

Hierarchical Ni_3S_2 nanosheets coated on Co_3O_4 nanoneedles arrays on 3D nickel foam as efficient electrocatalyst for oxygen evolution reaction

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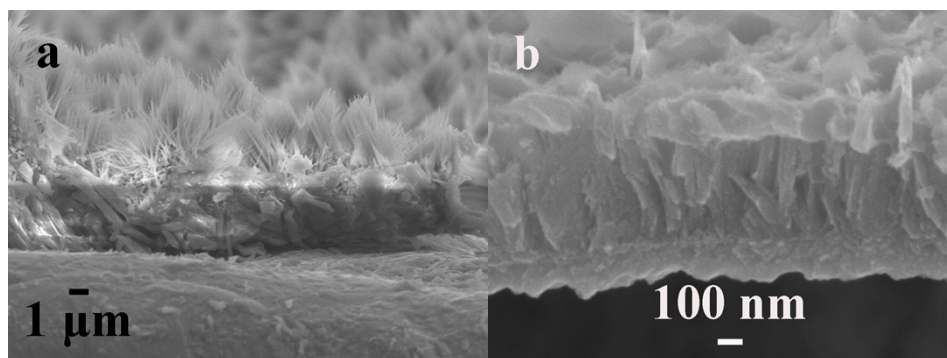


Fig. S1. A side view SEM image of (a) $\text{Co}_3\text{O}_4/\text{NF}$ and (b) $\text{Co}_3\text{O}_4@\text{Ni}_3\text{S}_2/\text{NF}$

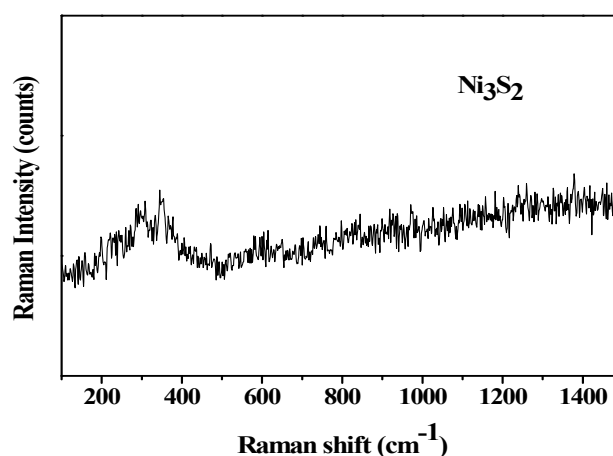


Fig. S2. the Raman intensity of $\text{Ni}_3\text{S}_2/\text{NF}$.

