

Self-driven broadband photodetectors on flexible silicon nanowires substrate by forming heterojunction with reduced graphene oxide

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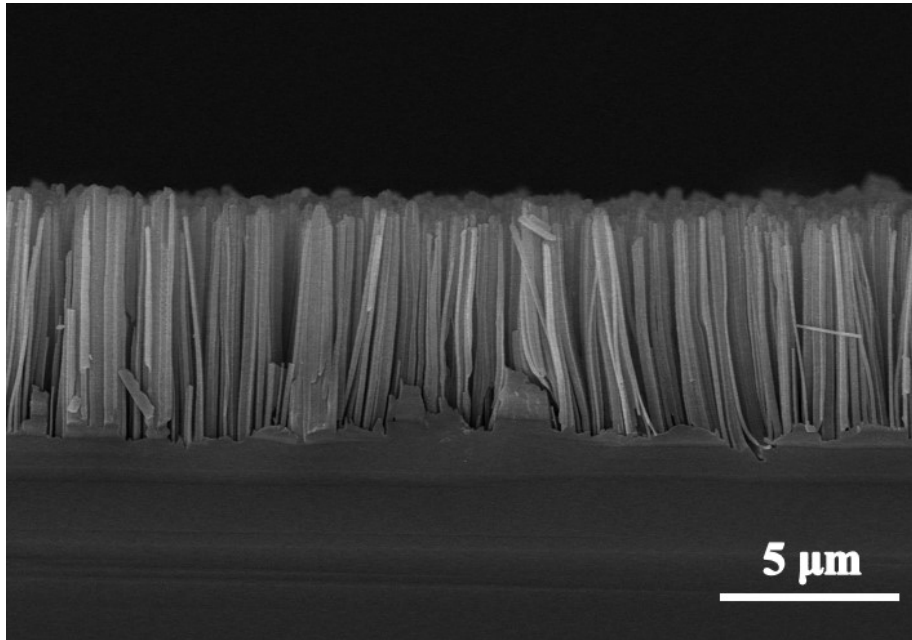


Figure S1. The SEM image of Si-NWs without coating rGO.

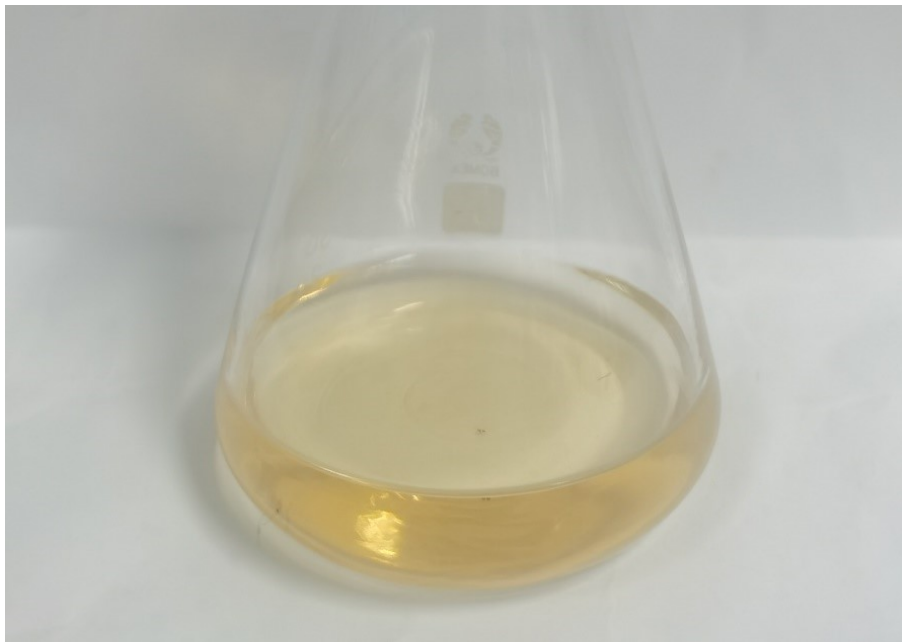


Figure S2. Photograph of GO suspension.

