Electronic Supplementary Information

Bis(2-oxoindolin-3-ylidene)-benzodifuran-dione-based D-A polymers for high-performance n-channel transistors

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Table S1 Molecular weight and thermal properties of polymers

Polymer	M_n (kDa)	Dispersity	Td[a] (^oC)
PBIBDF-TT	26.47	1.65	385
PBIBDF-TVT	28.07	1.72	389
PBIBDF-TAT	23.95	1.83	375

[a] 5% weight loss temperatures measured by TGA under nitrogen atmosphere.

Table S2 Crystallographic parameters for polymer films annealed at 150 (**PBIBDF-TT**) and 180 ^{o}C (**PBIBDF-TVT** and **PBIBDF-TAT**).

Polymer	Lamellar spacing		π-π spacing	
	q_z ($Å^{-1}$)	d (Å)	q_{xy}	d (Å)
PBIBDF-TT	0.217	28.96	1.82	3.45
PBIBDF-TVT	0.213	29.45	1.79	3.51
PBIBDF-TAT	0.211	29.83	1.80	3.49

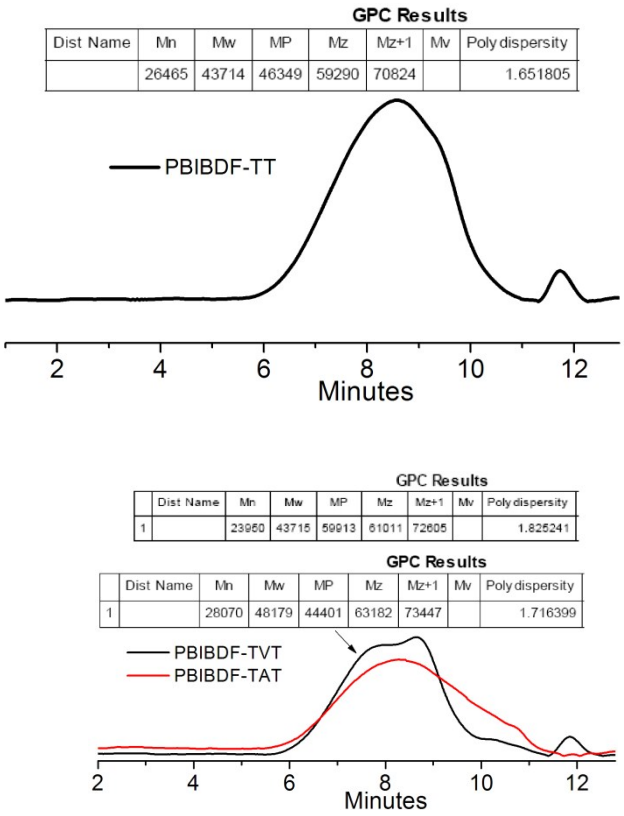

Fig. S1 The GPC results of BIBDF-based polymers.

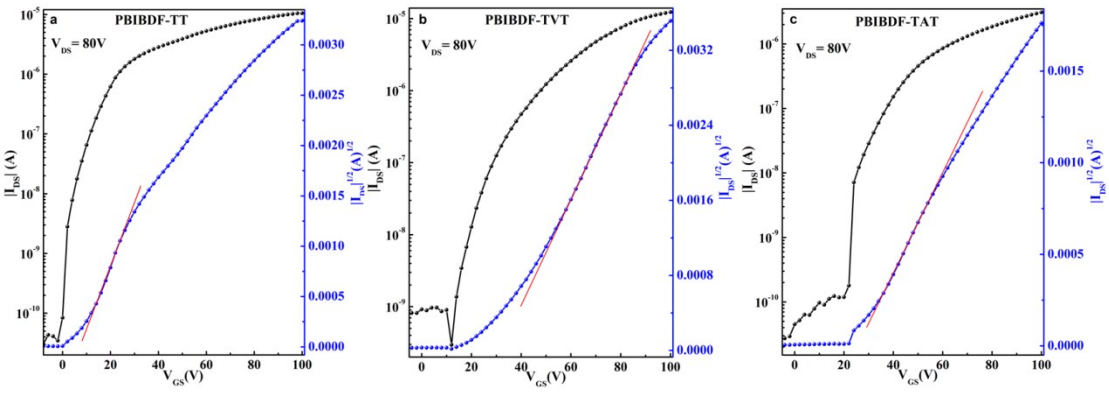

Fig. S2 The transfer curves of OTS-modified OTFTs.

