Supporting Information

A fast-response electrochromic device based on a composite gel film comprising triphenylamine derivatives and WO_3

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1. Nuclear magnetic resonance spectrums of TPB, TPB-2CHO and TPB-PSSO

(1) ^{1}H NMR and ^{13}C NMR spectra of TPB

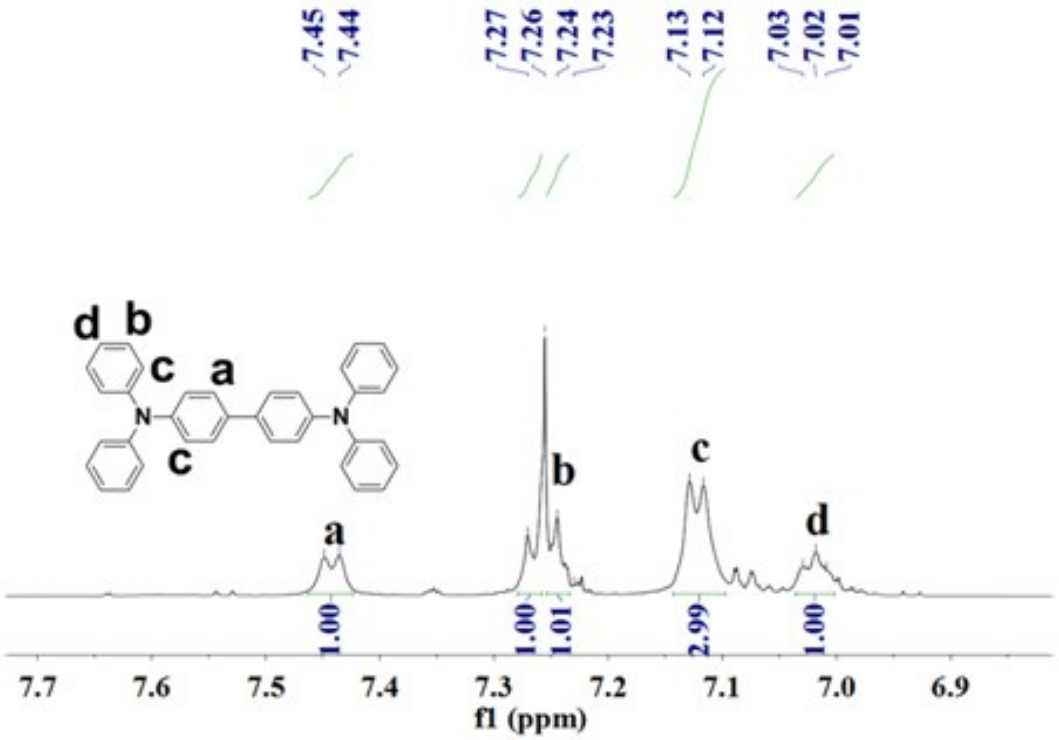

Fig. S1. ^{1}H NMR spectrum of TPB.

