Supplementary Material

Ferrocene formic acid surface modified $Ni(OH)_2$ for highly efficient alkaline oxygen evolution

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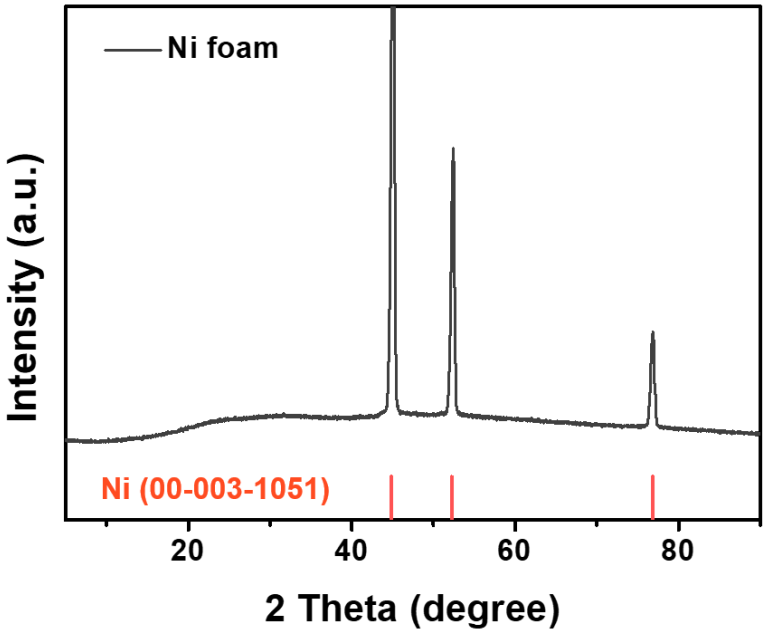

Figure S1. XRD of Ni foam.

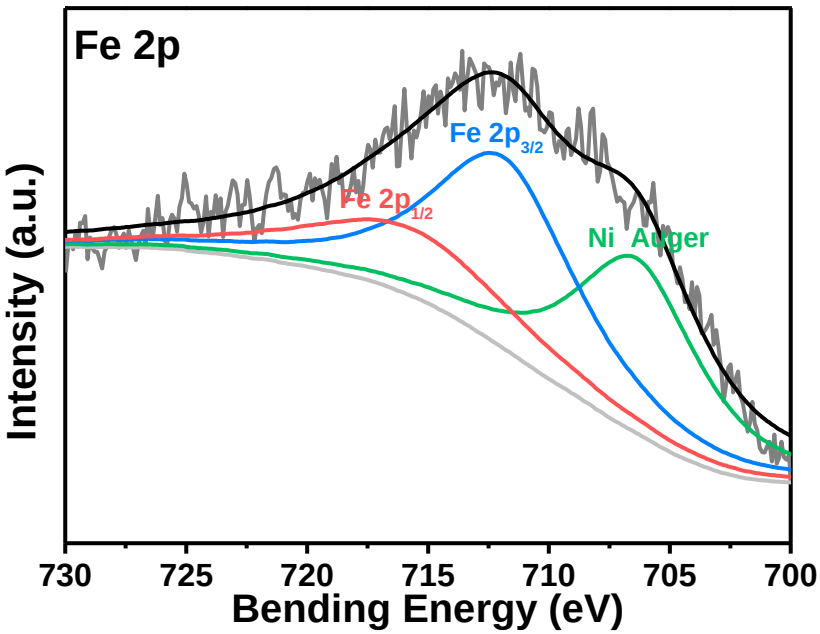

Figure S2. Fe 2p of FFA-Ni(OH)$_2$/NF.

