

Supporting Information

The Effect of Single Atom Replacement on Organic Thin Film Transistors: Case of Thieno[3,2-*b*]pyrrole vs Furo[3,2-*b*]pyrrole

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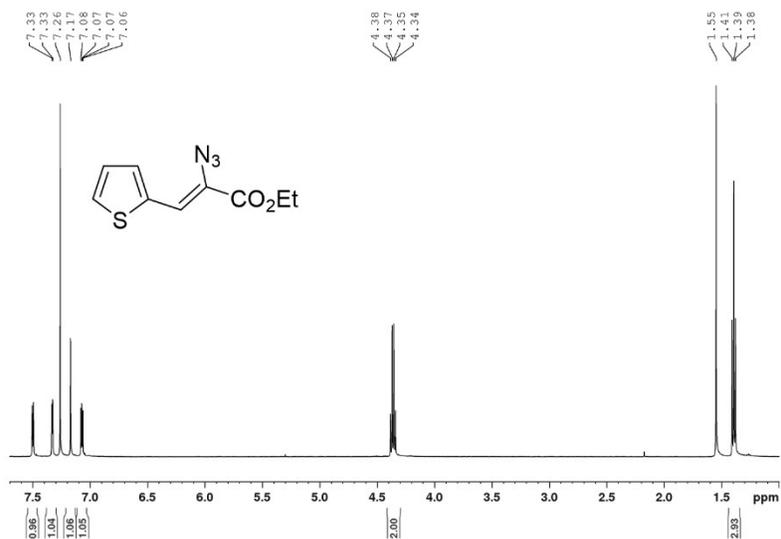


