Electronic Supplementary Material (ESI) for Sustainable Energy & Fuels.

NiFe double hydroxide coated on sulfur-modified $NiMoO_4$ nanorods as core-shell structured catalysts for oxygen evolution reaction

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Table S1 The overpotentials of NiFe LDH@S-$NiMoO_4$ are compared with related catalytic electrodes in 1 M KOH electrolyte solution.

Catalysts	Current density	Overpotential	Ref.
CoP_3/$NiMoO_4$ heterostructures on Ni foam	10 mA cm^{-2}	347 mV	(1)
Fe-doped $NiMoO_4$	10 mA cm^{-2}	299 mV	(2)
FeOOH modified $NiMoO_4$ nanowires	100 mA cm^{-2}	253 mV	(3)
Fe-S-$NiMoO_4$/ MoO_3 on Ni foam	100 mA cm^{-2}	249 mV	(4)
N-$NiMoO_4$/NiS_2 Nanowires/Nanosheets	10 mA cm^{-2}	283 mV	(5)
Ni_9S_8/MoS_2 Nanosheets Decorated $NiMoO_4$ Nanorods	10 mA cm^{-2}	360 mV	(6)
$NiFe_2O_4$/$NiMoO_4$ Nanorods on Ni foam	50 mA cm^{-2}	270 mV	(7)
$NiMoO_4$@Co_3O_4 Core–Shell Nanorods	100 mA cm^{-2}	282 mV	(8)
Core/shell -structured $NiMoO_4$ @ $MoSe_2$/NixSey Nanorod on Ni Foam	10 mA cm^{-2}	290 mV	(9)
P/NiFe doped $NiMoO_4$ micro-pillars arrays	100 mA cm^{-2}	360 mV	(10)
P-doped $Ni(OH)_2$/$NiMoO_4$ hierarchical nanosheet arrays grown on Ni foam	100 mA cm^{-2}	380 mV	(11)
Oxygen vacancy enriched $NiMoO_4$ nanorods	50 mA cm^{-2}	255 mV	(12)
Ce-Doped Ni–S nanosheets on Ni foam supported $NiMoO_4$ micropillars	100 mA cm^{-2}	244 mV	(13)
$NiMoO_4$/NiFe LDH/rGO multicomponent nanosheets	10mA cm^{-2}	270 mV	(14)
$NiFe_2O_4$−x/$NiMoO_4$ nanowire arrays on Ni Foam	600 mA cm^{-2}	326 mV	(15)
Crystalline-Amorphous $Ni_2P_4O_{12}$/$NiMoO_x$ Nanoarrays	20 mA cm^{-2}	250 mV	(16)
This work	100 mA cm^{-2}	277mV	

