

## Supporting Information

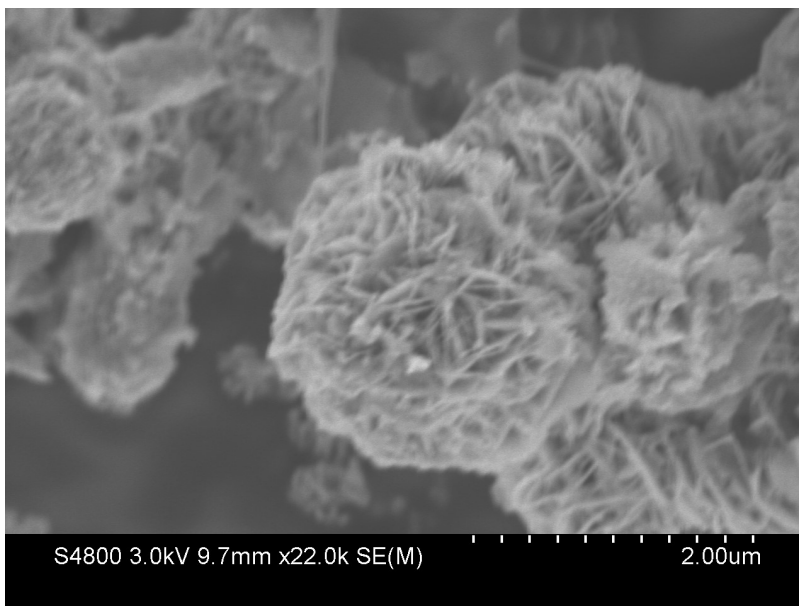
### **Significant improvement and mechanism of tetracycline degradation with synergistic piezoelectric effect of ZnO/CuS Z- scheme heterojunction photocatalyst**

Qi Gao <sup>a</sup>, Luping Zhou <sup>a</sup>, Shuai Xu <sup>a</sup>, Shuqi Dai <sup>b</sup>, Qi Zhu <sup>a</sup> and Yuliang Li <sup>\*a</sup>

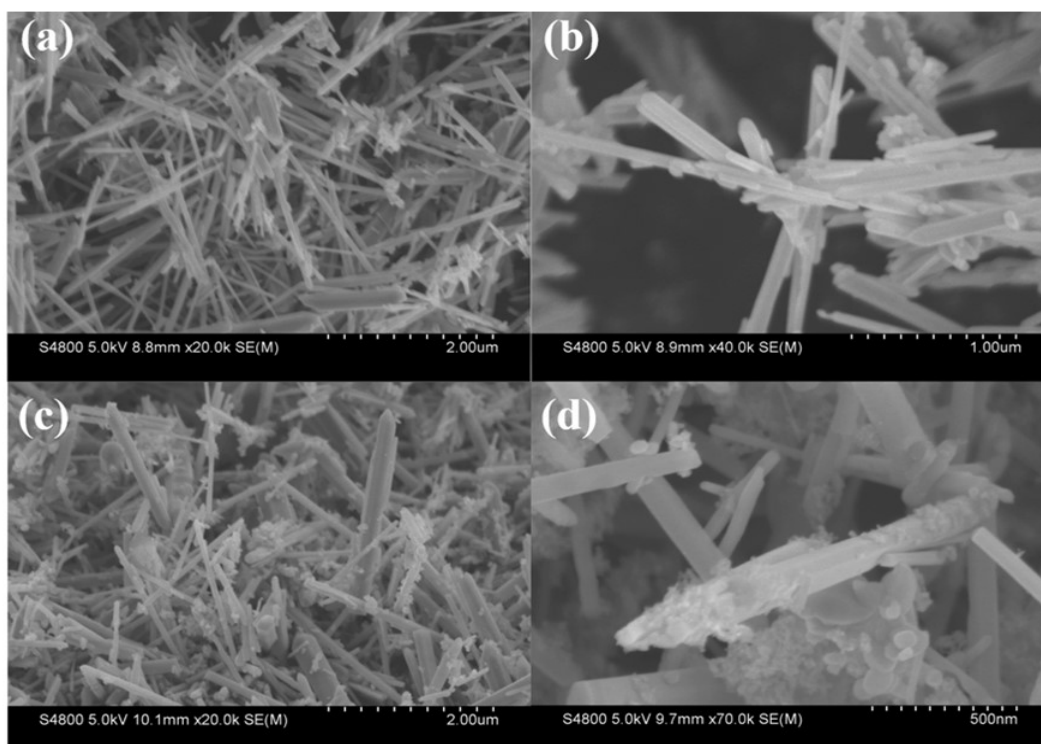
<sup>a</sup> Key Laboratory of Subsurface Hydrology and Ecological Effects in Arid Region,  
Ministry of Education, School of Water and Environment, Chang'an University, Xi'an,  
710064, China

