

## Supporting information

### High-performance self-powered photodetector based on Te/Si heterojunctions

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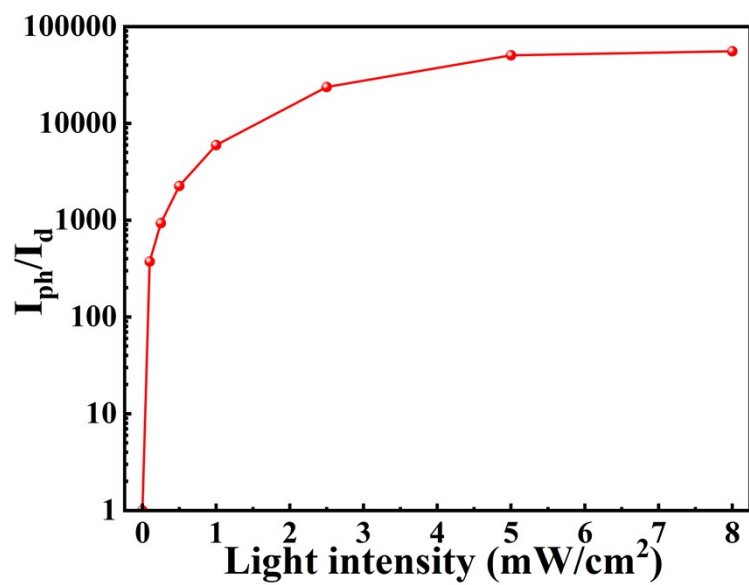


Fig. S1. Photocurrent/dark current at different light intensities.

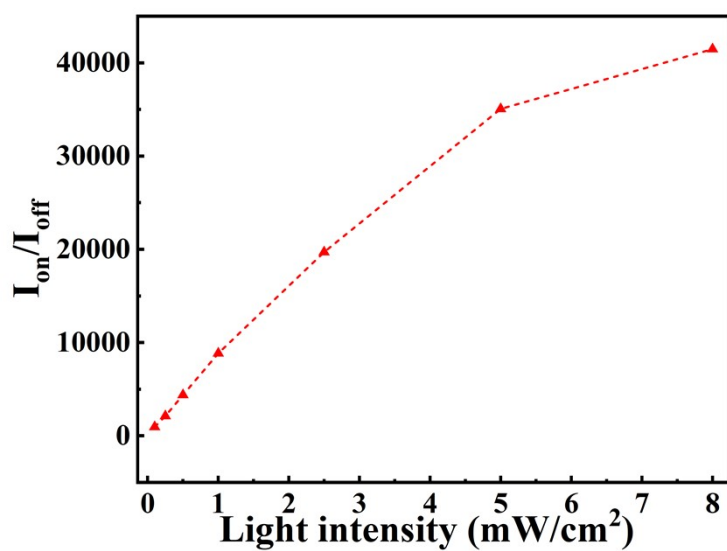
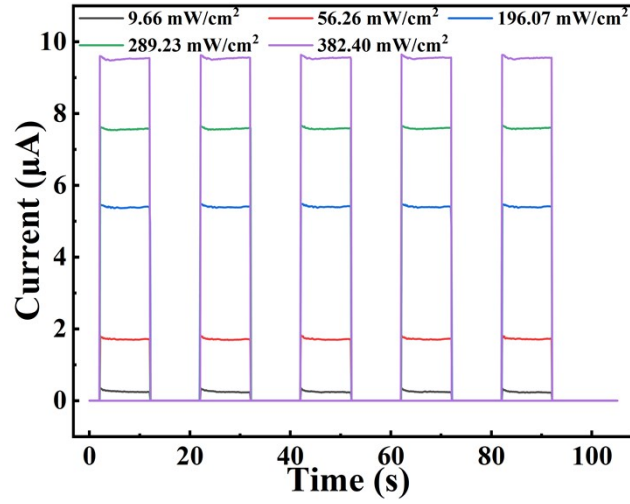
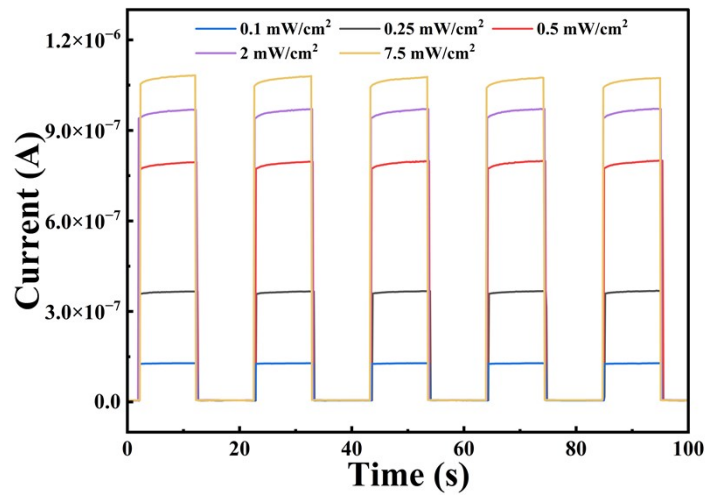


