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$CuWO_{4-x}/Bi_{12}O_{17}Cl_2$ 梯型异质结增强 PMS 活化性能用于高效抗生素去除

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S-Scheme-Enhanced PMS Activation for Rapidly Degrading Tetracycline using $CuWO_{4-x}/Bi_{12}O_{17}Cl_2$ Heterostructures

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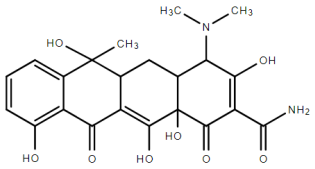
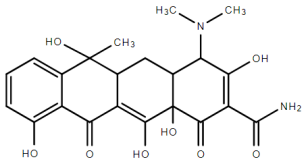
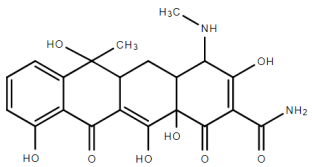
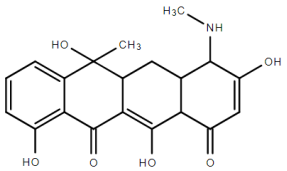
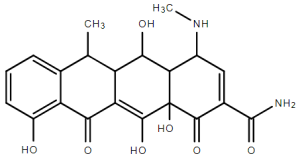
Table S1 Comparison of pollutant degradation studies with our work.

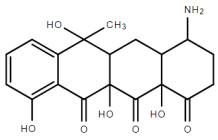
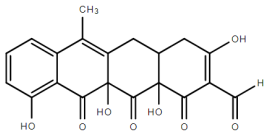
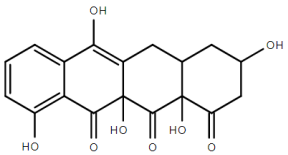
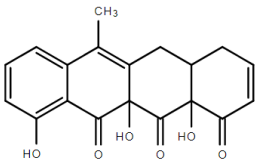
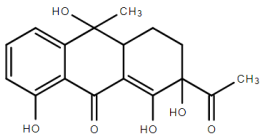
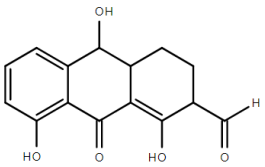
Photocatalyst	Concentration/(mg·L^{-1})	PMS Dosage/(g·L^{-1})	Time/min	Removal/%	Light source	Ref.
10%Co_3O_4/g-C_3N_4	TC:20	0.2	60	90.2	300 W XL ($\lambda \geq 420$ nm)	1
BC/CN-15	TC:10	0.2	60	88.3	300 W XL ($\lambda \geq 420$ nm)	2
Cu-R	TC:30	0.2	60	95.9	300 W XL (full spectrum)	3
BW/NH	TC:50	0.5	100	91.0	300 W XL ($\lambda \geq 420$ nm)	4
MCN	TC:20	0.5	60	80.0	300 W XL ($\lambda \geq 420$ nm)	5
CBB-50	TC:10	1.2	35	90.3	300 W XL ($\lambda \geq 420$ nm)	6
MoS_2/Ag/g-C_3N_4	TC:20	0.1	30	91.2	300 W XL ($\lambda \geq 420$ nm)	7
CovB-30	TC:10	0.3	30	94.7	300 W XL ($\lambda \geq 420$ nm)	our work

Table S2 The structural information of the possible intermediates products.

Compound	Formula	*m/z*	Proposed structure
TC	$C_{22}H_{24}N_2O_8$	445	
P1	$C_{22}H_{24}N_2O_8$	460	
P2	$C_{21}H_{22}N_2O_8$	432	
P3	$C_{20}H_{21}NO_6$	388	
P4	$C_{21}H_{22}N_2O_7$	415	

to be continued

continued Table S2

Compound	Formula	*m/z*	Proposed structure
P5	$C_{19}H_{21}NO_7$	371	
P6	$C_{20}H_{16}O_8$	385	
P7	$C_{18}H_{16}O_8$	362	
P8	$C_{19}H_{16}O_6$	340	
P9	$C_{17}H_{18}O_6$	318	
P10	$C_{15}H_{14}O_5$	274	

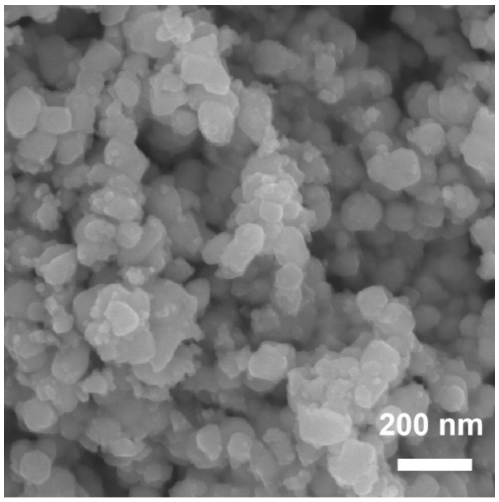


Fig. S1 FESEM images of $CuWO_4$.

