

Supporting Information

The SnS₂ nanosheet-based microstructures with high adsorption capabilities and visible light photocatalytic activities

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Table S1 The synthetic conditions, shape and size of the samples

Sample	$\text{C}_5\text{H}_{10}\text{NS}_2\text{Na}\cdot 3\text{H}_2\text{O}$ (mmol)	$\text{SnCl}_4\cdot 5\text{H}_2\text{O}$ (mmol)	Ethylene glycol (mL)	Acetic acid (mL)	Shape	Size
1	1.5	1	30	0	flower	1.5 μm
2	2	1	30	0	nanosheet	500 nm
3	1.5	1	25	5	nest	800 nm
4	2	1	25	5	nanoplate	200 nm

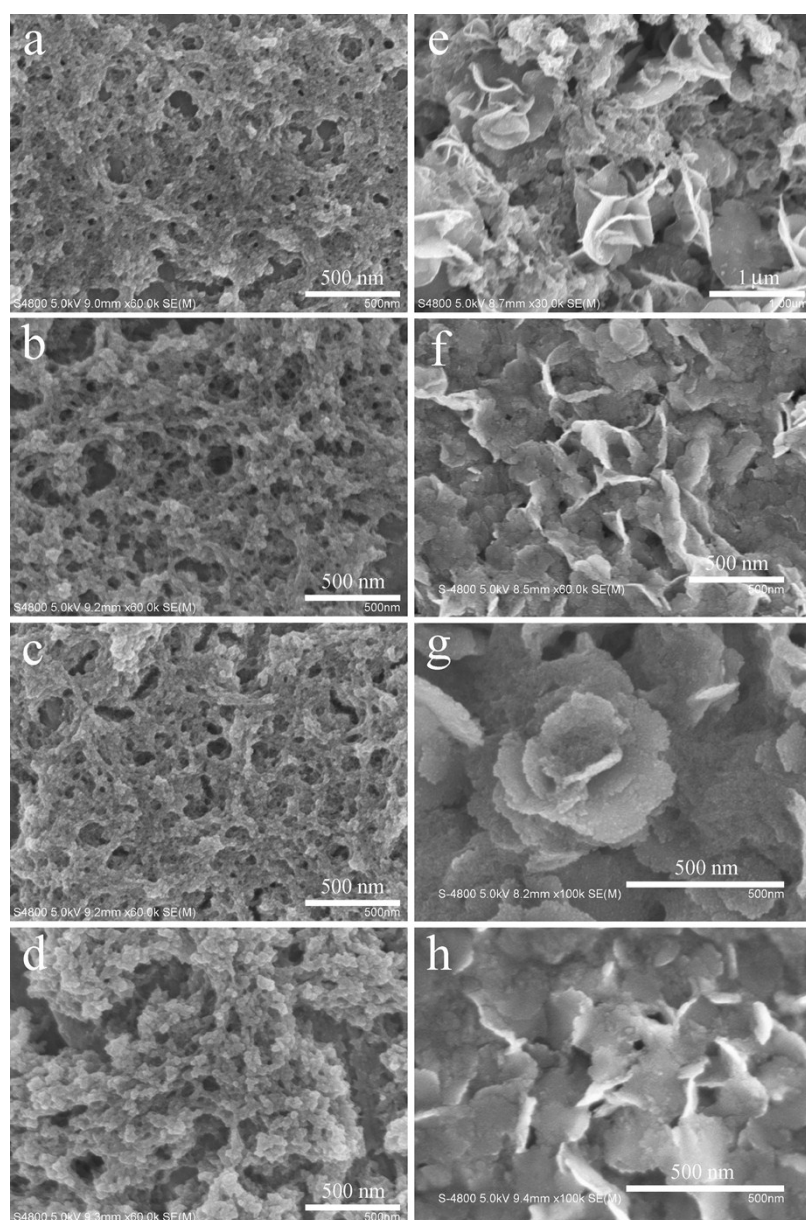


Fig. S1 Typical FESEM images of the products collected at different reaction times. (a-d) 2 h for sample 1 to 4, respectively, (e-h) 4 h for sample 1 to 4, respectively.

