

## **Supplementary information**

### **Innovative cost-effective nano-NiCo<sub>2</sub>O<sub>4</sub> cathode catalysts for oxygen reduction in air-cathode microbial electrochemical systems**

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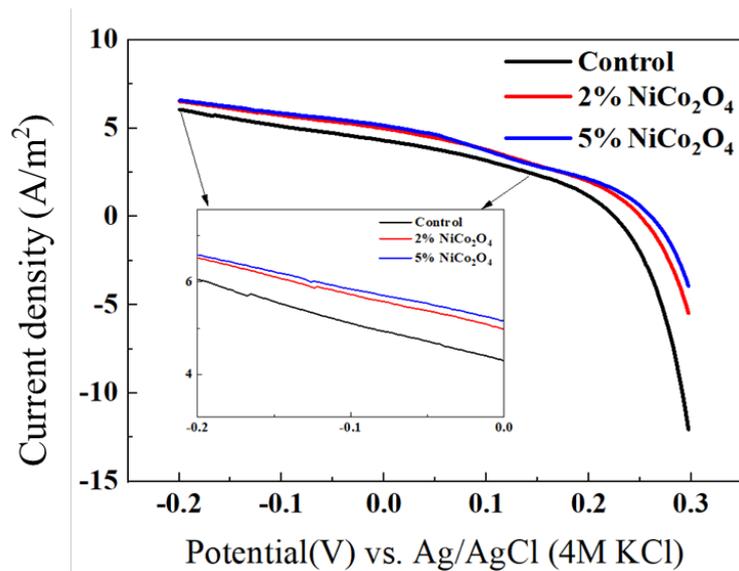
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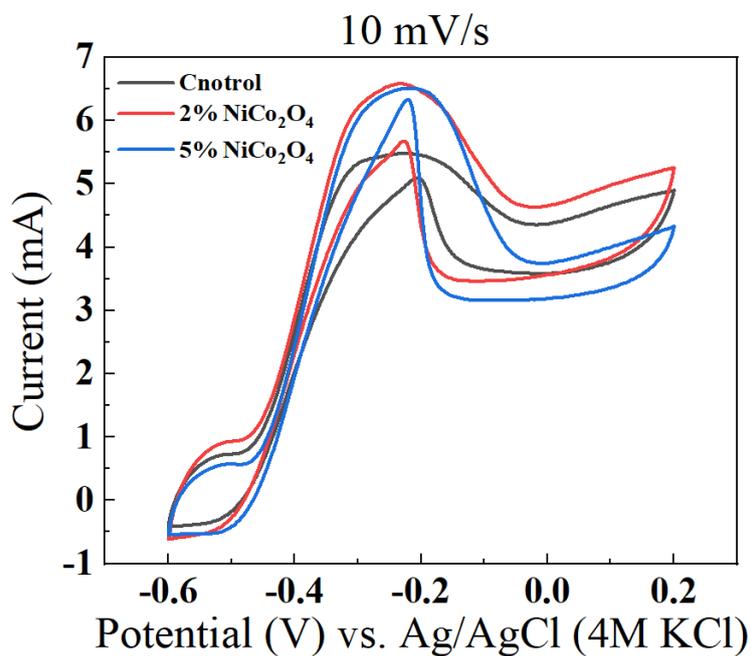
**Figure S1.** The linear sweep voltammetry of the cathodes with 0, 2%, and 5% NiCo<sub>2</sub>O<sub>4</sub>.

**Figure S2.** Cyclic voltammetry of the cathodes with 0, 2%, 5% NiCo<sub>2</sub>O<sub>4</sub> under 10 mV/s.

**Table S1.** The published data of different photocatalysts and their performance.



**Figure S1.** The linear sweep voltammetry of the cathodes with 0, 2%, and 5% NiCo<sub>2</sub>O<sub>4</sub>.



**Figure S2.** Cyclic voltammetry of the cathodes with 0, 2%, 5% NiCo<sub>2</sub>O<sub>4</sub> under 10 mV/s.

Table S1. The published data of different photocatalysts and their performance.

MFC	Anode materials	Cathode materials	Cathode catalysts	Power density	Ref.
Dual-chamber MFC	Carbon felt/ stainless steel	Carbon felt/ stainless steel	Rhodium	9.36 W/m <sup>3</sup>	[1]
Air-cathode MFC	Carbon cloth	Carbon cloth	Polypyrrole/ carbon black	401.8 mW/m <sup>2</sup>	[2]
Single chamber MFC	Carbon cloth	Carbon cloth	Polyaniline/ carbon black/ iron phthalocyanine	630.5 mW/m <sup>2</sup>	[3]
Air-cathode MFC	Carbon felt	Carbon felt	SnO <sub>2</sub> / Polyaniline	65 mW/m <sup>2</sup>	[4]
Dual-chamber MFC	Carbon felt	Carbon cloth	$\alpha$ -Fe <sub>2</sub> O <sub>3</sub> /polyani line	1502.78 mW/m <sup>2</sup>	[5]
Air-cathode MFC	Carbon felt	AC/ stainless steel	Co/N-C	2514 mW/m <sup>2</sup>	[6]
Single chamber MFC	Carbon fiber brush	Graphitic carbon	AgNPs/Fe <sub>3</sub> O <sub>4</sub>	1712 mW/m <sup>2</sup>	[7]
Single chamber MFC	stainless steel	stainless steel	V <sub>2</sub> O <sub>5</sub> /rGO	533 mW/m <sup>2</sup>	[8]
Single chamber MFC	wire mesh	wire mesh	GO/MgO	755.63 mW/m <sup>2</sup>	[9]

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chamber MFC					mW/m <sup>2</sup>	
Single	Graphite felts	Carbon cloth	cobalt oxide/N/	graphene	713.6	[10]
chamber MFC					mW/m <sup>2</sup>	
Single	Carbon felt	Stainless-steel	CoFe <sub>2</sub> O <sub>4</sub>		1771	[11,12]
chamber MFC		mesh			mW/m <sup>2</sup>	

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