

Electronic supplementary information for

Flower-Like 1T-MoS₂/NiCo₂S₄ on carbon cloth substrate as an efficient electrocatalyst for the
hydrogen evolution reaction

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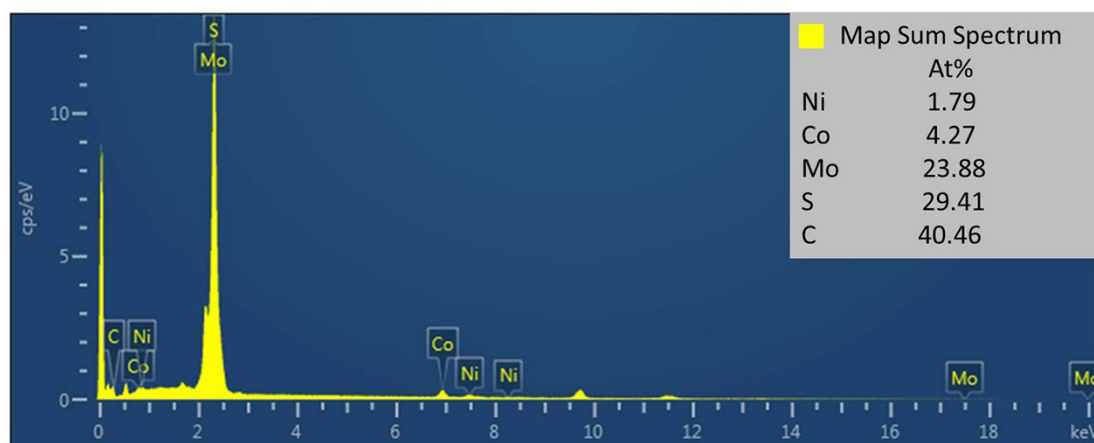


Figure S1. EDS spectrum of 1T-MoS₂/NiCo₂S₄/CC.

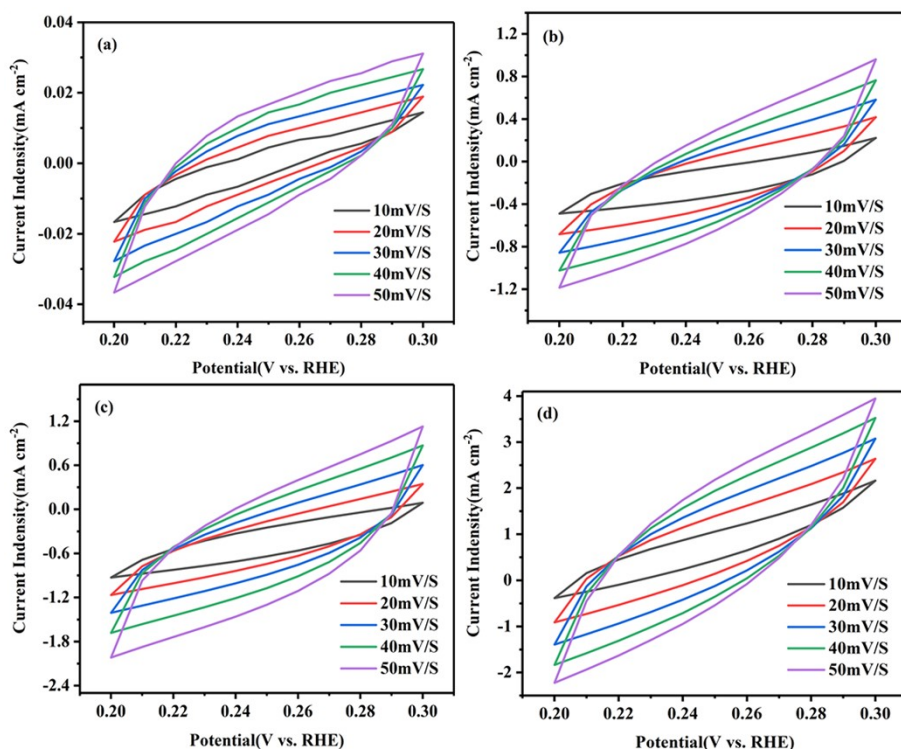


Figure S2. CV curves of (a) NiCo-LDH/CC, (b) NiCo₂S₄/CC, (c) MoS₂/CC and (d) 1T-MoS₂/NiCo₂S₄

/CC in 1 M KOH.

