Supplementary information

Through conformation change and charge trapping to achieve binary/ternary rewritable memory performance of carbazole-based organic molecules

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Content

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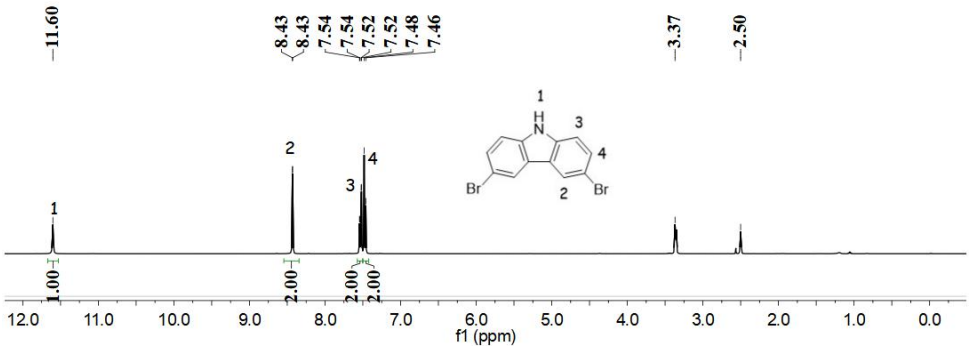

Fig. S1 ^{1}H NMR spectrum of **Cz-2Br** in DMSO-d_6.

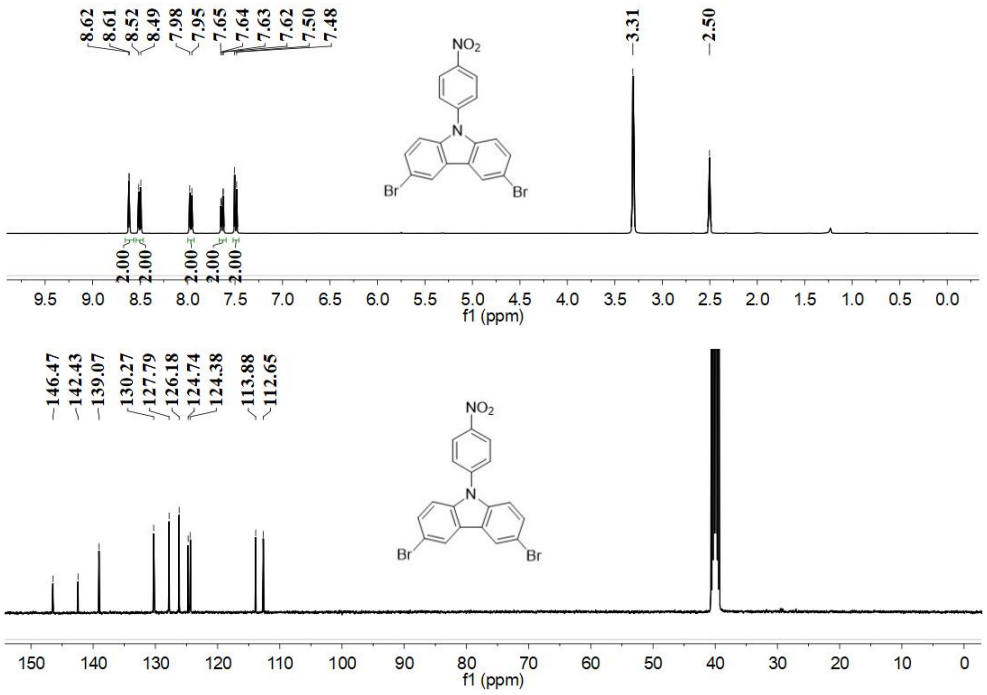

Fig. S2 ^{1}H NMR and ^{13}C NMR spectra of **Cz-2Br-NO$_2$** in DMSO-d_6.

