

Supplementary Information

Rational Design of Ni₃S₂ Nanosheets-Ag Nanorods on Ni Foam with Improved Hydrogen Adsorption Sites for Hydrogen Evolution Reaction

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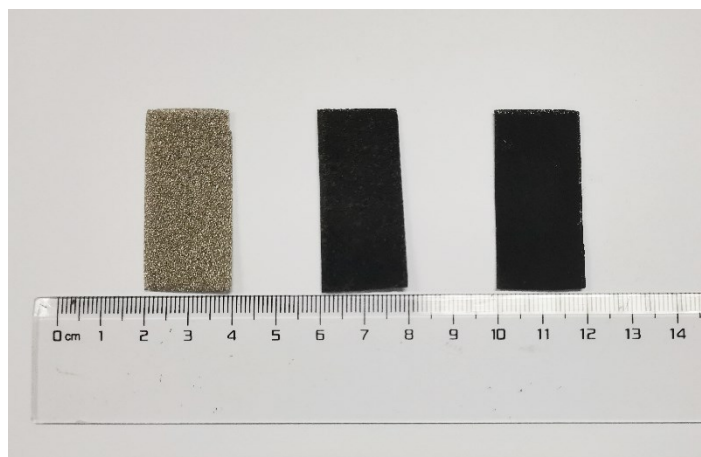


Fig. S1 Photograph of bare NF (left), $\text{Ni}_3\text{S}_2/\text{NF}$ (middle) and $\text{Ni}_3\text{S}_2\text{-Ag}/\text{NF}$ (right).

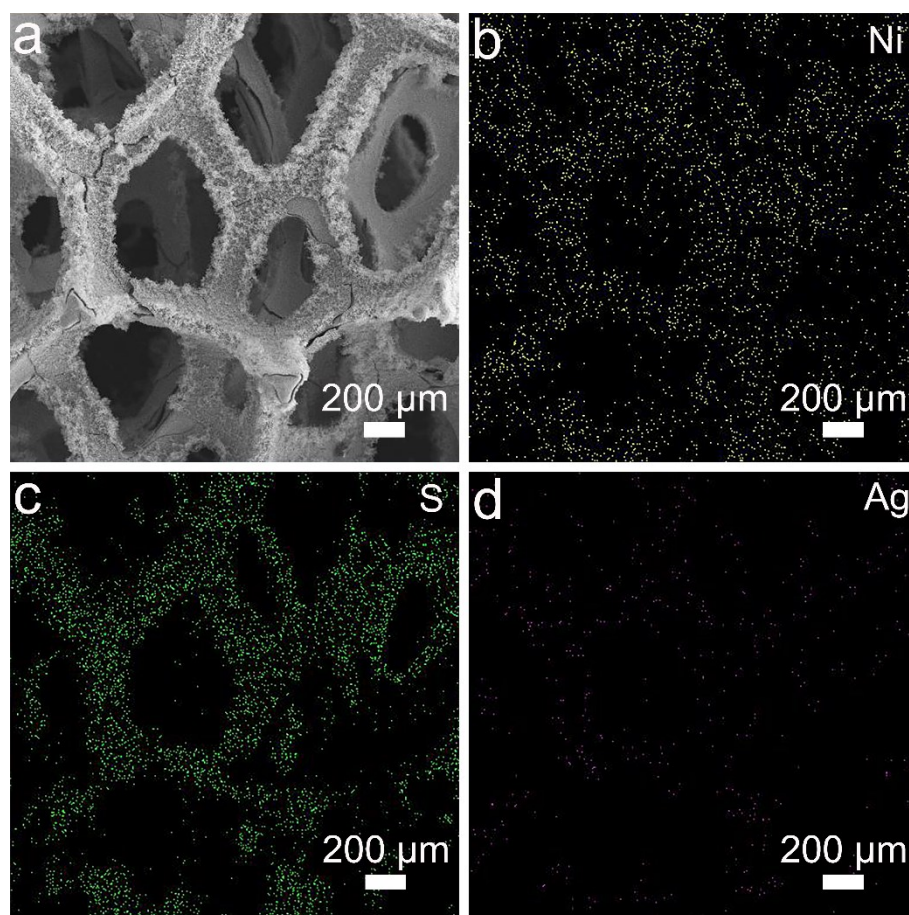


Fig. S2 SEM and the corresponding elemental mapping images of $\text{Ni}_3\text{S}_2\text{-Ag/NF}$.

