

Supplementary Material

Regulation of Ni₃S₂@NiS Heterostructure Grown on Industrial Nickel Net for Improved Electrocatalytic Hydrogen Evolution

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Table S1. Contents of each phase in Ni₃S₂@NiS from the quantitative XRD result.

Phase	At%
NiS	28.6%
Ni ₃ S ₂	29.8%

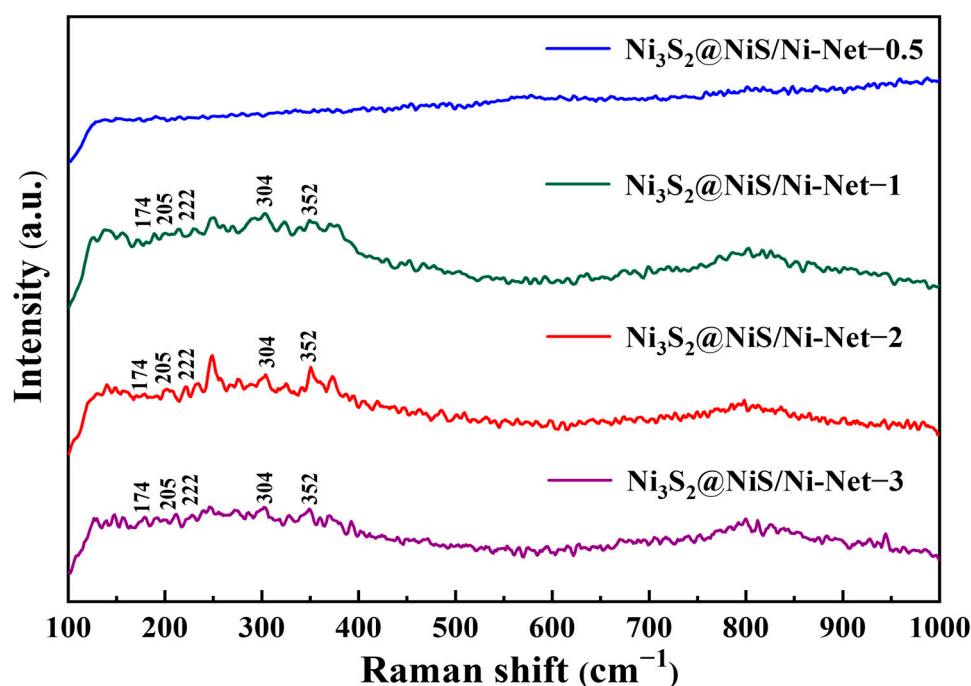


Figure S1. Raman spectra of Ni₃S₂@NiS/Ni-Net-0.5, Ni₃S₂@NiS/Ni-Net-1, Ni₃S₂@NiS/Ni-Net-2 and Ni₃S₂@NiS/Ni-Net-3.

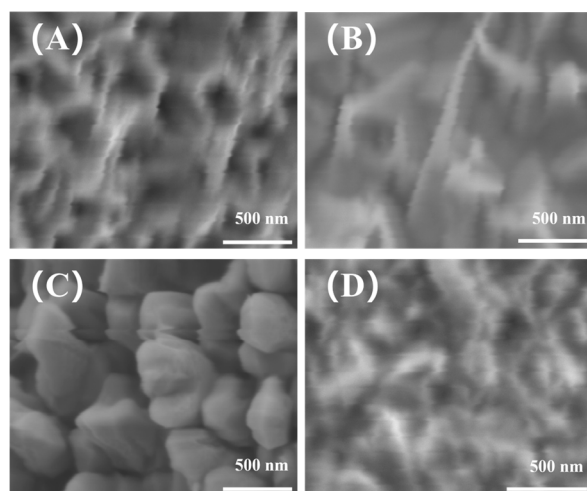


Figure S2. High-magnification SEM images of (A) $\text{Ni}_3\text{S}_2@\text{NiS}/\text{Ni-Net-0.5}$; (B) $\text{Ni}_3\text{S}_2@\text{NiS}/\text{Ni-Net-1}$; (C) $\text{Ni}_3\text{S}_2@\text{NiS}/\text{Ni-Net-2}$; (D) $\text{Ni}_3\text{S}_2@\text{NiS}/\text{Ni-Net-3}$.

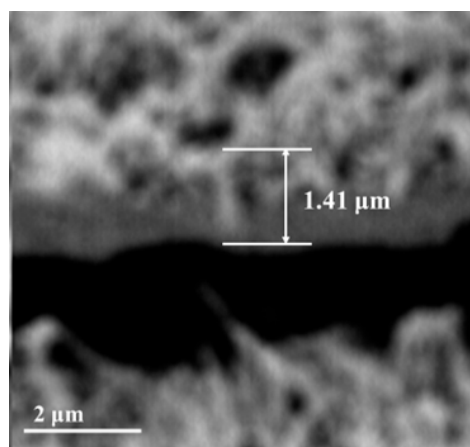


Figure S3. Cross-sectional SEM image of $\text{Ni}_3\text{S}_2@\text{NiS}/\text{Ni-Net-2}$.

