

**Supplementary Information for**  
**Enhanced Electrocatalytic Activity of MoP Microparticles**  
**for Hydrogen Evolution by Grinding and Electrochemical**  
**Activation**

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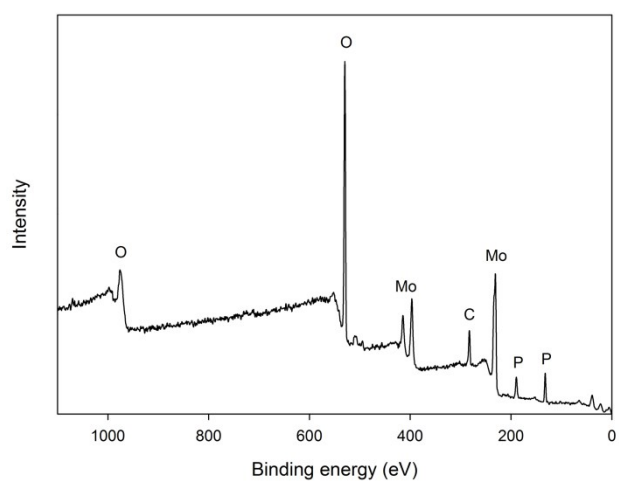


Fig. S1 XPS survey spectrum for long-term stored MoP.

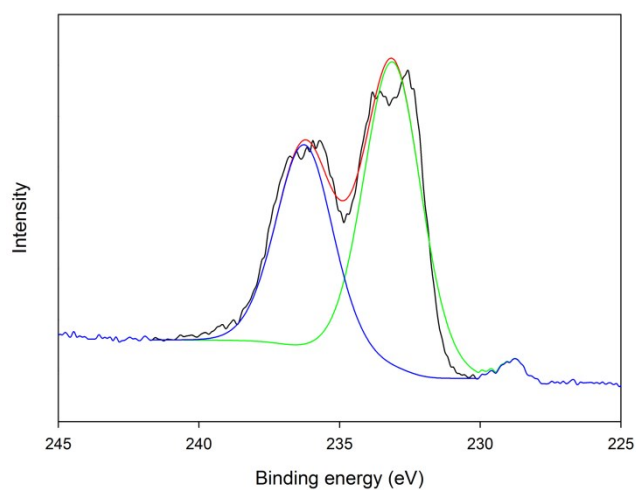


Fig. S2 XPS spectra of Mo 3d region for long-term stored MoP.

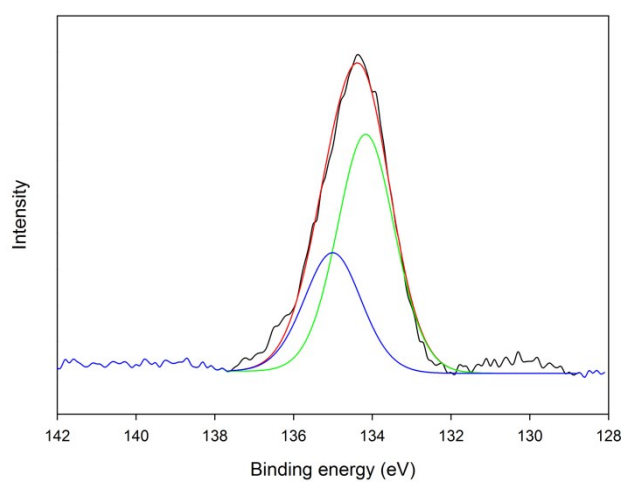


Fig. S3 XPS spectra of P 2p region for long-term stored MoP.

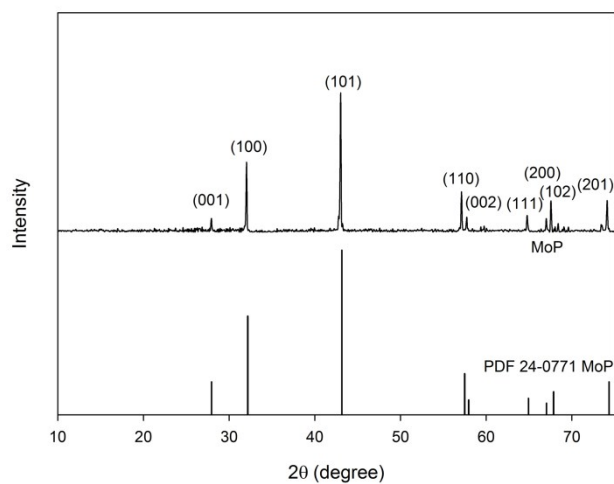


Fig. S4 XRD patterns of long-term stored MoP.

