

Supporting Information

In situ formed ZIF-67 derived NiFeCo-P nano-array for accelerating electrocatalytic oxygen evolution reaction

Xi Guo, Li Li,* Shuo Wang, Huan Zhang, Yuzhen Kuang, Guangbin Duan,* and

Bingqiang Cao

School of Materials Science and Engineering, University of Jinan, Jinan 250022,

China

*Corresponding-Author: Li Li

E-mail: mse_lil@ujn.edu.cn (L. Li)

Tel: +86-15621888686

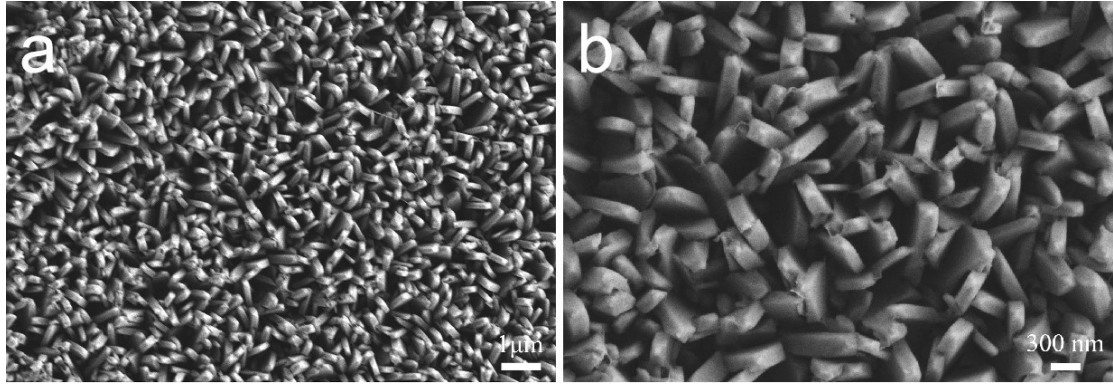


Fig. S1. SEM images of ZIF-67/NF.

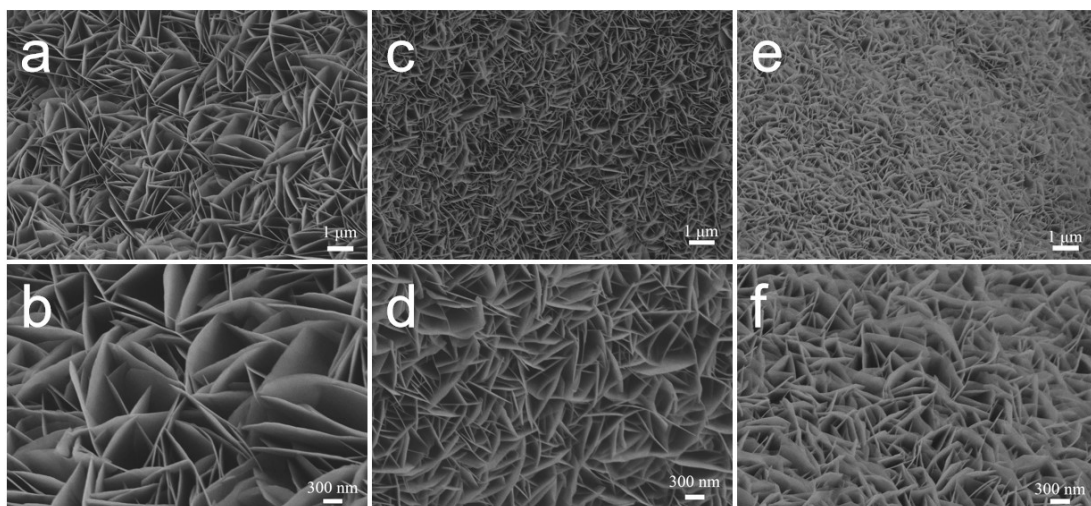


Fig. S2. SEM images of (a, b) $\text{Ni}_{0.8}\text{Fe}_{0.2}$ -LDH, (c, d) NiFe -LDH and (e, f) $\text{Ni}_{0.86}\text{Fe}_{0.14}$ -LDH.