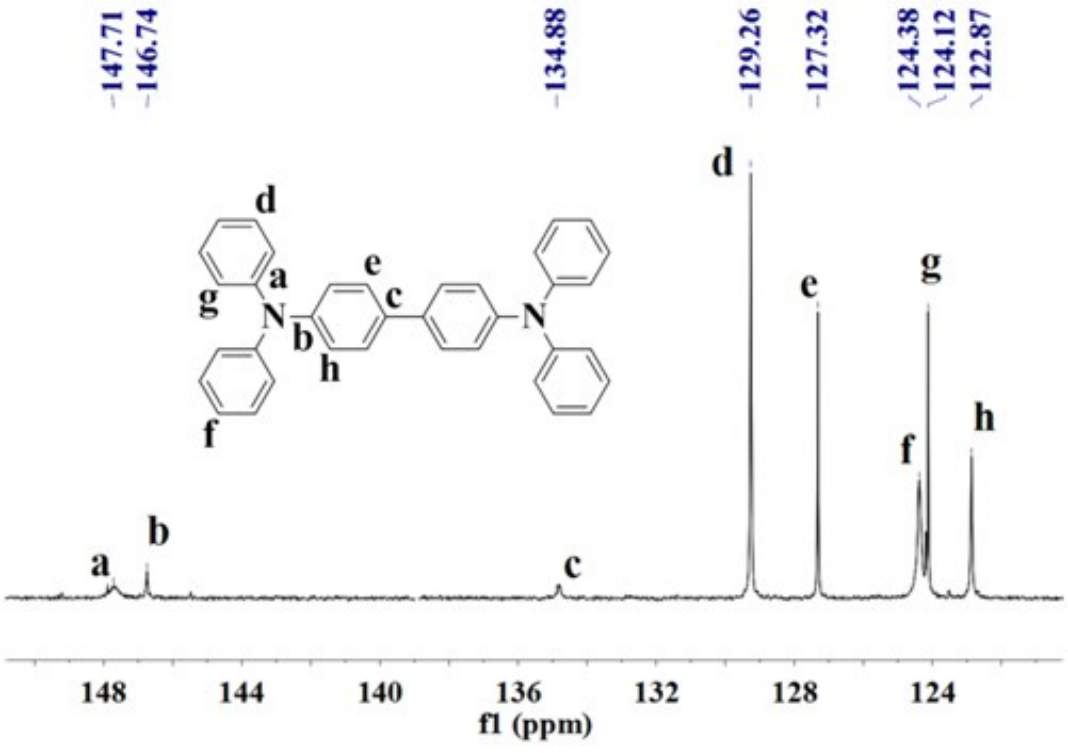

Fig. S2. ^{13}C NMR spectrum of TPB.

