Supplementary Information of

H_2O_2-free photo-Fenton system for antibiotics degradation in water via the synergism of oxygen-enriched graphitic carbon nitride polymer and nano manganese ferrite

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This file includes 2 tables and 6 figures.

Table S1 Comparison of the catalytic performance of HBWO and other catalysts

Catalysts	Dosage (g/L)	Target	Added oxidant	pH	Efficiency (min^{-1})	Ref
CeO_2/ferrihydrites	0.4	TC	50 mM H_2O_2	4.0	0.0103	[17]
$LaFeO_3$/diatomite	0.3	CIP	30 mM H_2O_2	4.0	0.0187	[18]
Au-$MnFe_2O_4$	0.1	TC	50 mM H_2O_2	Neutral	0.0231	[21]
$MnFe_2O_4$	0.4	MB	30 mM H_2O_2	3.0	0.021	[22]
ZIF-8/$MnFe_2O_4$	0.3	TC	50 mM H_2O_2	--	0.0266	[23]
$MnFe_2O_4$@ SnS_2	0.5	MB	15 mM H_2O_2	9.0	0.0200	[24]
$MnFe_2O_4$/CeO_2/SnS_2	--	MB	5 mM H_2O_2	--	0.0239	[27]
$MnFe_2O_4$–rGO	0.6	MB	5 mM H_2O_2	9.0	0.0499	[28]
C_3N_4@$MnFe_2O_4$-graphene	1.0	Amoxicillin	10 mM PS	---	0.017	[29]
		TC			0.027	
		CIP			0.043	
OMF	0.2	TC	0	--	0.0266	This work
		OTC	0	--	0.0196	
		CIP	0	--	0.0043	

Table S2 Analysis on element content via XPS

Name	Pos.	FEHM	Area	At%
Mn 2p	642	4.51365	1378405.0	8.71
Fe 2p	712	5.08555	3203574.2	17.15
C 1s	285	2.33351	284780.0	25.04
N 1s	405	1.8214	21518.6	1.05
O1s	531	2.3967	1601372.1	48.05

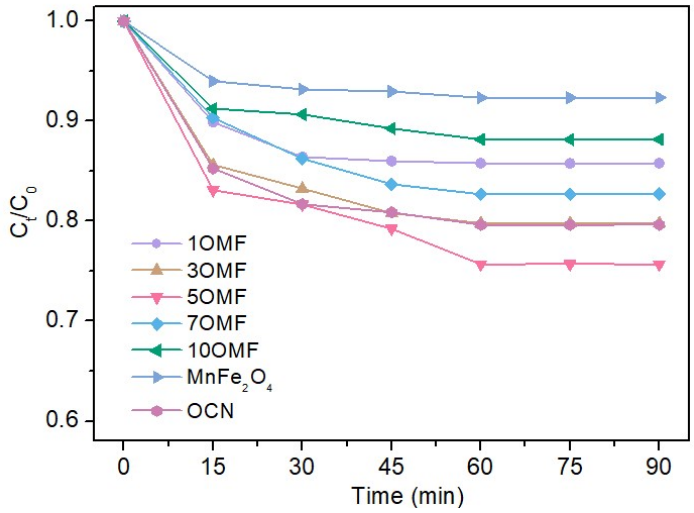

Fig. S1 Dark adsorption of samples.

