Electronic Supplementary Information

Flexible polymer memory devices derived from

triphenylamine-pyrene containing donor-acceptor polyimides

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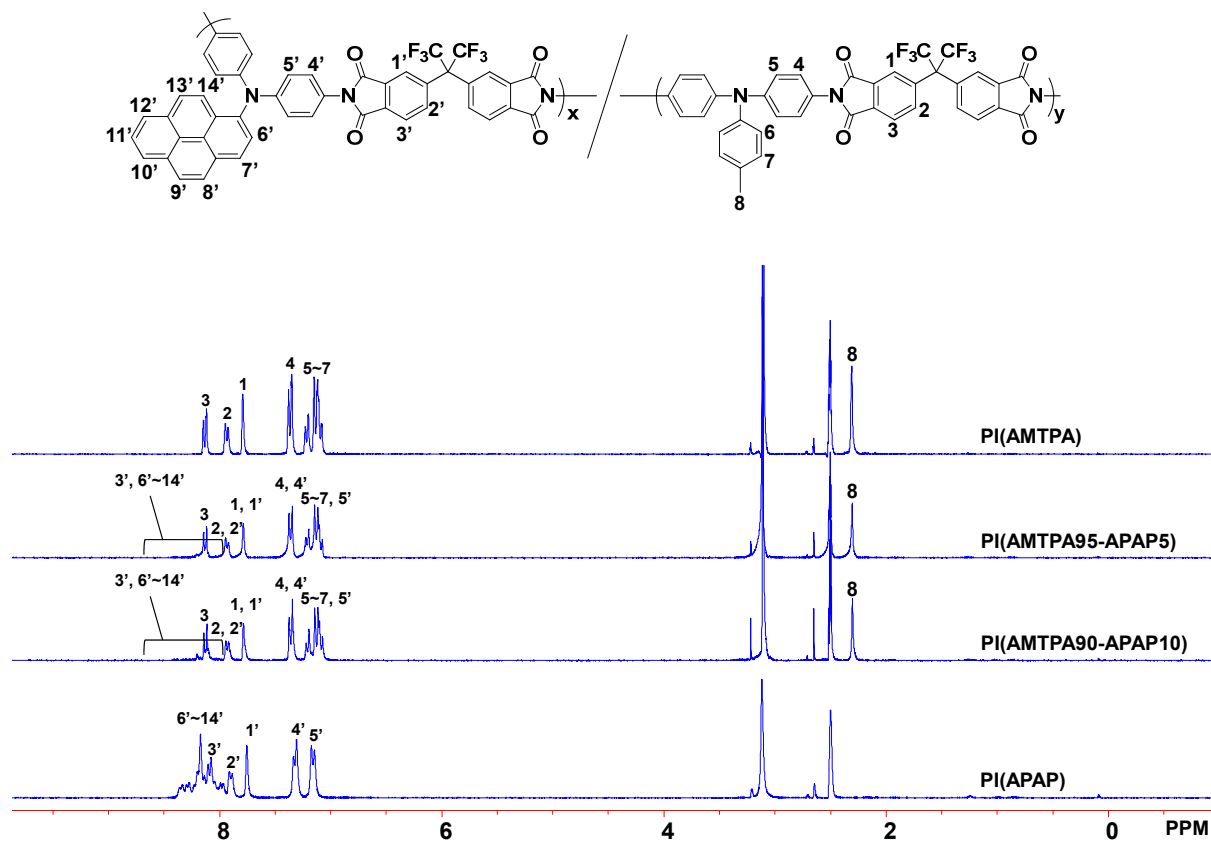
‡ The first two authors contributed equally to this paper
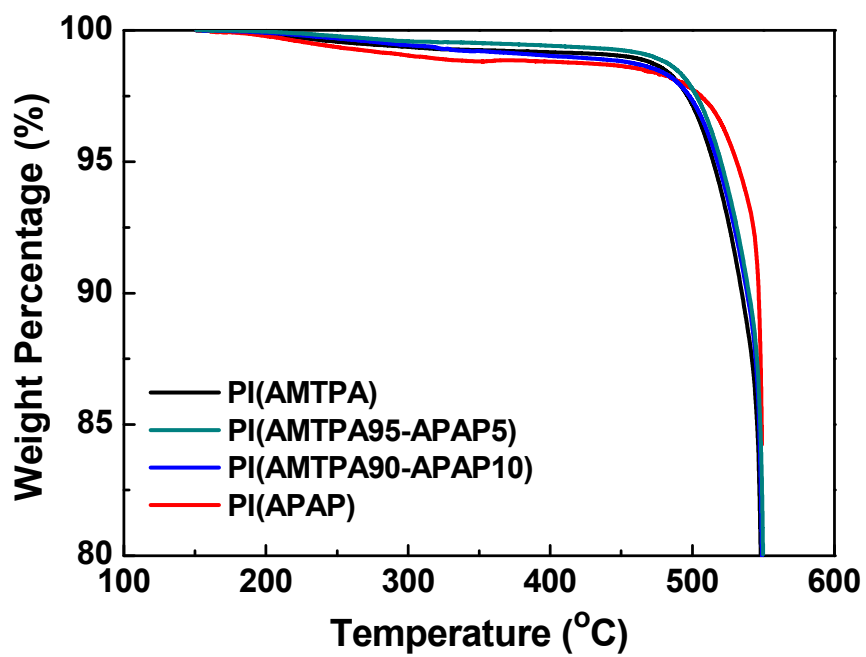
Fig. S1 ^{1}H NMR spectra of synthesized coPIs.
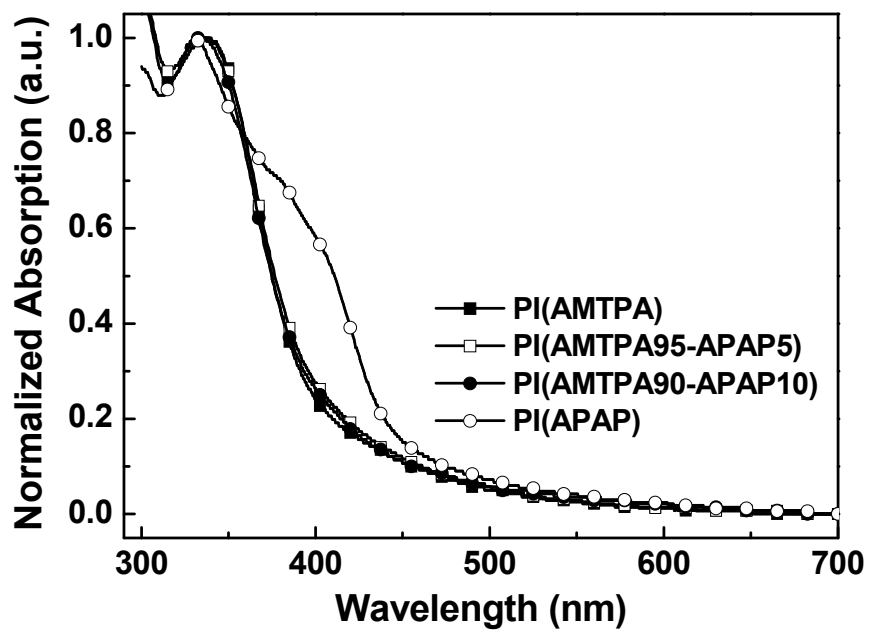
Fig. S2 TGA curves of synthesized coPIs.