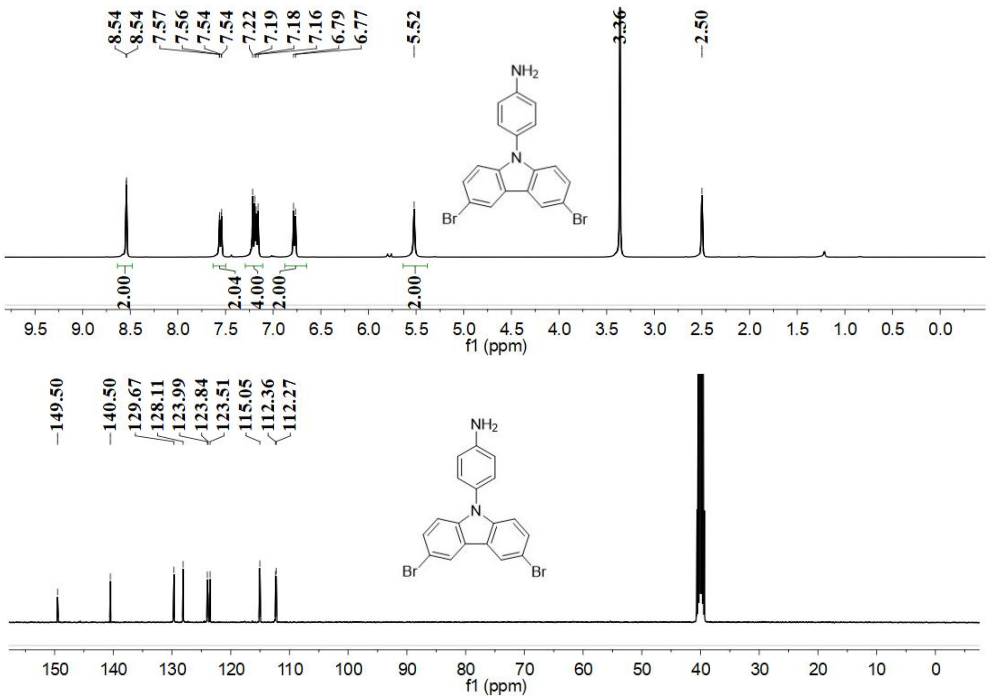

Fig. S3 ^{1}H NMR and ^{13}C NMR spectra of **Cz-2Br-NH$_2$** in DMSO-d_6.

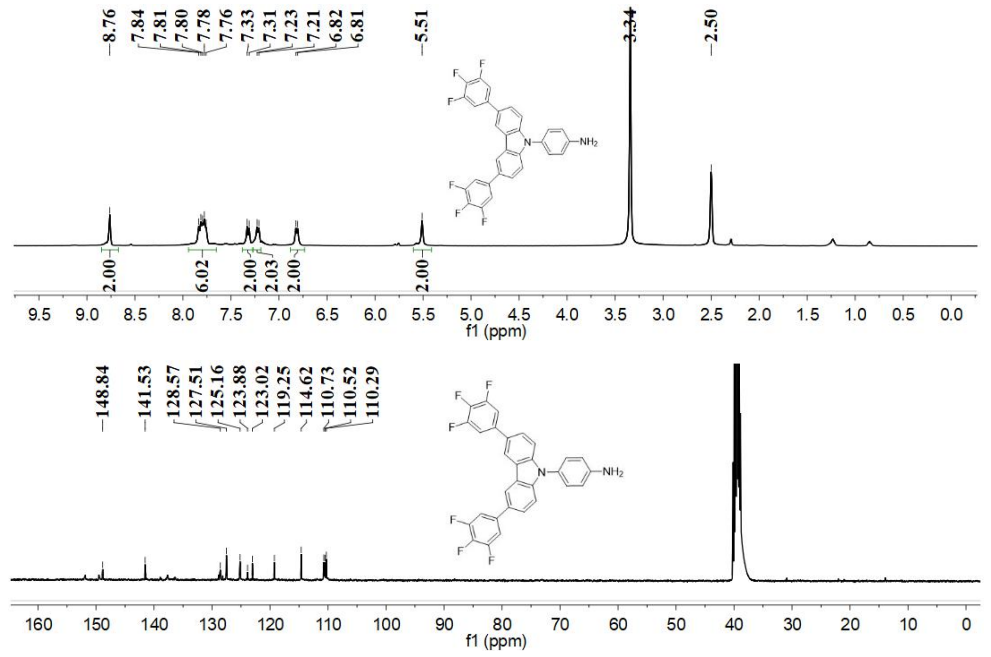

Fig. S4 ^{1}H NMR and ^{13}C NMR spectra of **Cz-2Ph3F** in DMSO-d_6.

