

Supplementary material

for

Enhanced exciton effect and singlet oxygen generation triggered by tunable oxygen vacancies on Bi₂MoO₆ for efficient photocatalytic degradation of sodium pentachlorophenol

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4 pages, 5 figures, 2 tables

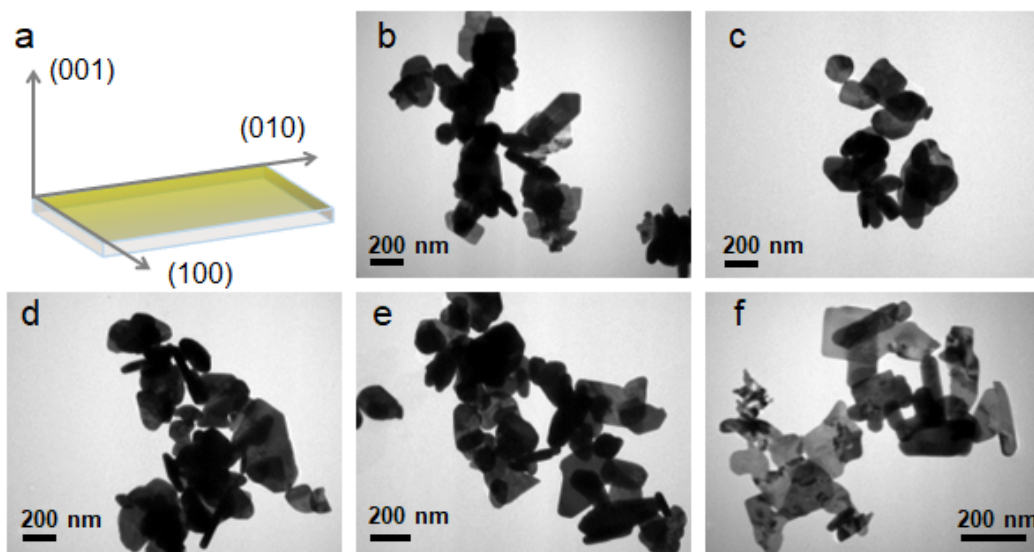


Figure S1. Schematic diagram of Bi_2MoO_6 nanosheets (a) and TEM images of BMO-001 (b), BMO-001-200 (c), BMO-001-250 (d), BMO-001-300 (e) and BMO-001-350 (f), respectively.

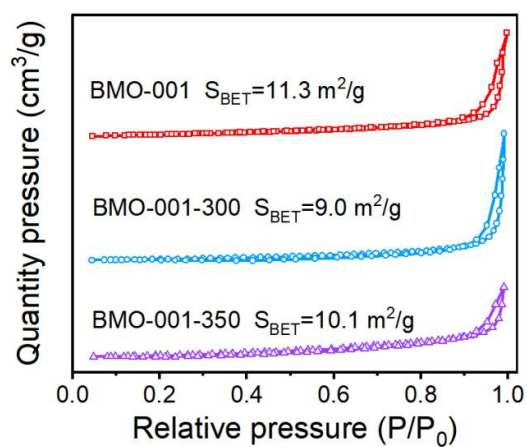


Figure S2. The Brunauer–Emmett–Teller (BET) surface areas of BMO-001, BMO-001-300 and BMO-001-350.

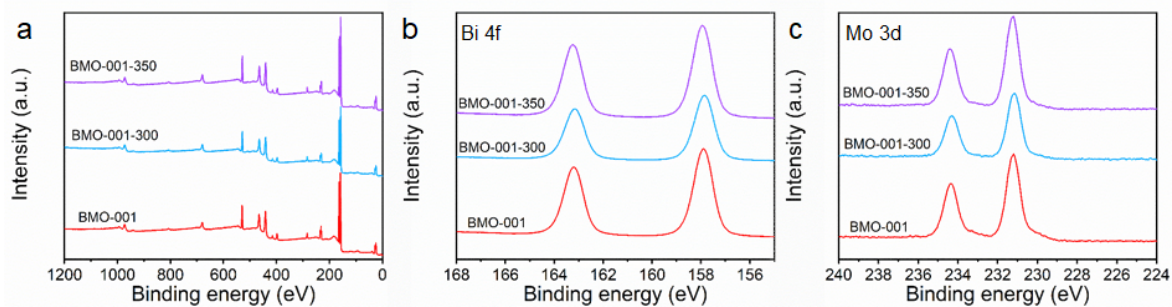


Figure S3. XPS spectra of BMO, BMO-001-300 and BMO-001-350 photocatalysts: (a) survey spectra, (b) Bi 4f and (c) Mo 3d.

