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Supplementary Information

A novel hollow CuS-CuO nanocube core and NiFe-LDH nanosheet shell electrocatalyst for oxygen evolution reaction applications

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Supplementary Figures

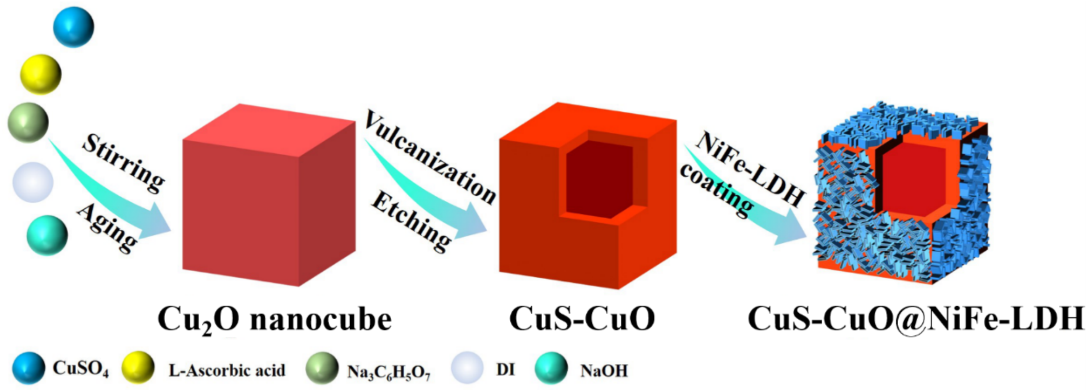

Figure S1. Schematic illustration of the synthesis of CuS-CuO@NiFe-LDH.

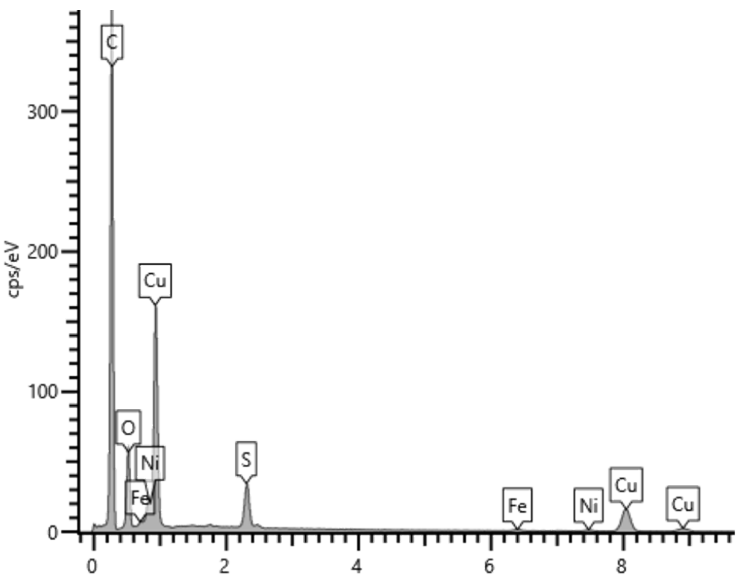

Figure S2. EDX spectrums of CuS-CuO@NiFe-LDH.

