

## Supplementary Information for

# Saturated and Stabilized White Electroluminescence with Simultaneous Three-Color Emission from a Six-Armed Star-Shaped Single-Polymer System

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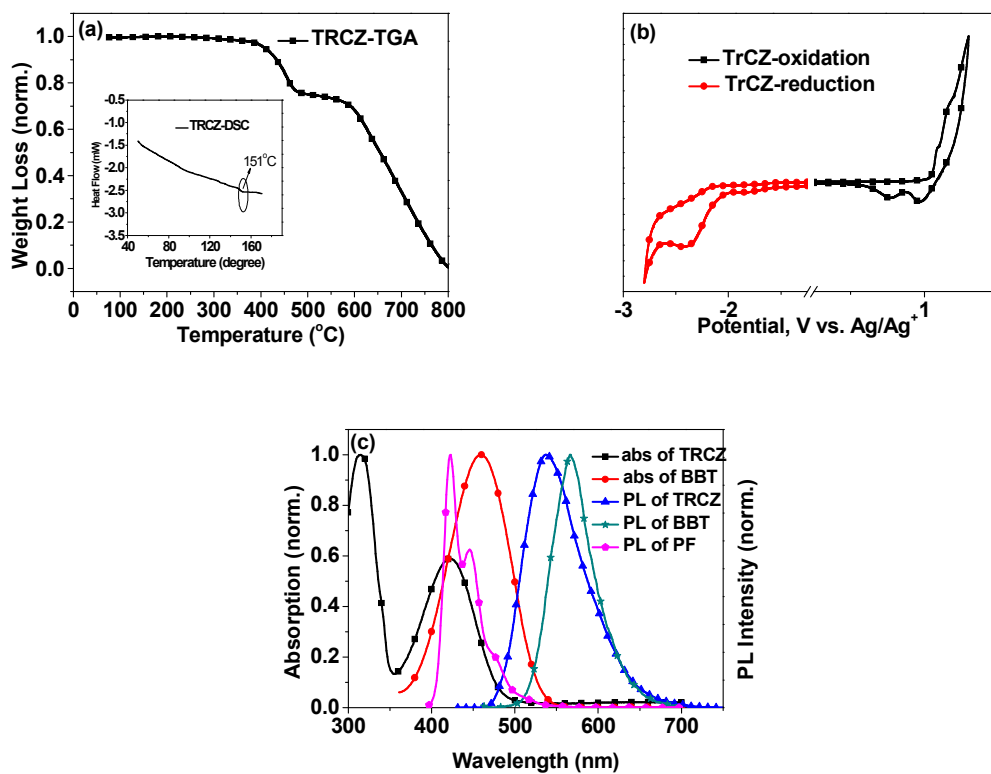


Figure S1. (a) Thermal properties of TRCZ; (b) Electrochemical properties of TRCZ; (c) The absorption spectrum of TRCZ and emission spectra of TRCZ, BBT, PF.

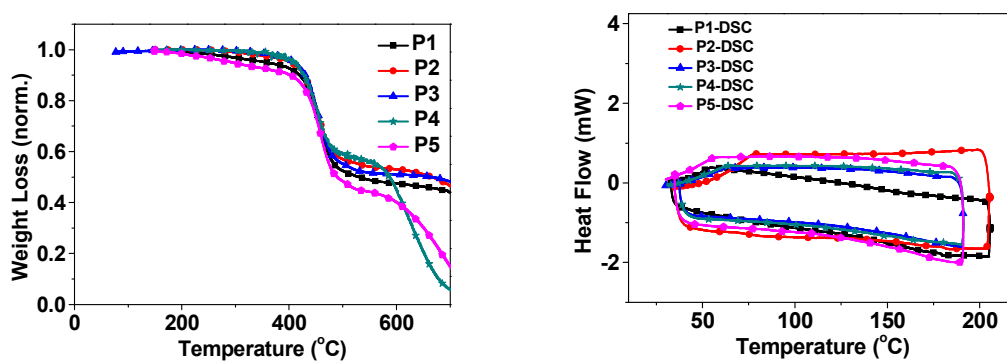


Figure S2. Thermal properties of P1-P5

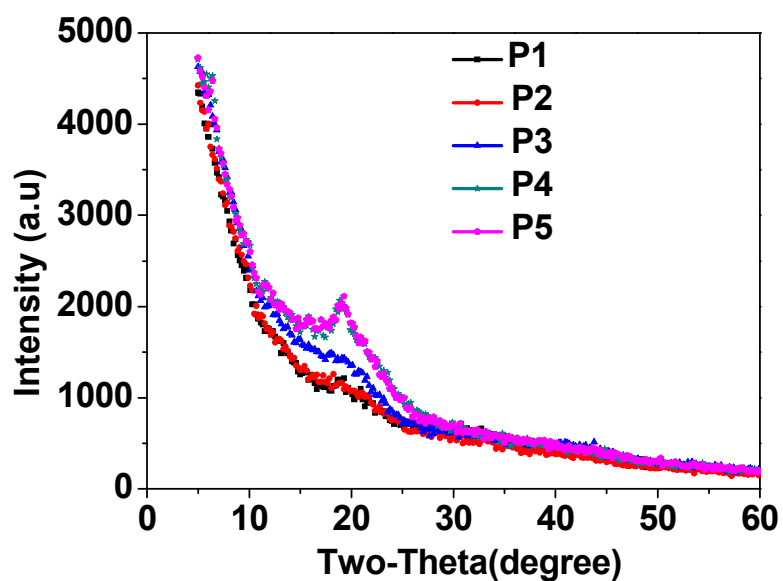


Figure S3. XRD patterns (0-60°) of P1-P5 powders ( $n = 2,3$ ). All samples were tested under the same conditions and each pattern was at its original intensity.

