

Electronic Supplementary Material (ESI) for New Journal of Chemistry.

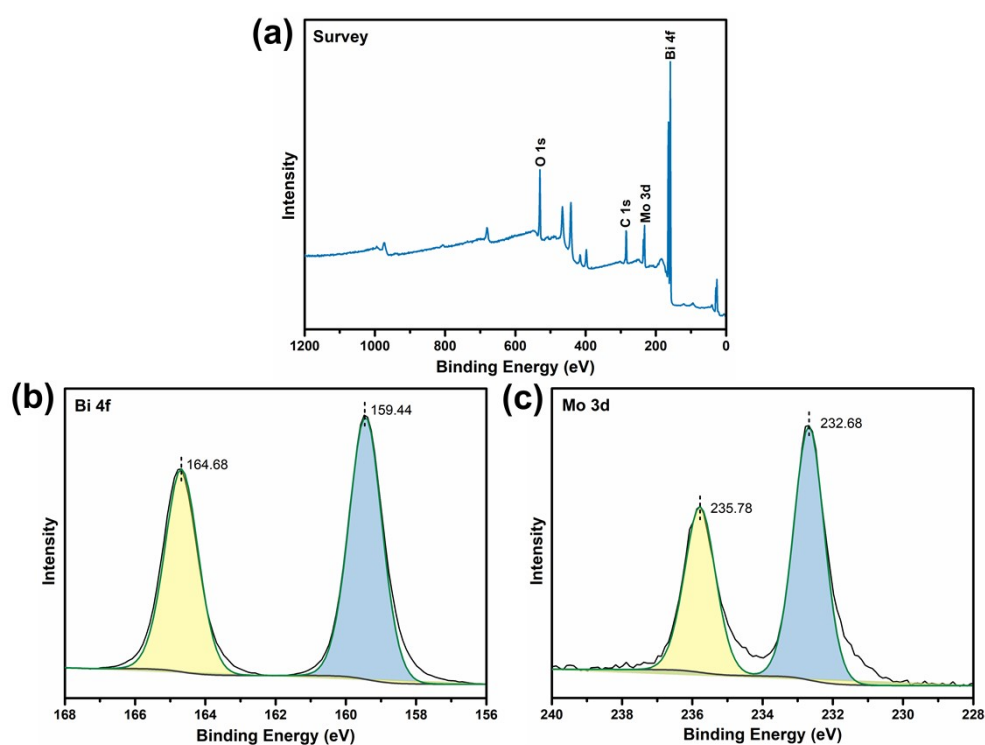
## Supporting information

### Construction of $\text{Bi}_2\text{MoO}_6/\text{g-C}_3\text{N}_4$ heterostructure with enhanced visible light photocatalytic performance

Guangxin Zhang\*, Jianguang Fang, Haoran Xu, Jingmiao Hu

*School of Materials Science and Engineering, Shandong University of Science and Technology,*

*Qingdao 266590, PR China*



**Fig. S1.** XPS spectra of  $\text{Bi}_2\text{MoO}_6$  (a) survey, (b) Bi4f, and (c) Mo 3d.

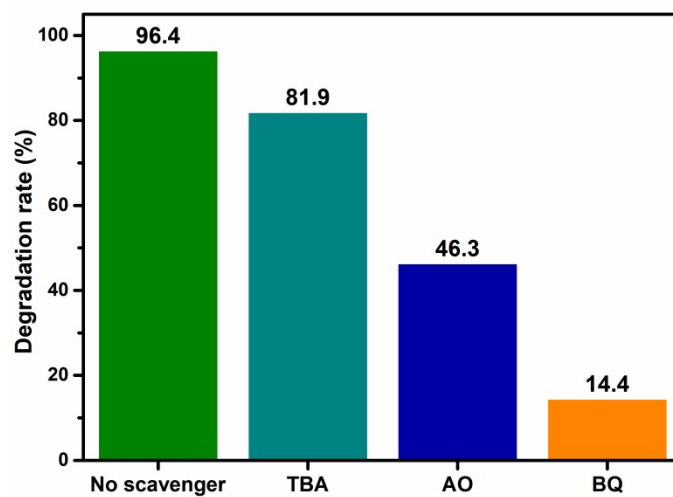


Fig. S2. Free radical quenching experiments of BiC-1 for RhB degradation.

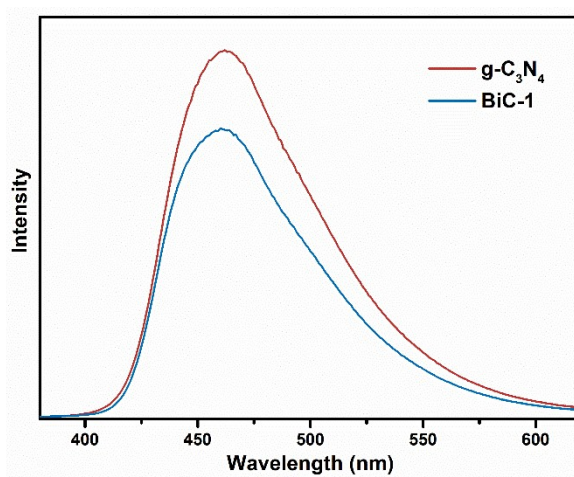


Fig. S3. PL spectra of  $g\text{-C}_3\text{N}_4$  and BiC-1.