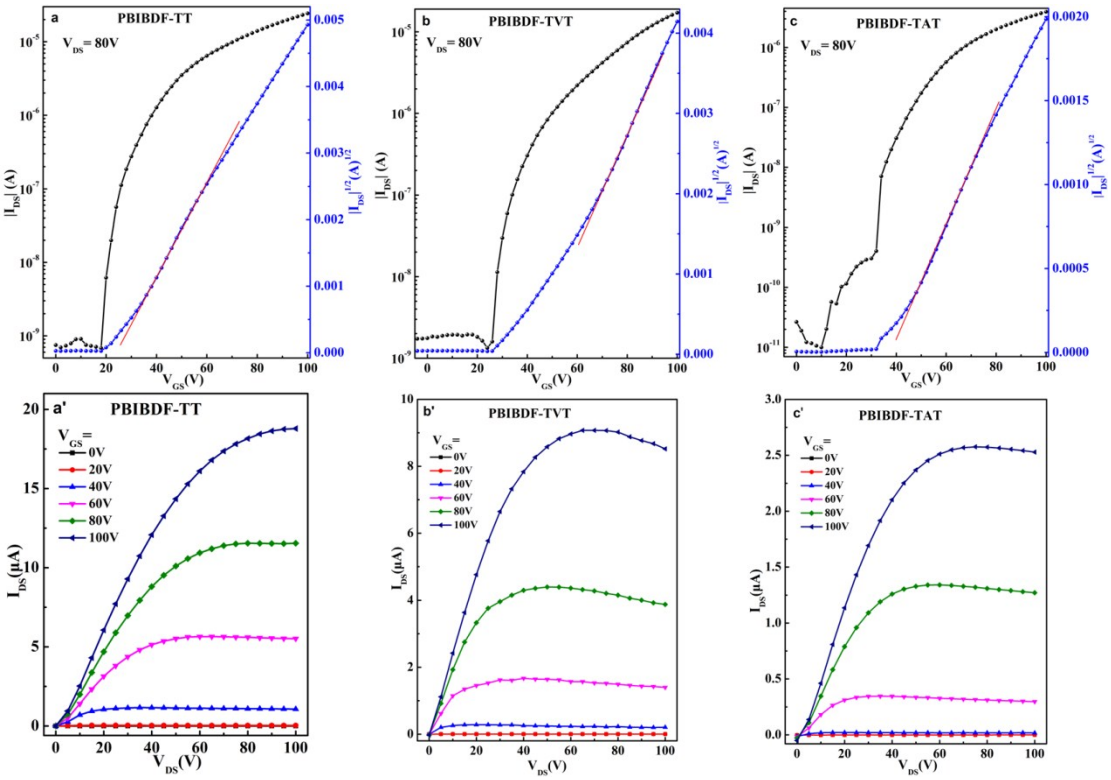

Fig. S3 Output and transfer curves of Cytop-modified OTFTs without annealing.