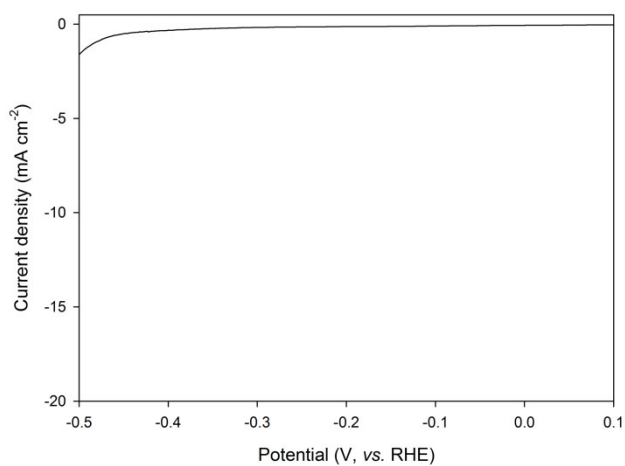


Fig. S5 Polarization curves of long-term stored MoP in 0.5 M  $\text{H}_2\text{SO}_4$  at a scan rate of  $2 \text{ mV s}^{-1}$ .

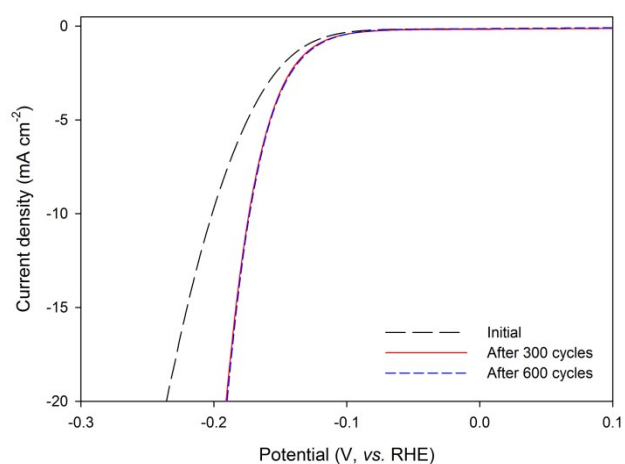


Fig. S6 Polarization curves of milled MoP before and after cyclic voltammetric treatment in 0.5 M  $\text{H}_2\text{SO}_4$  at a scan rate of  $2 \text{ mV s}^{-1}$ , the applied cycle was  $-0.15 \text{ V}$  to  $+0.15 \text{ V}$  vs. RHE at a scan rate of  $100 \text{ mV s}^{-1}$ .

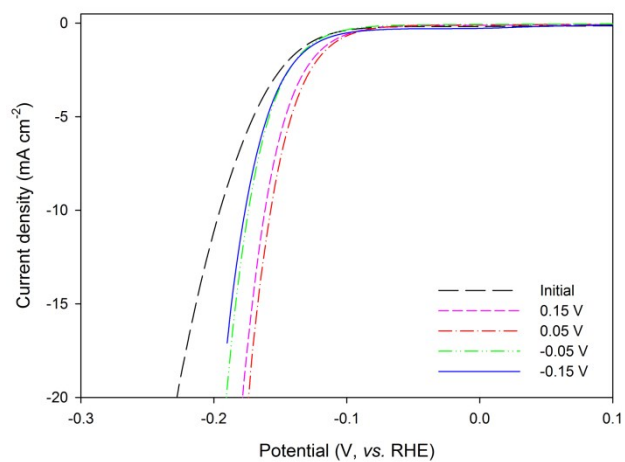


Fig. S7 Polarization curves of milled MoP that electrochemically activated at various potentials in 0.5 M H<sub>2</sub>SO<sub>4</sub> at a scan rate of 2 mV s<sup>-1</sup>.

