

Supporting Information.

Nanoporous Molybdenum Carbide Nanowire as an Advanced Electrocatalyst for the Hydrogen Evolution Reaction

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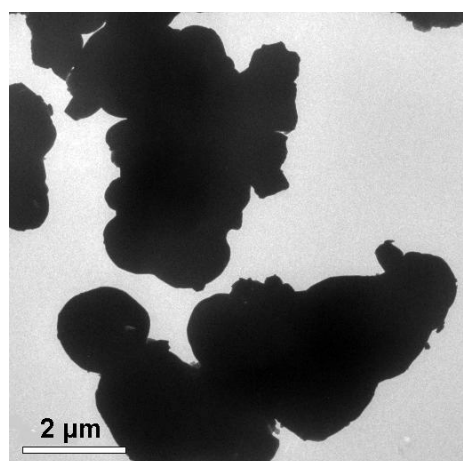


Figure S1. TEM image of commercial Mo₂C sample.

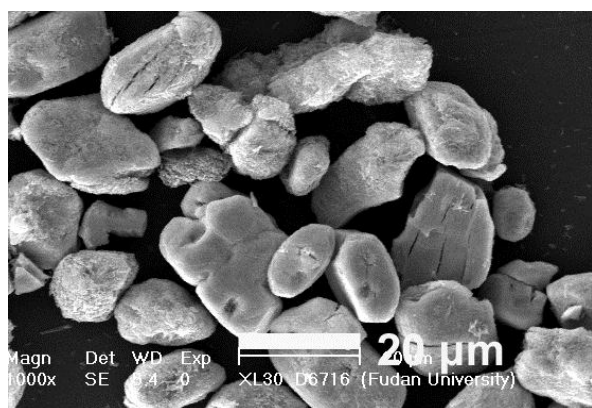


Figure S2. SEM image of bulky Mo₂C foams.

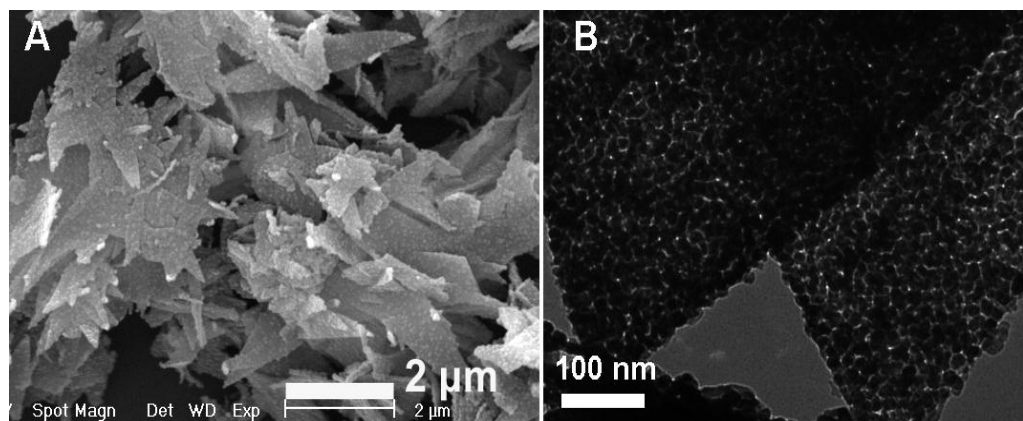


Figure S3. SEM (A) and TEM (B) images of Mo₂C flakes.

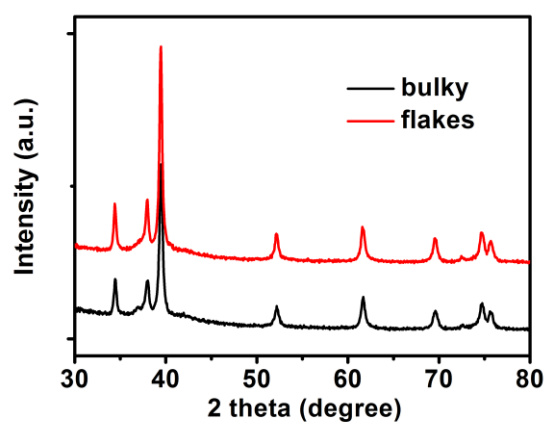


Figure S4. XRD patterns of bulky Mo₂C and Mo₂C flakes.