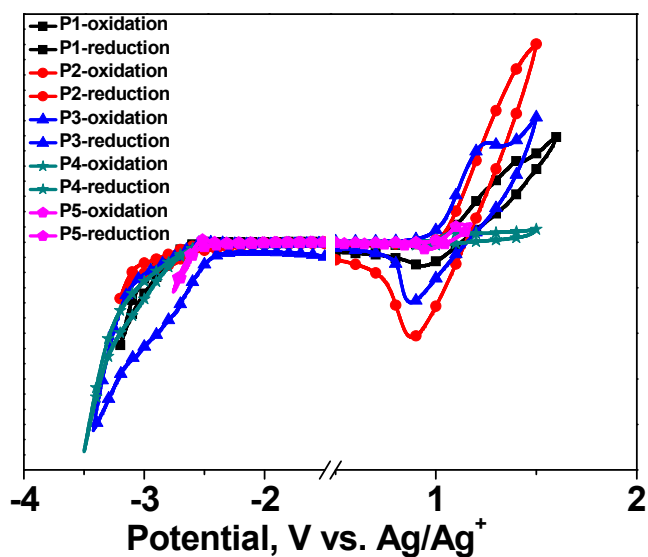


Figure S4. Electrochemical properties of P1-P5.

Table S1. Thermal and electrochemical properties of P1-P5.

Compounds	$T_g$ (°C)	$T_d$ (°C)	$E_{\text{onset}}$	$E_{\text{red}}$	$E_{\text{HOMO}}$	$E_{\text{LUMO}}$	$E_g$
P1	-	402	1.04	-2.60	-5.80	-2.09	3.71
P2	-	371	1.03	-2.57	-5.80	-2.11	3.70
P3	-	364	1.01	-2.44	-5.80	-2.13	3.67
P4	-	390	0.98	-2.44	-5.80	-2.18	3.62
P5	-	377	1.03	-2.56	-5.81	-2.11	3.69

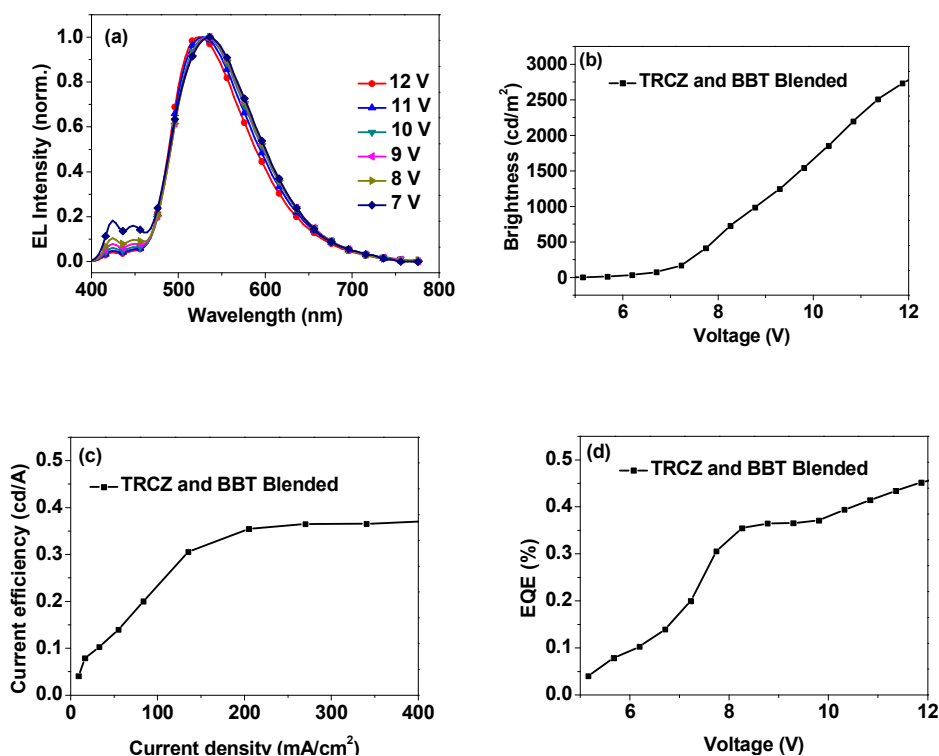


Figure S5. EL characteristics of TRCZ and BBT blended PF with the configuration of ITO/PEDOT: PSS/TRCZ and BBT blended in PFB/TPBI/LiF/Al. (a) EL spectrum with different voltages; (b) Brightness-voltage characteristics; (c) Current efficiency-density characteristics; (d) EQE-voltage characteristics.

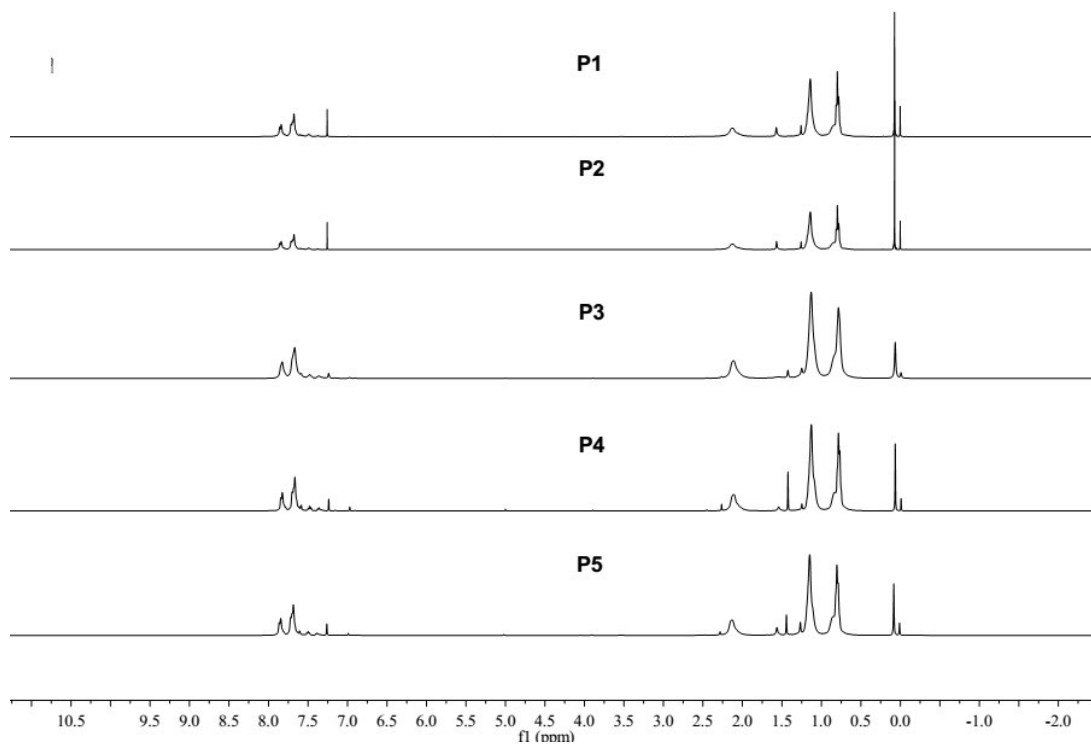


Figure S6.  $^1\text{H}$  NMR spectra of P1-P5.

