

Electronic Supplementary Information

**In-plane intergrowth CoS₂/MoS₂ nanosheet: Binary metal organic
framework evolution and efficient alkaline HER electrocatalysis**

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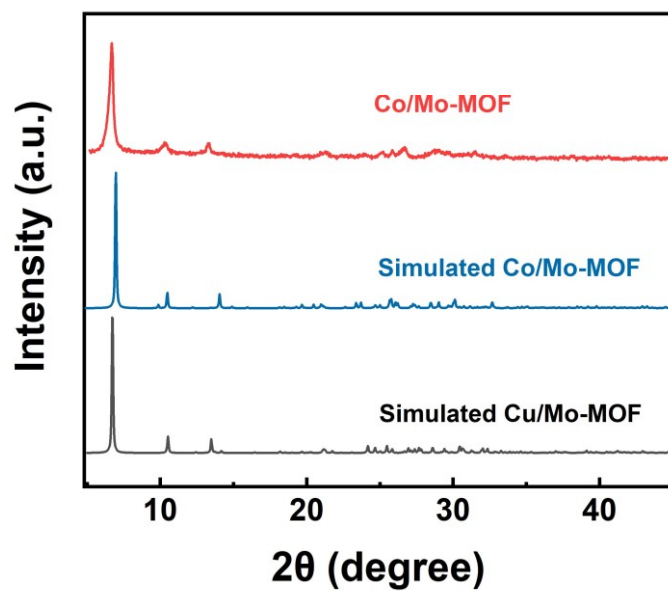


Fig. S1 XRD patterns of Co/Mo-MOF, simulated Co/Mo-MOF and Cu/Mo-MOF.

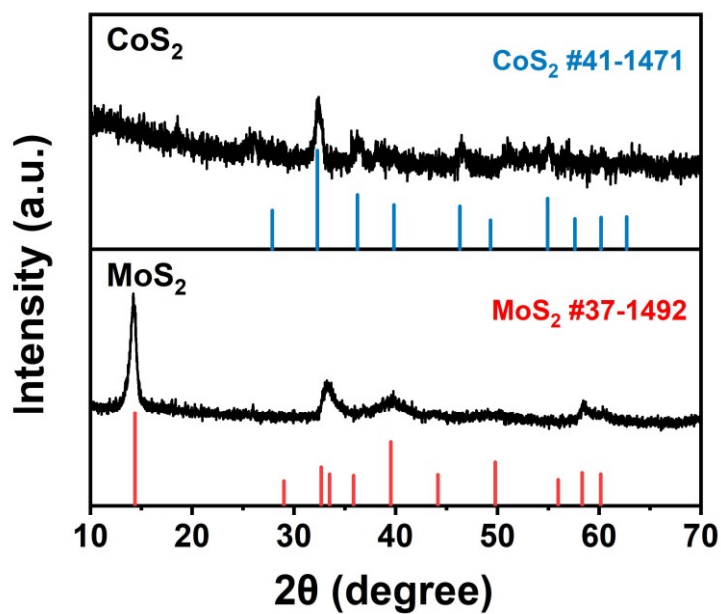


Fig. S2 XRD patterns of control samples of CoS_2 and MoS_2 .