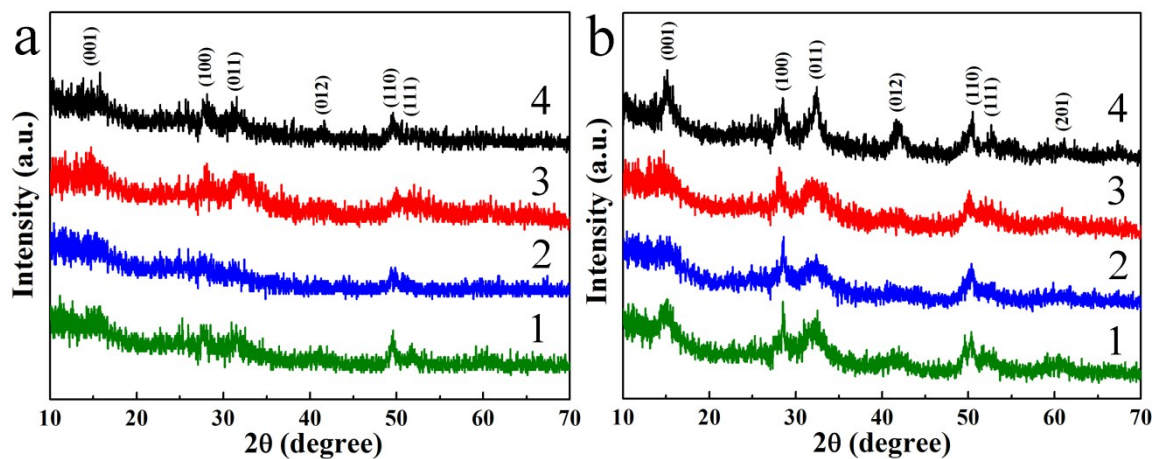


Fig. S2 Time-dependent XRD patterns of as-prepared SnS₂ nanosheet-based microstructures. (a) 2h, (b) 4h. The numbers 1 to 4 represented for sample 1 to 4, respectively.