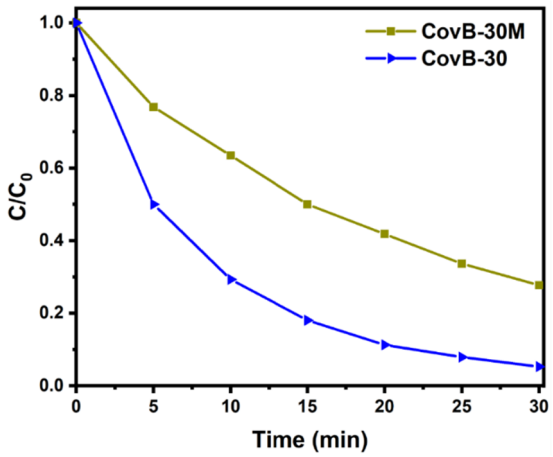


Fig. S2 In the PMS/Vis system, the degradation of TC by CovB-30M and CovB-30.

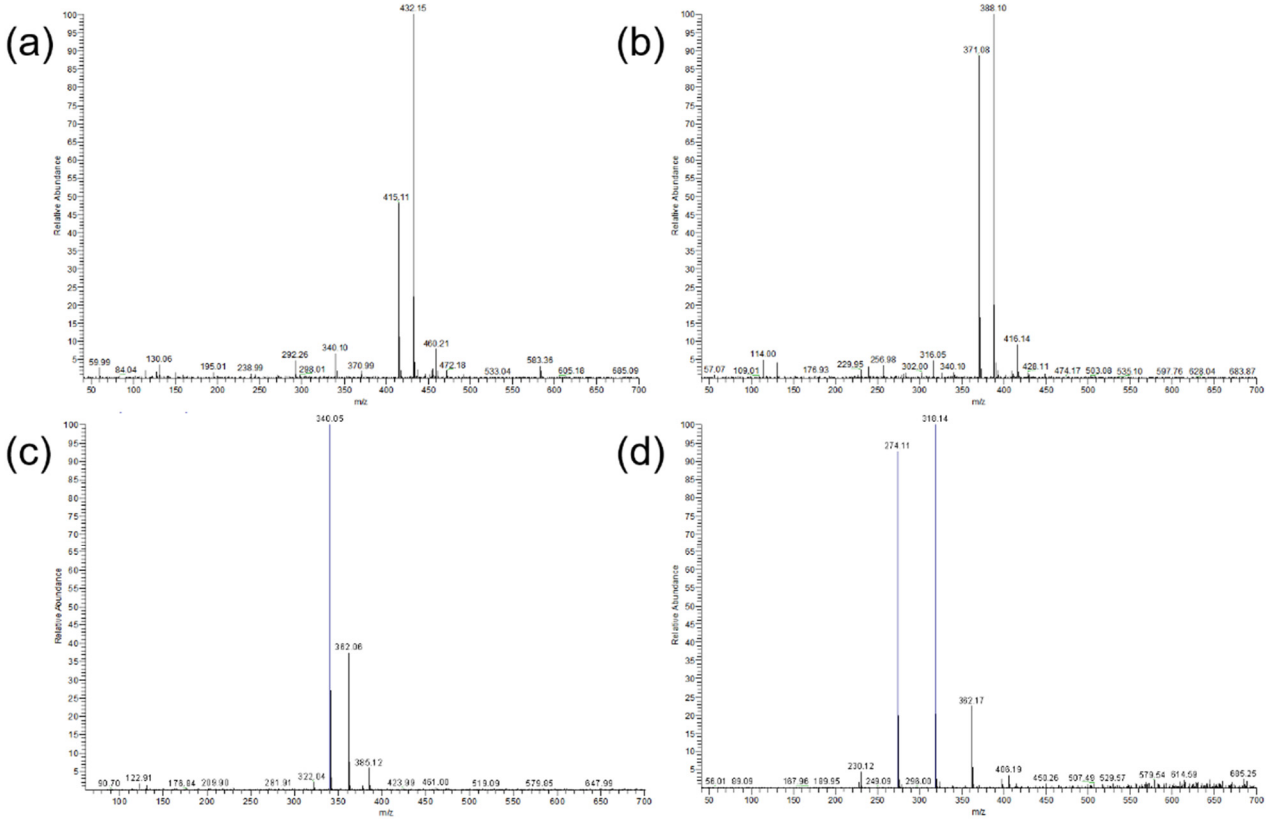


Fig. S3 Mass spectra for photocatalytic TC degradation with CovB-30 sample at different moments: (a, b) 15 min; (c, d) 30 min.

References

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