

**Phytic acid promotes the efficient electrocatalytic overall
water splitting of nickel-iron hydroxides**

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Content

Figure S1 SEM image of NiFe-LDH on NF and NiFe-LDH(PA) on NF.

Figure S2 Scanning electron microscope EDS of NiFe-LDH(PA).

Figure S3 High-resolution XPS spectra of survey spectrum (a) and C1s (b) for NiFe-LDH(PA) and NiFe-LDH, respectively.

Figure S4 HER polarization curves of NiFe-LDH with different amounts of PA treatment.

Figure S5 C_{dl} values observed from the CV test at different scan rates..

Figure S6 CV test at different scan rates of NiFe-LDH(PA), NiFe-LDH, $Fe(OH)_3(PA)$ and $Ni(OH)_2(PA)$, respectively..

Figure S7 Electrochemical impedance spectroscopy.

Figure S8 Digital photograph of the electrochemical water splitting cell.

Figure S9 Amount of H_2 and O_2 released measured theoretically and experimentally for overall water splitting at 10 mA/cm^2 .

Table S1 The elemental compositions of NiFe-LDH(PA) detected by EDS.

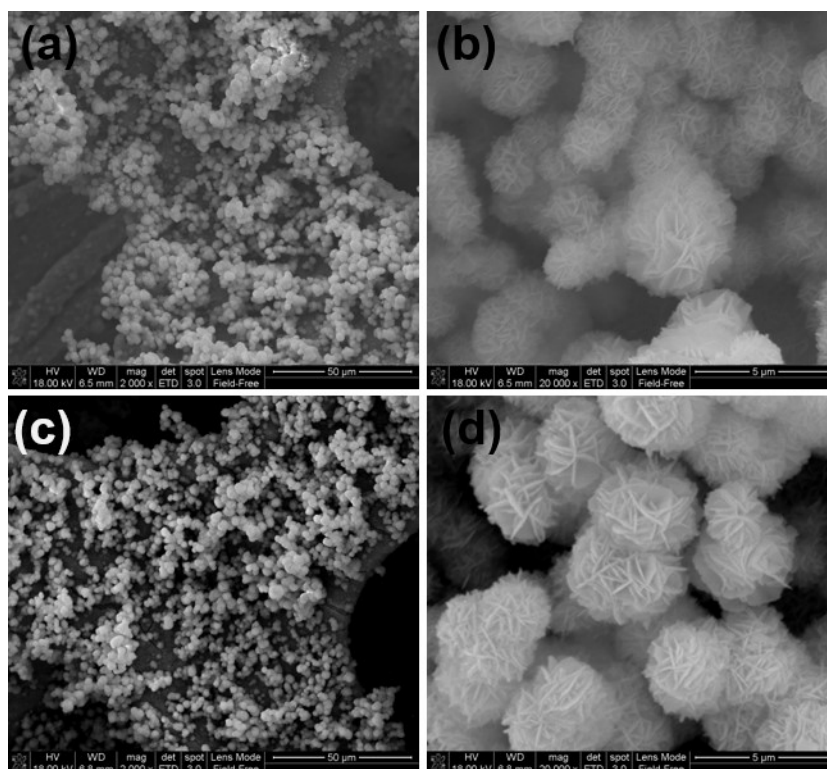


Figure S1 SEM image of NiFe-LDH on NF (a, b) and NiFe-LDH(PA) on NF (c, d).

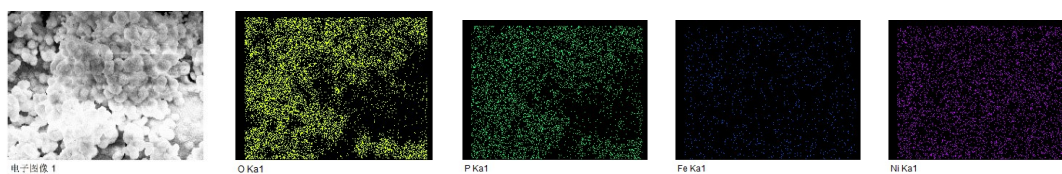


Figure S2 Scanning electron microscope EDS of NiFe-LDH(PA).

