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**The design of an inner-motile waste-energy-driven
piezoelectric catalytic system**

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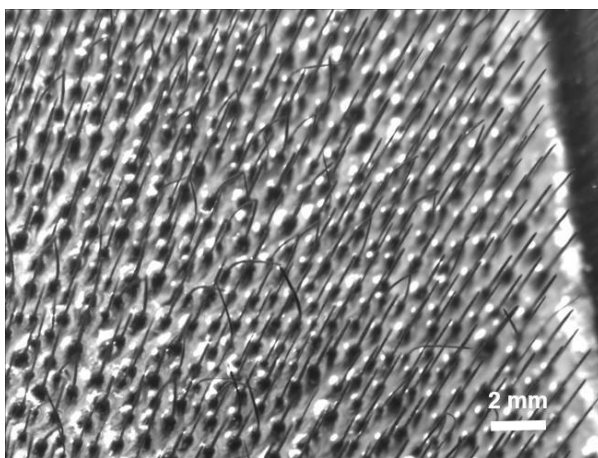


Fig. S1 Optical micrograph of the ZC film.

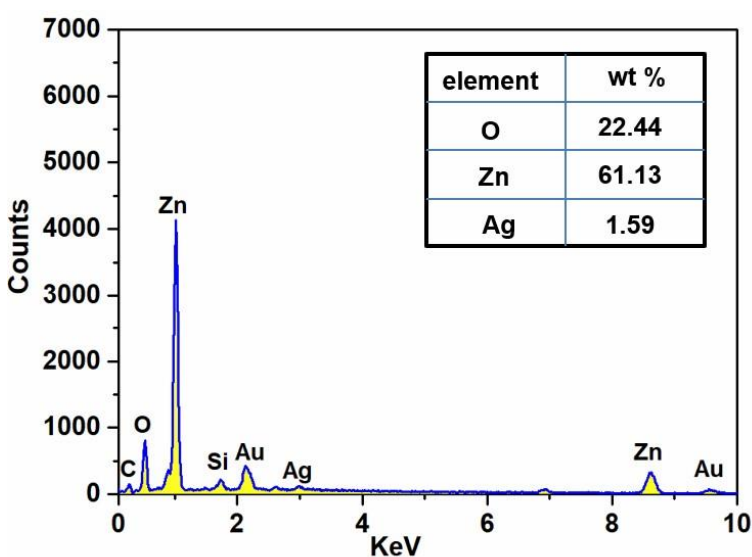


Fig. S2 EDS for different elements as to the ZAC film.

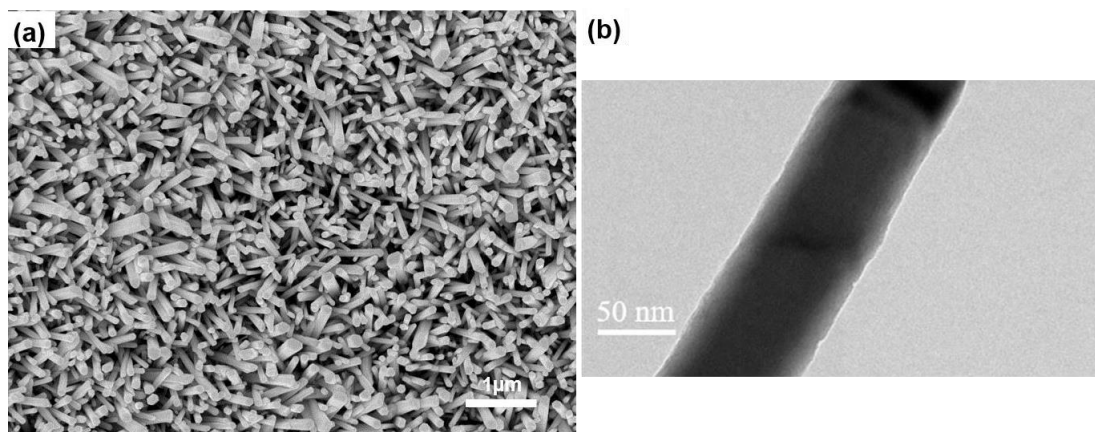


Fig. S3 (a) FESEM and (b) TEM of the sample prepared by the static ZC film in the AgNO_3 solution (10 mmol/L, 8 mL) without a rotating magnetic field.



