Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

Supporting Information

In-situ formation of Nickel sulfide quantum dots embedded into two-dimensional metal-organic framework for water splitting

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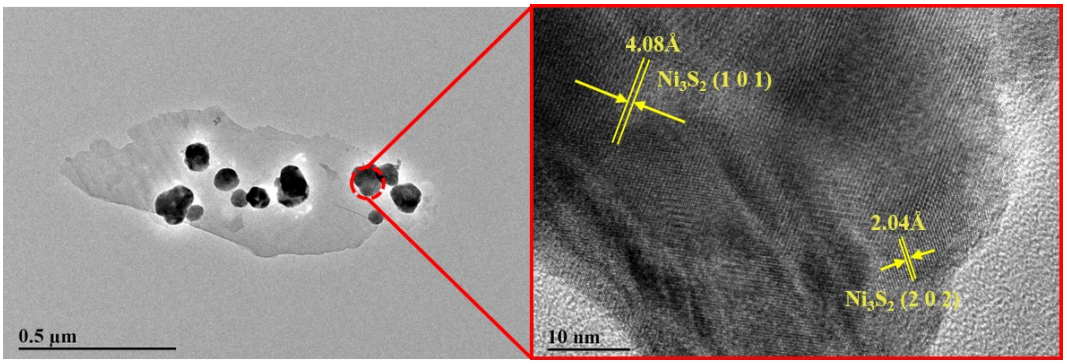

Figure S1 (a) TEM and (b) HRTEM images of Ni_3S_2@NiFe-TPA

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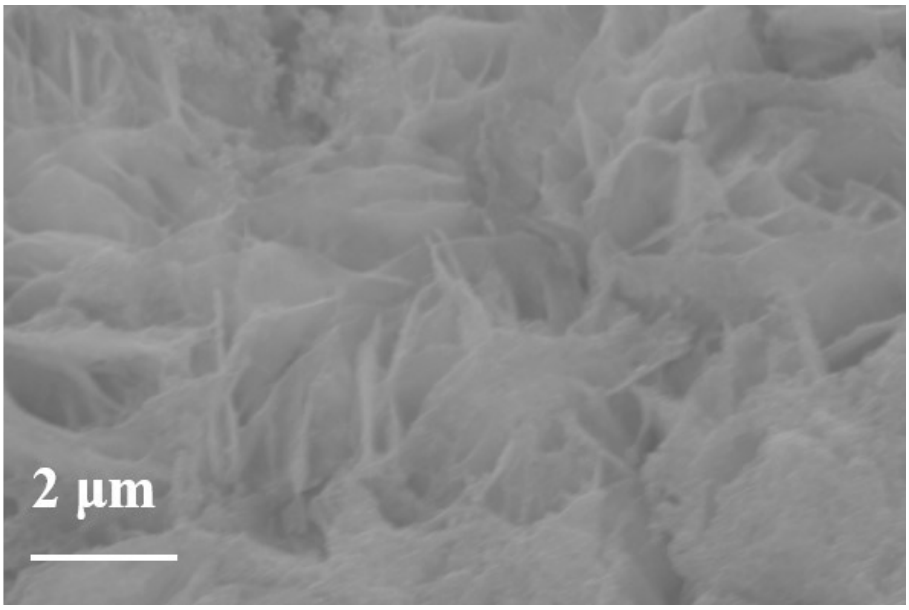