Fig. S2. On/off ratio at different light intensities.



**Fig. S3.** Dynamic photoresponse curves of a 520 nm laser at different light intensities under zero bias.



**Fig. S4.** Dynamic photoresponse curves of a 980 nm laser at different light intensities under zero bias.

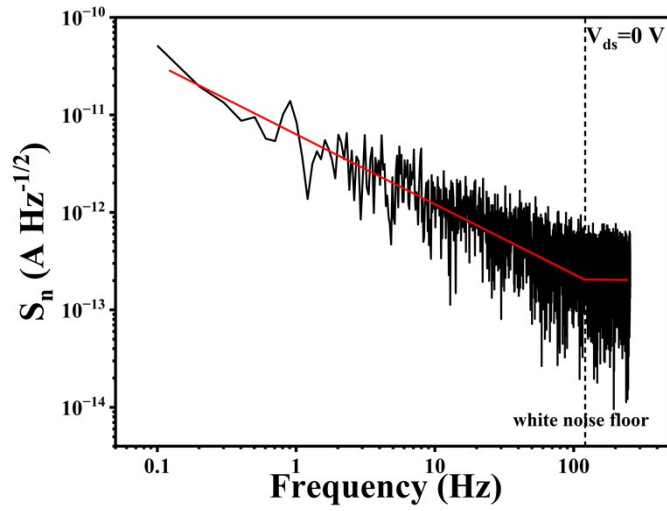


Fig. S5. Noise spectrum of the Te/Si heterojunction.

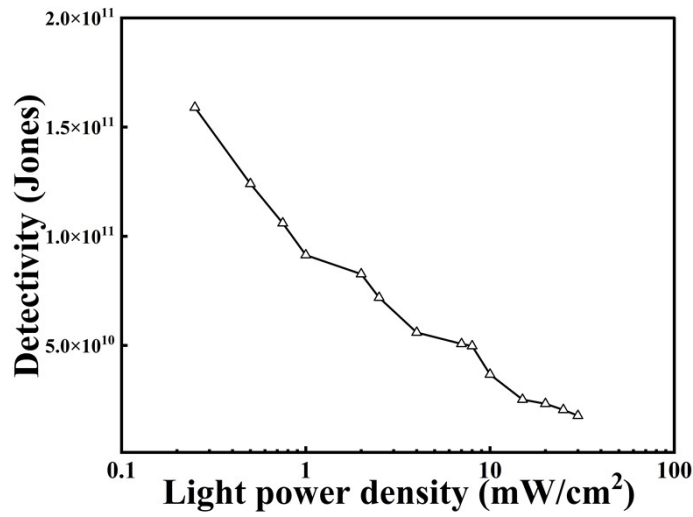


Fig. S6. Detectability of Te/Si heterojunction calculated using NEP.