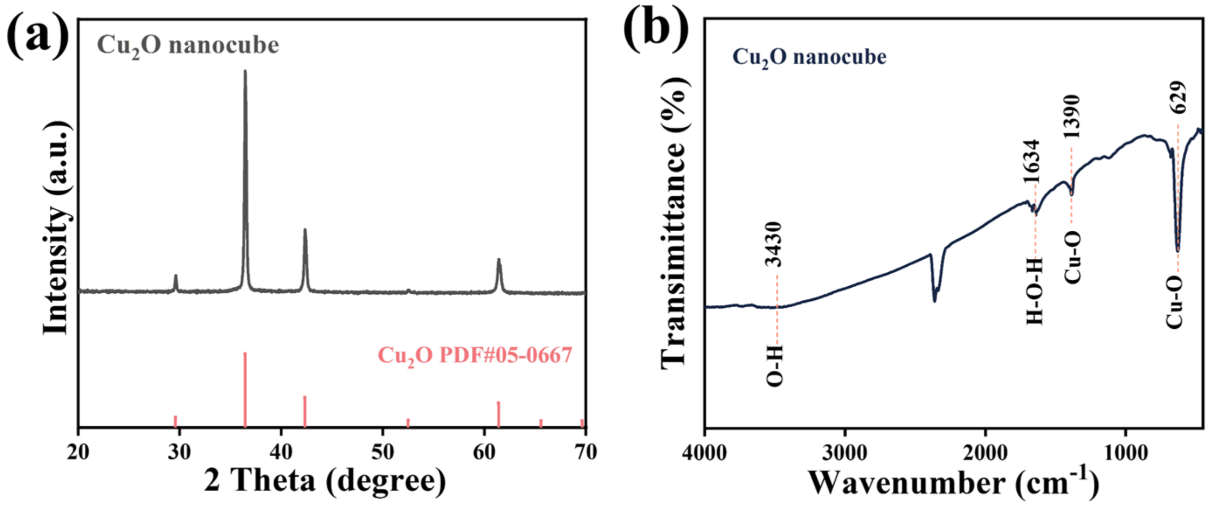

Figure S3. XRD (a) and FT-IR (b) of Cu_2O.

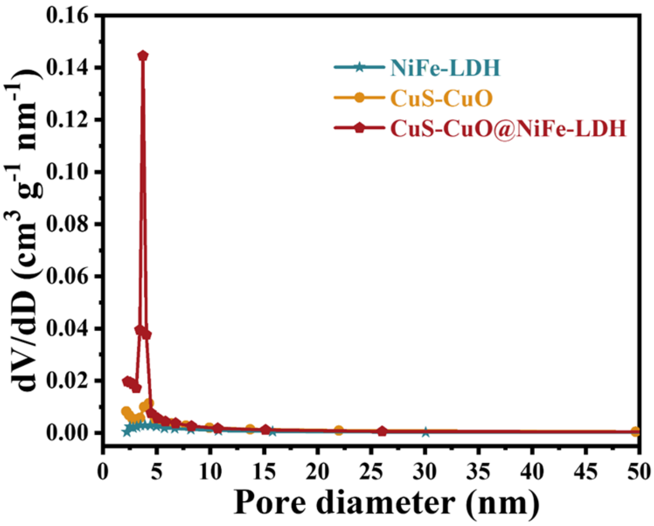

Figure S4. Pore size distribution of the NiFe-LDH, CuS-CuO and CuS-CuO@NiFe-LDH.

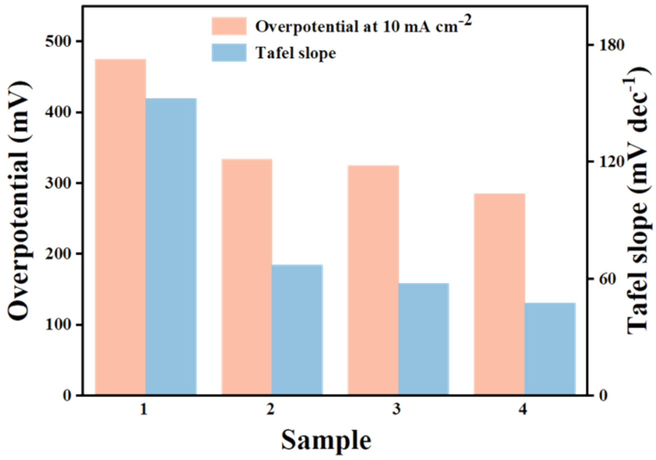

Figure S5. The corresponding Tafel slopes and overpotential at 10 mA·cm^{-2}. (Samples 1-4 correspond in turn to Cu_2O, CuS-CuO, NiFe-LDH and CuS-CuO@NiFe-LDH, respectively.)