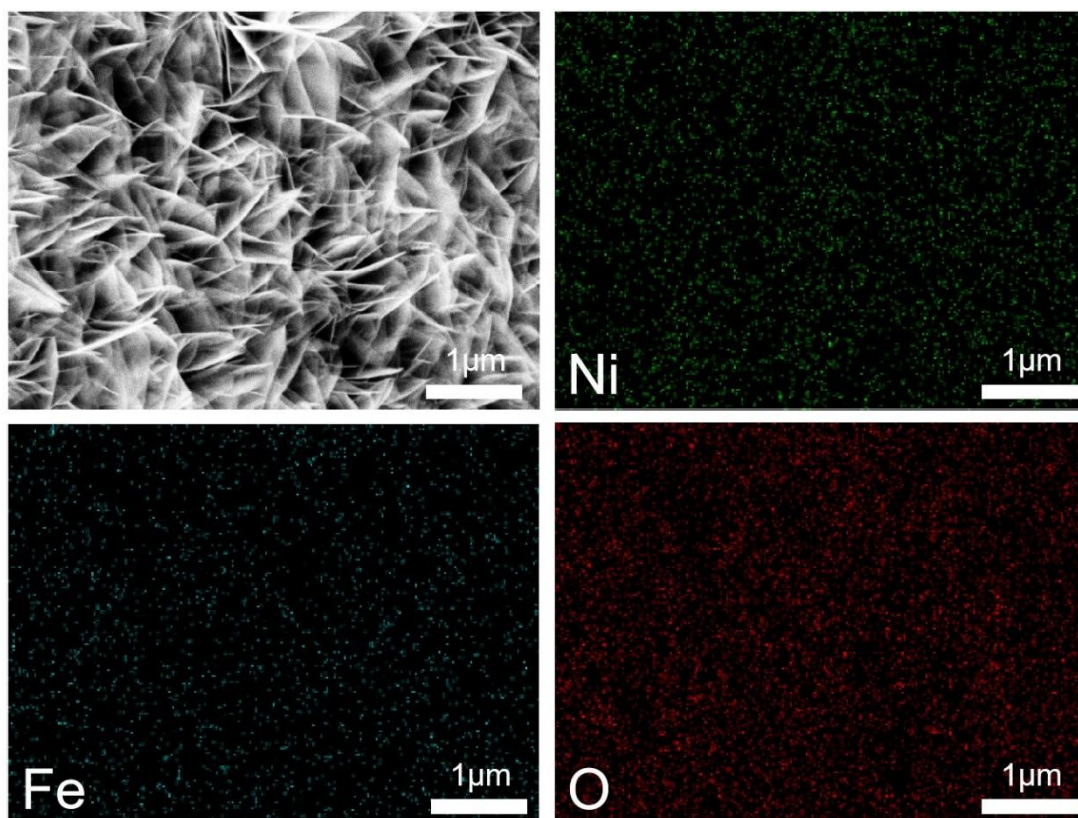


Fig. S3. SEM images and corresponding elemental mapping of NiFe-LDH.

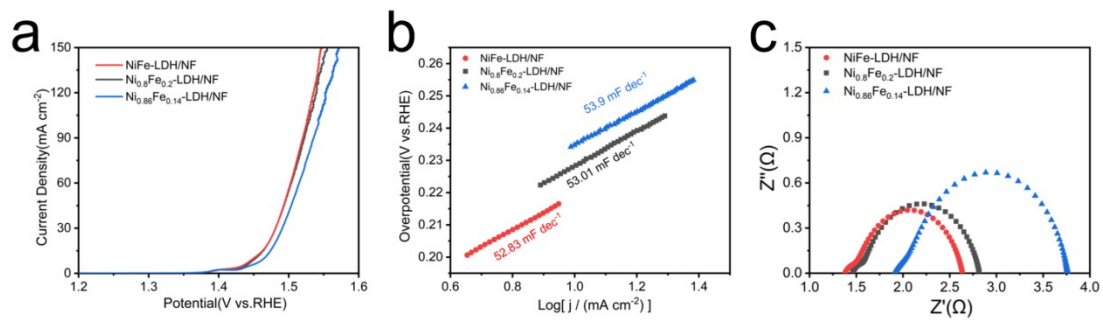


Fig. S4. Electrochemical OER properties of NiFe-LDH/NF electrodes prepared with different Ni/Fe ratios were compared. (a) LSV curves, (b) Tafel plots, and (c) EIS curves.