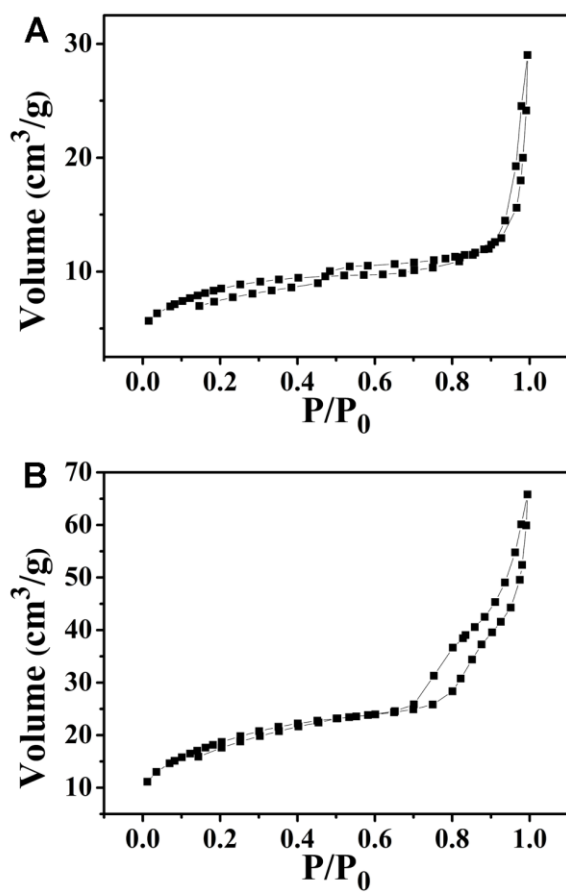


Figure S5. Nitrogen adsorption/desorption isotherm of bulky Mo₂C (A) and Mo₂C flakes (B).

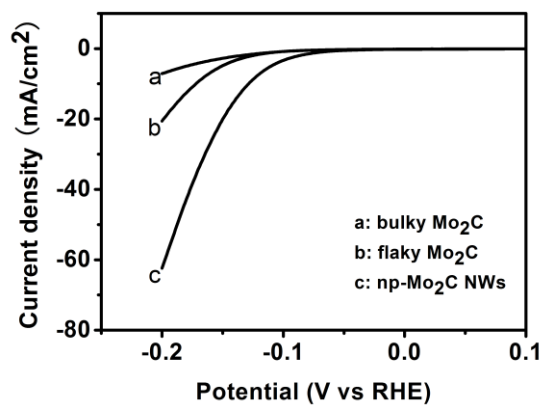


Figure S6. Polarization curves obtained from glassy carbon electrodes modified with np-Mo₂C NWs, bulky Mo₂C and flaky Mo₂C. Each electrode was modified with the same amount of catalysts.

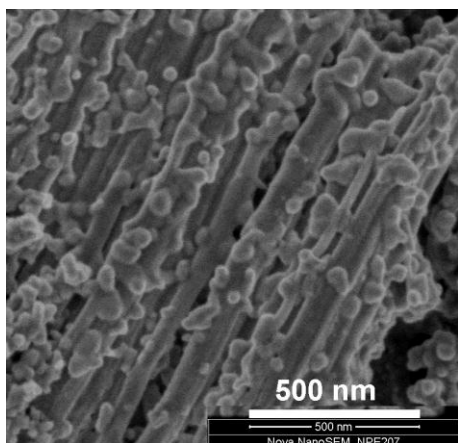


Figure S7. SEM image of np-Mo₂C NWs mixed with Vulcan carbon (w/w 1:1).

