Supplementary Information (SI) for Journal of Materials Chemistry C.

Supporting Information

Ferroelectric polarization-modulated two-dimensional homojunctions for enhanced nonvolatile multistate memory with self-powered optical readout capacity

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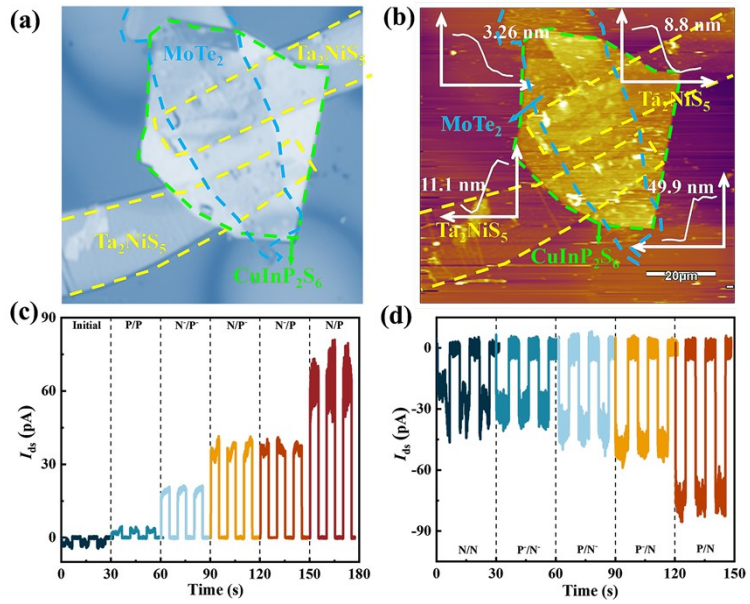

Figure S1. (a)The optical image. (b) The AFM image show the device with a thickness of 3.26 nm for $MoTe_2$. The insets show the thickness of $MoTe_2$, $CuInP_2S_6$ and Ta_2NiS_5 nanoflakes, respectively. (c, d) the *I*-t characteristics under different states. All measurements were performed at 660 nm, an intensity of 7.96 mW/cm^2 and zero bias.

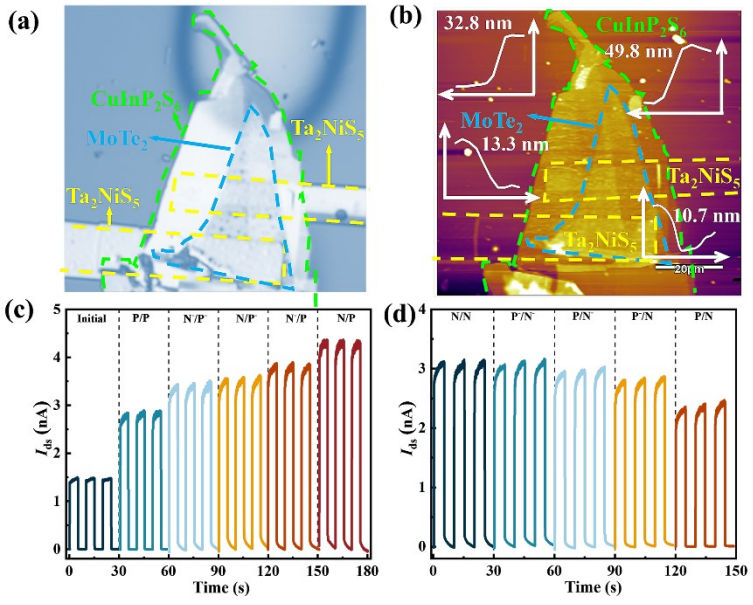

Figure S2. (a)The optical image. (b)The AFM image show the device with a thickness of 32.8 nm for $MoTe_2$. The insets show the thickness of $MoTe_2$, $CuInP_2S_6$ and Ta_2NiS_5 nanoflakes, respectively. (c, d) the *I*-t characteristics under different states. All measurements were performed at 660 nm, an intensity of 7.96 mW/cm^2 and zero bias.

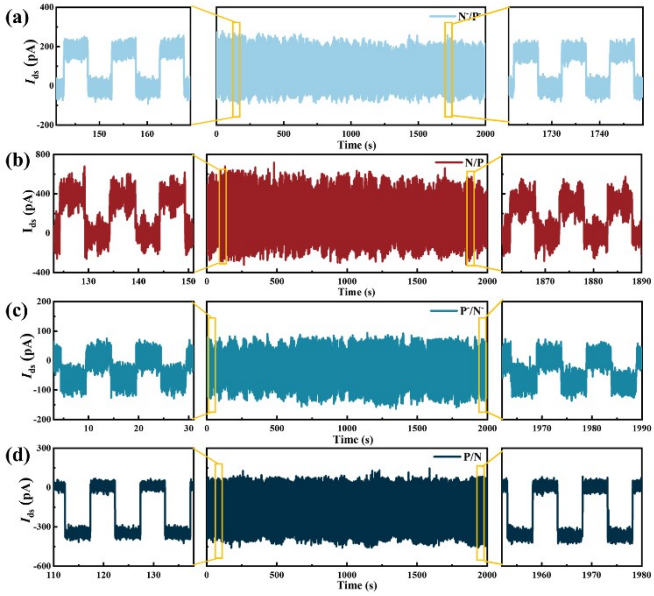

Figure S3. Retention performance of device in four different states, namely N^-/P^- (a), N/P (b), P^-/N^- (c), and P/N(d). All measurements were performed at 660 nm, intensity of 7.96 mW/cm^2 and zero bias.