

## Supporting Information

### Coupled $\text{MoO}_{3-x}$ @CoP heterostructure as pH-universal Electrode for Hydrogen Generation at Large Current Density

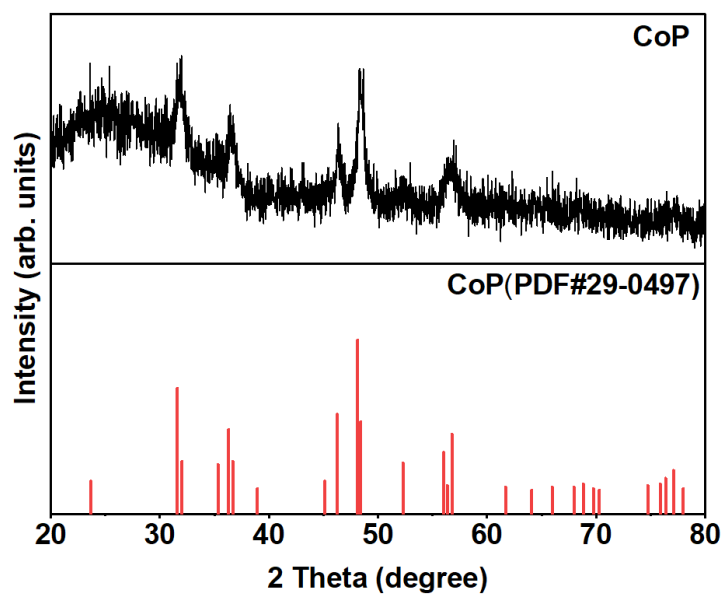
*Pengzuo Chen, Kaixun Li, Yutong Ye Doufeng Wu\* and Yun Tong\**

Department of Chemistry, Key Laboratory of Surface & Interface Science of Polymer Materials of  
Zhejiang Province, Zhejiang Sci-Tech University, Hangzhou 310018, China

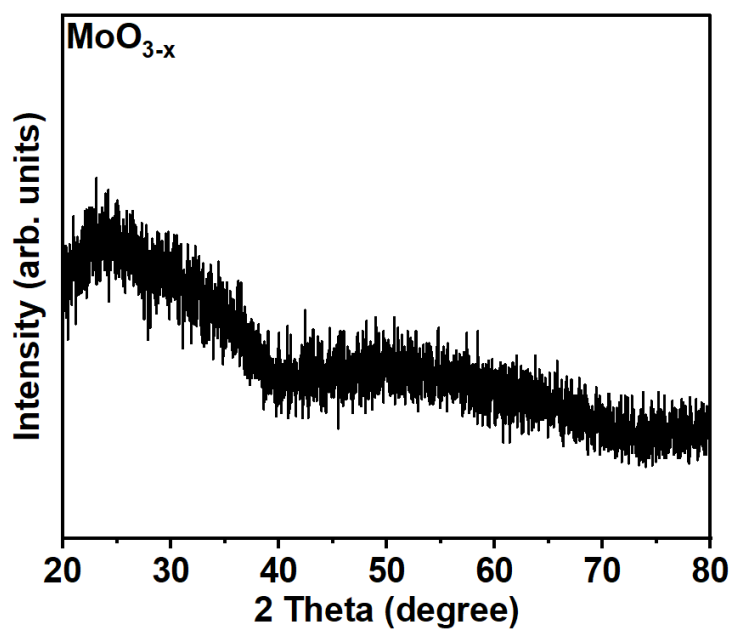
Correspondence and requests for materials should be addressed to Y. Tong (E-mail:  
tongyun@mail.ustc.edu.cn; dfwu@zstu.edu.cn)