(2) ^{1}H NMR and ^{13}C NMR spectra of TPB-2CHO

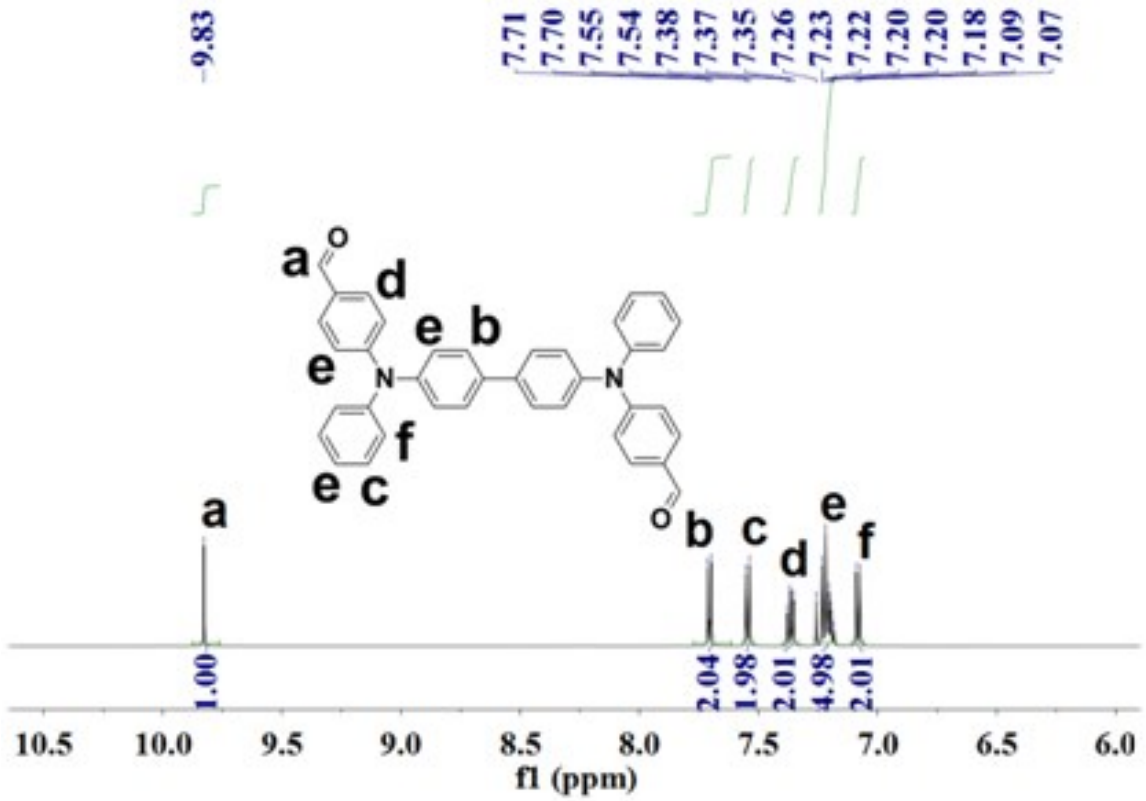

Fig. S3. ^{1}H NMR spectrum of TPB-2CHO.

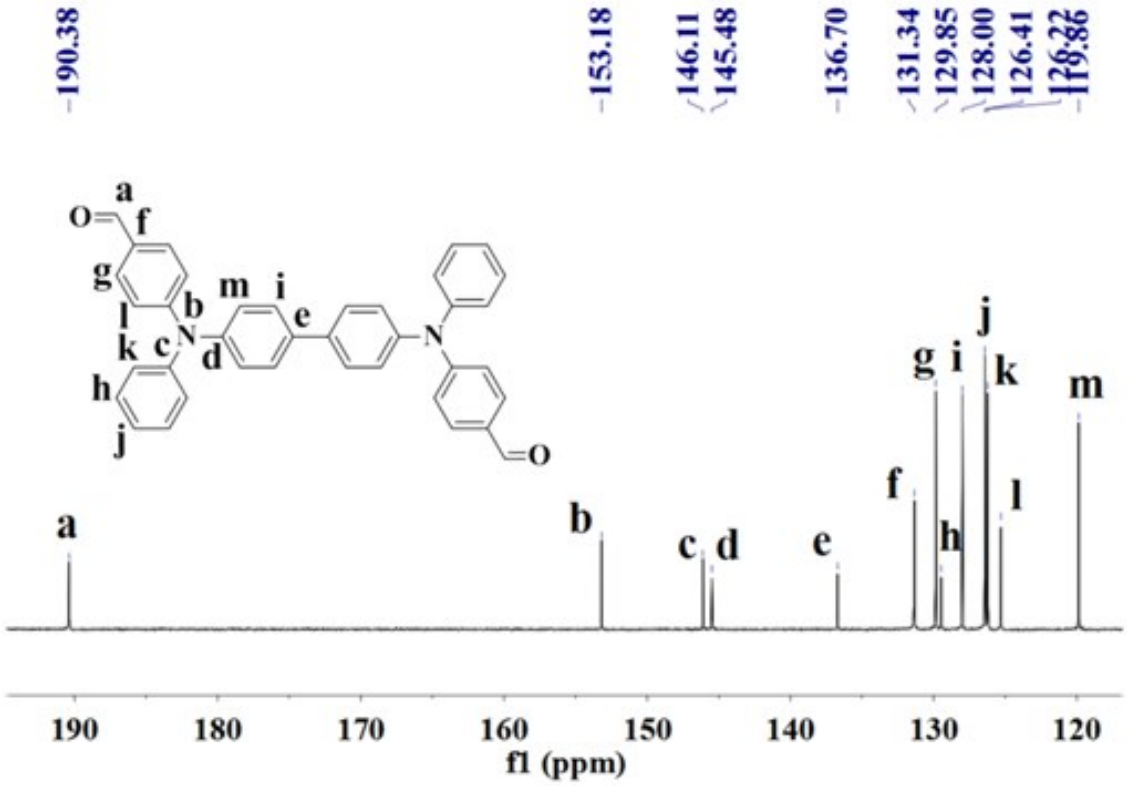

Fig. S4. ^{13}C NMR spectrum of TPB-2CHO.