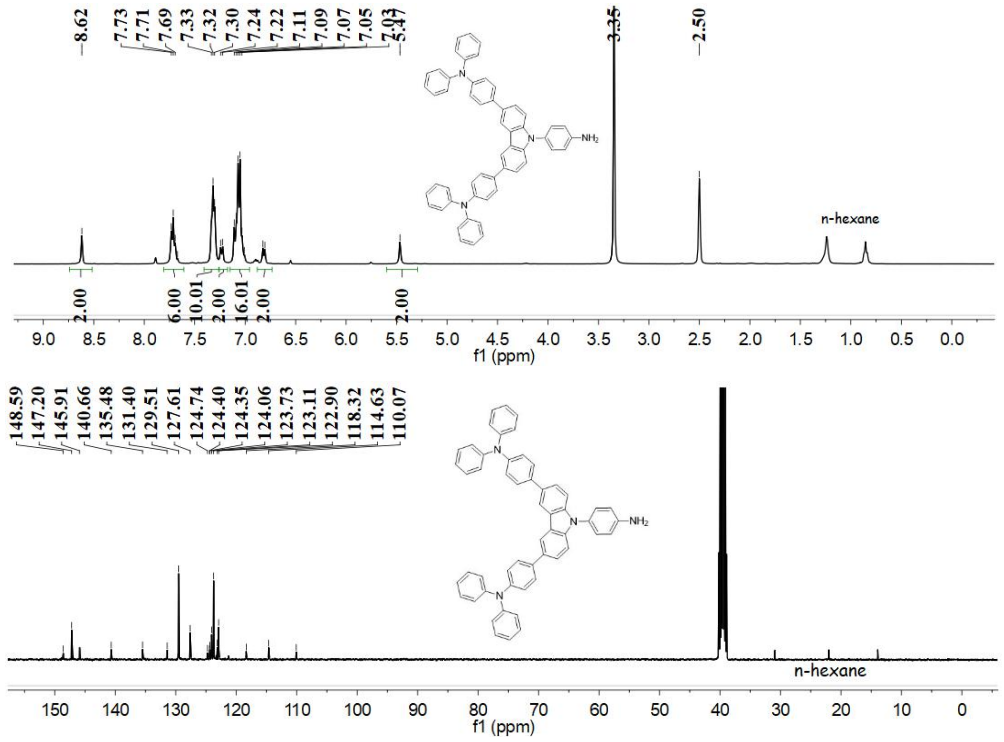

Fig. S5 ^{1}H NMR and ^{13}C NMR spectra of **Cz-2TPA** in DMSO-d_6.