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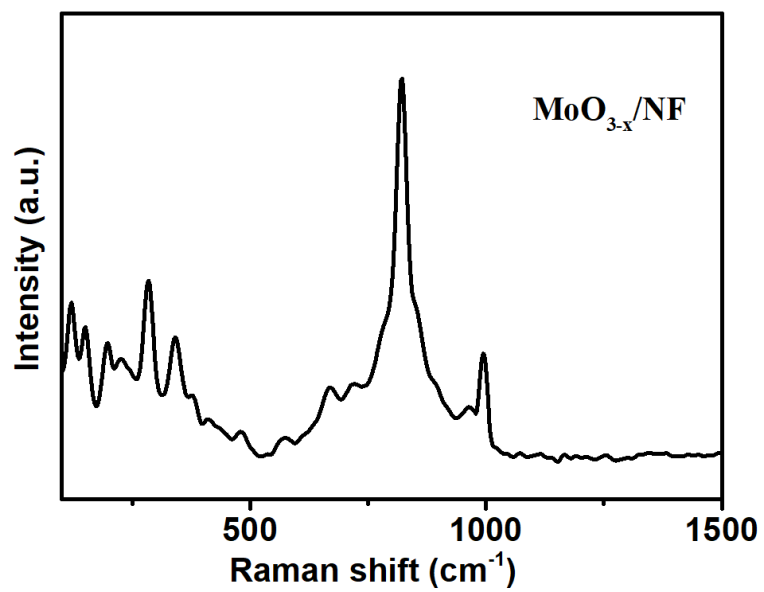
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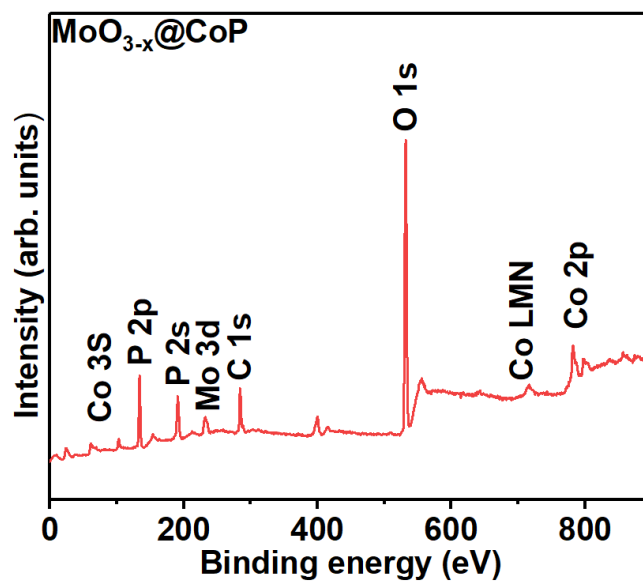
**Figure S1.** The XRD pattern of CoP/NF sample.



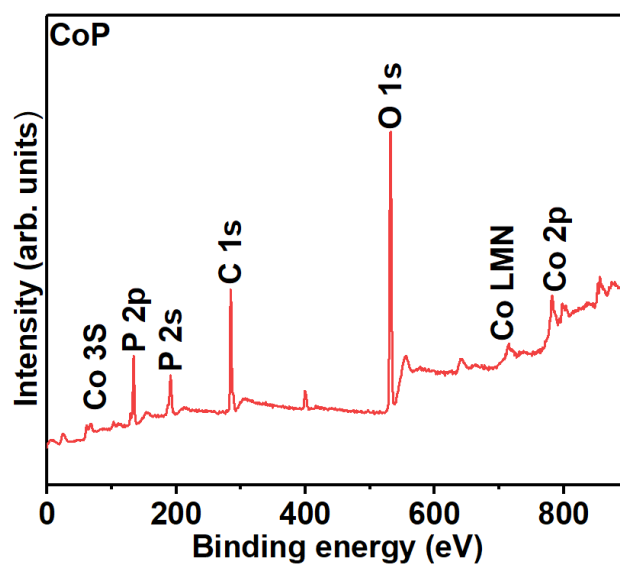
**Figure S2.** The XRD pattern of MoO<sub>3-x</sub>/NF sample.



