

Supporting Information

Construction of NiFe-LDH catalyst with three-dimensional unified gas diffusion layer structure via facile acid etching route for oxygen evolution reaction

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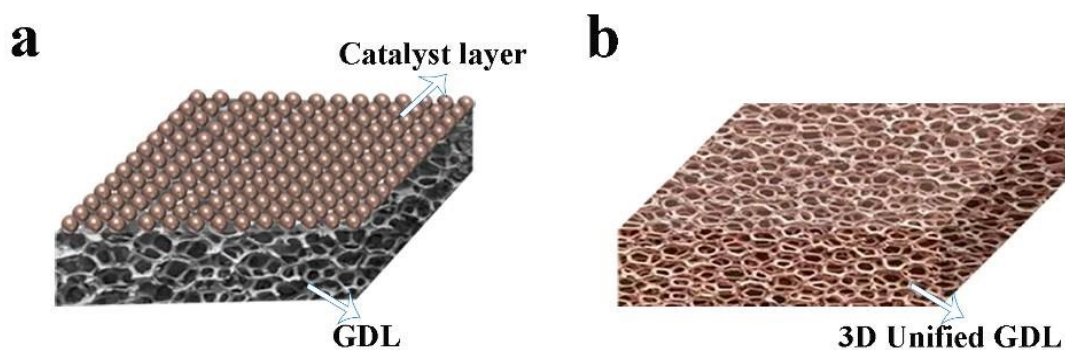


Figure S1. (a) Traditional electrode design, (b) Three-dimensional unified GDL design.

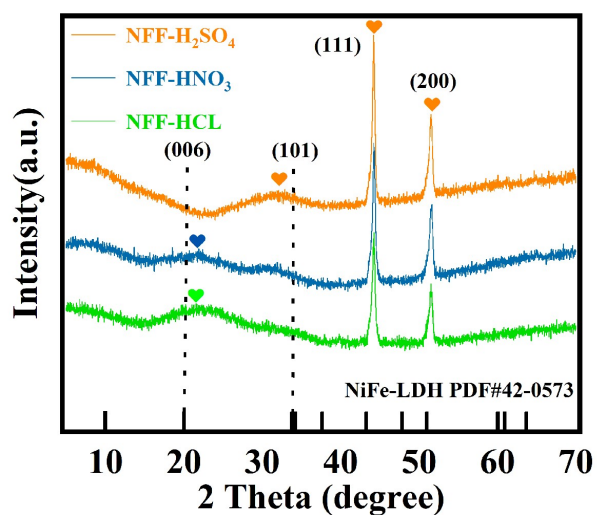


Figure S2. XRD patterns of NFF-H₂SO₄, NFF-HNO₃ and NFF-HCL.

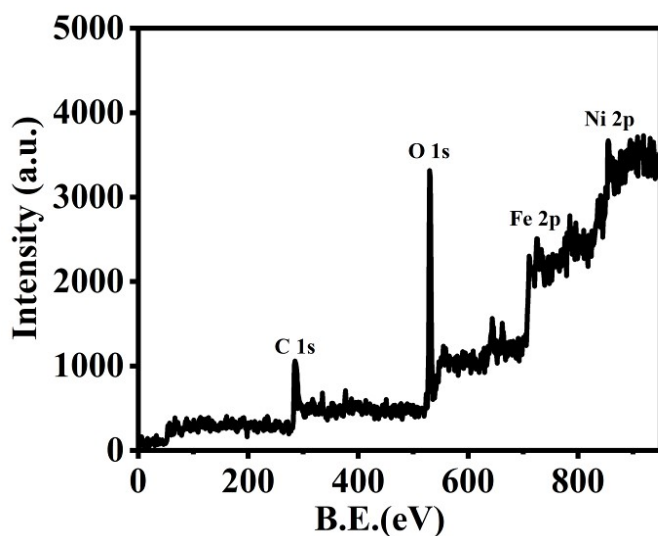


Figure S3. XPS survey spectrum of NFF-H₂SO₄.