Fig S1 ¹H NMR spectrum of ethyl-2-azido-3-(thiophen-2-yl)acrylate

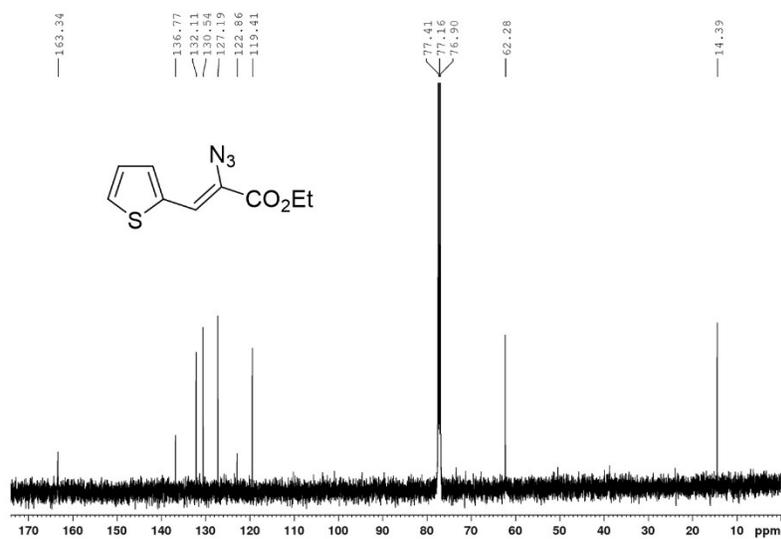


Fig S2 ¹³C NMR spectrum of ethyl-2-azido-3-(thiophen-2-yl)acrylate

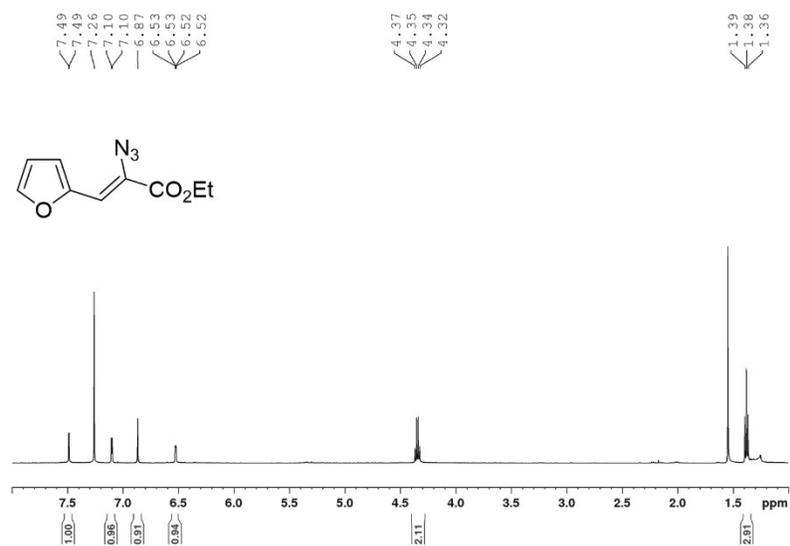


Fig S3 ¹H NMR spectrum of ethyl-2-azido-3-(furan-2-yl)acrylate

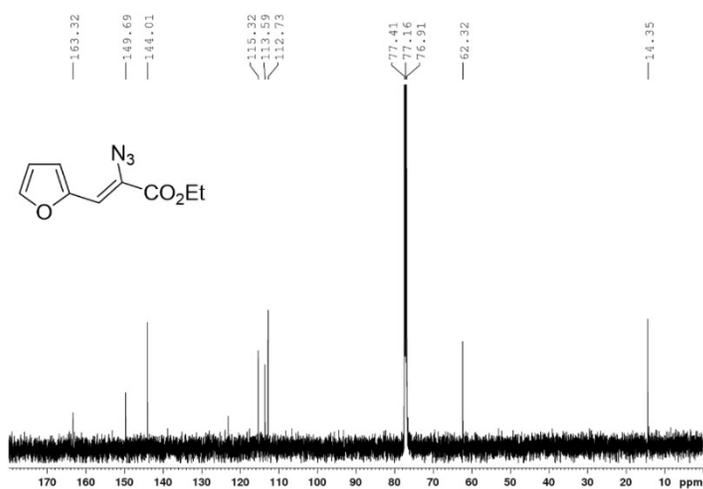


Fig S4 ¹³C NMR spectrum of ethyl-2-azido-3-(furan-2-yl)acrylate

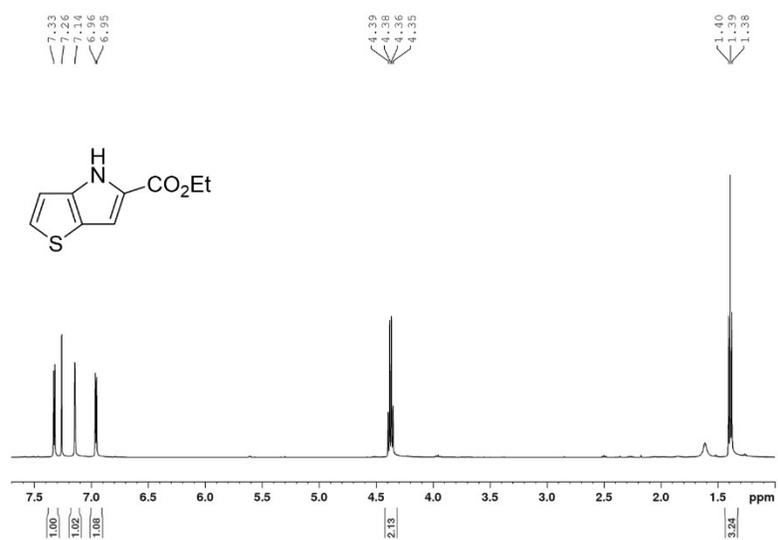


Fig S5 ¹H NMR spectrum of ethyl 4*H*-thieno[3,2-*b*]pyrrole-5-carboxylate