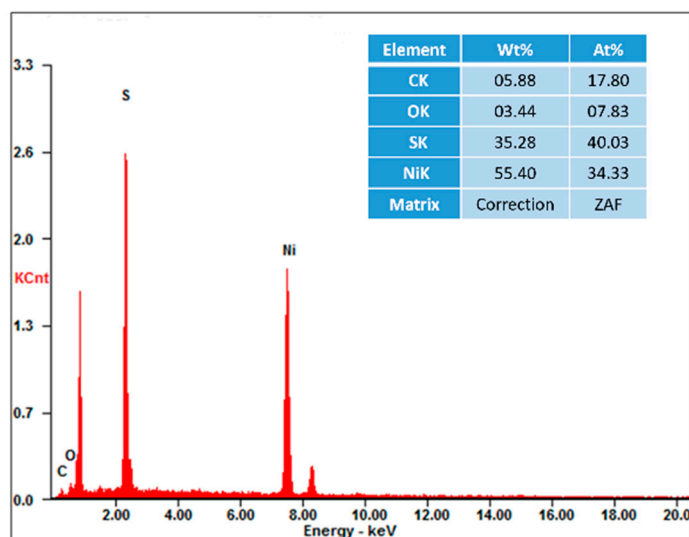


Figure S4. The EDS spectrum of $\text{Ni}_3\text{S}_2@\text{NiS}/\text{Ni-Net-2}$.

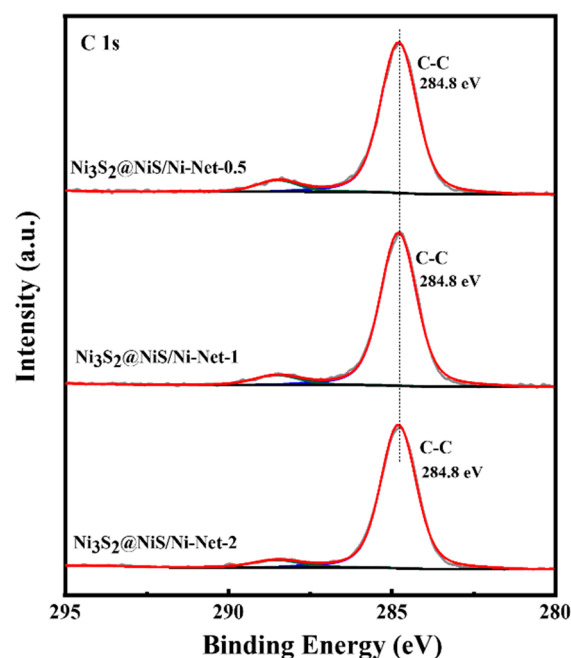


Figure S5. C 1s XPS spectra of Ni₃S₂@NiS/Ni-Net-0.5, Ni₃S₂@NiS/Ni-Net-1, and Ni₃S₂@NiS/Ni-Net-2.

Table S2. Comparison of HER properties of reported nickel sulfide-based electrocatalysts.

Catalyst	Overpotential [mV]@ current density [mA/cm ²]	Stability test	Reference
Ni ₃ S ₂ @NiS/Ni-Net	207 mV@100 mA/cm ²	100 h	In this work
Mn-Ni ₃ S ₂ @MoS ₂	187 mV@100 mA/cm ²	50 h	[1]
La-Ni ₃ S ₂ /MoS ₂ @NF	154 mV@100 mA/cm ²	50 h	[2]
WO ₃ /Ni ₃ S ₂	249 mV@100 mA/cm ²	55 h	[3]
N-Ni ₃ S ₂ @NG	191 mV@100 mA/cm ²	60 h	[4]
Ni ₃ S ₂ /NiMoS/NF	197 mV@100 mA/cm ²	14 h	[5]
MoS ₂ -Ni ₃ S ₂	191 mV@100 mA/cm ²	50 h	[6]
Mo-Ni ₃ S ₂ /NF	199 mV@100 mA/cm ²	100 h	[7]
NiWO ₄ /Ni ₃ S ₂	274 mV@100 mA/cm ²	75 h	[8]
Ni ₃ S ₂ -Fe-Ni	339 mV@100 mA/cm ²	48 h	[9]
Co ₃ S ₄ -Ni ₃ S ₂ -C/N	227 mV@100 mA/cm ²	20 h	[10]
V-NiS/CC	246 mV@100 mA/cm ²	30 h	[11]
P-Ni ₃ S ₂ -NiS/NF	380 mV@100 mA/cm ²	30 h	[12]

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