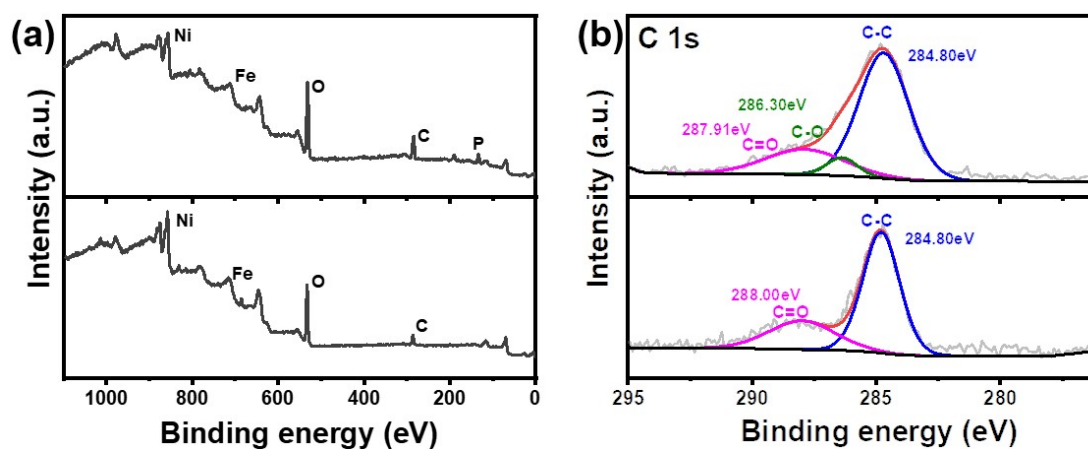


Figure S3 High-resolution XPS spectra of survey spectrum (a) and C 1s (b) for NiFe-LDH(PA) and NiFe-LDH, respectively.

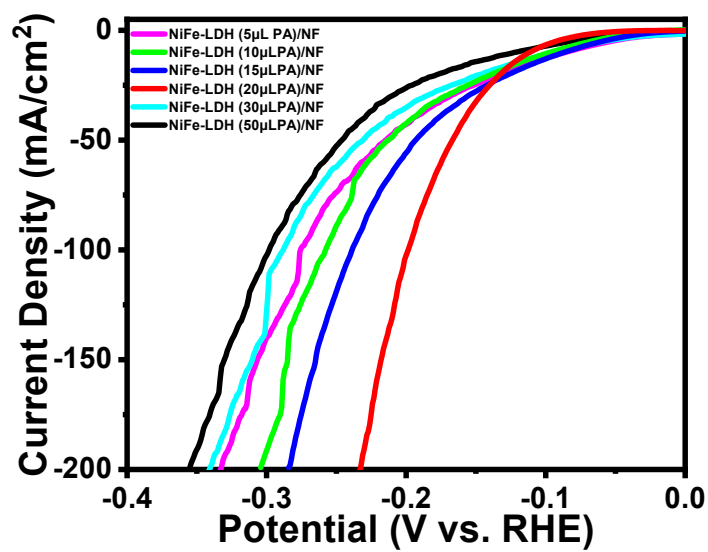


Figure S4 HER polarization curves of NiFe-LDH with different amounts of PA treatment.

