Electronic Supplementary Material (ESI) for CrystEngComm.

Supporting information

Flexible self-powered solar-blind Schottky photodetectors based on individual Ga_2O_3 microwire/MXene junction

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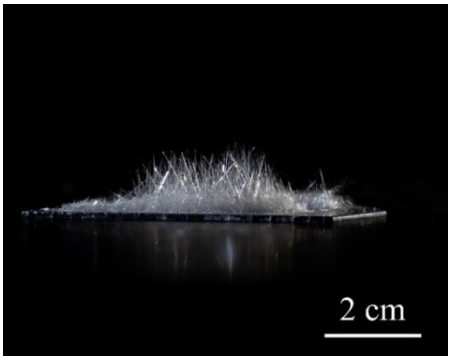

Fig. S1 Optical image of the Ga_2O_3 MW.

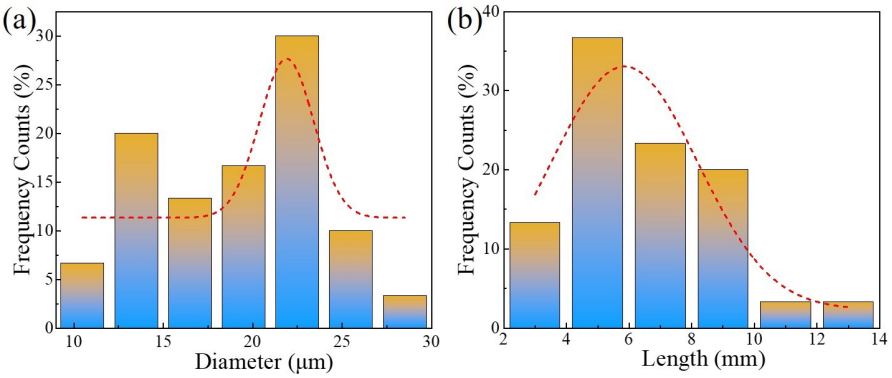

Fig. S2 (a) Diameter and (b) length distribution histograms of the CVD-synthesized Ga_2O_3 MWs.

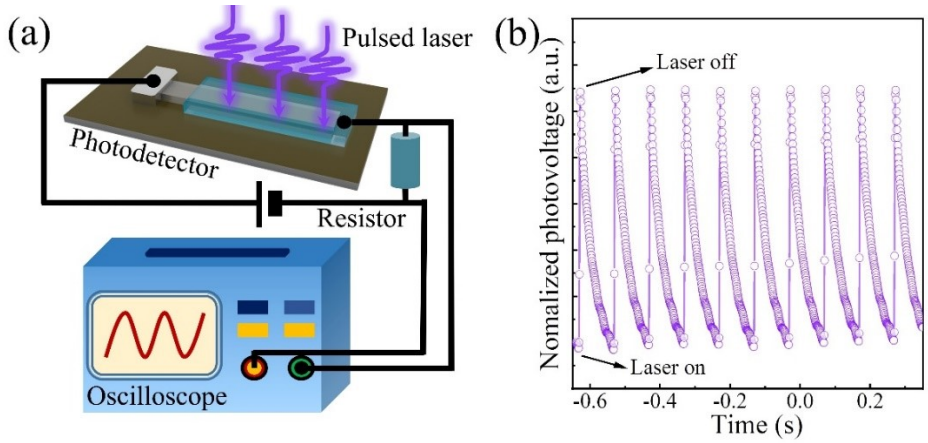

Fig. S3 (a) Schematic diagram of the experimental setup for testing the time response of the photodetector. (b) Time-resolved response of the Ga_2O_3 MW/MXene heterojunction under the excitation of 254 nm nanosecond pulse laser under zero bias.

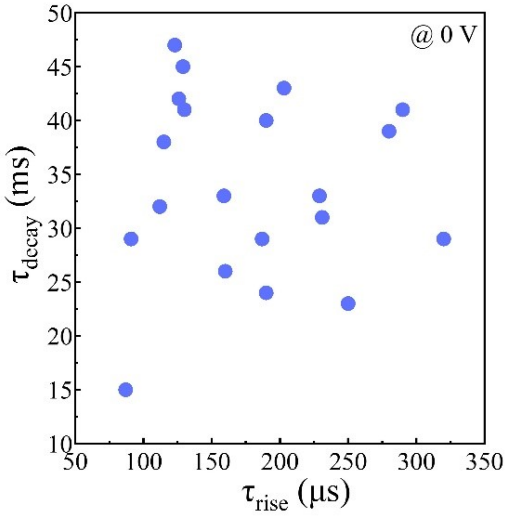

Fig. S4 (a) Rise time (τ_{rise}) and decay time (τ_{decay}) of the twenty Ga_2O_3 MW/MXene photodetectors.