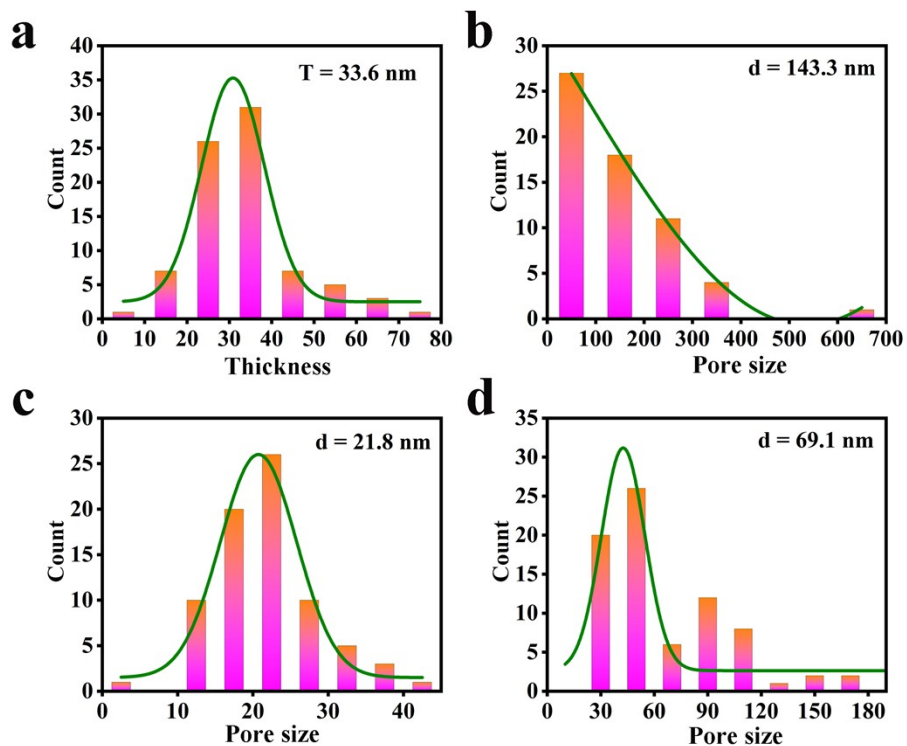


Figure S4. (a) The thickness histogram of NFF-H₂SO₄ nanosheets. (b) The corresponding pore size histograms for NFF-H₂SO₄, (c) NFF-HCL and (d) NFF-HNO₃.

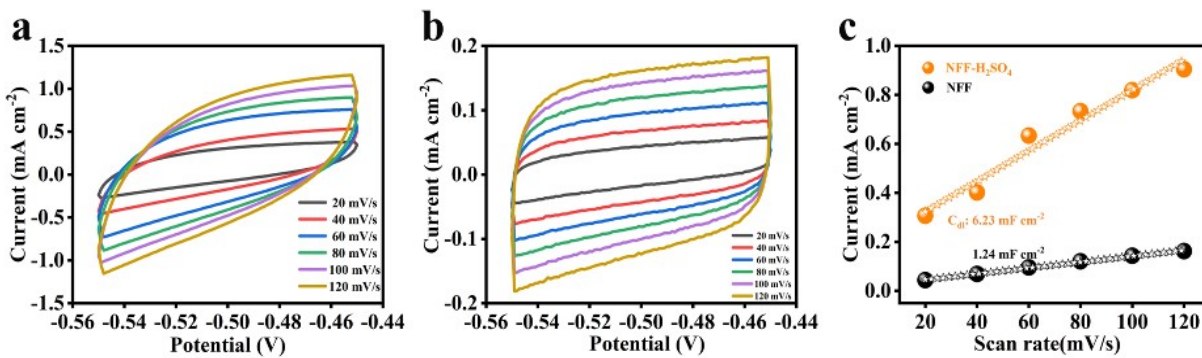


Figure S5. CV curves of (a) NFF-H₂SO₄, (b) Bare NFF at different scan rates (20, 40, 60, 80, 100 and 120 mV s⁻¹), (c) The corresponding C_{dl} curves.

