

Supporting Information

**Porous-Structured Three-Dimensional Iron Phosphides Nanosheets for
Enhanced Oxygen Evolution Reaction**

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Table S1. EIS data derived from Nyquist plots of **Figure. 7.**

Electrodes	E_{app} / V	R_s [$\Omega \text{ cm}^2$]	R_p [$\Omega \text{ cm}^2$]	C [mF cm^2]
PS-3D-				
FeP@NiO Ni		2.47	3.34	11.93
CoP@NiO Ni	1.49	3.63	3.92	40.56
NiP@NiO Ni		3.55	12.33	20.45
CuP@NiO Ni		3.35	6.49	38.80

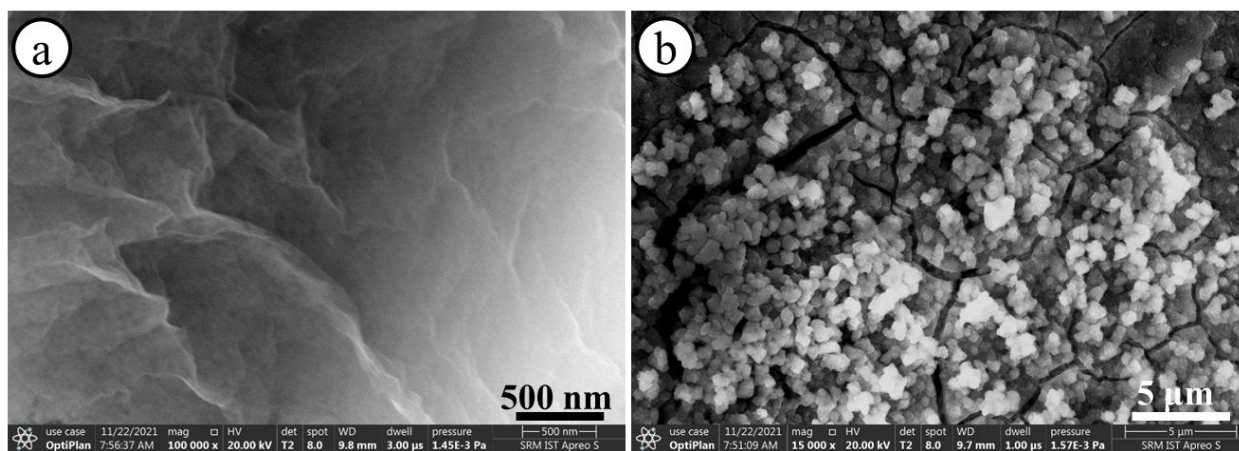


Figure S1. HR-SEM images of FeP nanostructures with high (a) and low (b) magnification images.