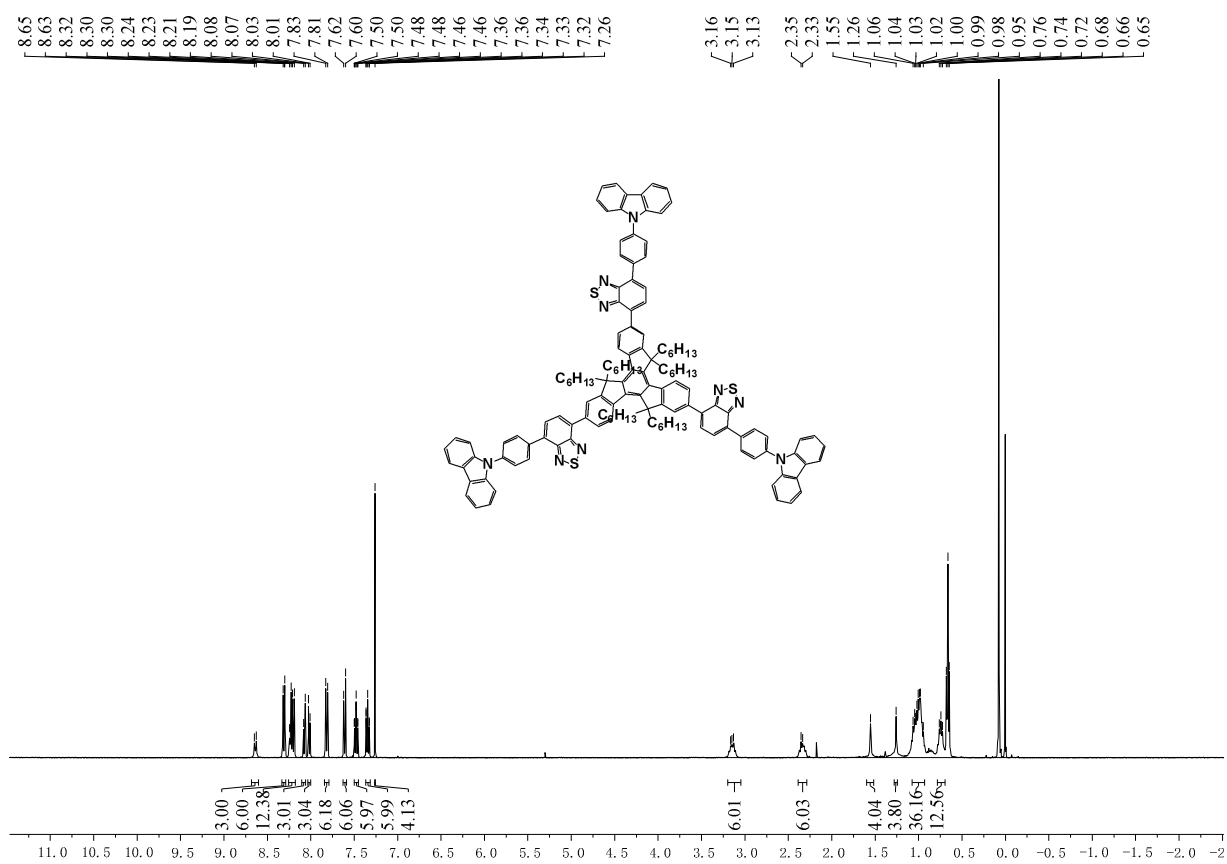


Figure S7.  $^1\text{H}$  NMR spectra of TRCZ in  $\text{CDCl}_3$ .

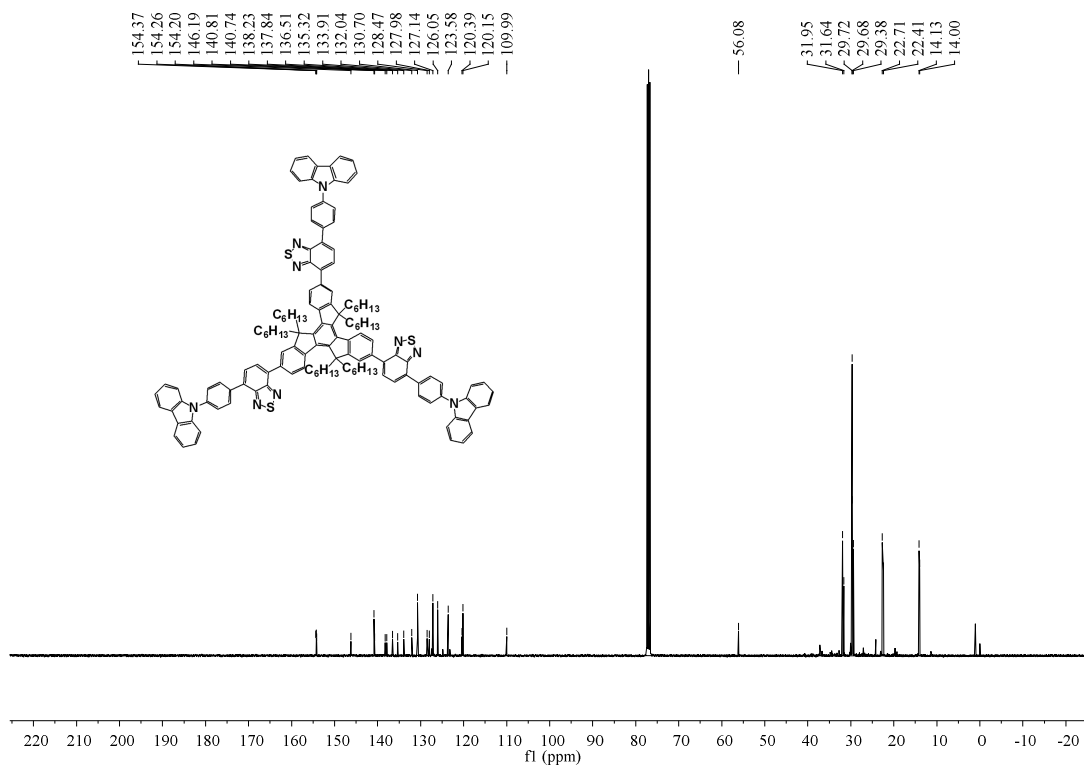


Figure S8.  $^{13}\text{C}$  NMR spectra of TRCZ in  $\text{CDCl}_3$ .