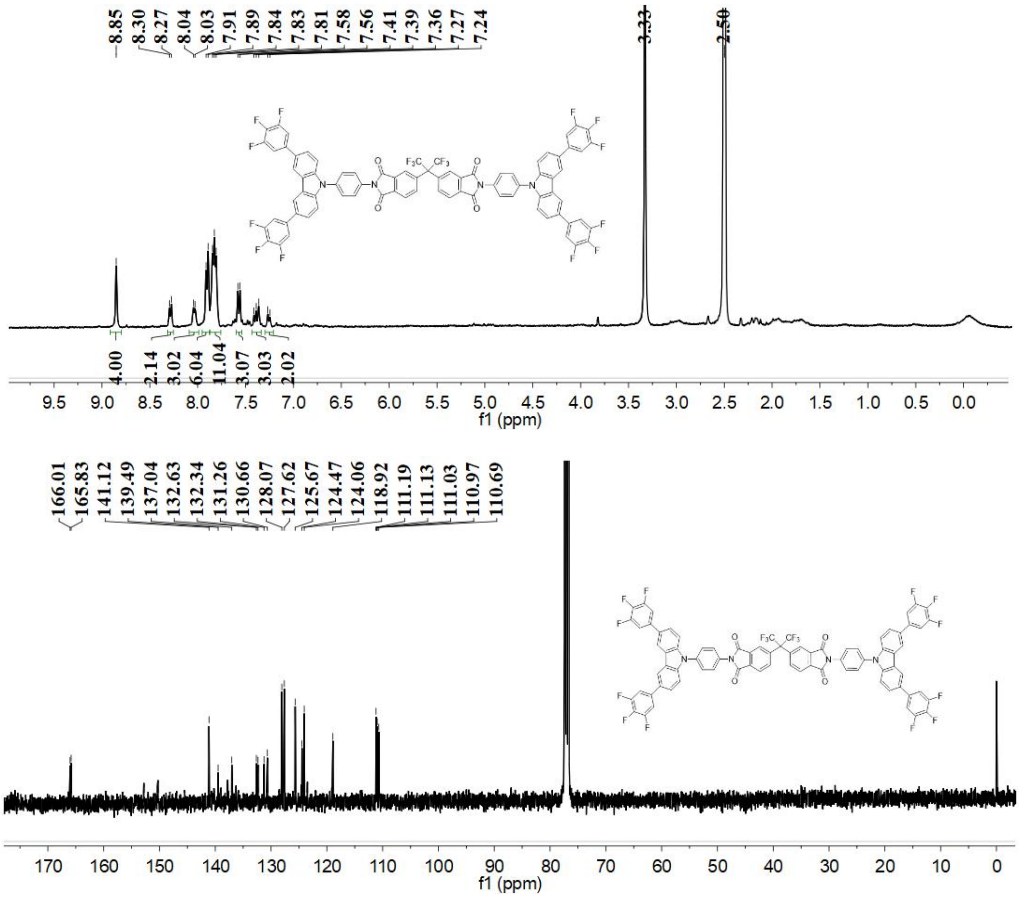

Fig. S6 ^{1}H NMR (DMSO-d_6) and ^{13}C NMR ($CDCl_3$) spectra of **Cz-2Ph3F 6FDA**.

