

## Supporting Information

### Ga doping Enhances Oxygen Evolution Reaction Performance and stability of NiFe layered double hydroxides

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The experimental part: Prior to testing, calibration of the Hg/HgO electrode was first carried out using a three-electrode system in which a platinum sheet was used as the working electrode and counter electrode. CV scans were performed in 1 M KOH solution in the range of -0.935 to -0.915 V at a scan rate of 1 mV s<sup>-1</sup>. The average of the potentials where the current was equal to zero was used as the potential of the reversible hydrogen electrode (relative to Hg/HgO). Therefore, all potentials reported in our paper were calibrated to the reversible hydrogen electrode (RHE) by equation (2).

#### Supplementary Figures

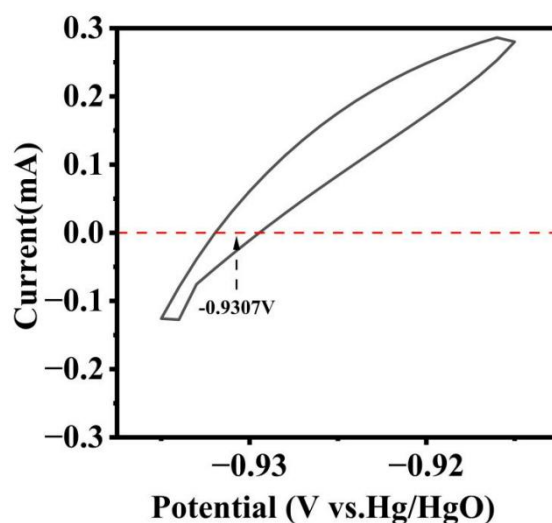


Fig. S1. Hg/HgO reference electrode calibration curve in 1M KOH.

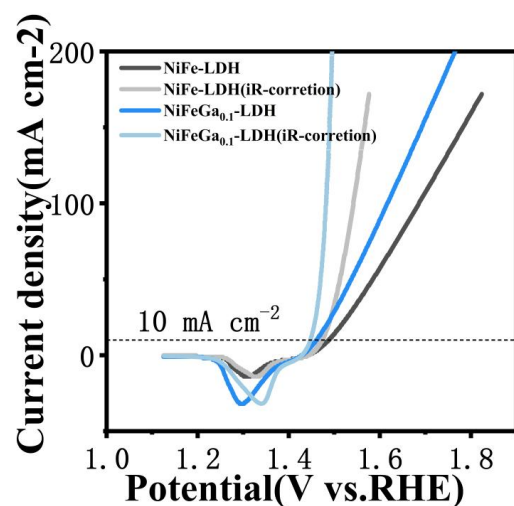


Fig. S2. The LSV curves before and after IR compensation are compared.

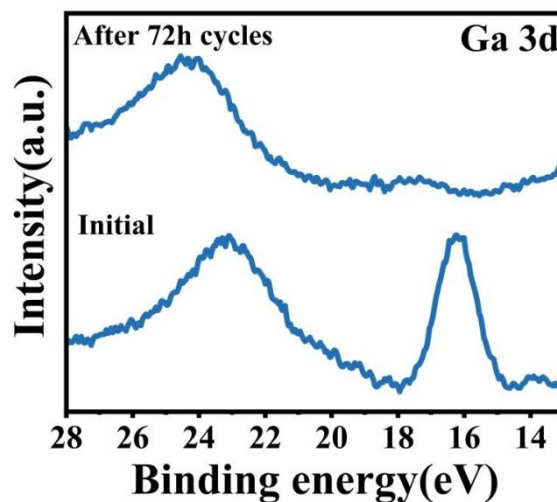


Fig. S3. NiFeGa<sub>0.1</sub>-LDH@NF XPS Ga 3d orbit curve before and after the cycle

## Supplementary Tables

Table. S1. NiFeGa<sub>0.1</sub>-LDH@NF Electrochemical catalytic performance A comparative study of similar types of electrocatalysts recently reported

Catalysts	J (mA cm <sup>-2</sup> )	$\eta$ (mV)	Stability (h)	Electrolyte	Ref.
NiFe-LDH Sn <sub>0.015</sub> (M)	10	250	50(1.5V)	1M KOH	1
NiFe-LDHS	10	224	32(50mA cm <sup>-2</sup> )	1M KOH	2
Ce@NiFe-LDH	10	220	60(1.48V)	1M KOH	3
NiFeMo <sub>0.1</sub> -LDH	10	227	24(1.54V)	1M KOH	4
Mn <sup>2+</sup> -doped NiFe-LDH	10	190	40(50mA cm <sup>-2</sup> )	1M KOH	5
NiFeIr-LDH	10	246	12(10mA cm <sup>-2</sup> )	1M KOH	6
Co@NiFe-LDH	10	253	/	1M KOH	7
NiFeGa <sub>0.1</sub> -LDH	10	224	72(50mA cm <sup>-2</sup> )	1M KOH	This work

## References

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