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A Coaxial Three-layer $(Ni,Fe)O_xH_y$/Ni/Cu Mesh Electrode: Excellent Oxygen Evolution Reaction Activity for Water Electrolysis

Jizuo Zhao,[a] Weibing Wu,*[a] Xiangyu Jia,[a] Zhenlu Zhao*[a] and Xun Hu[a]

[a] School of Materials Science and Engineering, University of Jinan, Jinan, 250022, Shandong, China

*Corresponding author E-mail: mse_wuwb@ujn.edu.cn (Weibing Wu), mse_zhaozl@ujn.edu.cn (Zhenlu Zhao)

Supplementary Figures

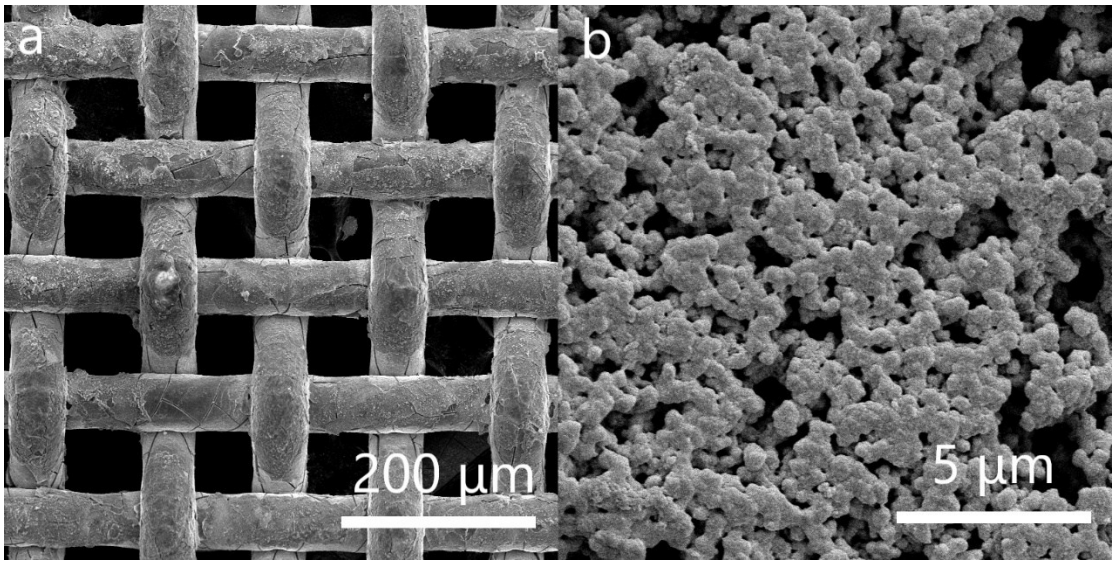

Figure S1. Scanning electron microscopy (SEM) images of the (Ni,Fe)O_xH_y/Ni/Cu mesh electrode after long-term stability test with the scale bars of (a) 200 µm and (b) 5 µm.

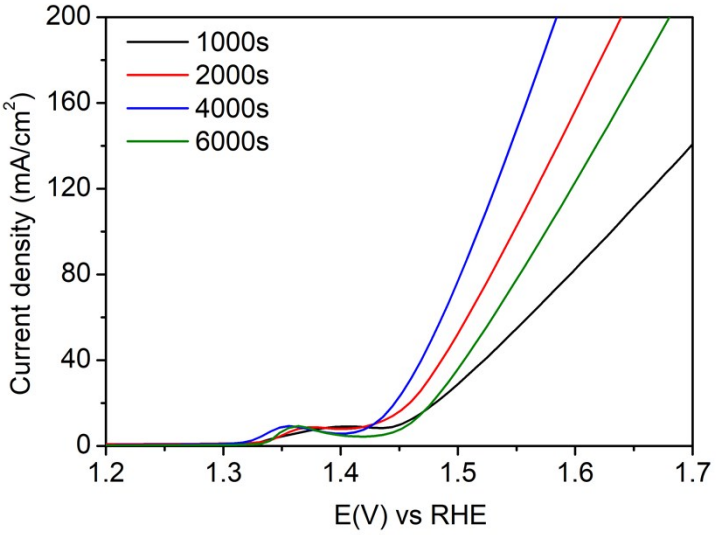

Figure S2. OER polarization curves obtained from samples of different Ni plating time in 1.0 M KOH solution at a scan rate of 1 mV/s.