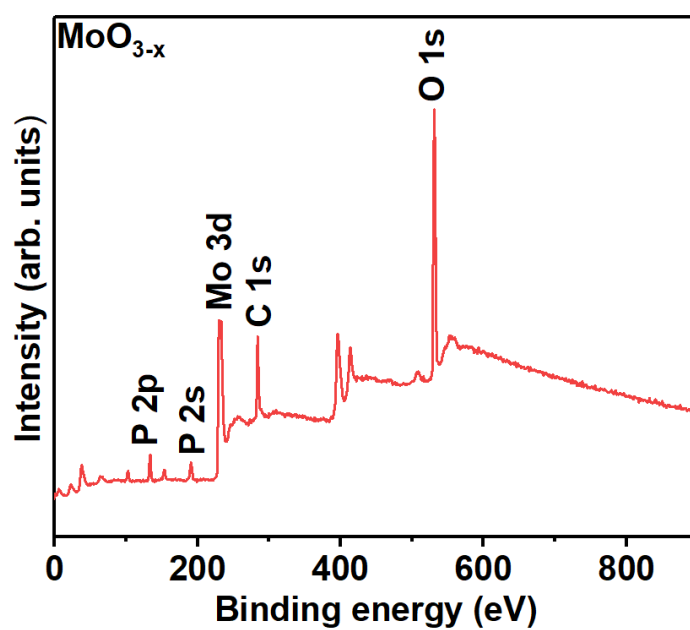
**Figure S3.** The Raman spectra of  $\text{MoO}_{3-x}/\text{NF}$  sample.