(3) ^{1}H NMR and ^{13}C NMR spectra of TPB-PSSO

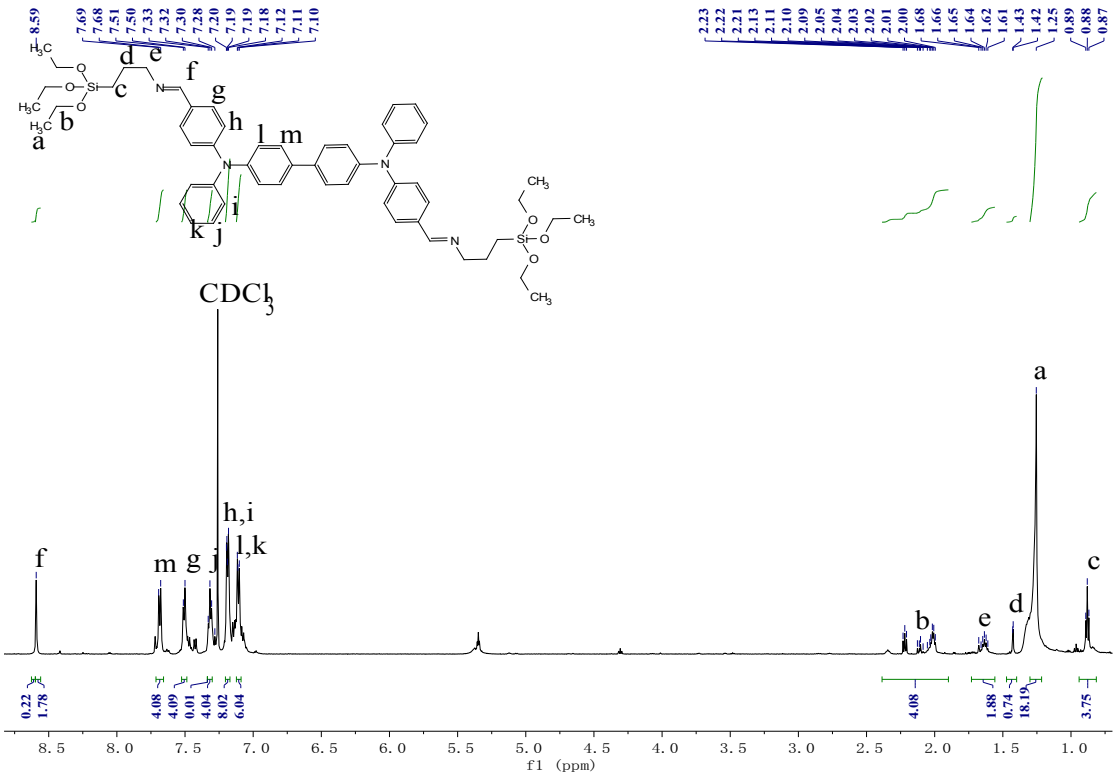

Fig. S5. ^{1}H NMR spectrum of TPB-PSSO.

