

Electronic Supplementary Information

In-situ Interfacial Hydrogen Doping of Room Temperature Fabricated Flexible a-IGZO Thin Film Transistors for High-performance Photodetection

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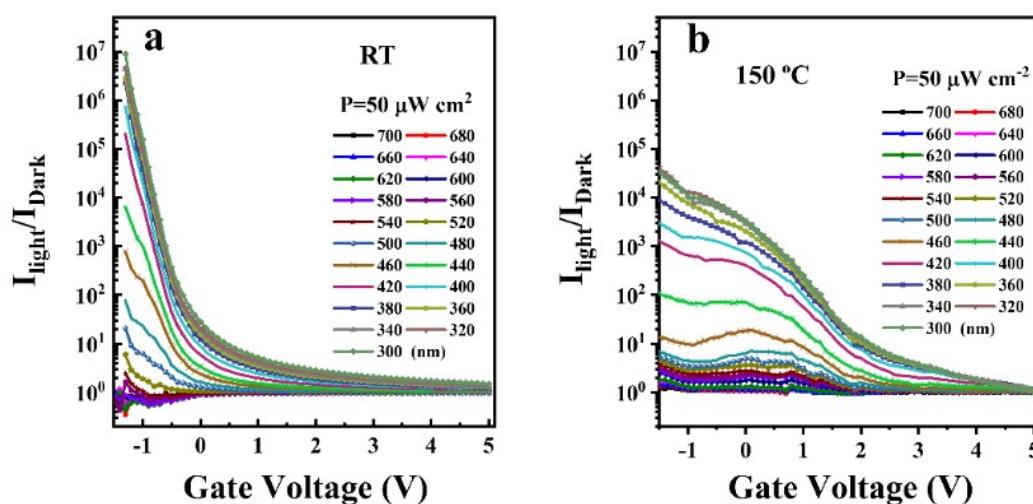


Figure S1. $I_{\text{light}}/I_{\text{dark}}$ versus gate voltage curves under light with different wavelengths of (a) the RT and (b) 150 °C TFT.

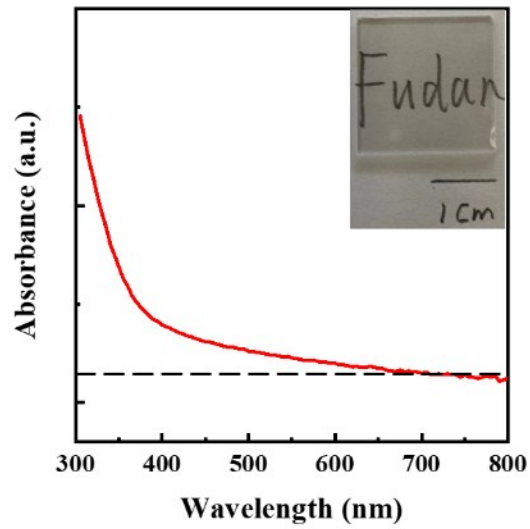


Figure S2. UV-vis absorption spectrum of the RT fabricated a-IGZO channel and Al_2O_3 dielectric films deposited on a quartz glass (the inner is the image of the films).

