

Supporting Information

Synthesis of Novel Conjugated Polymers Based on Benzo[1,2-*d*:4,5-*d'*]-bis([1,2,3]triazole) for Applications in Organic Field-Effect Transistors

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CONTENT

1. Molecular weight and polydispersity index
2. NMR spectra of polymers
3. OFET device performances of three polymers.
4. Polymer structure in reference

Table S1. The molecular weights and polydispersity indexes (PDI) of **PBTBBTa-BT**, **PBTBBTa-TT** and **PBTBBTa-TVT**.

Polymer	Mn(kDa)	Mw(kDa)	PDI(kDa)
PBTBBTa-BT	39.0	56.8	1.45
PBTBBTa-TT	18.2	43.5	2.39
PBTBBTa-TVT	31.0	57.8	1.86

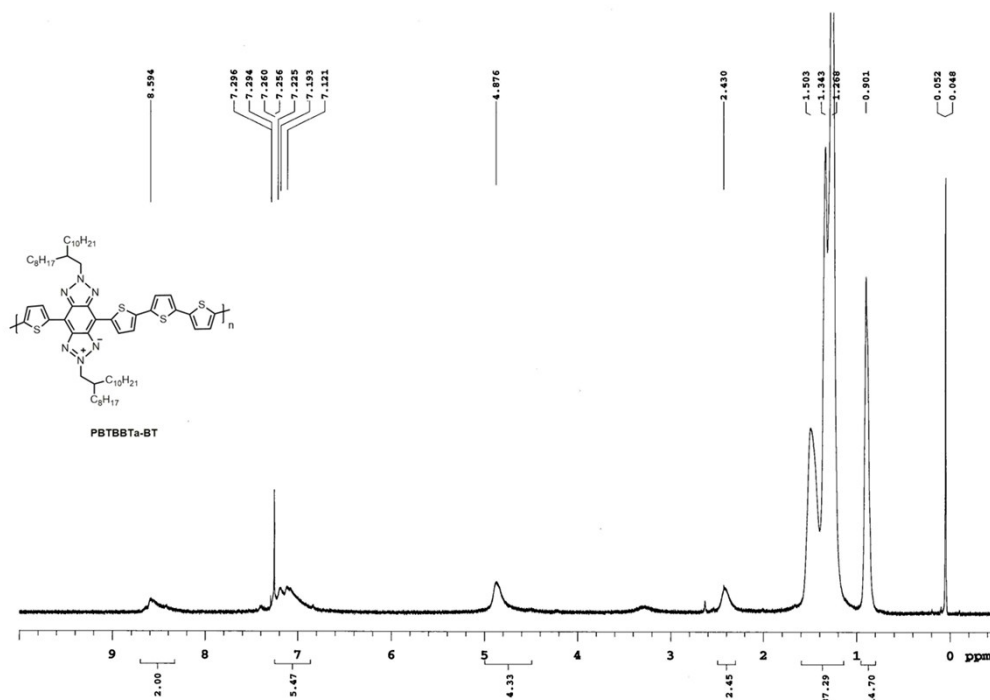


Fig. S1 ^1H NMR spectrum of polymer **PBTBBTa -BT**

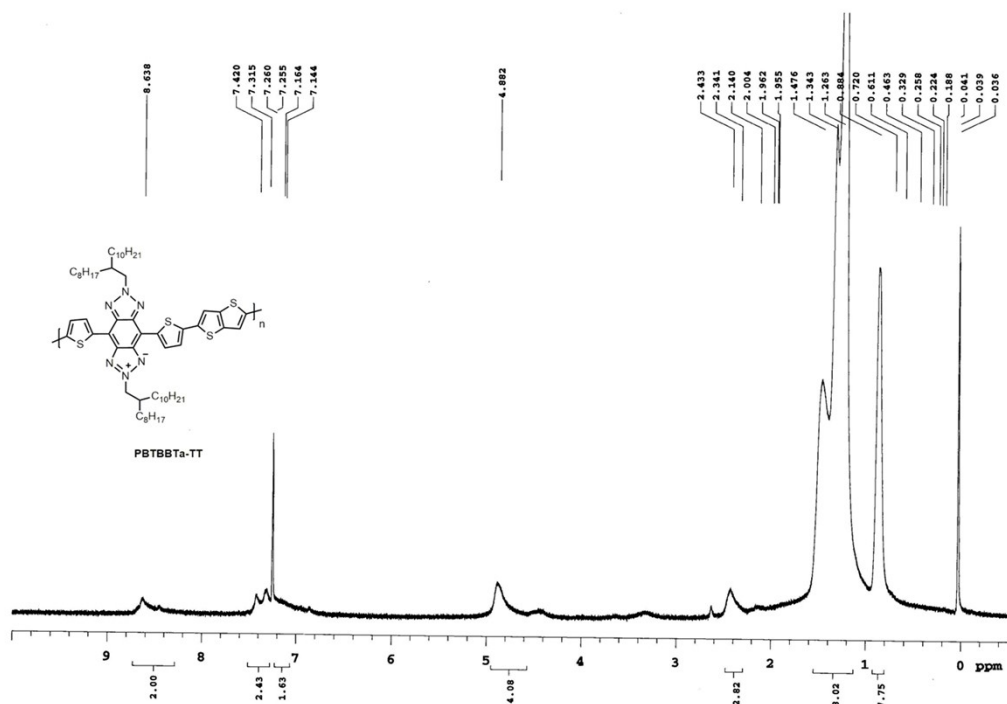


Fig. S2 ^1H NMR spectrum of polymer **PBTBBTa-TVT**

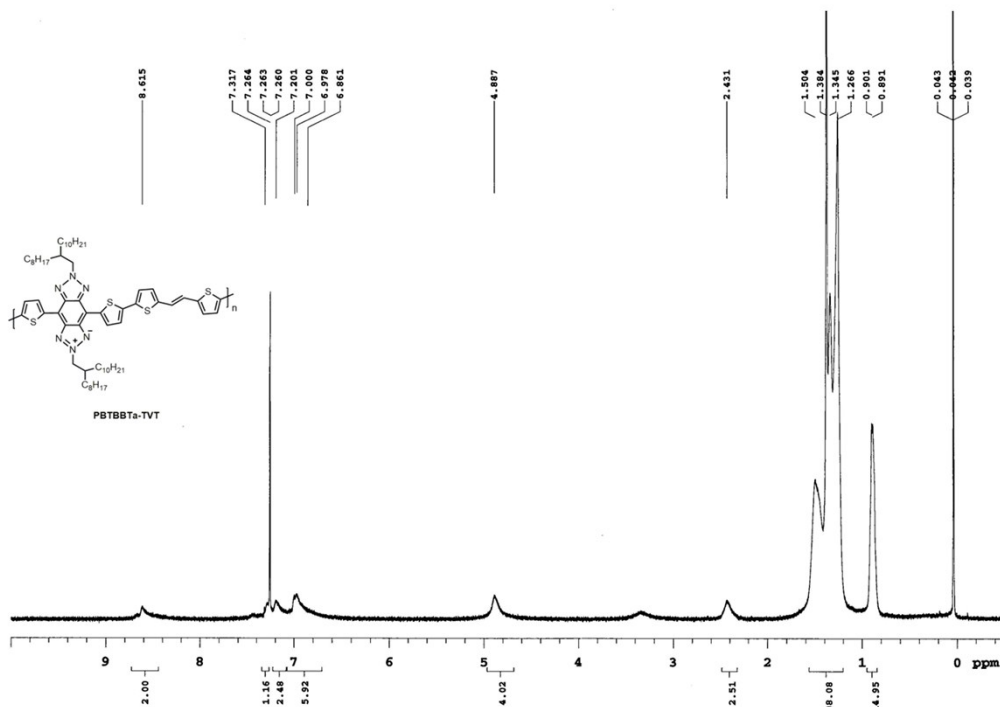