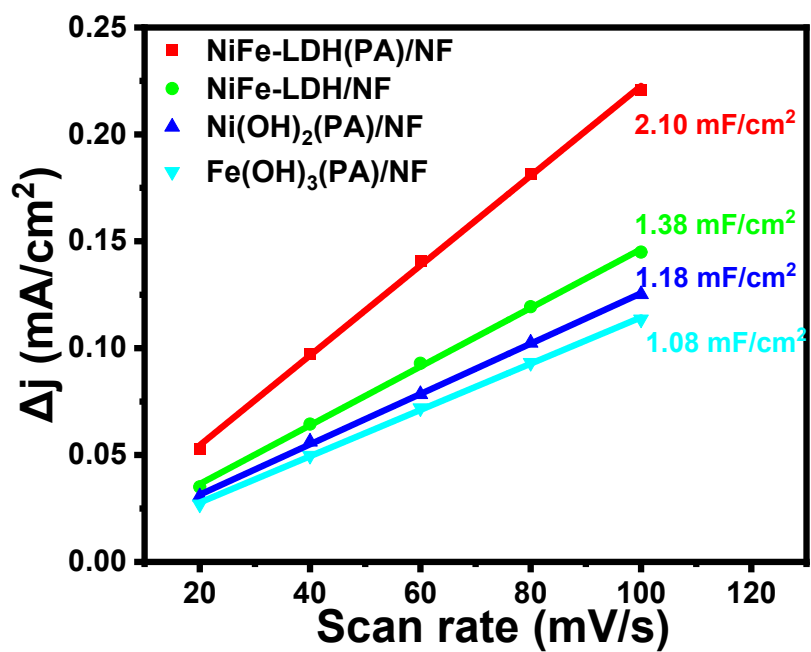


Figure S5 C_{dl} values observed from the CV test at different scan rates.

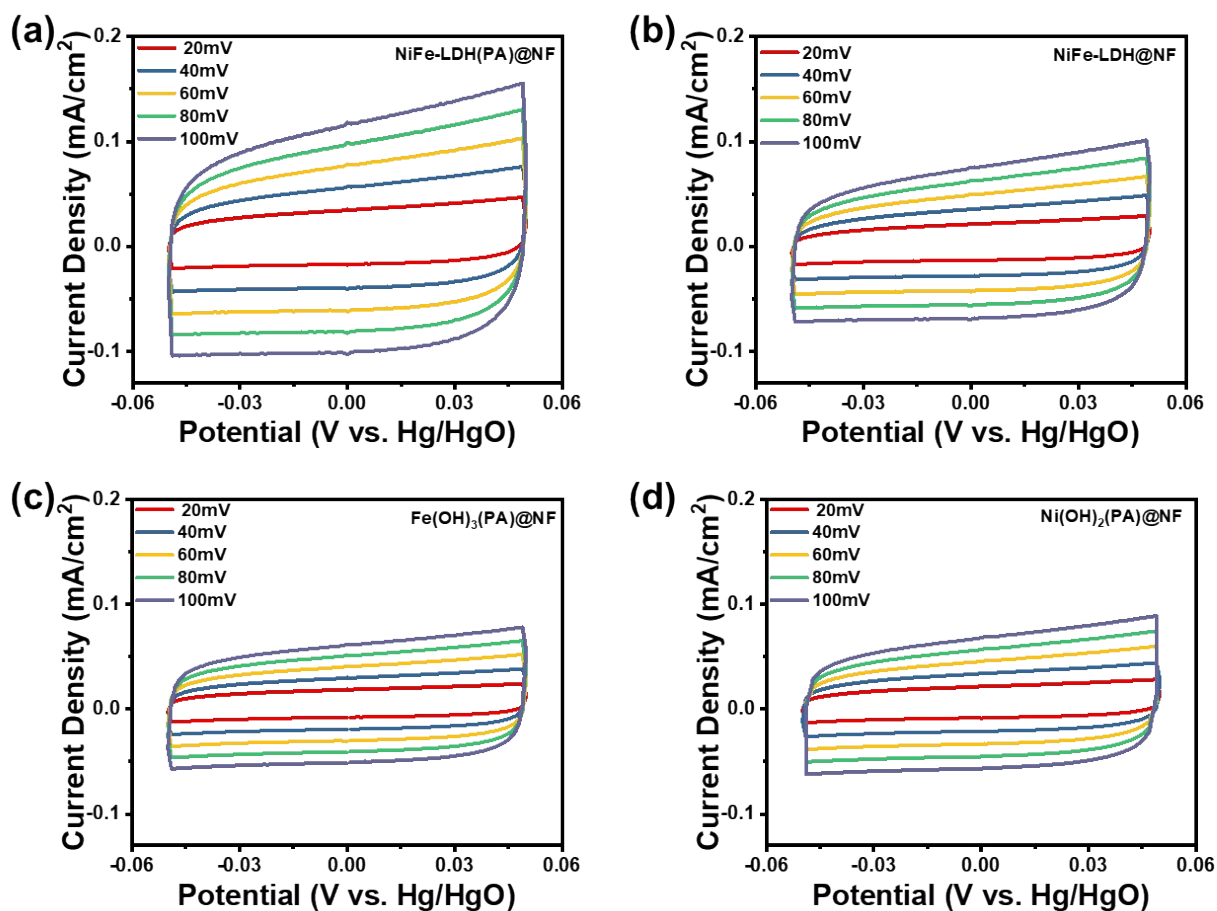


Figure S6 CV test at different scan rates of NiFe-LDH(PA), NiFe-LDH, $\text{Fe(OH)}_3(\text{PA})$ and $\text{Ni(OH)}_2(\text{PA})$, respectively.