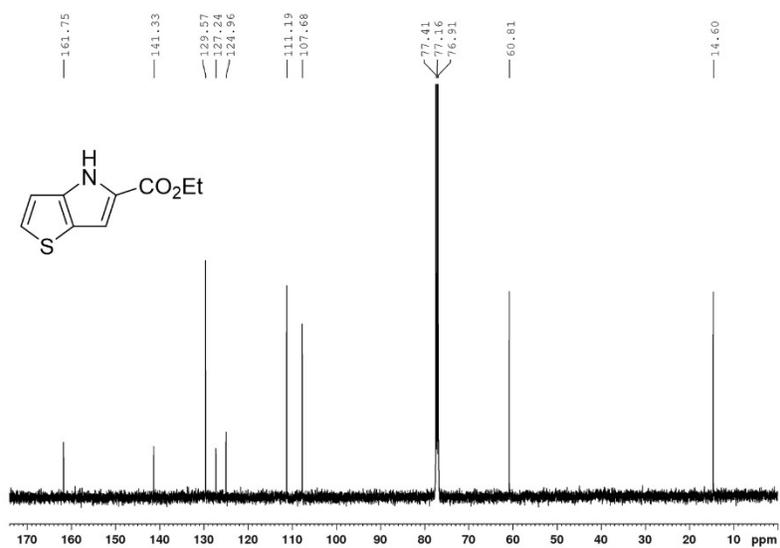


Fig S6 ¹³C NMR spectrum of ethyl 4*H*-thieno[3,2-*b*]pyrrole-5-carboxylate

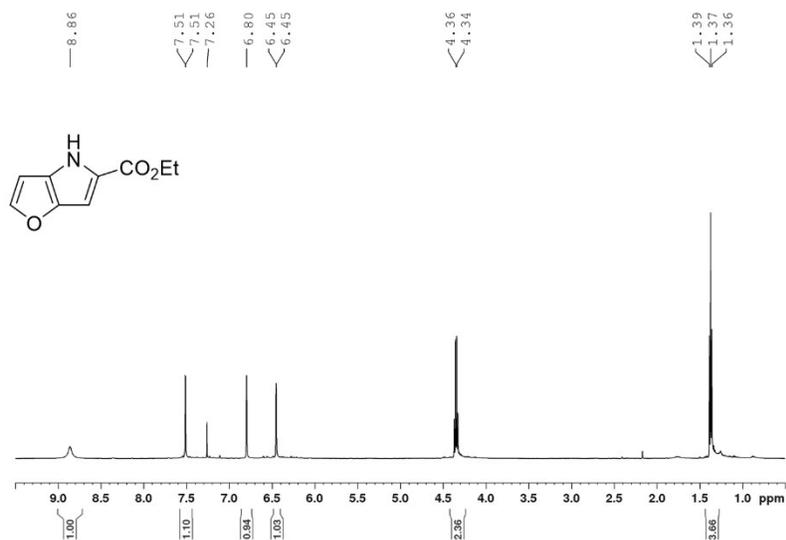


Fig S7 ¹H NMR spectrum of ethyl 4*H*-furo[3,2-*b*]pyrrole-5-carboxylate

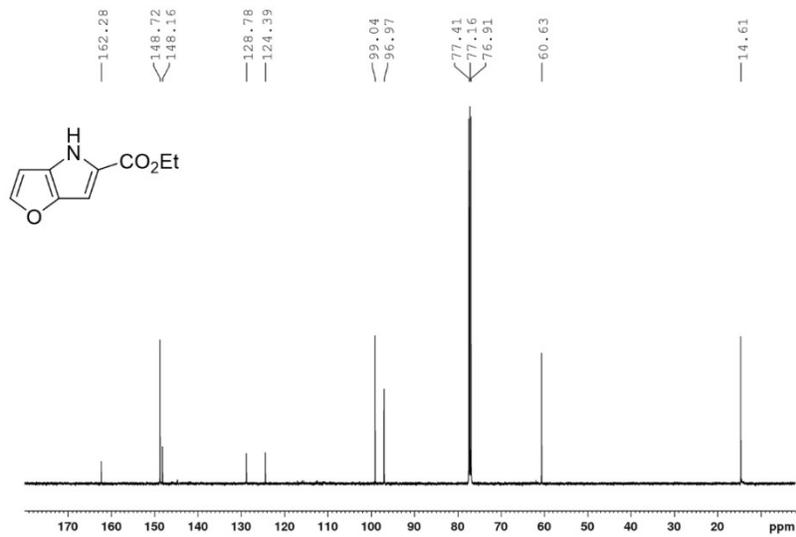


Fig S8 ¹³C NMR spectrum of ethyl 4*H*-furo[3,2-*b*]pyrrole-5-carboxylate

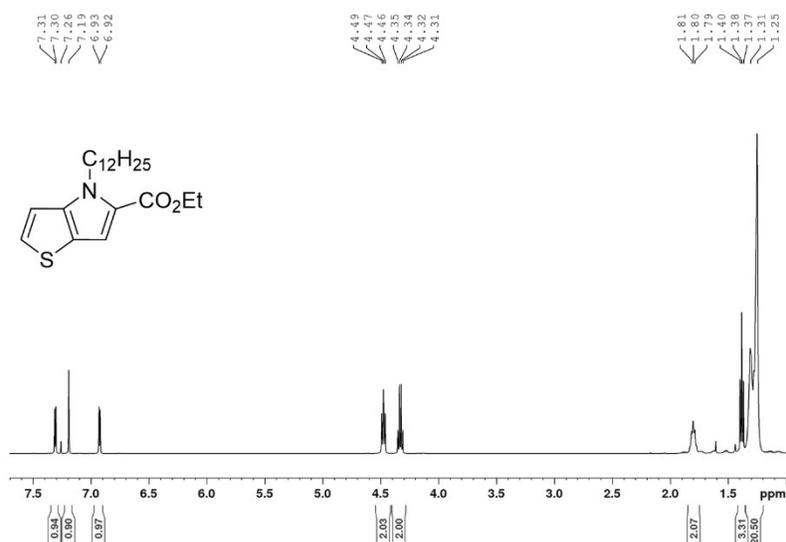


Fig S9 ¹H NMR spectrum of ethyl 4-dodecyl-4*H*-thieno[3,2-*b*]pyrrole-5-carboxylate