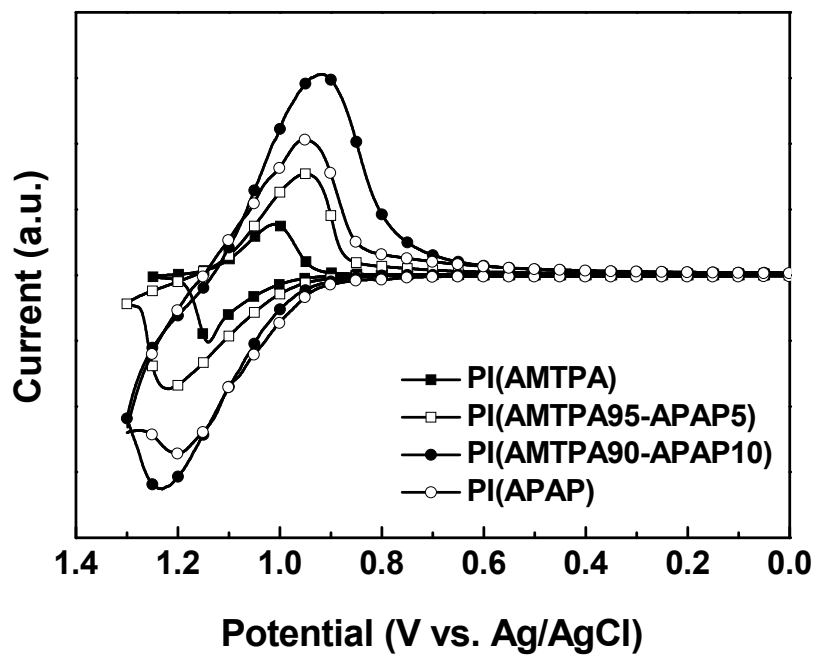**Fig. S3** Optical absorption spectra of synthesized coPIs thin films.

