Supplementary Information for

Molybdenum in-situ etching treated ultra-thin NiFeMo LDHs nanosheet arrays as performance anodic catalyst for efficient industrial hydrogen production

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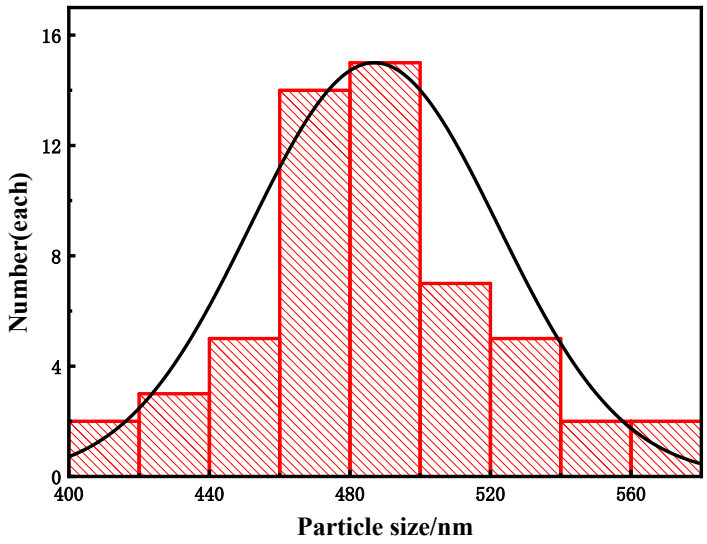

Figure S1 Normal distribution histogram of particle size for NiFeMo/NFF

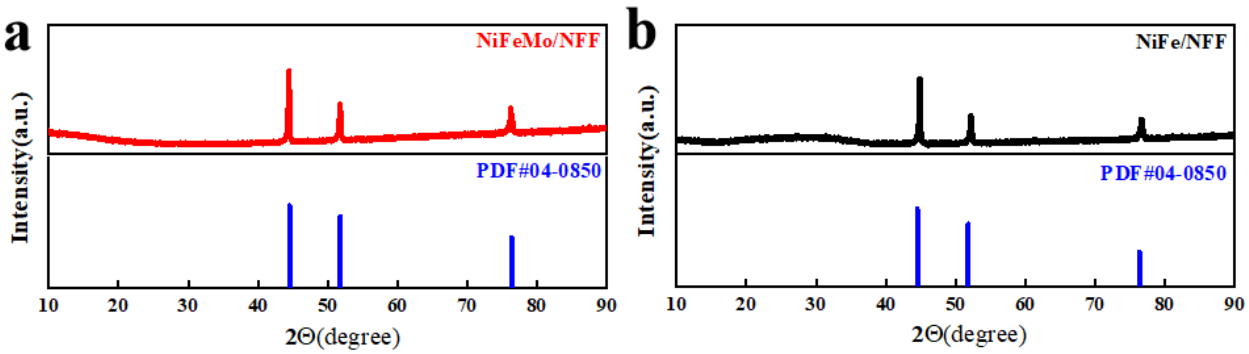

Figure S2 XRD profile of NiFeMo/NFF(a) and NiFe/NFF(b)

Figure S3 LSV curve and overpotential comparison of NFF, NiFe/NFF, NiFeMo/NFF

Figure S4 The CV curves of NFF, NiFe/NFF, NiFeMo/NFF

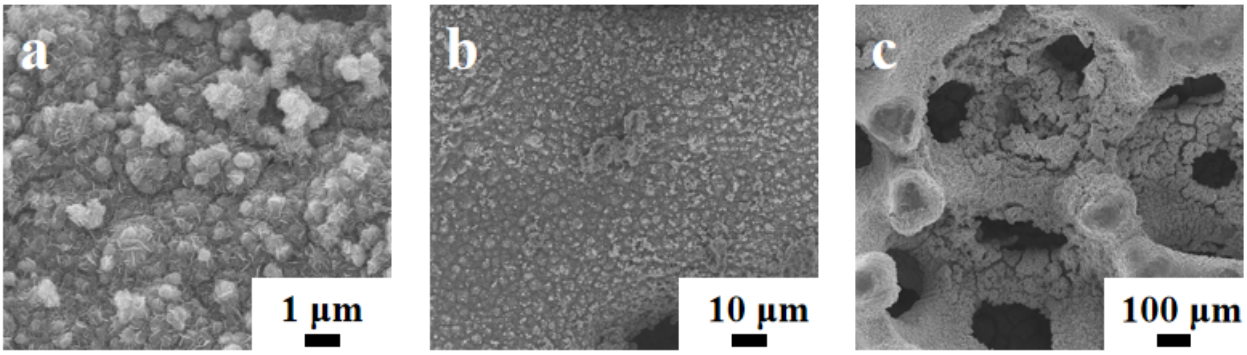

Figure S5 SEM characterization of NiFeMo/NFF after long-term electrolysis

Table S1 EDS Mapping of NiFeMo/NF

Element	Atomic Number	Mass（%）	Atomic（%）
O	**8**	**22.99**	**53.32**
Fe	**26**	**29.69**	**22.06**
Ni	**28**	**34.91**	**19.72**
Mo	**42**	**7.74**	**2.99**
Zr	**40**	**4.68**	**1.90**

