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Heterogeneous electrocatalysts of MoS_2/NiCoP for high stable hydrogen evolution

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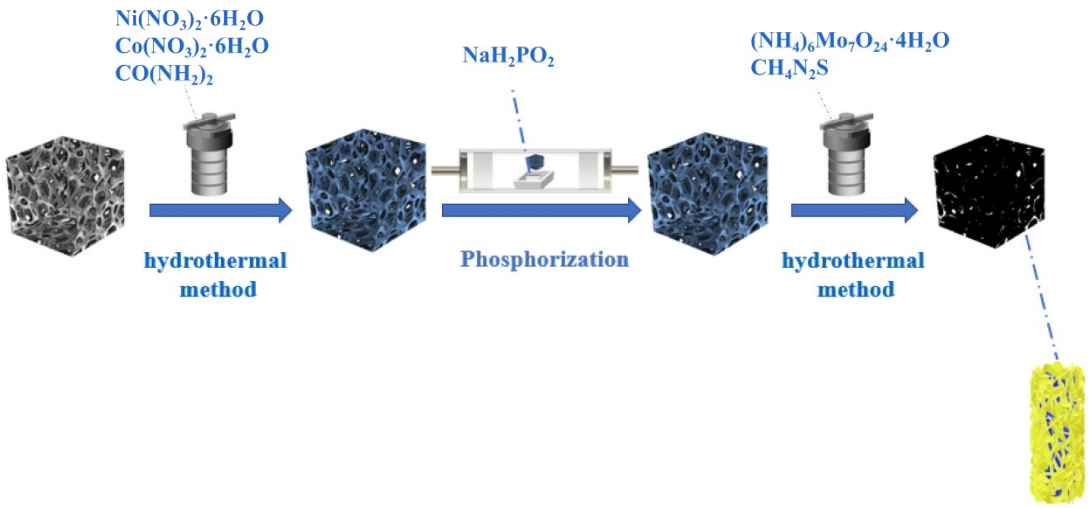

Fig. S1 MoS_2/NiCoP heterogeneous structure of the synthetic route.