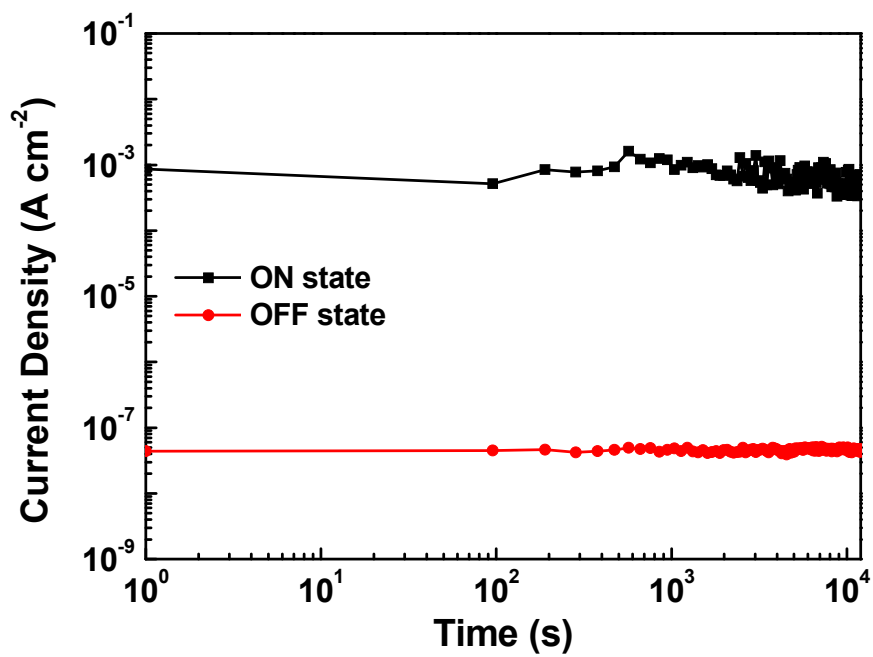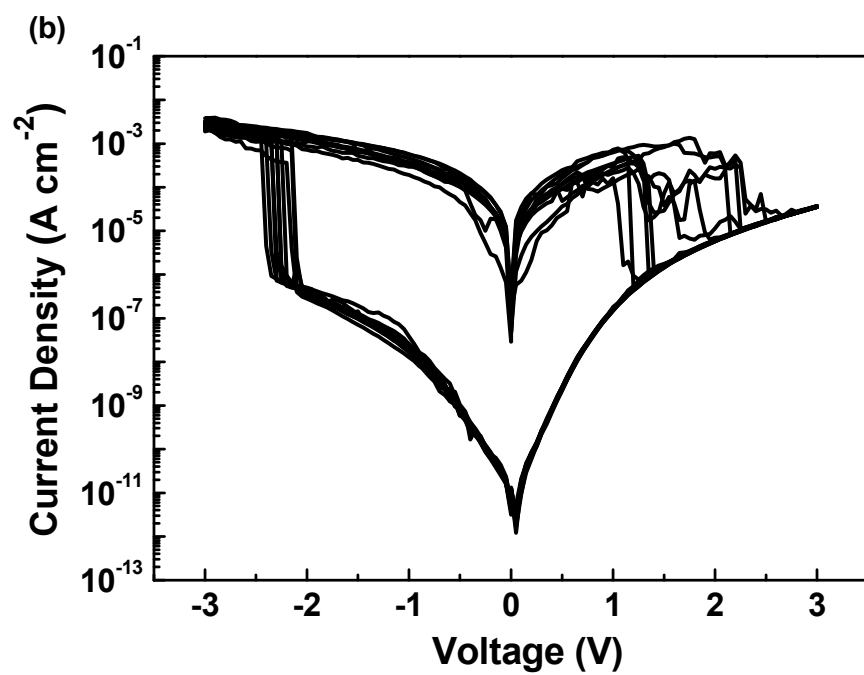