

Supporting Information

Adjustment of conformation change and charge trapping in ion-doped polymers to achieve ternary memory performance

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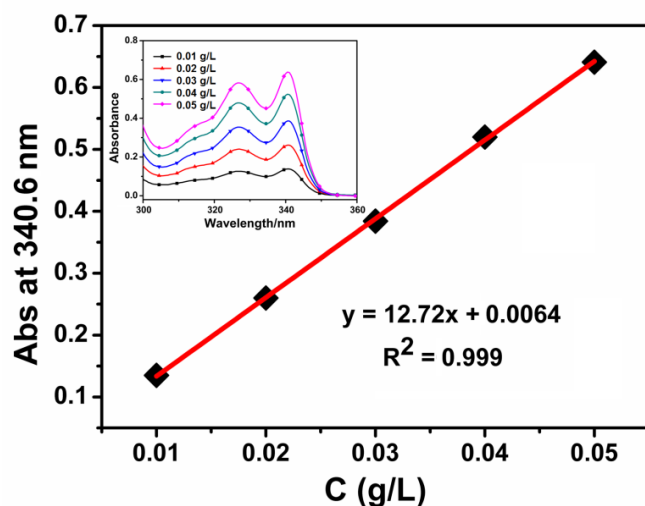


Fig. S1 The linear equation between the absorption intensity (at 340.6 nm) and the concentration of BCz ; the inset is the UV-vis spectra of BCz in DMF solution with different concentrations.

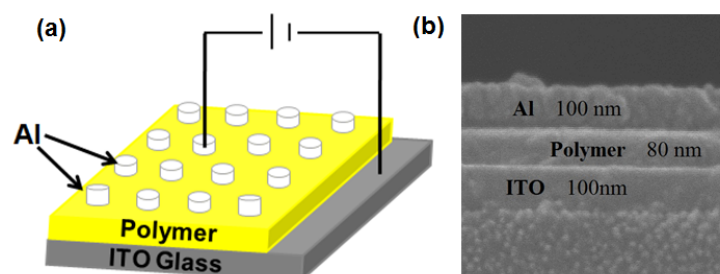


Fig. S2 (a) Schematic diagram of the Al/polymer/ITO device; (b) SEM image of the cross section of Al /Polymer/ ITO device.

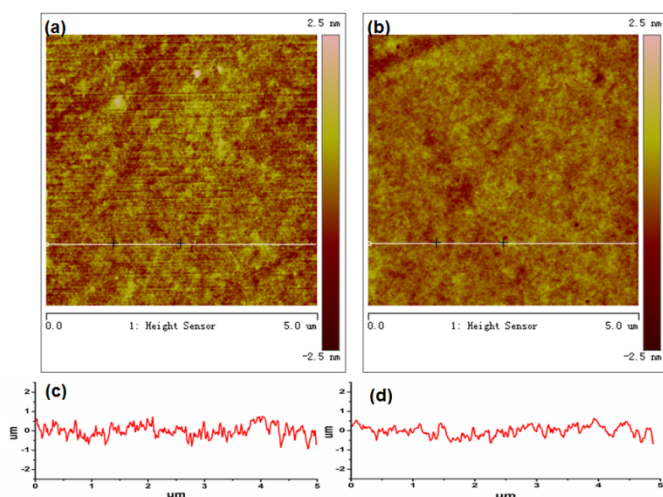


Fig. S3 (a, b) The tapping-mode (5 μm × 5 μm) AFM topography image of P4VPCz5 and P4VPCz8 on ITO substrates; (c, d) Roughness of the (a, b) thin film.

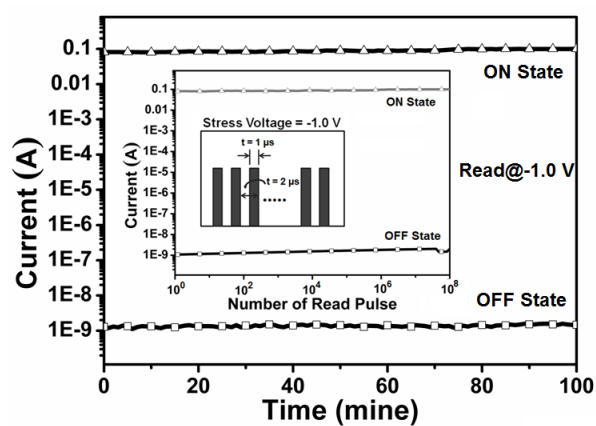


Fig. S4 Stability test of the ITO/P4VPCz2/Al devices. (a) Retention time of the OFF and ON1 states under a continuous readout voltage (-1.0 V); the inset shows Stimulus effect of a read pulse of -1.0 V on the three distinct states.

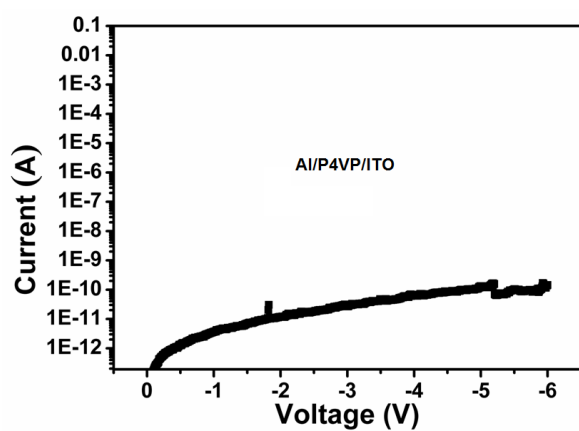


Fig. S5 I-V characteristics of ITO/P4VP/Al.