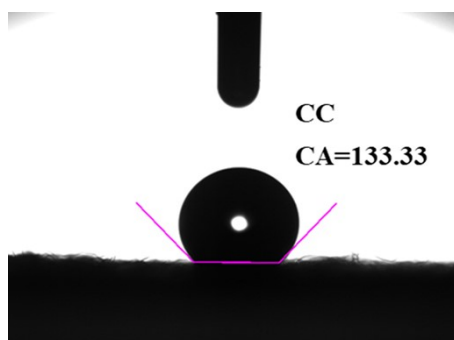


Figure S3. Contact angle tests of CC.

Table S1. Comparison of the HER performance of 1T-MoS₂/NiCo₂S₄/CC with previously reported electrocatalysts.

Catalysts	Overpotential (mV) (at 10mA cm ⁻²)	Tafel slope (mV dec ⁻¹)	Electrolytes	Reference
1T-MoS ₂ /NiCo ₂ S ₄ /CC	107	66.4	1.0 M KOH	This work
1T-MoS ₂ /NiS ₂	116	72	1.0 M KOH	Ref. 22
1T-MoS ₂ /G/NF	117	38	0.5 M H ₂ SO ₄	Ref. 17
1T/2H-MoS ₂ -HN	156	47.9	0.5 M H ₂ SO ₄	Ref. 36
2H-1T MoS ₂	194.8	113.1	0.5 M H ₂ SO ₄	Ref. 14
S-nMoS ₂	252	45	0.5 M H ₂ SO ₄	Ref. 15
Mo-C/N@MoS ₂	117	64.3	1.0 M KOH	Ref. 5

MoS ₂ /RGO-180	213	43	0.5 M H ₂ SO ₄	Ref. 23
MoS ₂ /graphene/NF	89	45	0.5 M H ₂ SO ₄	Ref. 3
NiCo ₂ S ₄ /Ni ₃ S ₂ /NF	119	105.2	1.0 M KOH	Ref. 38
NiCo/NiCo ₂ S ₄ @NiCo/NF	132	58.2	1.0 M KOH	Ref. 28
MoS ₂ /NiCo ₂ S ₄ /CFP	139.6	37.7	0.5 M H ₂ SO ₄	Ref. 43
CoNi ₂ S ₄ /Ni ₃ S ₂ @NF	171	88.6	1.0 M KOH	Ref. 30

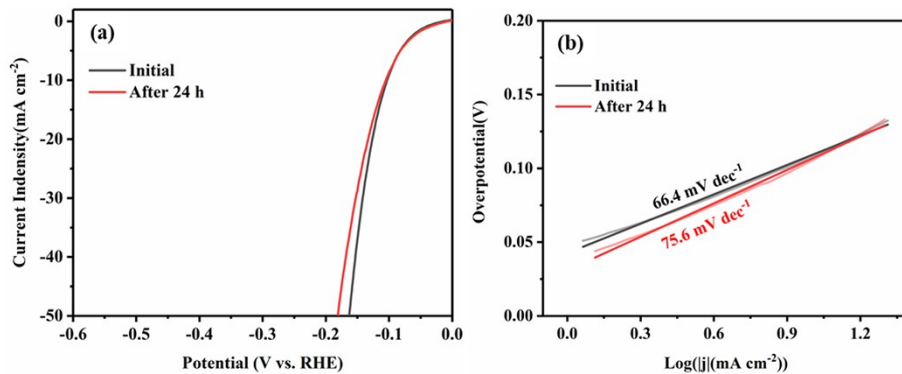


Figure S4. (a) LSV curves (b) The Tafel slopes of the 1T-MoS₂/NiCo₂S₄/CC composite before and after the chronoamperometry test for 24 h.