Fig. S3 ^1H NMR spectrum of polymer **PBTBBTa-SVS**

Table S2 OFET device performances of **PBTBBT_a-BT**

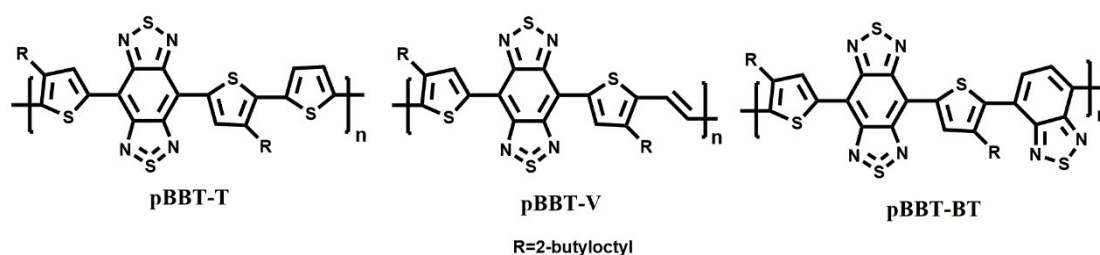
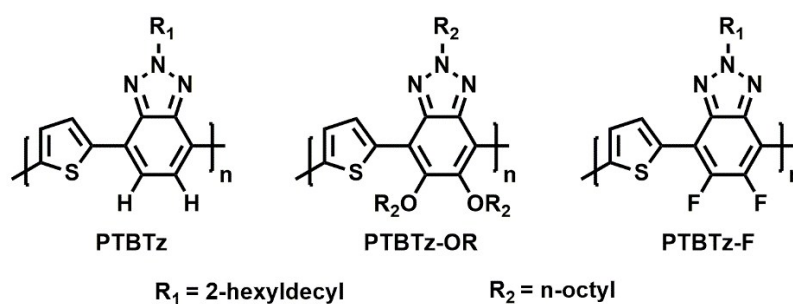
Device	Annealing Temp (°C)	Annealing Time (min)	V_T (V)	$I_{on/off}$	Mobility ($\text{cm}^2 \text{V}^{-1} \text{s}^{-1}$)
1	N/A	10	-3.2	8.4×10^4	5.1×10^{-2}
2	50	10	-11.6	3.7×10^4	0.22
3	150	10	-4.6	3.4×10^4	3.8×10^{-2}
4	200	10	-5.3	1.7×10^4	7.4×10^{-2}
5	280	10	-9.7	1.6×10^6	0.21
6	50	30	-3.8	1.1×10^3	3.9×10^{-2}
7	280	30	-12.4	5.6×10^3	3.2×10^{-2}

Table S3 OFET device performances of **PBTBBT_a-TT**

Device	Annealing Temp (°C)	Annealing Time (min)	V_T (V)	$I_{on/off}$	Mobility ($\text{cm}^2 \text{V}^{-1} \text{s}^{-1}$)
8	N/A	10	-8.6	5.5×10^4	6.6×10^{-2}
9	100	10	-0.4	1.2×10^3	9.0×10^{-2}
10	150	10	-7.6	8.3×10^4	0.13