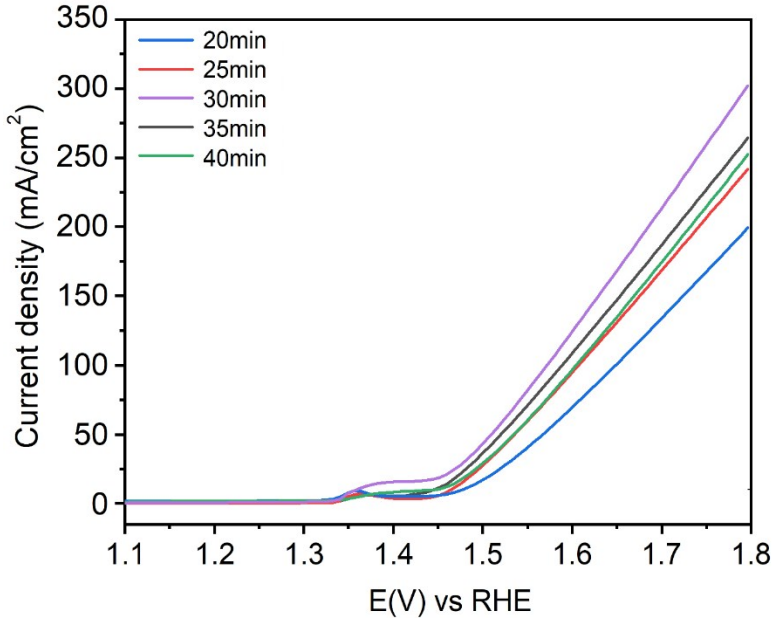

Figure S3. OER polarization curves obtained from samples of different $(Ni,Fe)O_xH_y$ catalyst time in 1.0 M KOH solution at a scan rate of 1 mV/s.

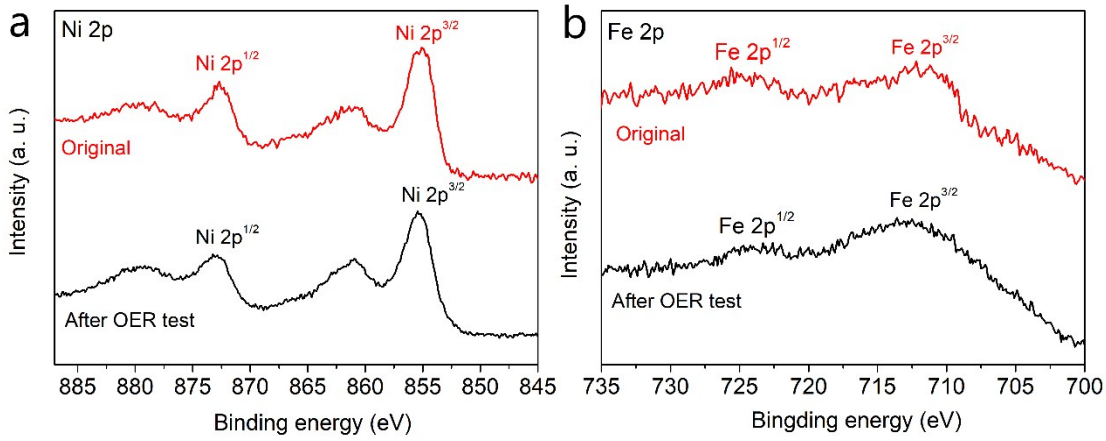

Figure S4. (a) Ni 2p XPS spectra of the $(Ni,Fe)O_xH_y$ catalyst before and after OER test. (b) Fe 2p XPS spectra of the $(Ni,Fe)O_xH_y$ catalyst before and after OER test.