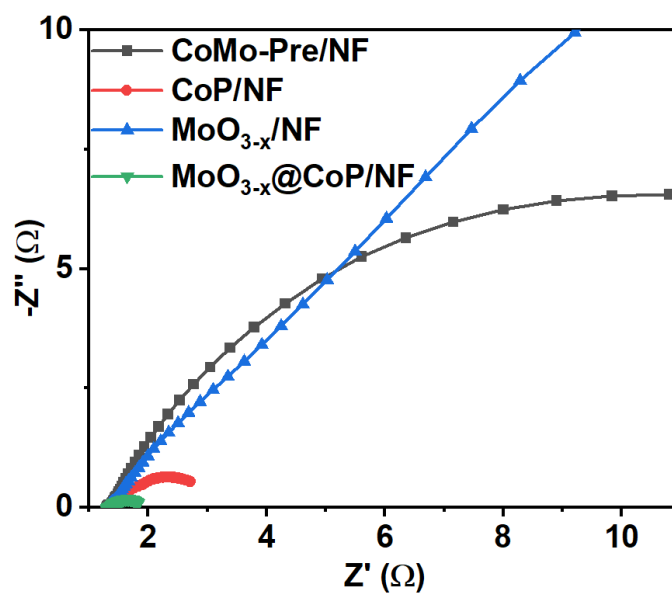
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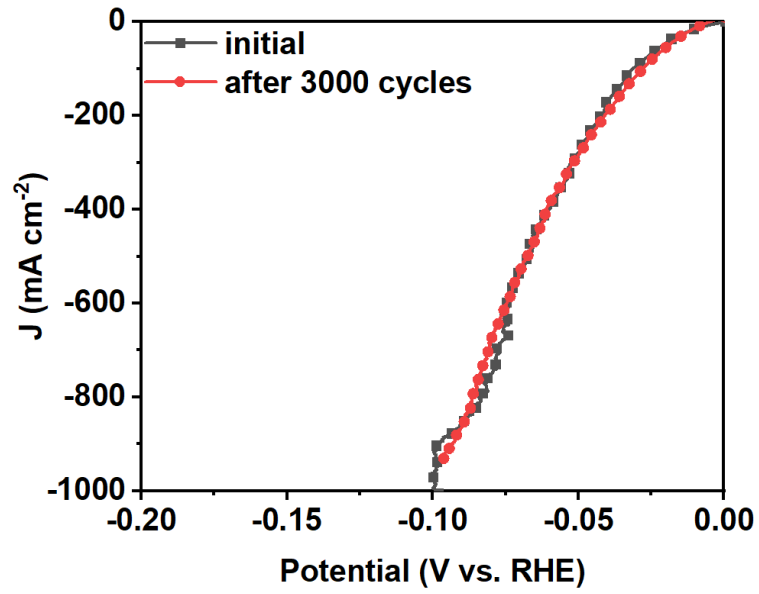
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