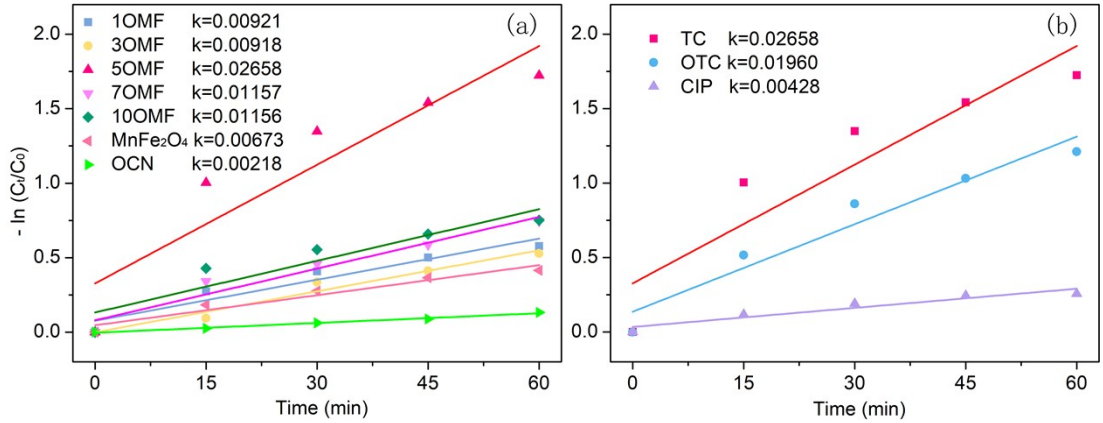

Fig. S2 The photocatalytic degradation kinetics of (a) different OMF composites and (b) TC, OTC and CIP degradation over 5OMF.

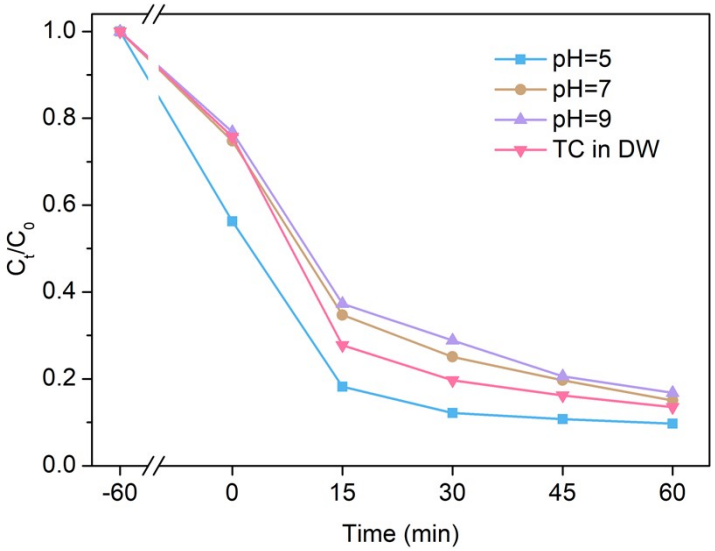

Fig. S3 Effect of pH on TC degradation over 5OMF.

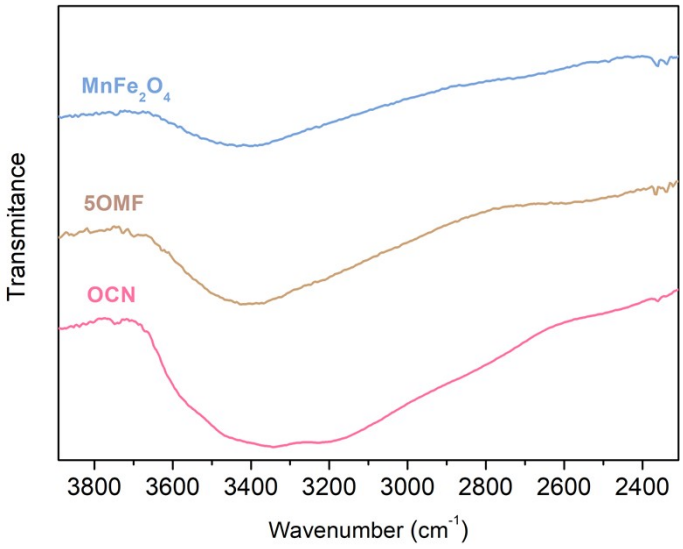

Fig. S4 FT-IR spectra of samples.

