Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.


Supporting information

# Precursor-converted Formation of Bimetal-Organic Framework Nanosheets for Efficient Oxygen Evolution Reaction

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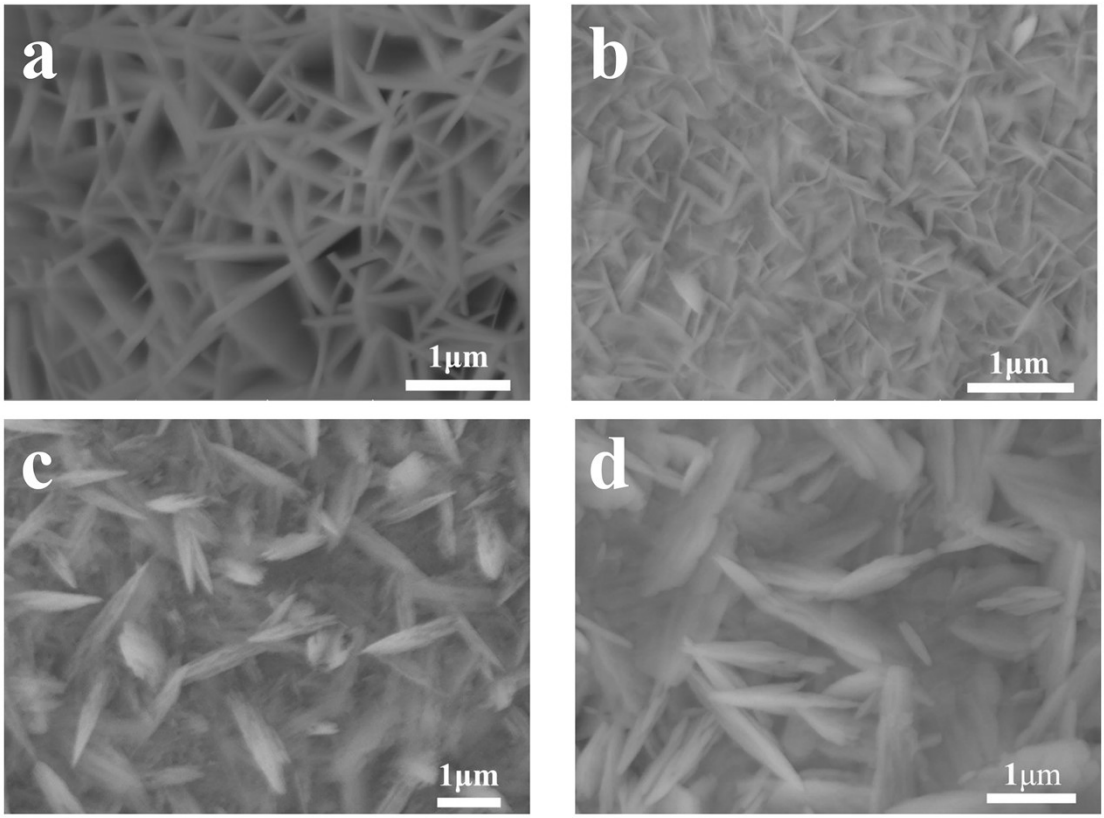


