Supplementary Information

Tuning the Electronic Structure of a Novel 3D Architectured Co-N-C Aerogel to Enhance Oxygen Evolution Reaction Activity

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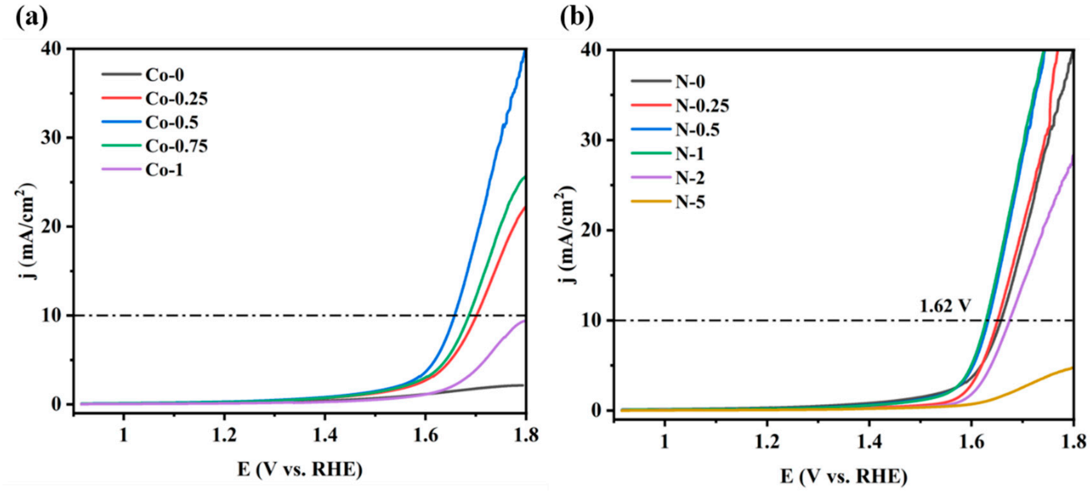

Figure S1. (a) LSV curves of Co-C with different cobalt doping amounts (wt%); (b) LSV curves of Co-N-C with different nitrogen doping amounts (wt%).

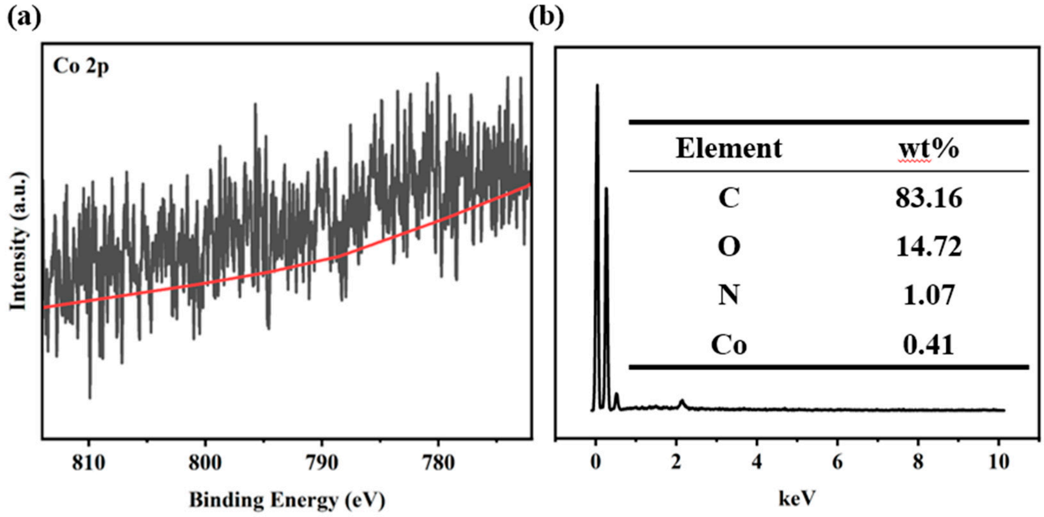

Figure S2. (a) Co 2p high-resolution XPS spectrum and (b) EDS of Co-N-C.