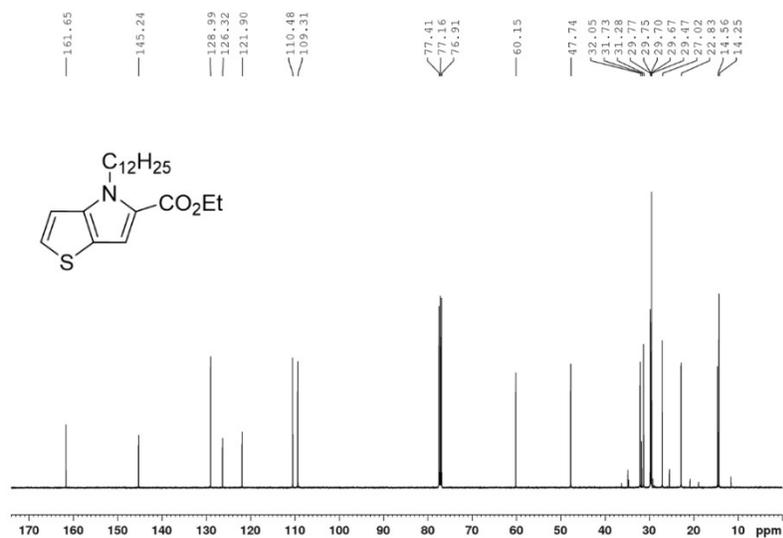


Fig S10 ¹³C NMR spectrum of ethyl 4-dodecyl-4*H*-thieno[3,2-*b*]pyrrole-5-carboxylate

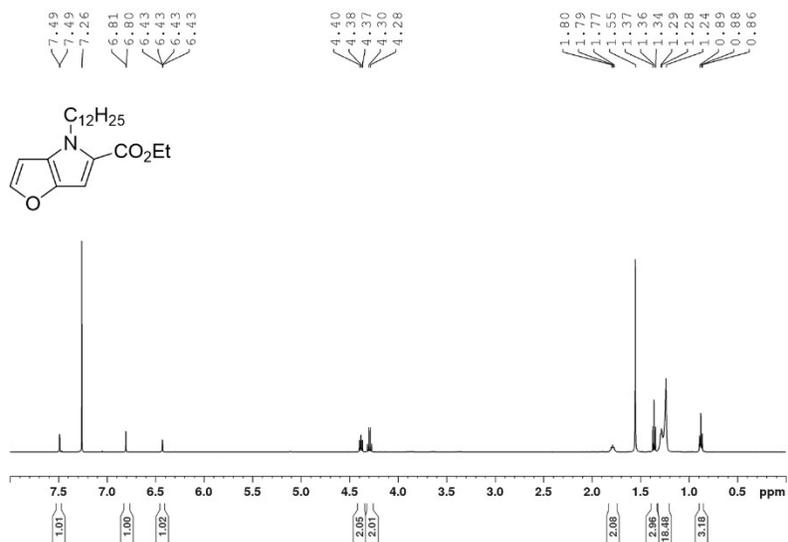


Fig S11 ¹H NMR spectrum of ethyl 4-dodecyl-4*H*-furo[3,2-*b*]pyrrole-5-carboxylate

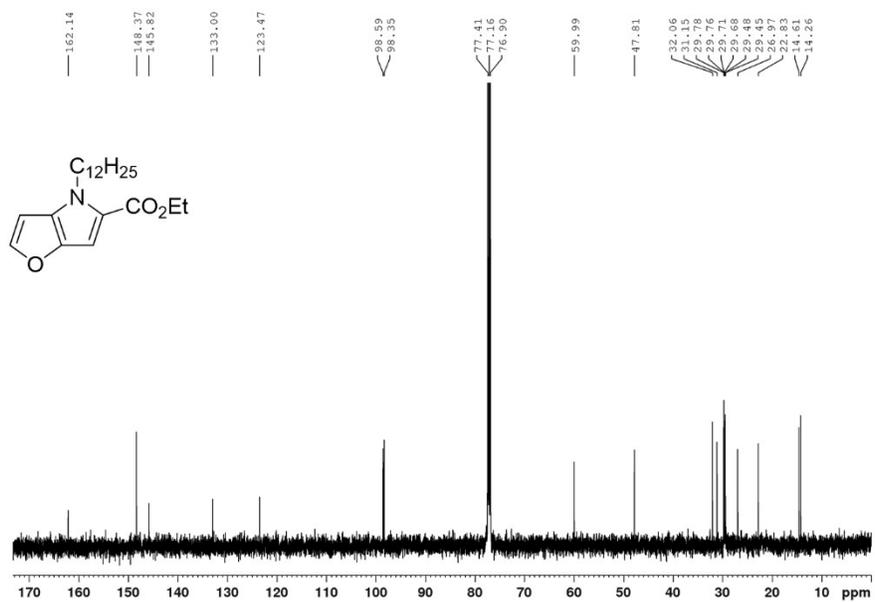


Fig S12 ¹³C NMR spectrum of ethyl 4-dodecyl-4*H*-furo[3,2-*b*]pyrrole-5-carboxylate