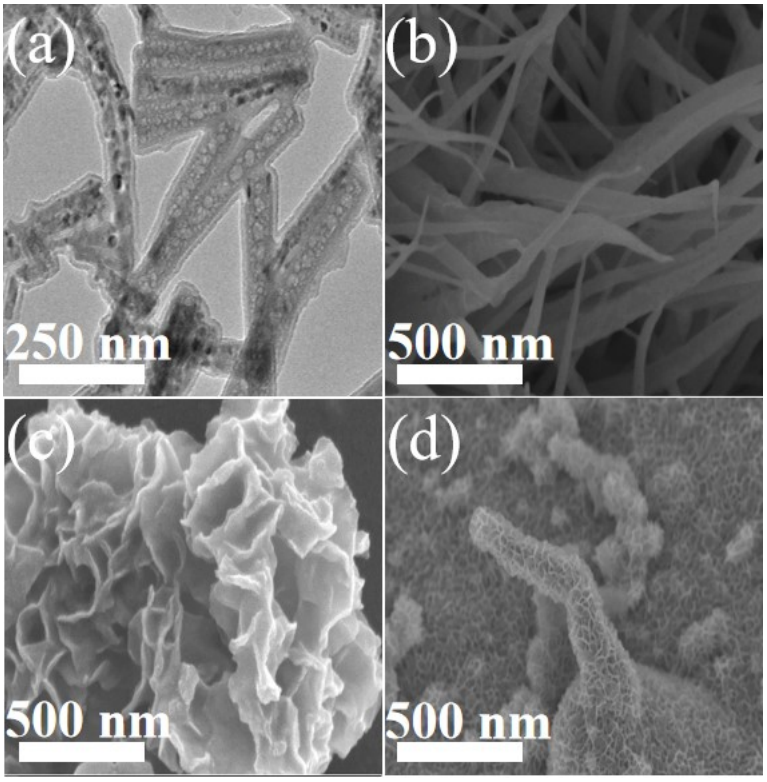

Fig. S2 (a&b) TEM and SEM of NiCoP. (c)SEM of MoS_2 and (d)SEM of MoS_2/NiCoP

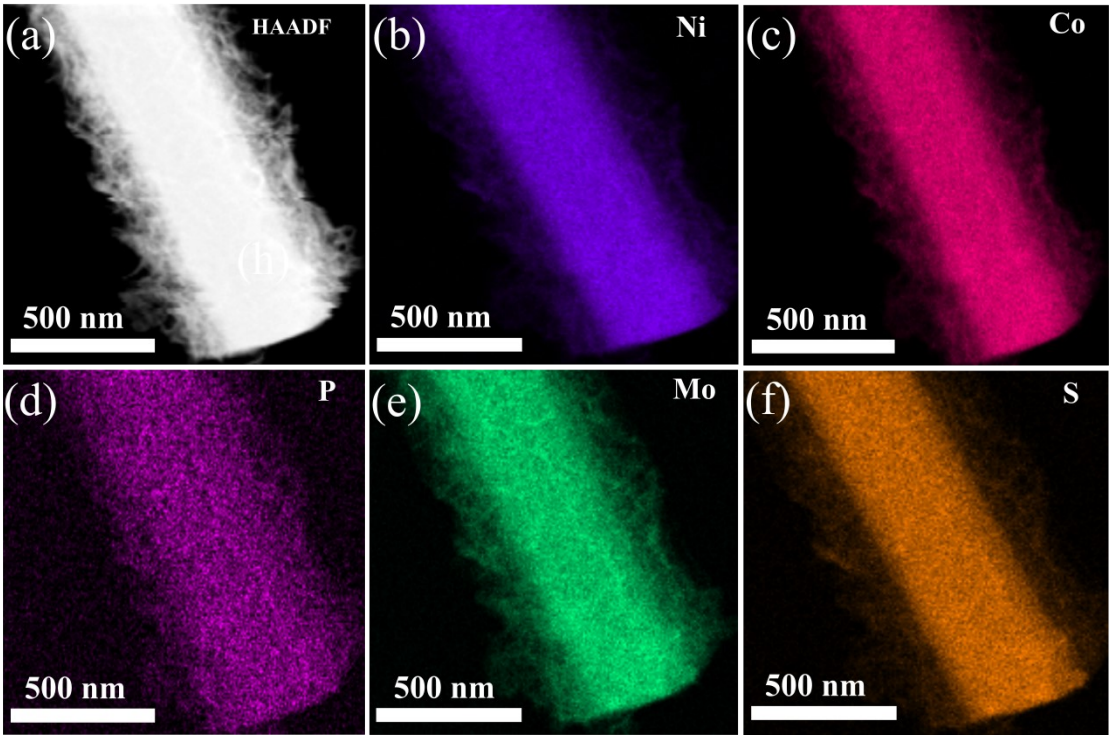

Fig. S3 (a) HAADF-STEM image and (b) Ni, (c) Co, (d) P, (e) Mo and (f) S corresponding elemental mapping images of MoS_2-NiCoP hollow nanowire.