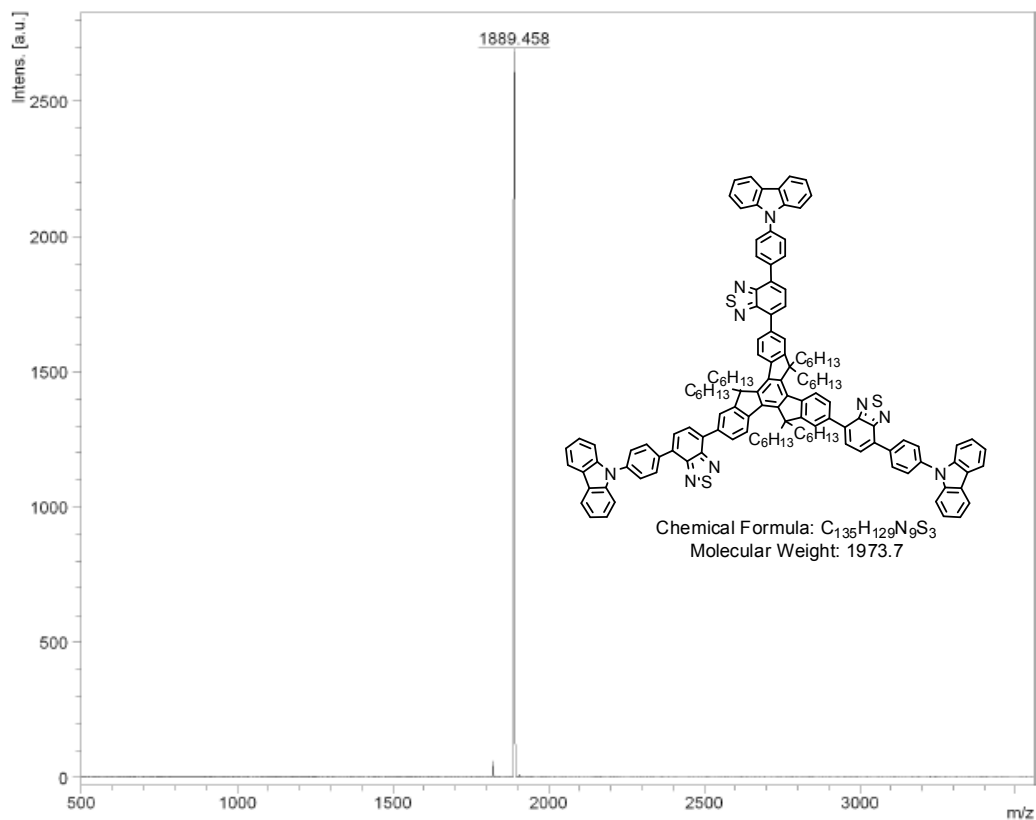


Figure S9. MALDI-TOF mass spectra of TRCZ.

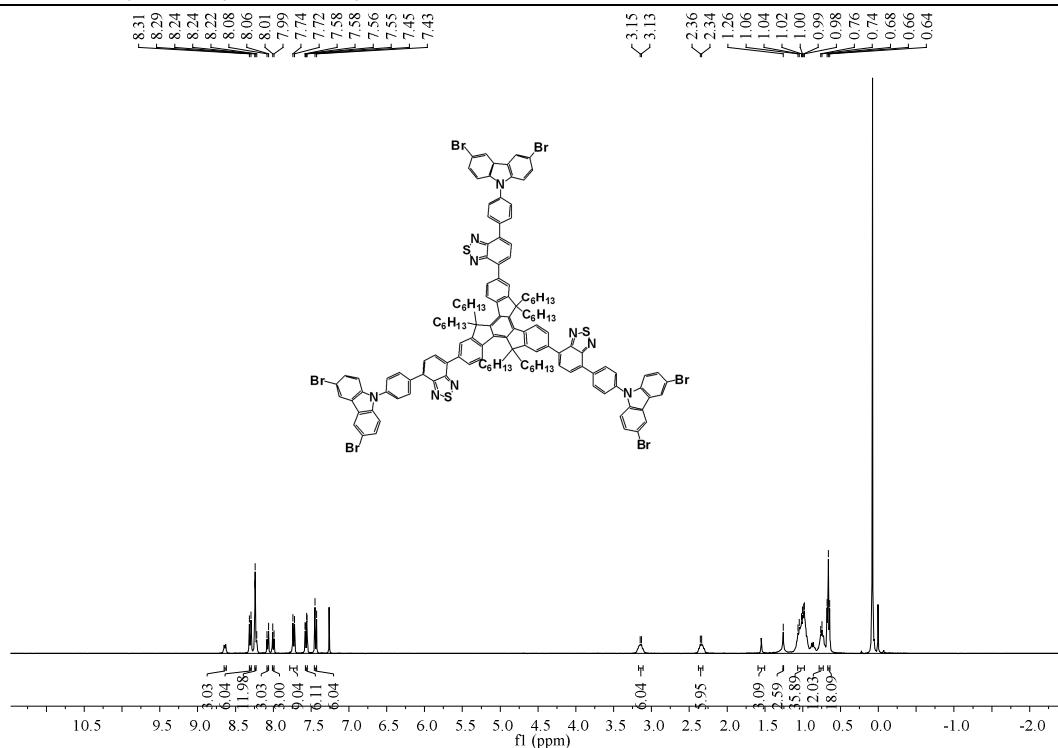


Figure S10. <sup>1</sup>H NMR spectra of TRCZ6Br in CDCl<sub>3</sub>.