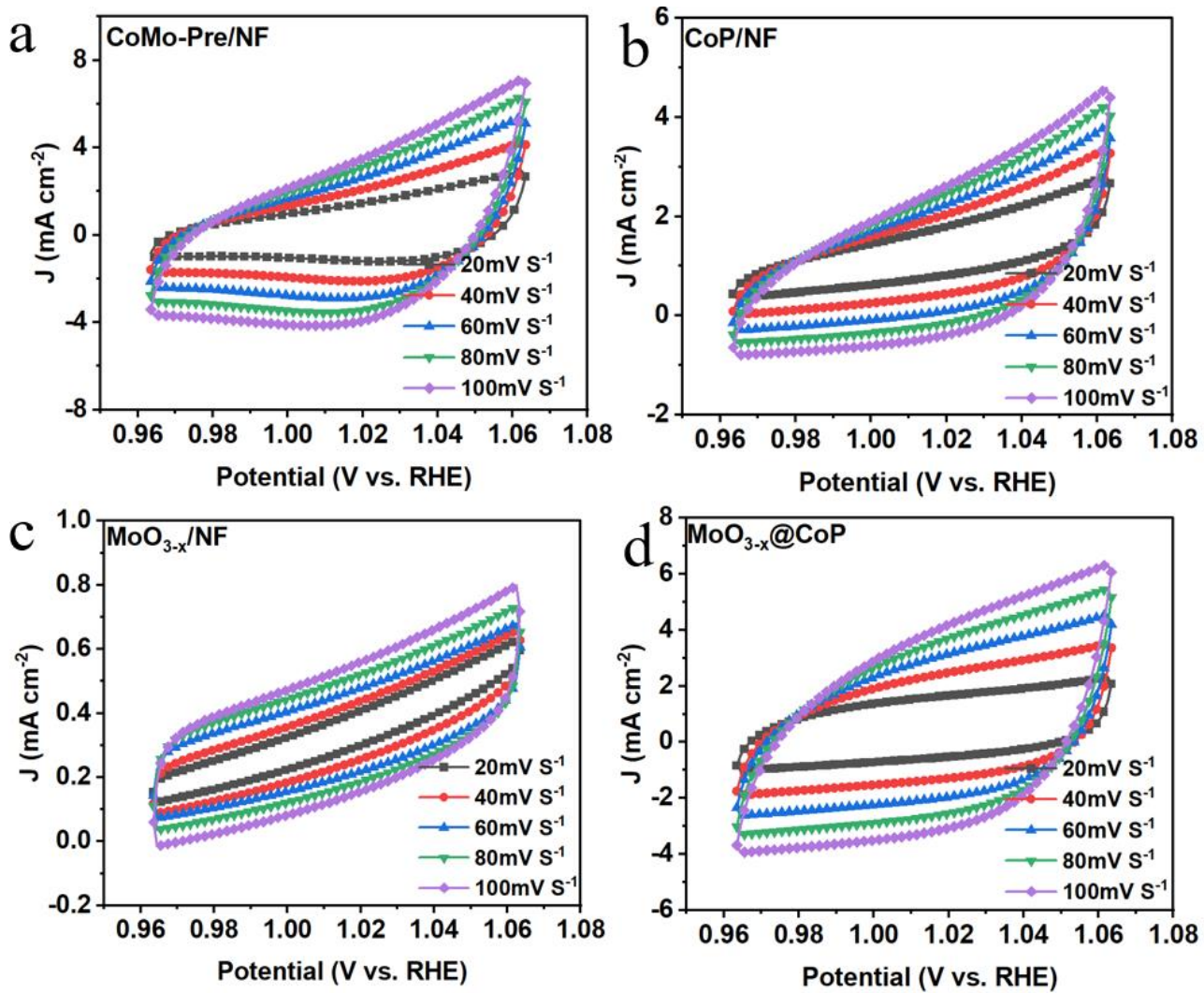
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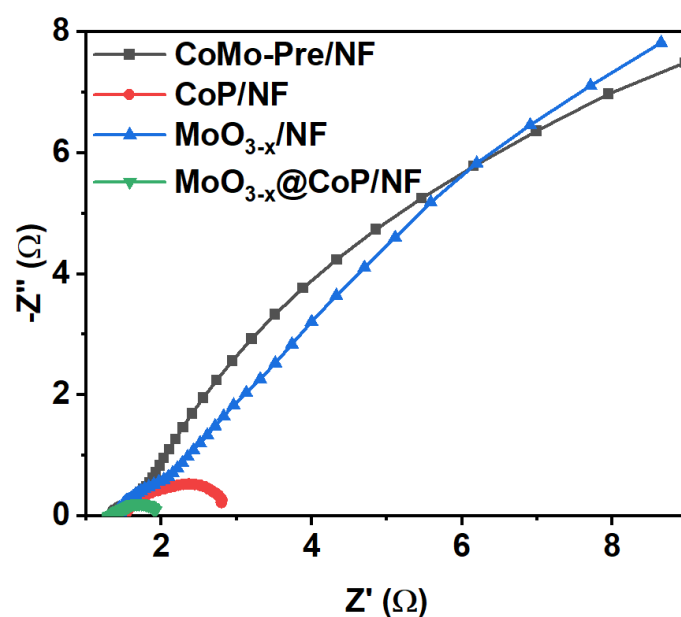