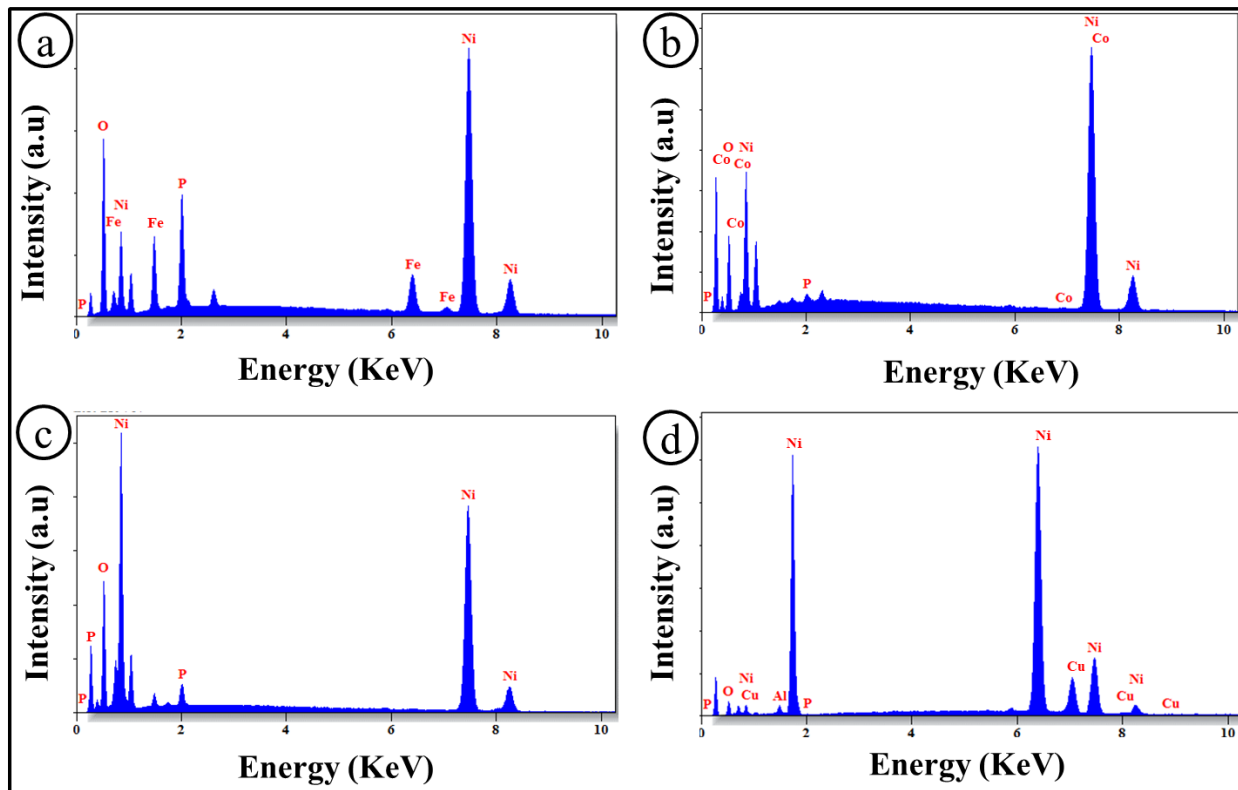


Figure S2. EDX spectra of the PS-3D-FeP@NiO|Ni (a), CoP@NiO|Ni (b), NiP@NiO|Ni (c), and CuP@NiO|Ni (d) electrodes.