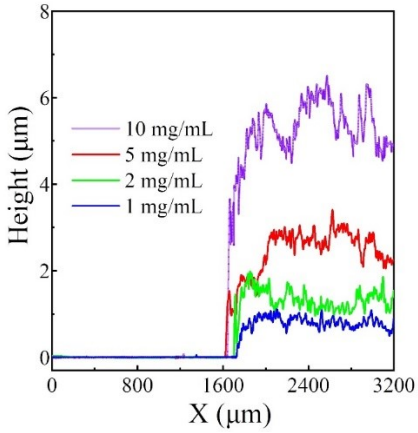

Fig. S5 Height profile of MXene films fabricated by different concentrations of the MXene solution.

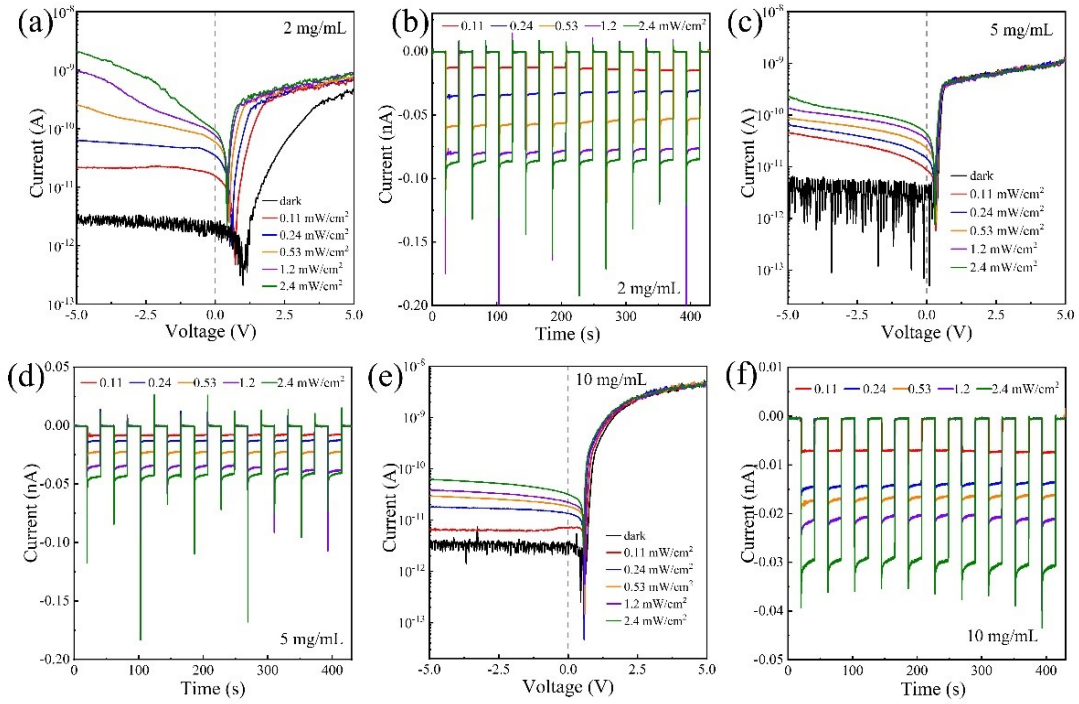

Fig. S6 (a) Logarithmic *I-V* curves of the photodetector fabricated by MXene solution (2 mg/mL). (b) *I-T* curves of the photodetector fabricated by MXene solution (2 mg/mL) at 0 V bias. (c) Logarithmic *I-V* curves of the photodetector fabricated by MXene solution (5 mg/mL). (d) *I-T* curves of the photodetector fabricated by MXene solution (5 mg/mL) at 0 V bias. (e) Logarithmic *I-V* curves of the photodetector fabricated by MXene solution (10 mg/mL). (f) *I-T* curves of the photodetector fabricated by MXene solution (10 mg/mL) at 0 V bias.

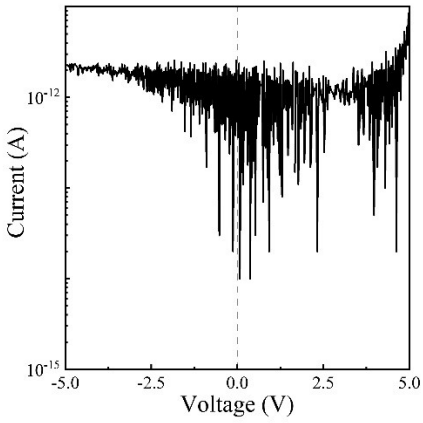

Fig. S7 *I-V* characteristic curve of the photodetector that was fabricated by the MXene solution with lower concentration.