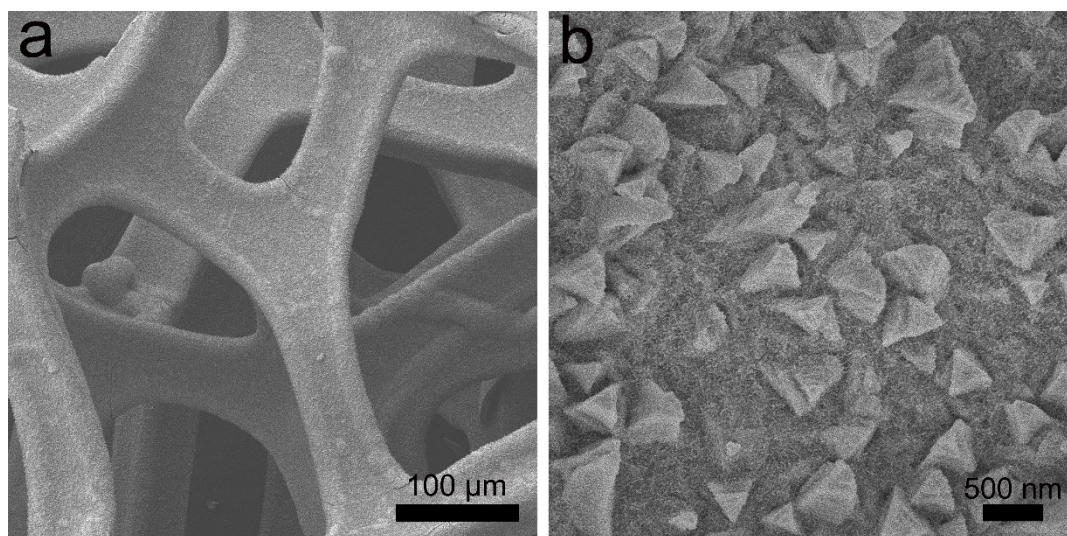


Fig. S3 SEM images of a) low and b) high magnifications of $\text{Ni}_3\text{S}_2/\text{NF}$.

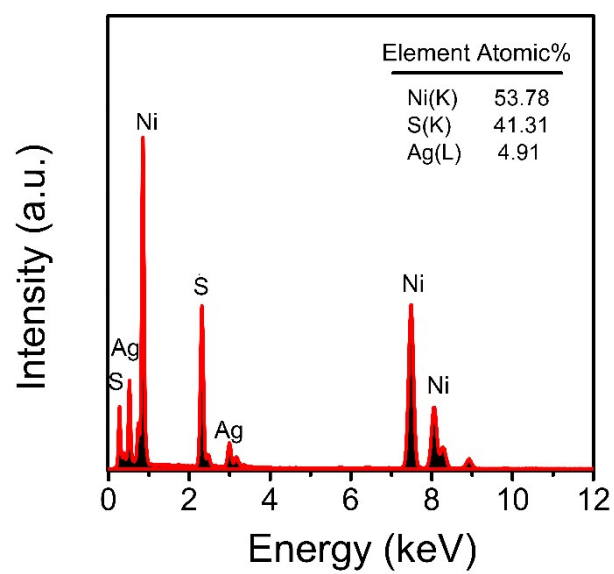


Fig. S4 EDS image of $\text{Ni}_3\text{S}_2\text{-Ag/NF}$.

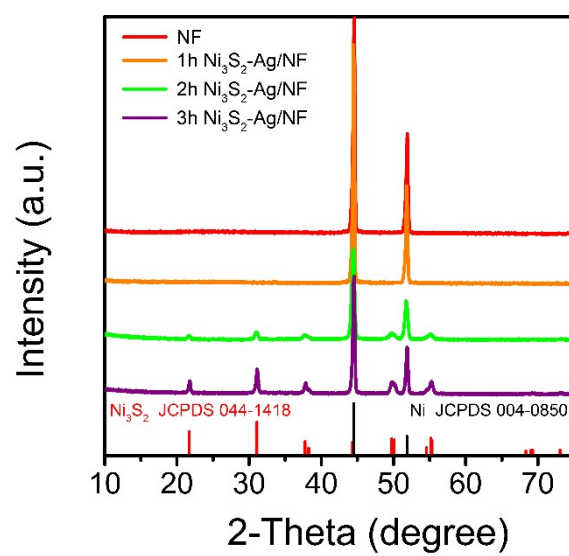


Fig. S5 XRD patterns of NF, 1 h $\text{Ni}_3\text{S}_2\text{-Ag/NF}$, 2 h $\text{Ni}_3\text{S}_2\text{-Ag/NF}$, and 3 h $\text{Ni}_3\text{S}_2\text{-Ag/NF}$.

