

Supporting Information for

Construction of PtSe₂/Ge heterostructure-based short-wavelength infrared photodetectors array for image sensing and optical communication applications

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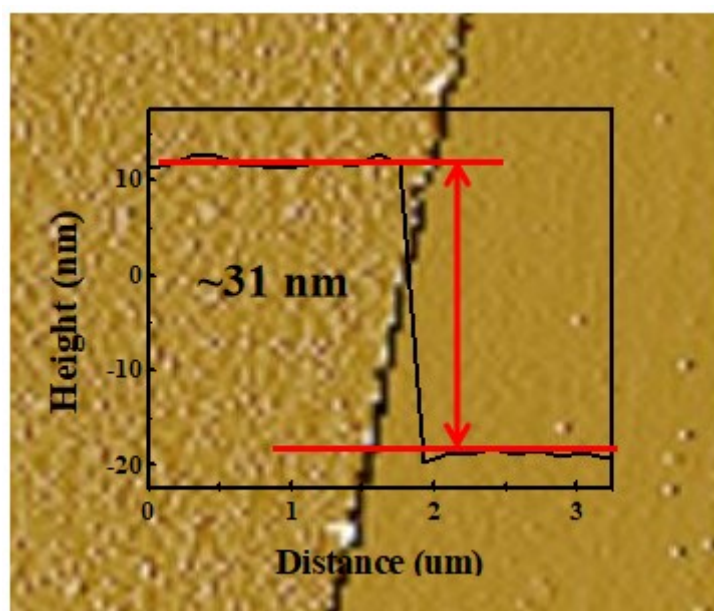


Fig. S1. The AFM image of the multilayered PtSe₂ film atop a Ge substrate. The inset in it shows the height profile of the film.

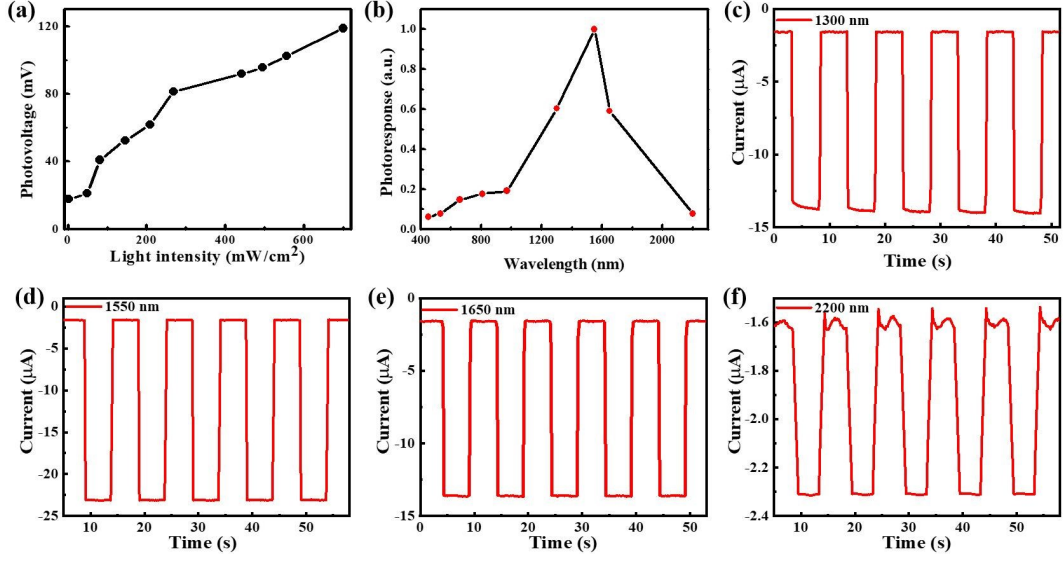


Fig. S2. (a) The photovoltage of the device as a function of incident light intensity. (b) The normalized photoresponse as a function of incident light wavelength. The time-dependent photoresponse of the device under SWIR illumination with wavelengths of (c) 1300 nm, (d) 1550 nm, (e) 1650 nm and (f) 2200 nm.