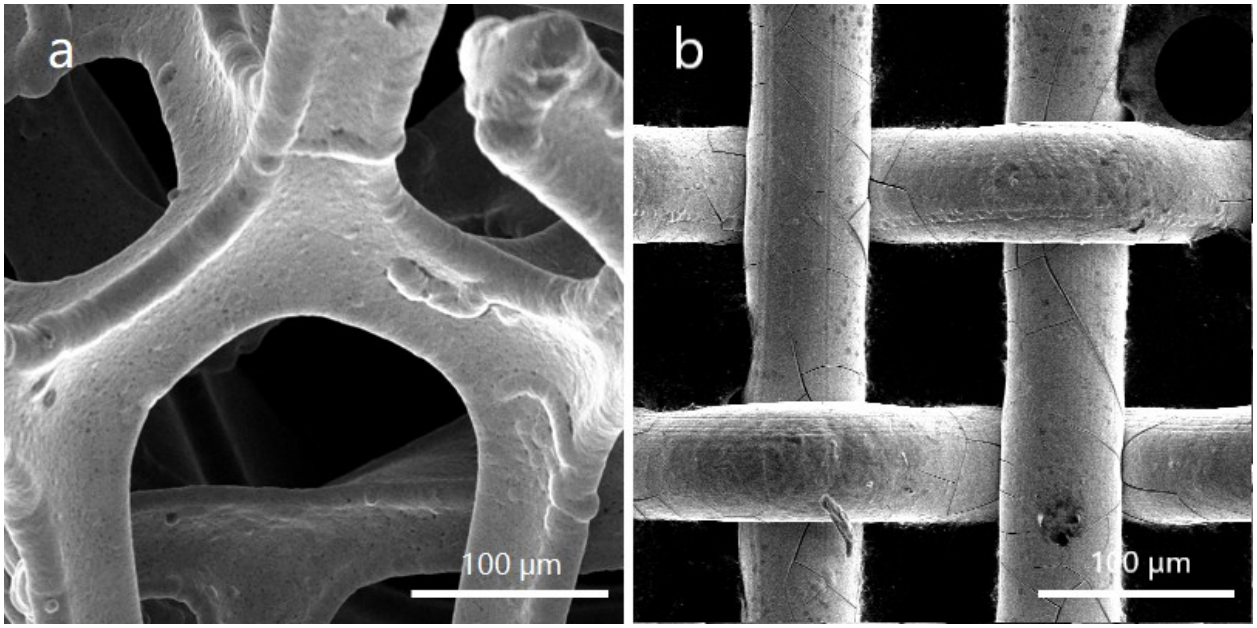

Figure S5. SEM imagines of (a) Ni foam and (b) Ni-plated Cu mesh.

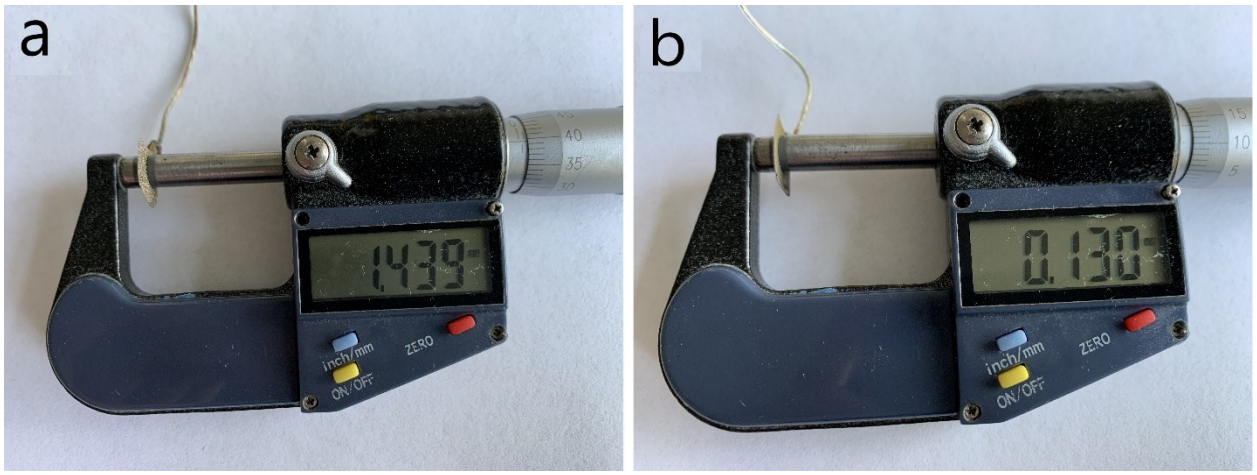

Figure S6. Thickness measured by vernier caliper of (a) Ni foam electrode and (b) Ni-plated Cu mesh electrode.

