

Supporting information

Efficient hydrogen evolution of Ni₂P via incorporation of Mo for alkaline freshwater and seawater electrolysis

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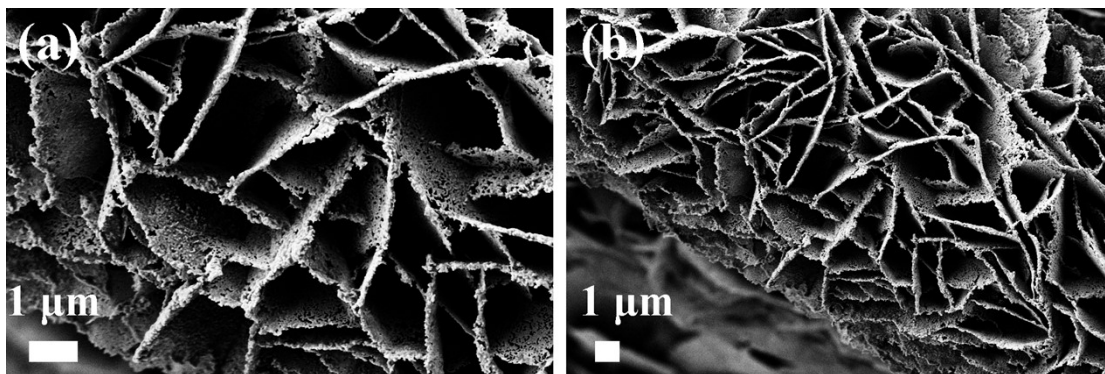


Fig. S1 SEM images of Ni₂P/CC electrocatalyst at (a) 10k magnifications. (b) 5k magnifications.

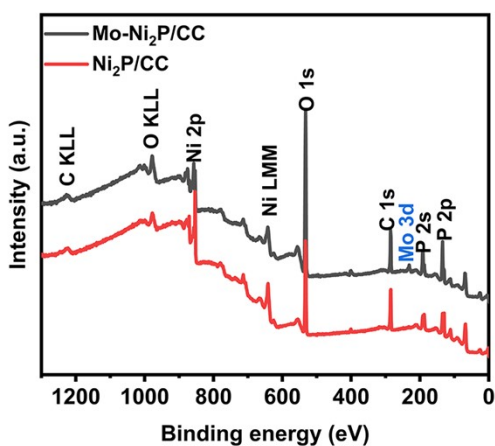


Fig. S2 XPS survey of Mo-Ni₂P/CC and Ni₂P/CC electrocatalyst.