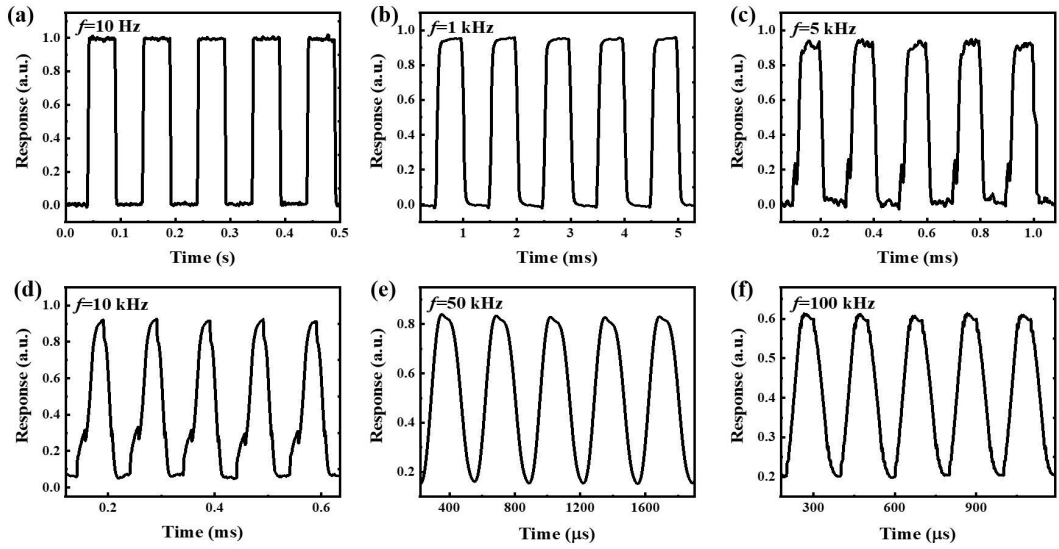


Fig. S3. The photoresponse of the device under 1550 nm illumination with different modulating frequencies at (a) 10 Hz, (b) 1 kHz, (c) 5 kHz, (d) 10 kHz, (e) 50 kHz and (f) 100 kHz.

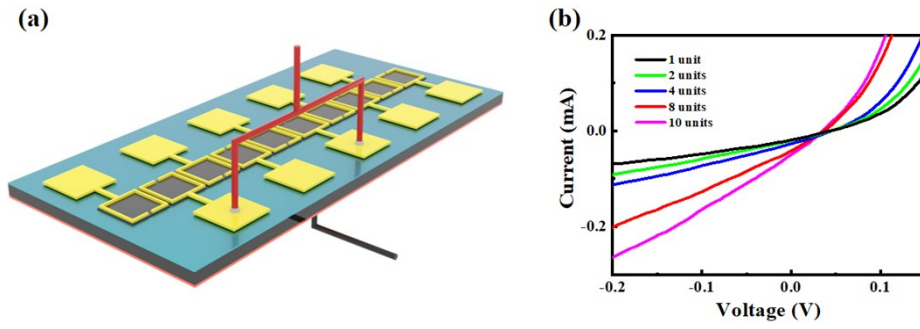


Fig. S4. (a) Schematic diagram of the photodetectors array connected in parallel. (b) I - V curves of the photodetectors array connected in parallel with different unit numbers under 1550 nm light irradiation.

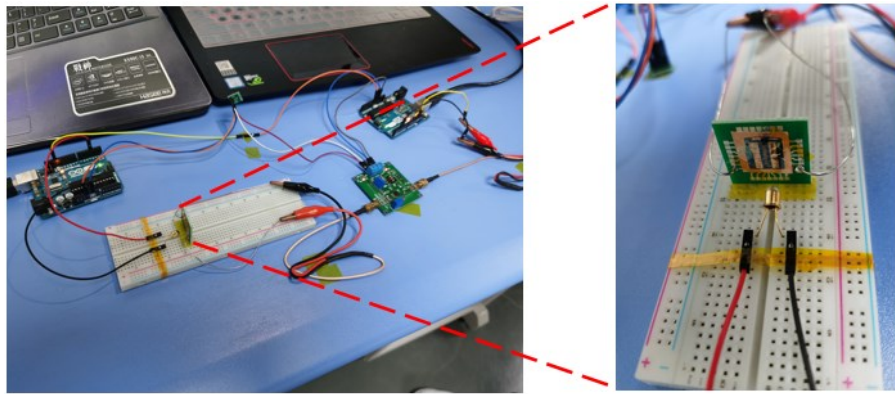


Fig. S5. The digital photograph of the SWIR optical communication system.