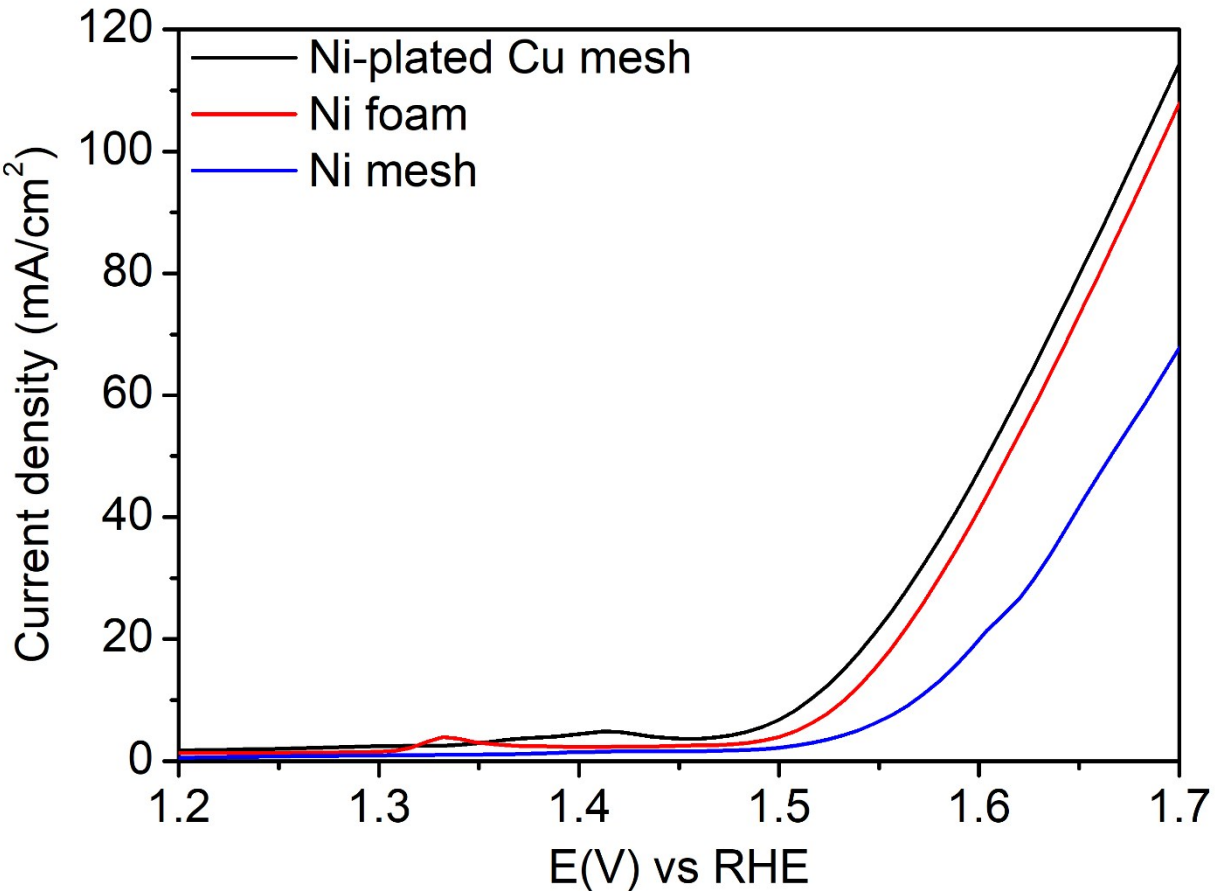

Figure S7. OER polarization curves obtained from bare Ni-plated Cu mesh, Ni foam and Ni mesh in 1.0 M KOH solution at a scan rate of 1 mV/s.