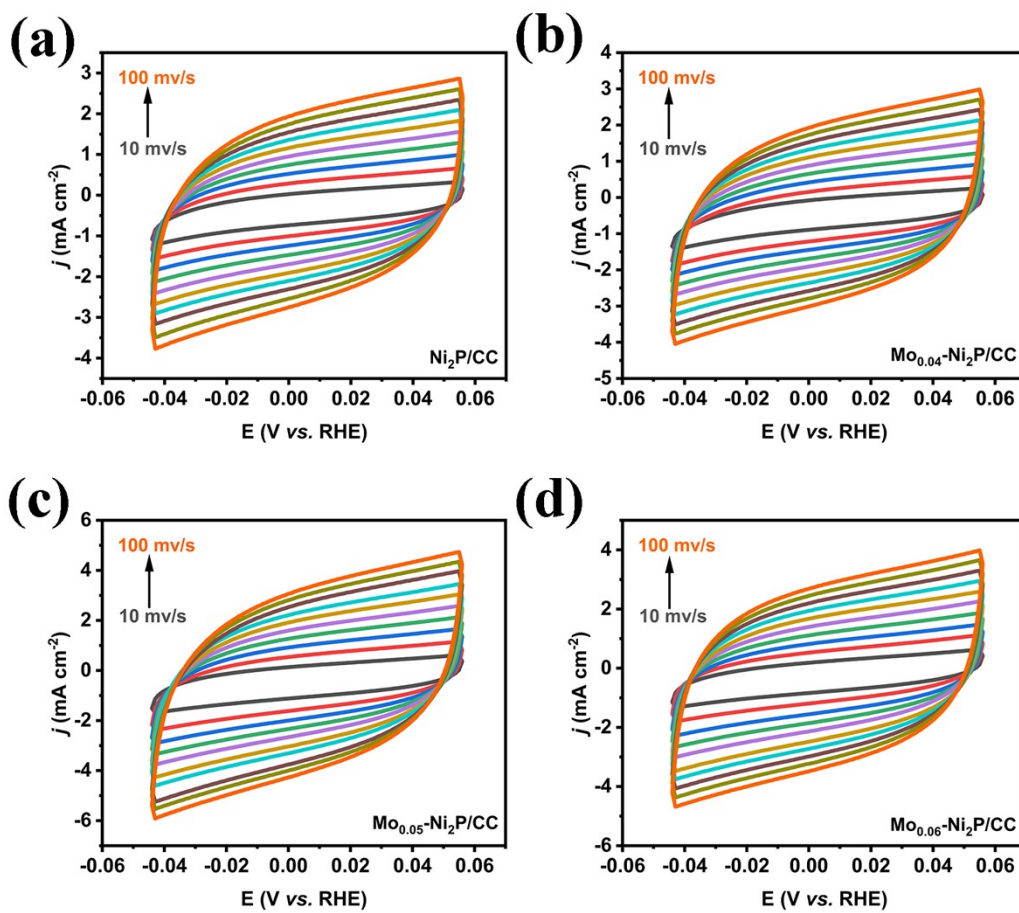


Fig.S3 Cyclic voltammograms of (a) Ni₂P/CC, (b) Mo_{0.04}-Ni₂P/CC, (c) Mo_{0.05}-Ni₂P/CC and (d) Mo_{0.06}-Ni₂P/CC from 10 to 100 mV s⁻¹.

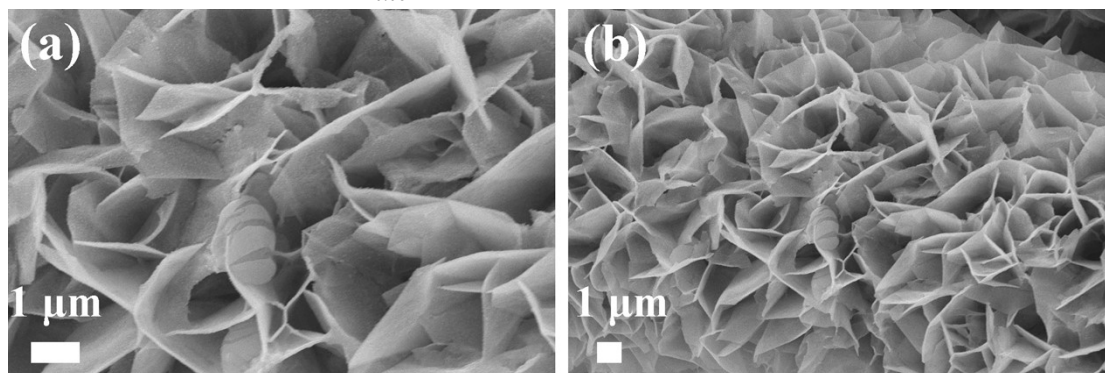


Fig. S4 SEM images of Mo-Ni₂P/CC after 20 hour-long term HER in 1 M KOH solution.