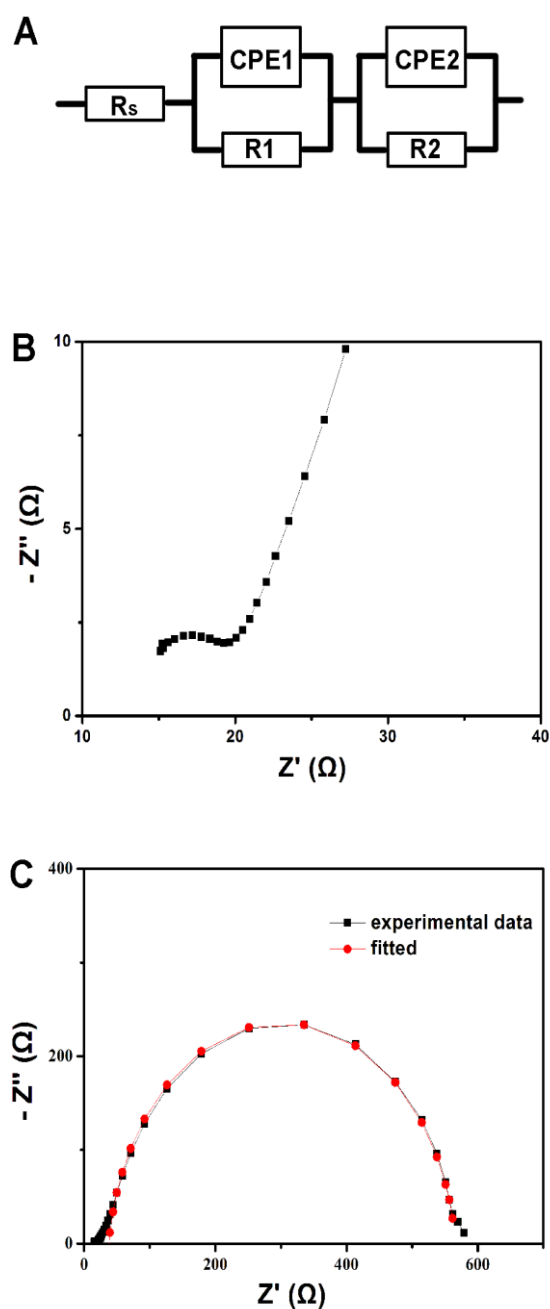


Figure S8. (A) Equivalent electrical circuit used to model the HER process on np-Mo₂C NWs-modified GCE at various overpotentials. (B-C) Nyquist plots of np-Mo₂C NWs-modified GCE at $\eta = 90$ mV. The square symbols are experimental data and line with the circle dots is modeled by (A).

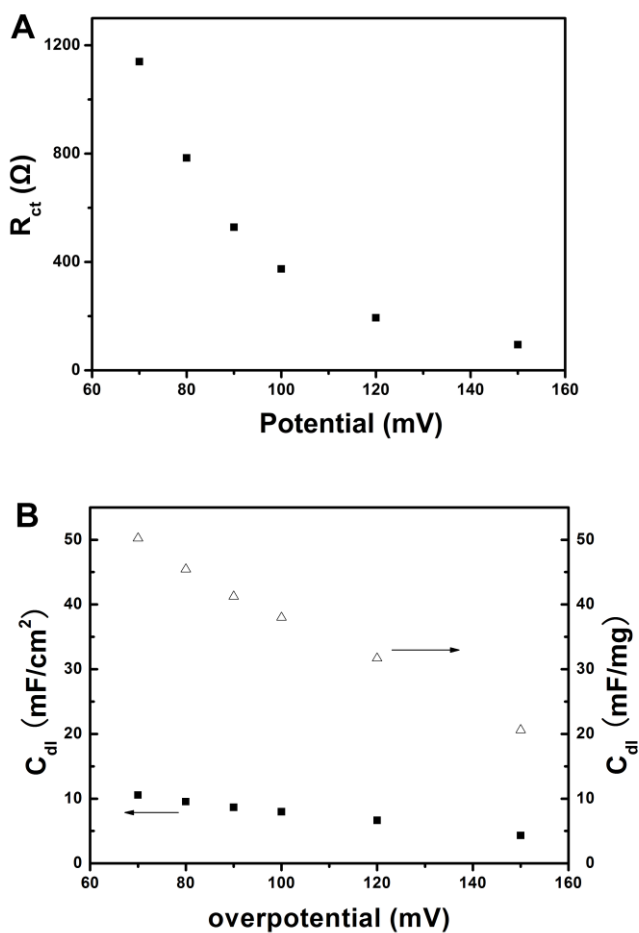


Figure S9. The low-frequency charge transfer resistance R_{ct} (A) and constant phase element (B) as a function of the HER overpotentials for np-Mo₂C NWs-modified GCE in 0.5 M H₂SO₄.

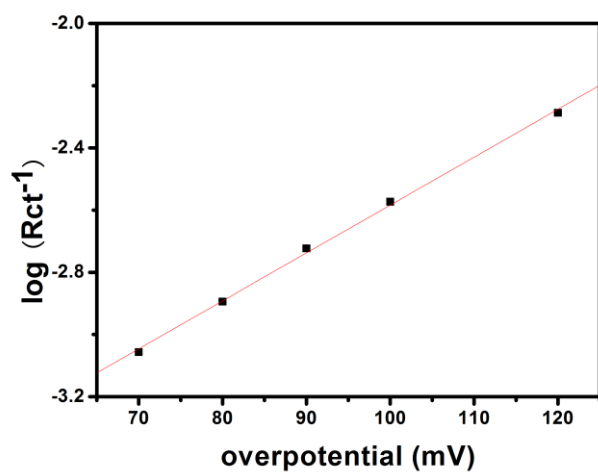


Figure S10. Plots of $\log (R_{ct}^{-1})$ vs. overpotential for np-Mo₂C NWs.