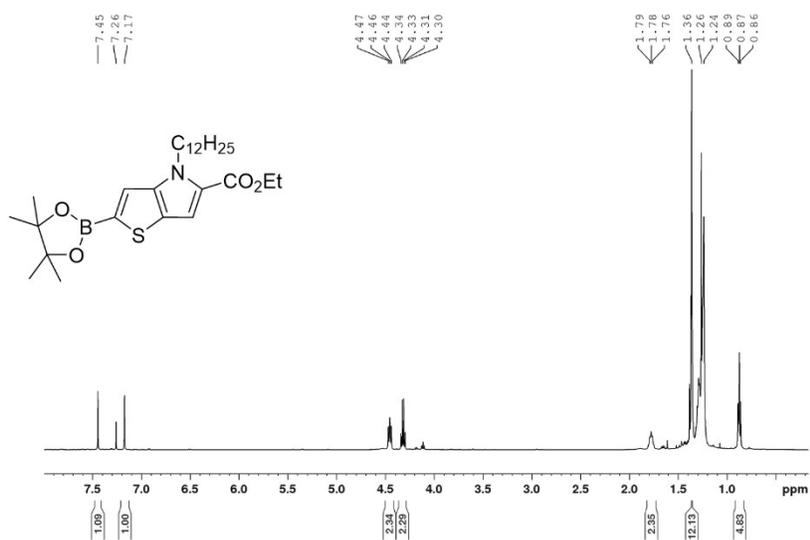


Fig S13 ¹H NMR spectrum of ethyl 4-dodecyl-2-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-4*H*-thieno[3,2-*b*]pyrrole-5-carboxylate

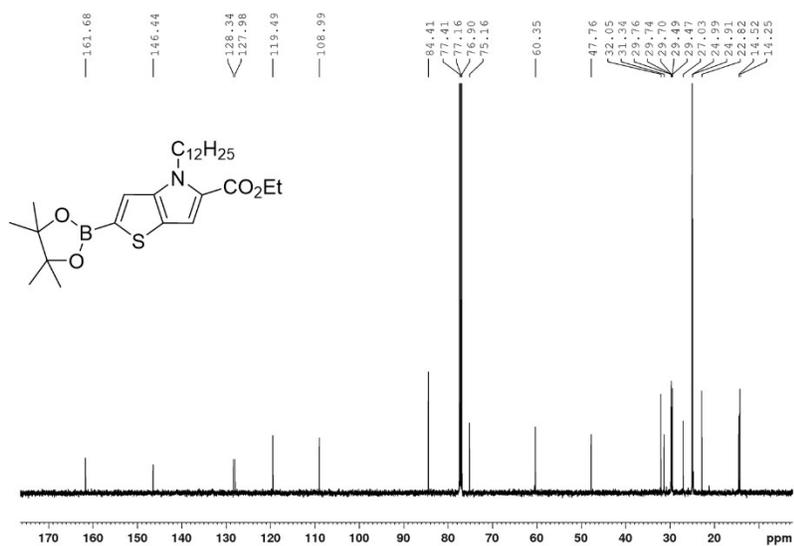


Fig S14 ¹³C NMR spectrum of ethyl 4-dodecyl-2-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-4*H*-thieno[3,2-*b*]pyrrole-5-carboxylate