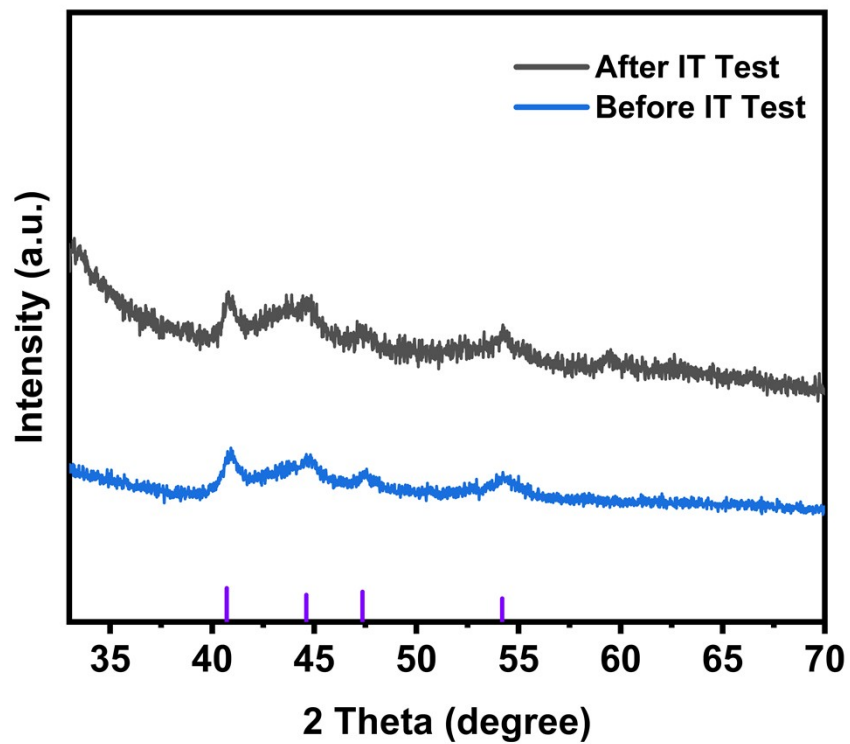


Fig. S5 XRD pattern of Mo-Ni₂P after stability in 1 M KOH.

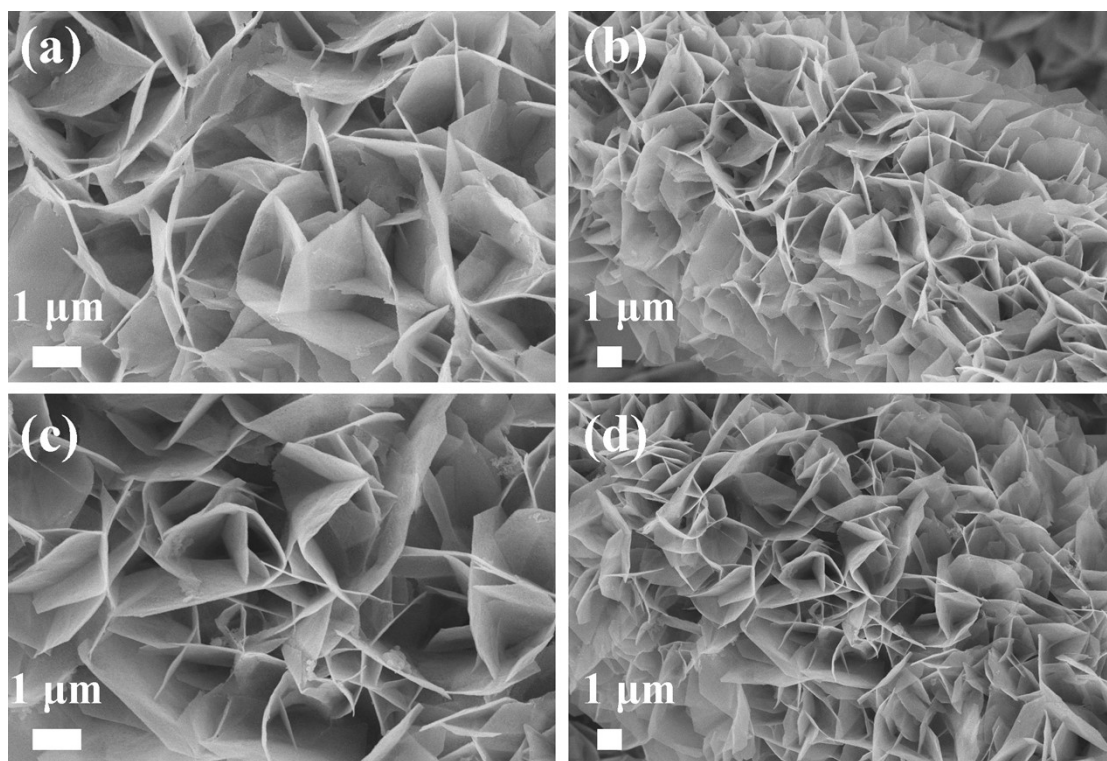


Fig. S6 SEM images of Mo-Ni₂P/CC after 20 hour-long HER in (a-b) simulated seawater and (c-d) alkaline seawater solution.

Table S1. The composition of the Mo-Ni₂P/CC.

Catalyst	Element	Weight %	Atomic %
Mo-Ni ₂ P/CC	Ni	64.63	51.35
	P	30.85	46.45
	Mo	4.52	2.20

Table S2. Comparison the influence of mass loading on HER.

Catalysts	mass loading (mg cm ⁻²)	Overpotential at 10 mA cm ⁻² (mV)
Ni ₂ P/CC	2.98	166
Mo _{0.04} - Ni ₂ P/CC	3.02	139
Mo _{0.05} - Ni ₂ P/CC	3.05	113
Mo _{0.06} - Ni ₂ P/CC	3.09	141