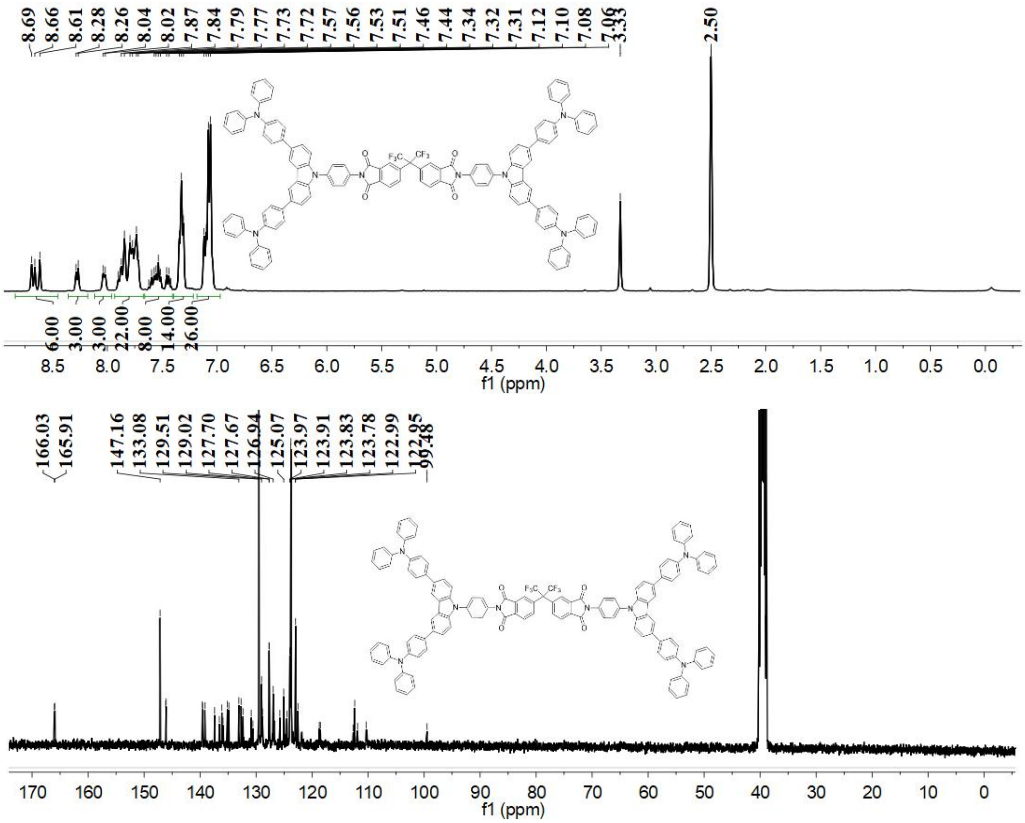

Fig. S7 ^{1}H NMR and ^{13}C NMR spectra of **Cz-2TPA 6FDA** in DMSO-d_6.

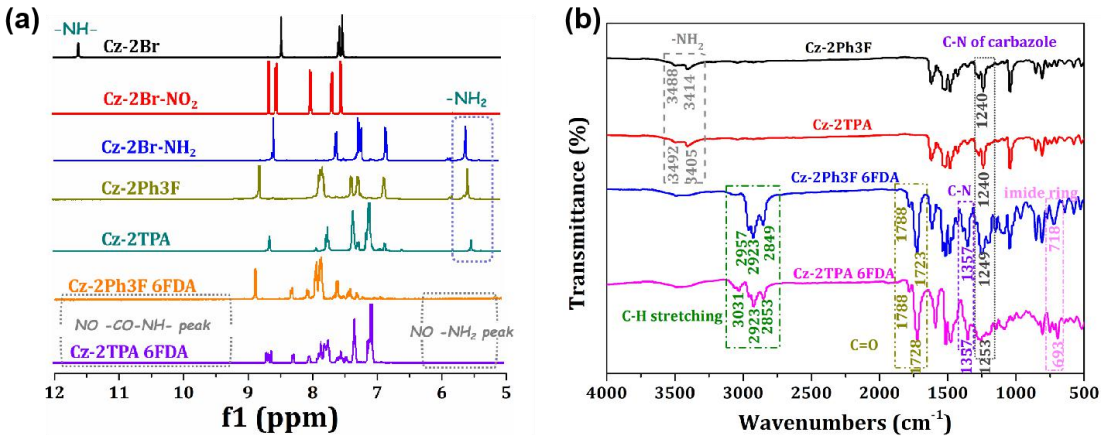

Fig. S8 (a) ^{1}H NMR spectra of organic compounds in DMSO-d_6. (b) FT-IR spectra.

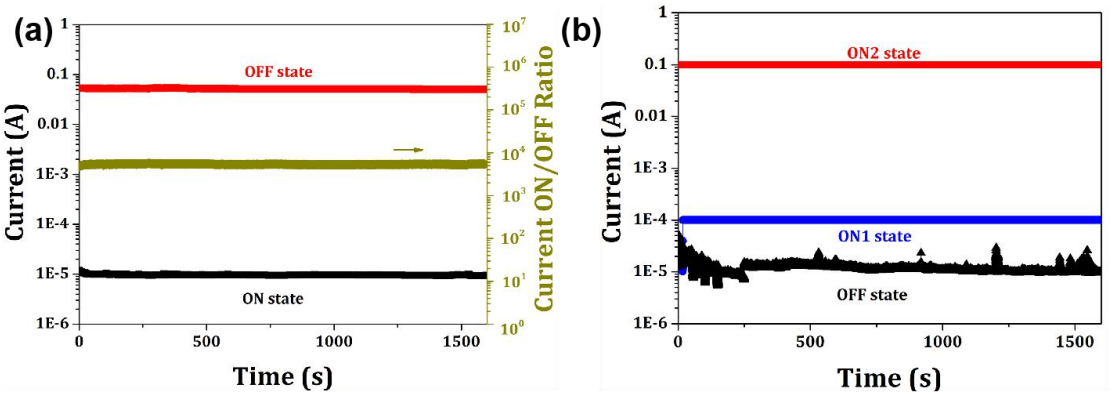

Fig. S9 (a) Effect of the operation time on the current of the ITO/**Cz-2Ph3F 6FDA**/Al device on the ON and OFF states tested at 1 V under ambient condition. (b) Effect of the operation time on the current of the ITO/**Cz-2TPA 6FDA**/Al device on the ON2, ON1, and OFF states tested at 1 V under ambient condition.