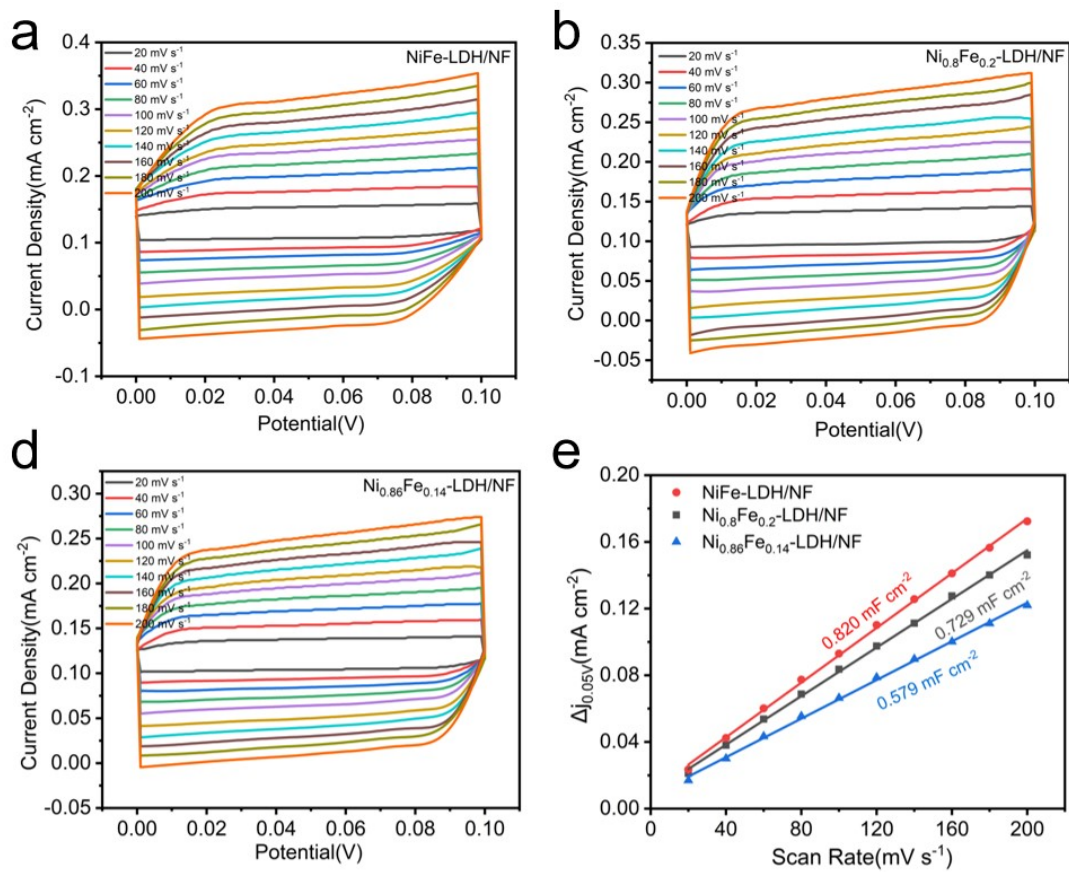


Fig. S5. CV curves of (a) NiFe-LDH/NF, (b) $\text{Ni}_{0.8}\text{Fe}_{0.2}$ -LDH/NF and (c) $\text{Ni}_{0.86}\text{Fe}_{0.14}$ -LDH/NF at different scan rates, (d) the corresponding C_{dl} results.

