A new two-dimensional D-A copolymer based on 4, 8-bis(2’-ethylhexylthiophene)thieno[2,3-f]benzofuran for high performance polymer solar cells

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Figure S1 $^1$HNMR of compound 4

Figure S2 $^1$HNMR of monomer M1
Figure S3 $^{13}\text{C}$ NMR of monomer M1

Figure S4 $^1\text{H}$NMR of PTBFTDTBT
Figure S5  (a) Transfer characteristics of the PTBFTDTBT OFET measured at $V_{ds} = -$50 V. (b) Output characteristics with $V_{DS}$ varying from 10 V to -50 V in steps of 10 V deposited on OTS modified SiO$_2$.

Figure S6  TEM images of PTBFTDTBT/PC$_{71}$BM blend films prepared by ODCB. (a) 1:1 D/A ratio; (b) 1:2 D/A ratio. Scale bar: 20 nm.