*Supporting Information*

# Multifunctional Two-dimensional Perovskite Solar Cells for Photodetector and Resistive Switching

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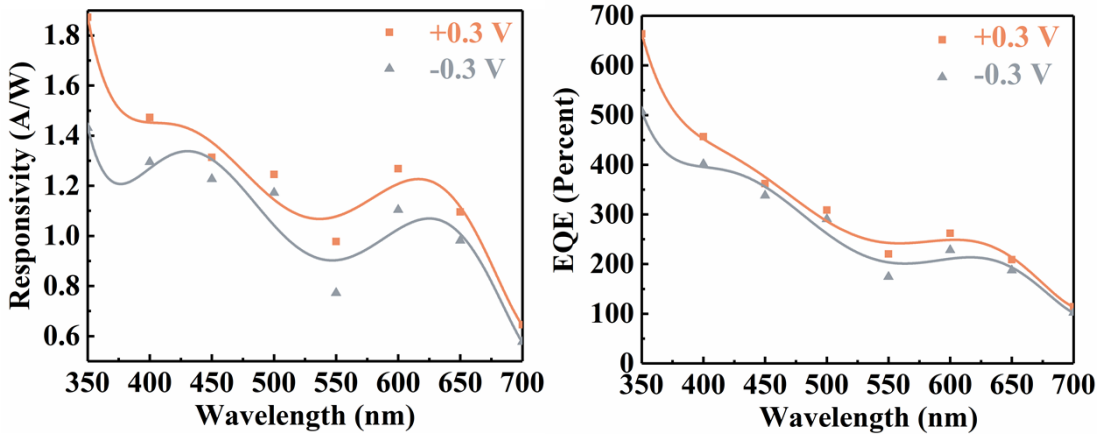


(a) (b)

**Figure S1**. (a) Responsivity and (b) EQE spectra measured under +0.3 V, and −0.3 V of BA ($n$ = 4) device.

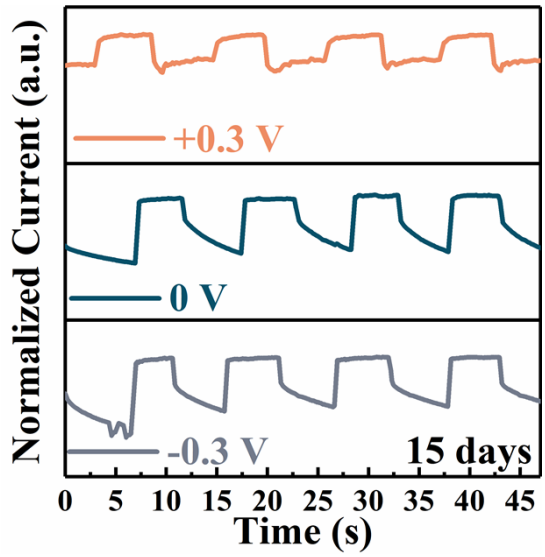


**Figure S2.** Photocurrent response (2.2 mW/cm$^2$, 5 s duration, after 15 days).

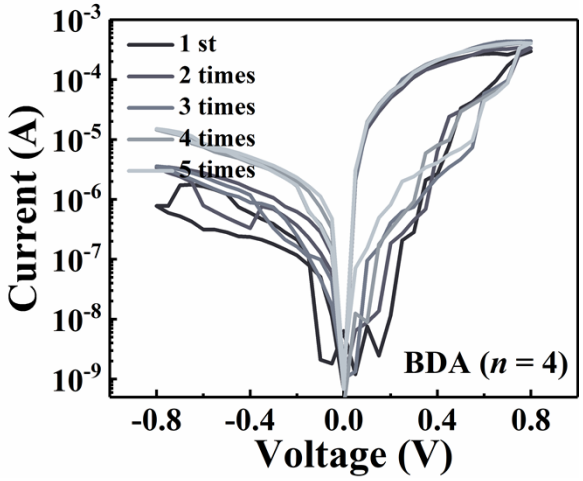


**Figure S3**. Cycle test of the BDA ($n$ = 4) device.

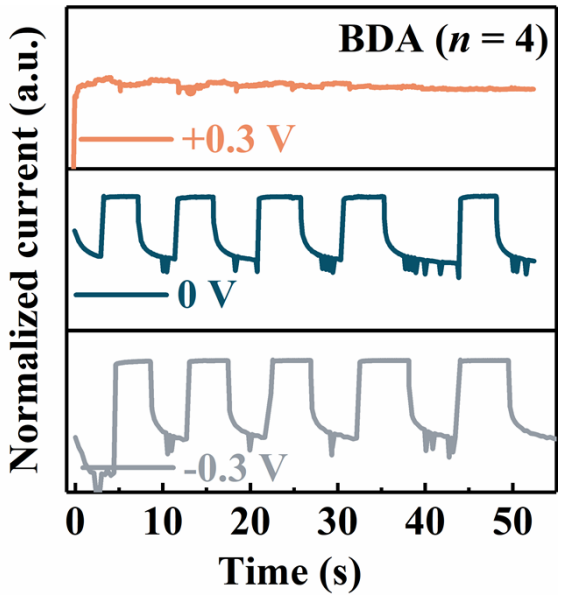


**Figure S4.** Photocurrent response upon light pulses (2.2 mW/cm$^2$, 5 s duration) of the BDA ($n$ = 4) device.