

Supplementary Materials: Engineering Ternary Copper-Cobalt Sulfide Nanosheets as High-performance Electrocatalysts toward Oxygen Evolution Reaction

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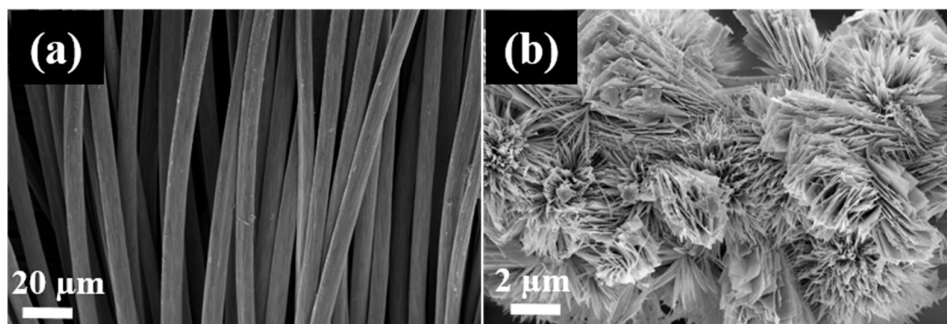


Figure S1. SEM images of (a) bare CC (b) CuCoO/CC.

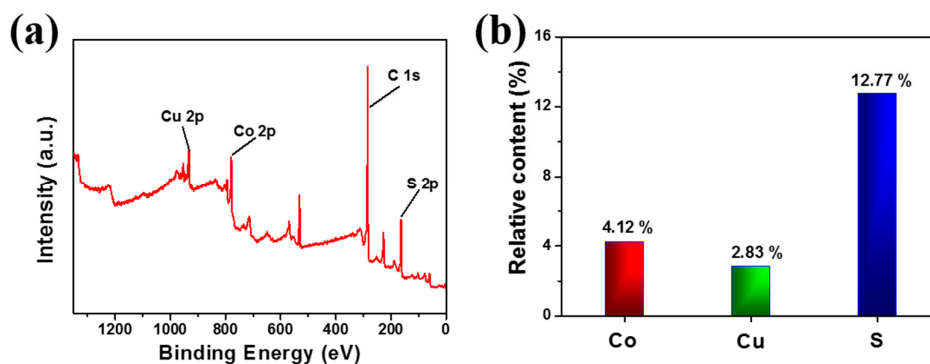


Figure S2. (a) X-ray photoelectron spectroscopy (XPS) survey spectrum (b) Relative content of Co, Cu and S derived from XPS measurement.

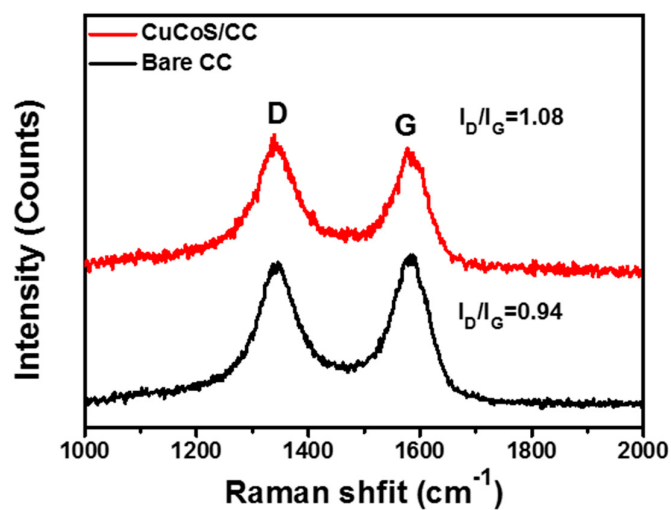


Figure S3. Raman spectra of bare CC and CuCoS/CC.

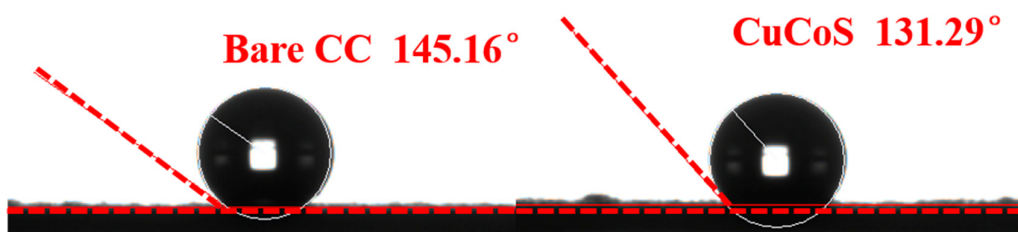


Figure S4. Contact angle of bare CC and CuCoS/CC using the water.