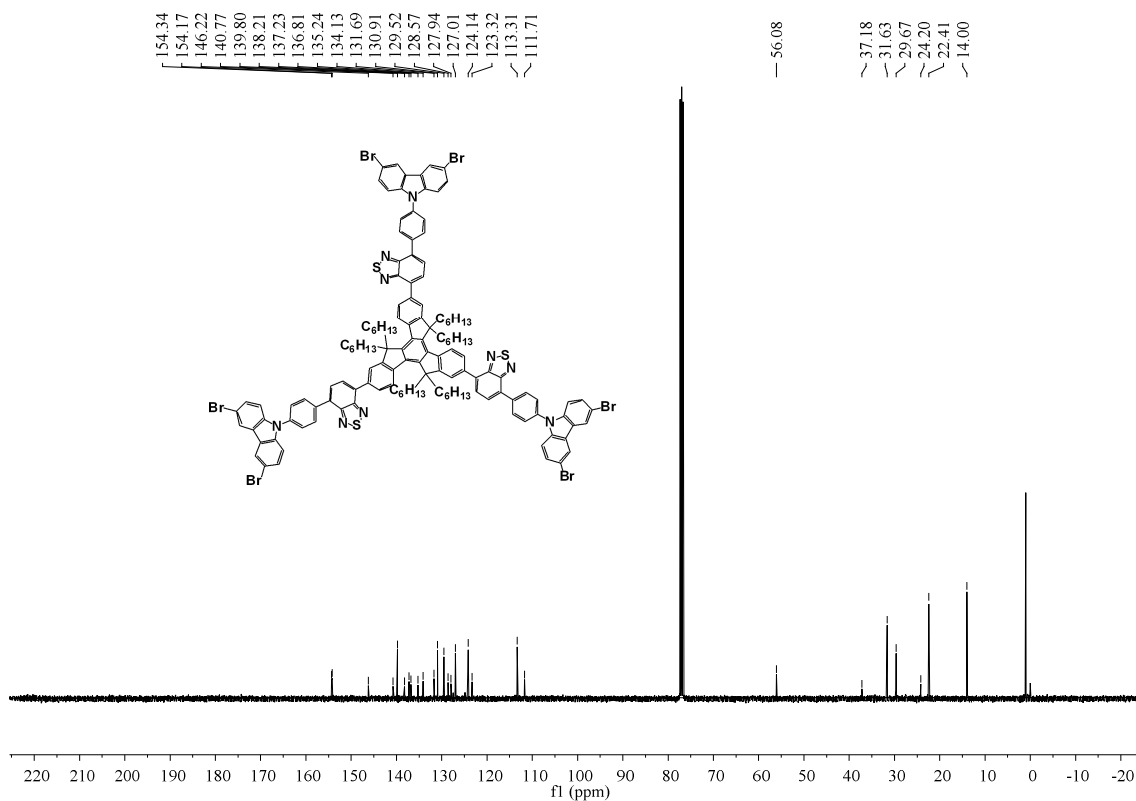
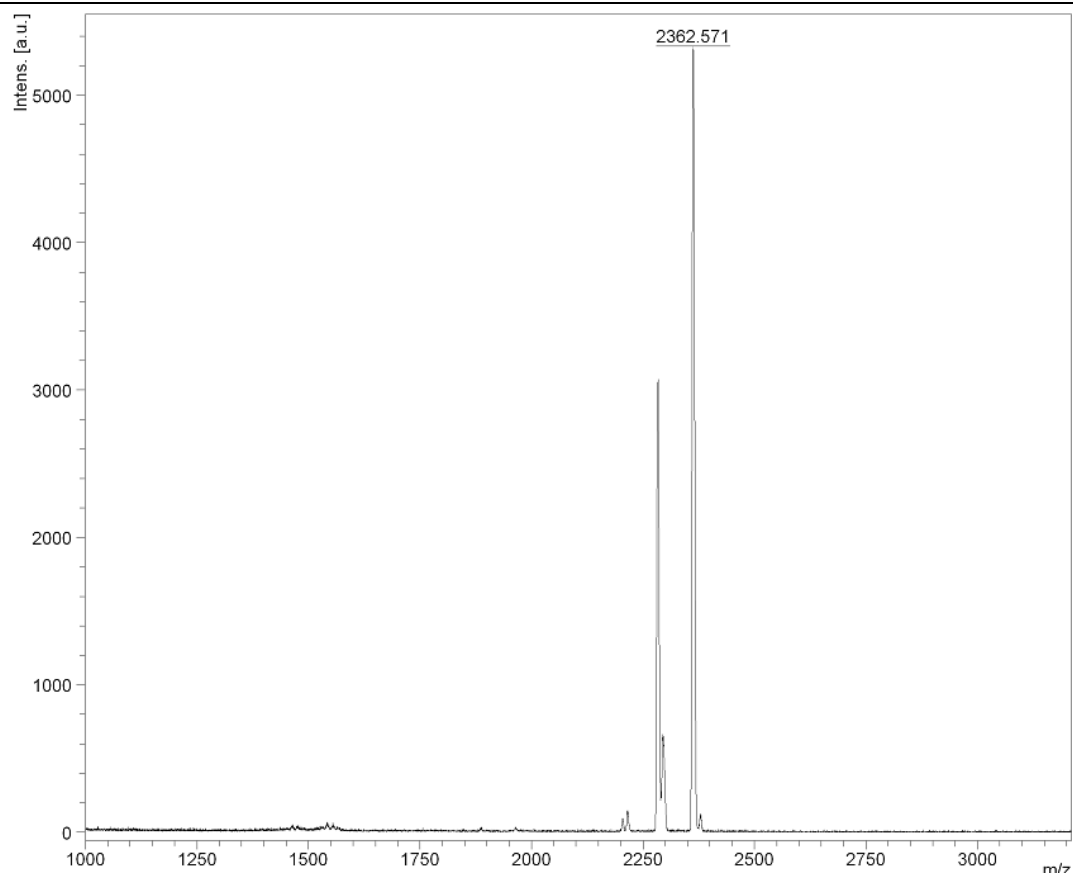
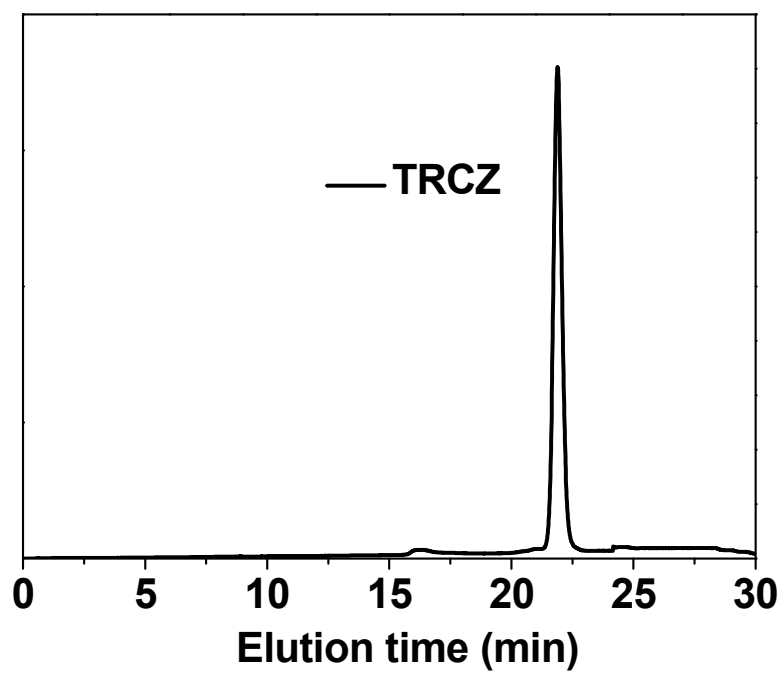