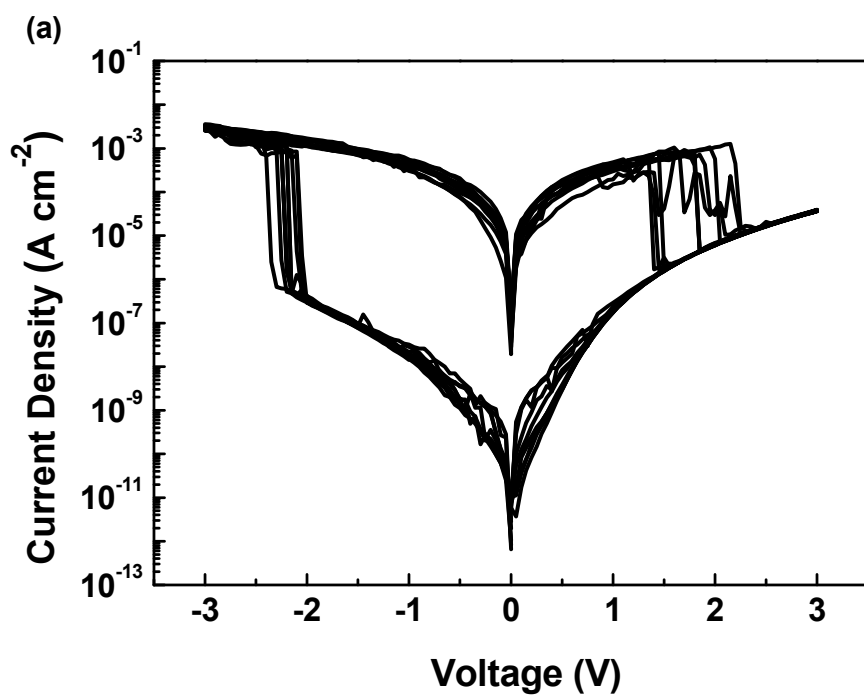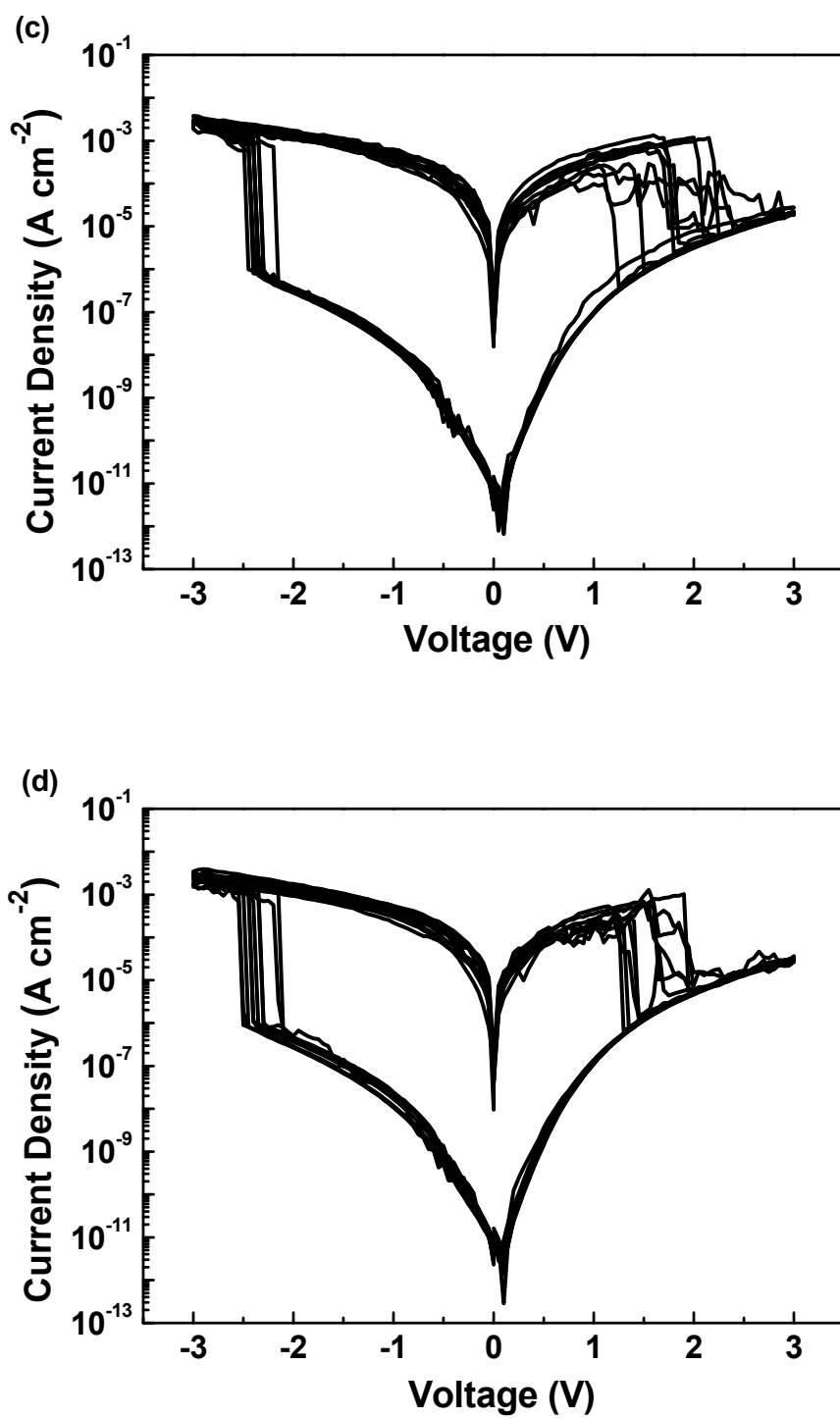**Fig. S4** CV of synthesized coPIs.