**Figure S1**. SEM images of NiFe-MOF@NF under different reaction times. a) 0 h, b) 1 h, c) 3 h and d) 6 h.

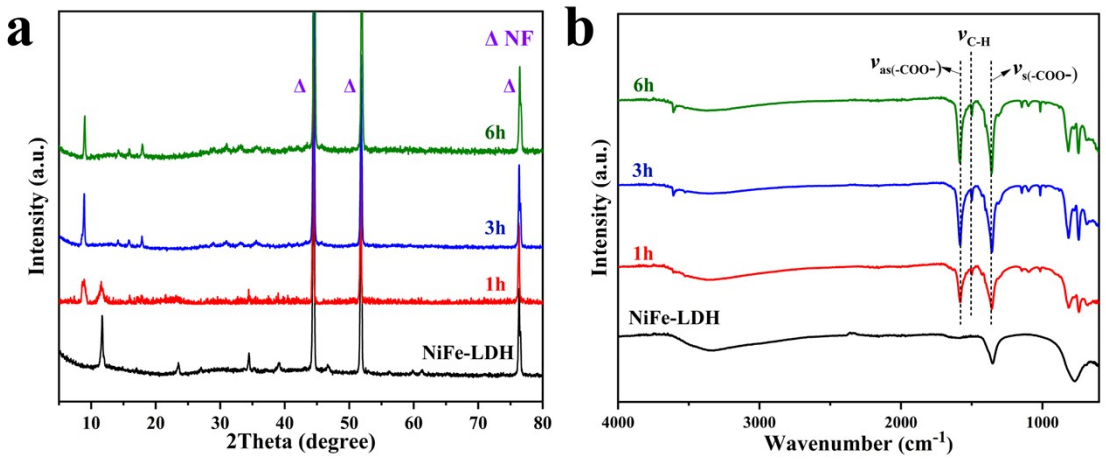


**Figure S2**. a) XRD patterns and b) FT-IR spectra of NiFe-MOF@NF under different reaction times of 0 h, 1 h, 3 h, and 6 h.