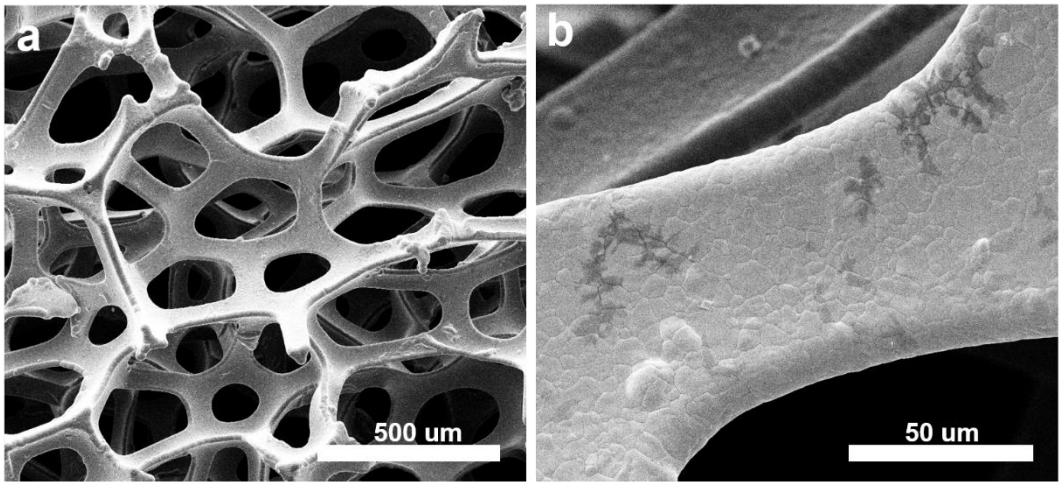

Figure S3. SEM images of NF.

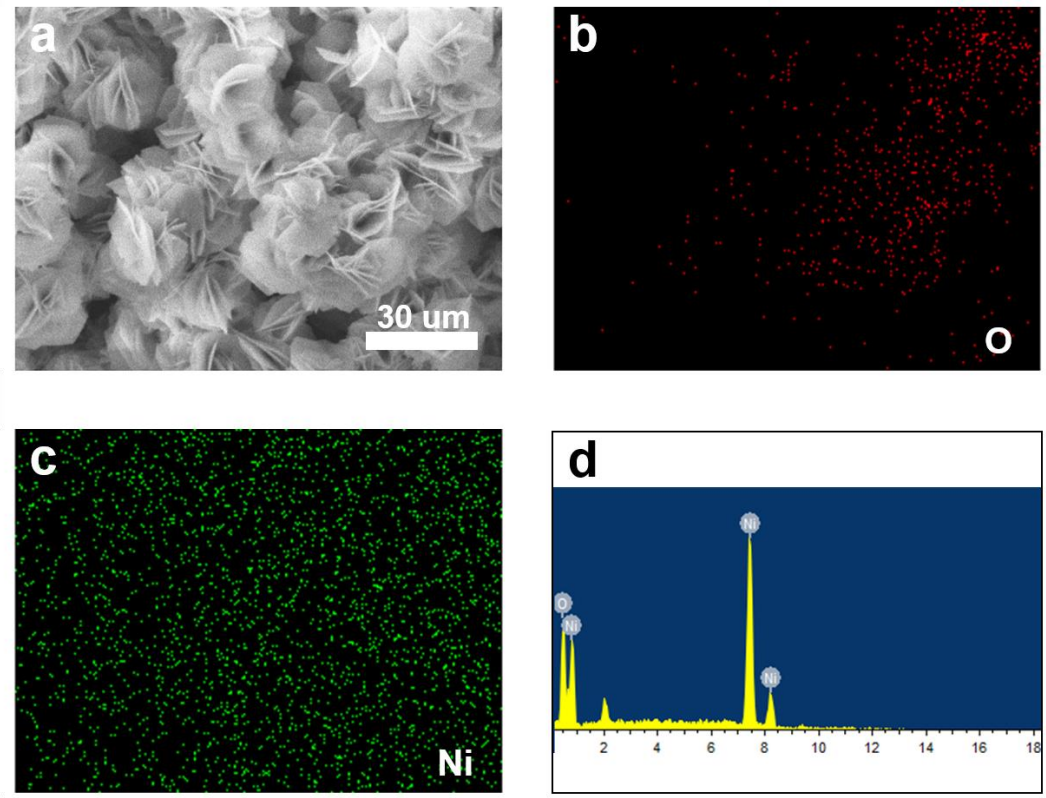

Figure S4. SEM-Mappings of $Ni(OH)_2$/NF.