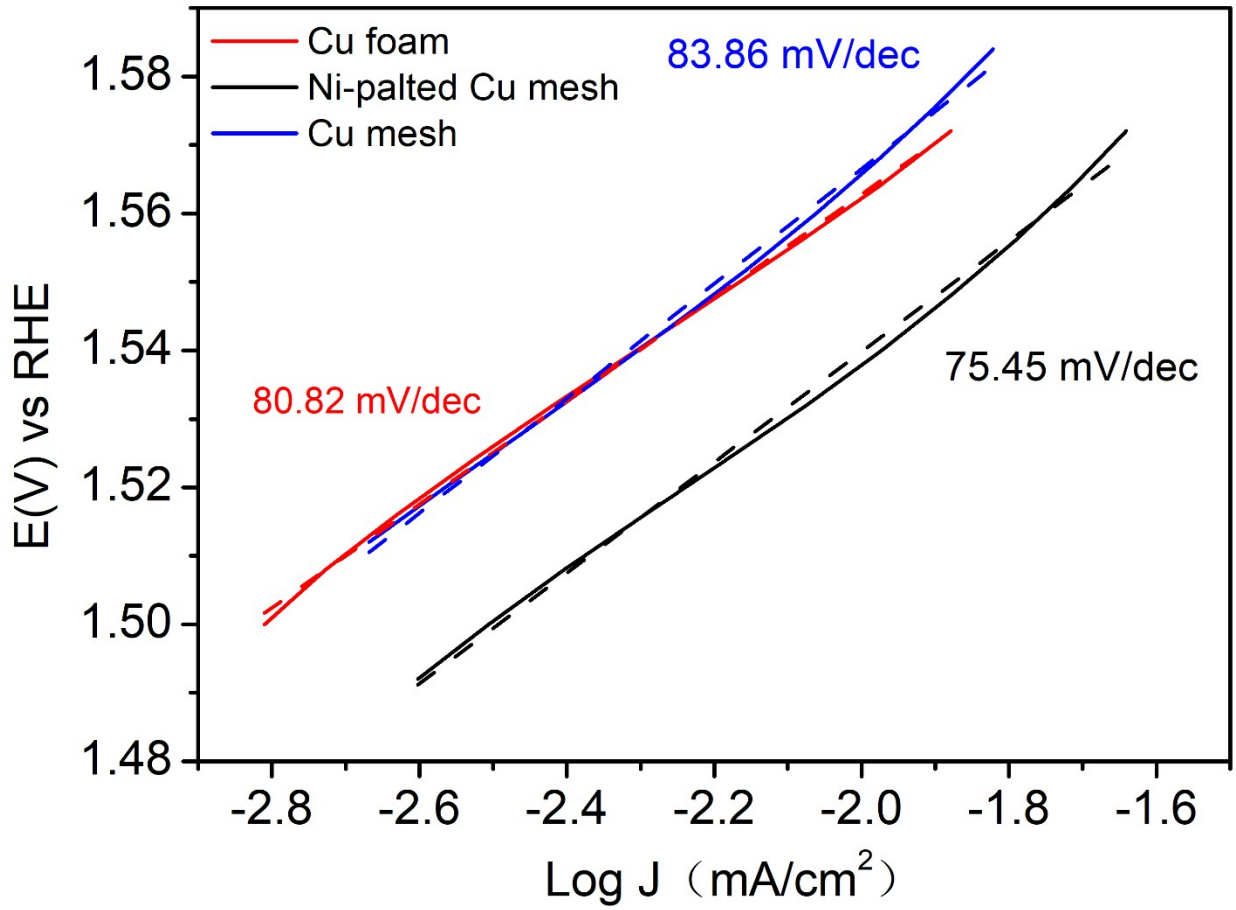

Figure S8. Tafel slopes of the bare Ni-plated Cu mesh, Ni foam and Ni mesh.

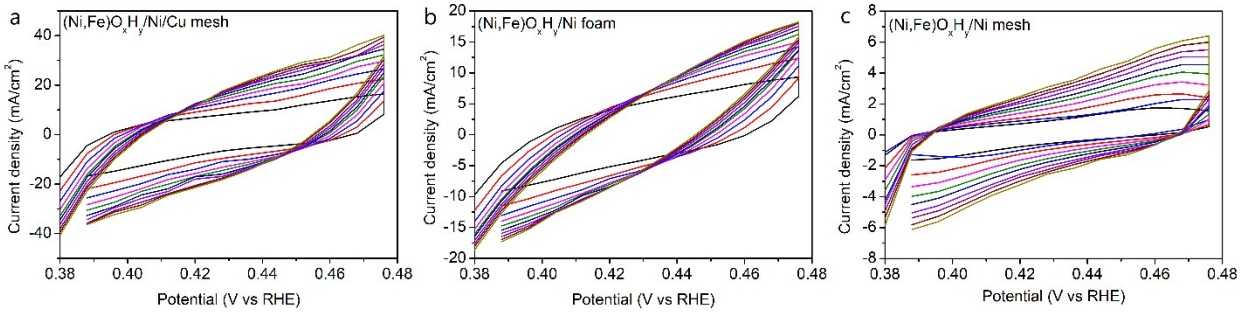

Figure S9. Typical cyclic voltammetry curves at the scan rates from 10 mV/s to 100 mV/s with a 10 mV/s interval for (Ni,Fe)O_xH_y catalyst deposited on (a) Ni-plated Cu mesh, (b) Ni foam, and (c) Ni mesh.