Fig. S4 The pictures of ZnO electrode film.

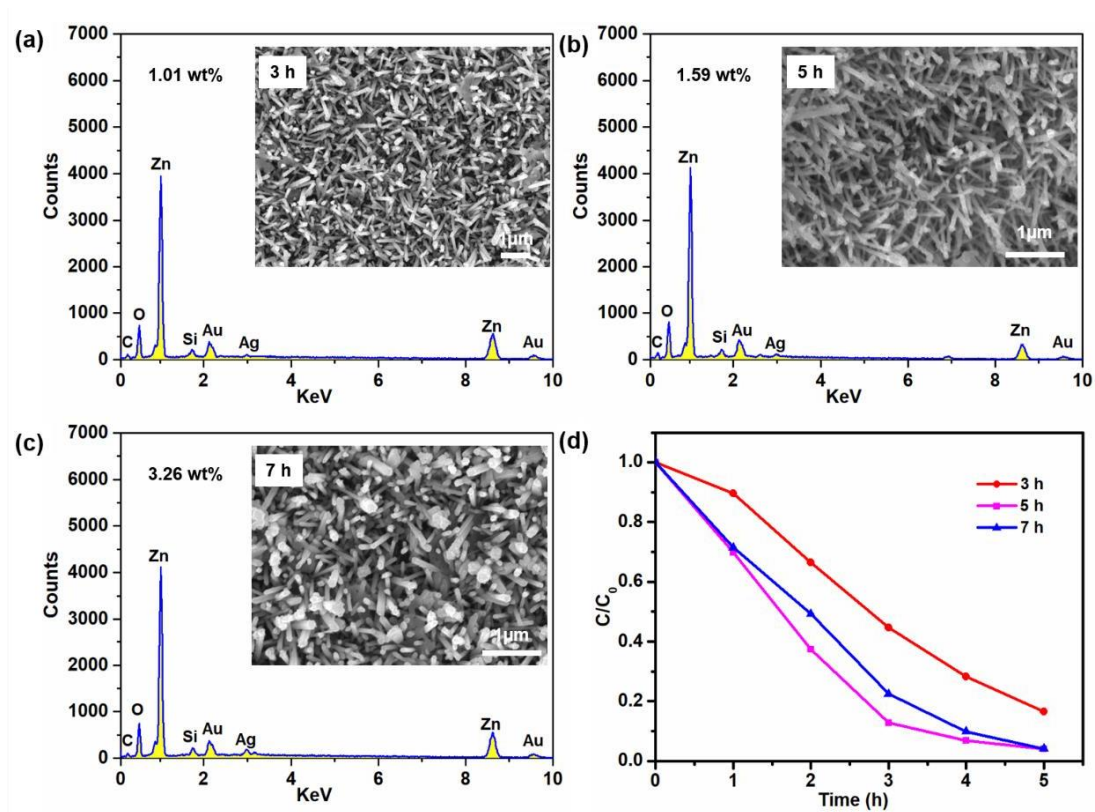


Fig. S5 (a-c) EDS analysis of samples with different piezoelectric deposition time and the inset shows the corresponding FESEM; (d) piezoelectric-catalytic performance of samples with different piezoelectric deposition time.

Table S1. Different catalysts for piezoelectric catalytic degradation of RhB

Catalysts	BaTiO ₃ powders ¹	MoS ₂ nanoflowers ²	Ag ₂ O/BaTiO ₃ powers ³	Bi ₂ WO ₆ powders ⁴	The ZAC film in this manuscript
Catalytic activity	C/C_0 of ~0.2 in 160 min	C/C_0 of ~0.04 in 10 min	C/C_0 of ~0.7 in 180 min	C/C_0 of ~0.03 in 80 min	C/C_0 of 0.039 in 5 h

References

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