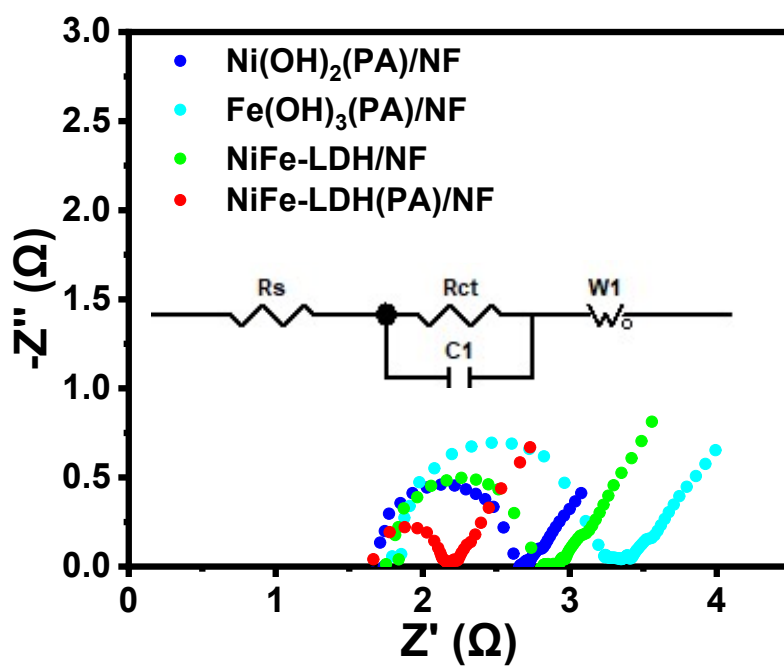


Figure S7 Electrochemical impedance spectroscopy.



Figure S8 Digital photograph of the electrochemical water splitting cell.

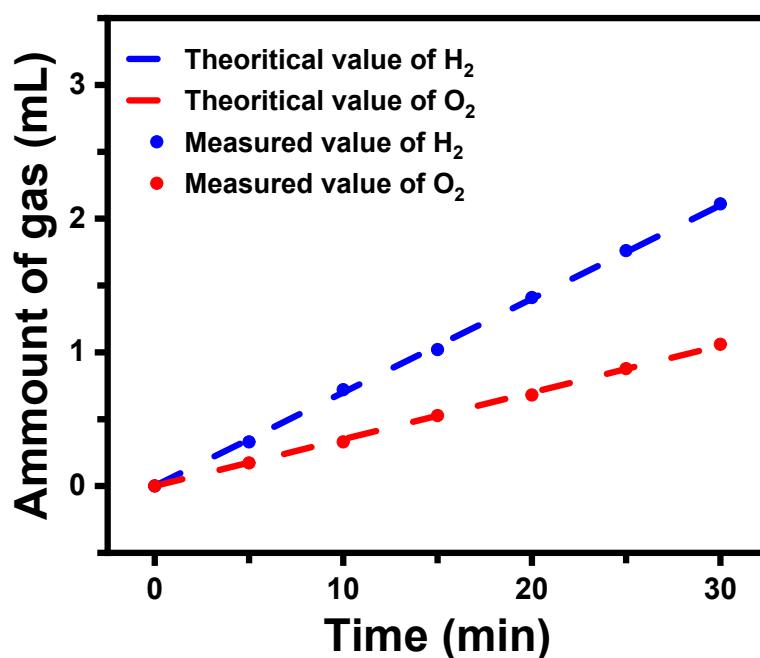


Figure S9 Amount of H₂ and O₂ released measured theoretically and experimentally for overall water splitting at 10 mA/cm².

Table S1 The elemental compositions of NiFe-LDH(PA) detected by EDS.

Elements	Wt.%
Ni	33.30
Fe	3.02
O	58.33
P	5.35
Total	100.00