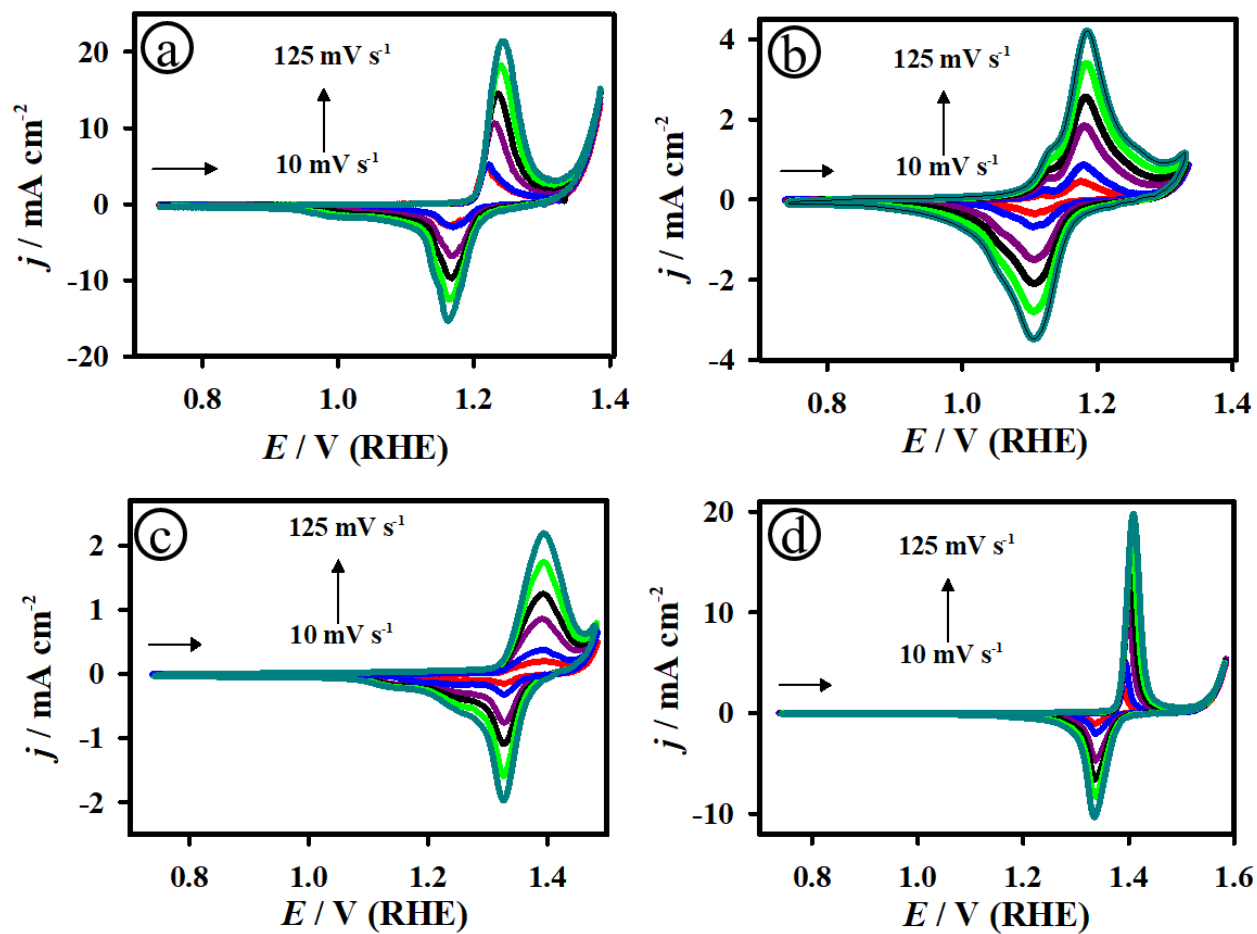


Figure S3. CV curves of the PS-3D-FeP@NiO|Ni (a), CoP@NiO|Ni (b), NiP@NiO|Ni (c), and CuP@NiO|Ni (d) electrodes recorded in 1.0 M KOH with the different scan rates, starting from 10 to 125 mV s⁻¹.