**Figure S8.** Polarization curves before and after 3000 cycles of MoO<sub>3-x</sub>@CoP/NF for HER in 1 M KOH.

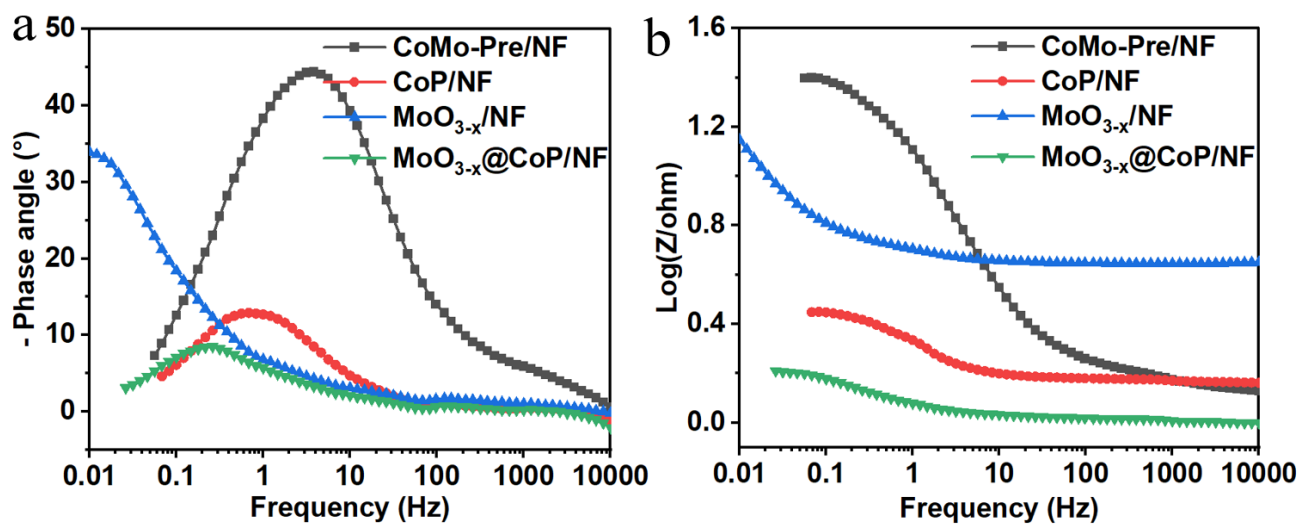


**Figure S9.** The cyclic voltammetry curves of (a) CoMo-Pre/NF, (b) CoP/NF, (c) MoO<sub>3-x</sub>/NF and (d) MoO<sub>3-x</sub>@CoP/NF electrodes in 1.0 M KOH recorded at different scan rates from 20 to 100 mV s<sup>-1</sup>.