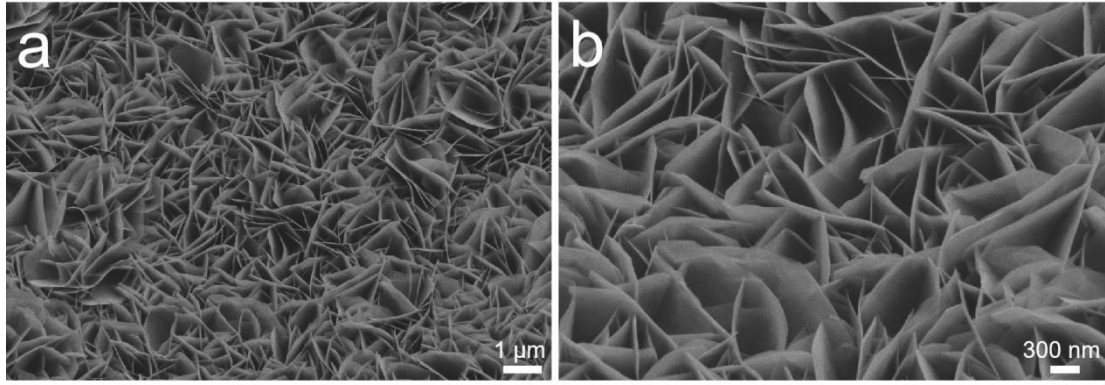


Fig. S6. SEM images of NiFeCo-LDH/NF.

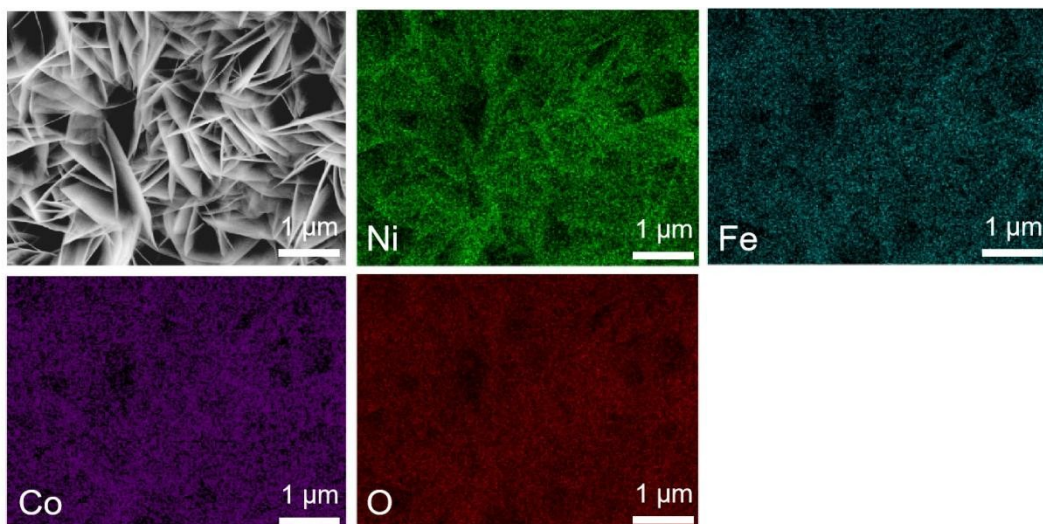


Fig. S7. SEM images and corresponding elemental mapping of NiFeCo-LDH.