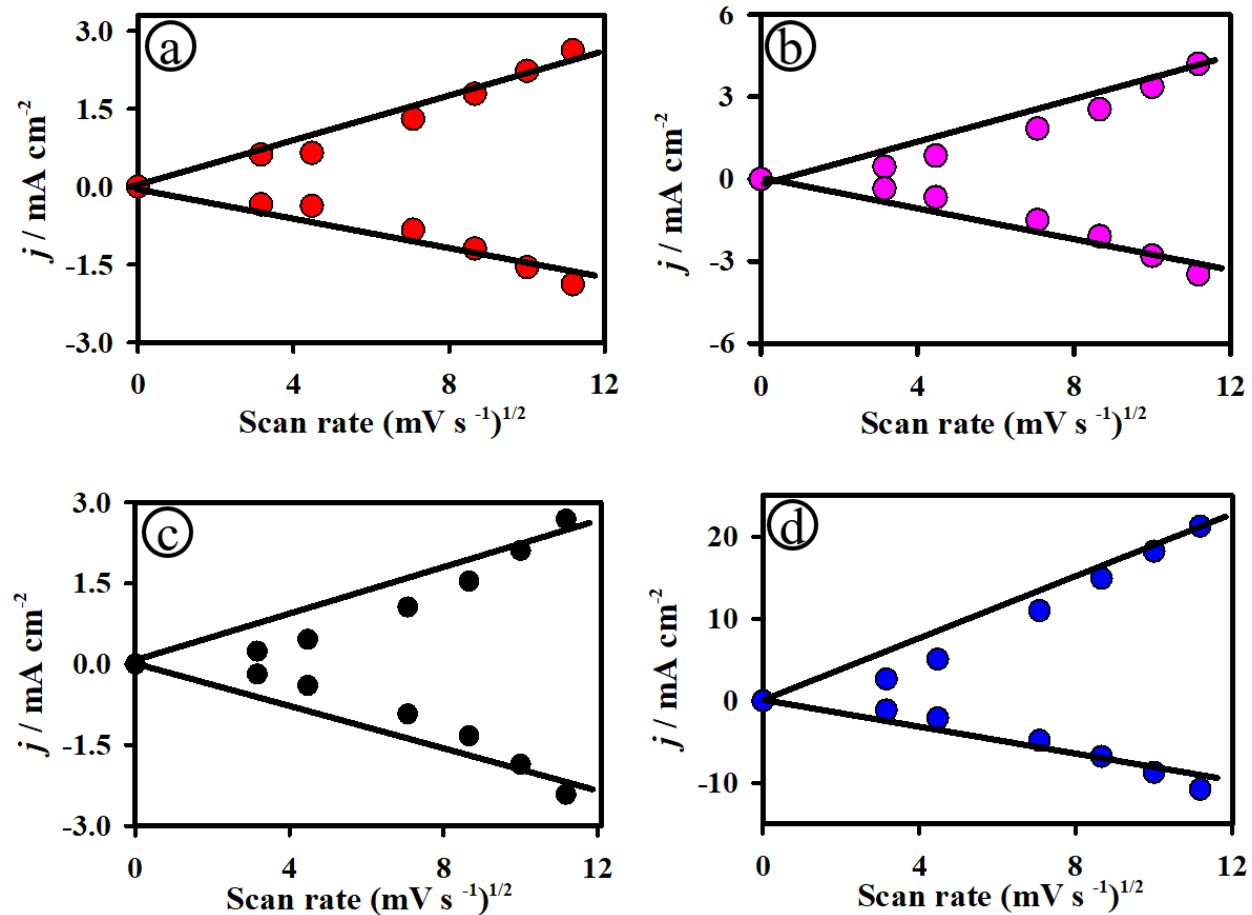


Figure S4. The plot of anodic and cathodic peak current densities against the square root of the scan rates for PS-3D-FeP@NiO|Ni (a), CoP@NiO|Ni (b), NiP@NiO|Ni (c), and CuP@NiO|Ni (d).

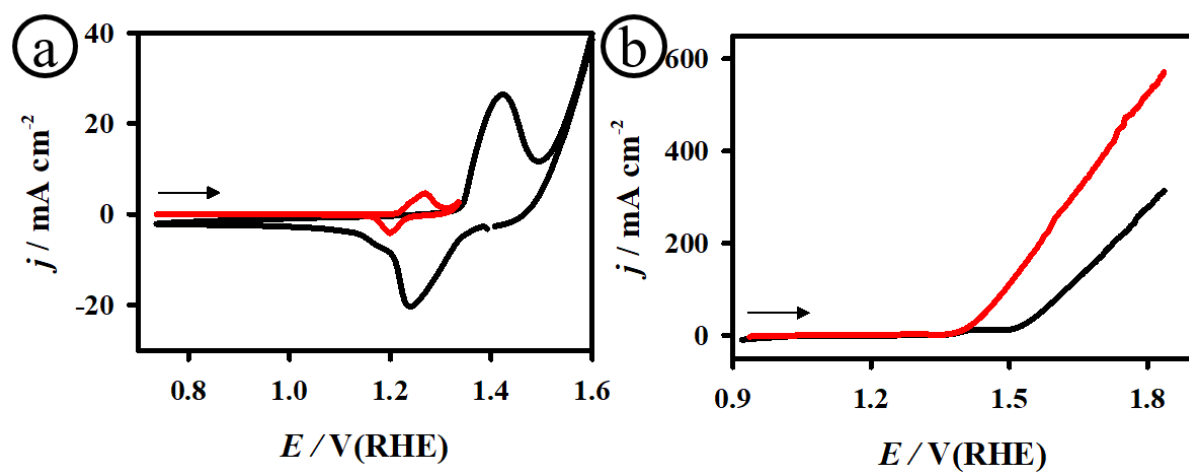


Figure S5. CV (a) and LSV (b) curves of the PS-3D-FeP@NiO|Ni (red curve) and FeP|NF (black curve) electrodes recorded in 1.0 M KOH electrolyte.