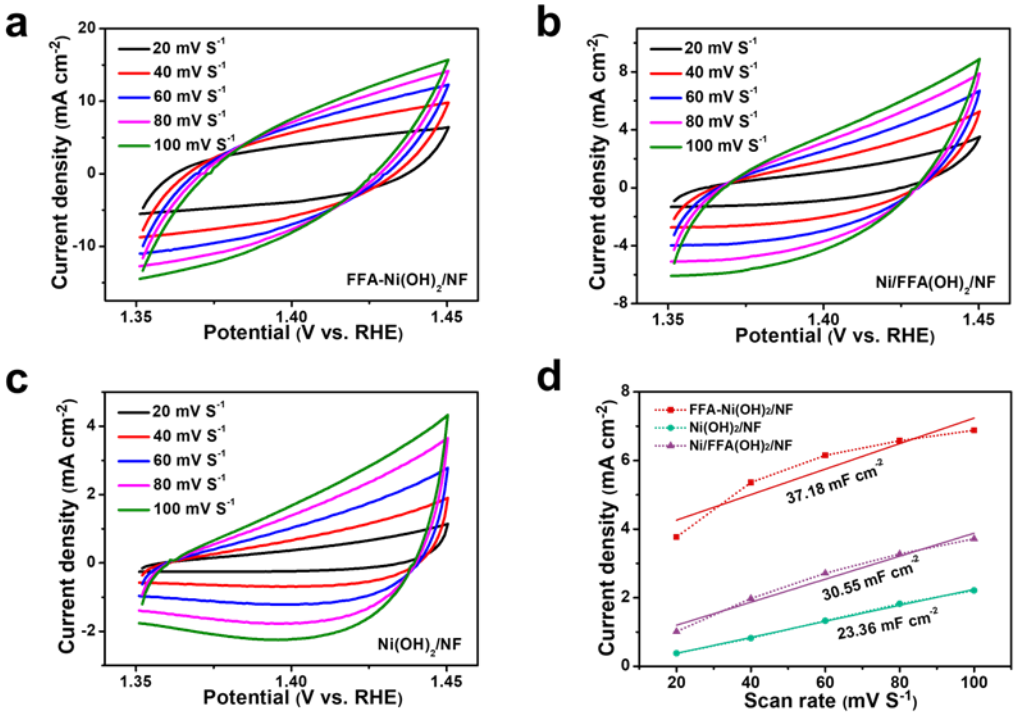

Figure S5. CVs of (**a**) FFA-$Ni(OH)_2$/NF, (**b**) Ni/FFA$(OH)_2$/NF, and (**c**) $Ni(OH)_2$/NF (at 1.35-1.45 V vs, RHE). (**d**) C_{dl} of FFA-$Ni(OH)_2$/NF, Ni/FFA$(OH)_2$/NF and $Ni(OH)_2$/NF.

Elements	Weight percentage %	Atomic percent %
O K	35.85	67.21
Fe K	0.41	0.22
Ni K	63.74	32.56
Total	100	100

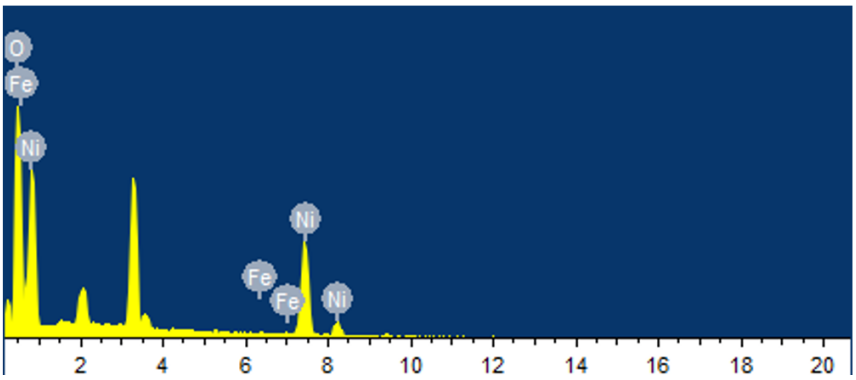

Figure S6. The surface element content statistics of FFA-Ni$(OH)_2$/NF.

Table S1. Comparison of the overpotential between the catalyst in this work and the previously reported Fe-Ni based OER electrocatalysts.

Ref.	Electrocatalyst	Current density	Overpotential	Tafel slope
[37]	r-FeOOH/a-$Ni(OH)_2$/NF	100	310	51.4
[38]	Ni-Fe LDH NSA	100	320	70
[39]	Ni-Fe-OH/Ni_3S_2/NF	100	324	54
[40]	$(Ni,Fe)S_2$@MoS_2	100	330	43.21
[41]	FeNC-550	10	340	86.67
[42]	Ru/NiFe LDH-F/NF	100	345	50.2
[43]	Ni–Fe@rGO	10	350	38
[44]	(FeNi)O/NiSe@NF	100	370	70.6
[45]	Ni–Fe samples	100	374	86
[46]	Ni_3S_2@$FeNi_2S_4$@NF	100	379	92
[47]	Fe-Co-Ni-S_x/NF	100	390	86
This work	FFA-$Ni(OH)_2$/NF	100	311	77.68