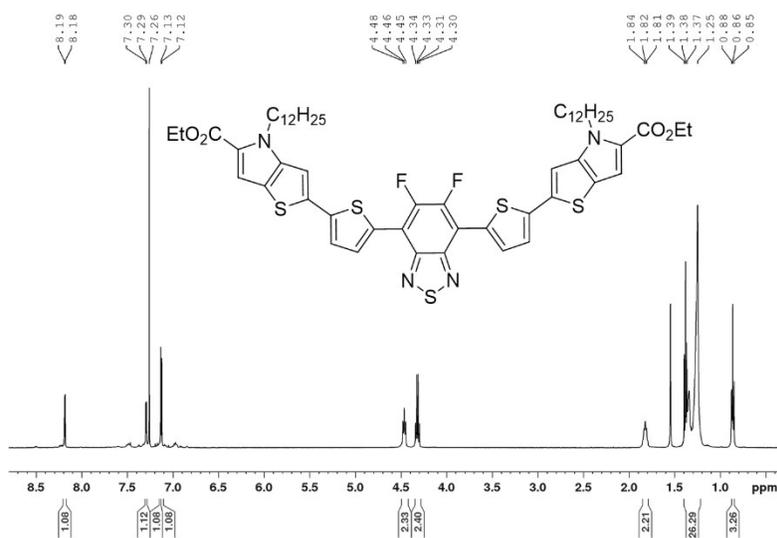


Fig S17 ¹H NMR spectrum of TP-FBT2T-TP

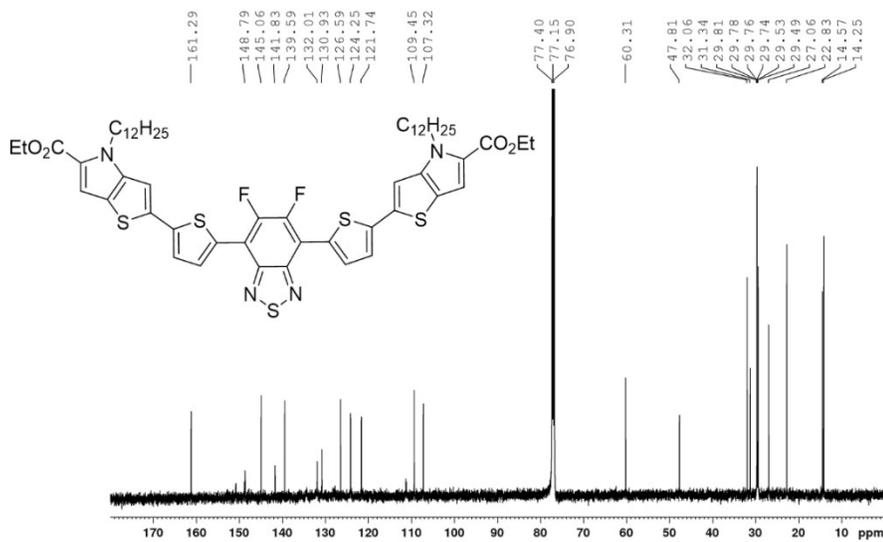


Fig S18 ¹³C NMR spectrum of TP-FBT2T-TP

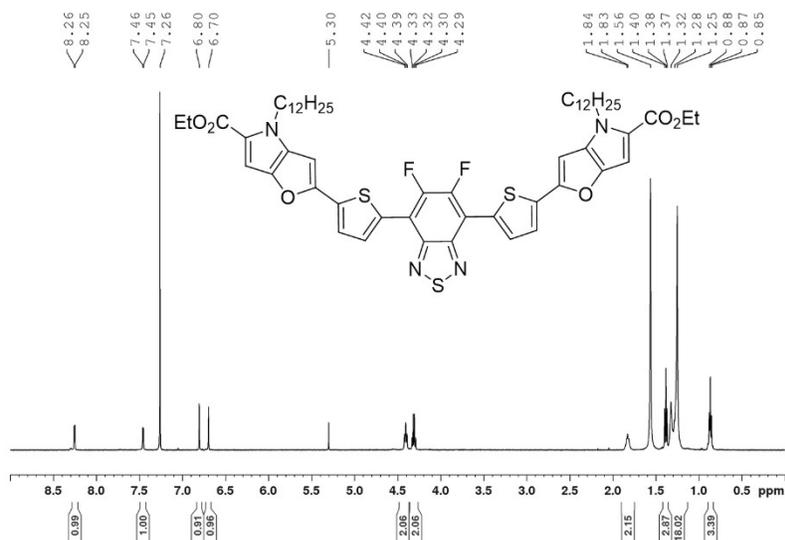


Fig S19 ¹H NMR spectrum of FP-FBT2T-FP

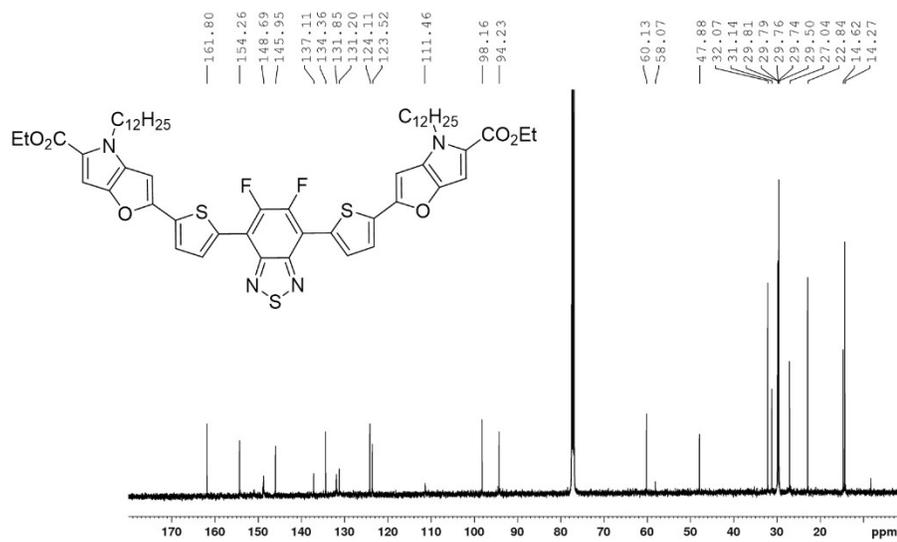


Fig S20 ¹³C NMR spectrum of FP-FBT2T-FP

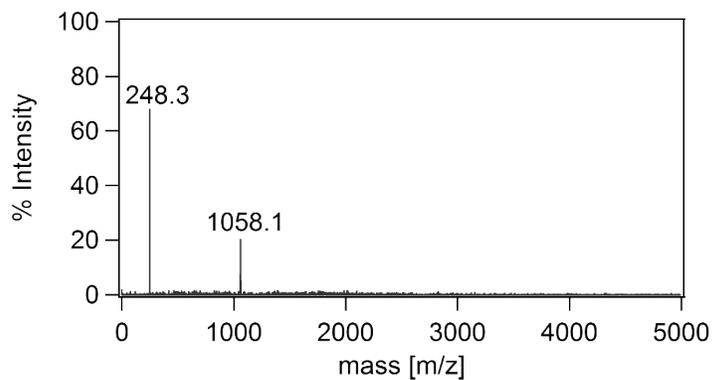