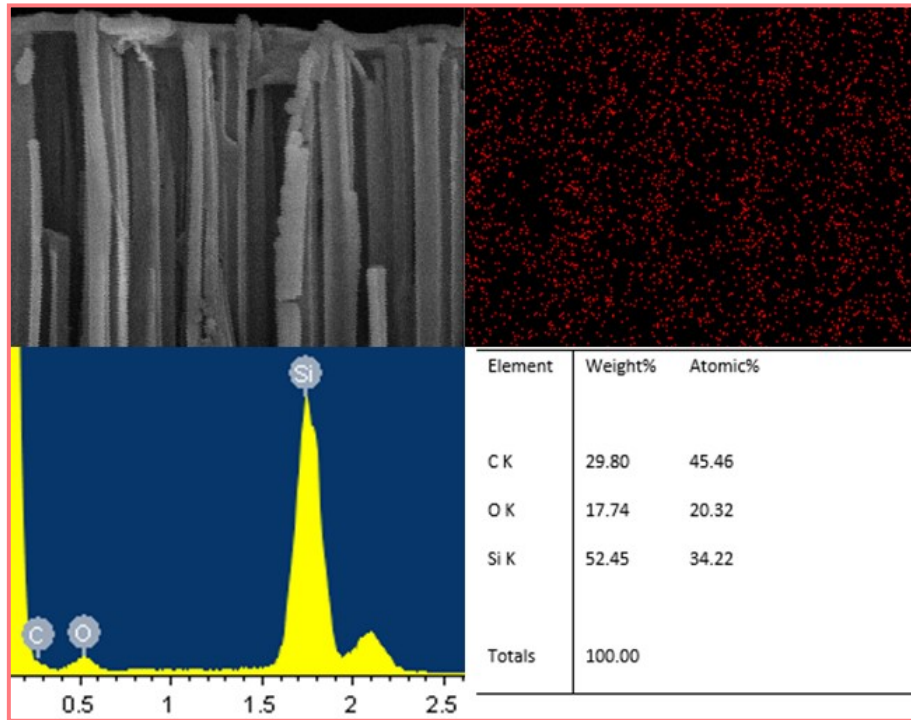


Figure S3. EDS spectra of Si-NWs/rGO structure.

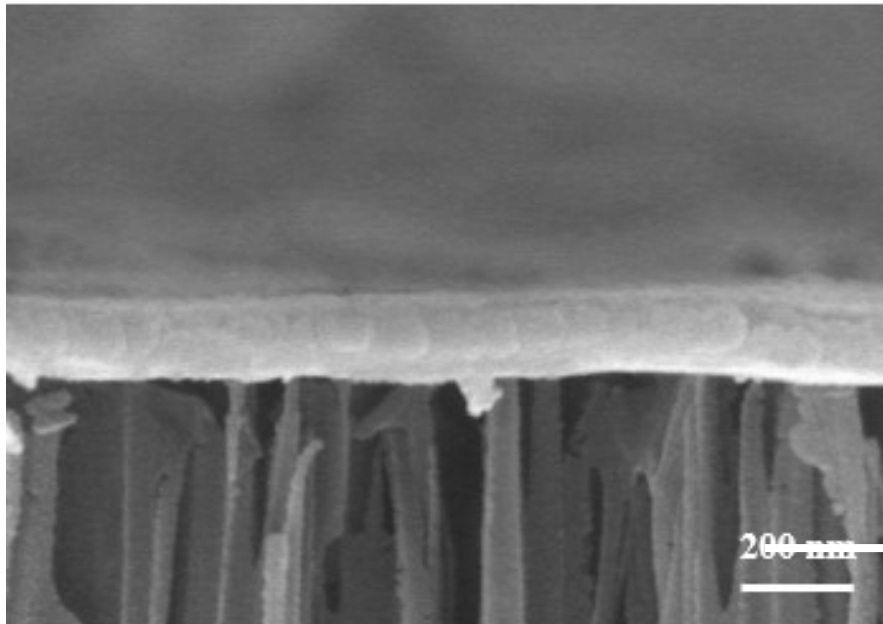


Figure S4. SEM image of rGO film.