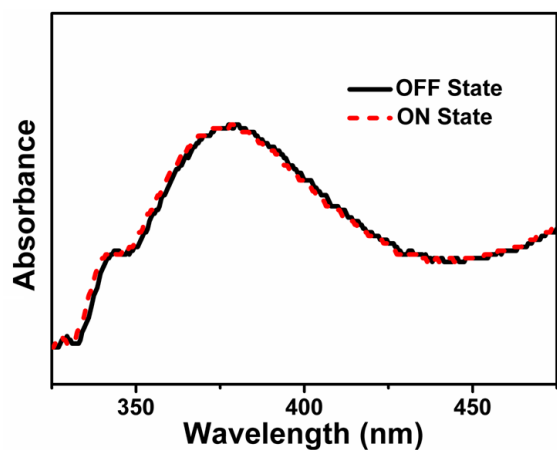


Fig. S6 UV-visible spectra of the P4VPCz2 thin films in the OFF and ON state on an ITO substrate; the ON state was programmed by using a removable liquid Hg droplet as the top electrode.

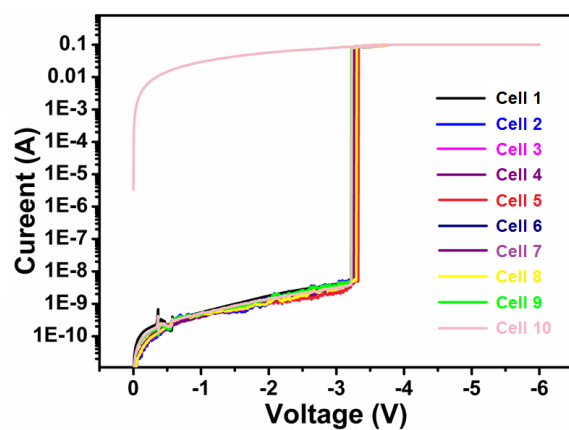


Fig. S7 *I-V* characteristics of ITO/P4VPCz2/Al.

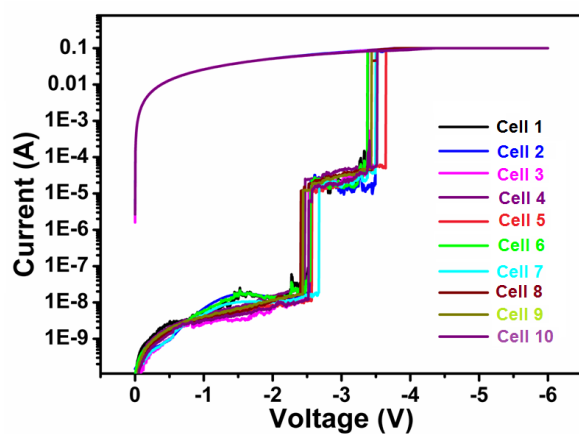


Fig. S8 *I-V* characteristics of ITO/P4VPCz5/Al.

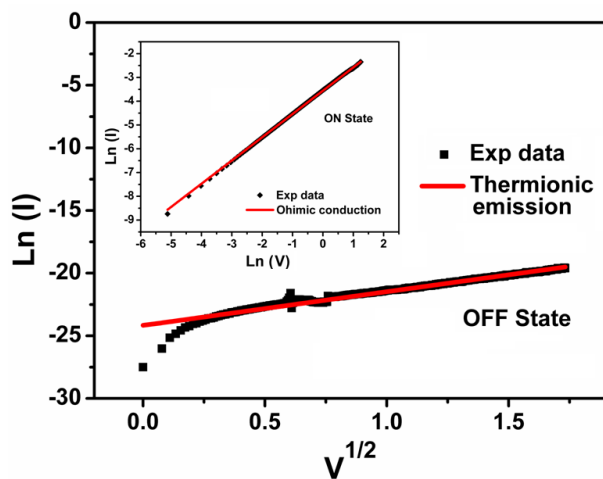


Fig. S9 Analysis on fitted I-V characteristics of the ITO/P4VPCz2/Al device in the OFF state and ON state.

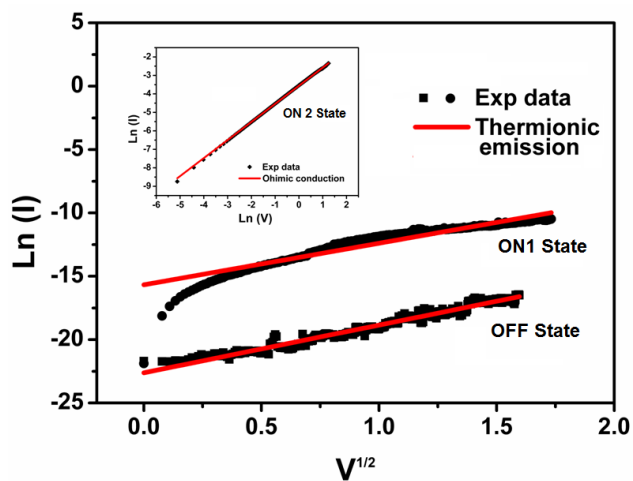


Fig. S10 Analysis on fitted I-V characteristics of the ITO/P4VPCz5/Al device in the OFF, ON1 and ON2 state.