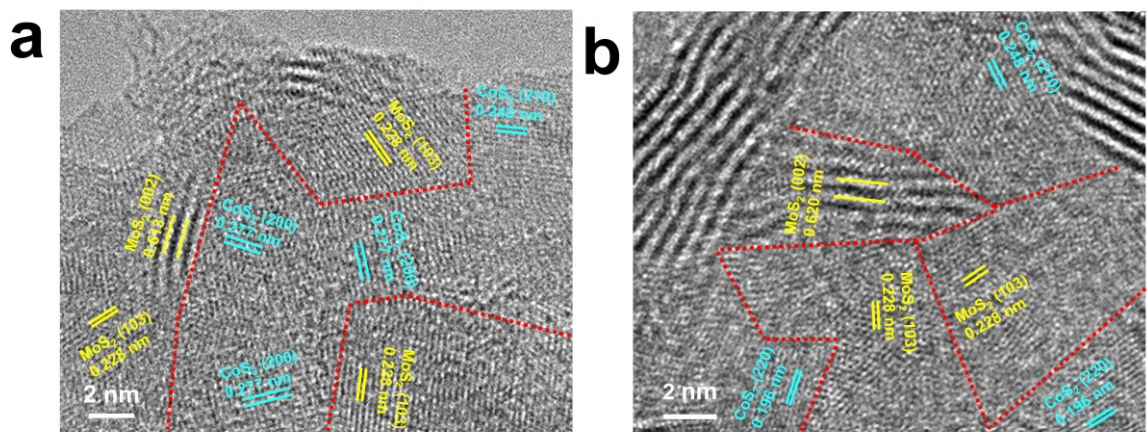


Fig. S3 (a), (b) Additional HRTEM images of CoS₂/MoS₂ intergrowth nanosheets.