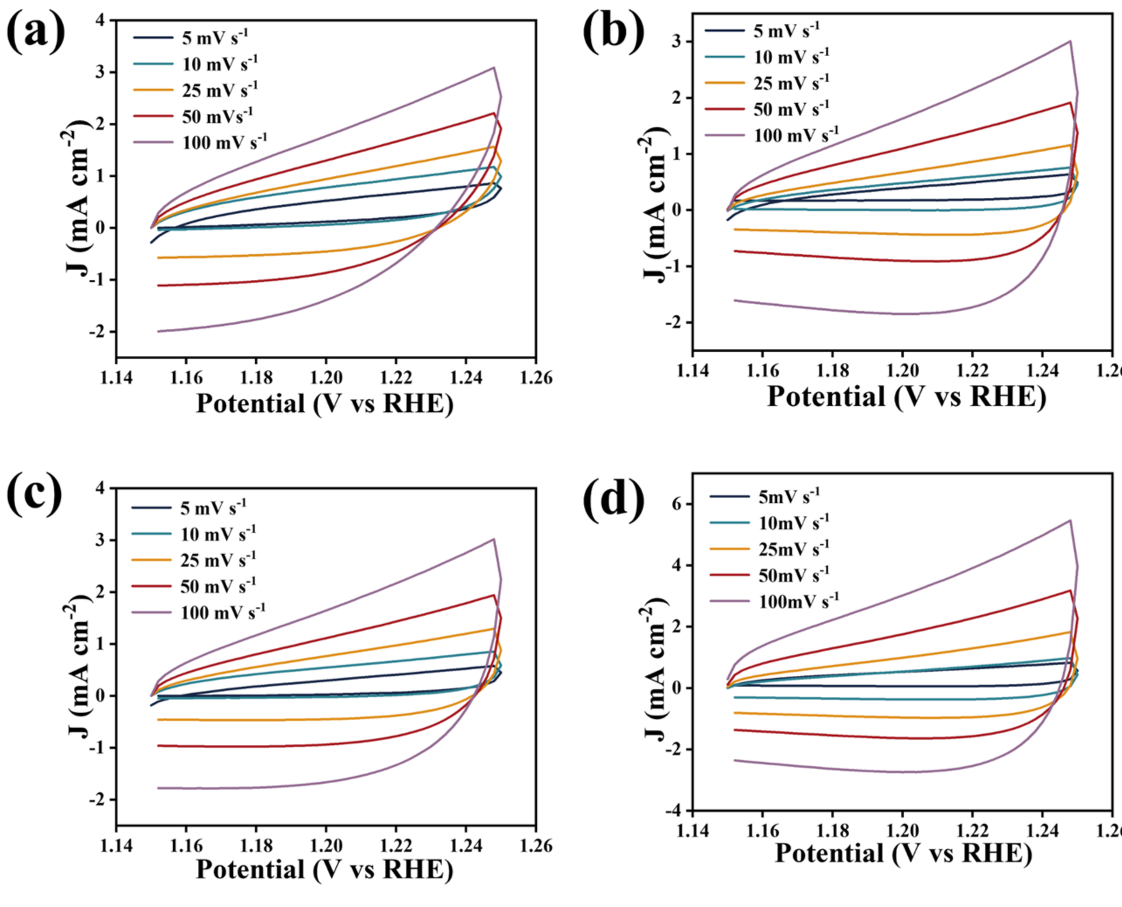

Figure S6. CV curves of (A) Cu_2O, (B) CuS-CuO, (C) NiFe-LDH and (D) CuS-CuO@NiFe-LDH at different scan rates from 5 to 100 mV s^{-1}.

Supplementary Tables

Table S1 Mass ratio of element in CuS-CuO@NiFe-LDH

element	wt%
O	22.53
S	20.47
Fe	6.01
Ni	10.73
Cu	40.26

Table S2 Performance comparison of representative OER electrocatalysts at a current density of 10 mA cm^{-2} under 1 M KOH solution.

HER Catalysts	Overpotential (mV)	Tafel slope (mV dec^{-1})	Stability (h)	Ref.
CuS-CuO@NiFe-LDH	**285**	**47.65**	**15**	**This work**
CuNiP@Cu	318	100	20	1
Ni-Fe NP/N-C	330	56.7	10	2
FeCoNi-N-rGO	440	124	200 (η_5)	3
Fe-CuS/CuO/CS	340	31	10	4
Ni@3FCCO	369	69	18	5
Sn-Ni_3S_2@NF	321	-	110 (η_{100})	6
Ni SAs@S/N-CMF	285	50.8	60	7
CoNiFe LDH	194	49	10	8
(Ni, Fe)S_2@MoS_2	270	101.22	24	9
Ni@CN	307	-	10	10
(FeCoNiCuZn)O	323	64.5	50	11
$Cu_{0.98}Dy_{0.02}$CS/CuS	303	-	12 (η_{50})	12

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