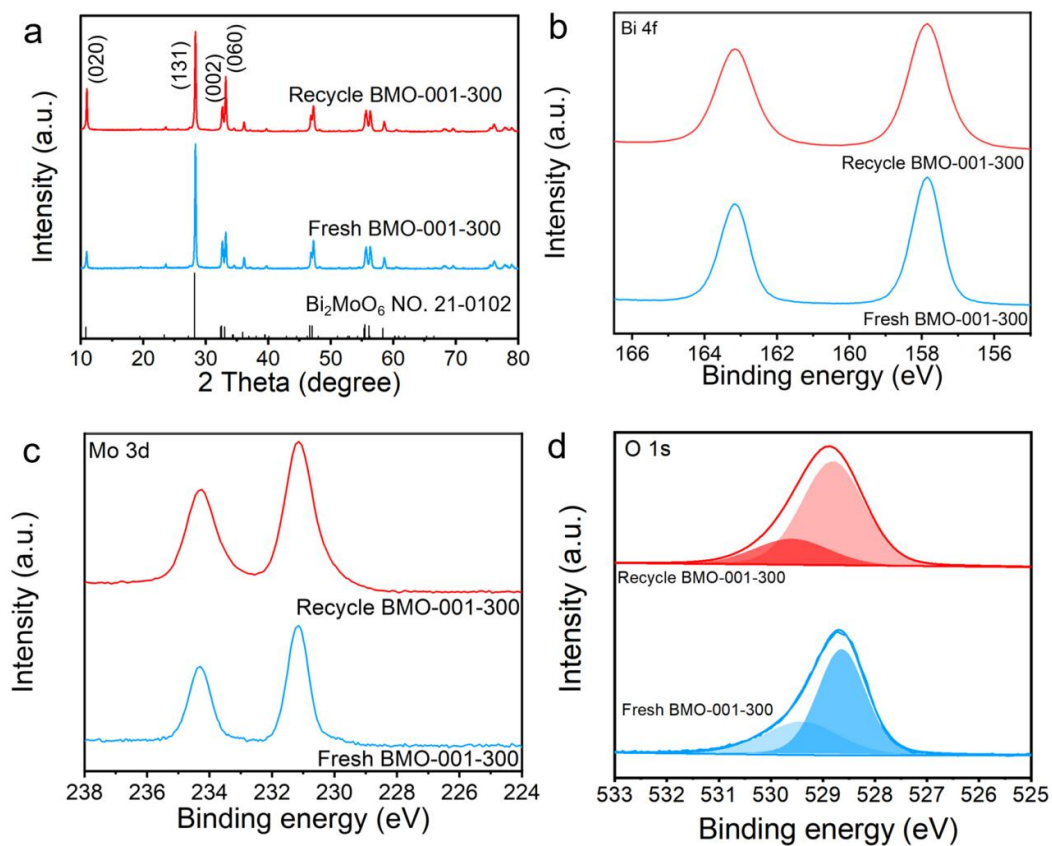


Figure S4. (a) XRD and XPS spectra of (b) Bi 4f, (c) Mo 3d and (d) O 1s over the fresh and recycle BMO-001-300 photocatalysts.

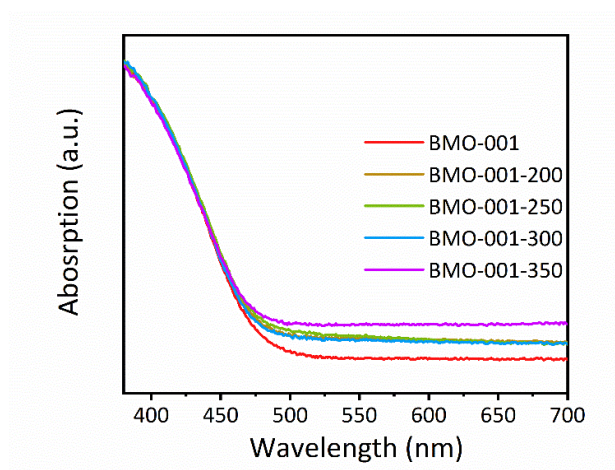


Figure S5. UV-vis diffuse reflectance spectra of as-prepared photocatalysts.

Table S1. Comparison of photocatalytic degradation of chlorophenols pollutants using different photocatalysts.

Photocatalysts	Light resources	Pollutants concentration	Photocatalytic activity	Refs.
g-C ₃ N ₄	300W Xe lamp $\lambda \geq 420$ nm	10 ppm 4-CP	30.6% within 240 min	[40]
Au-C ₃ N ₄	300W Xe lamp $\lambda \geq 420$ nm	10 ppm 4-CP	77.2% within 60 min	[41]
BiOCl-g-C ₃ N ₄	300W Xe lamp $\lambda \geq 420$ nm	10 ppm 4-CP	95% within 120 min	[42]
BiO _{2-x}	300W Xe lamp $\lambda \geq 420$ nm	30 ppm 4-CP	100% within 120 min	[43]
TiO ₂	500W Xe lamp $\lambda \geq 365$ nm	20 ppm PCP	85% within 15 min	[44]
Bi _{2.1} WO ₆	500W Xe lamp $\lambda \geq 420$ nm	10 ppm NaPCP	91% within 120 min	[45]
Ag/BiOCl	500W Xe lamp $\lambda \geq 420$ nm	10 ppm NaPCP	80% within 180 min	[46]
Bi/Bi ₂ MoO ₆	300W Xe lamp $\lambda \geq 400$ nm	10 ppm NaPCP	95% within 120 min	[47]
BMO-001-300	300W Xe lamp $\lambda \geq 400$ nm	50 ppm NaPCP	80% within 60 min	This work

Note: 4-CP: 4-chlorophenol; PCP: Pentachlorophenol; NaPCP: Sodium pentachlorophenol.

Table S2. The band potential analysis of BMO-001, BMO-001-300 and BMO-001-350.

Sample	Ef vs. Ag/AgCl	Ef vs. NHE	VB-XPS	VB vs. NH E	Eg	CB vs. NH E
BMO	-0.29 V	0.32 V	2.16 eV	2.48 V	2.56 eV	-0.08 V
BMO-001-300	-0.30 V	0.31 V	2.07 eV	2.38 V	2.52 eV	-0.14 V
BMO-001-350	-0.34 V	0.27 V	1.66 eV	1.93 V	2.51 eV	-0.58 V