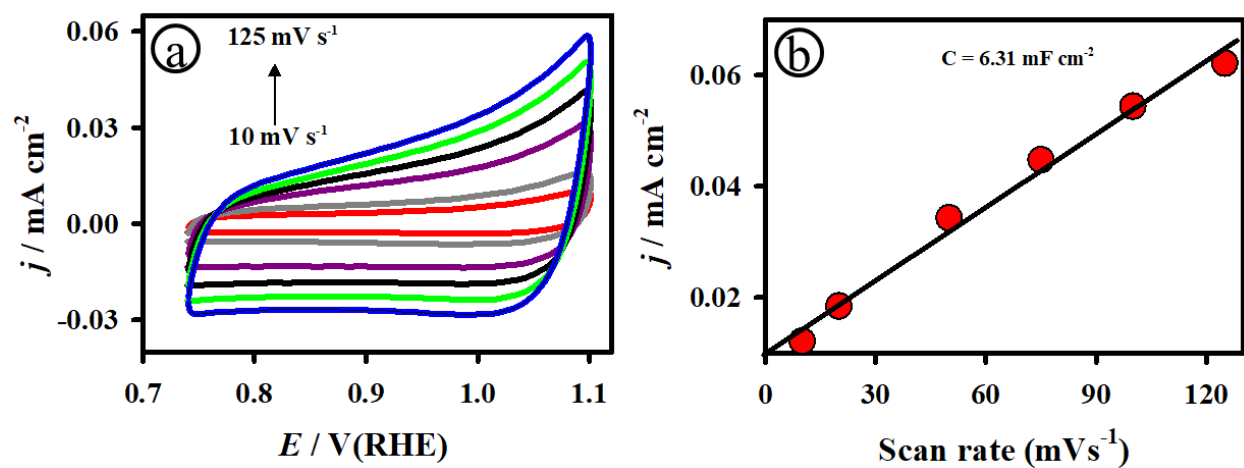


Figure S6. (a) CVs of the PS-3D-FeP@NiO|Ni electrode recorded in 1.0 M KOH at different scan rates from 10 to 125 mV s^{-1} . (b) Plot of current density measured from non-faradaic region of the voltammograms against the function of the scan rates.