<sup>b</sup> South China Advanced Institute for Soft Matter Science and Technology (AISMST),  
School of Molecular Science and Engineering, South China University of Technology,  
Guangzhou, 510640, China

\* E-mail: [yulianglee@hotmail.com](mailto:yulianglee@hotmail.com)



**Fig. S1** SEM image of CuS



**Fig. S2** SEM image of (a) ZC-12, (b) ZC-10, (c) ZC-1 and (d) ZC-0.67

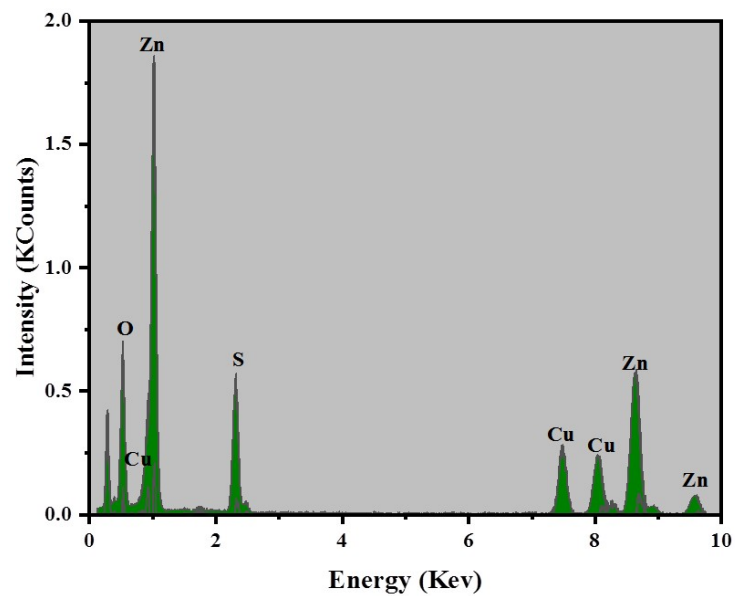


Fig. S3 EDS elemental microanalysis of ZC-10

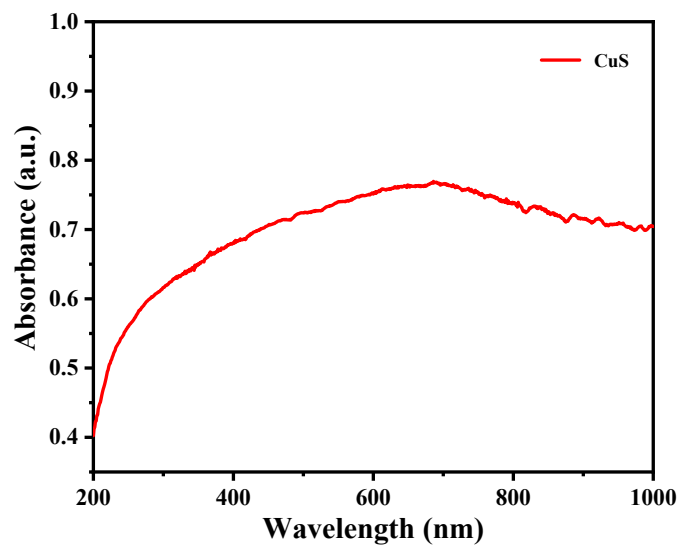
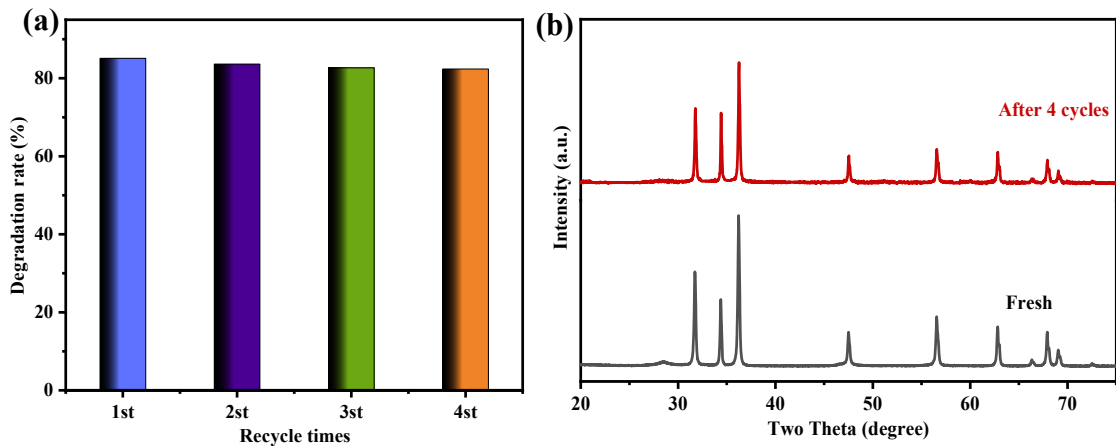
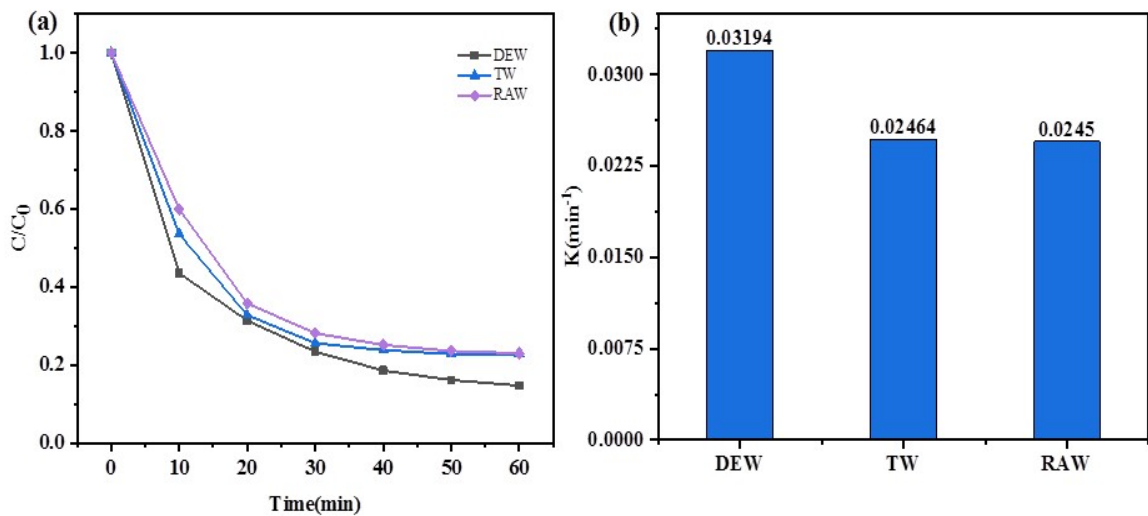


