

MXene-enhanced quantum dots ultraviolet photodetector performance towards flexible photoelectric detection

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Table S1. Photoresponse comparison of photodetectors with similar materials and structures reported in recent years.

Device structure	bias (V)	λ (nm)	t_r (s)	t_f (s)	on/off	D* (Jones)	Refs.
Mn-doped ZnO films	3	365	1.871	3.309	—	1.7×10^{10}	20
ZnO/NiO	0	350	7.5	4.8	—	—	23
ZnO/MXene/DBR	10	350	3.79	1.93	—	1.7×10^{13}	25
ZnO QDs/MXene	10	350	1.85	1.21	—	2×10^{11}	32
ZnO Nanorods/MXene	5	368	12.2	3.9	806	2.03×10^{10}	42
ZnO/MXene/ZnO	5	365	0.15	1.52	1370	1.32×10^{11}	45
ZnMgO/MXene	1	365	1.23	0.073	1285	7.22×10^8	This work

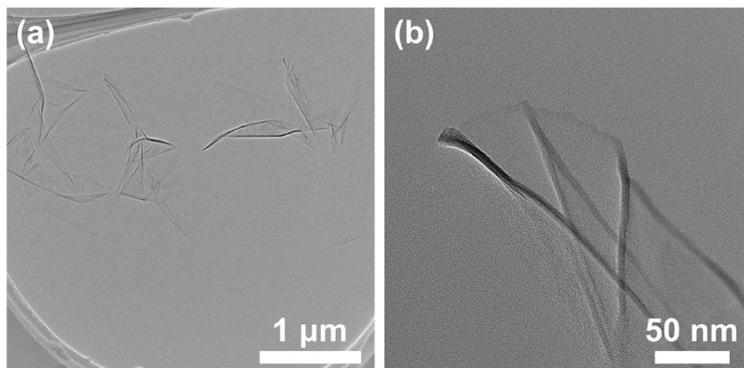


Figure S1. TEM images of $\text{Ti}_3\text{C}_2\text{T}_x$ MXene nanosheets.

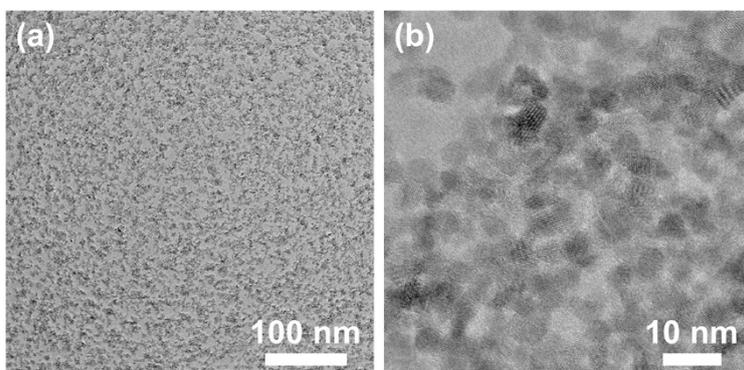


Figure S2. TEM (a) and HRTEM (b) images of ZnMgO quantum dots.

