

In-situ grown on carbon cloth of three-dimensional hierarchical flower-like bimetallic-organic materials doped with sulfur as air cathode in microbial fuel cell

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Fig. S1. Blank carbon cloth (left) and carbon cloth loaded with Zn/Co-3DHFLM (right).

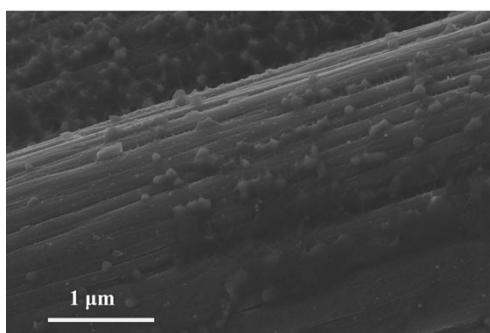


Fig. S2. SEM images of Zn/Co-S-3DHFLM loaded on carbon cloth.

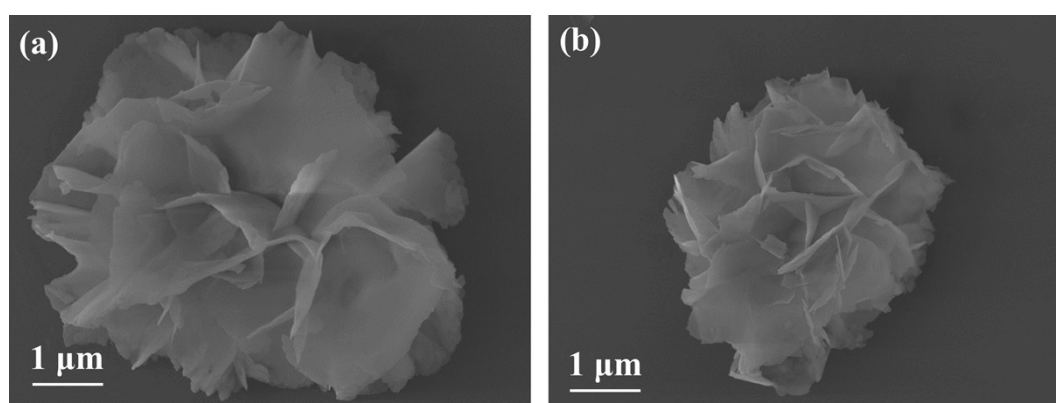


Fig. S3. SEM images of (a) Co-3DHFLM, (b) Zn/Co-3DHFLM.

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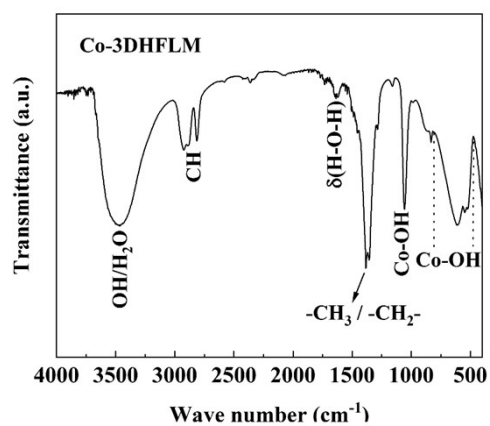


Fig. S4. FTIR spectra of the as-prepared Co-3DHFLM.

Table S1. Surface elemental compositions (in atom%) of Zn/Co-S-3DHFLM.

Sample	C	O	Zn	Co	S
At %	39.9	27.1	1.4	11.6	20.0

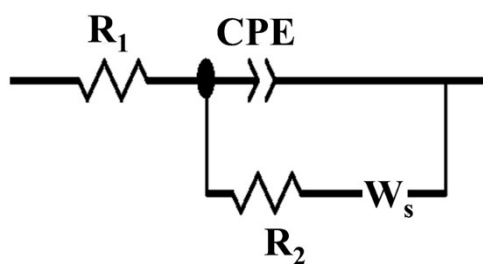


Fig. S5. Equivalent circuit.

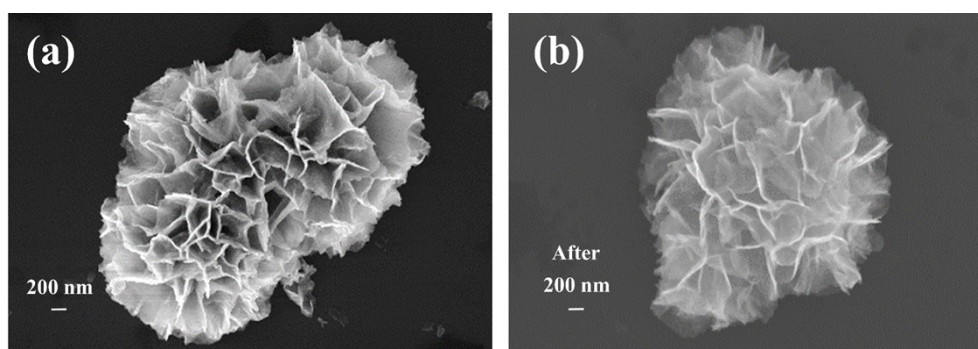


Fig. S6. SEM images of Zn/Co-S-3DHFLM (a) before stability experiments and (b) after undergoing 160 000s stability experiments.

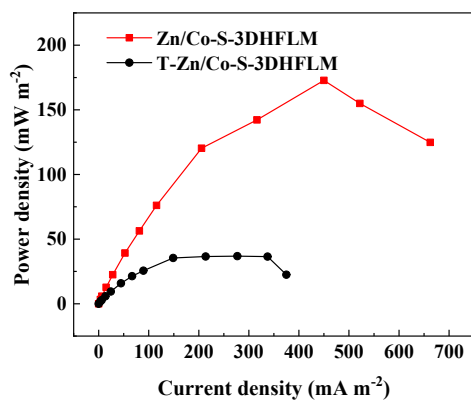


Fig. S7. Power density curves.

Table S2. The raw materials with corresponding prices, consumption and sources for synthesis of Zn/Co-S-3DHFLM.

	Price	Consumption	Cost (\$)	Source
2-Methylimidazole	0.083 \$·g ⁻¹	0.656 g	0.054	
Zn (NO ₃) ₂ ·6H ₂ O	3.327 \$·g ⁻¹	0.094 g	0.313	
Co (NO ₃) ₂ ·6H ₂ O	0.113 \$·g ⁻¹	1.674 g	0.189	Aladdin, Shanghai, China
Methanol	7.218 \$·L ⁻¹	0.325 L	2.346	
Na ₂ S·9H ₂ O	0.469 \$·g ⁻¹	1.922 g	0.901	
Zn/Co-S-3DHFLM		1 g	3.803	As-synthesized