Supporting Information

Trimetallic (Co/Ni/Cu) Hydroxyphosphate Nanosheet Array as Efficient and Durable Electrocatalyst for Oxygen Evolution Reaction

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The number of pages (including cover page): 6

The number of figures: 6 (Figures: S1-6)

The number of tables: 4 (Tables: S1-4)

Figures and tables

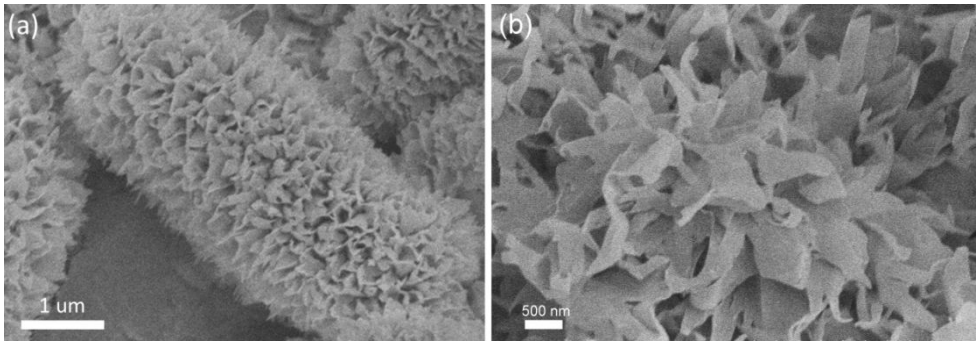

Figure S1. SEM images of Ni-CuHP/NF.

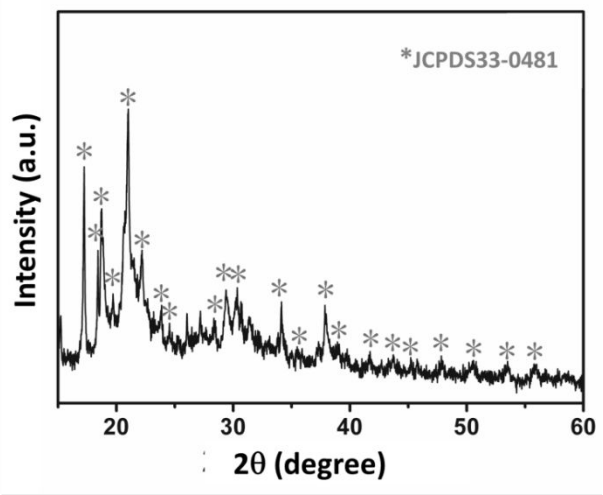

Figure S2. XRD pattern of raw CuHP.

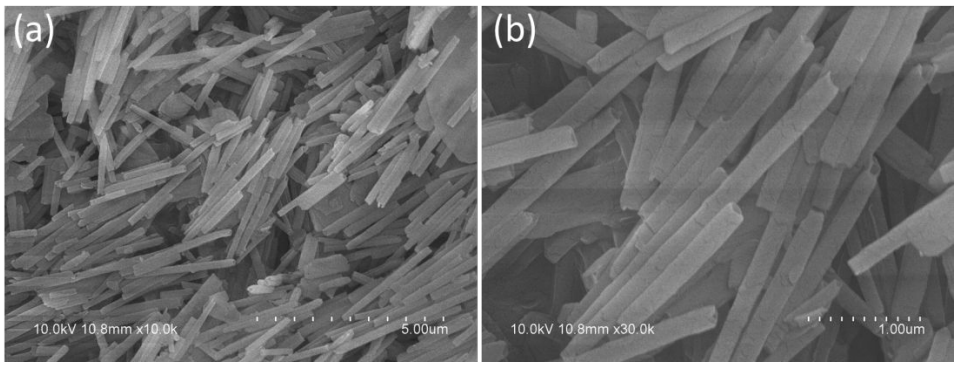

Figure S3. SEM images of raw CuHP nanotubes.

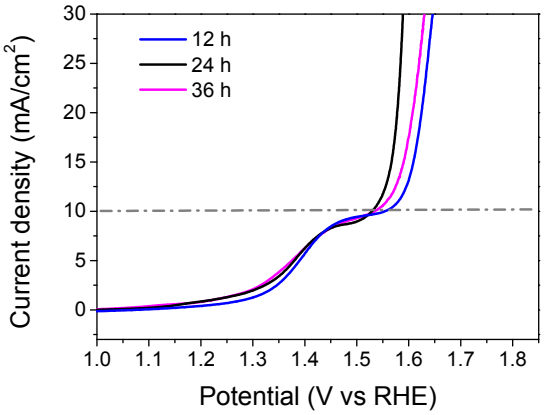

Figure S4. LSV curves of CoNi-CuHP/NF samples prepared with different hydrothermal time.

