

Supporting Information

High-performance Schottky heterojunction photodetector with directly-grown graphene nanowalls as electrodes

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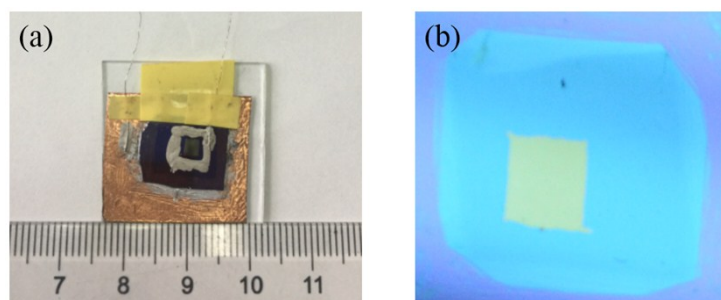


Figure S1. Photograph of GNWs-Si photodetector. (a) Photo of the photodetector with wires and substrate contacts. (b) Photo of the photodetector without wires and contacts.

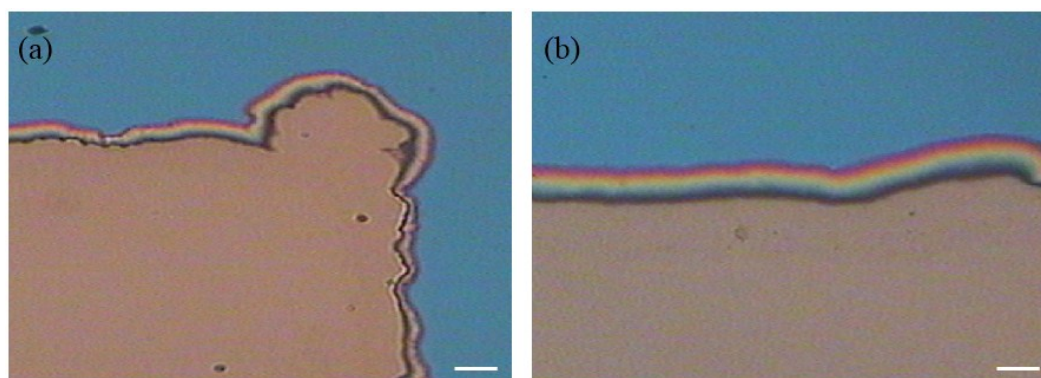


Figure S2. Photograph of GNWs-Si photodetector at the edge of light-sensitive window. (a) One corner of the window. (b) One side of the window. The scale bar is 50 μm .

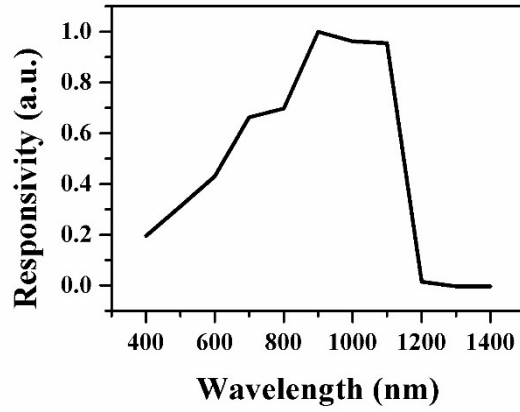


Figure S3. Spectrum response of GNWs-Si photodetector. The step for wavelength scanning is limited to 100 nm due to equipment limitation.

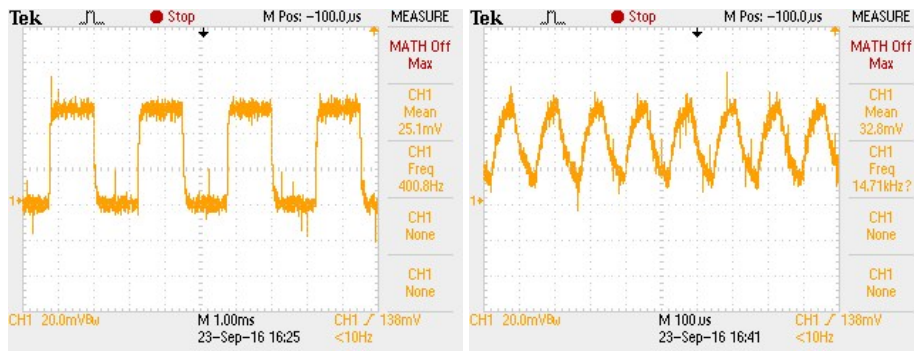


Figure S4. Raw data for 3dB cut-off frequency measurements. (a) Signal frequency of 400Hz; (b) Signal frequency of 8.5 kHz

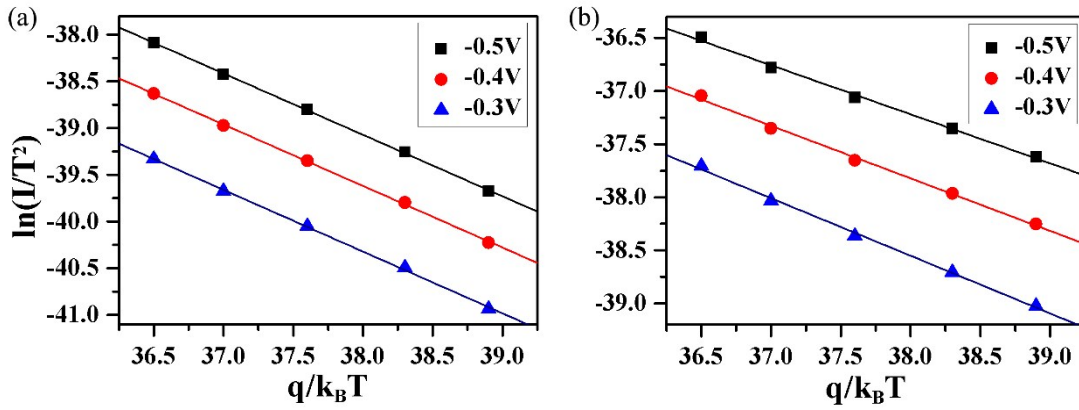


Figure S5. Schottky barrier height fitted by temperature-dependent measurements.

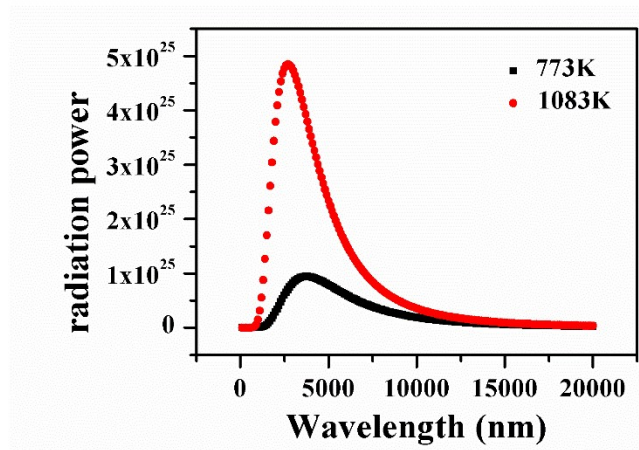


Figure S6. Black body radiation spectrum at 773K and 1073K.