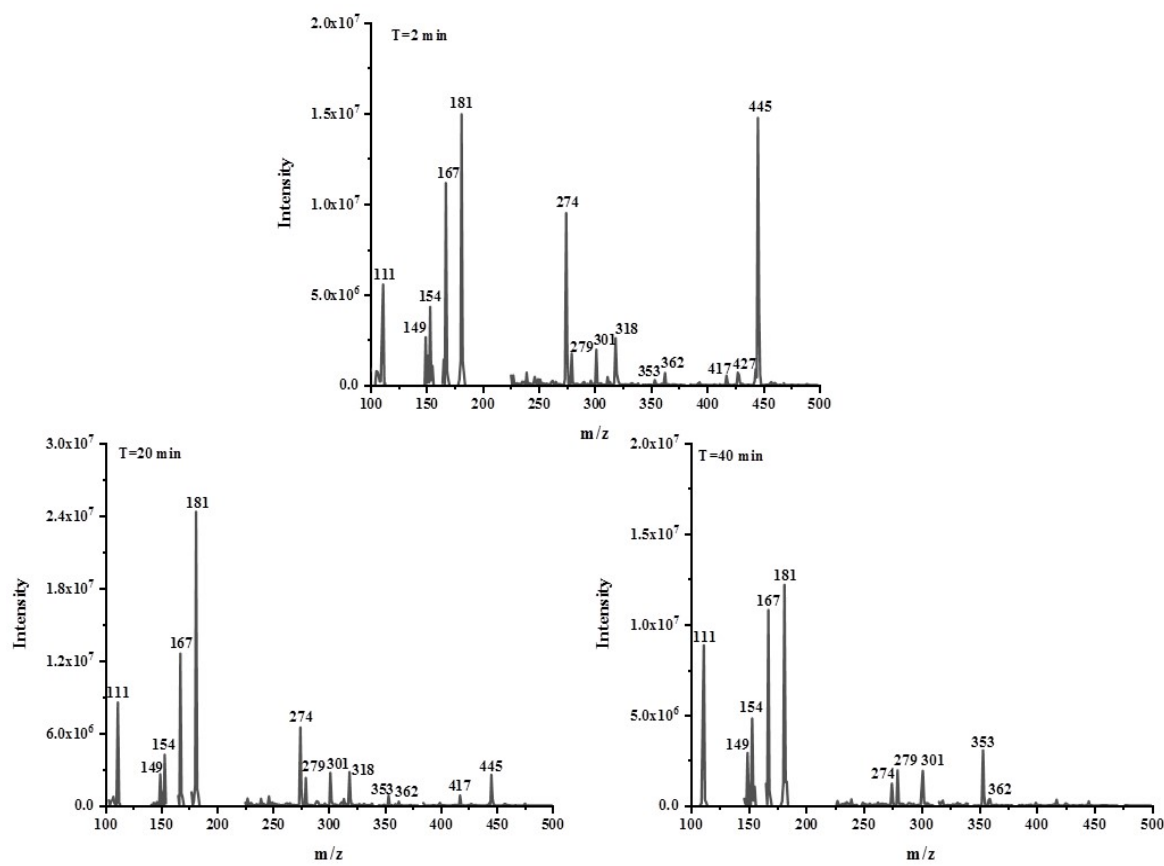
Fig. S4 UV-Vis absorption spectra of CuS



**Fig. S5** (a) Cycling experiment of ZC-10 piezo-photocatalytic degradation of TC and (b) XRD spectra before and after Cycling



**Fig. S6** Piezo-photocatalytic degradation of TC in different water matrices over ZC-10



**Fig. S7** Mass spectra of the TC and intermediates eluted at different reaction time

**Table S1** Textural properties of ZnO, CuS and ZC-10 samples

Sample	S <sub>BET</sub> (m <sup>2</sup> /g)	Pore Volume (cm <sup>3</sup> g <sup>-1</sup> )	Pore diameter (nm)
ZnO	11.805	0.04287	3.370
CuS	17.983	0.06115	3.925
ZC-10	26.118	0.01253	3.465

**Table S2** Piezo-photocatalysts degradation of organic pollutants reported in literatures.

Photocatalyst	Degraded organic pollutants	Dosage (mg/L)	Degradation concentration(mg/L)	Degradation time(min)	Degradation rate	Ref.
ZnO	MB	1000	5	120	93%	[1]
	RhB	1000	5	120	90%	
	TB	1000	5	120	81%	
AgI/ZnO	RhB	200	10	80	96.4%	[2]
	MO	200	10	100	95.8%	
	TC	200	10	120	94.7%	
ZnO@TiO <sub>2</sub>	MO	1000	10	120	88%	[3]
CuS/ZnO	MB	2000	5	90	100%	[4]
Bi <sub>2</sub> WO <sub>6</sub> /g-C <sub>3</sub> N <sub>4</sub> /ZnO	RhB	1000	5	20	95.1%	[5]
ZnO/Al <sub>2</sub> O <sub>3</sub>	MO	100	50	120	81.3%	[6]
ZnO/BaTiO <sub>3</sub>	RhB	1000	10	90	100%	[7]
FeS/ZnO	MO	1000	10	50	97%	[8]
<b>ZnO/CuS</b>	<b>TC</b>	<b>400</b>	<b>30</b>	<b>60</b>	<b>85.28%</b>	<b>This work</b>

## References:

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