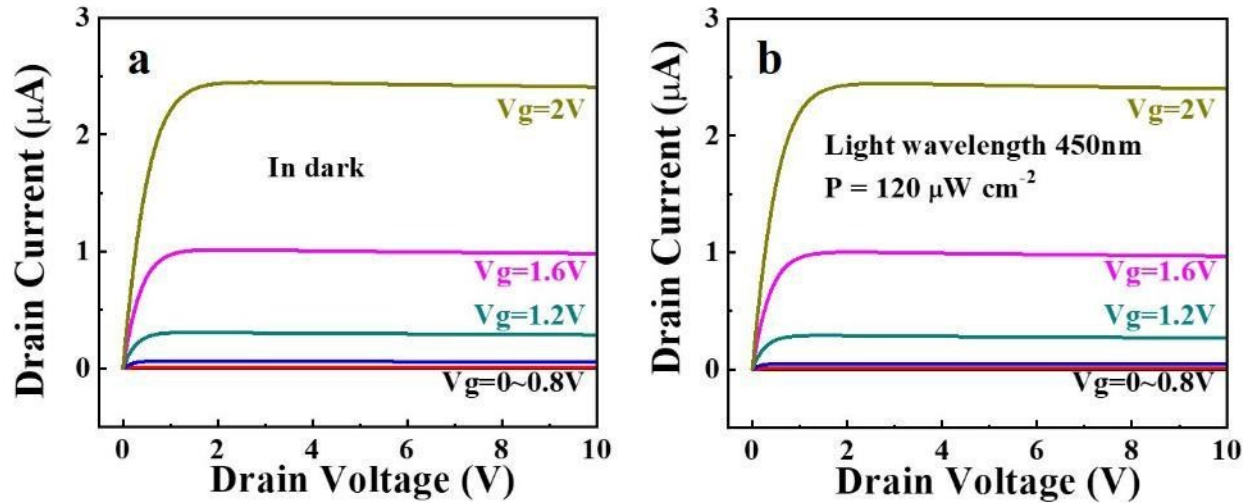


Figure S3. Output curves of the 150 °C TFT (a) in dark and (b) under light with wavelength of 450 nm.

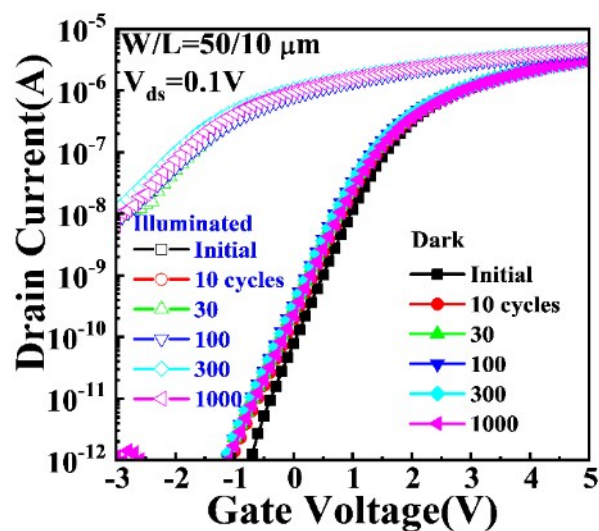


Figure S4. Transfer curves of flexible device with different bending cycles.

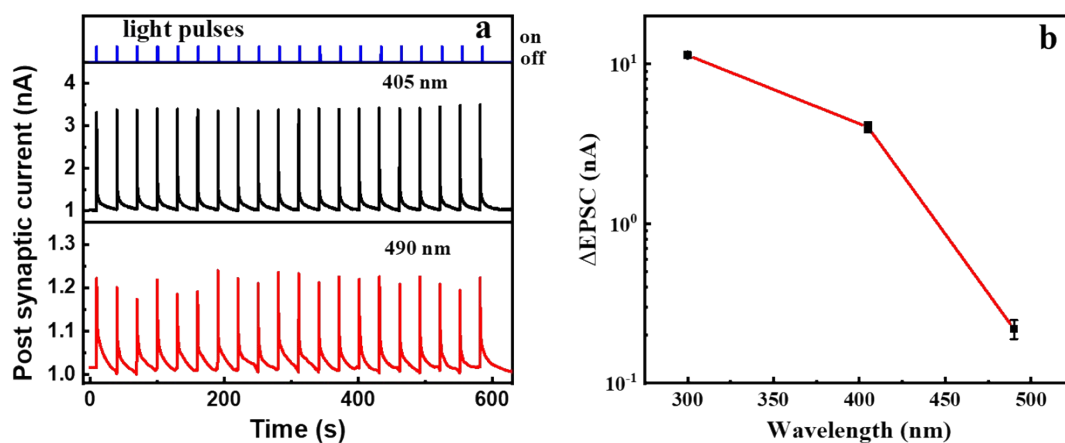


Figure S5 (a) The post synaptic current of the RT Al_2O_3 device recorded at $V_{ds}=0.1$ V, $V_g=0$ V in response to the 405 nm and 490 nm light pulses. The intensity, width and interval of light pulse train are $100 \mu\text{W}\cdot\text{cm}^{-2}$, 100 ms, and 30 s. (b) The ΔEPSC of RT Al_2O_3 device illuminated at different wavelength light.