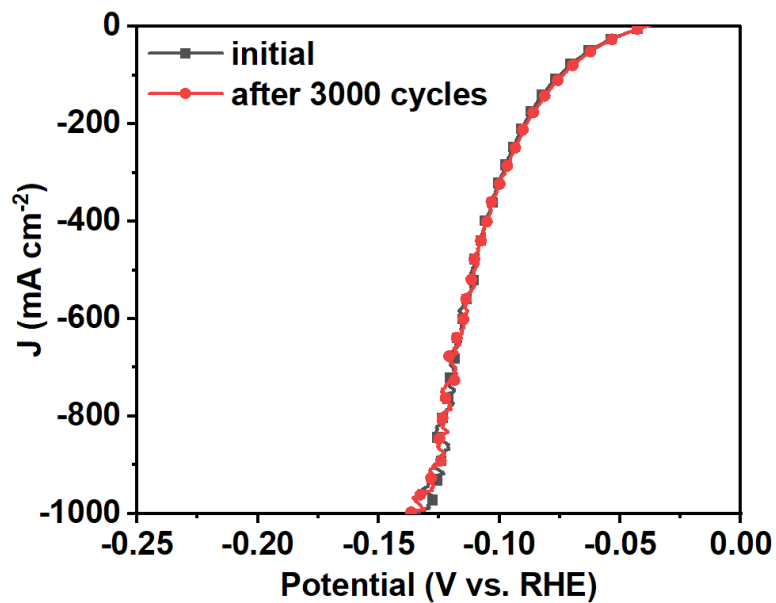




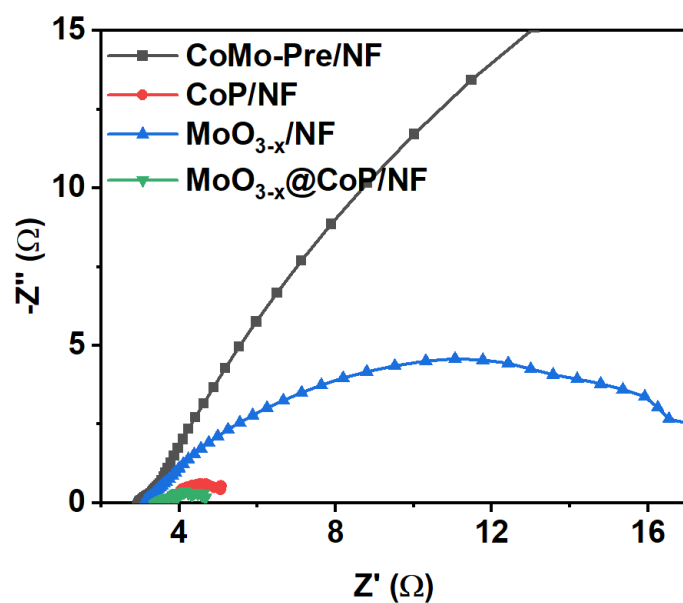
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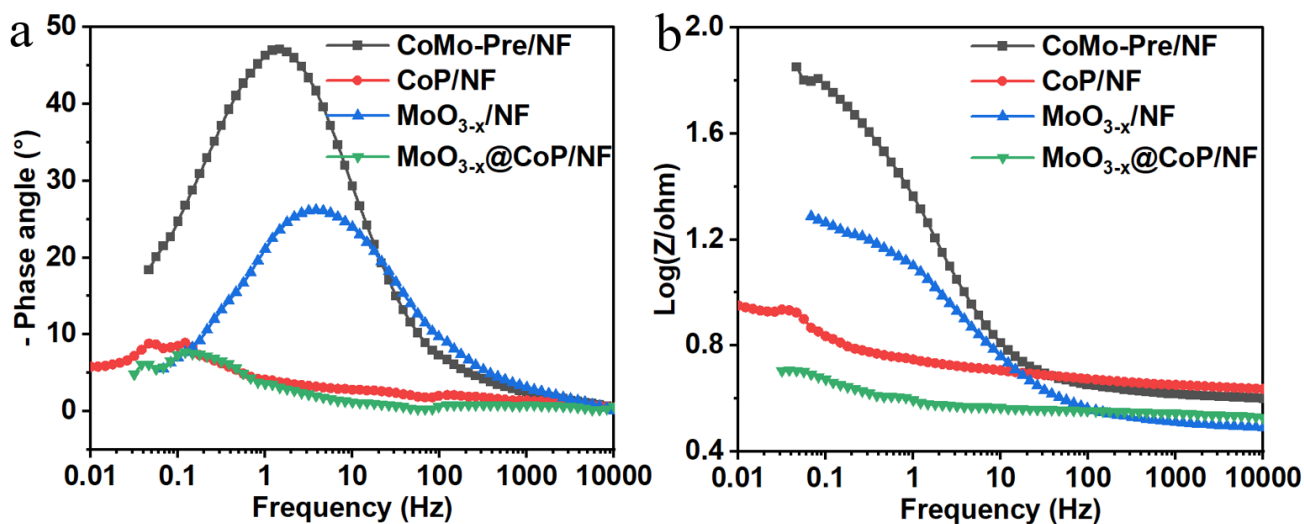
**Figure S11.** (a-b) corresponding Bode plots for MoO<sub>3-x</sub>@CoP/NF, CoP/NF, MoO<sub>3-x</sub>/NF, CoMo-Pre/NF samples 0.5M H<sub>2</sub>SO<sub>4</sub>.



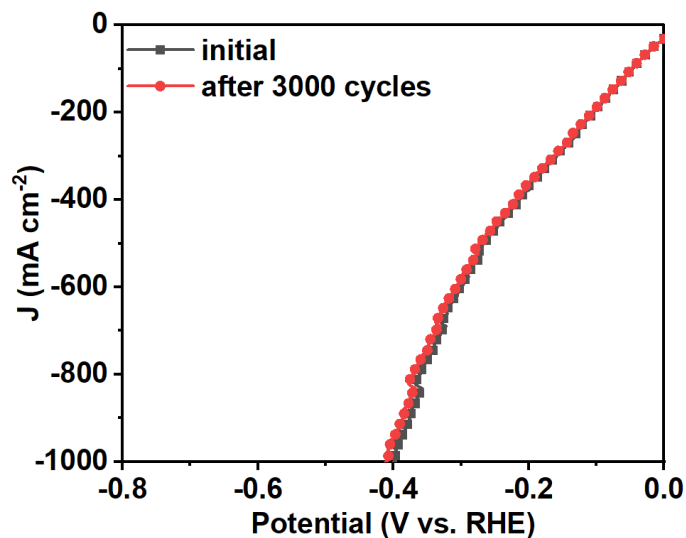
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**Figure S13.** Nyquist plots for  $\text{MoO}_{3-x}\text{@CoP/NF}$ ,  $\text{CoP/NF}$ ,  $\text{MoO}_{3-x}\text{/NF}$ ,  $\text{CoMo-Pre/NF}$  samples in 1 M PBS.



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