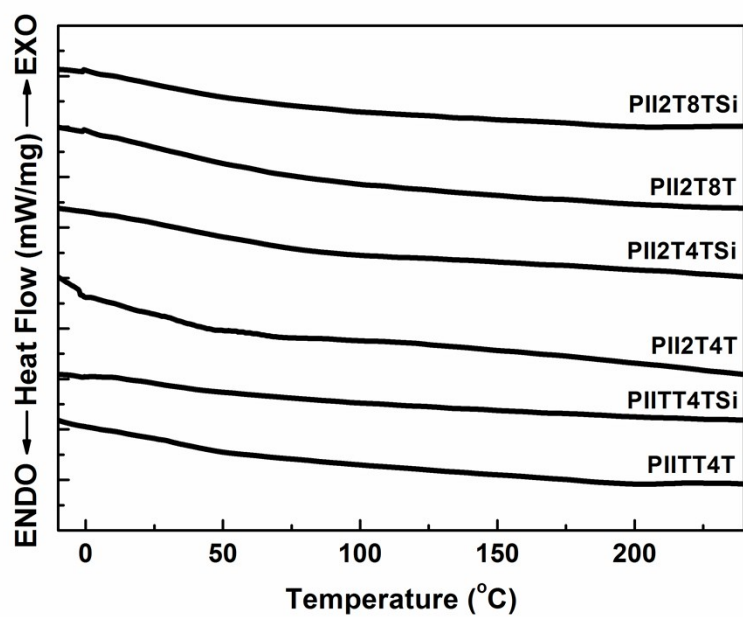


Fig. S4. DSC curves of the studied polymers under a nitrogen atmosphere.

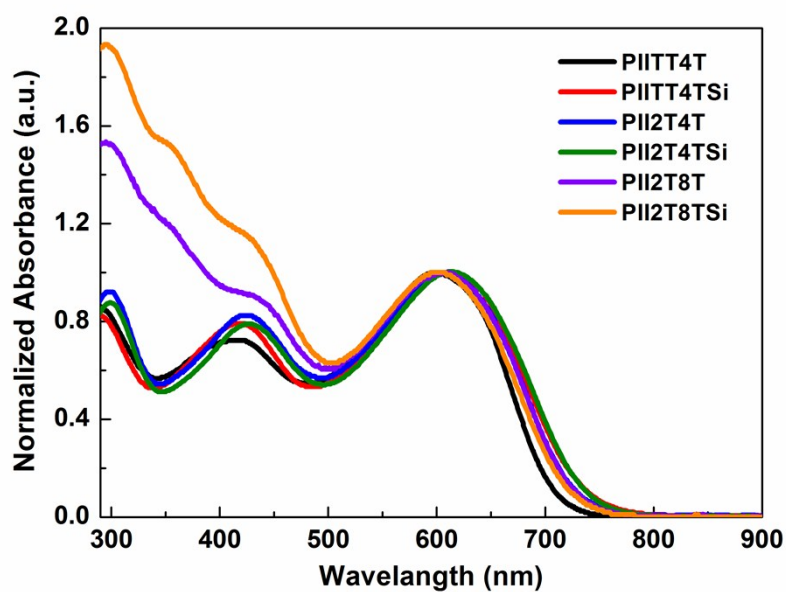


Fig. S5. UV-Vis absorption spectra of the studied polymers in dilute chloroform solution.

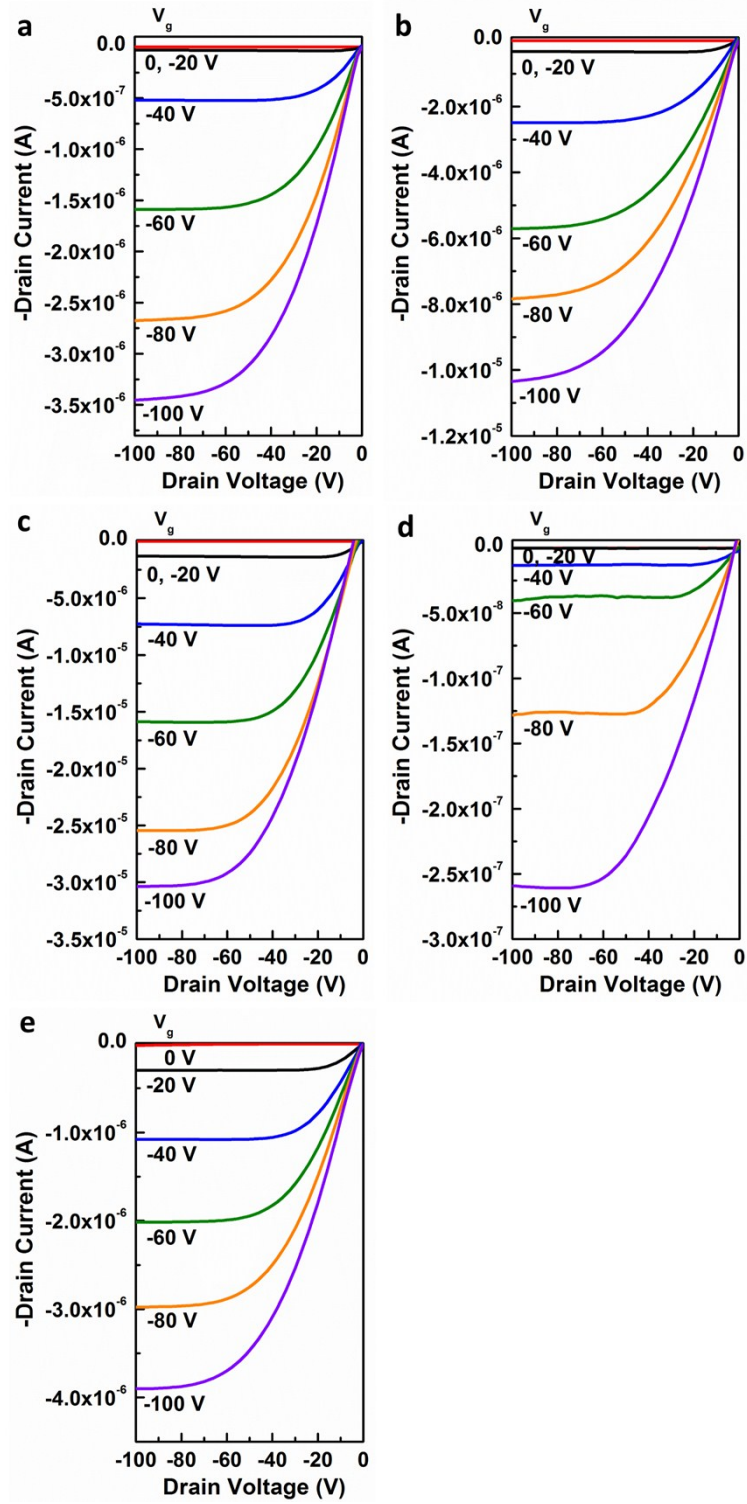


Fig. S6. FET output curves of (a) PIITT4T-, (b) PIITT4TSi-, (c) PII2T4T-, (d) PII2T8T-, and (e) PII2T8TSi-based device, respectively.