Fig. S5 Retention time test of flat **PI(APAP)** device.
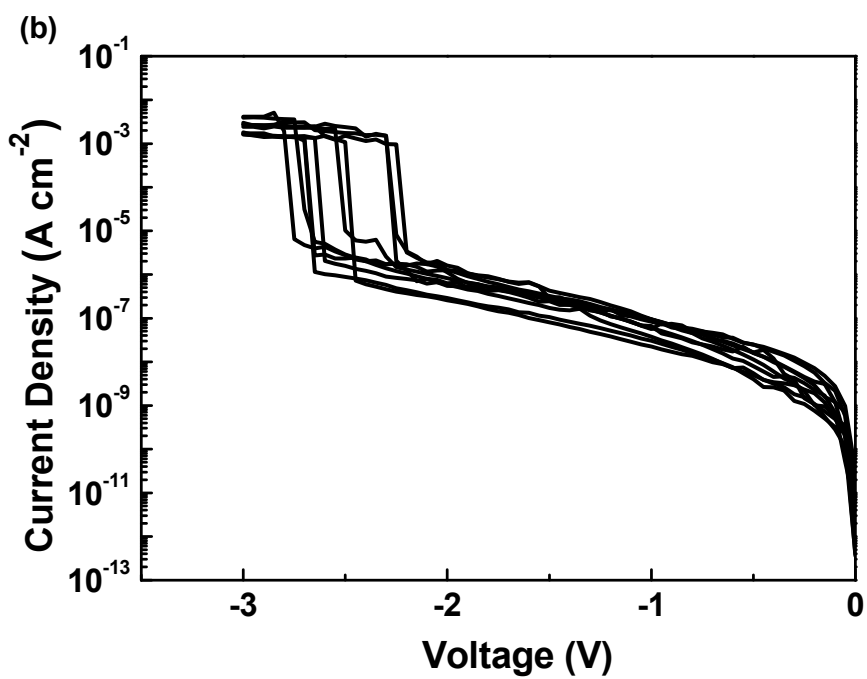