Supplementary Materials

Fabrication of Bi_2MoO_6 Nanosheets/TiO_2 Nanorod Arrays Heterostructures for Enhanced Photocatalytic Performance under Visible-Light Irradiation

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Table S1. Bi_2MoO_6-based photocatalysts and their photocatalytic performance.

Materials	Degradation rate (%)	Time (min)	Rate constant k (min^{-1})	Pollutants	Light sources	Ref.
Bi_2MoO_6 nanosheets	81	150		MB	UV light	[1]
Bi_2MoO_6@TiO_2 nanotubes	21	120		MB	visible light	[1]
Au/Bi_2MoO_6@TiO_2 nanotubes	82	120	0.0203	MB	UV light	[1]
	68	120	0.0081	MB	visible light	[1]
	95	90		BPA	visible light	[1]
Bi_2MoO_6 nanosheets	68.1	80		MO	visible light	[2]
Bi_2MoO_6/TiO_2 nanobelts	90.4	80		MO	visible light	[2]
Bi_2MoO_6/TiO_2 nanobelts	100	40		MO	UV light	[2]
Bi_2MoO_6 nanosheets	29.6	40		MO	UV light	[2]
Bi_2MoO_6/TiO_2 nanobelts	74	60	0.016	X-3B	visible light	[3]
Bi_2MoO_6 microspheres	20	360		MB	visible light	[4]
TiO_2/Bi_2MoO_6	83~95	360		MB	visible light	[4]
Bi_2MoO_6 film	55	240	0.0029	ARS	visible light	[5]
Bi_2MoO_6/TiO_2 bilayer films	85	240	0.0081	ARS	visible light	[5]
TiO_2-Bi_2MoO_6/$Bi_{3.64}Mo_{0.36}O_{6.55}$	93 for RhB, 83 for o-nitrophenol	120		RhB, o-nitrophenol	visible light	[6]
Bi_2MoO_6/TiO_2 microspheres	78~96	300	0.00459~0.00895	phenol	visible light	[7]
	76~94	300	0.00456~0.00812	nitrobenzene	visible light	[7]
Bi_2MoO_6/TiO_2 nanofibers	92	300		RhB	visible light	[8]

Bi/Bi_2MoO_6/TiO_2 nanotubes	97.3 73.21 for MB, 92.98 for RhB	100 120	0.03505 0.00739 for MB, 0.02253 for RhB	MB MB, RhB	visible light solar irradiation	[9] [10]
Bi_2MoO_6/ZIF-8	66.88	100		MB	visible light	[11]
S-doped Bi_2MoO_6	97	60		RhB	visible light	[12]
Bi_2MoO_6/TiO_2 nanorods	95	180	0.015	MB	visible light	This work

Table S2. The abbreviations of products with different amounts of Bi_2MoO_6 by varying the mass of raw materials in precursor solution.

	$Bi(NO_3)_3 \cdot 5H_2O$ (mg)	$Na_2MoO_4 \cdot 2H_2O$ (mg)
BMT-1	20	5
BMT-2	48	12
BMT-3	96	24
BMT-4	144	36

Table S3. S_{BET}, Pore Volume and Mean Pore Diameter of TiO_2, Bi_2MoO_6, BMT-3 and BMT-4 samples.

Samples	S_{BET} (m^2/g)	Pore Volume (cm^3/g)	Mean Pore Diameter (nm)
TiO_2	64.0	0.17	9.7
Bi_2MoO_6	26.0	0.05	3.8
BMT-3	88.2	0.18	4.9
BMT-4	60.7	0.10	3.7

Table S4. Pseudo-first-order rate constants and corresponding R-Square values of different samples.

Samples	Reaction rate constant (k) (min^{-1})	R-Square
Blank	0.000538	0.94606
TiO_2 nanorods	0.00113	0.94418
BMT-1	0.00203	0.96246
BMT-2	0.00662	0.96883
BMT-3	0.015	0.95206
BMT-4	0.0126	0.96452