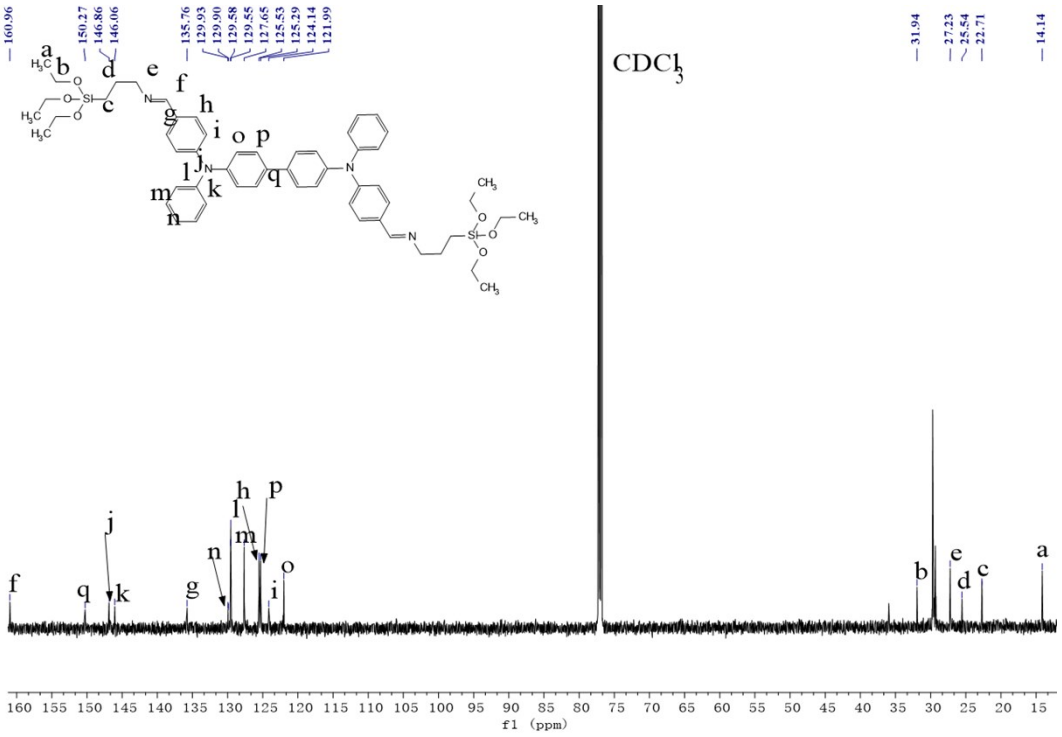

Fig. S6. ^{13}C NMR spectrum of TPB-PSSO.

2. Fourier transform infrared spectra of TPB-PSSO

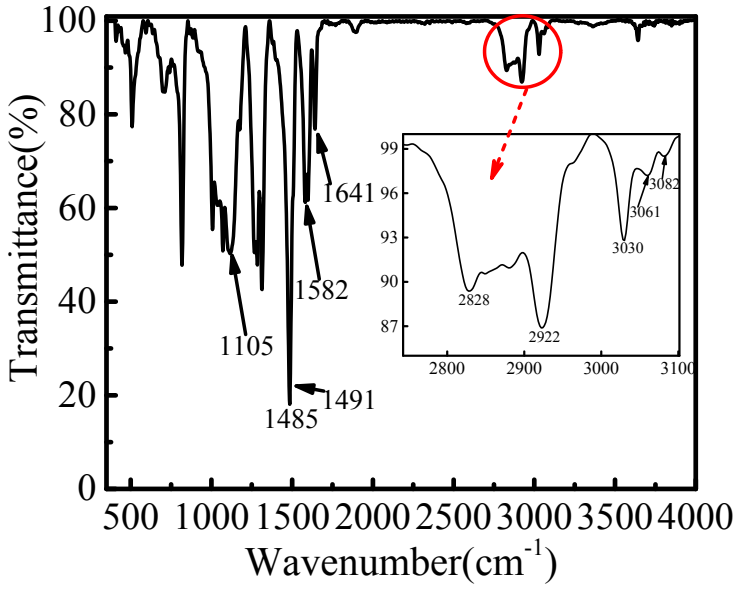

Fig. S7. FTIR spectra of TPB-PSSO.