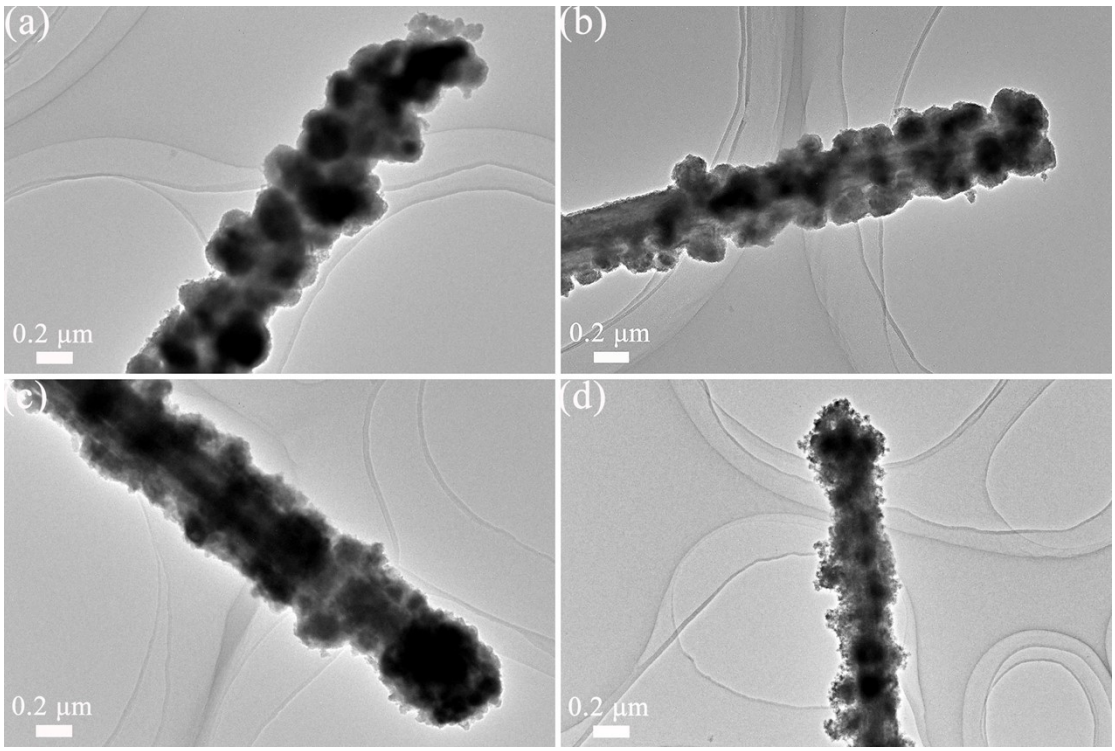

Fig. S1 TEM images (a-d) of NiFe LDH_{30min}@S-$NiMoO_4$, NiFe LDH@S-$NiMoO_4$, NiFe LDH_{50min}@S-$NiMoO_4$ and NiFe LDH_{60min}@S-$NiMoO_4$.

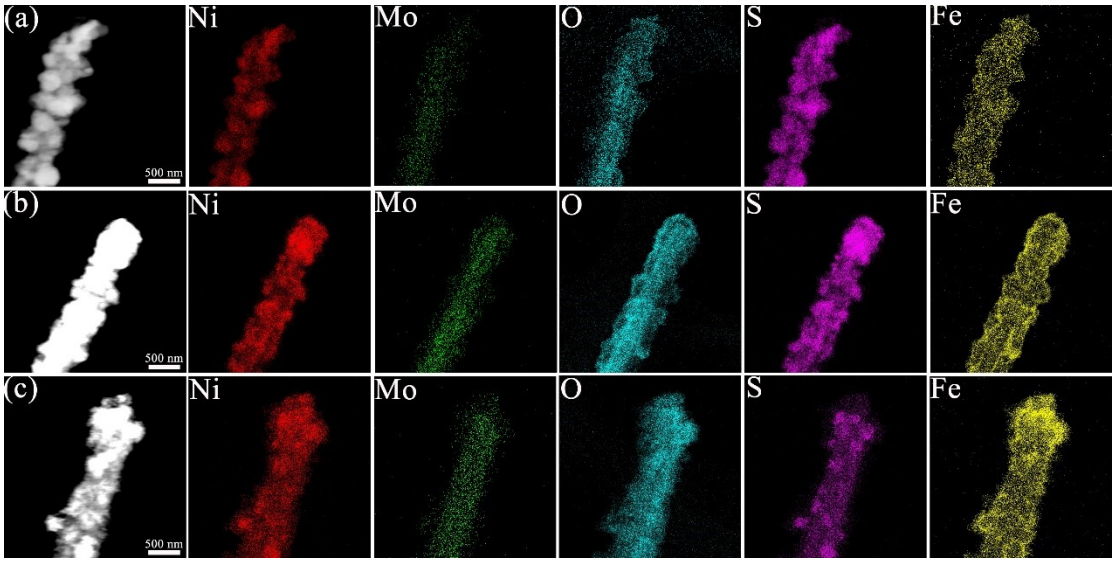

Fig. S2 EDS mapping images (a-c) of NiFe LDH_{30min}@S-$NiMoO_4$, NiFe LDH_{50min}@S-$NiMoO_4$ and NiFe LDH_{60min}@S-$NiMoO_4$.