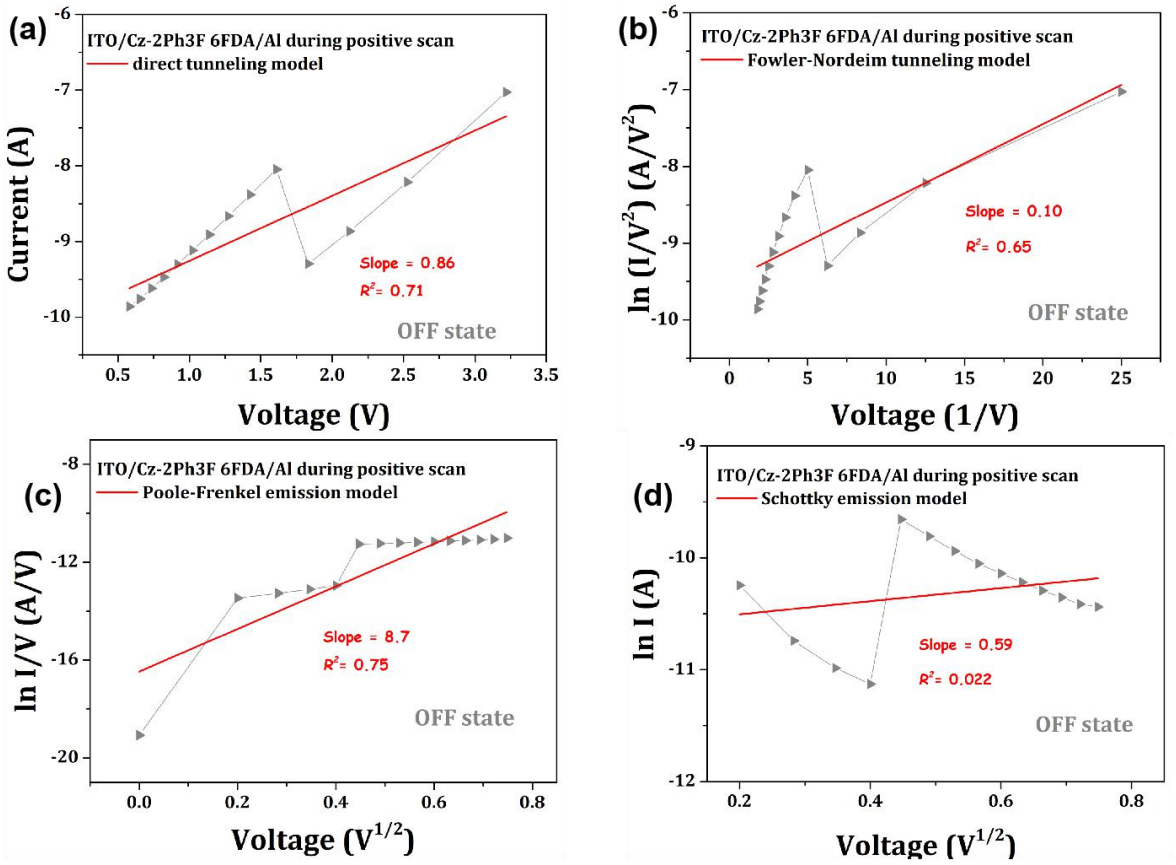

Fig. S10 Linear fitting models and corresponding the OFF state curves of ITO/**Cz-2Ph3F 6FDA**/Al

during positive scan.

