

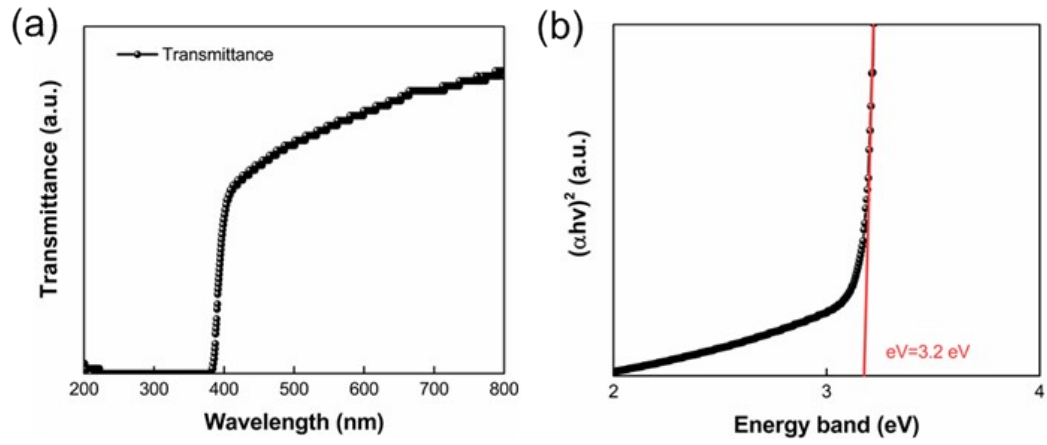
Supplementary Materials for

**Ferroelectrically modulated and enhanced photoresponse of  
Ag/PZT/NSTO self-powered photodetector in ultraviolet range**

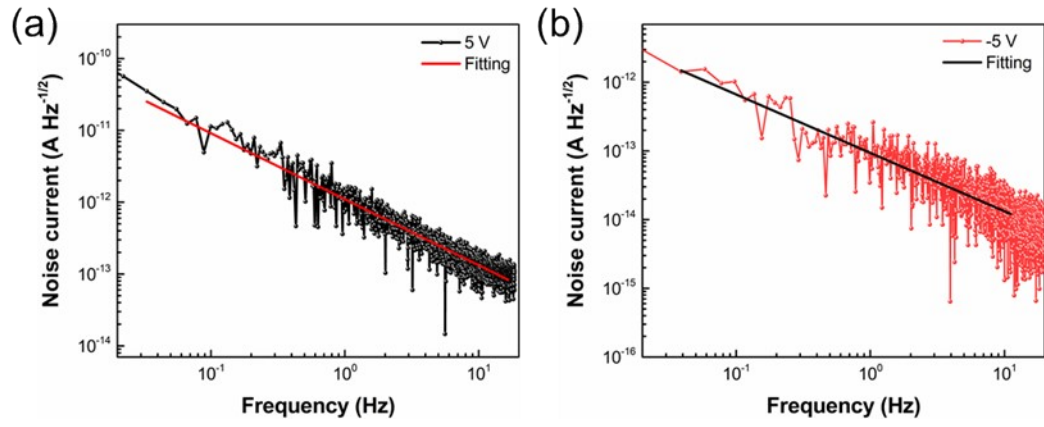
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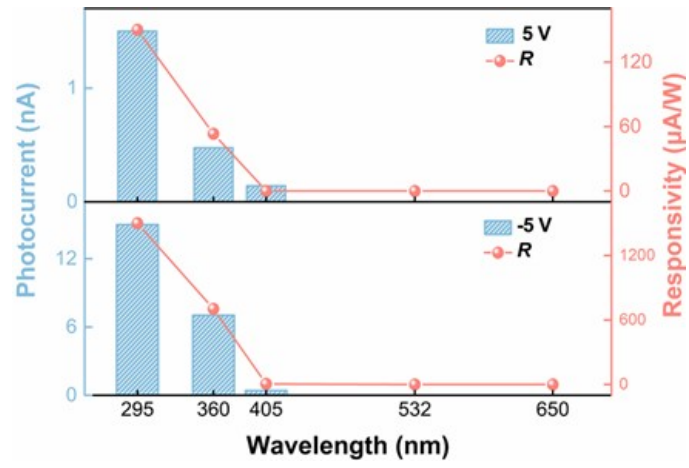
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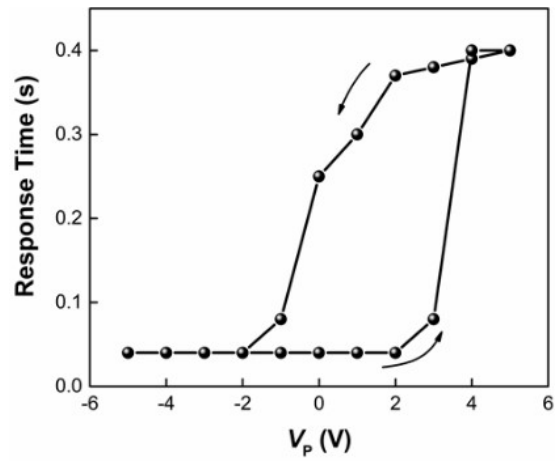
**Fig. S1.** (a) Transmission spectrum of the PZT film. (b) Plot of  $(\alpha E)^2$  versus  $E$  for the PZT film near the optical band gap and linear extrapolation to determine the optical band gap.



**Fig. S2.** Frequency-dependent noise current of device at (a) 5 V  $V_p$  (polarization voltage) and (b) -5 V  $V_p$  at a bias voltage of 0 V.



**Fig. S3.** Wavelength-dependent photocurrent and responsivity of the device without a bias voltage.



**Figure S4.** Response time loop versus  $V_p$ .