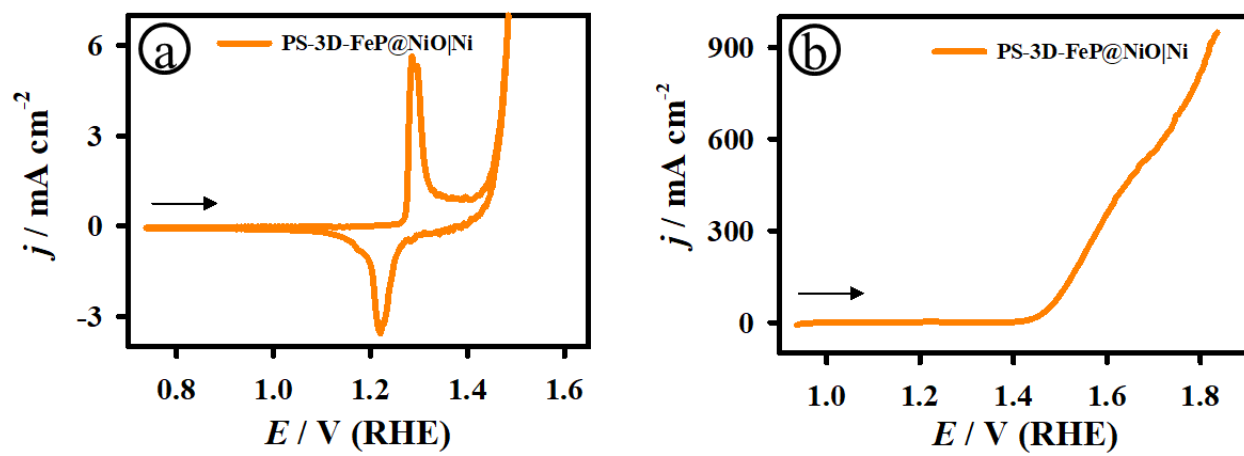


Figure S7. CV curve (a) and LSV curves (b) of the PS-3D-FeP@NiO|Ni electrode recorded in 30% KOH.

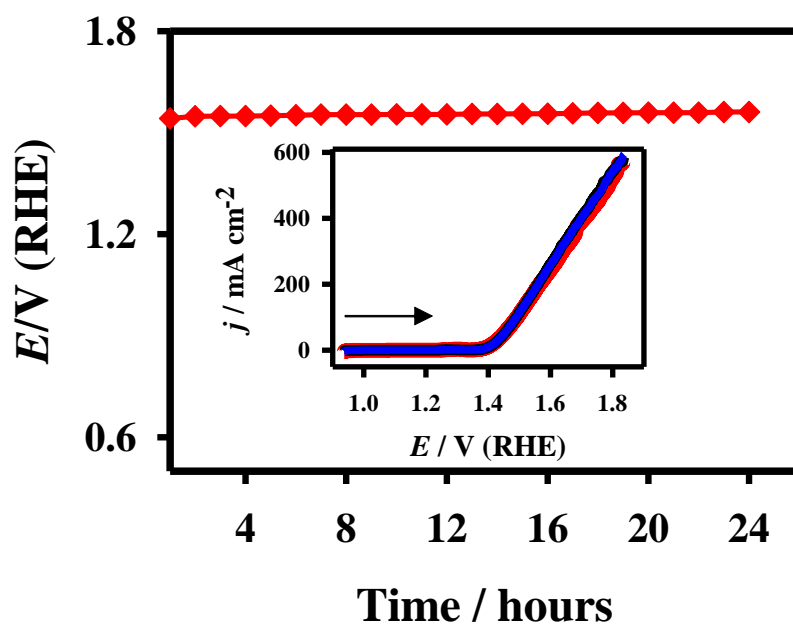


Figure S8. Chronopotentiometric curve of the PS-3D-FeP@NiO|Ni electrode recorded in 1.0 M KOH under applied current density of $\sim 10.0 \text{ mA cm}^{-2}$. Inset: LSV curves of the PS-3D-FeP@NiO|Ni electrodes. Electrolyte: 1.0 M KOH; Scan rate of 20 mV s^{-1} .