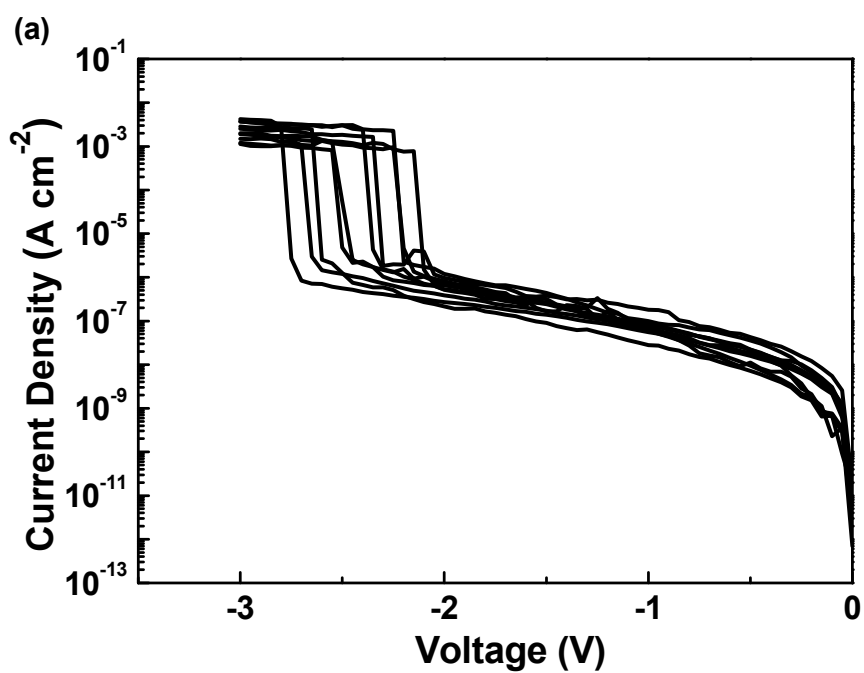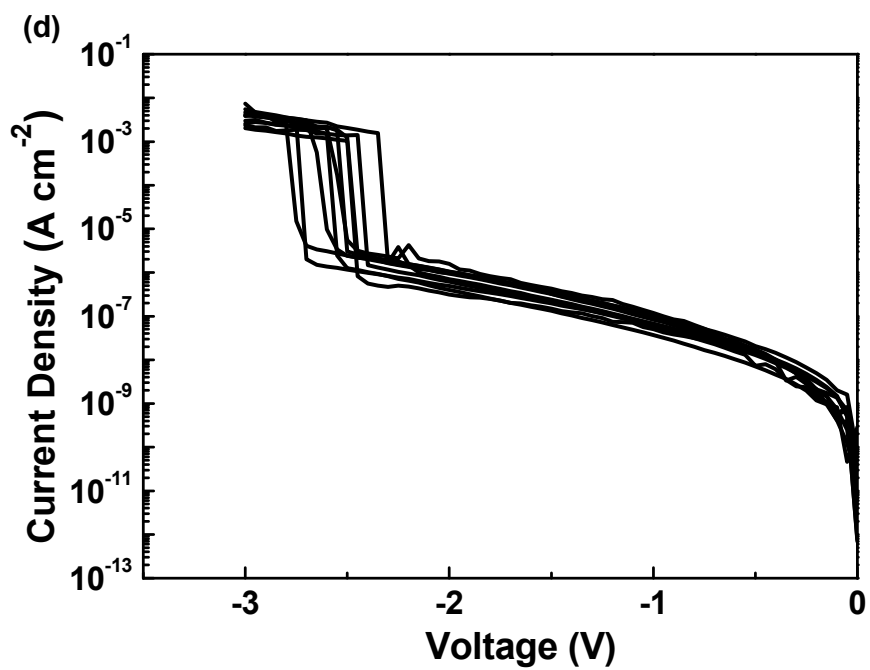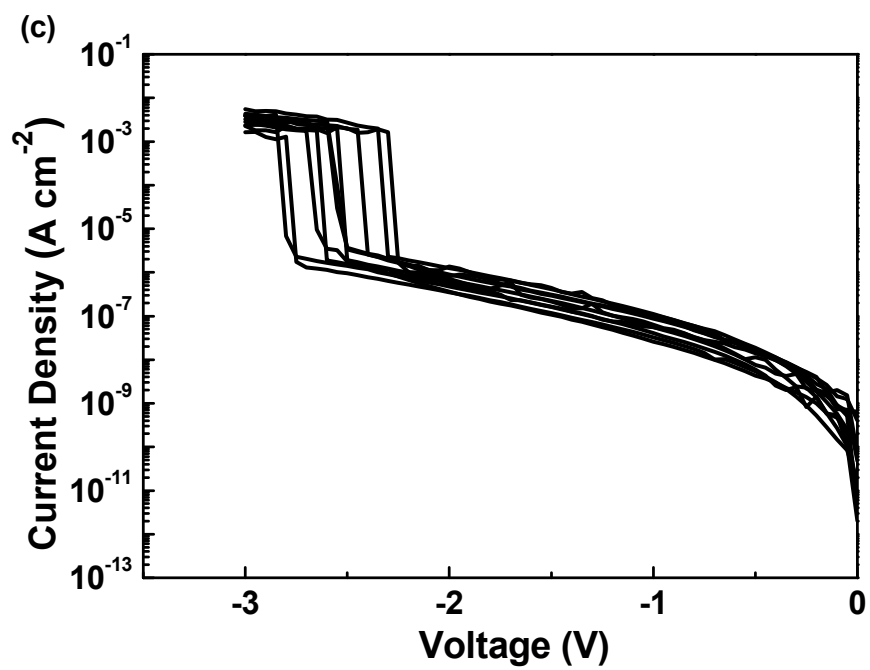
(a)