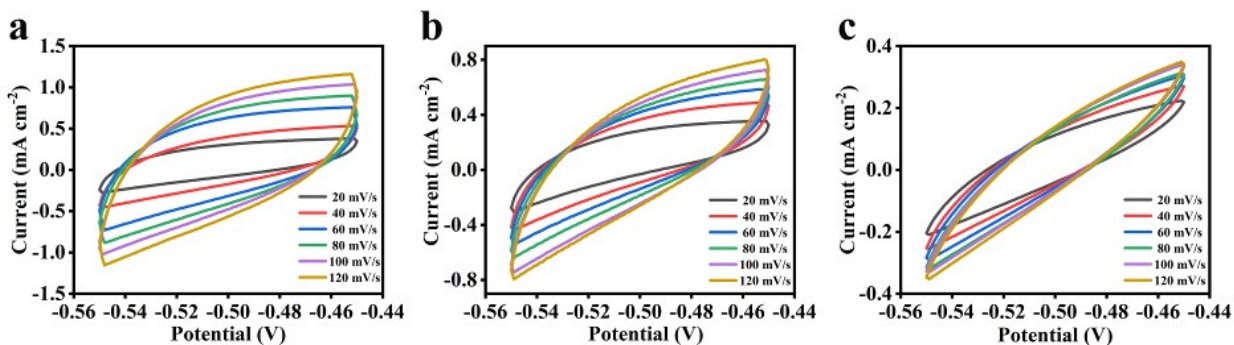


Figure S6. CV curves of (a) NFF-H₂SO₄, (b) NFF-HNO₃ and (c) NFF-HCL at scan rates (20, 40, 60, 80, 100 and 120 mV s⁻¹).

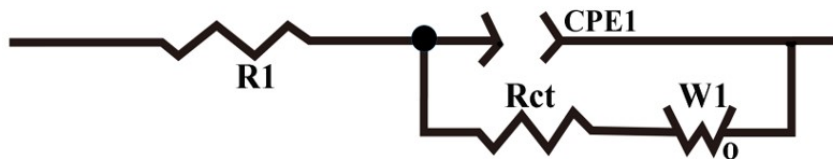


Figure S7. Equivalent circuit diagram for EIS.

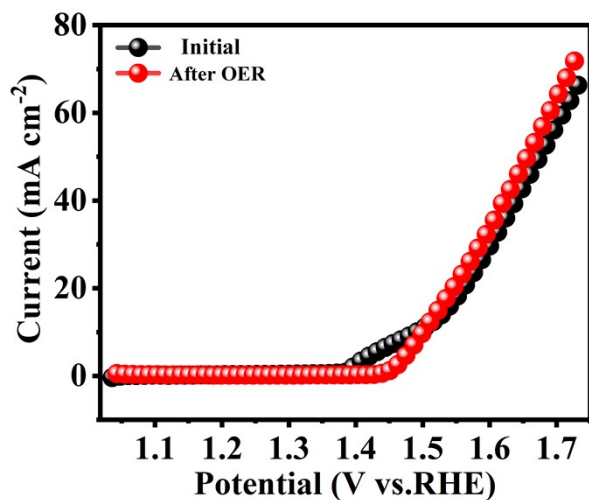


Figure S8. Comparison of LSV curves before and after 12 hours OER.

Table S1. Ni/Fe based catalysts reported in recent literatures at 10 mA cm⁻².

Num	Electrocatalyst	η_{10} [mV]	Electrolyte	Substrate	References
1	NFF-H ₂ SO ₄	275	1 M KOH	NFF	This work
2	Co-NiFe-LDH	278	1 M KOH	GC	1
3	NiO/C@NiFe-LDH	299	1 M KOH	GC	2
4	NiFe-LDH/CuONRs/CF	290	1 M KOH	Cu foil	3
5	NiFe-LDH@MnCO ₃	279	1 M KOH	NF	4
6	F-Ni ₂ B/Ni(OH) _x	340	1 M KOH	GC	5
7	(NiFe)S ₂ -GN	320	1 M KOH	GC	6
8	NiFe CHs-CNT/G	300	1 M KOH	GC	7
9	NiFe LDH@NDCDs	385	0.1 M KOH	NF	8
10	NiFe PBA@N-CNT	280	0.1 M KOH	NF	9
11	NiFe@C	322	1 M KOH	GC	10
12	Mn-NiFe-LDHs	332	1 M KOH	CP	11
13	Ni ₃ S ₂ @FeNi-NiFe ₂ O ₄ /C	280	1 M KOH	GC	12
14	NiFeCr-MOFs	333	1 M KOH	GC	13
15	NiFe-NDC MOFs	295	1 M KOH	GC	14
16	NiFe-Co@NC	450	0.1 M KOH	GC	15
17	NiFe@WC-NCL	279	1 M KOH	GC	16
18	NiFe@NC	277	0.1 M KOH	GC	17
19	CoNiFeS	288	1 M KOH	GC	18

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