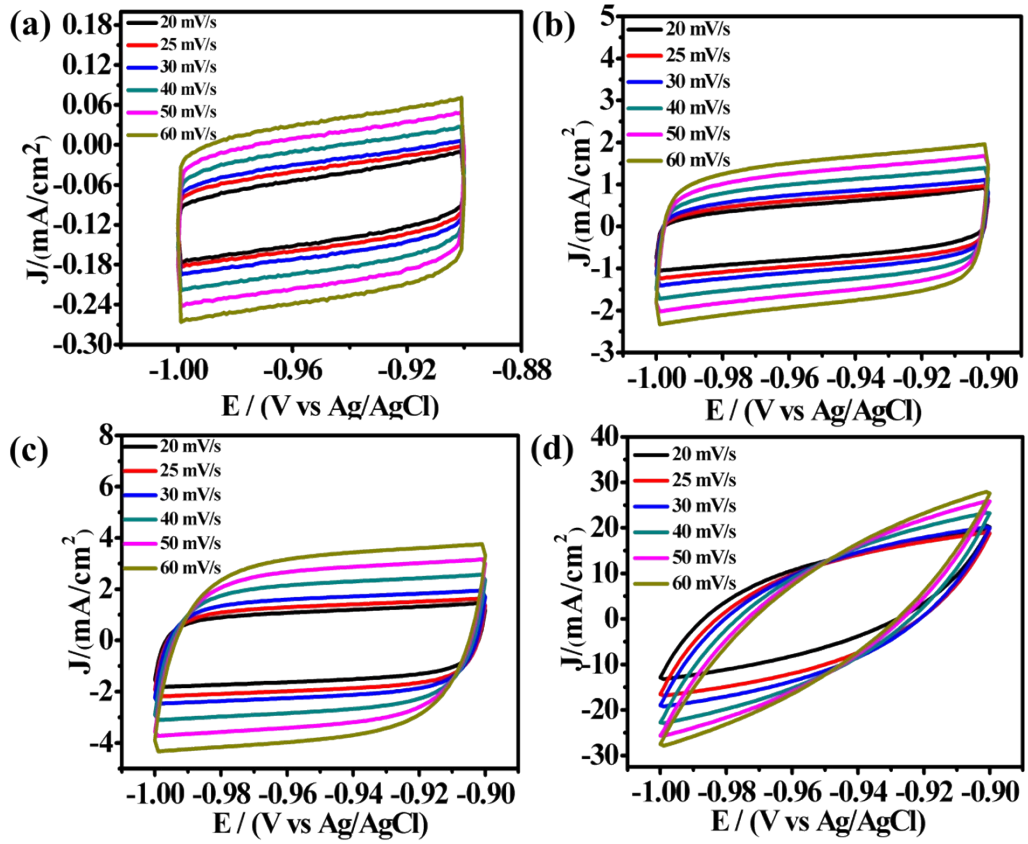

Fig. S4 Cyclic voltammograms of (a) NF, (b) NiCoP/NF, (c)MoS_2 and (d) MoS_2/NiCoP electrodes.