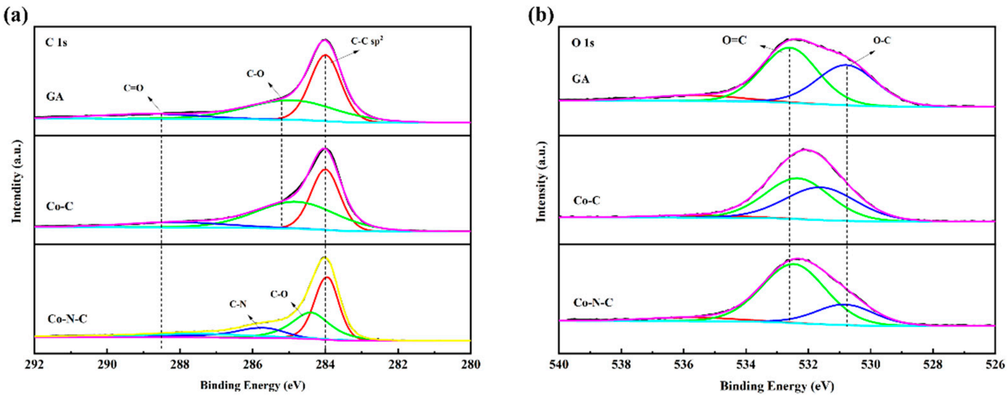

Figure S3. C 1s (a) and O 1s (b) high-resolution XPS spectrum of GA, Co-C, and Co-N-C.

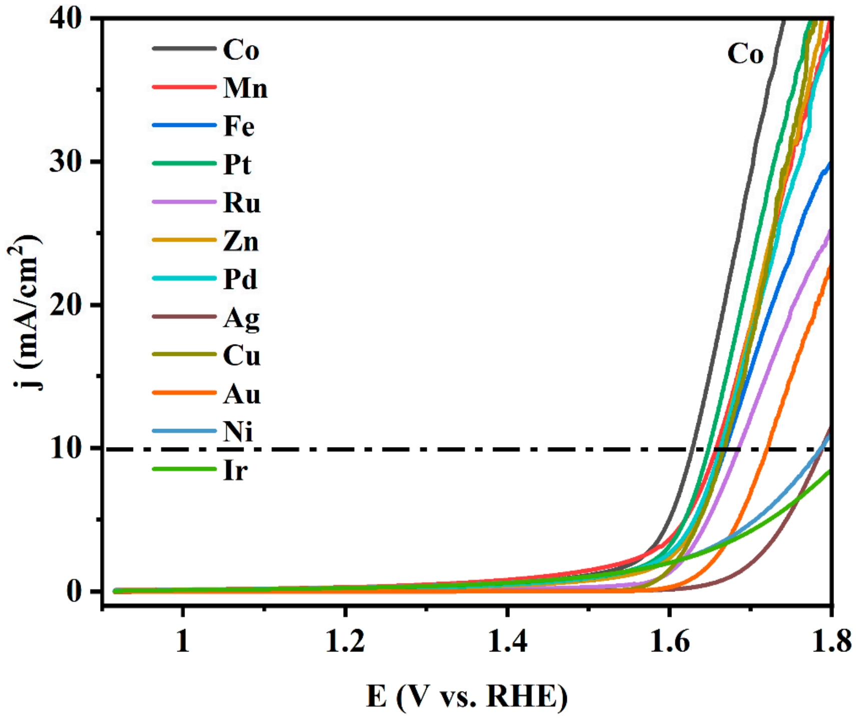

Figure S4. LSV curves of M-N-C aerogel electrocatalysts (M=Mn, Fe, Ni, Pt, Au, etc.).

