Two-dimensional monoelemental germanene nanosheets: facile preparation and optoelectronic applications

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Table S1. The light powder density (P_λ) of the incident light with various irradiation wavelengths. The gradually increased P_λ were labelled with **I**, **II**, **III**, **IV**, and **VI** levels, respectively.

P_λ (mW/cm^2)	I level	II level	III level	IV level	VI level
Simulated light (SL)	26.2	53.0	83.1	118	122
350 nm	0.61	1.52	2.52	3.26	3.41
365 nm	0.76	1.66	2.55	3.57	3.69
380 nm	0.32	1.02	1.91	2.68	2.77
400 nm	0.64	2.04	3.57	5.22	5.35
475 nm	1.91	4.33	7.01	10.1	10.6
550 nm	2.04	3.95	5.98	8.28	8.40
650 nm	2.04	4.08	6.02	8.54	8.92

Table S2. Typical parameters of 2D GeNS-based photodetector at 0.6 V applied bias potential and 0.5 M KOH electrolyte.

Wavelength (nm)	**Light intensity (P_λ, mW·cm^{-2})**	**Responsivity (R_{ph}, μA·W^{-1})**	**Detectivity (D*, Jones)**
	26.2	7.81	5.20E+09
	53.0	4.20	2.87E+09
SL	83.1	3.45	2.32E+09
	118	3.00	2.01E+09
	122	3.06	2.04E+09
350	0.61	81.97	5.50E+10
365	0.76	131.58	7.66E+10
380	0.32	340.91	1.82E+11
400	0.64	28.41	1.78E+10
475	1.91	10.50	6.45E+09
550	2.04	9.21	6.13E+09
650	2.04	8.91	6.14E+09

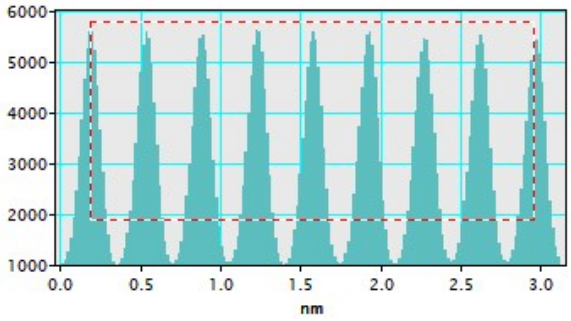

Fig. S1 Contrast profiles corresponding to cyan zones in the inset of Fig. 1b.

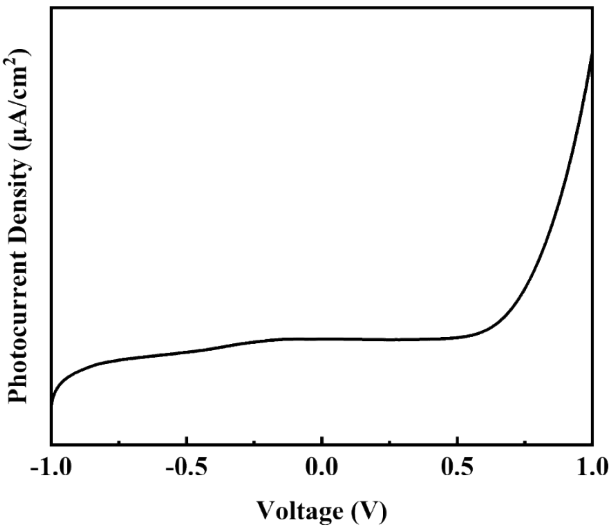

Fig. S2 Linear sweep voltammetry curves of 2D GeNS-based photodetectors in 0.5M KOH.

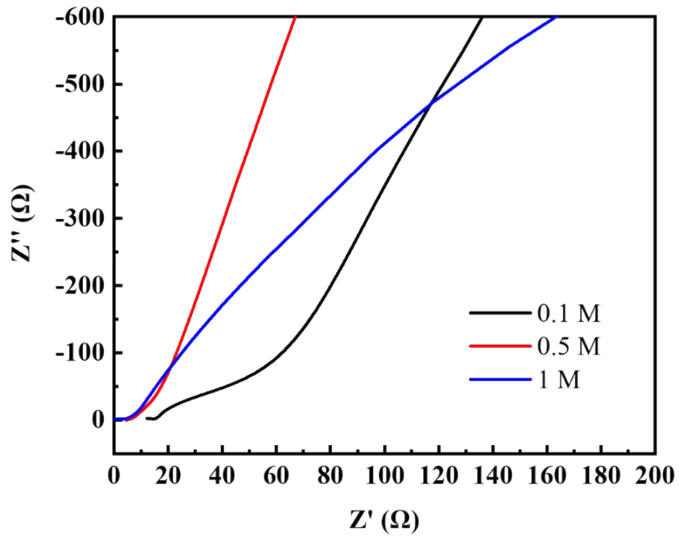

Fig. S3 The impedance spectroscopic plots of 2D GeNS-based photodetectors in different KOH electrolyte concentrations (0.1 M, 0.5 M and 1 M).