

Supporting Information

Epitaxial heterogeneous interfaces construction of Ni–MoS₂/N-doped porous carbon cages/CC for efficient hydrogen evolution reaction

Xin Yang[†], Ruihua Hao[†], Yu Han, Jingyang Tian*, Xiangbin Ge, Minghui Cao, Jingwei Wang, Chong Lin*

Jiangxi Province Key Laboratory of Functional Organic Polymers, School of Chemistry and Materials Science, East China University of Technology, Nanchang, Jiangxi, 330013, P. R. China

Corresponding author: jytian2012@163.com (Prof. Tian); clin2008@163.com (Prof. Lin)

[†] These authors contributed equally.

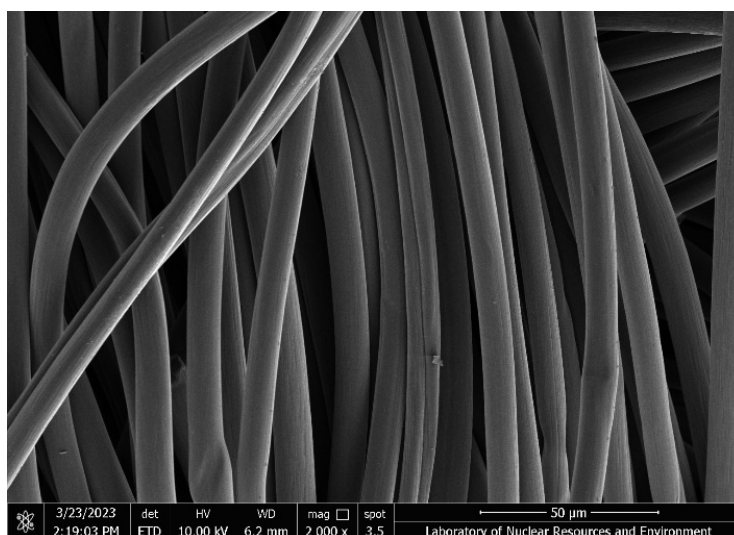


Figure S1. SEM image of CC.

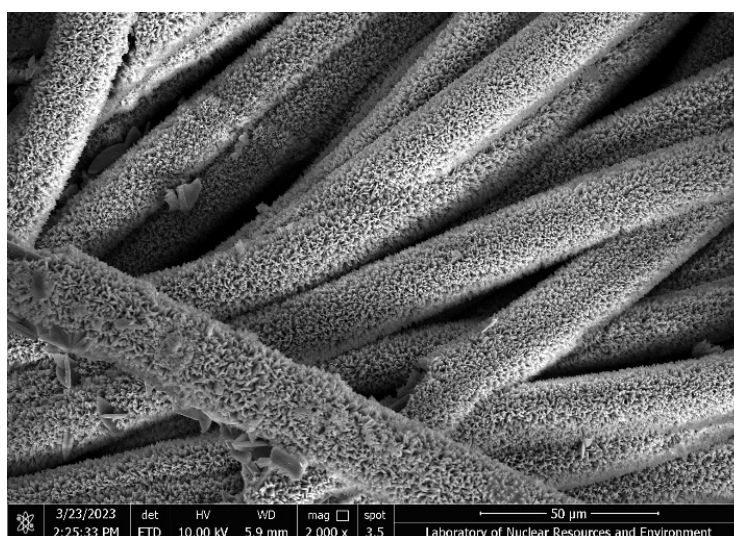


Figure S2. SEM image of ZIF-8/CC.

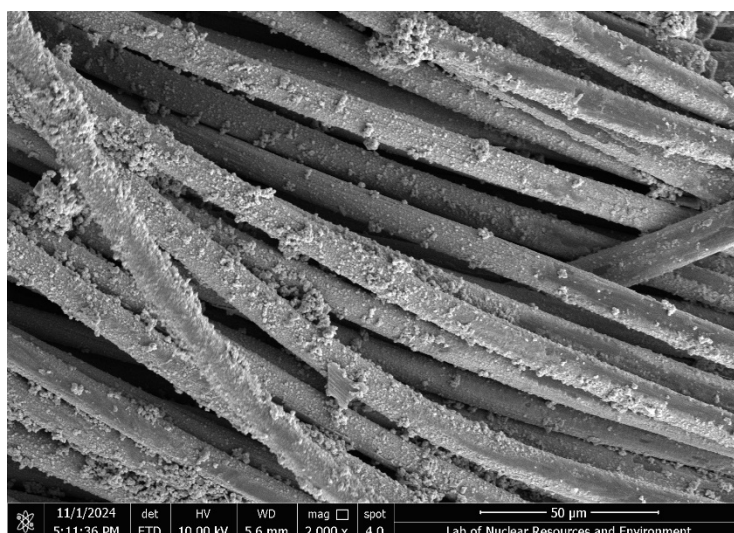


Figure S3. SEM image of MoS₂/CC.