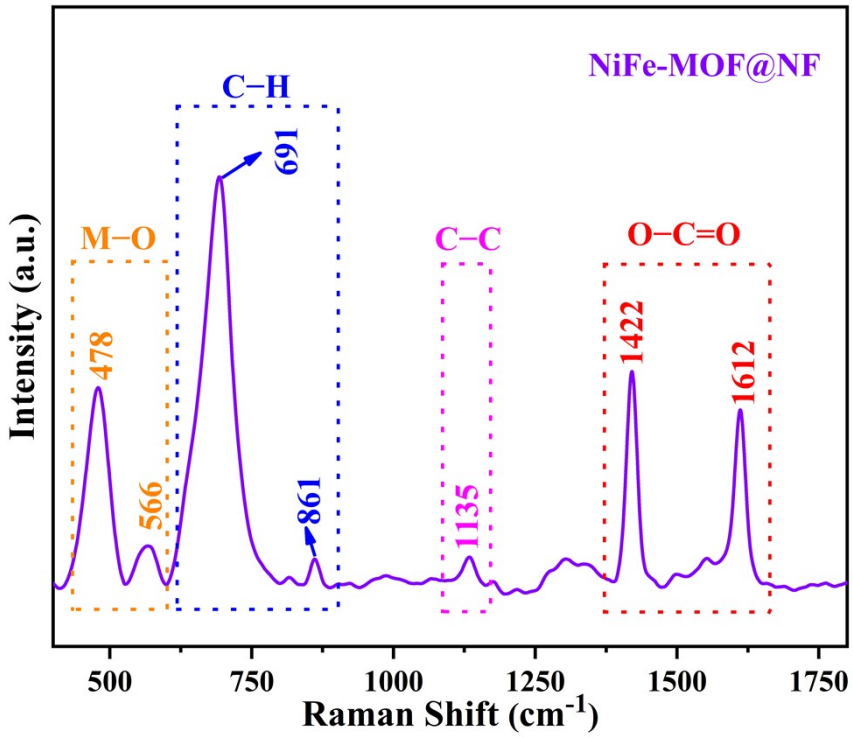


**Figure S3**. Raman spectrum of NiFe-MOF@NF.

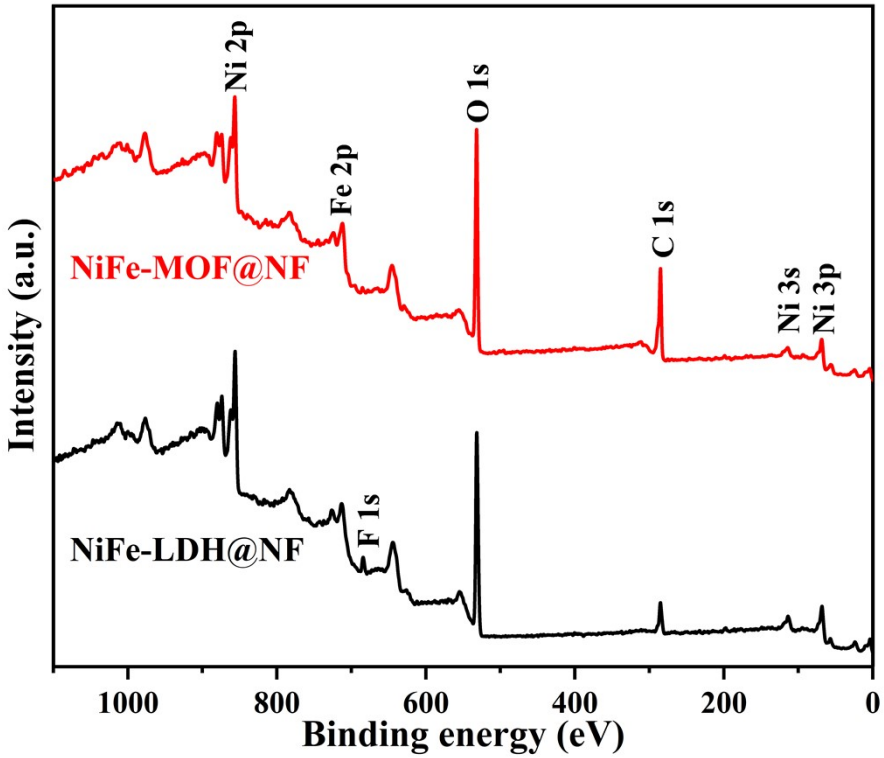


**Figure S4**. The survey XPS spectra of NiFe-MOF@NF and pristine NiFe-LDH@NF.

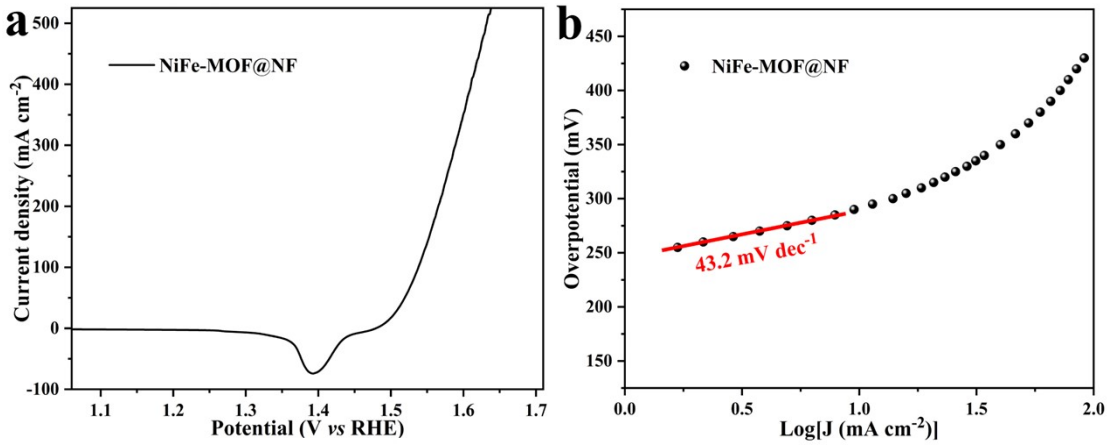


**Figure S5**. a) The reverse scan from 1.66 to 1.06 V (vs. RHE) for NiFe MOF@NF in 1 M KOH electrolyte; b) Tafel plot of NiFe-MOF@NF recorded using steady state test.

