

Supporting Information

Controllable growth of MoS₂ nanosheets on TiO₂ burst nanotubes and their photocatalytic activity

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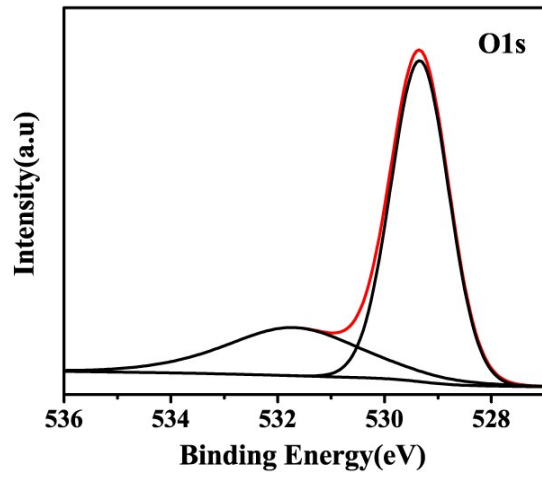


Fig. S1 O1s peaks of TiO₂ burst nanotubes

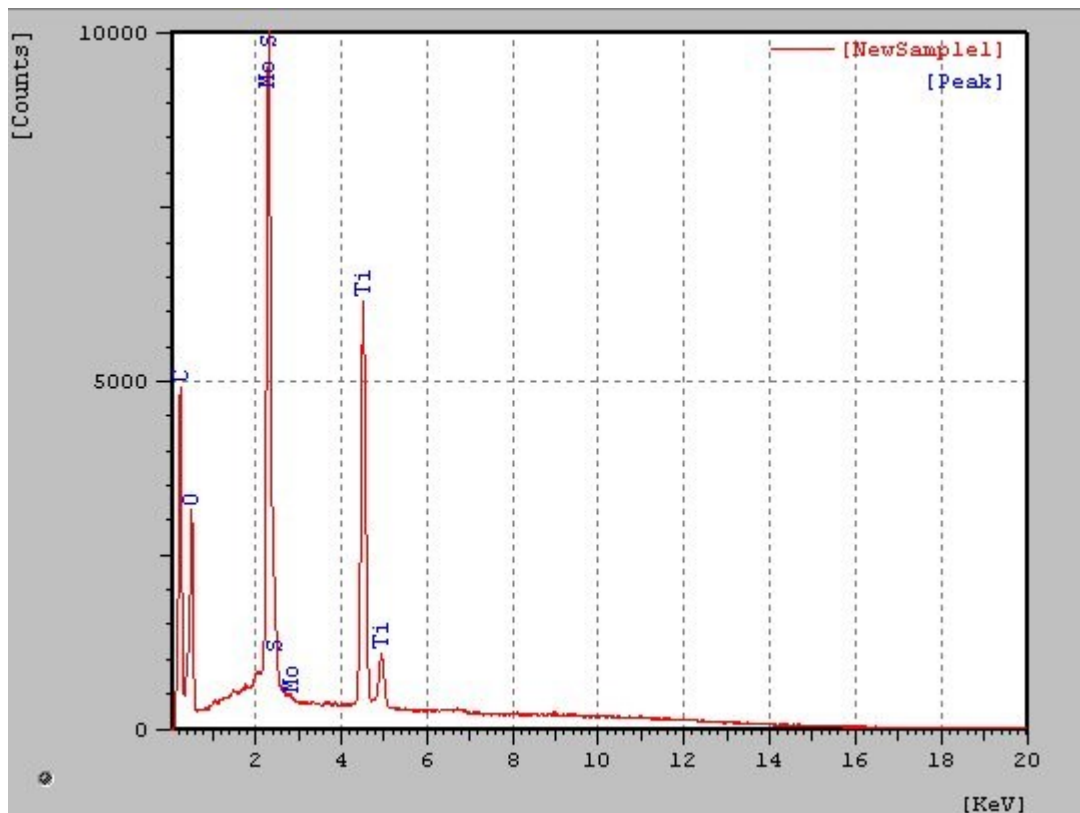


Fig.S2 EDS spectrum of TiO₂/MoS₂ nanocomposites

Table S1. Comparison of BET surface area and pore volume of the samples.

Photocatalyst	BET surface area (m ² g ⁻¹)	Pore volume (cm ³ g ⁻¹)
TiO ₂	41.77	0.5264
MoS ₂	10.59	0.1214
TiO ₂ /MoS ₂	113.97	0.4029

Table S2. Adsorption Parameters of the Langmuir and Freundlich Models for the Adsorption of MB onto the TiO₂ burst nanotubes, MoS₂ nanosheets and TiO₂/MoS₂ nanocomposites.

	Langmuir model			Freundlich model		
	q _{max} (mg g ⁻¹)	K _L	R ²	K _F	1/n	R ²
TiO ₂	5.342	0.471	0.993	4.12	0.054	0.734
MoS ₂	42.91	-17.92	0.996	37.03	0.043	0.658
TiO ₂ /MoS ₂	72.46	1.468	0.997	41.87	0.157	0.784

Table S3. Weight% and AT% of main elements in TiO₂/MoS₂ Nanocomposites.

Element	Weight%	AT%
C	25.966	41.616
O	37.915	45.620
S	7.984	4.794
Ti	11.551	4.642
Mo	16.584	3.328

Total 100.000 100.000

Table S4. The normalized MB degradation rate constant of TiO₂ burst nanotubes, MoS₂ nanosheets and TiO₂/MoS₂ nanocomposite

	k_{MB}	S_{BET}	k'_{MB}
TiO ₂	0.003	41.77	7.18×10^{-5}
MoS ₂	0.011	10.59	1.04×10^{-3}
TiO ₂ /MoS ₂	0.048	113.97	4.21×10^{-4}