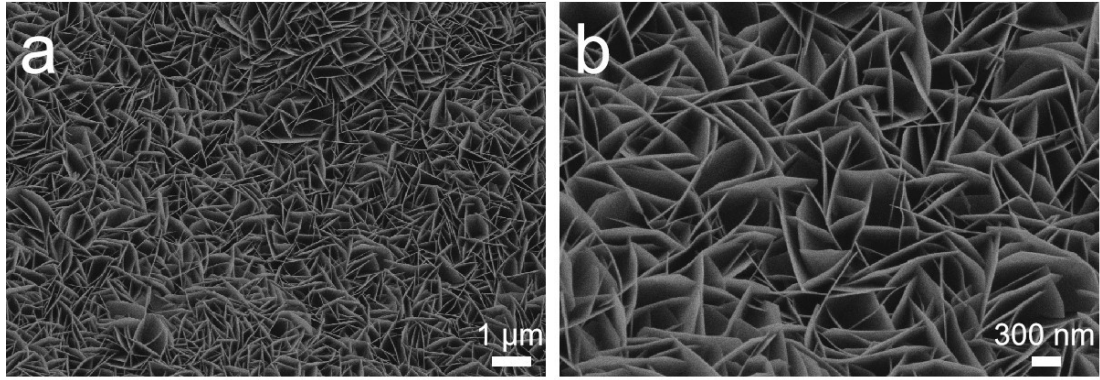


Fig. S8. (a,b) SEM images of NiFe-P.

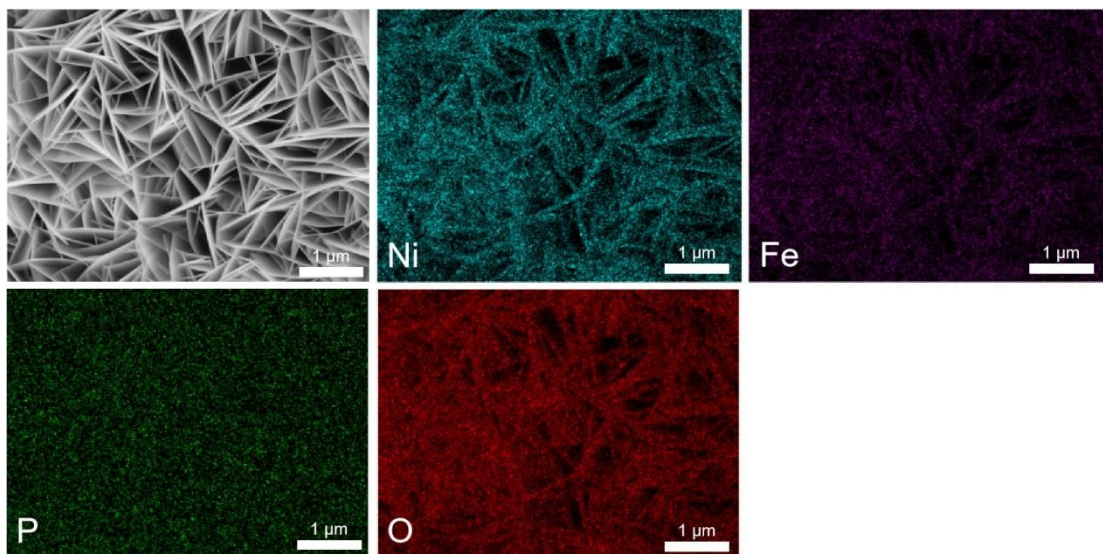


Fig. S9. SEM image and corresponding elemental mapping of NiFe-P/NF.

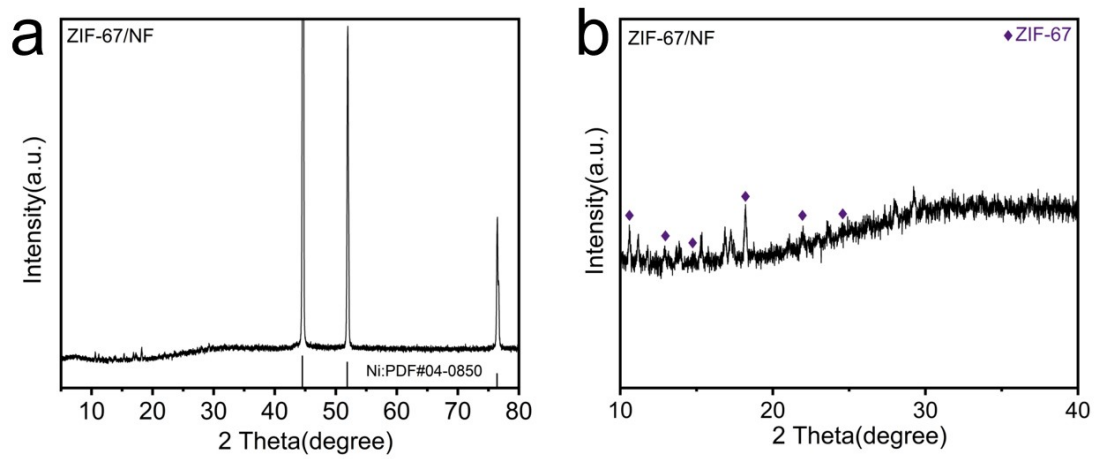


Fig. S10. (a,b) XRD patterns of ZIF-67/NF.