Fig S21 MALDI-TOF spectrum of **TP-FBT2T-TP**

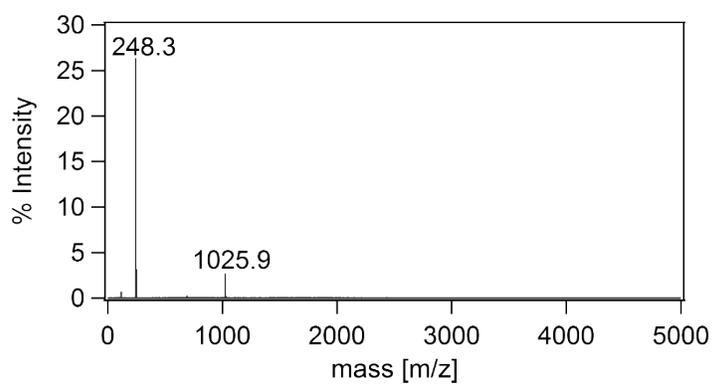


Fig S22 MALDI-TOF spectrum of **FP-FBT2T-FP**

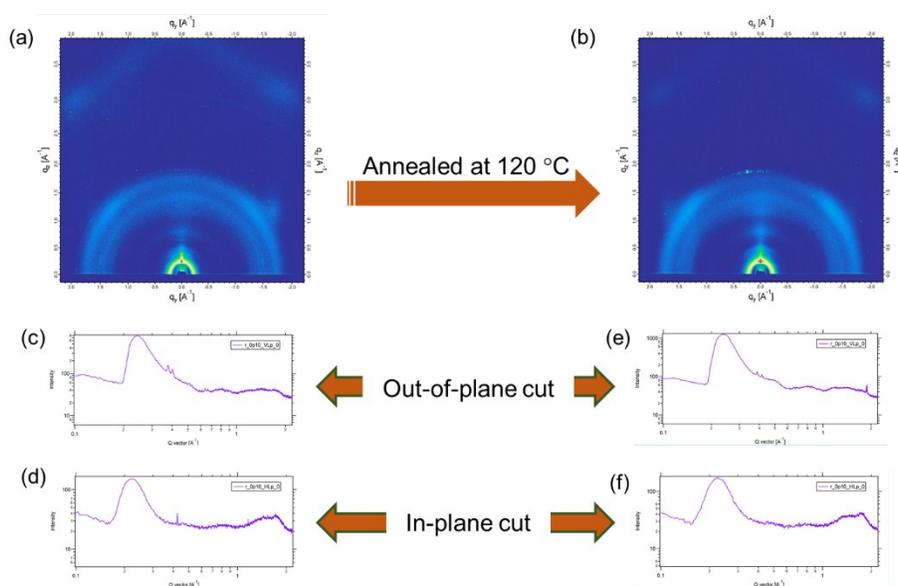


Fig S23 (a) GIWAXS spectrum, (c) out-of-plane cut, (d) in-plane cut of **TP-FBT2T-TP** film before annealing. (b) GIWAXS spectrum (e) out-of-plane cut, (f) in-plane cut of **TP-FBT2T-TP** film after annealing