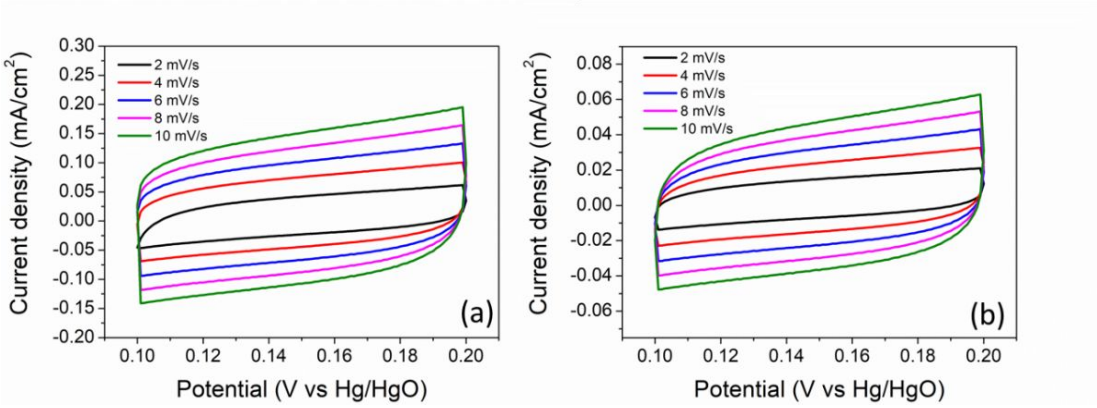

Figure S5. CV curves for (a) CoNi-CuHP/NF and (b) Ni-CuHP/NF.

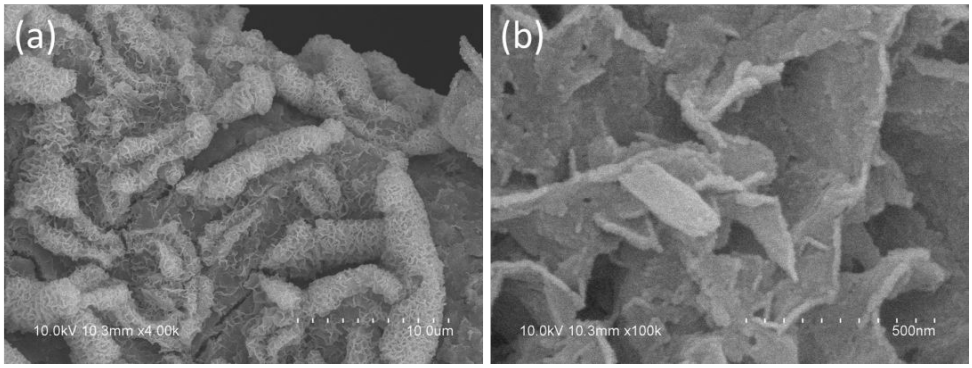

Figure S6. SEM images of CoNi-CuHP/NF after stability tests.

Table S1. XPS tested atom concentrations of Co, Cu, Ni and P in the Ni-CuHP and CoNi-CuHP samples.

Atom %	Co	Cu	Ni	P
Ni-CuHP	--	8.33	9.98	9.09
CoNi-CuHP	5.21	8.20	5.06	9.16

Table S2. The element molar ratio from ICP-AES tests results of the samples with different hydrothermal time.

hydrothermal time	Co	Cu	Ni	P
12 h	0.55	0.87	0.56	1
24 h	0.56	0.88	0.57	1

36 h	0.57	0.89	0.57	1

Table S3. The element molar ratio from ICP-AES tests results of the CoNi-CuHP samples with different $CoCl_2$(aq) for ion-exchange.

Concentration of $CoCl_2$(aq)	Co	Cu	Ni	P
0.03 M	0.43	0.87	0.69	1
0.05M	0.56	0.88	0.57	1
0.08 M	0.64	0.89	0.41	1
0.10 M	0.71	0.90	0.37	1

Table S4. Comparison to the metal phosphate based electrocatalysts for OER in alkaline aqueous electrolyte reported in recent two years.

Electrocatalysts	Overpotential @10 mA/cm^2 (mV)	Tafel Slope (mV/dec)	Electrolyte	Cycling Stability	Ref.
CoP/rGO-400	340	66	1.0 M KOH	22 h	1
$NiP_{Na}(Co_2Fe_2)$-NTs	300	56.3	1.0 M KOH	2 h	2
$Co_3(PO_4)_2$@N-C	317	62	1.0 M KOH	8 h	3
NiFe/NiFe:Pi	290	38	1.0 M KOH	10 h	4
$Co_3(PO_4)_2$/RGO	405	75	0.1 M KOH	3 h	5

NiCoP/C nanoboxes	330	96	1.0 M KOH	10 h	6
CoHPi nanoflakes	314	31	1.0 M KOH	6.7 h	7
Sn-FeHP	359	81	1.0 M KOH	13.3 h	8
CoNi-CuHP/NF	299	88	0.1 M KOH	45 h	This work

References

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