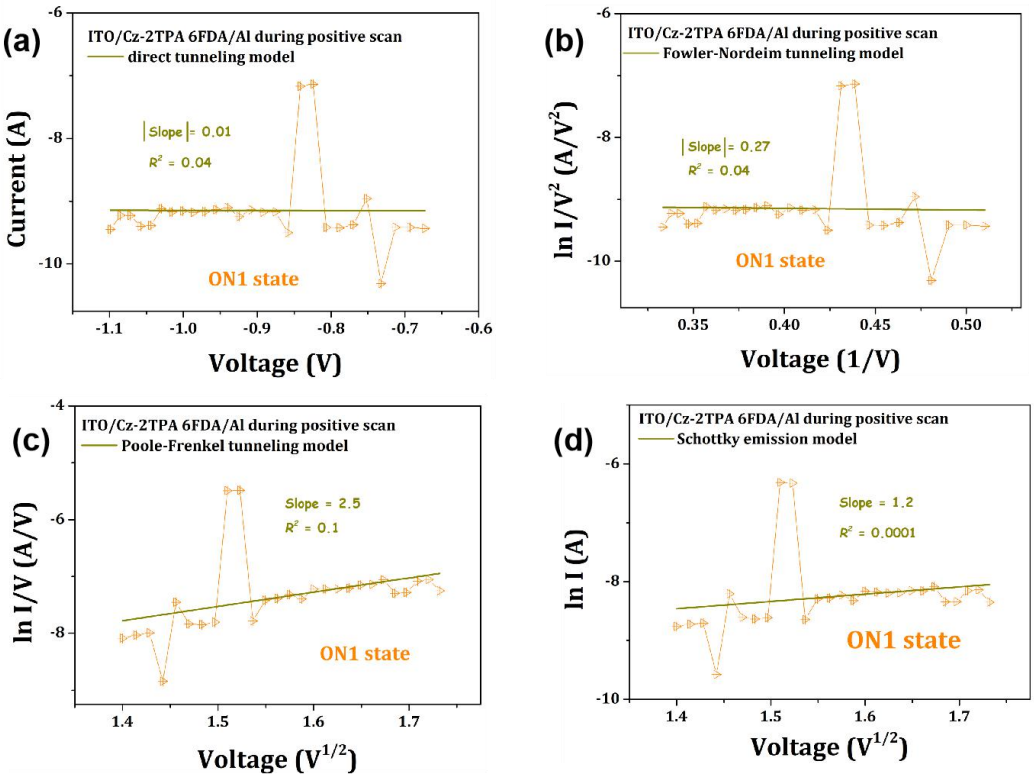

Fig. S11 Linear fitting models and corresponding the ON1 state curves of ITO/**Cz-2TPA 6FDA**/Al during positive scan.

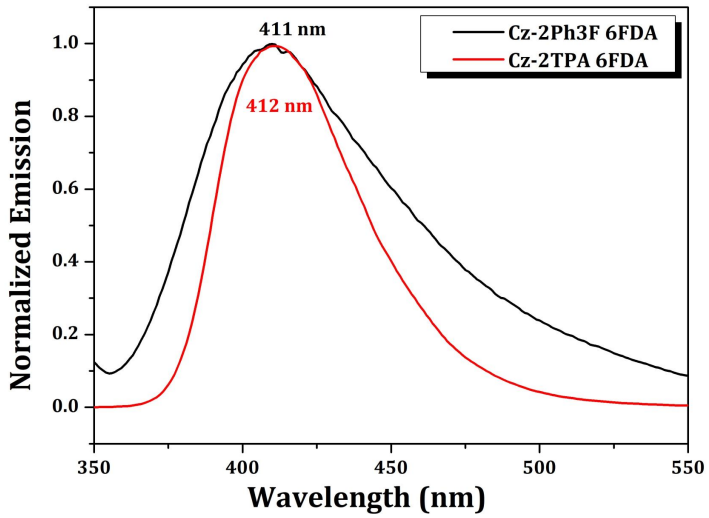

Fig. S12 The normalized fluorescence emission spectra of **Cz-2Ph3F 6FDA** and **Cz-2TPA 6FDA** in CH2Cl2.