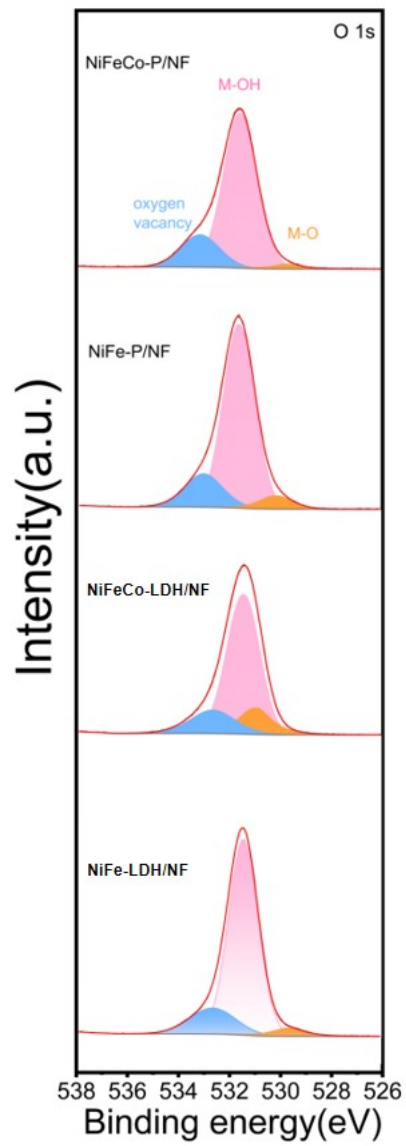


Fig. S11. High-resolution XPS spectra of O 1s in NiFe-LDH/NF, NiFe-P/NF, NiFeCo-LDH/NF, and NiFeCo-P/NF.