11	250	10	-9.7	1.6×10^6	7.4×10^{-2}
12	150	30	-14.7	2.3×10^1	4.8×10^{-2}

Table S4 OFET device performances of **PBTBBT**a-TV**T**

Device	Annealing Temp (°C)	Annealing Time (min)	V_T (V)	$I_{on/off}$	Mobility ($\text{cm}^2 \text{V}^{-1} \text{s}^{-1}$)
14	N/A	10	-12	1.3×10^4	1.3×10^{-2}
15	70	10	-10	7.1×10^3	1.4×10^{-2}
16	150	10	-4	3.9×10^3	1.2×10^{-2}
17	250	10	-7.2	8.1×10^3	3.1×10^{-2}
18	250	30	-10.3	2.5×10^3	1.8×10^{-2}

**Fig. S4** Polymer structure of **pBBT-T**, **pBBT-V** and **pBBT-BT****Fig. S5** Polymer structure of **PTBTz**, **PTBTz-OR** and **PTBTz-F****Reference**

- Wang, y.; Hosokawa, R.; Mori, T.; Michinobu, T. *Bull. Chem. Soc. Jpn* **2017**, 90, 1041–1049.
- Yum, S; An, T. K.; Wang, X.; Lee, W.; Uddin, M. A.; Kim, Y. J.; Nguyen, T. L.; Xu, S.; Hwang, S.; Park, C. E.; Woo, H. Y. *Chem. Mater.* **2014**, 26, 2147–2154.