Figure S11. <sup>13</sup>C NMR spectra of TRCZ6Br in CDCl<sub>3</sub>.



**Figure S12.** MALDI-TOF mass spectra of **TRCZ6Br**.



**Figure S13.** GPC elution curve for **TRCZ**



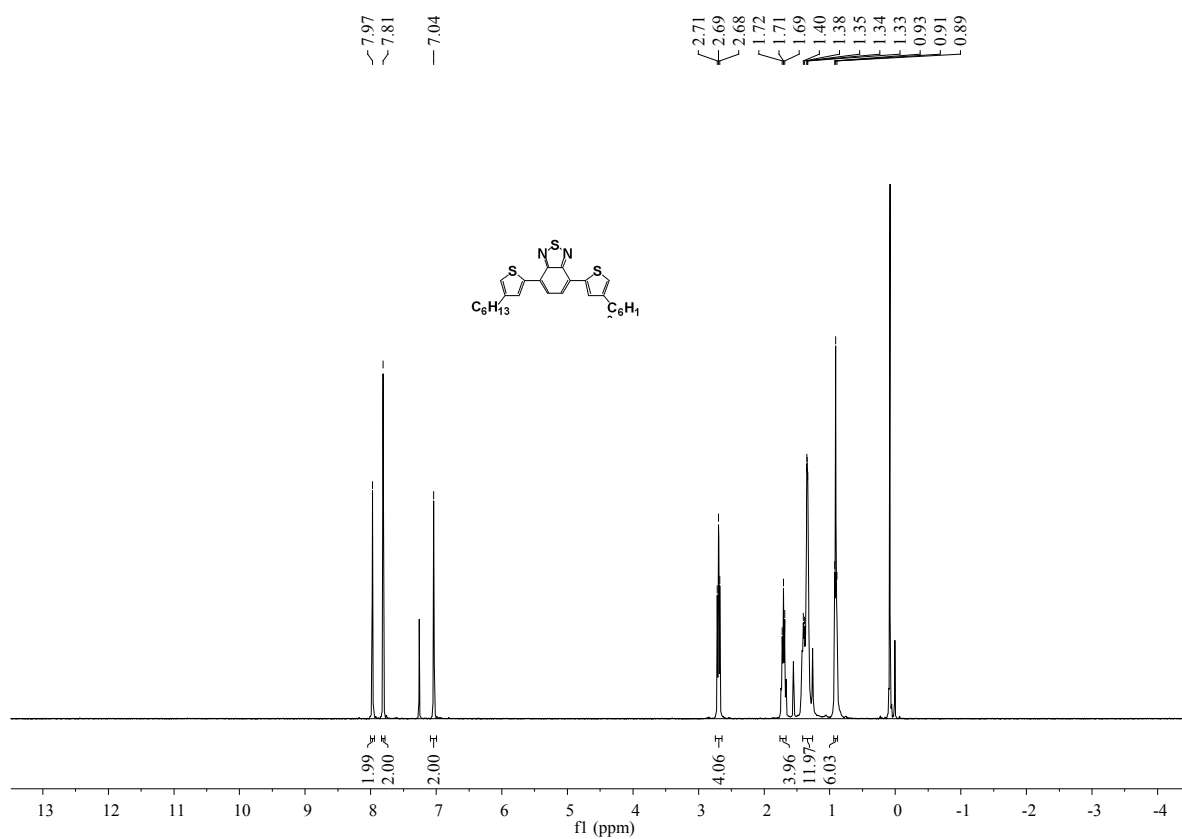


Figure S14.  $^1\text{H}$  NMR spectra of BBT in  $\text{CDCl}_3$ .