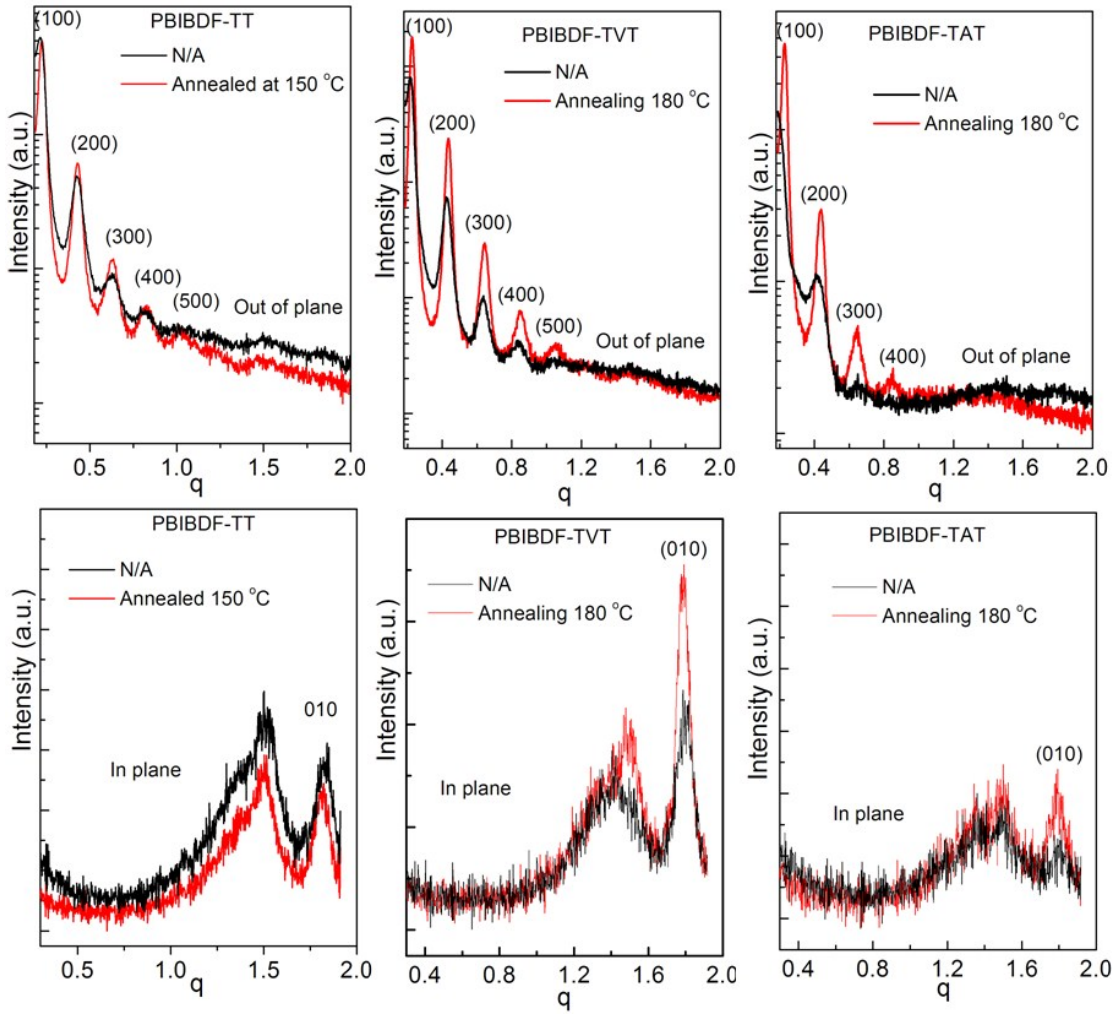

Fig. S4 Out-of-plane and in plane line cuts of GIXD.