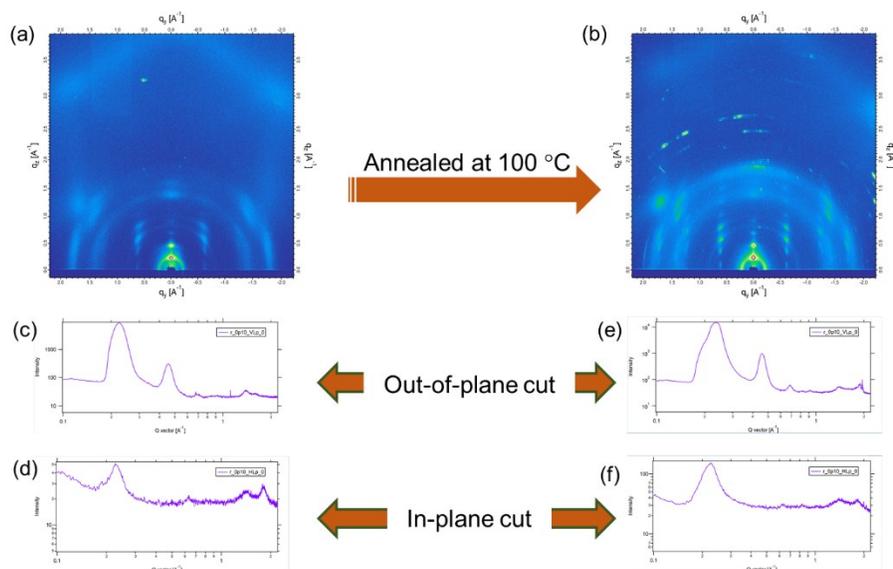


Fig S24 (a) GIWAXS spectrum, (c) out-of-plane cut, (d) in-plane cut of FP-FBT2T-FP film before annealing. (b) GIWAXS spectrum (e) out-of-plane cut, (f) in-plane cut of FP-FBT2T-FP film after annealing

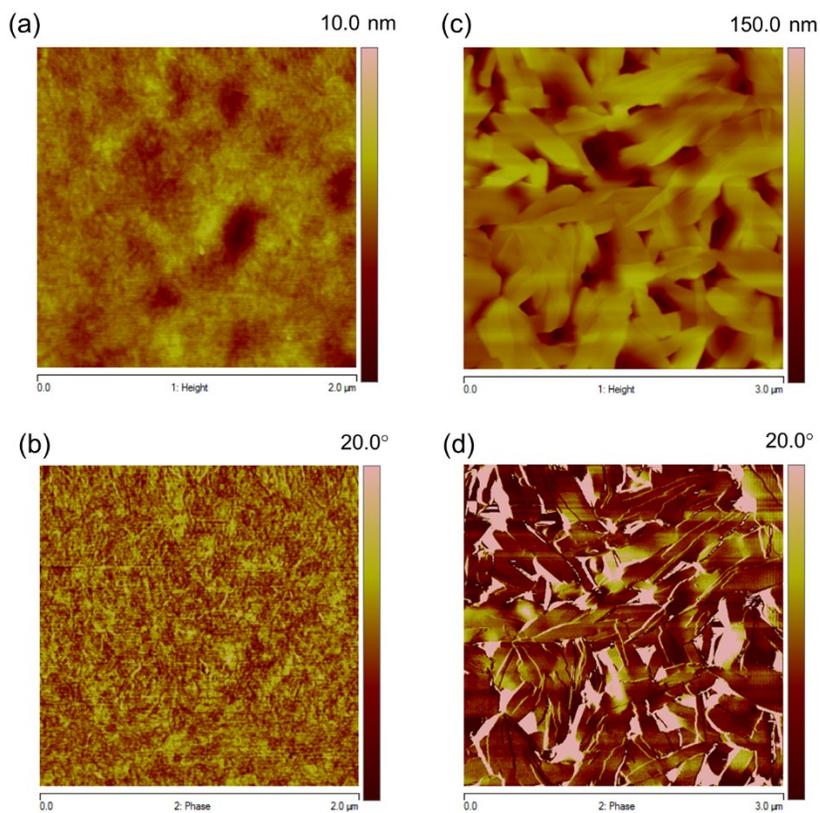


Fig S25 TMAFM (a) height image, (b) phase image of TP-FBT2T-TP thin film annealed at 120 °C. TMAFM (a) height image, (b) phase image of FP-FBT2T-FP thin film annealed at 100 °C