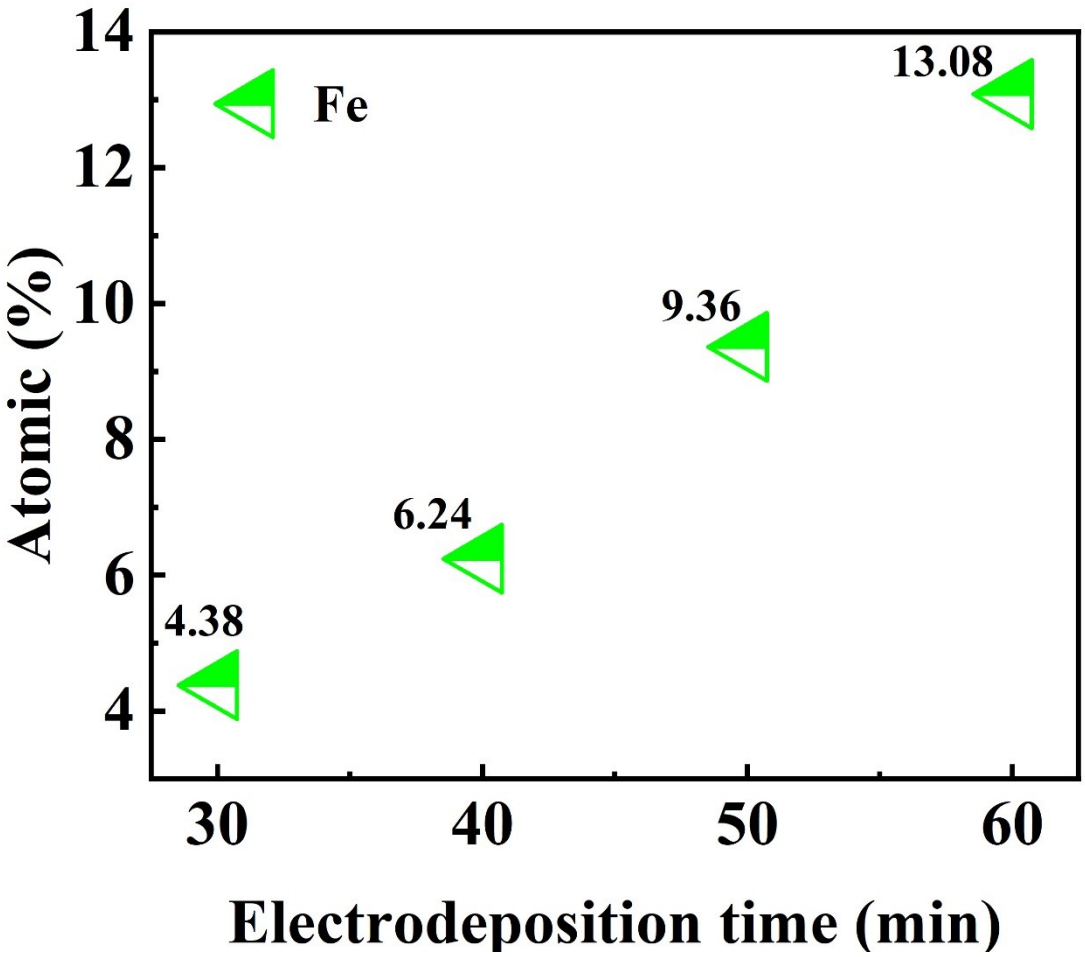

Fig. S3 Atomic specific gravity of Fe element at different times of electrodeposition.