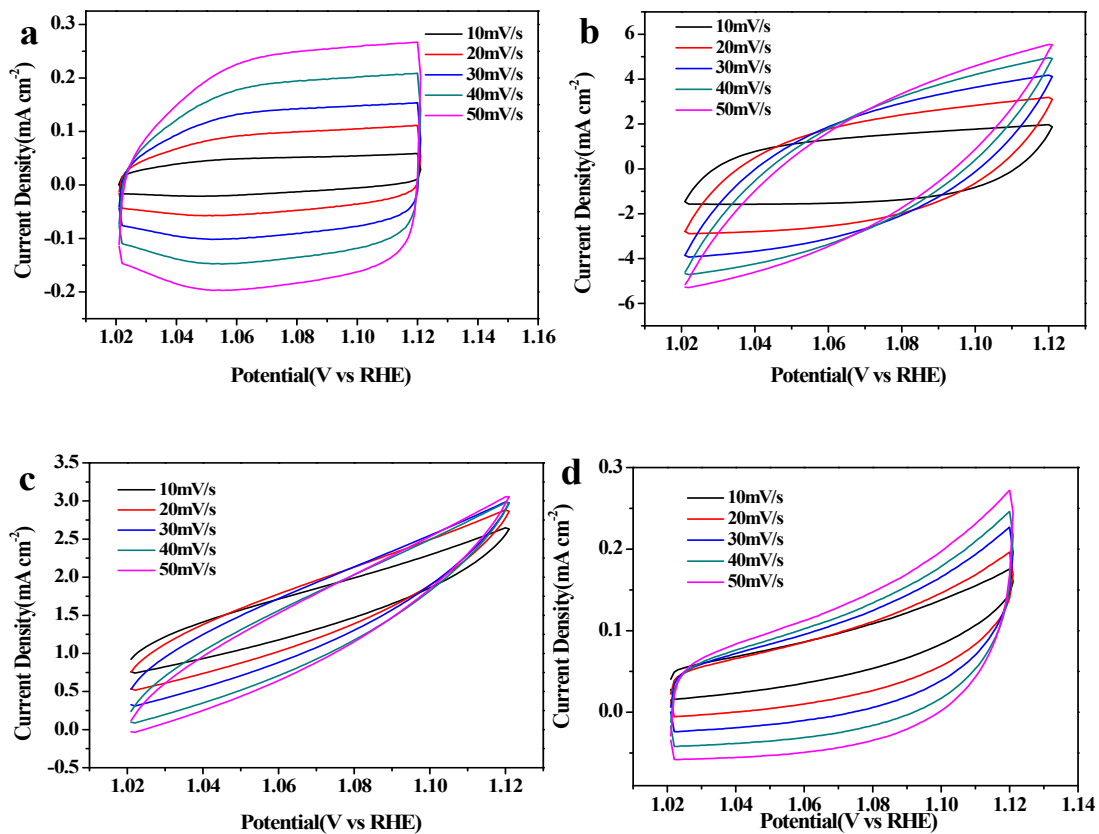


Fig. S3. Electrochemical double-layer capacitance measurements. The cyclic voltammograms (CVs) measurements with various scan rates for Co_3O_4 precursor/NF(a) Co_3O_4 /NF (b) Ni_3S_2 /NF (c) $\text{Co}_3\text{O}_4@/\text{Ni}_3\text{S}_2$ /NF (d) in 1.0 M KOH.

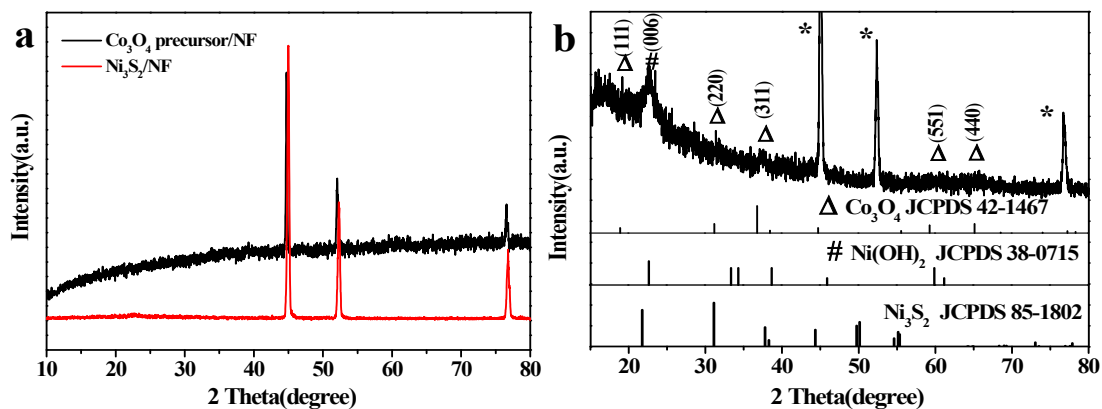


Fig. S4. The XRD spectra of Co_3O_4 /NF and Ni_3S_2 /NF a), $\text{Co}_3\text{O}_4@/\text{Ni}_3\text{S}_2$ /NF after OER stability test.