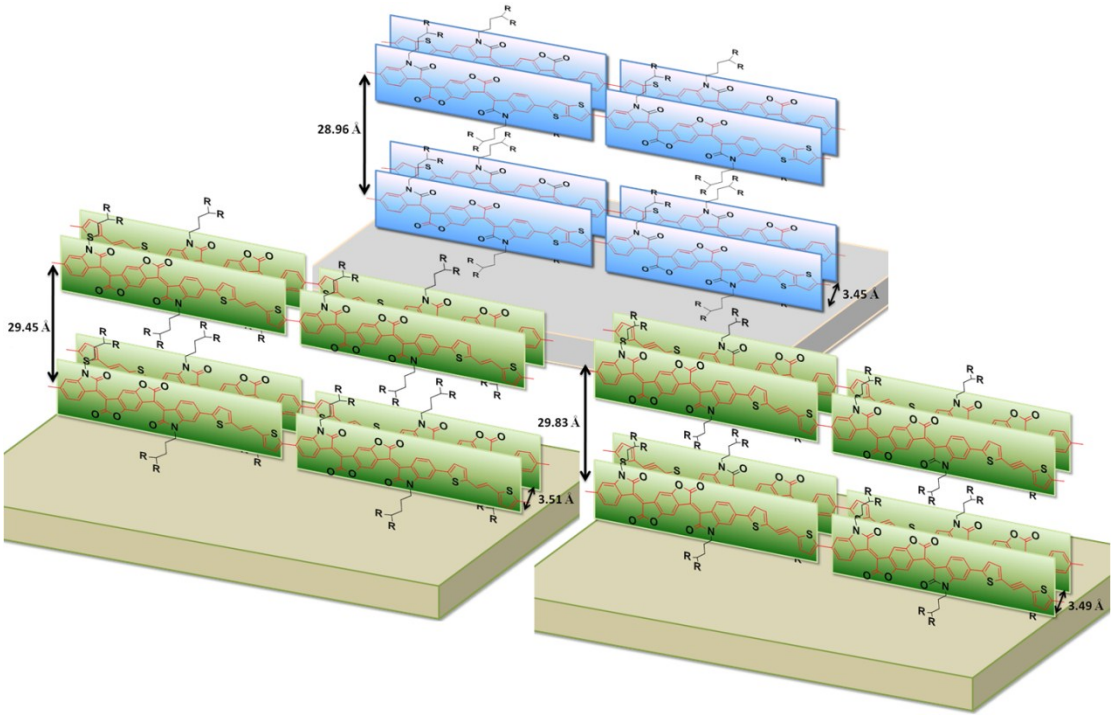

Fig. S5 Proposed polymer packing model in the thin films of three BIBDF-based polymers.

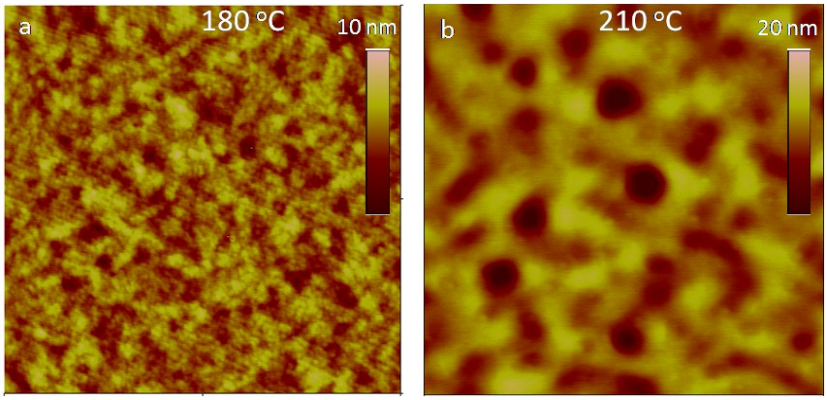

Fig. S6 AFM topography images (2 μm×2 μm) of **PBIBDF-TT** films coated on Cytop-modified SiO_2/Si substrates at different annealing temperature.

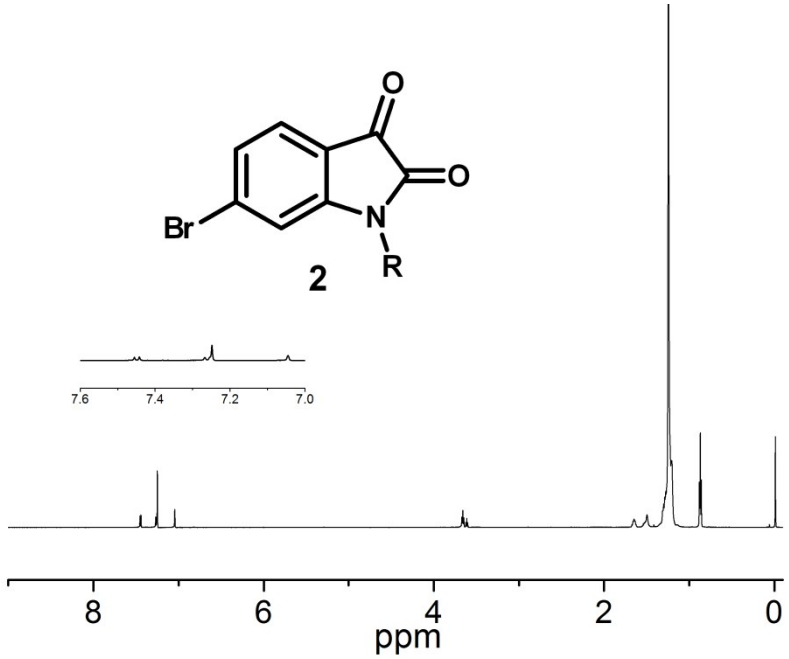

Fig. S7 ^{1}H NMR of compound **2** in $CDCl_3$.