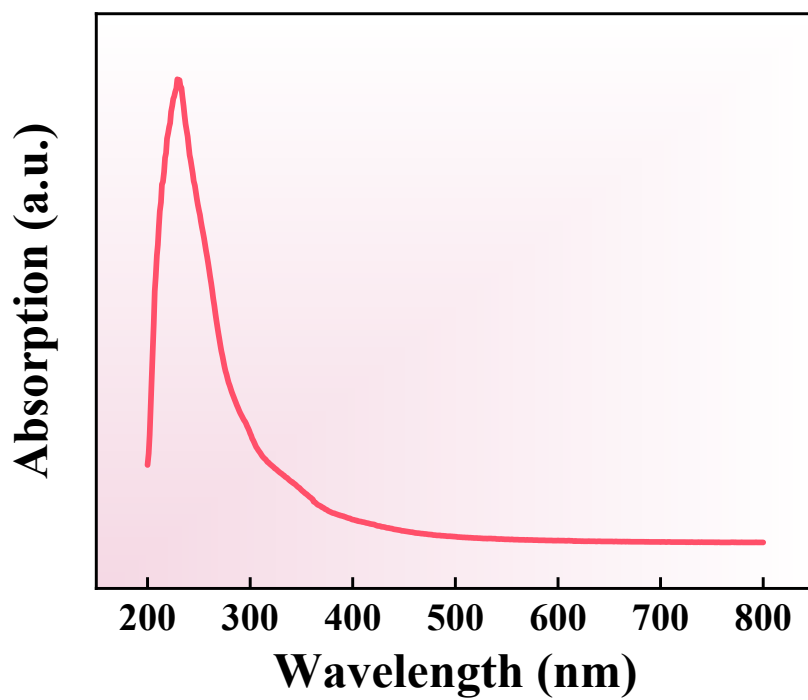


Figure S5. Absorption spectrum of GO dispersion.

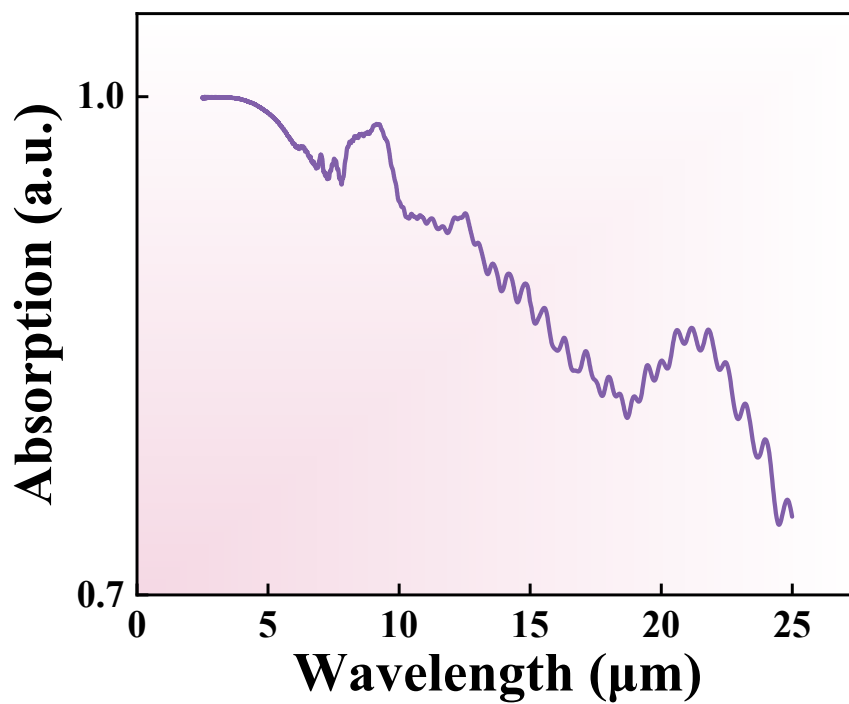


Figure S6. Absorption spectrum of the rGO film.