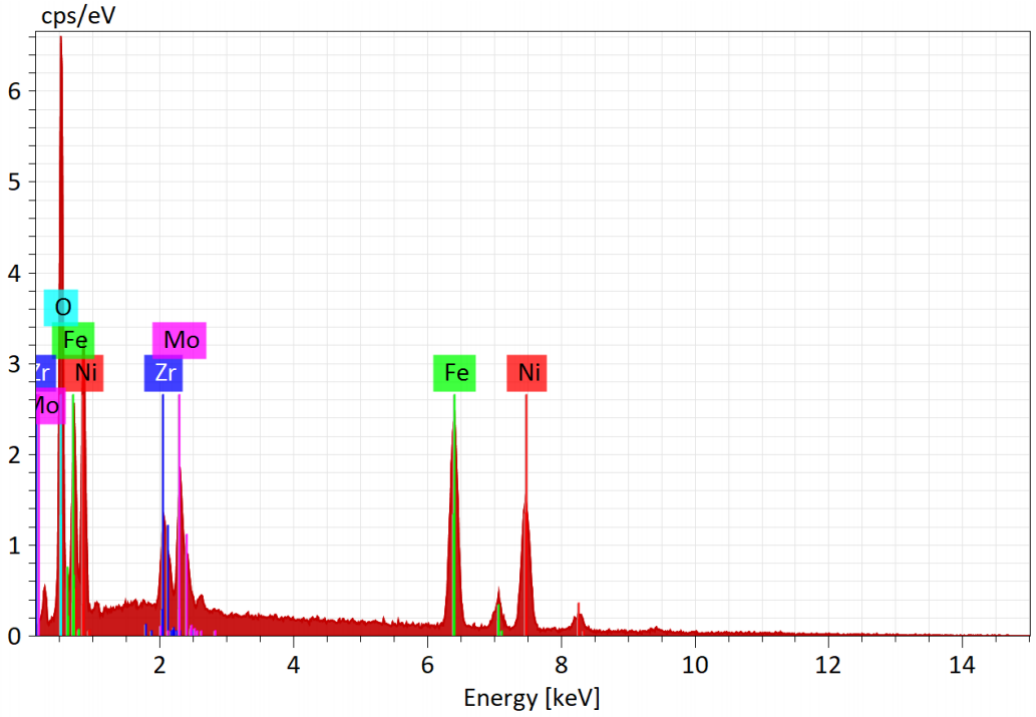

Table S2 Overpotential Data of Different Materials at 10 to 1000 mA cm^{-2}

Electrode	10 mA cm^{-2}	100 mA cm^{-2}	300 mA cm^{-2}	500 mA cm^{-2}	800 mA cm^{-2}	1000 mA cm^{-2}
NiFeMo/NFF	**288 mV**	**367 mV**	**476 mV**	**575 mV**	**712 mV**	**784 mV**
NiFe/NFF	**296 mV**	**392 mV**	**518 mV**	**627 mV**	**779 mV**	**848 mV**
NFF	**327 mV**	**423 mV**	**564 mV**	**689 mV**	**866 mV**	**975 mV**

Table S3 Cdl and ECSA

Electrode	Cdl（mF cm^{-2}）	ECSA（cm^2）
NiFeMo/NFF	**14.28**	**357**
NiFe/NFF	**3.36**	**84**
NFF	**0.94**	**23.5**

Table S4 AC Impedance

Electrode	Rs	Rp
NiFeMo/NFF	**0.70**	**6.88**
NiFe/NFF	**0.72**	**36.56**
NFF	**0.70**	**219.7**

Table S5 Electrochemical properties of Ni/Fe based catalysts in recent years

catalytic agent	Synthesis method	Electrochemical tests			Ref
		Current Density (mA cm^{-2})	Over potetial (mV)	Tafel slope (mV dec^{-1})	
NiFe-LDH/Ti_3C_2	hydro-thermal method	10	334	55	1
NiFe-LDH/NaMnO	molten-salt growth method	20	260	21	2
Mo–$NiFe_2O_4$-V_O	High temperature calcination method	10	315	35.9	3
$Fe_{0.3}Ni_1Co_2$/S-C	hydro-thermal method	10	276	52.2	4
NiFeCo oxide	Radio frequency magnetron sputtering technology	10	280	32.25	5
FeCoMo/CP	Co-precipitation + pyrolysis	10	270	63	6
FeNiVOx	Single-step aerosol assisted chemical vapor deposition	10	250	51	7
FeCoMn/PC	Solvent thermal method	10	170	66.7	8
NiFeMo/NFF	Electrochemical in situ etching method	10	288	43.5	This work

References:

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