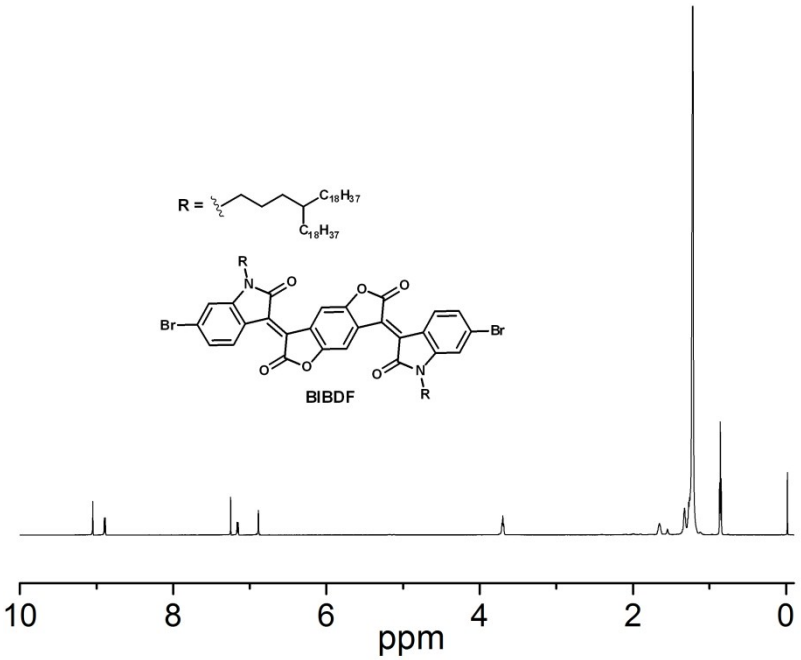

Fig. S8 ^{1}H NMR of BIBDF in $CDCl_3$.

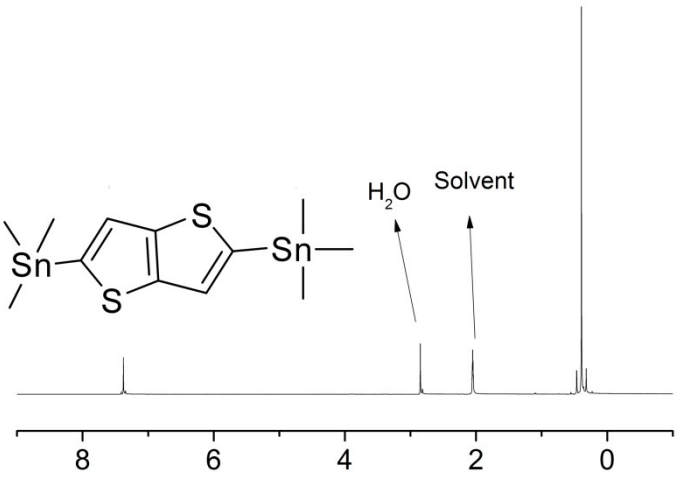

Fig. S9 ^{1}H NMR of **M1** in C_3D_6O.

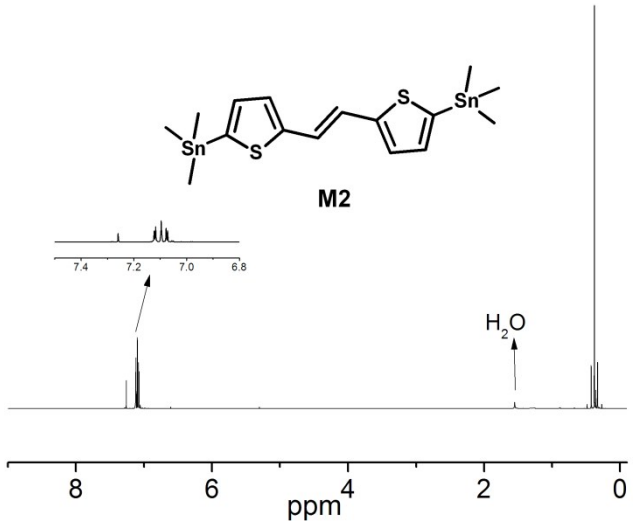

Fig. S10 ^{1}H NMR of **M2** in $CDCl_3$.