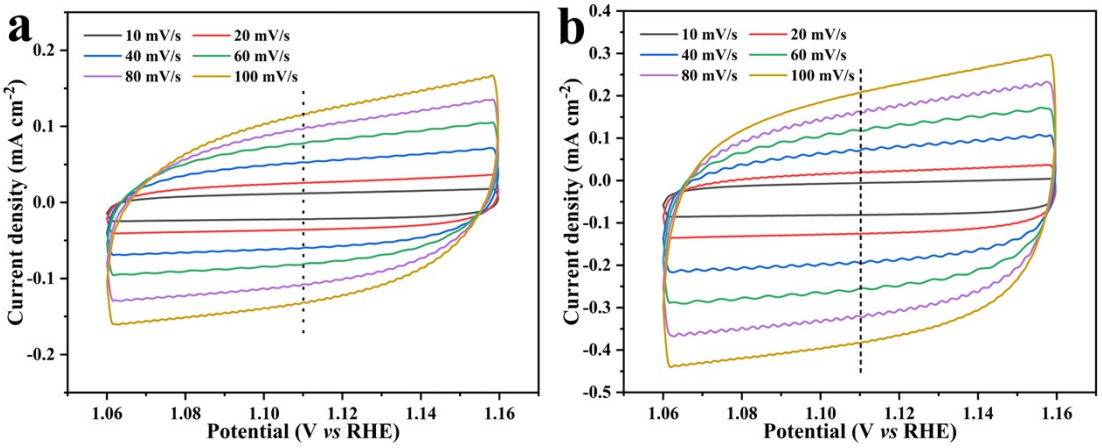


**Figure S6**. CV curves of (a) NiFe-LDH@NF, (b) NiFe-MOF@NF at different scan rates from 10 to 100 mV $s^{-1}$.

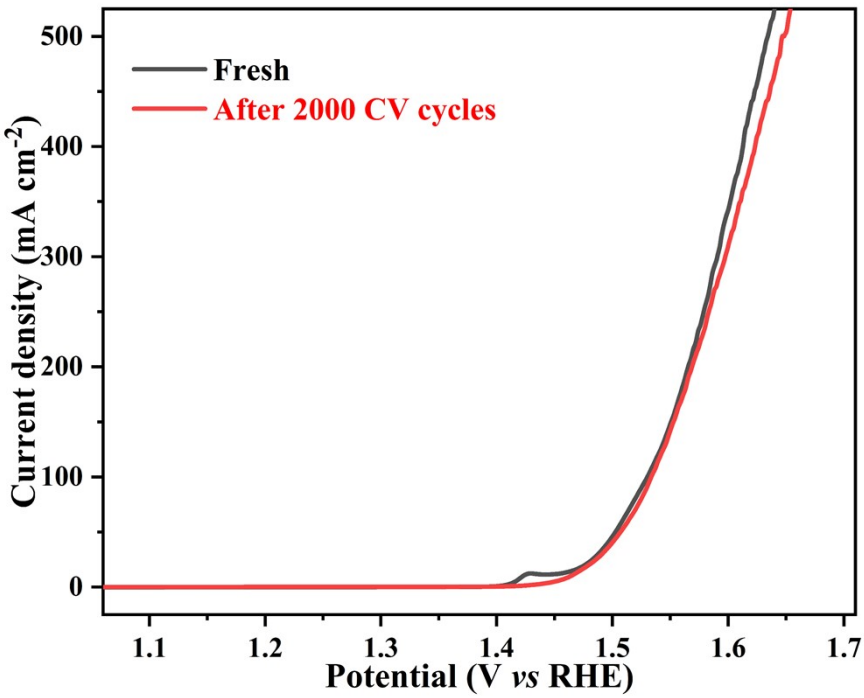


**Figure S7**. LSV curves before and after 2000 CV of NiFe-MOF@NF.

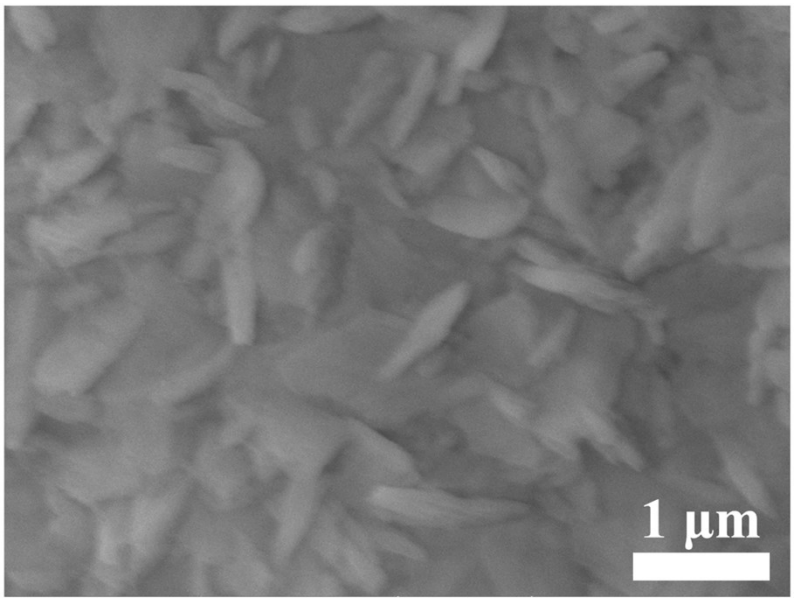


**Figure S8**. The SEM image of NiFe-MOF@NF electrode after the stability test.

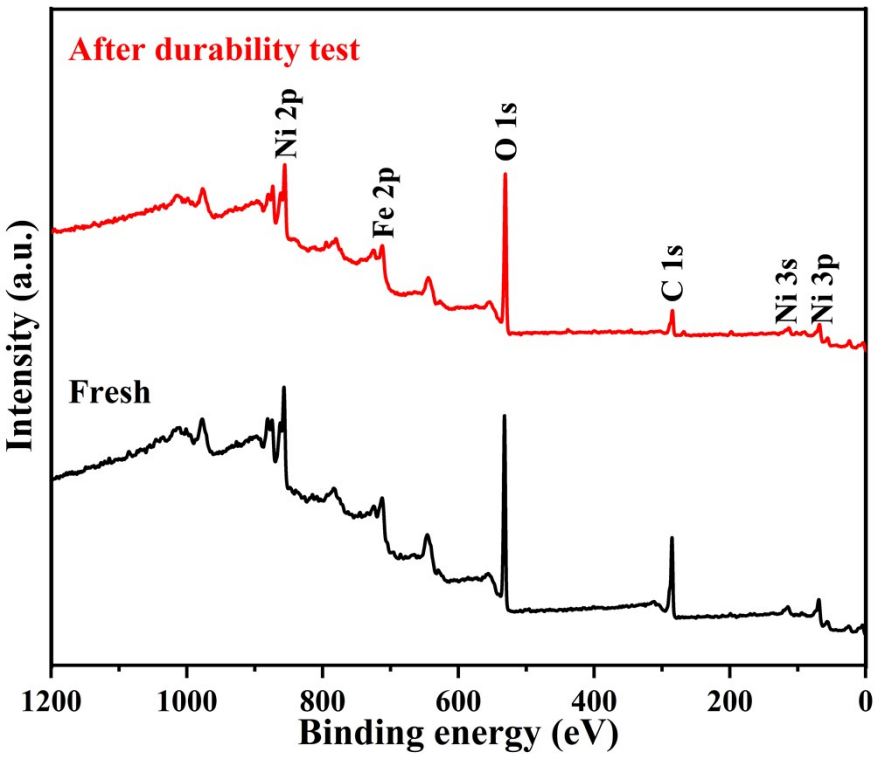


**Figure S9**. The survey XPS spectra of NiFe-MOF@NF before and after the durability test.

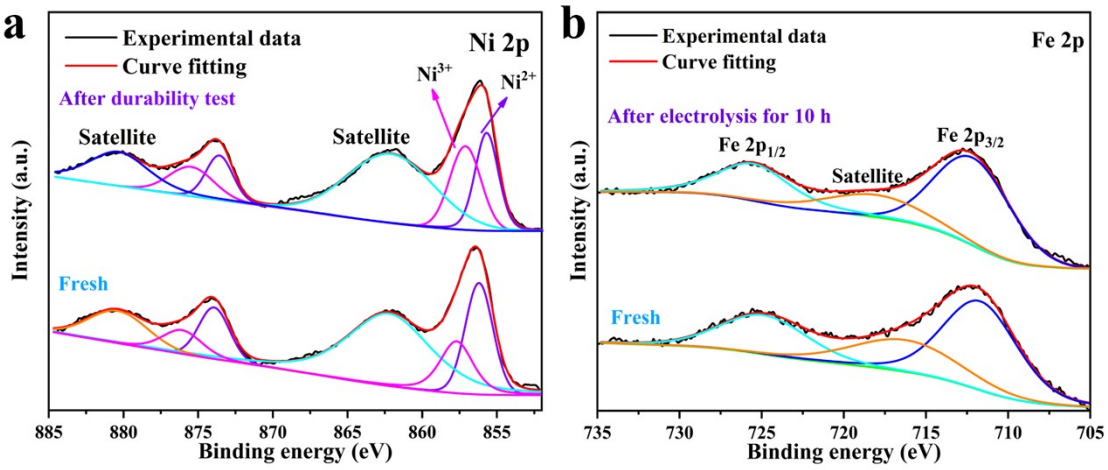