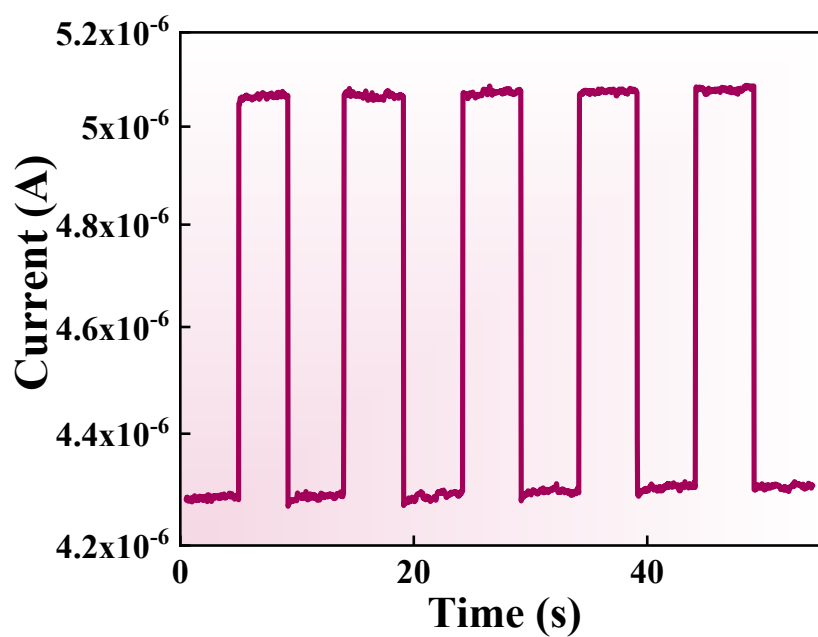


Figure S7. Photocurrent switching performance of the device measured under $36.7 \mu\text{W}/\text{cm}^2$ 980 nm illumination at -0.3 bias.

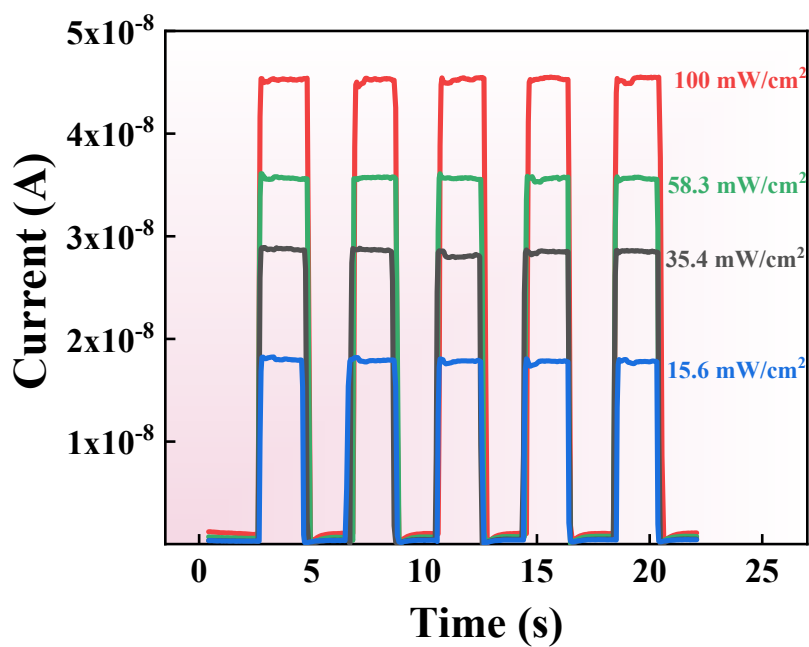


Figure S8. Photocurrent performance of the photodetector under 1550 nm illumination in different intensities.