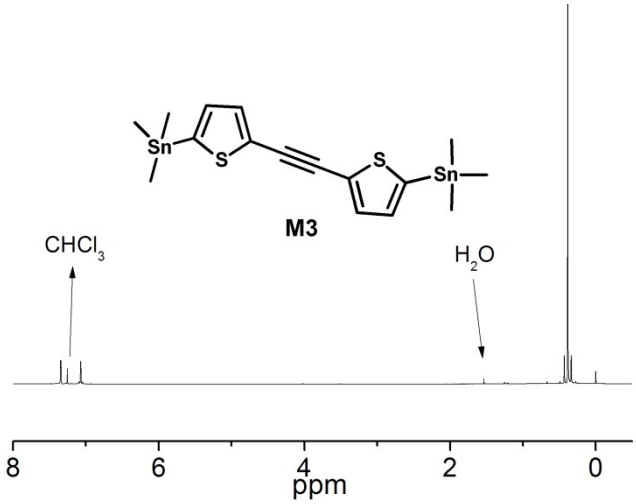

Fig. S11 ^{1}H NMR of **M3** in $CDCl_3$.

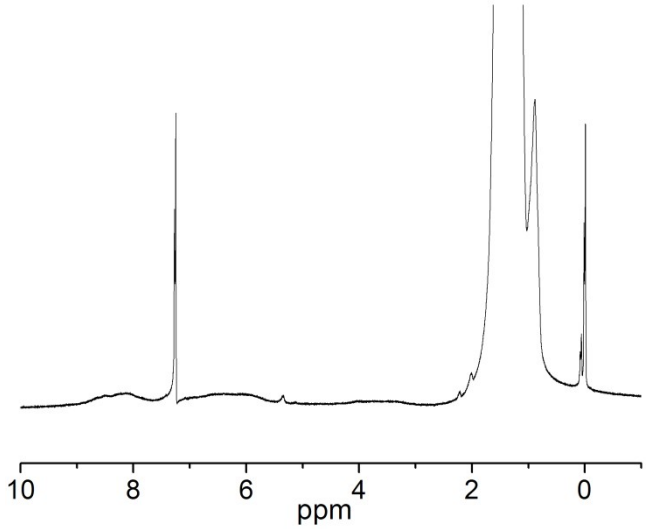

Fig. S12 ^{1}H NMR of polymer PBIBDF-TT in $CDCl_3$.

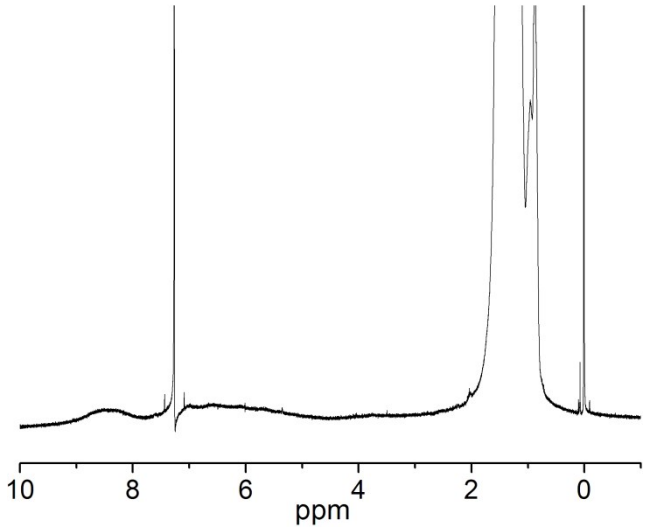

Fig. S13 ^{1}H NMR of polymer PBIBDF-TVT in $CDCl_3$.

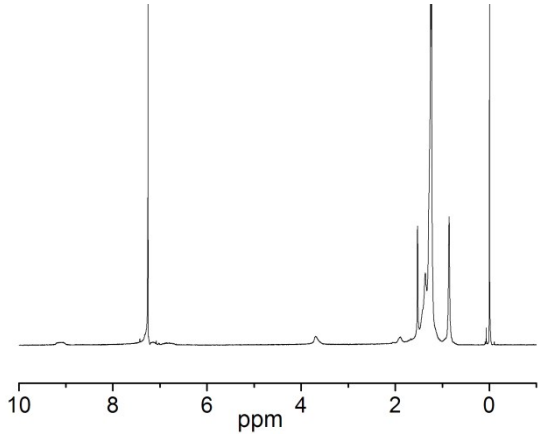

Fig. S14 ^{1}H NMR of polymer PBIBDF-TAT in $CDCl_3$.