(b)

(c)

(d)

Fig. S6 Current density-voltage (*J-V*) characteristic of flexible **PI(AMTPA95-APAP5)** memory device under bending radius of curvature of (a) 30 mm, (b) 20 mm, (c) 10 mm, and (d) 5 mm.
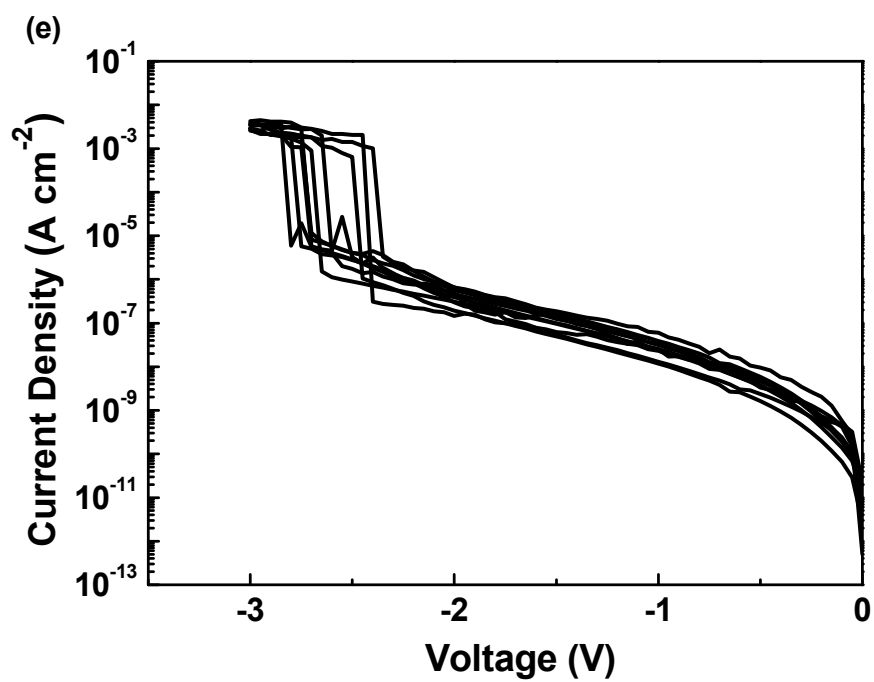
(a)

(b)

(c)

(d)

(e)

Fig. S7 Current density-voltage (*J-V*) characteristic of flexible **PI(APAP)** memory device (in

different cells) under (a) a flat condition and bending condition radius of curvature of (b) 30
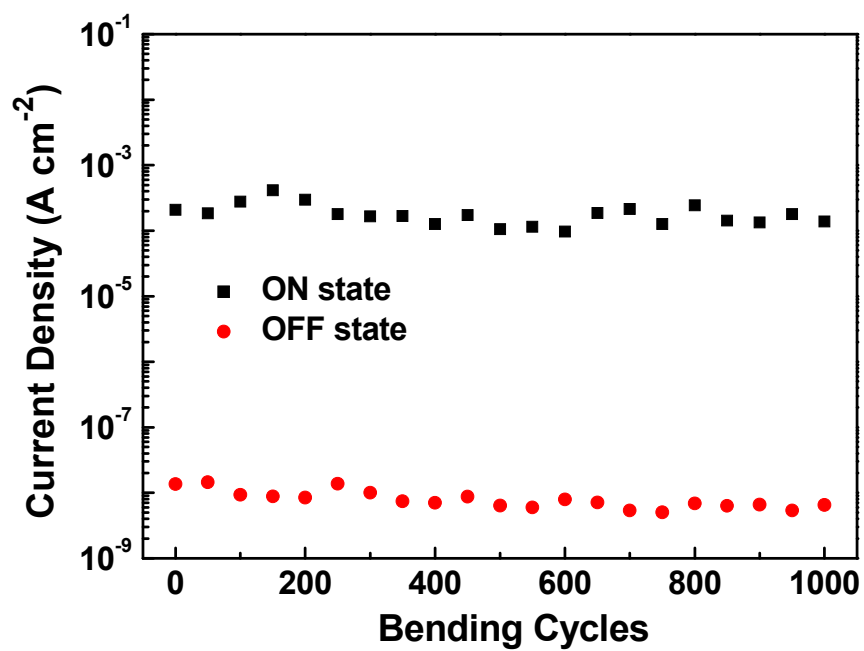
mm, (c) 20 mm, (d) 10 mm, and (e) 5 mm.