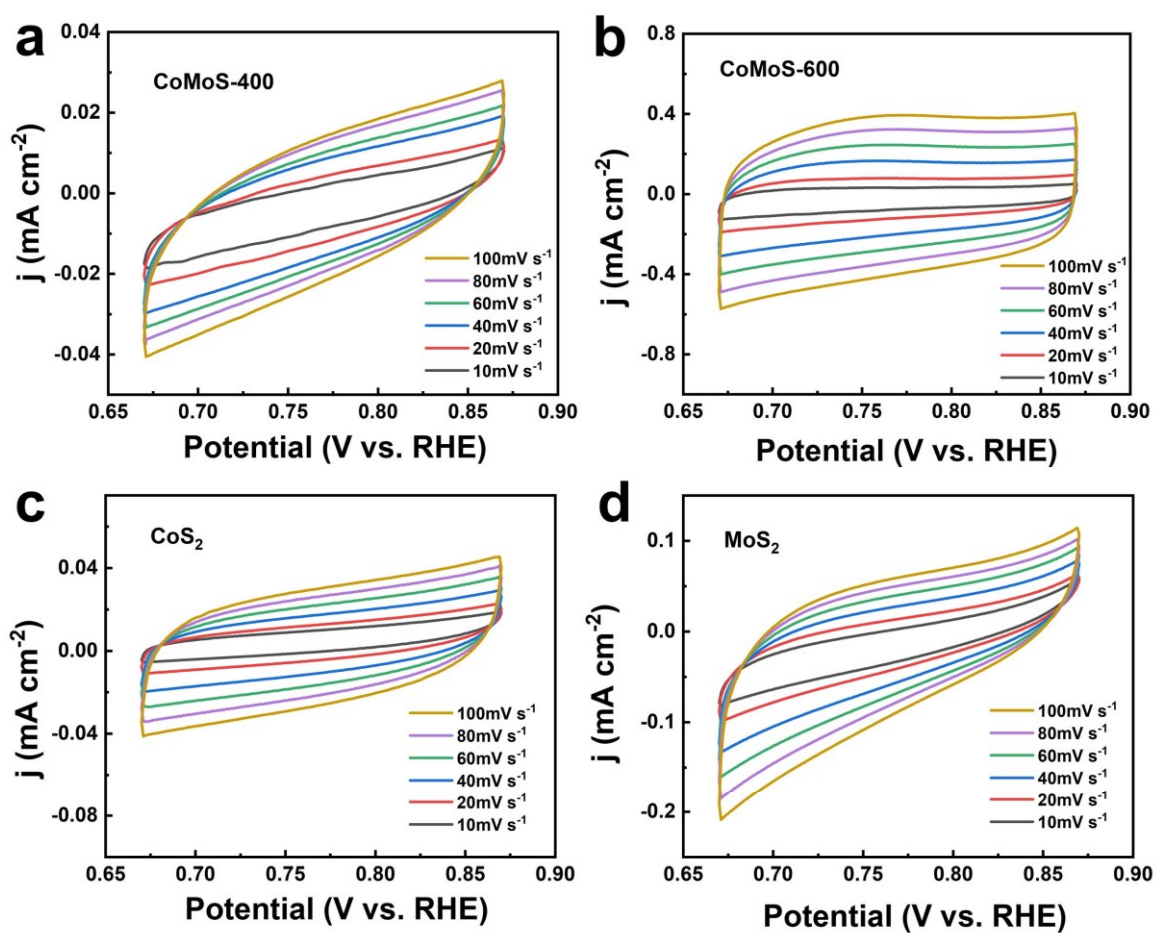


Fig. S4 CV curves of (a) CoMoS-400, (b) CoMoS-600, (c) CoS₂ and (d) MoS₂ at different scan rates.

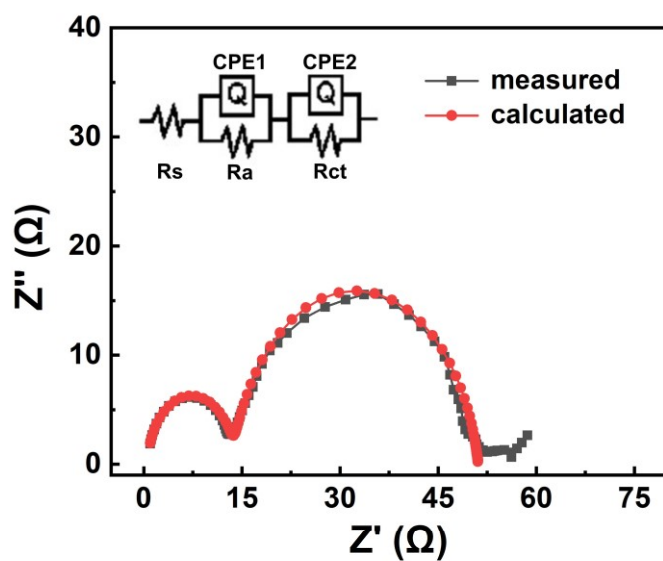


Fig. S5 The Nyquist plots and equivalent circuit of $\text{CoS}_2/\text{MoS}_2$.