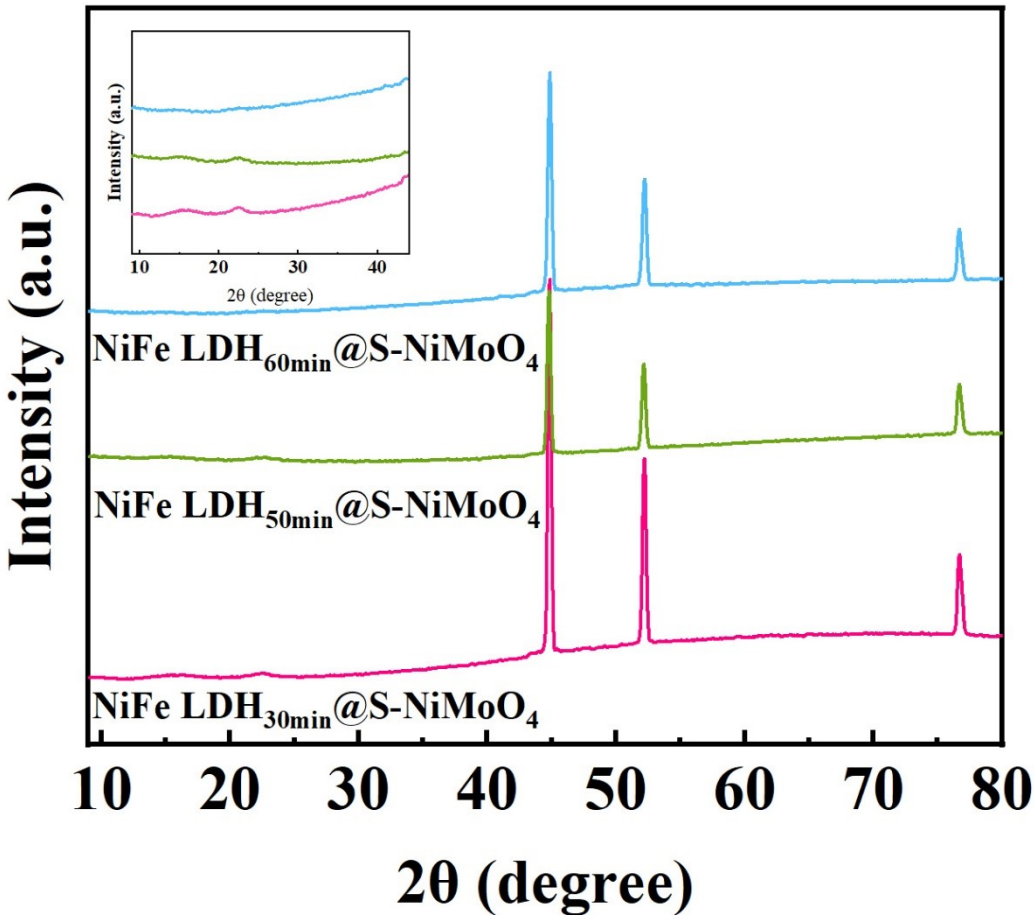

Fig. S4 XRD patterns of NiFe LDH_{30min}@S-$NiMoO_4$, NiFe LDH_{50min}@S-$NiMoO_4$ and NiFe LDH_{60min}@S-$NiMoO_4$.

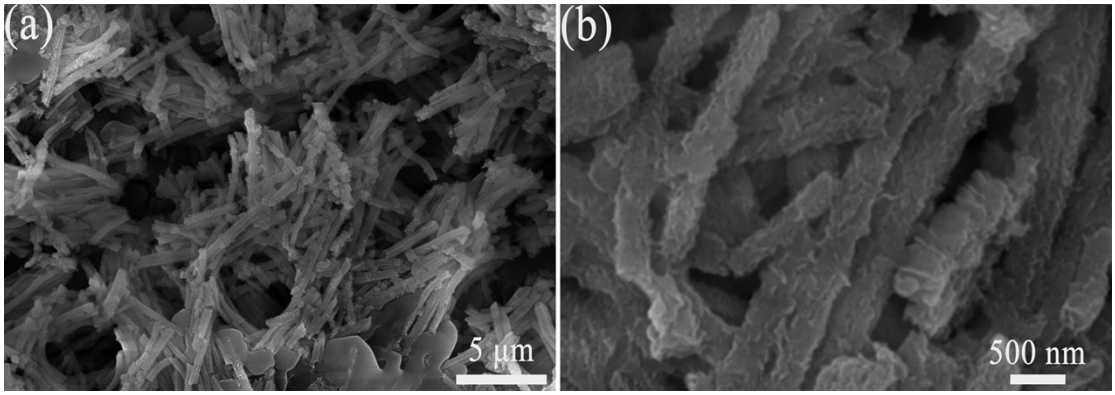

Fig. S5. Low-magnification (a) and High-magnification (b) SEM image of NiFe LDH_{30min}@S-$NiMoO_4$.

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