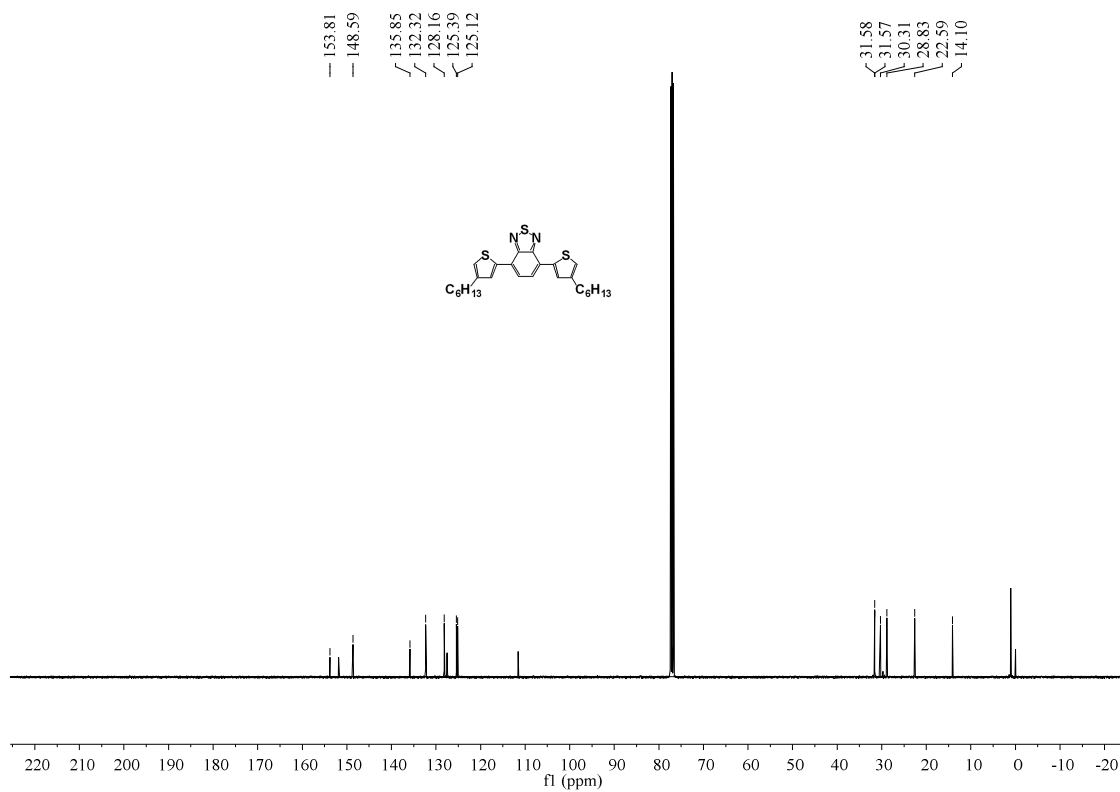


Figure S15.  $^{13}\text{C}$  NMR spectra of BBT in  $\text{CDCl}_3$ .

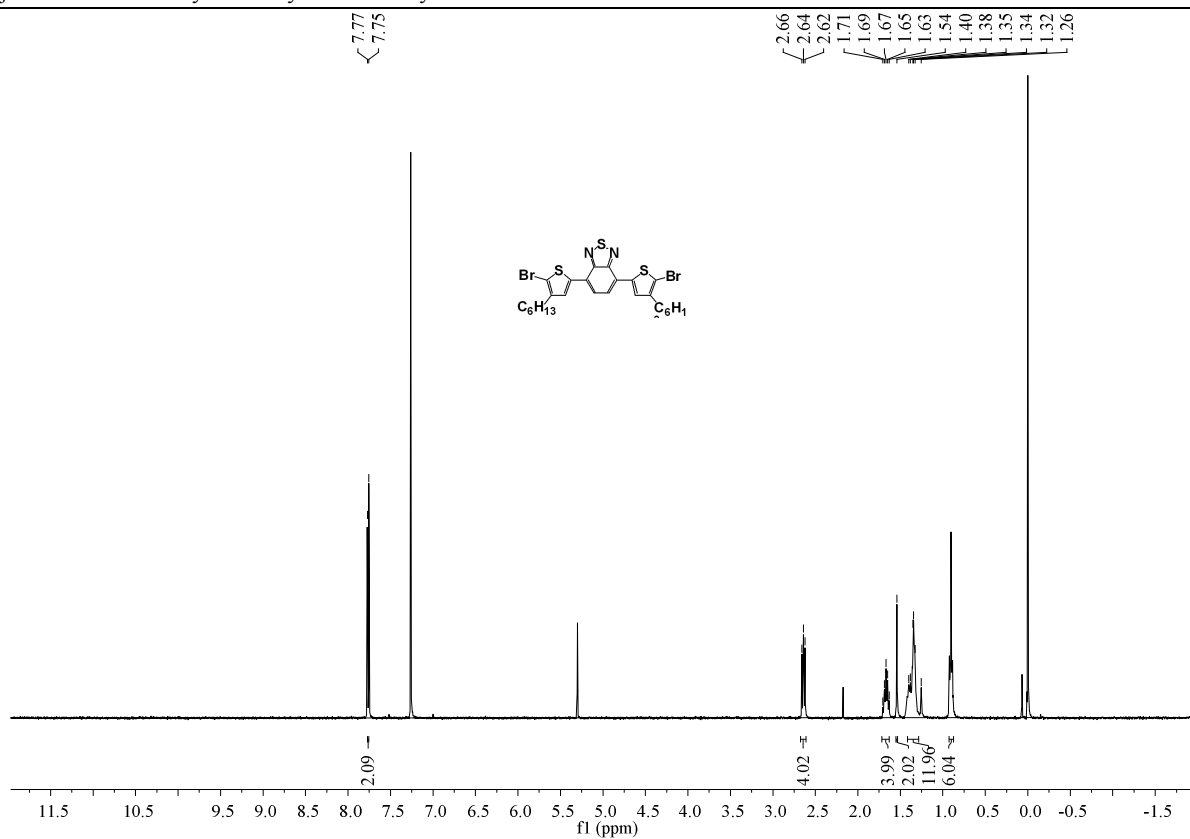


Figure S16.  $^1\text{H}$  NMR spectra of BBT2Br in  $\text{CDCl}_3$ .