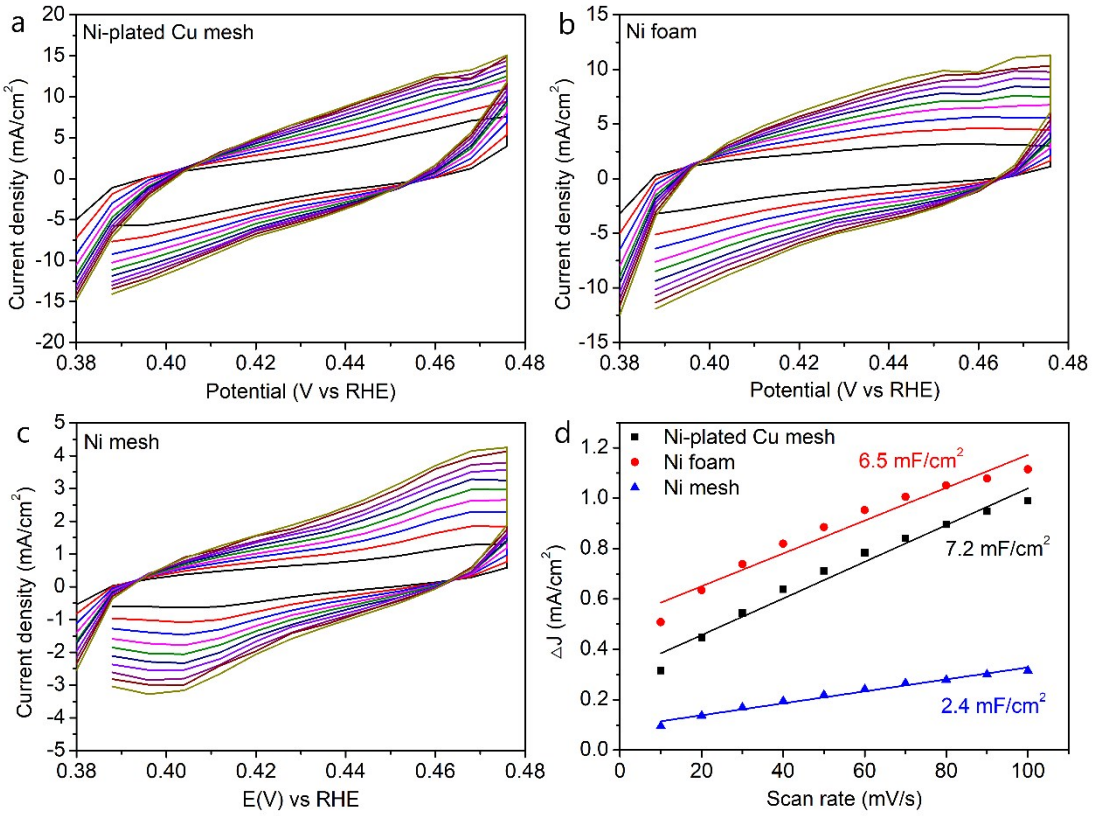

Figure S10. Typical cyclic voltammetry curves at the scan rates from 10 mV/s to 100 mV/s with a 10 mV/s interval for the electrodes of (a) (Ni,Fe)O_xH_y/Ni/Cu mesh, (b) (Ni,Fe)O_xH_y/Ni foam and (c) (Ni,Fe)O_xH_y/Ni mesh at the scanning potential range from 0.38 V to 0.48 V vs RHE. (d) Capacitive ΔJ (= Ja-Jc) versus the scan rates of the three substrates.

