Electronic supplementary information

Pyrene end-capped oligothiophene derivatives for organic thin-film transistors and organic solar cells

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Fig. S1. TGA of 1s and 3s.

Fig. S2. Cyclic voltammograms of 1s and 3s.

Fig. S3. DSC of 1s and 3s.
Fig. S4. HOMO and LUMO energies of 1s (a) and 3s (b).

Fig. S5. (a) Output and (b) transfer characteristics of 1s-based OTFTs, each deposited on an OTS-modified SiO₂/Si substrate, at $T_{\text{sub}} = 75$ °C.
Fig. S6. (a) Current density (I)–voltage (V) data and (b) IPCE data based on various film thicknesses of 1s and C$_{60}$ under simulated AM 1.5 solar irradiation at 100 mW cm$^{-2}$.

Fig. S7. (a) Current density (I)–voltage (V) data and (b) IPCE data based on 1s:C$_{60}$= 40 nm device under simulated AM 1.5 solar irradiation at 100 mW cm$^{-2}$. 
Fig. S8. $^1$H NMR of 1s.
Fig. S9. $^1$H NMR of 3s.
**Fig. S10.** High resolution mass spectrum of 1s.

**Fig. S11.** High resolution mass spectrum of 3s.