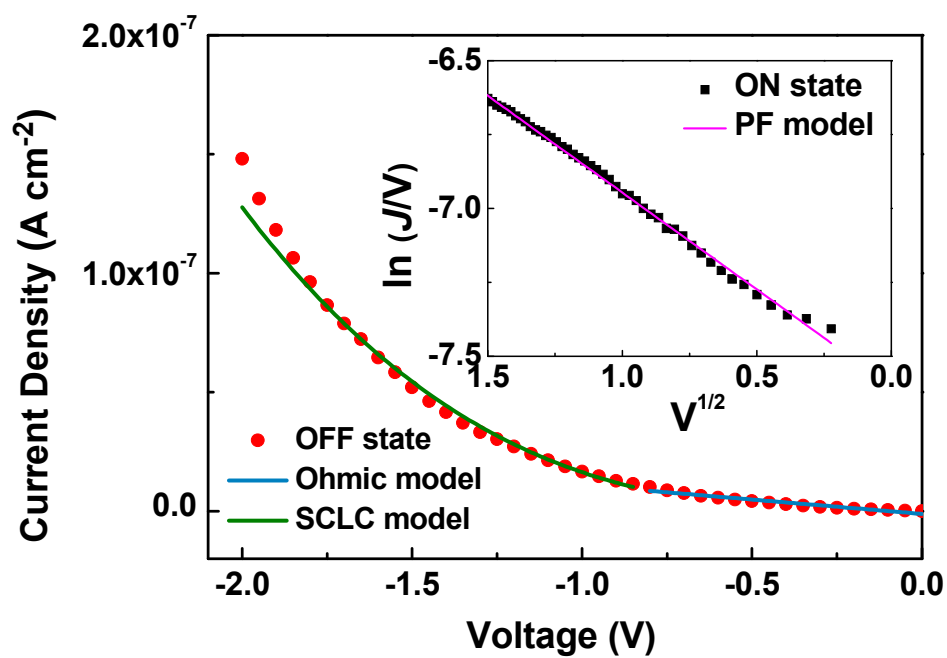**Fig. S8** Mechanical endurance of the flexible **PI(AMTPA95-APAP5)** memory device.

Fig. S9 Experimental and fitted *J-V* characteristics of volatile **PI(AMTPA)** device in the OFF and
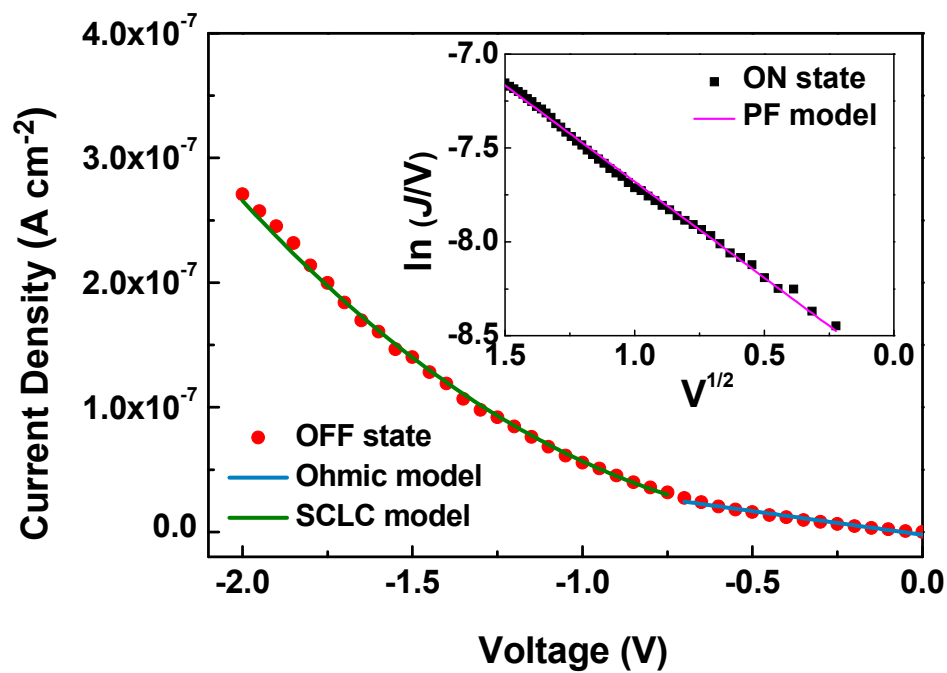
ON states.

Fig. S10 Experimental and fitted *J-V* characteristics of volatile **PI(APAP)** device in the OFF and ON states.