Figure S2 the SEM curve of NSQDs@NiFe-TPA after the stability test of OER

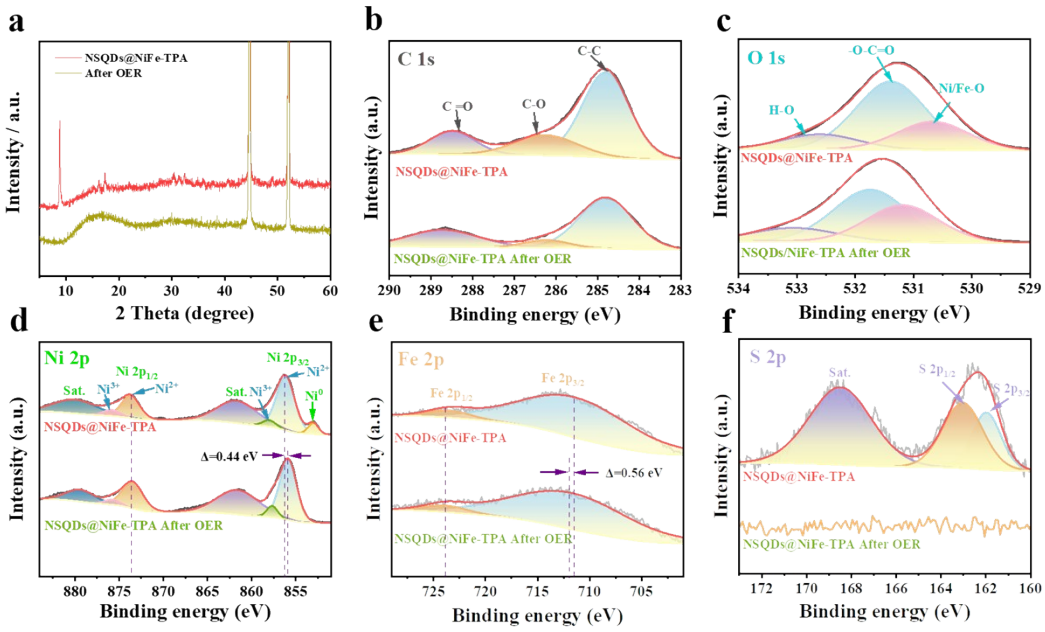

Figure S3 (a) the XRD curve and the high resolution XPS of (b) C 1s, (c) O 1s, (d) Ni 2p (e) Fe 2p and (f) S 2p of NSQDs@NiFe-TPA and NSQDs@NiFe-TPA after OER.

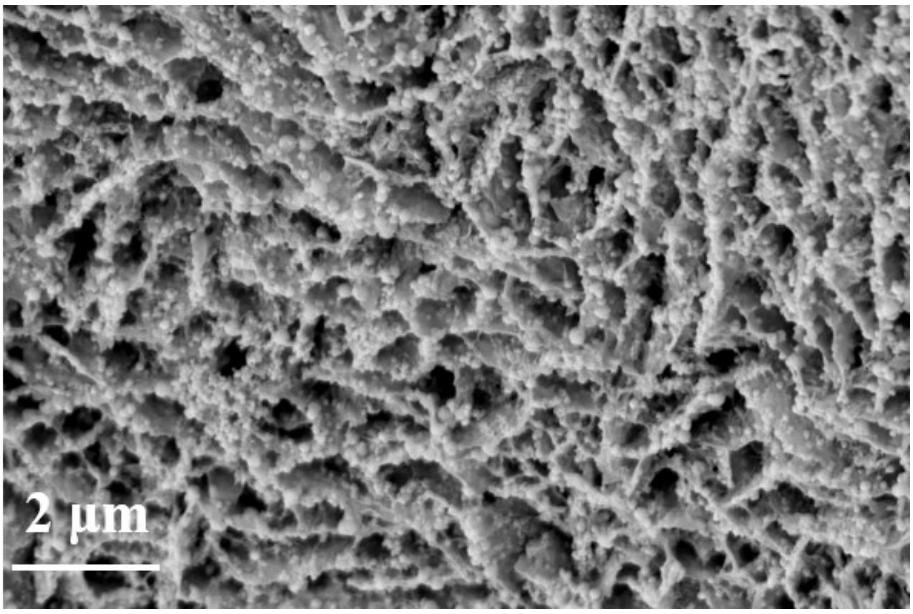

Figure S4 the SEM curve of Ni_3S_2@NiFe-TPA after HER.