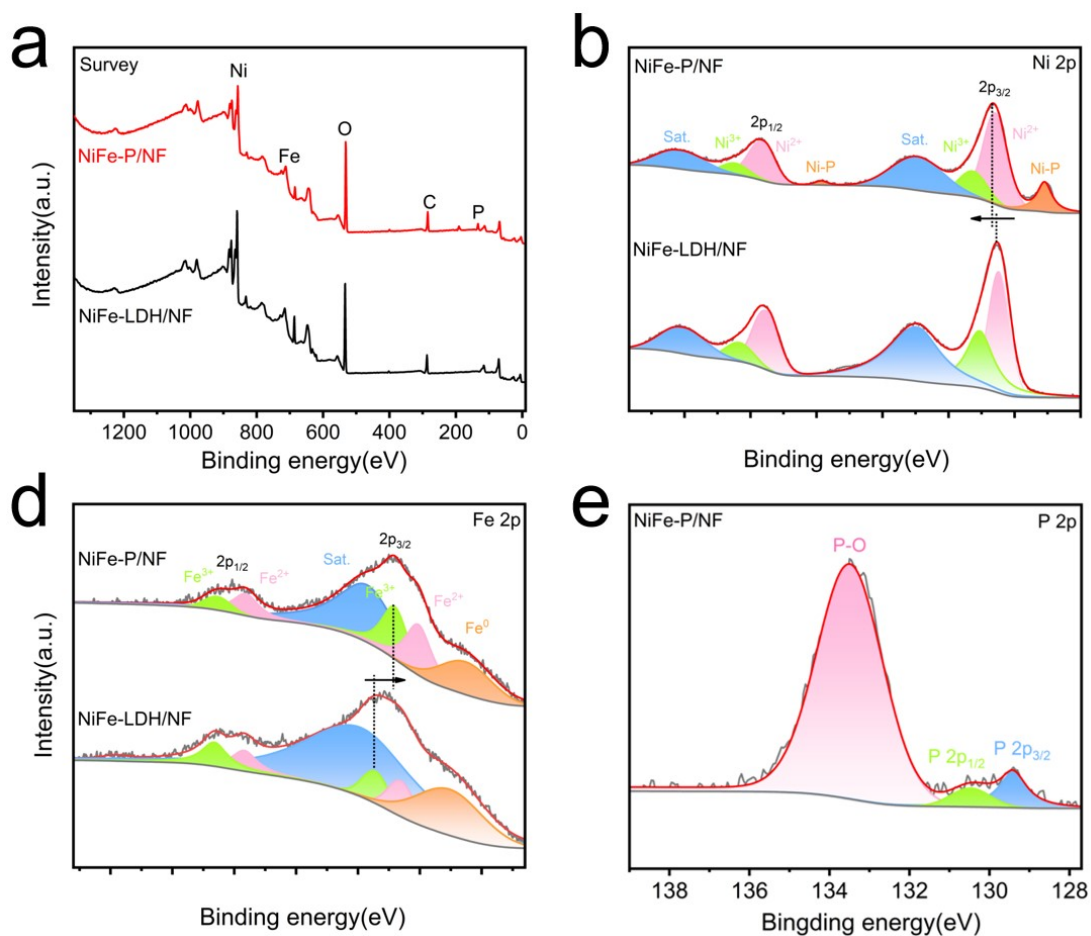


Fig. S12. (a) XPS spectra of NiFe-LDH/NF and NiFe-P/NF. High-resolution XPS spectra of (b) Ni 2p, and (c) Fe 2p in NiFe-LDH/NF and NiFe-P/NF and of (d) P 2p in NiFe-P/NF.

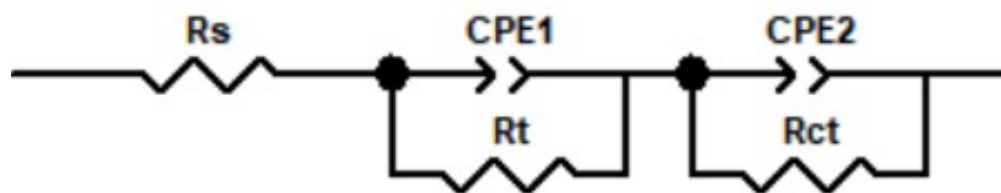


Fig. S13. EIS simulation of the electrocatalysts in electrocatalytic OER.