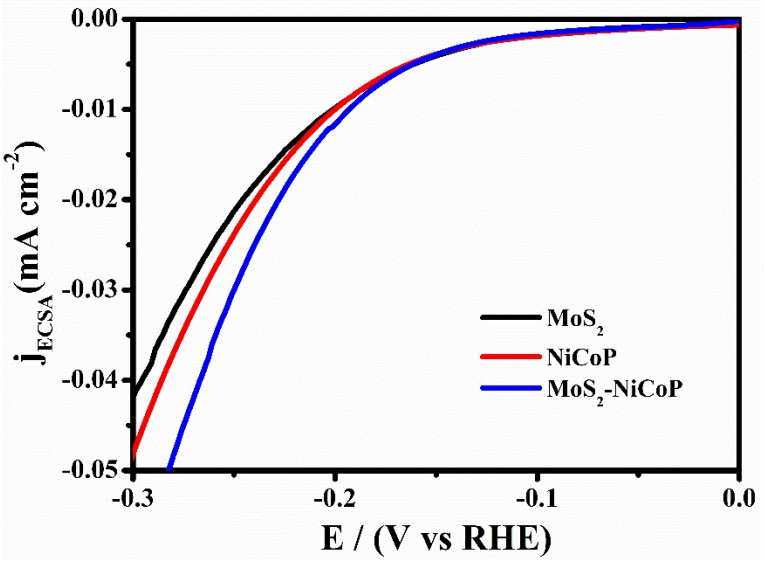

Fig. S5 Polarization curves of different samples normalized by ECSA for HER

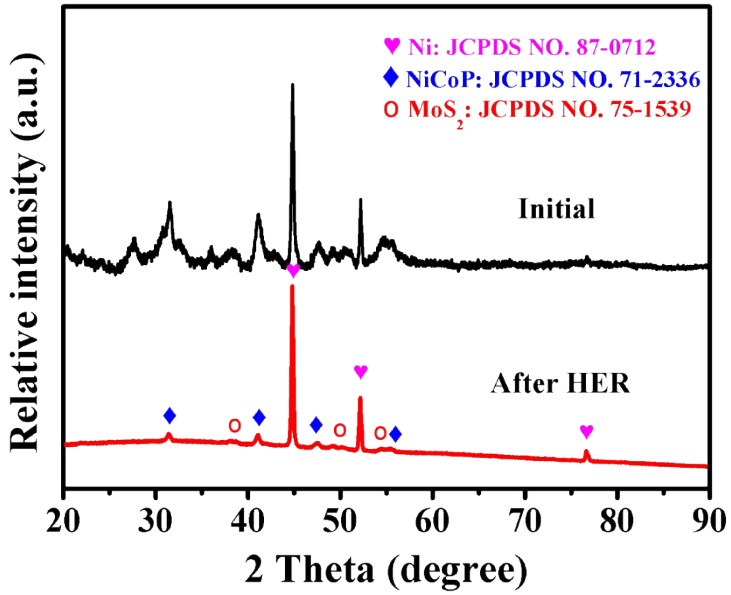

Fig. S6 XRD patterns of MoS_2-NiCoP before and after HER test.

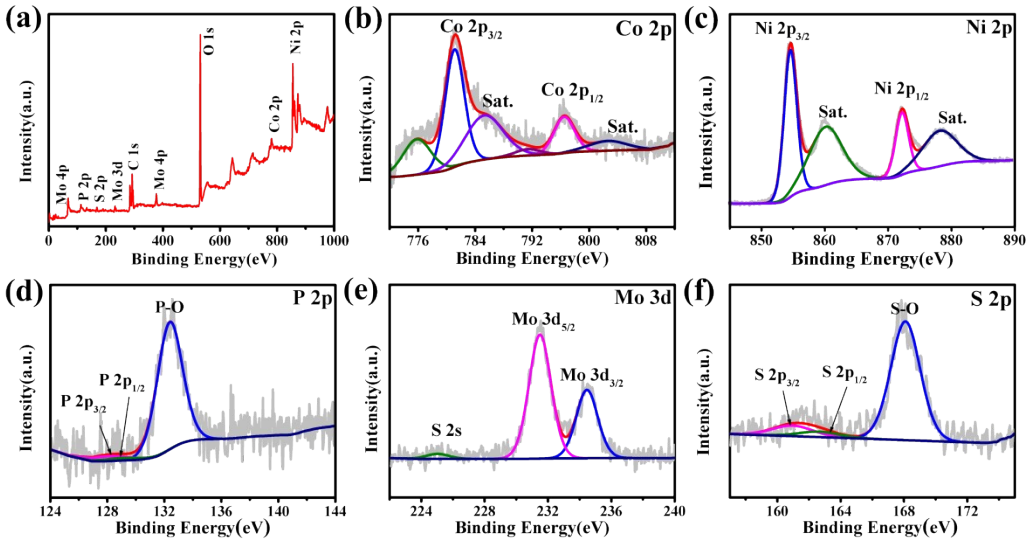

Fig. S7 (a-f) XPS survey spectra and the high-resolution XPS spectra of Co 2p, Ni 2p, P 2p, Mo 3d and S 2p in MoS_2-NiCoP and the precursor after HER test, respectively.

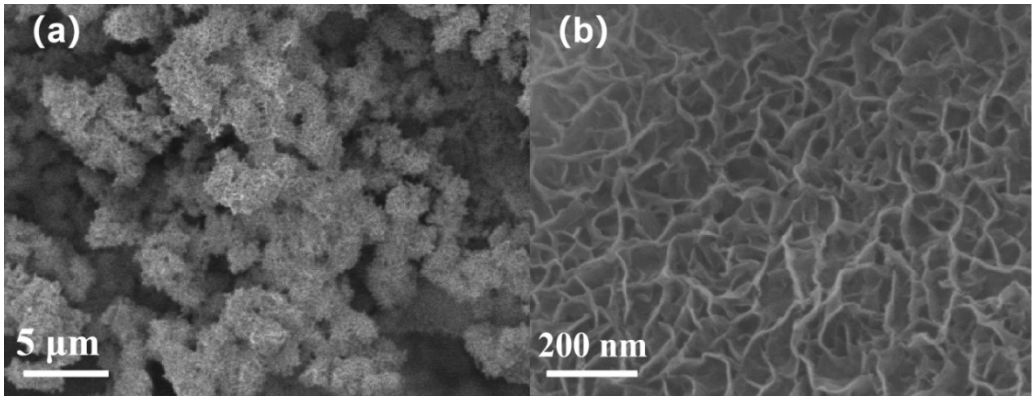

Fig. S8 (a&b) SEM of MoS_2/NiCoP after long time HER test.