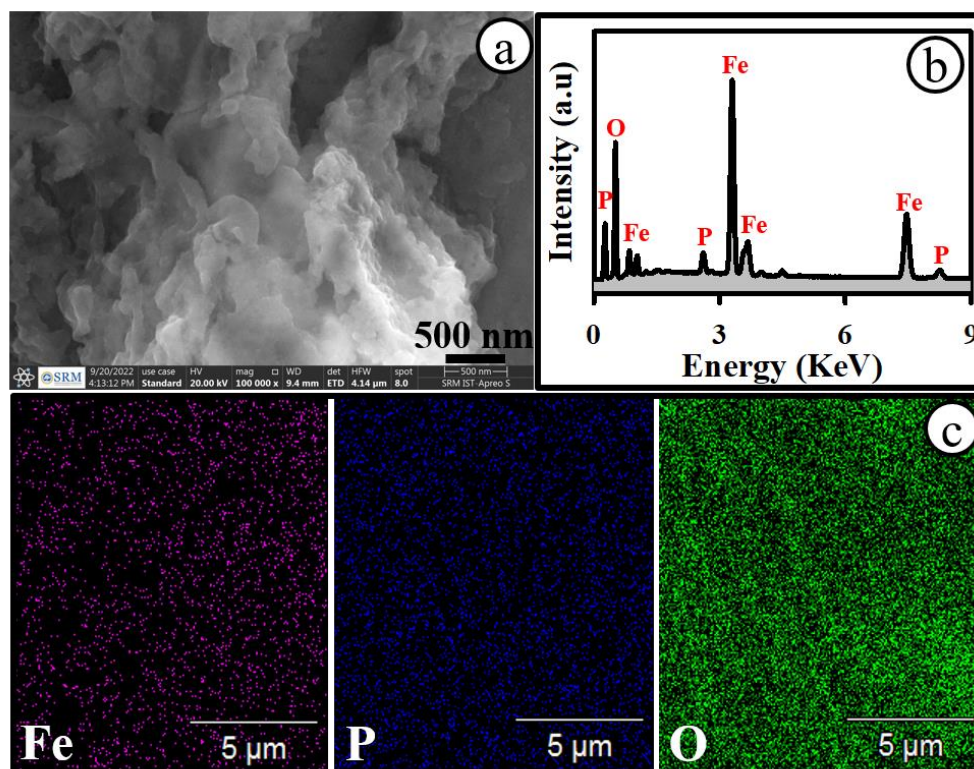


Figure S9. HRSEM image (a), EDX spectra (b) and elemental mapping of Fe, P and O (c) for the PS-3D-FeP@NiO|Ni electrode measured after had a long-term stability test.

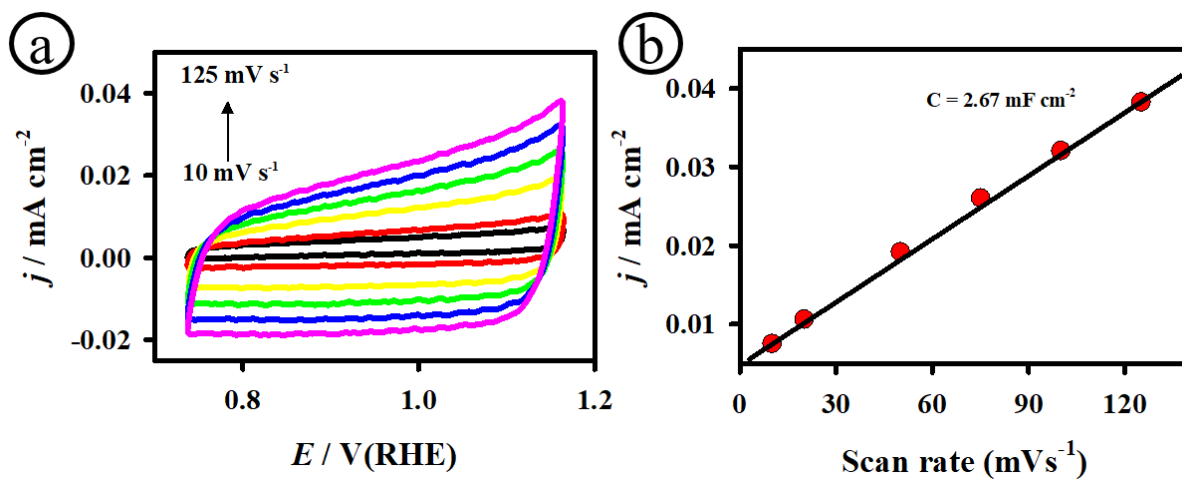


Figure S10. (a) CVs of the PS-3D-FeP@NiO|Ni electrode recorded in 1.0 M KOH at different scan rates from 10 to 125 mV s^{-1} measured after had a long-term stability test. (b) Plot of current density measured from non-faradaic region of the CVs against the function of the scan rates.