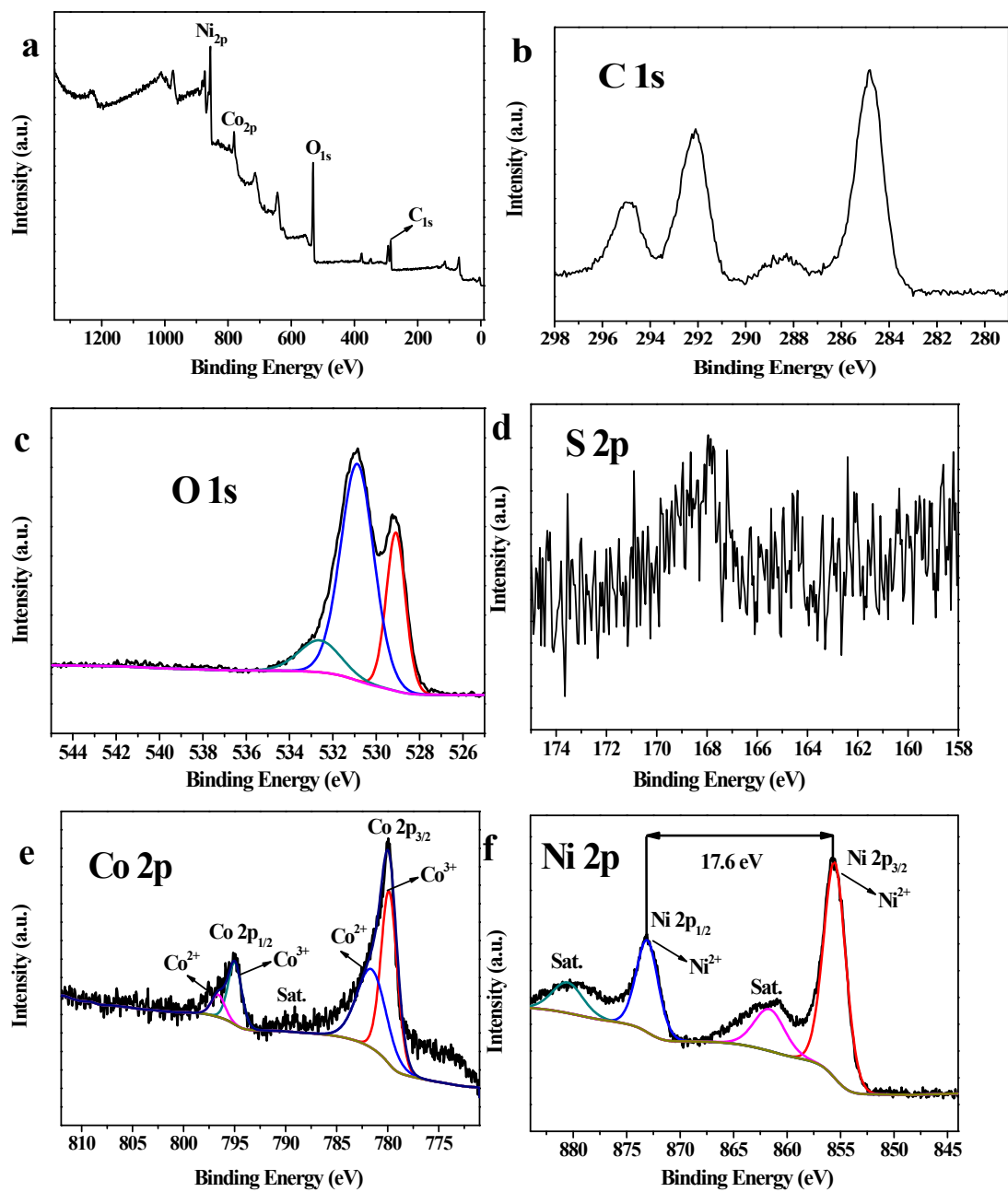


Fig. S5. The XPS spectra of $\text{Co}_3\text{O}_4@\text{Ni}_3\text{S}_2/\text{NF}$ after OER stability test: (a) survey, (b) C 1s, (c) O 1s, (d) S 2p, (e) Co 2p and (f) Ni 2p regions.

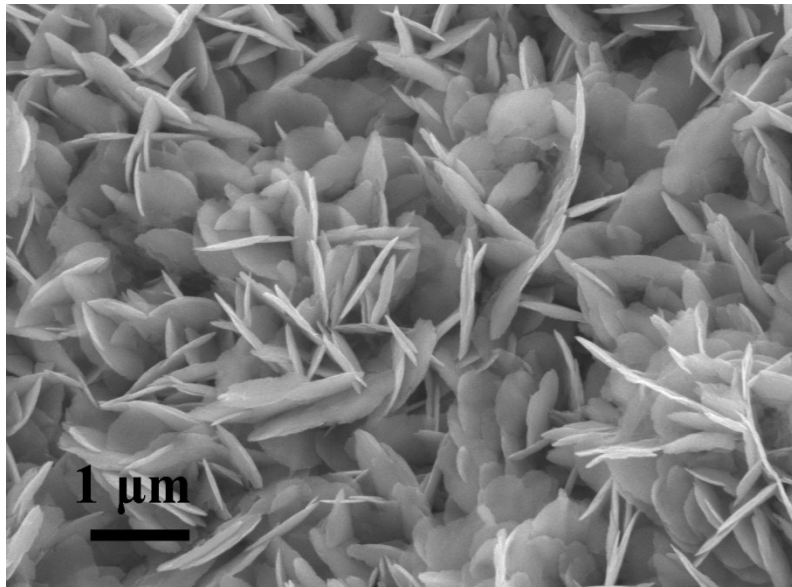


Fig. S6. SEM image of Co₃O₄@Ni₃S₂/NF after OER stability test.