**Figure S10**. a) Ni 2p and b) Fe 2p spectra of fresh NiFe-MOF@NF and corresponding catalyst after the durability test.

**Table S1.** OER performances comparison of the electrocatalysts and NiFe-MOF@NF.

| Electrocatalyst | Overpotential (mV) | Tafel slope ($dec^{-1}$) | Electrolyte | Reference |
|---|---|---|---|---|
| **NiFe-MOF@NF** | **265@10mA $cm^{-2}$** | **38.1** | **1M KOH** | **This work** |
| NiCo-BDC BMNSs | 230@10mA $cm^{-2}$ | 61 | 1M KOH | 1 |
| MCCF/NiMn-MOFs | 280@10mA $cm^{-2}$ | 86 | 1M KOH | 2 |
| NiFe-BTC-GNPs MOF | 220@10mA $cm^{-2}$ | 51 | 1M KOH | 3 |
| $Fe/Ni_{2.4}/Co_{0.4}$-MIL-53 | 236@20mA $cm^{-2}$ | 52.2 | 1M KOH | 4 |
| CoNi-MOFNA | 215@10mA $cm^{-2}$ | 51.6 | 1M KOH | 5 |
| MIL-53(FeNi)/NF | 233@50mA $cm^{-2}$ | 31.3 | 1M KOH | 6 |
| $Co_3Fe$-MOF | 280@10mA $cm^{-2}$ | 38 | 1M KOH | 7 |
| Ni–Fe–MOF NSs | 221@10mA $cm^{-2}$ | 56 | 1M KOH | 8 |
| MOF-Fe/Co(1:2) | 238@10mA $cm^{-2}$ | 52 | 1M KOH | 9 |
| D-Ni-MOF NSA | 219@10mA $cm^{-2}$ | 48.2 | 1M KOH | 10 |
| CoZn MOF/CC | 287@10mA $cm^{-2}$ | 76.3 | 1M KOH | 11 |
| CoNiBDC/CA-350 | 192@10mA $cm^{-2}$ | 39 | 1M KOH | 12 |

## Reference


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