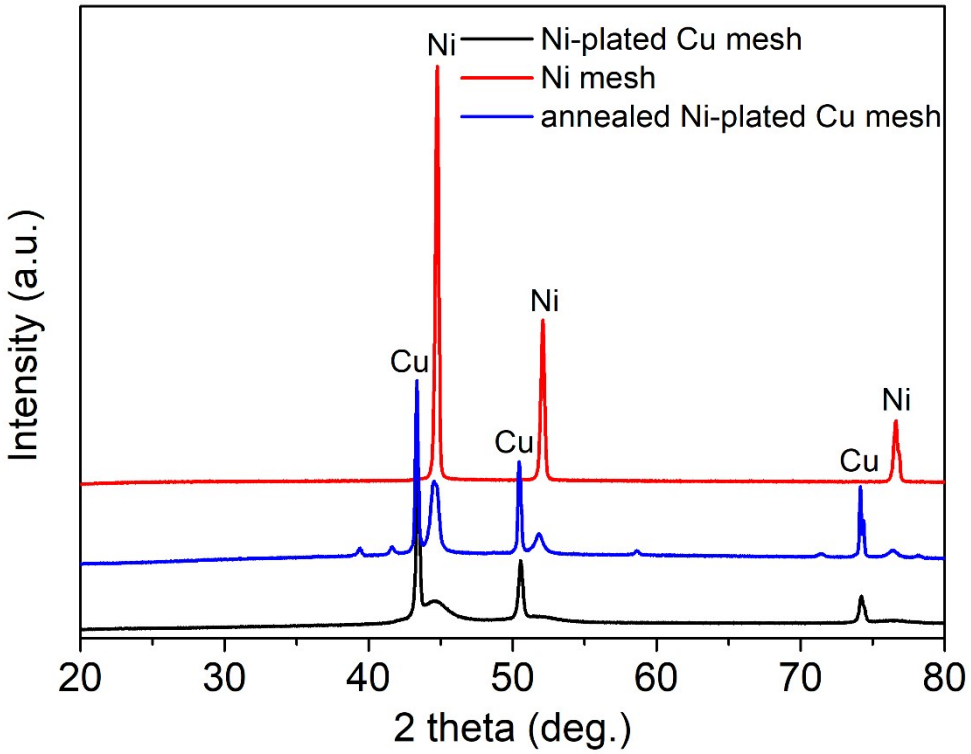

Figure S11. XRD patterns of (a) Ni-plated Cu mesh, (b) Ni mesh and (c) annealed Ni-plated Cu mesh.