3. Thermogravimetric analysis curve of TPB-PSSO

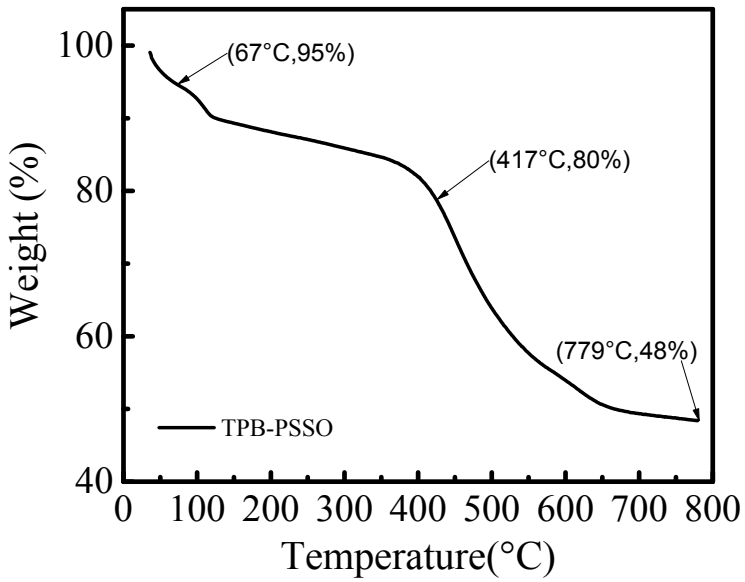

Fig. S8. TGA curse of TPB-PSSO from room temperature to 800 °C.

4. Optoelectrochemical properties of TPB-PSSO

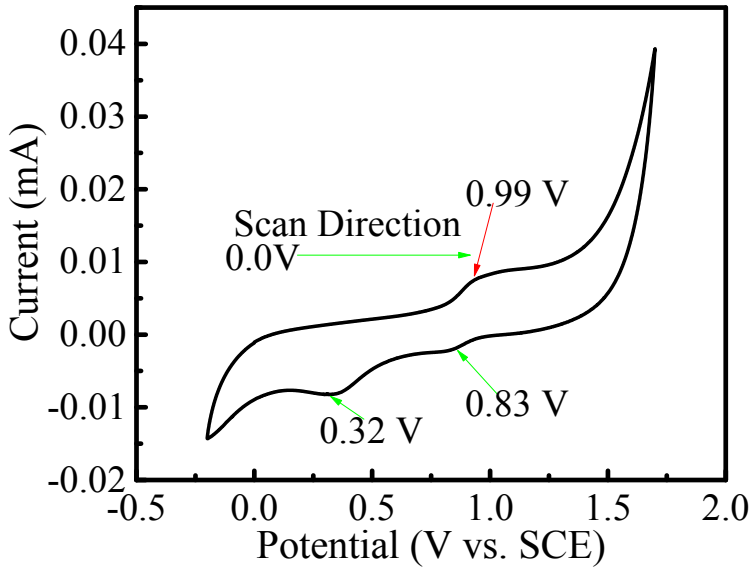

Fig. S9. Cyclic voltammograms of TPB-PSSO in PC solution containing 0.1 M $LiClO_4$ at a scan rate of 50 mV/s.

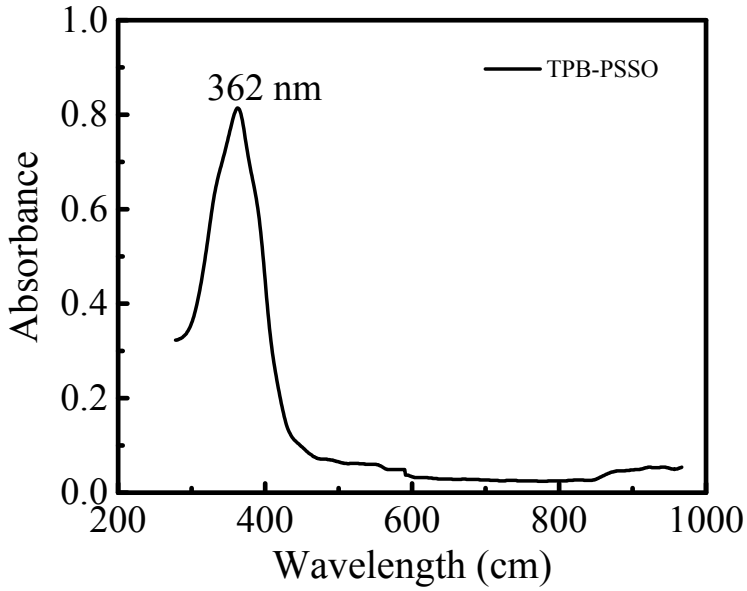

Fig. S9. Electronic absorption spectra of TPB-PSSO in PC solutions