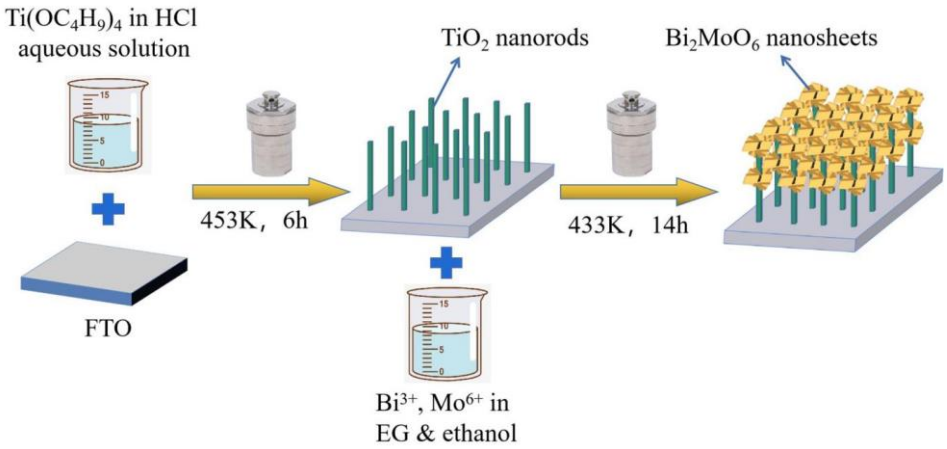

Figure S1. Stepwise synthesis protocol of TiO_2 nanorod arrays and Bi_2MoO_6/TiO_2 HSs.

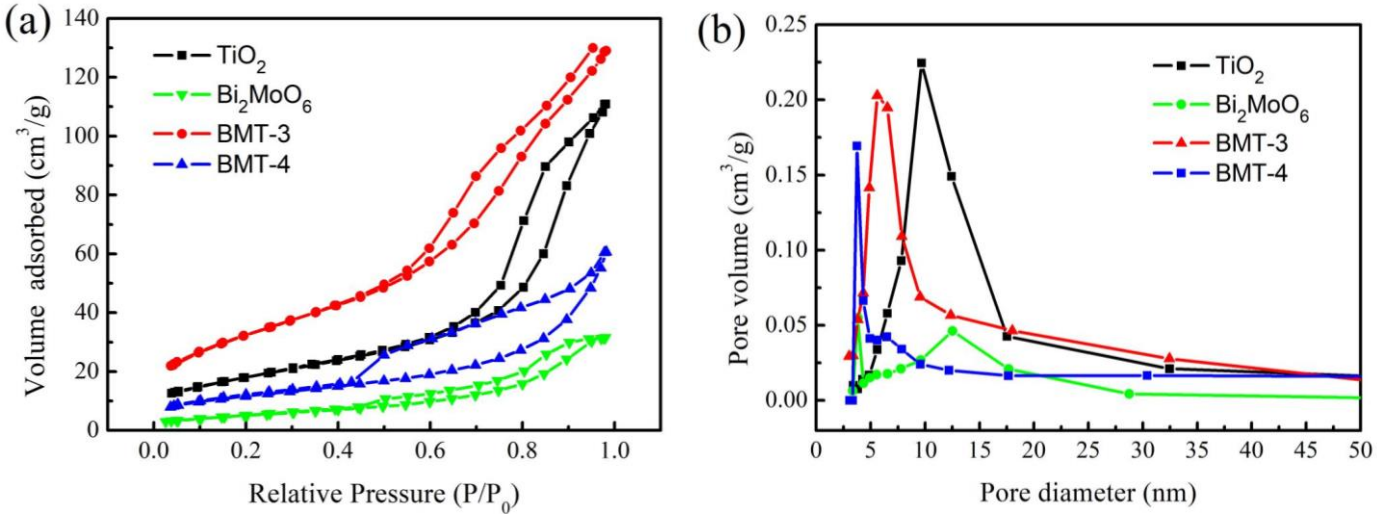

Figure S2. N_2 adsorption−desorption isotherms (a) and the corresponding pore-size distribution curves (b) of TiO_2, Bi_2MoO_6, BMT-3 and BMT-4 samples.