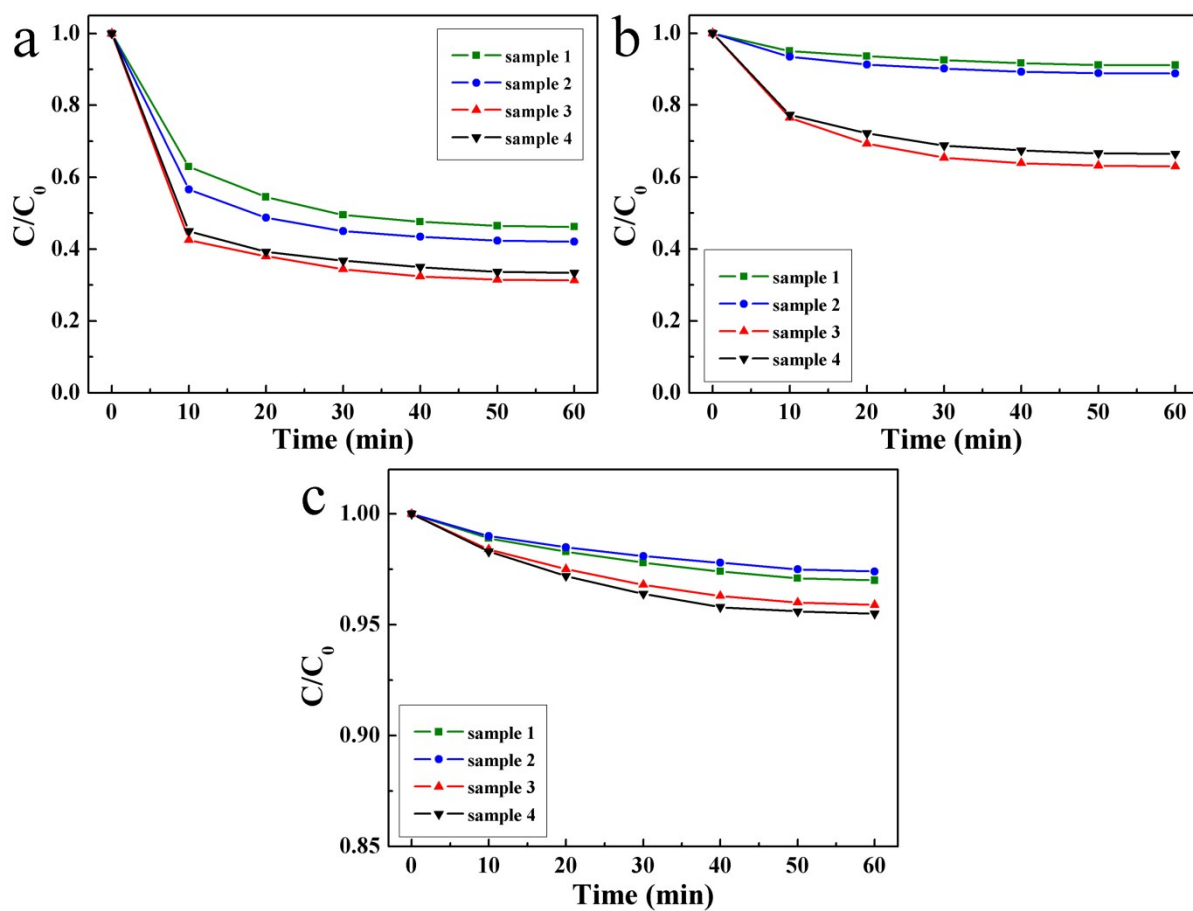


Fig. S3 Adsorption rate curves of as-prepared SnS₂ nanosheet-based microstructures in different dye solutions. (a) MB, (b) RhB, (c) MO.

Table S2 The adsorption capacity, photocatalytic degradation and total removal of MB, RhB, MO and phenol from the solution with the samples

Sample	MB			RhB			MO			phenol		
	A	P	T	A	P	T	A	P	T	A	P	T
1	53.8%	54.3%	78.9%	16.3%	76.2%	80.1%	3.0%	22.4%	24.7%	0.7%	1.4%	2.1%
2	57.9%	76.0%	89.9%	20.2%	76.8%	81.5%	2.6%	14.2%	16.4%	0.8%	1.2%	2.8%
3	68.7%	78.3%	92.8%	58.4%	83.9%	93.3%	4.1%	29.5%	32.4%	1.7%	1.5%	3.2%
4	66.6%	84.7%	94.9%	54.0%	89.1%	95.0%	4.5%	21.3%	24.8%	1.5%	1.7%	3.1%

Note: A, P, T-abbreviation for adsorption capacity, photocatalytic degradation and total removal, respectively.

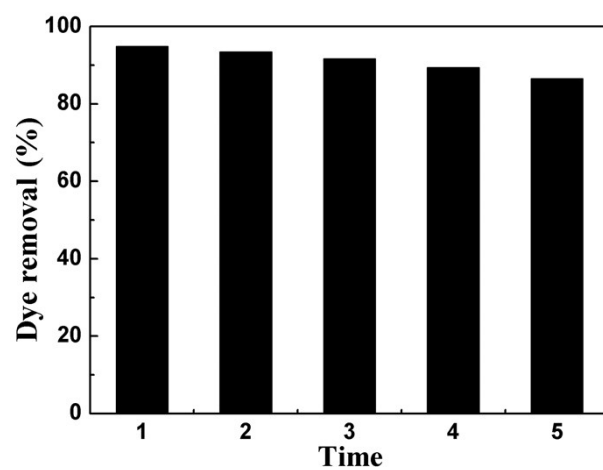


Fig. S4 Cycling results of MB removal from the solution with sample 4.