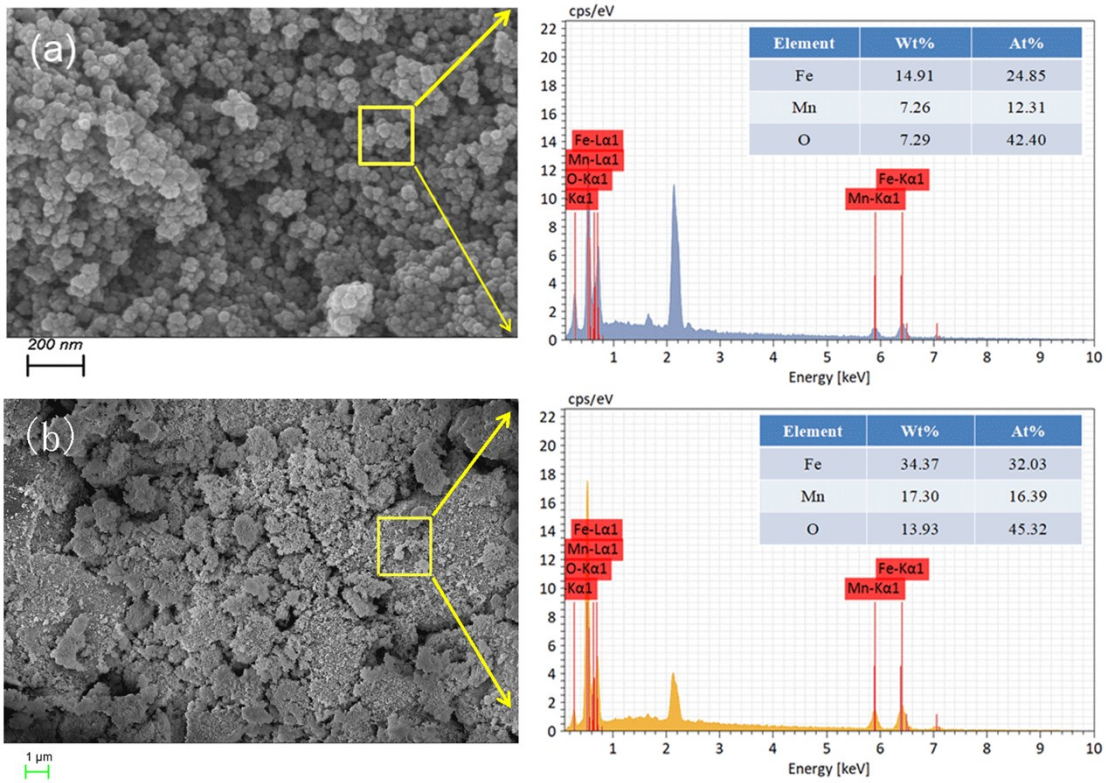

Fig. S5 SEM and EDS images of (a) $MnFe_2O_4$ and (b) 5OMF.

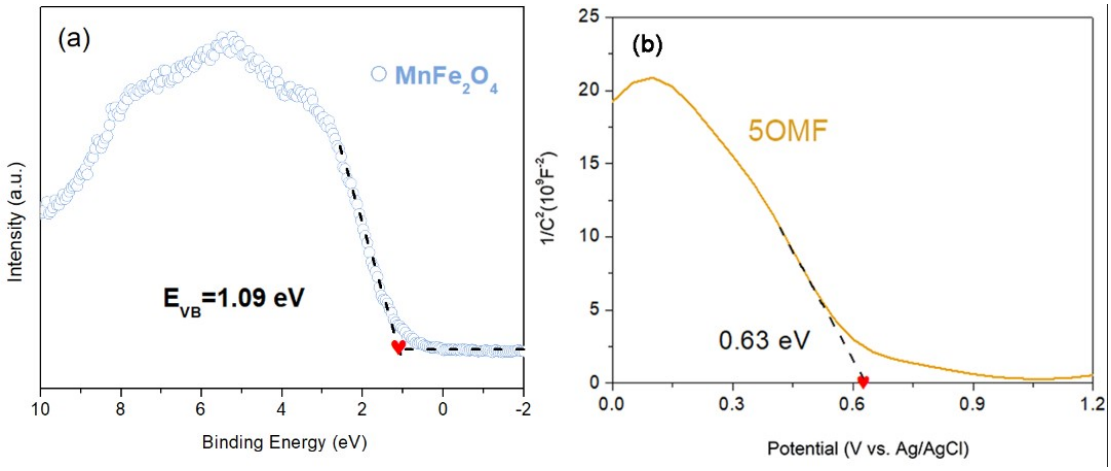

Fig. S6 (a) XPS-VB spectra of $MnFe_2O_4$, (b) Mott-Schottky analysis of 5OMF film electrode in 0.5M of Na_2SO_4 solution with pH located at 6.98.