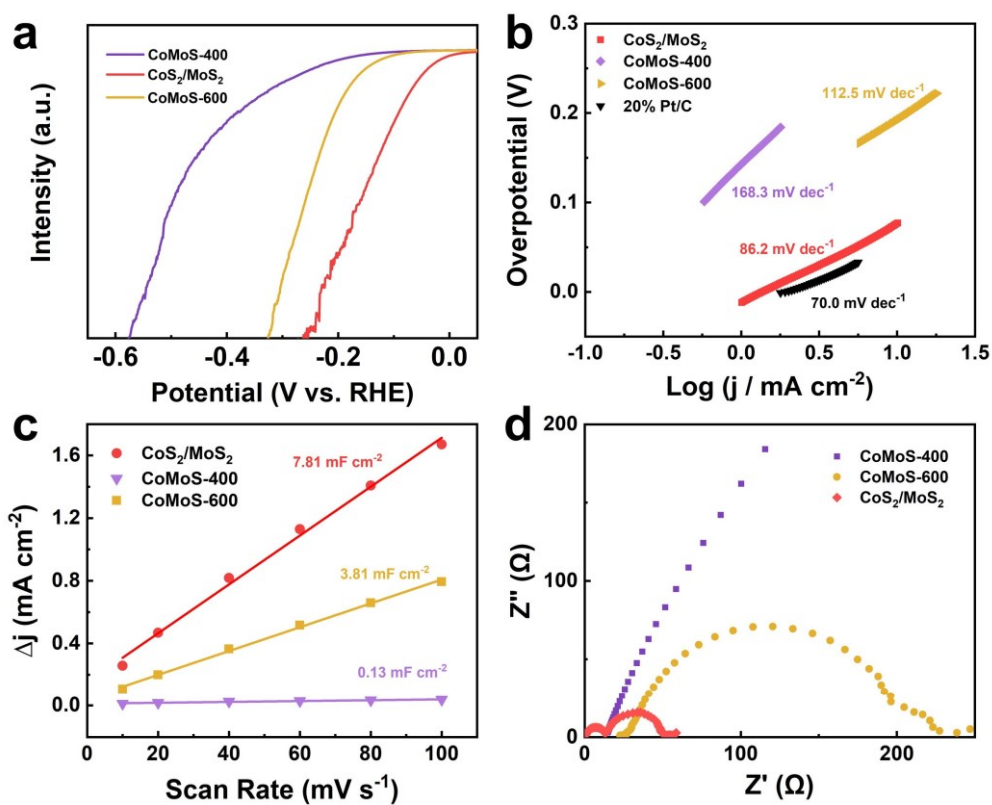


Fig. S6 (a) LSV polarization curves, (b) Tafel plots, (c) Cdl calculation and (d) Nyquist plots of control samples: CoMoS-400 and CoMoS-600 .

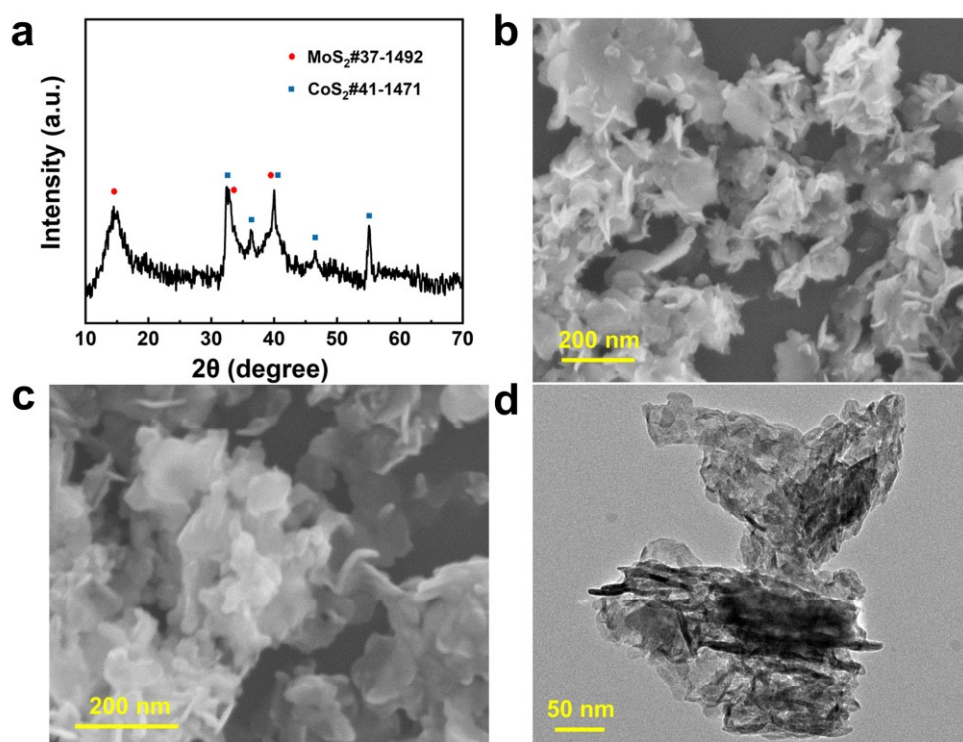


Fig. S7 (a) XRD pattern, (b, c) SEM and (d) TEM images of tested-CoS₂/MoS₂.

