

Enhanced heterogeneous Fenton-like degradation of methylene blue by reduced CuFe_2O_4

Qingdong Qin^a, Yahong Liu^a, Xuchun Li^b, Tian Sun^a, Yan Xu^{a,*}

^aSchool of Civil Engineering, Southeast University, Nanjing 210096, China

^bSchool of Environmental Science and Engineering, Zhejiang Gongshang University,
Hangzhou 310018, China

* Corresponding author: xuxucalmm@seu.edu.cn, Tel.: +86 25 83790757, Fax: +86
25 83790757

Table S1 Comparison of MB removal using different Fenton-like catalysts

Catalysts	Catalyst dose (g/L)	[MB] ₀ (mg/L)	[H ₂ O ₂] ₀ (mM)	pH	k (min ⁻¹) ^a	References
Fe ₃ O ₄ /CeO ₂	1	100	163.7	6.0	0.034	1
rGSs/Fe ₂ O ₃ /PPy	0.5	80	~2450	6.5	0.031	2
Fe ₃ O ₄ @SiO ₂	1.0	50	~680	6.5	0.020	3
FePt	0.005	5	~1140	5.5	0.023	4
MnO ₂ -coated Fe-pillared bentonite	0.1	50	176.4	2.4	0.013	5
Ferrocene	0.186	10	23.58	4.0	0.026	6
GT-Fe	1.0	50	~330	3.1	0.021	7
Reduced CuFe ₂ O ₄	0.1	50	0.5	3.2	0.055	This work

^a k caculated from the pseudo-first-order kinetic model ($C=C_0e^{-kt}$)

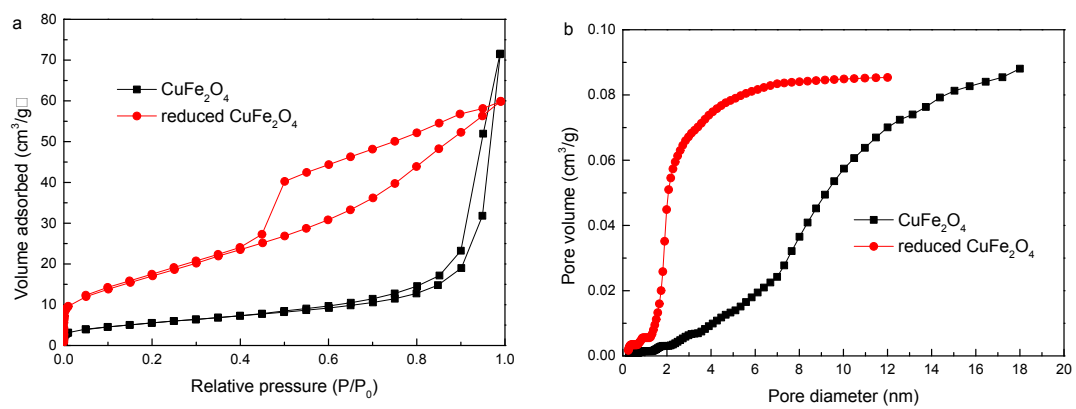


Fig.S1 N_2 adsorption isotherms (a) and pore size distribution curves (b) of CuFe_2O_4 and reduced CuFe_2O_4 .

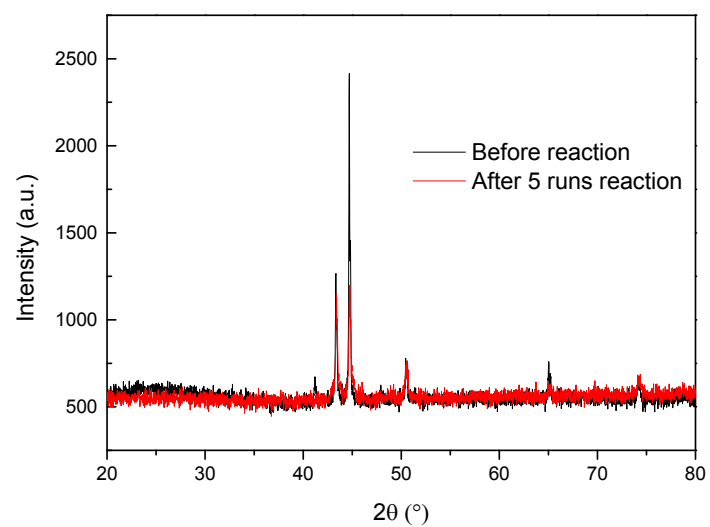


Fig.S2 XRD patterns of reduced CuFe_2O_4 before and after reaction.

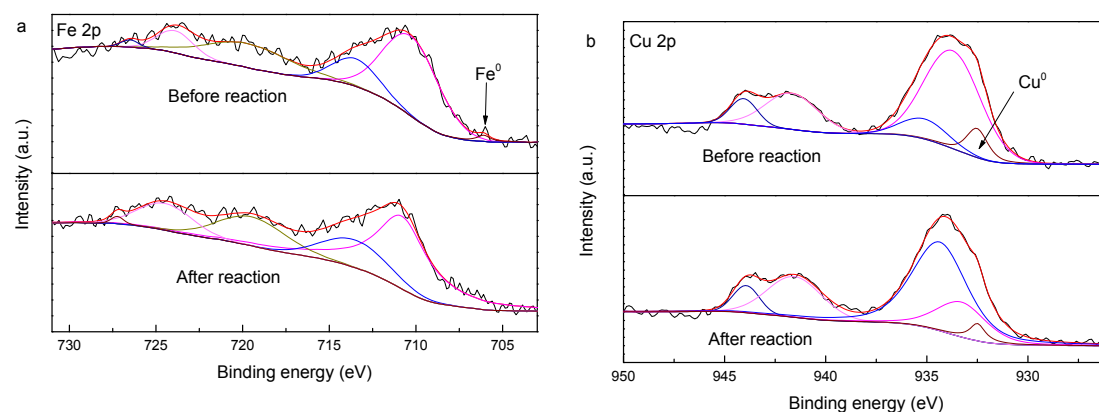


Fig.S3 XPS spectra for Fe 2p (a) and Cu 2p (b) of reduced CuFe_2O_4 before and after reaction.

References

1. K. Y. Li, Y. Q. Zhao, C. S. Song and X. W. Guo, *Appl. Surf. Sci.*, 2017, **425**, 526-534.
2. J. S. Zhang, T. J. Yao, C. C. Guan, N. X. Zhang, H. Zhang, X. Zhang and J. Wu, *J. Colloid Interface Sci.*, 2017, **505**, 130-138.
3. S. T. Yang, W. Zhang, J. R. Xie, R. Liao, X. L. Zhang, B. W. Yu, R. H. Wu, X. Y. Liu, H. L. Li and Z. Guo, *RSC Adv.*, 2015, **5**, 5458-5463.
4. S. C. Hsieh and P. Y. Lin, *J. Nanopart. Res.*, 2012, **14**, 10.
5. Z. L. Shi, X. X. Wang and S. H. Yao, *Chin. J. Inorg. Chem.*, 2015, **31**, 696-702.
6. Q. Wang, S. L. Tian and P. Ning, *Ind. Eng. Chem. Res.*, 2014, **53**, 643-649.
7. T. Shahwan, S. Abu Sirriah, M. Nairat, E. Boyaci, A. E. Eroglu, T. B. Scott and K. R. Hallam, *Chem. Eng. J.*, 2011, **172**, 258-266.