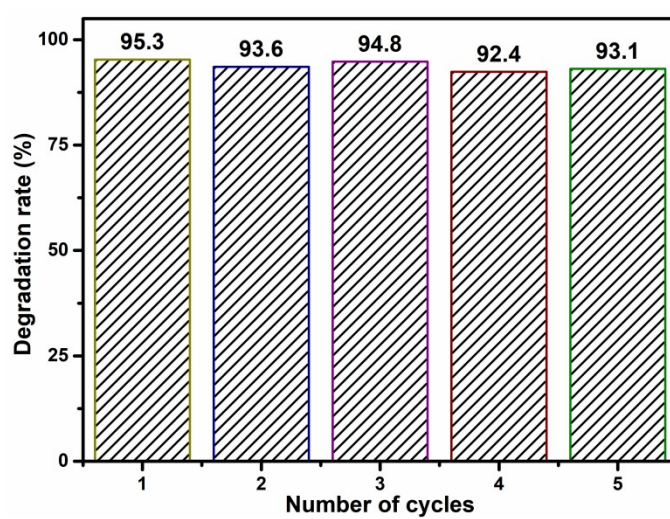


Fig. S4. Reusability of BiC-1 for RhB degradation.

**Table S1** Comparison of photocatalytic performance of Bi<sub>2</sub>MoO<sub>6</sub>/g-C<sub>3</sub>N<sub>4</sub> photocatalysts

Photocatalysts	Light source	Dosage	Initial concentration	Degradation efficiency	Reference
Bi <sub>2</sub> MoO <sub>6</sub> /g-C <sub>3</sub> N <sub>4</sub>	300 W xenon lamp (>400 nm)	0.4 g/L	10 mg/L RhB	75% (120 min)	[1]
Bi <sub>2</sub> MoO <sub>6</sub> /g-C <sub>3</sub> N <sub>4-x</sub>	300 W xenon lamp	0.1 g/L	10 mg/L RhB	95% (60 min)	[2]
Bi <sub>2</sub> MoO <sub>6</sub> -g-C <sub>3</sub> N <sub>4</sub>	500 W xenon lamp (≥420 nm)	0.4 g/L	10 mg/L RhB	97% (50 min)	[3]
Bi <sub>2</sub> MoO <sub>6</sub> /g-C <sub>3</sub> N <sub>4</sub>	50 W LED light (410 nm)	1 g/L	10 mg/L MB	97% (40 min)	[4]
Bi <sub>2</sub> MoO <sub>6</sub> /g-C <sub>3</sub> N <sub>4</sub>	300 W xenon lamp (≥400 nm)	0.8 g/L	1.25×10 <sup>-5</sup> mol/L RhB	99% (40 min)	[5]
Bi <sub>2</sub> MoO <sub>6</sub> /g-C <sub>3</sub> N <sub>4</sub>	400 W xenon lamp (≥420 nm)	0.4 g/L	10 mg/L RhB	98% (70 min)	[6]
Bi <sub>2</sub> MoO <sub>6</sub> /g-C <sub>3</sub> N <sub>4</sub>	300 W xenon lamp (>420 nm)	1 g/L	1×10 <sup>-5</sup> mol/L RhB	72% (360 min)	[7]
g-C <sub>3</sub> N <sub>4</sub> /C@Bi <sub>2</sub> MoO <sub>6</sub>	500 W xenon lamp (>420 nm)	1 g/L	15 mg/L β-naphthol	72% (150 min)	[8]
Bi <sub>2</sub> MoO <sub>6</sub> /g-C <sub>3</sub> N <sub>4</sub>	300 W xenon lamp (>420 nm)	0.2 g/L	10 mg/L naproxen	83% (60 min)	[9]
Bi <sub>2</sub> MoO <sub>6</sub> /Bi/g-C <sub>3</sub> N <sub>4</sub>	300 W xenon lamp (>420 nm)	0.75 mg/cm <sup>2</sup>	200 ppm HCHO	96.15% (600 min)	[10]
Bi <sub>2</sub> MoO <sub>6</sub> /g-C <sub>3</sub> N <sub>4</sub>	300 W xenon lamp (>400 nm)	1 g/L	10 mg/L RhB	96.4% (16 min)	This work

## References

- [1] K. Xia, H. Chen, M. Mao, Z. Chen, F. Xu, J. Yi, Y. Yu, X. She, H. Xu, H. Li, *Phys. Status Solidi A*, 2018, **215**, 1800520.
- [2] B. Zhou, Q. Liu, S. Zhang, M. Sanjrani, H. Yang, S. Xia, *Chem. Phys. Lett.*, 2020, **748** 137381.
- [3] Q. Liang, M. Zhang, C. Yao, C. Liu, S. Xu, Z. Li, *J. Photochem. Photobiol., A*, 2017, **332**, 357-363.
- [4] J. Lv, K. Dai, J. Zhang, L. Geng, C. Liang, Q. Liu, G. Zhu, C. Chen, *Appl. Surf. Sci.*, 2015, **358**, 377-384.
- [5] W. Chen, G.-R. Duan, T.-Y. Liu, S.-M. Chen, X.-H. Liu, *Mater. Sci. Semicond. Process.*, 2015, **35**, 45-54.
- [6] H. Li, J. Liu, W. Hou, N. Du, R. Zhang, X. Tao, *Appl. Catal., B*, 2014, **160-161**, 89-97.
- [7] K. Xiao, H. Huang, N. Tian, Y. Zhang, *Mater. Res. Bull.*, 2016, **83**, 172-178.
- [8] T. Ma, J. Wu, Y. Mi, Q. Chen, D. Ma, C. Chai, *Sep. Purif. Technol.*, 2017, **183**, 54-65.
- [9] K. Fu, Y. Pan, C. Ding, J. Shi, H. Deng, *J. Photochem. Photobiol., A*, 2021, **412**, 113235.
- [10] Y. Wu, M. Song, Z. Chai, J. Huang, X. Wang, *ACS Sustainable Chem. Eng.*, 2020, **8**, 7710-7720.