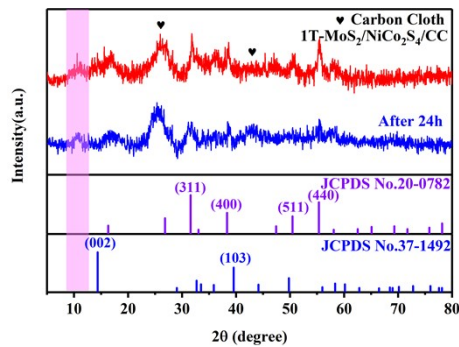


Figure S5. XRD patterns of the 1T-MoS₂/NiCo₂S₄/CC composite before and after the chronoamperometry test for 24 h.

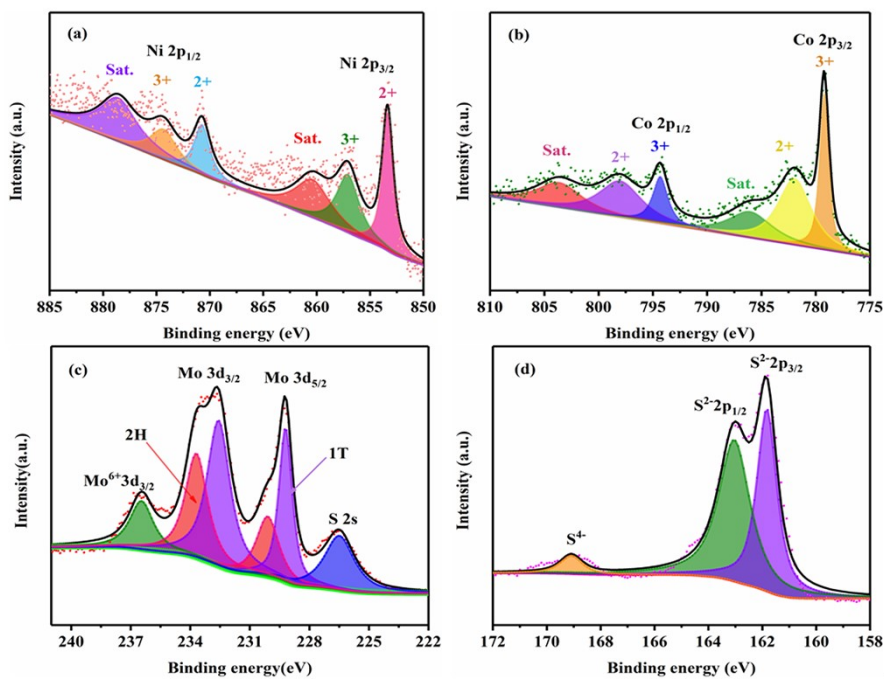


Figure S6. High-resolution XPS spectra of (a) Ni 2p. (b) Co 2p. (c) Mo 3d and (d) S 2p of 1T-MoS₂/NiCo₂S₄/CC after the chronoamperometry test for 24 h in 1.0 M KOH.

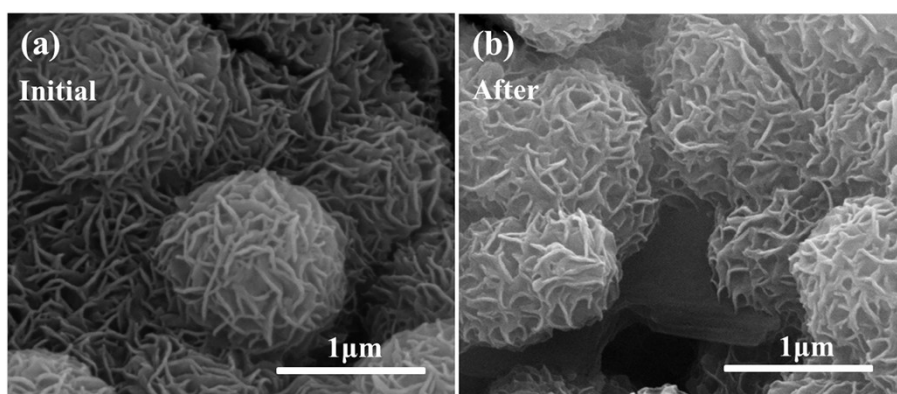


Figure S7. SEM images of the 1T-MoS₂/NiCo₂S₄/CC composite (a) before and (b) after the chronoamperometry test for 24 h.