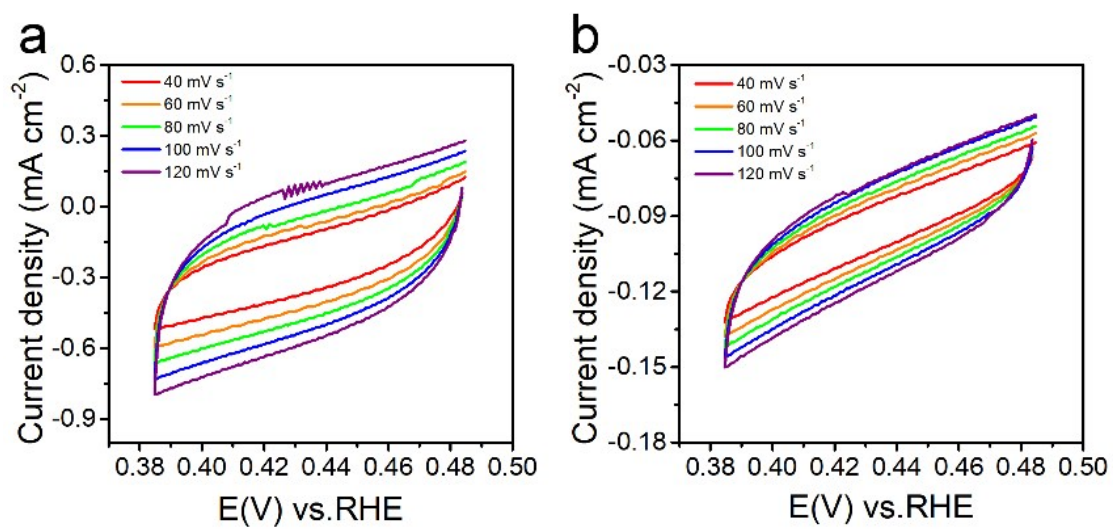


Fig. S6 CV scans of double-layer capacitance measurement of a) $\text{Ni}_3\text{S}_2/\text{NF}$ and b) NF at different scanning rates.

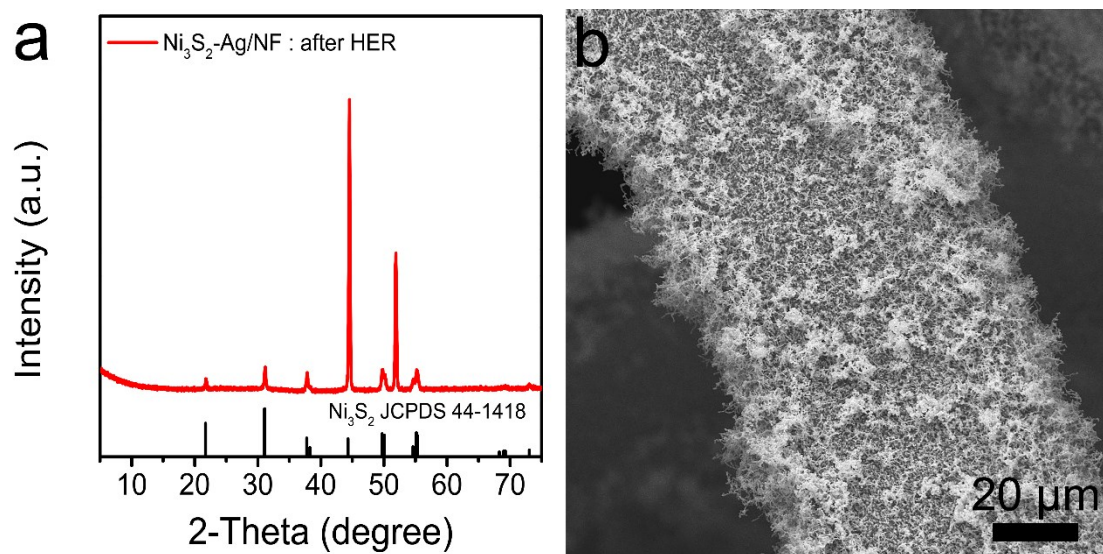


Fig. S7 a) XRD pattern and b) SEM of $\text{Ni}_3\text{S}_2\text{-Ag/NF}$ after a stability test for 10 h.