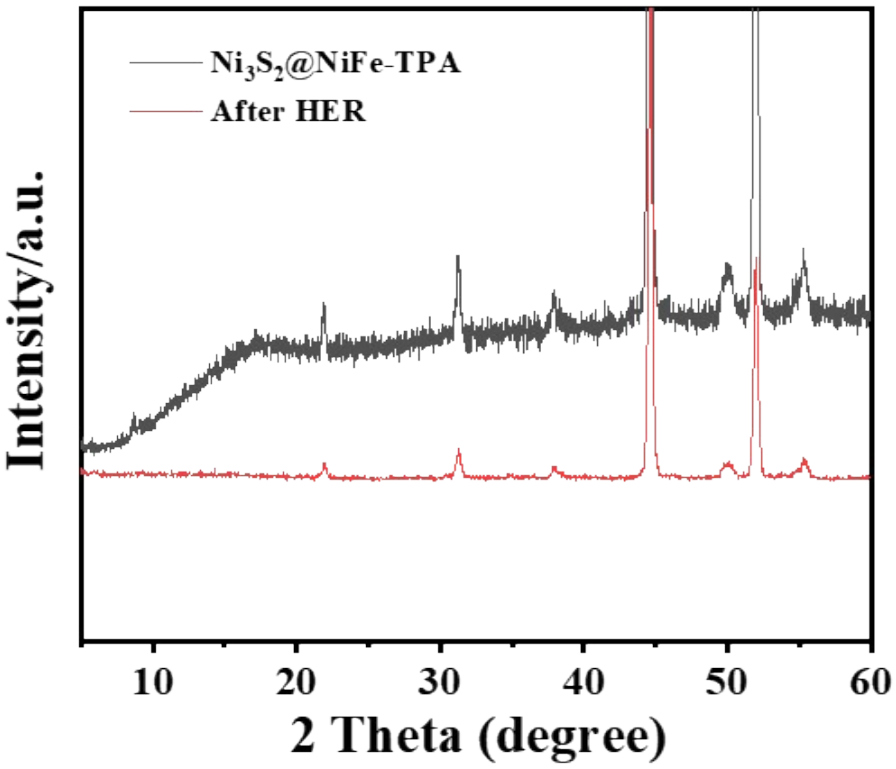

Figure S5 XRD patterns of Ni_3S_2@NiFe-TPA and Ni_3S_2@NiFe-TPA after HER.

Table S1 A performance comparison with recently published non-noble metal-based OER catalysts

Electrocatalyst	Electrolyte	Overpotential (mV vs. RHE) 10 mA cm^{-2}	Ref.
NSQDs@NiFe-TPA	1 M KOH	219	This work
Co(Zn)S_2/CC	1 M KOH	248	[1]
Fe-NiCo-S	1 M KOH	247	[2]
CoFe-MS/MOF	1 M KOH	264	[3]
N, P-Co_9S_8/CoS_2/$Co_{1-x}S$	1 M KOH	285	[4]
Ti-CoS_x HSS	1 M KOH	249	[5]
Ni–Co–S/NSC	1 M KOH	309	[6]

Table S1 A performance comparison with recently published non-noble metal-based HER catalysts

Electrocatalyst	Electrolyte	Overpotential (mV vs. RHE) 10 mA cm^{-2}	Ref.
Ni_3S_2@NiFe-TPA	1 M KOH	109	This work
Ni_3S_2@2D Co-MOF	1 M KOH	140	[7]
40% MoS_x/Co-MOF-74	1 M KOH	147	[8]
Ni-M@C-130	1 M KOH	123	[9]
$CoS_{1.097}$-160	1 M KOH	163	[10]
MoS_x/Ni-MOF-74	1 M KOH	114	[11]
Ni–Co–S/NSC	1 M KOH	177	[12]

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