

Air Cathode Catalysts of Microbial Fuel Cell by Nitrogen-Doped Carbon Aerogels

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Summary

- **Five pages**
- **Two tables**
- **Three figures.**

Table S1. Fitting results of the EIS data

	Pt/C	NCA800
$R_o (\Omega)$	14.58	16.32
$C_{dl} (F \cdot s^{n-1})$	1.26	0.60
n_1	0.26	1
$R_{in} (\Omega)$	4.89	0.84
$C_{ad} (F \cdot s^{n-1})$	0.19	0.11
N_2	0.95	0.71
$R_{ct} (\Omega)$	0.71	1.05
$W (\Omega \cdot s^{-1/2})$	26.22	23.93
$R_t (\Omega)$	46.40	42.14

Table S2 Comparison of MSP between NCA800 and literature results

Catalyst	Cathode substrate	Anode material	P_{max} (mW m⁻²)	Loading (mg cm⁻²)	MSP (mW g⁻¹)	Ref.
NCA800	Carbon cloth	Carbon cloth	1048 ± 47	2	52.4	this work
Cellulose-derived carbon	Carbon cloth	Carbon fiber brush	2293 ± 50	20	11.47	1
Sewage sludge biochar	Carbon cloth	Carbon cloth	500 ± 17	5	10	2
Activated carbon nanofibers	Carbon cloth	Carbon cloth	803	12	6.67	3
Nitrogen-doped activated carbon	Carbon cloth	Carbon brush	650 ± 20	5	12.4	4
Carbon nanotube	Carbon cloth	Carbon paper	84.8	0.5	16.96	5
nitrogen-doped carbon nanosheet on graphene	stainless steel net	carbon brush	1159.34	5	23.19	6
Activated carbon/carbon black	stainless steel mesh	graphite fiber brush	1560 ± 40	42.86	3.64	7
Bamboo charcoal	stainless steel mesh	carbon brush	1719 ± 82	50	3.44	8
Biocarbon from plant moss	Carbon cloth	Carbon cloth	703 ± 16	2	35.15	9

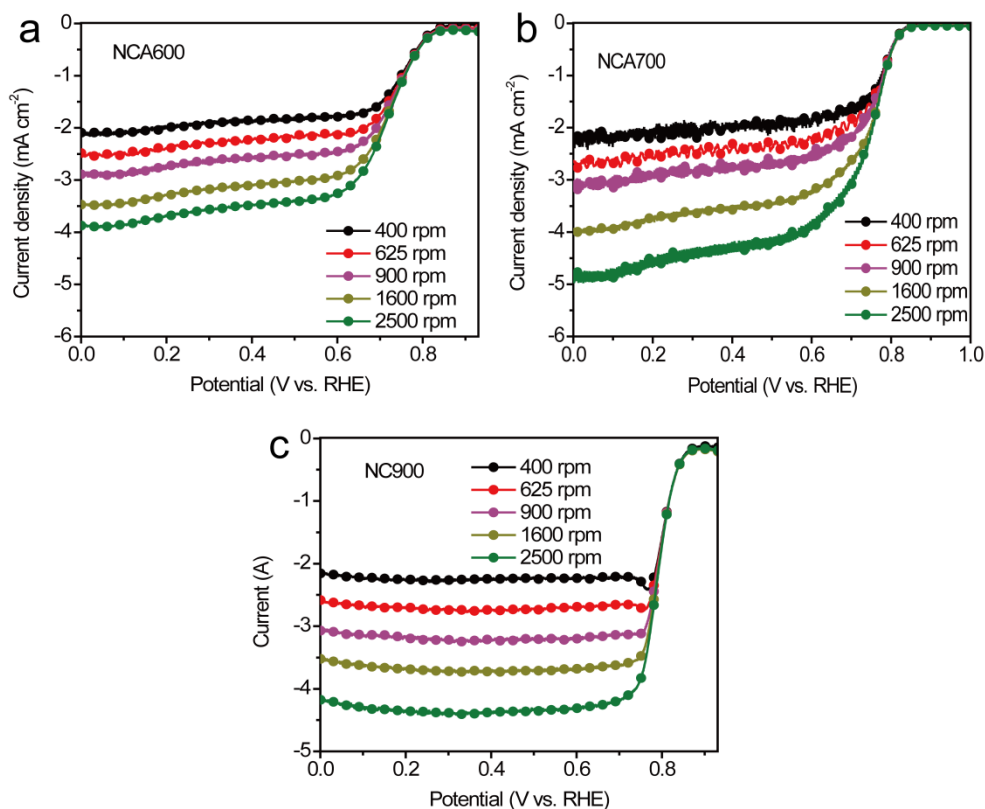


Fig. S1 LSV curves of (a) NCA600, (b) NCA700 and (c) NCA900 at different rotation rates at the potential scan rate of 10 mV s^{-1} in oxygen-saturated 0.1 M NaOH .