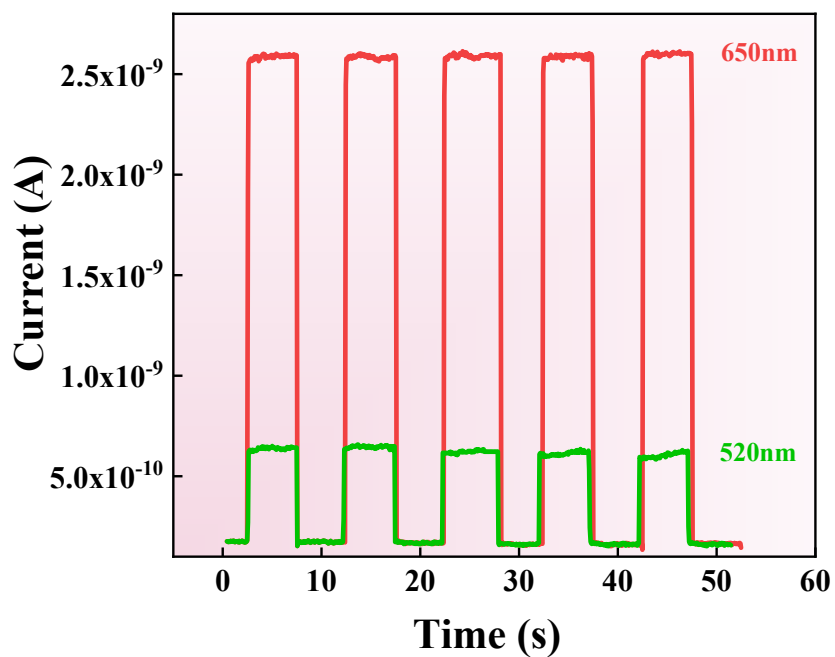


Figure S9. Photocurrent performance of the photodetector under $10.2 \mu\text{W}/\text{cm}^2$ 520 nm and $10.6 \mu\text{W}/\text{cm}^2$ 650nm illuminations, respectively.

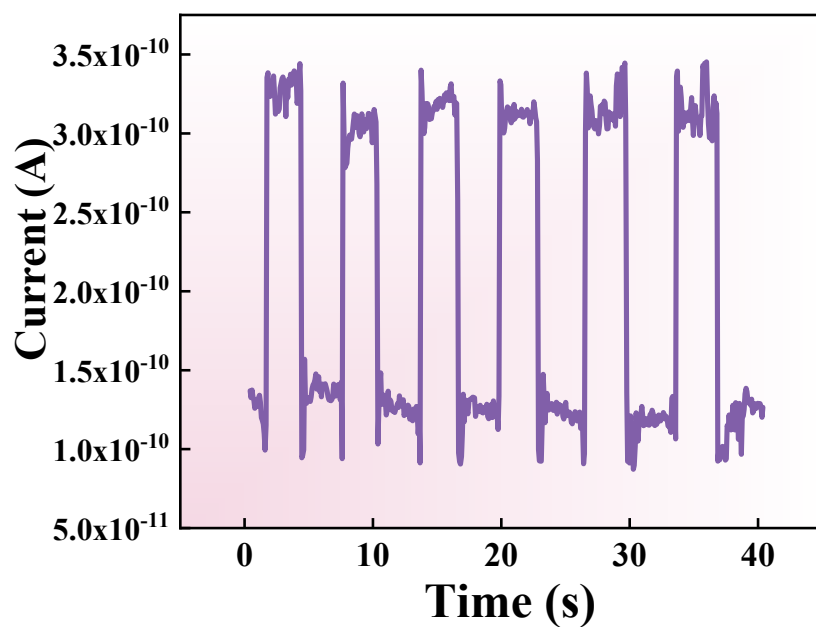


Figure S10. Photocurrent performance of the photodetector under $4.5 \text{mW}/\text{cm}^2$ $10 \mu\text{m}$ illumination.