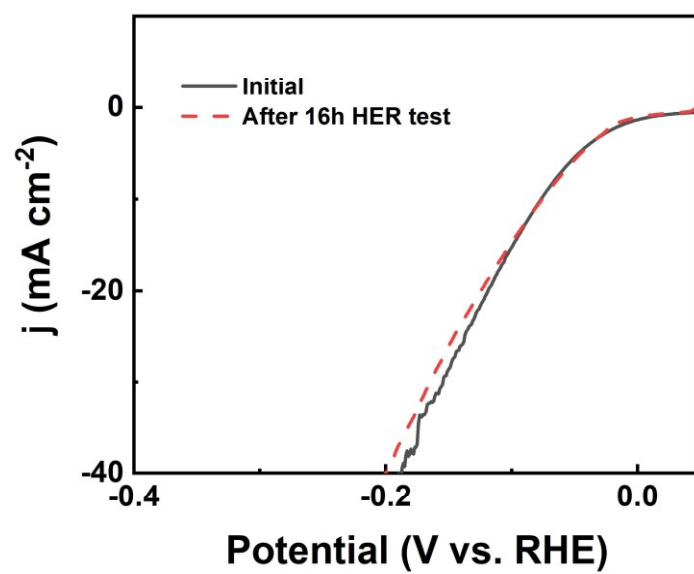


Fig. S8 LSV curves of tested-CoS₂/MoS₂ (red dash line) and CoS₂/MoS₂ (black line).

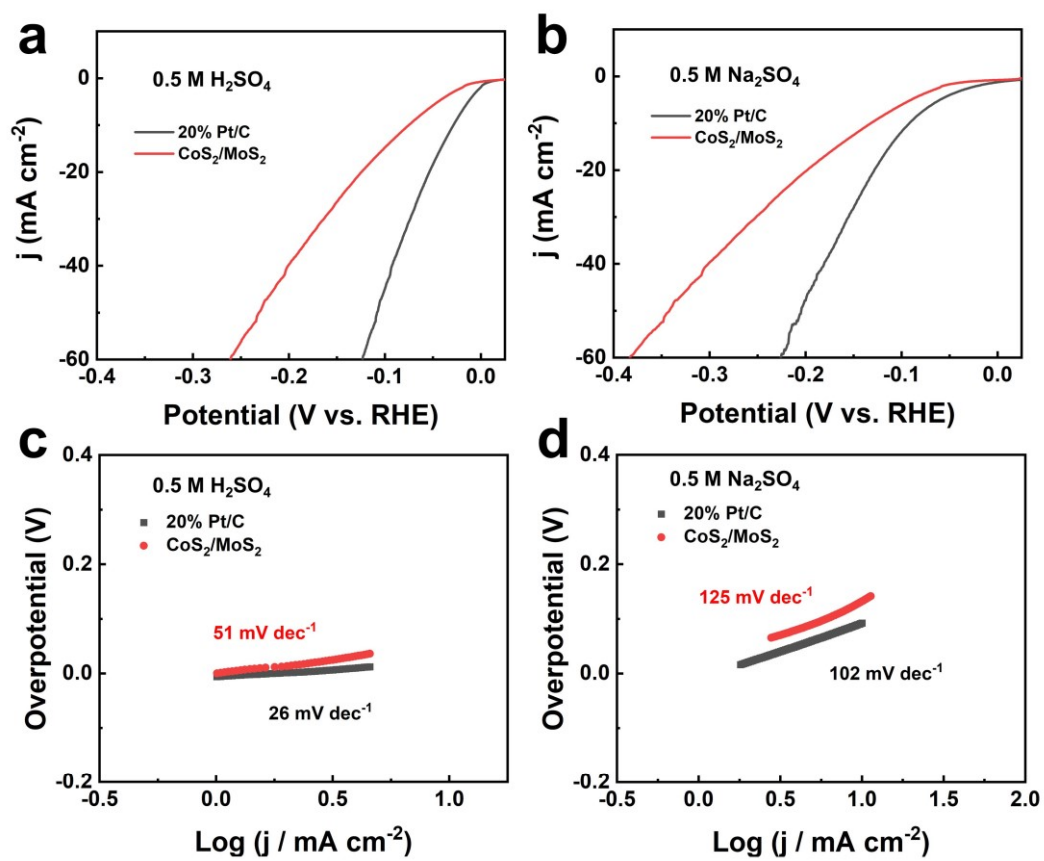


Fig. S9 LSV curves (a, b) and corresponding Tafel plots (c, d) of $\text{CoS}_2/\text{MoS}_2$ and commercial Pt/C in acid and neutral media.