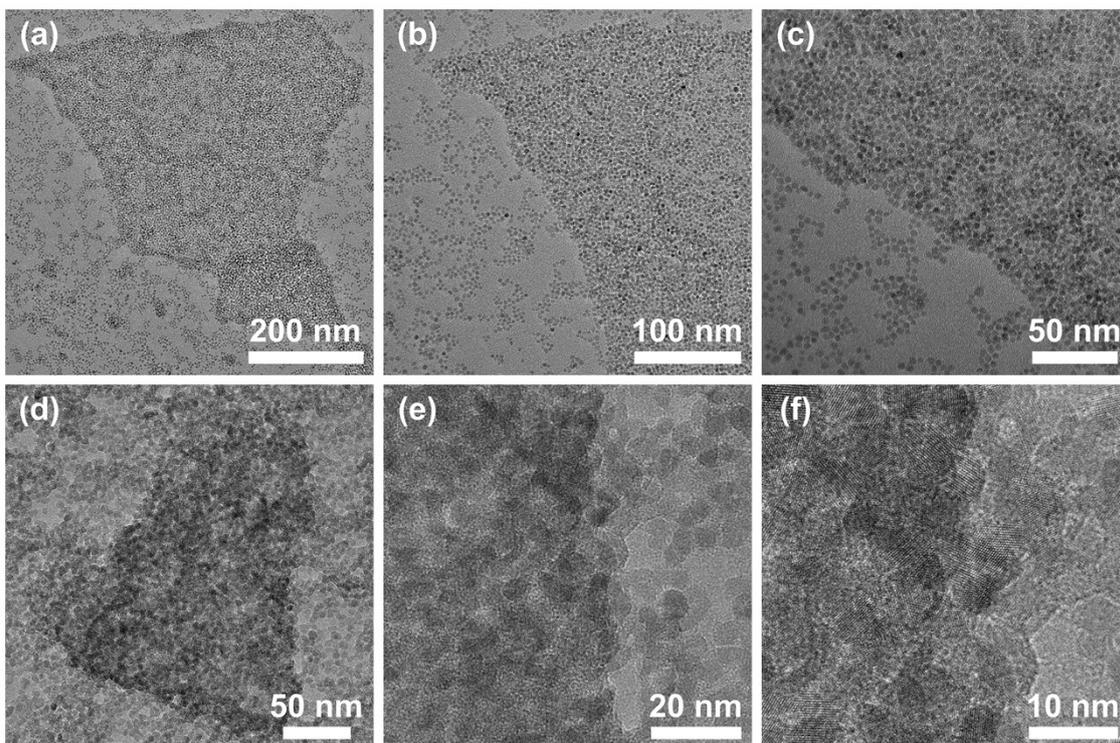


Figure S3. TEM images of the ZMO/TCT 4 sandwich-like heterostructure.

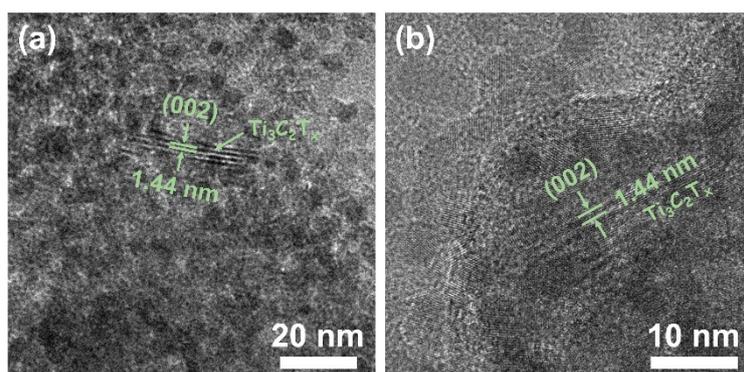


Figure S4. HRTEM images of the ZMO/TCT 4 sandwich-like heterostructure.

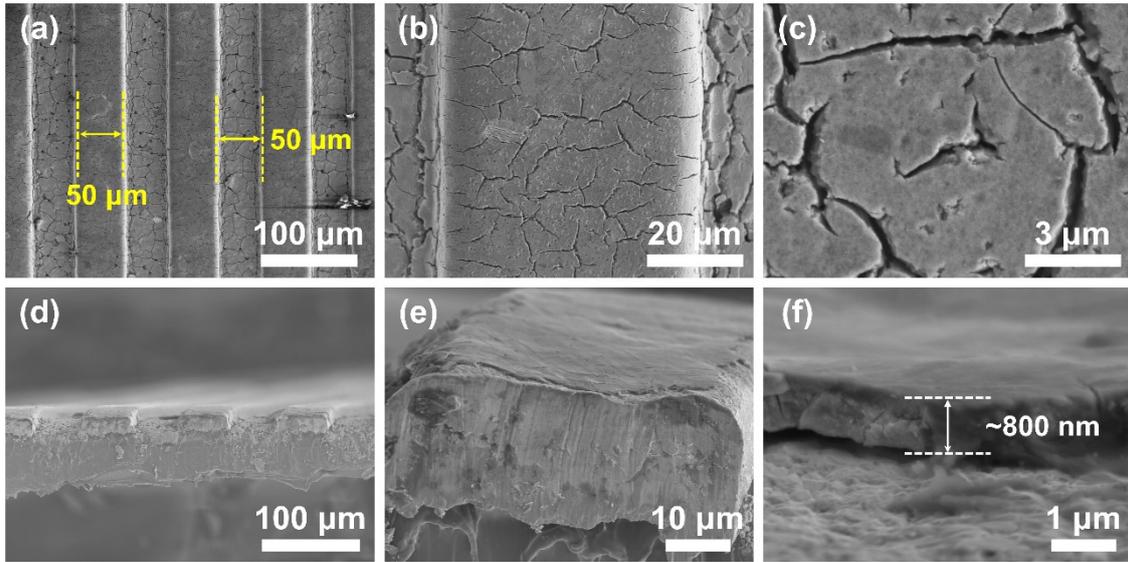


Figure S5. The surface and cross-sectional images of the device.