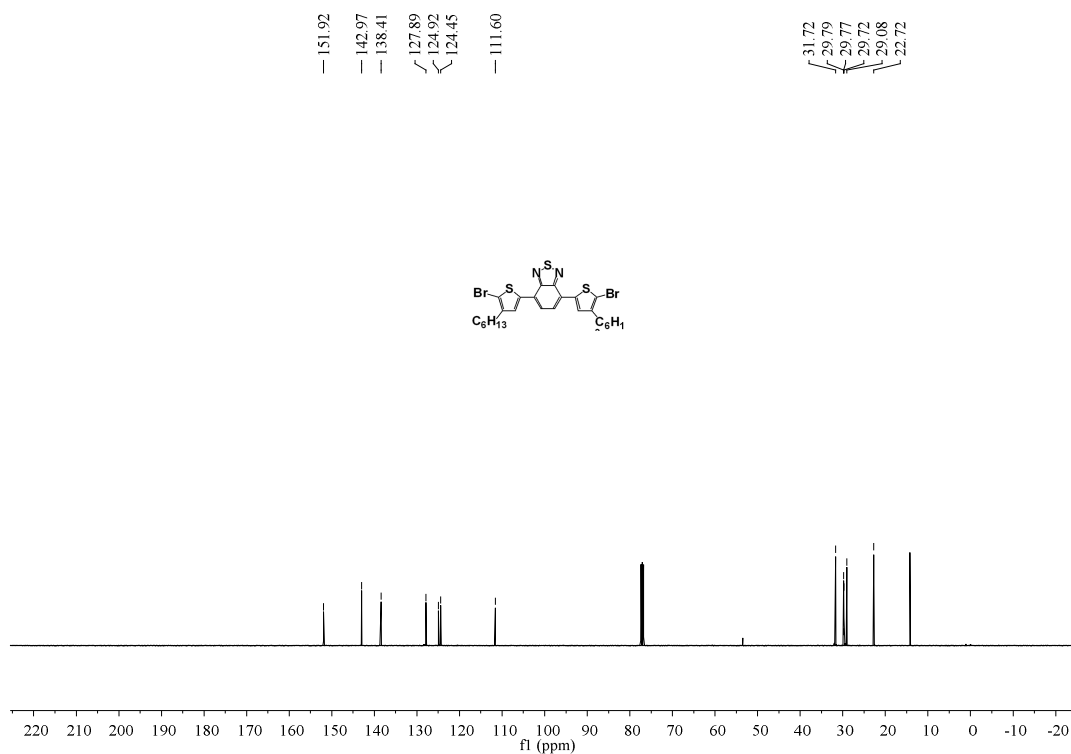
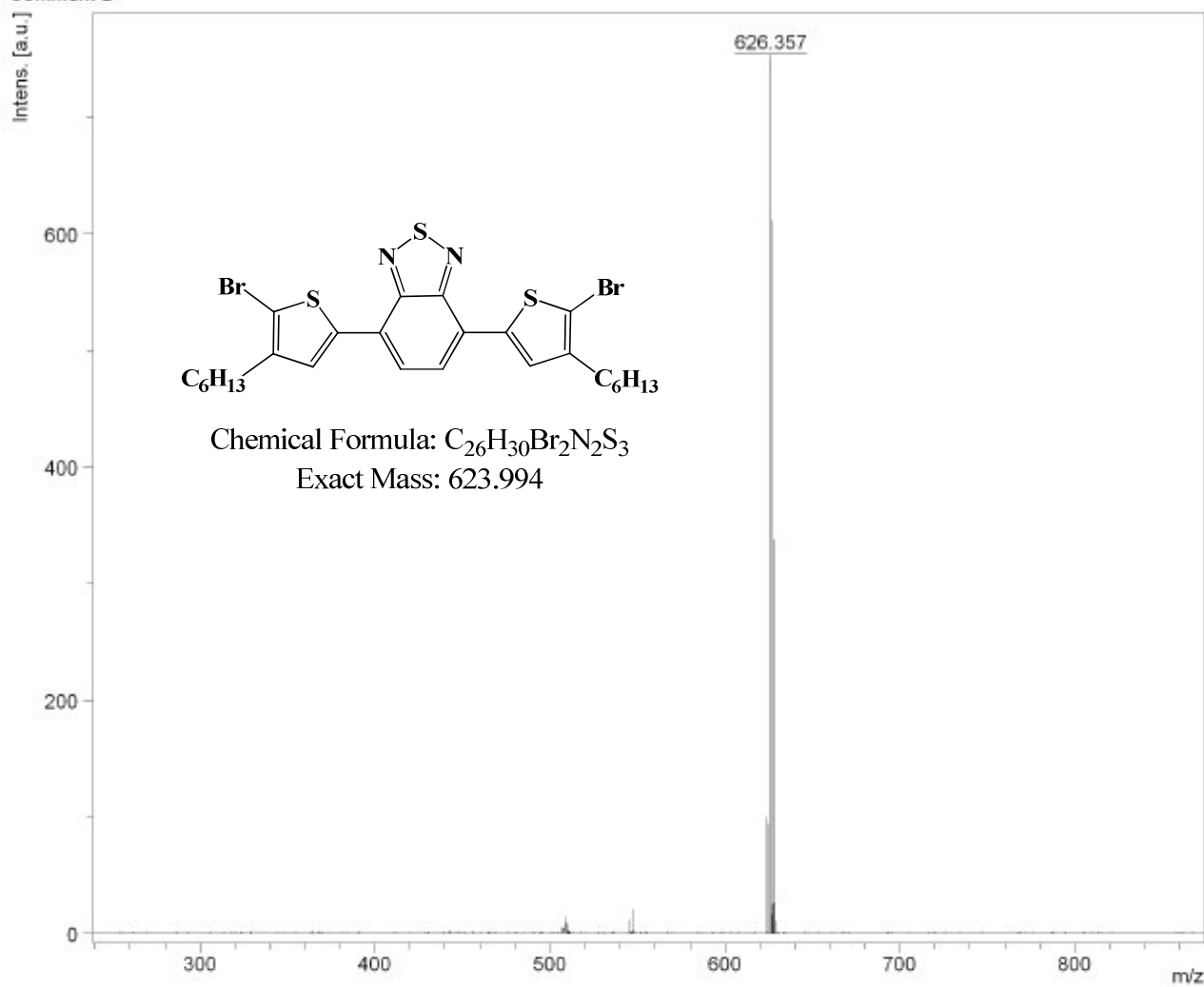


Figure S17.  $^{13}\text{C}$  NMR spectra of BBT2Br in  $\text{CDCl}_3$ .

Comment 2



**Figure S18.** MALDI-TOF mass spectra of **BBT2Br**.