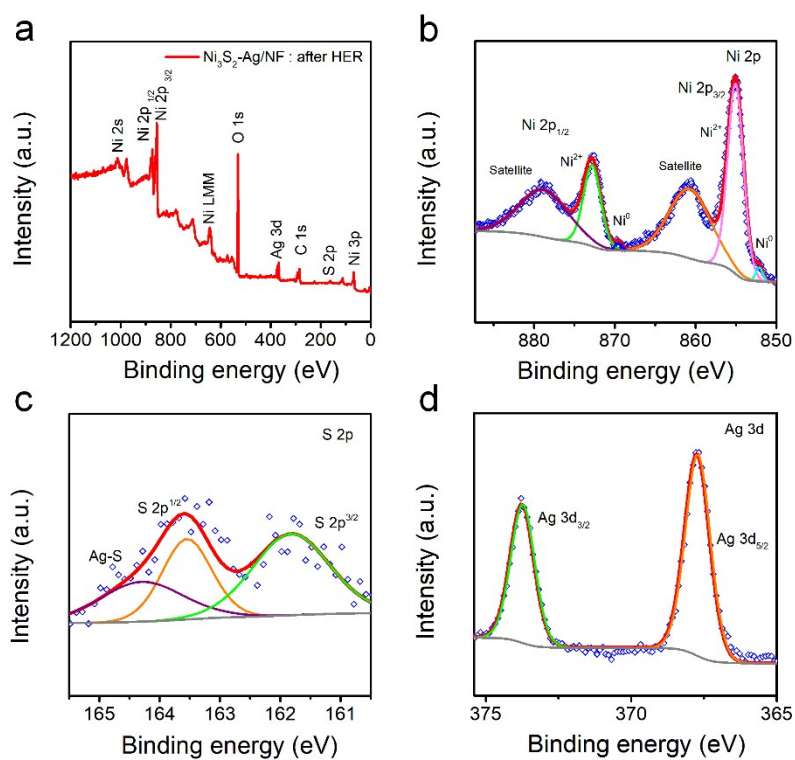


Fig. S8 a) XPS survey, b) Ni 2p, c) S 2p, and d) Ag 3d XPS spectra of $\text{Ni}_3\text{S}_2\text{-Ag/NF}$ after a stability test.

Table S1. Comparison of the HER performances of Ni₃S₂-Ag/NF in this work with previously reported Ni₃S₂-related HER electrocatalysts in 1 M KOH.

Catalysts	Overpotential at 10 mA cm ⁻² (mV)	Tafel slope (mV dec ⁻¹)	References
NiFe@Ni ₃ S ₂	184	115	1
MoS ₂ -Ni ₃ S ₂ /NF	203	98	2
MoS ₂ /Ni ₃ S ₂ foam	190	65.6	3
Cu-Ni ₃ S ₂	121	86.2	4
NiWO ₄ /Ni ₃ S ₂	136	112	5
Ni ₃ S ₂ @Ni(OH) ₂ /NF	237	109	6
Ni ₃ S ₂	335	97	7
Ni ₃ S ₂ /NF	131	96	8
Sn-Ni ₃ S ₂ /NF	137	148	9
Ni ₃ S ₂	267	-	10
Co ₃ S ₄ @ MoS ₂ -Ni ₃ S ₂	136	72	11
Ni ₃ S ₂ Nanosheets array	123	110	12
Ni ₃ S ₂ -300	135	75.5	13
Ni ₃ S ₂ /NF	223	-	14
Ni ₃ S ₂ /NF	182	89	15
Ni ₃ S ₂ Nanorod Array	200	107	16
Ni ₃ S ₂ -Ag/NF	161	82	This work

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