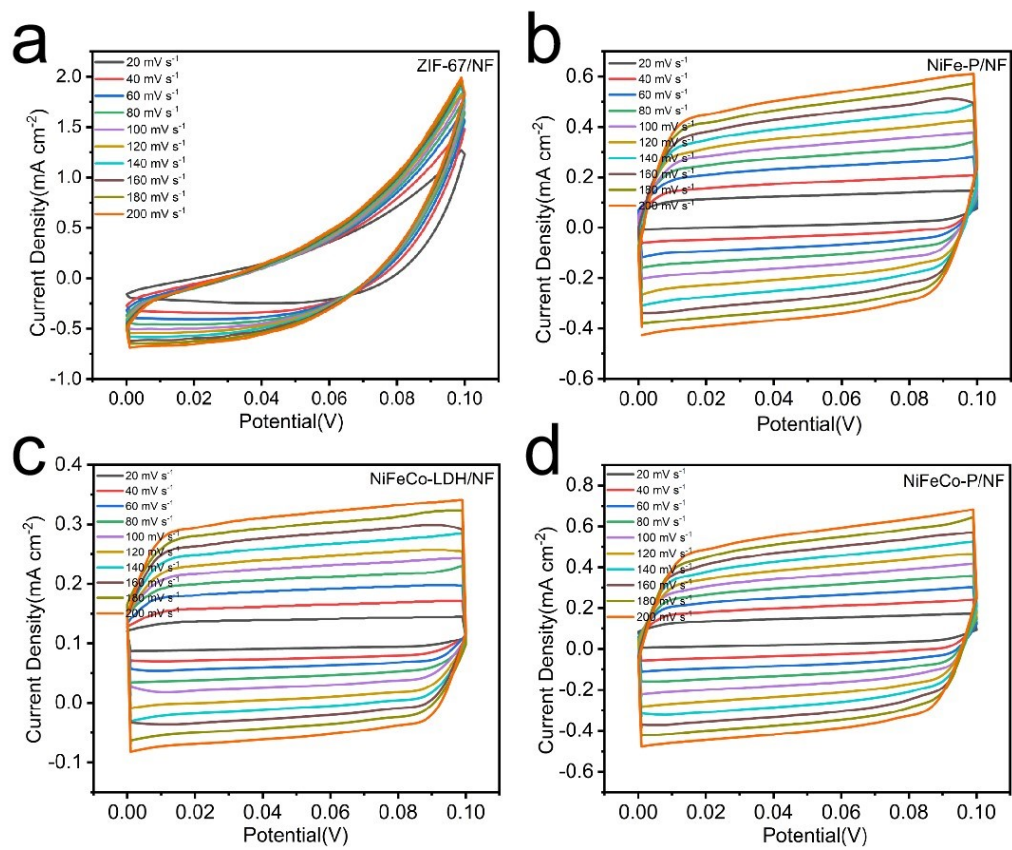


Fig. S14. CV curves of (a) ZIF-67/NF, (b) NiFe-P/NF, (c) NiFeCo-LDH/NF and (d) NiFeCo-P/NF at different scan rates.

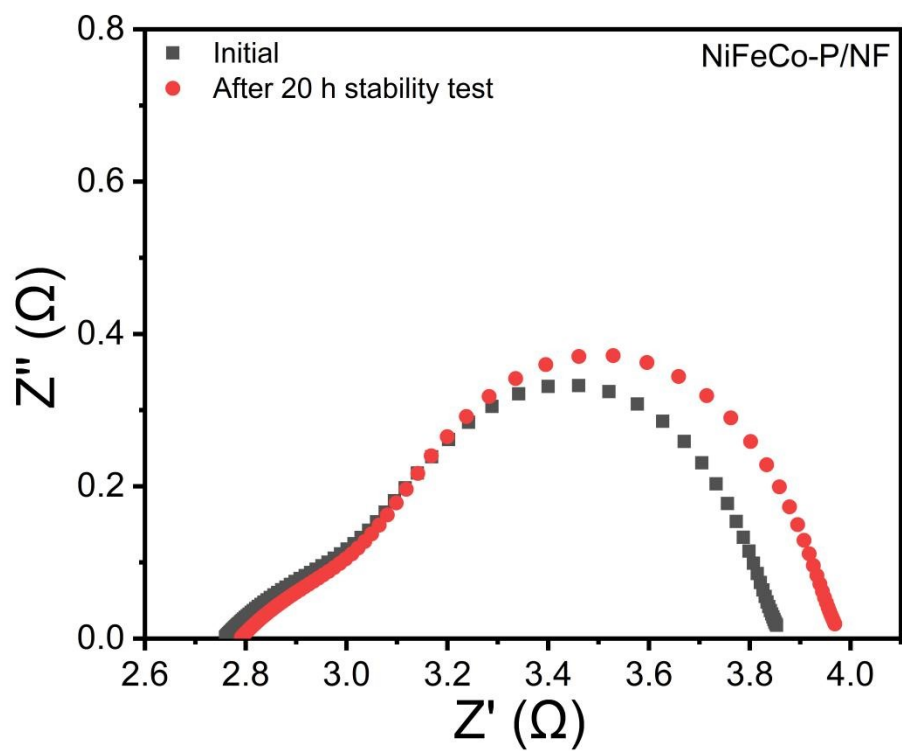


Fig. S15. EIS curves of NiFeCo-P/NF before and after the chronopotentiometry measurement.