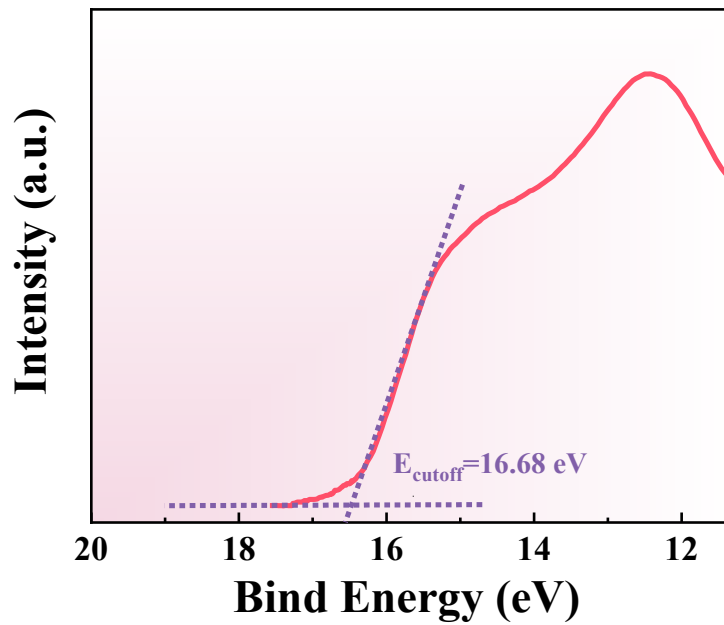


Figure S11. UPS spectra the secondary electron onset region for rGO film.

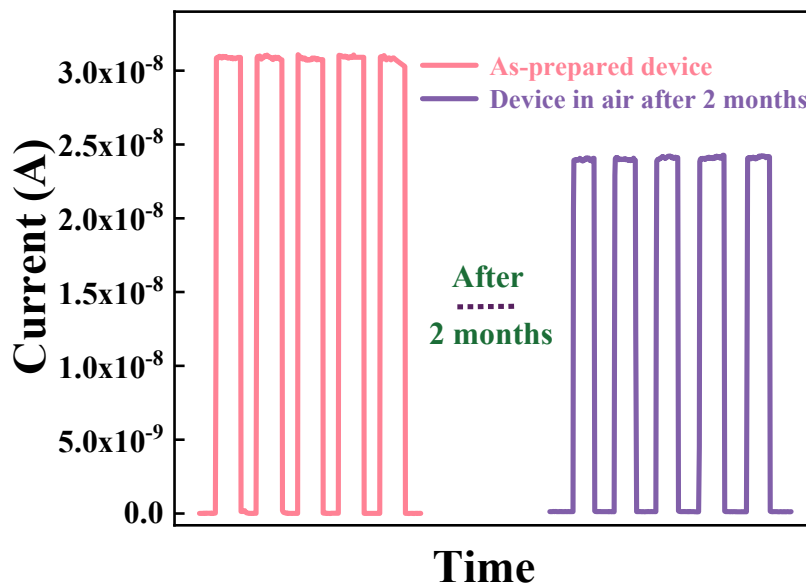


Figure S12. Stability comparison of Si-NWs/rGO heterojunction photodetector as-prepared and after storing in air (20%RH @ 20°C) after two months under $1.9 \mu\text{W}/\text{cm}^2$ 980 nm illumination.