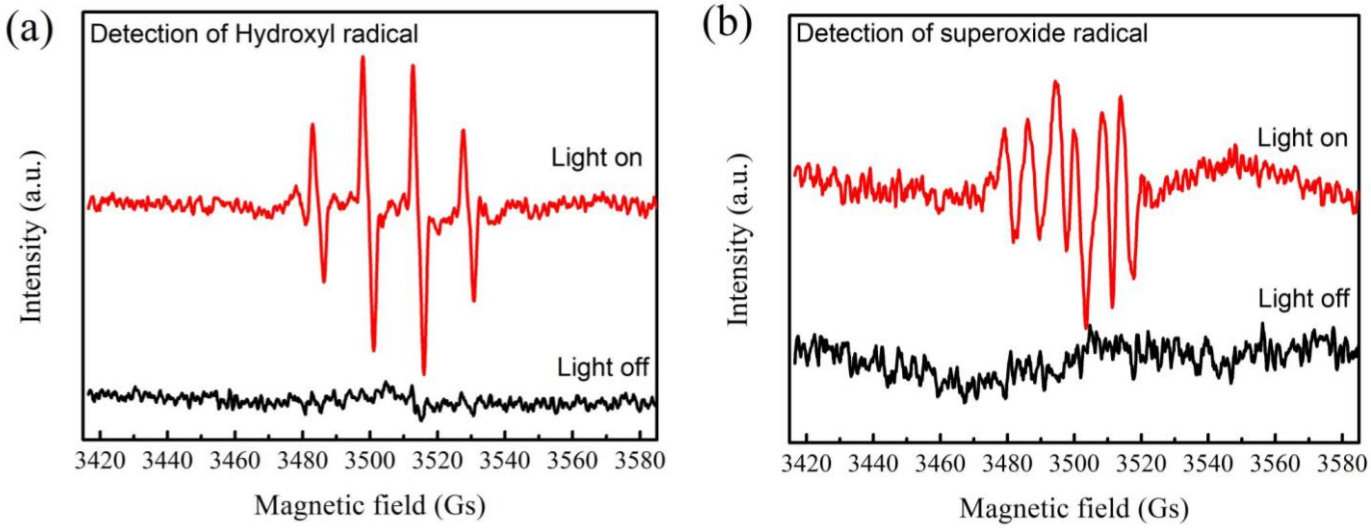

Figure S3. The ESR signals of •OH (a) and $\bullet O_2^-$ radicals (b) of BMT-3 photocatalysts.

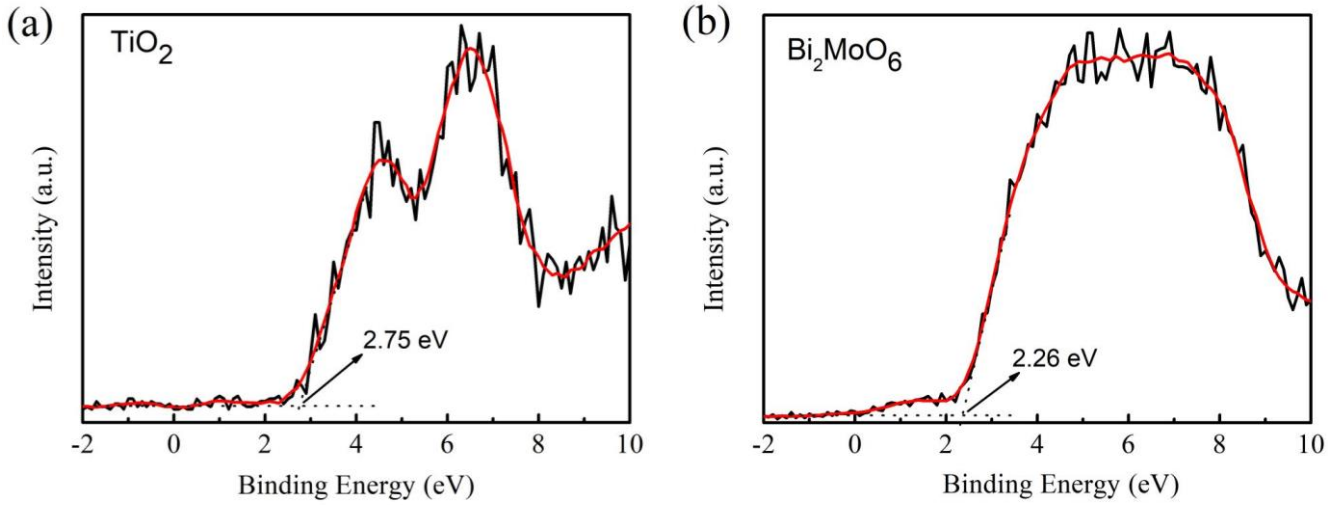

Figure S4. XPS valence band spectra of TiO_2 and Bi_2MoO_6. .