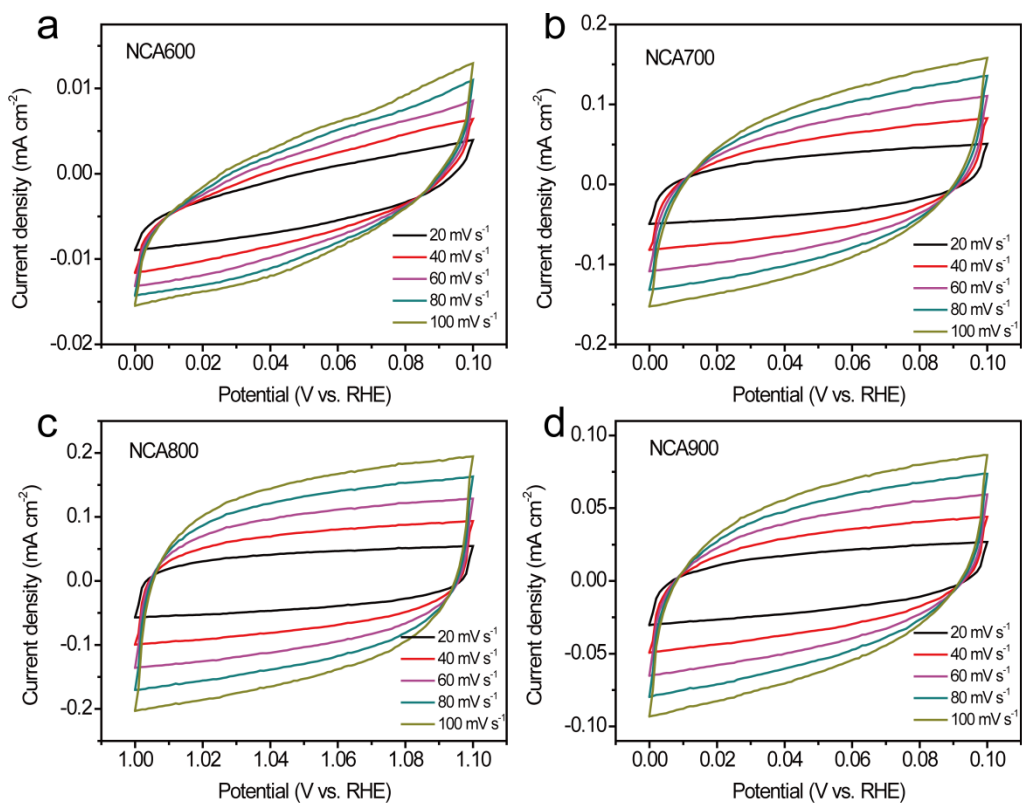


Fig. S2 Cyclic voltammograms of (a) NCA600, (b) NCA700, (c) NCA800 and (d) NCA900 within the potential range of +1.0 to +1.1 V at various scan rates.

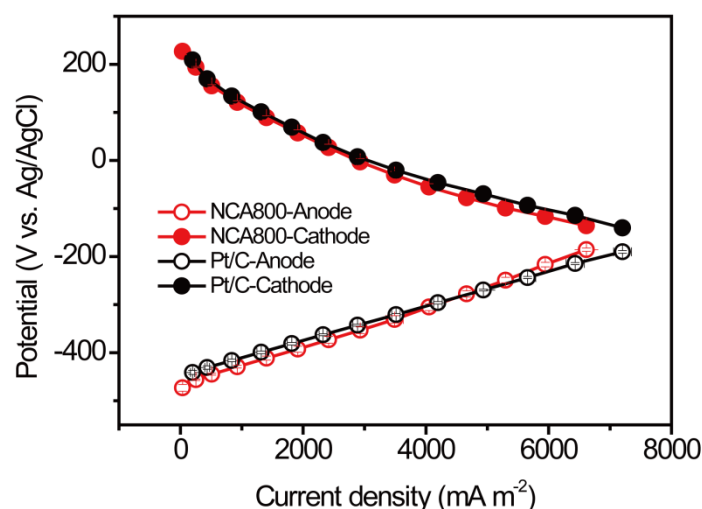


Fig. S3 Polarization curves of anode and cathode at different current densities. Note that the measurements were conducted in duplicate and the error bars of the cathode potentials were smaller than the symbol size.

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