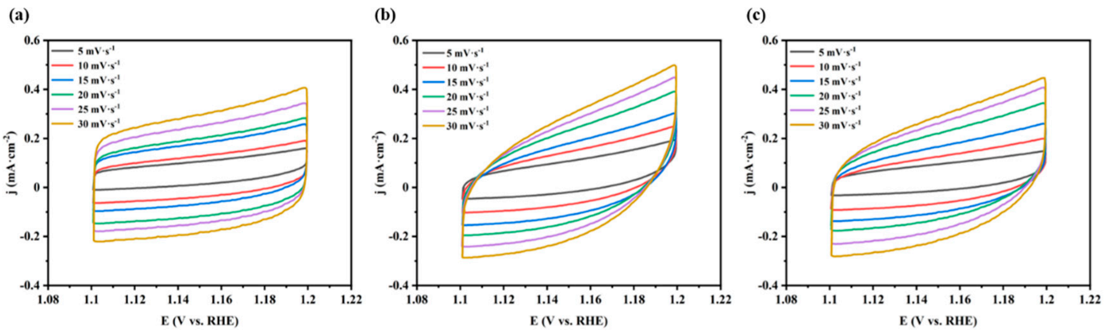

Figure S5. Typical CV curves of (a) GA, (b) Co-C, and (c) Co-N-C at different scan rates.

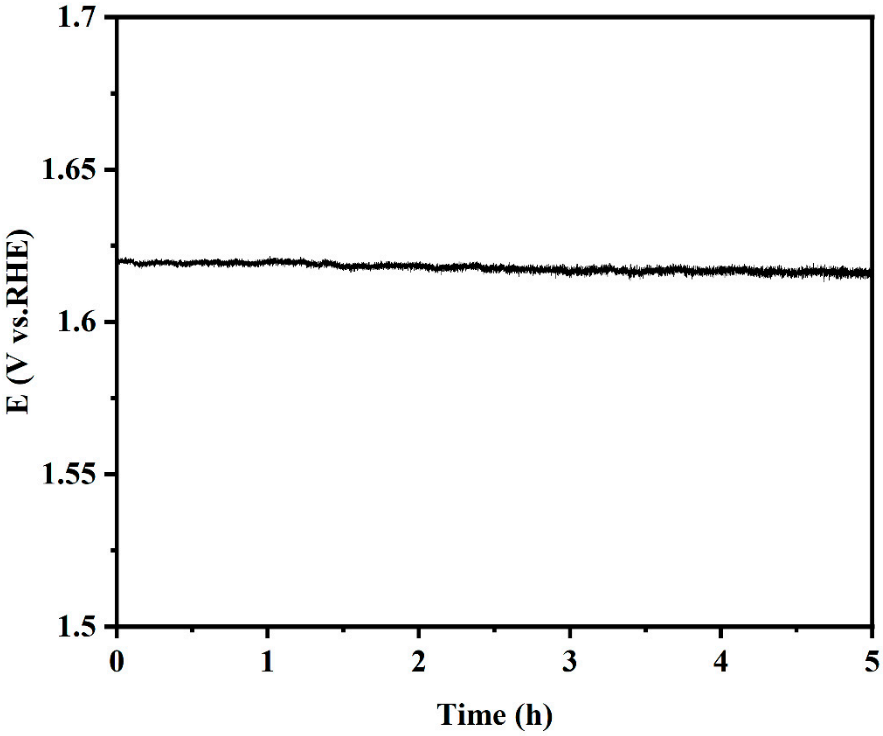

Figure S6. Chronopotentiometric curve for the Co-N-C at 10 mA/cm^2.

Table S1. Comparison of Co-N-C aerogel and some previously reported Co-N-C electrocatalysts in terms of OER performance.

electrocatalyst	Overpotential at 10mA/cm^2	Reference
Co-N-C aerogel	0.383 V	This work
Mo_2C-Co-N-C	0.396 V	[1]
Co@CoO@Co_3O_4-N/C	0.45 V	[2]
Co/Co-N-C	0.41 V	[3]
3D Co-N-C NN-800	0.47 V	[4]

CoO_x/Co-N-C	0.42 V	[5]
3D-Co–N–C-annealing	0.42 V	[6]
3DOM Co-NCPs-900	0.418 V	[7]
Mn/Co–N–C-0.02-800	0.43 V	[8]
CoO/Co@N–C	0.442 V	[9]
Co–N–C-0.4	0.39 V	[10]
Fe,Co,N–C	0.41 V	[11]
Co/N-Pg	0.40 V	[12]
CoA@CNC-700	0.46 V	[13]
Co-NCNT	0.40 V	[14]

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