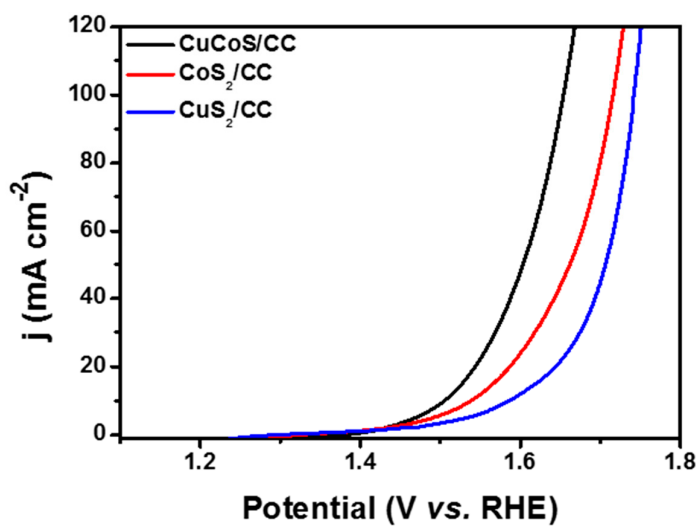


Figure S5. Polarization curves of CuS₂/CC, CoS₂/CC and CuCoS/CC.

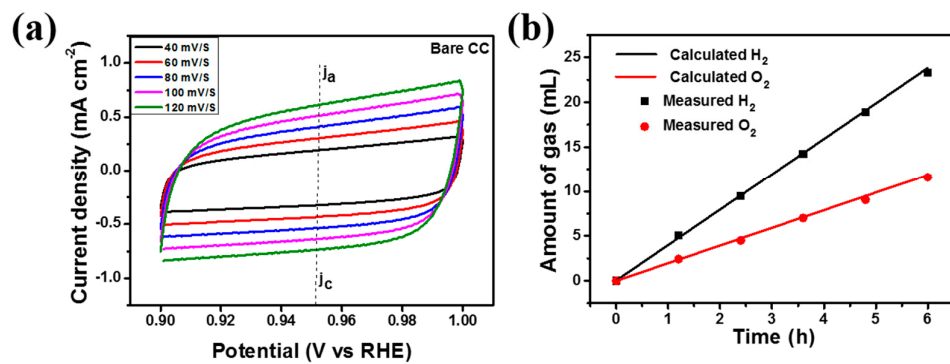


Figure S6. (a) Cyclic voltammetry of bare CC (b) The faradaic efficiency of H₂ and O₂ production over CuCoS/CC measured and theoretically calculated with time at 5 mA cm⁻² current density in 1.0 M KOH.

Table S1. The elemental composition of CuCoS/CC measured by ICP-MS.

element	Co	Cu
Molar fraction	26.78%	15.34%

Table S2. Comparison of OER performance for our work with other electrocatalysts.

Catalyst	Loading (mg cm ⁻²)	Electrolyte	Overpotential at 10 mA cm ⁻² (mV vs RHE)	Tafel slope (mV dec ⁻¹)	Ref.
CuCoS/CC	1.03	1.0 M KOH	276	58	This work
S-NiCoFe LDH	1.05	1.0 M KOH	206	46	[1]
n (EO)/Cl-doped Co(OH) ₂	1.0	1.0 M KOH	330	98	[2]
NiCoP/Ni foam	1.6	1.0 M KOH	280	87	[3]
NiCoP/CC	1.3	1.0 M KOH	254	-	[4]
CoS ₂ /CC	0.98	1.0 M KOH	291	67	[5]
NiCo ₂ S ₄ NS/CC	1.0	1.0 M KOH	260	72	[6]
Ni _{1.5} Fe _{0.5} P	1.38	1.0 M KOH	264	55	[7]
CoFe ₂ O ₄ NPs	1.031	1.0 M NaOH	378	73	[8]
Ni _{2.3} %-CoS ₂ /CC	0.97	1.0 M KOH	270	69	[9]
CoP ₃ NAs/CFP	1.09	1.0 M KOH	334	62	[10]
NF@NC-CoFe ₂ O ₄ /C NRAs	1.03	1.0 M KOH	240	45	[11]
Co-Cu ₇ S ₄ -0.07	1.0	1.0 M KOH	270	130	[12]

References

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