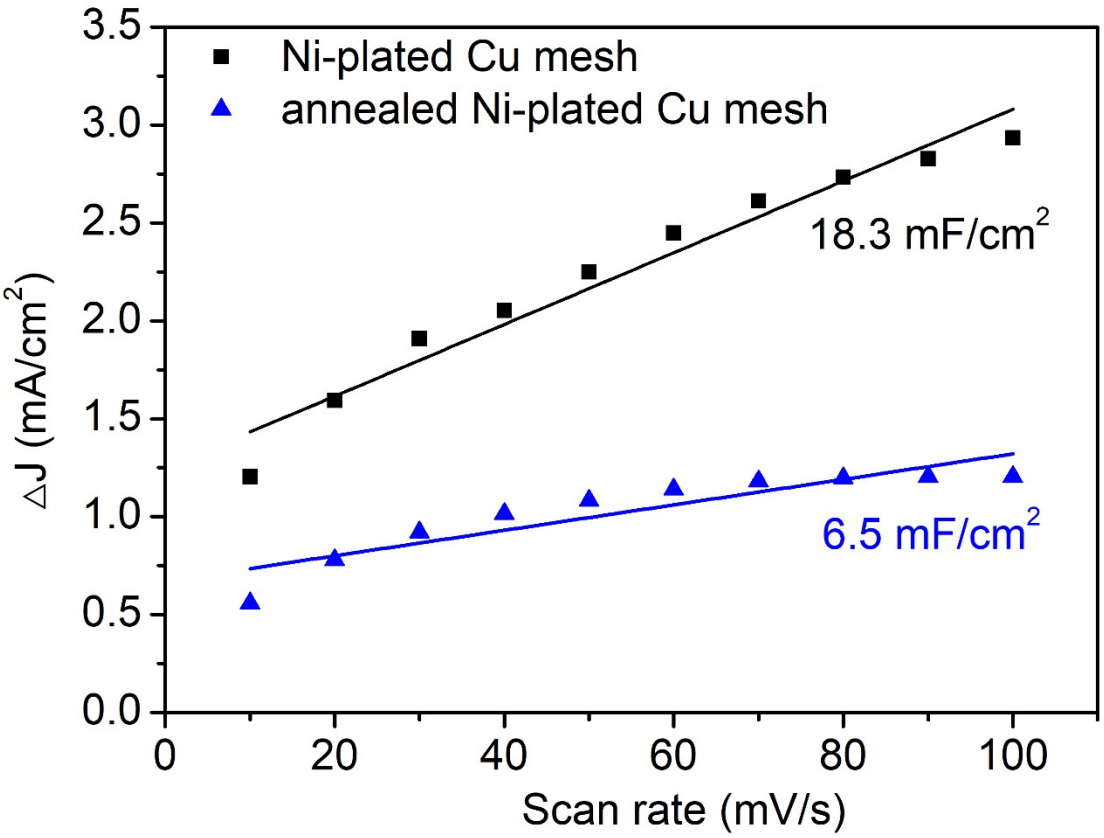

Figure S12. Capacitive ΔJ (= Ja-Jc) versus the scan rates of $(Ni,Fe)O_xH_y$ catalyst deposited on Ni-plated Cu mesh and annealed Ni-plated Cu mesh.

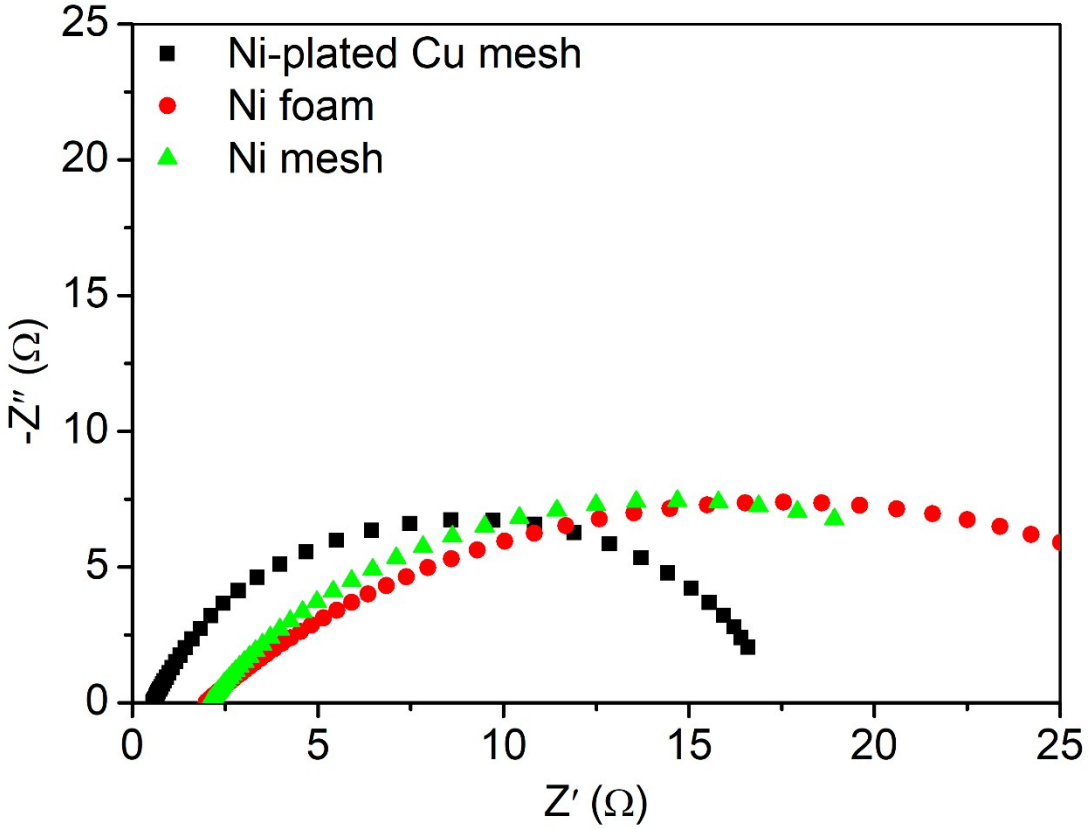

Figure S13. Fitted electrochemical impedance spectra of the three substrates.