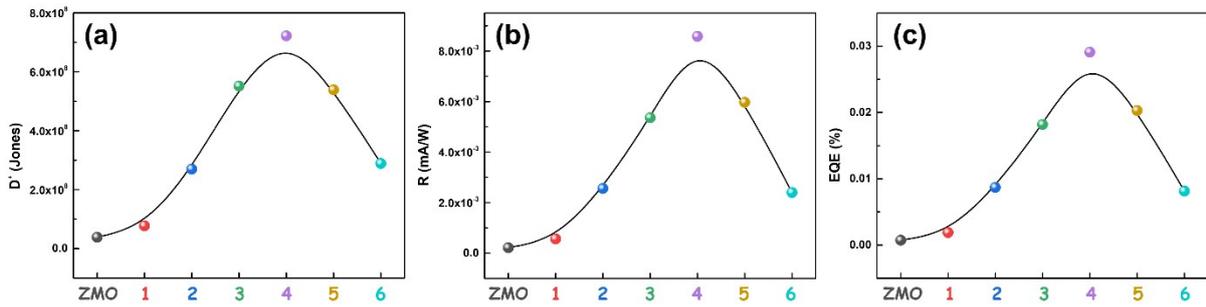


Figure S6. The detectivity, responsivity, and external quantum efficiency for the devices based on different samples.

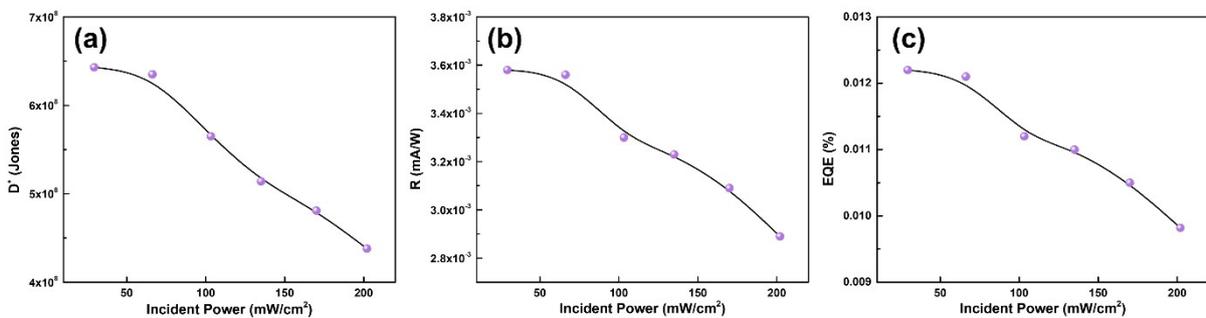


Figure S7. The detectivity, responsivity, and external quantum efficiency for the devices based on ZMO/TCT 4 composite under different incident powers.

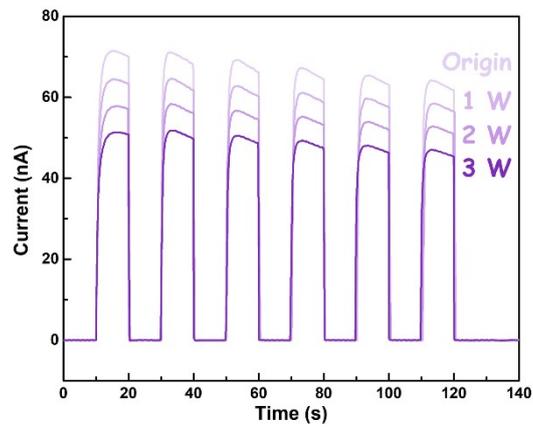


Figure S8. The long-term stability for the device based on ZMO/TCT 4 composite tested in 3 weeks.

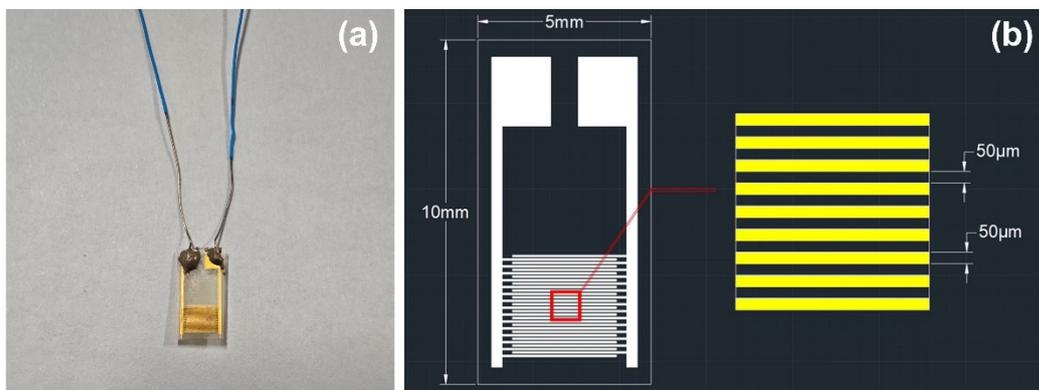


Figure S9. The optical photograph of the photodetector. (b) The blueprint of the interdigital electrode.