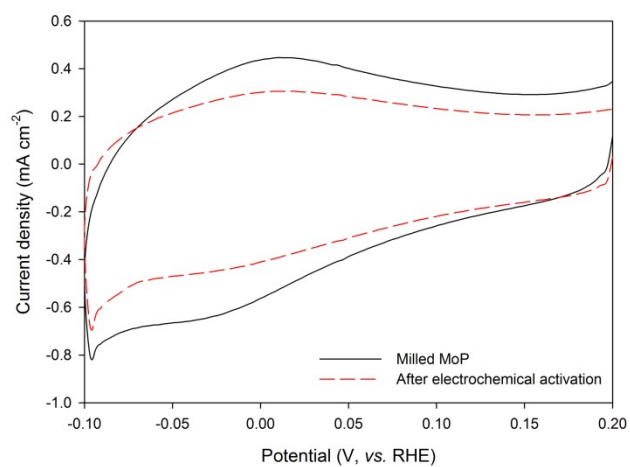


Fig. S8 Cyclic voltammograms of the milled MoP particles in 0.5 M H<sub>2</sub>SO<sub>4</sub> at a scan rate of 50 mV s<sup>-1</sup>.

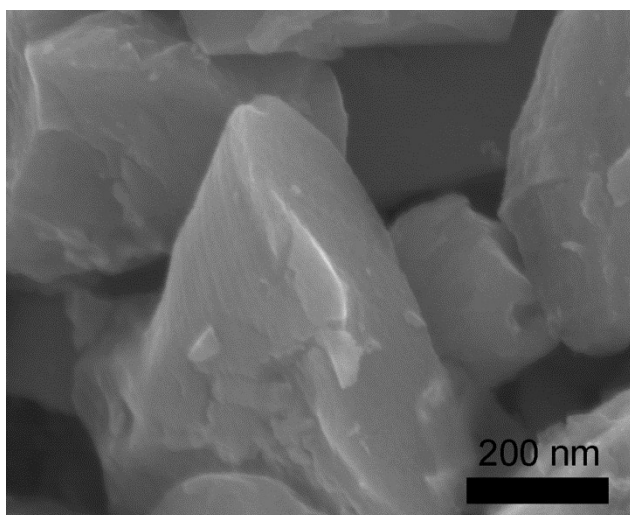


Fig. S9 SEM image of MoP microparticles after electrochemical activation.

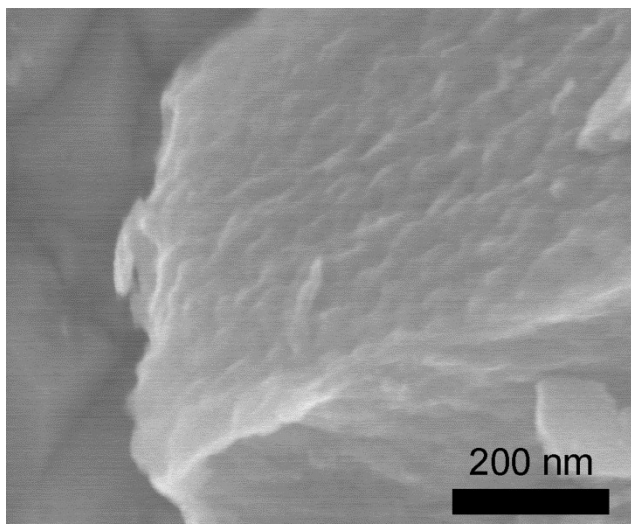


Fig. S10 SEM image of MoP microparticles before electrochemical activation.

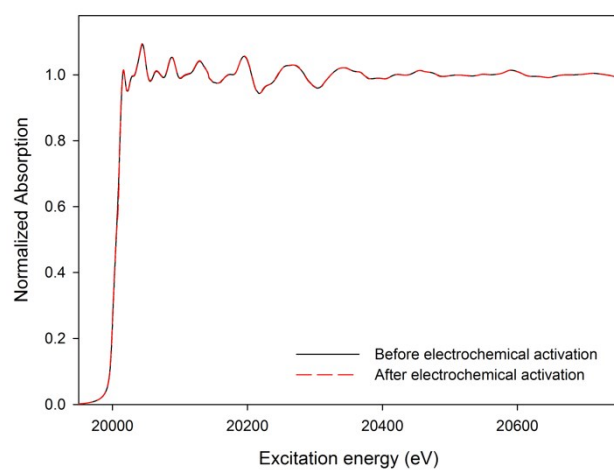


Fig. S11 X-ray absorption structure spectra of MoP microparticles before and after electrochemical activation