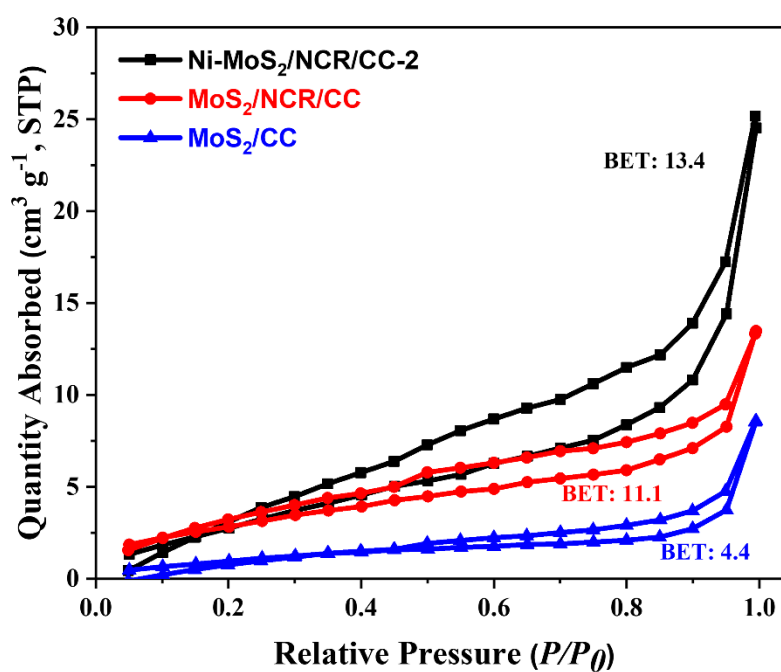


Figure S4. Nitrogen adsorption–desorption isotherms.

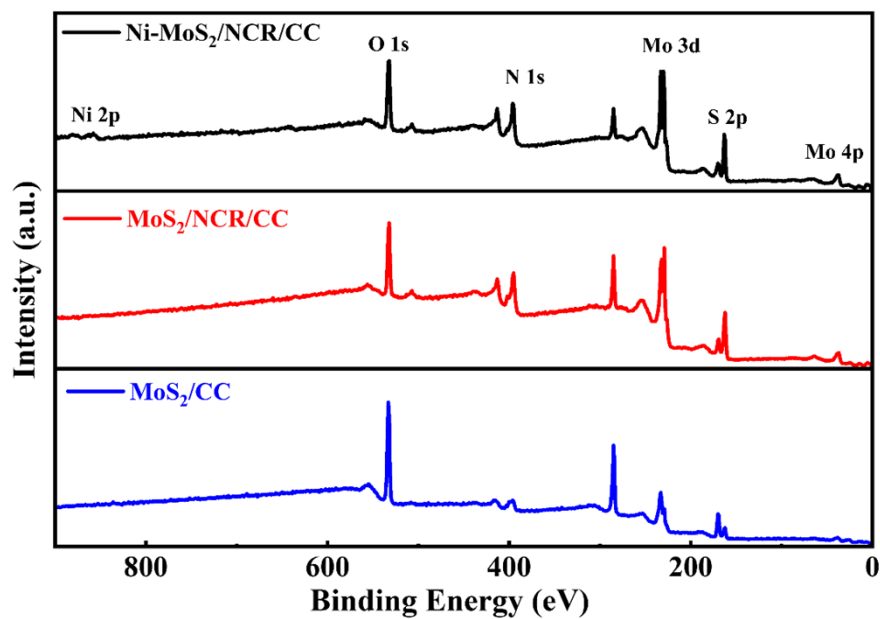


Figure S5. Full XPS spectra of Ni-MoS₂/NCR/CC-2, MoS₂/NCR/CC, and MoS₂/CC.

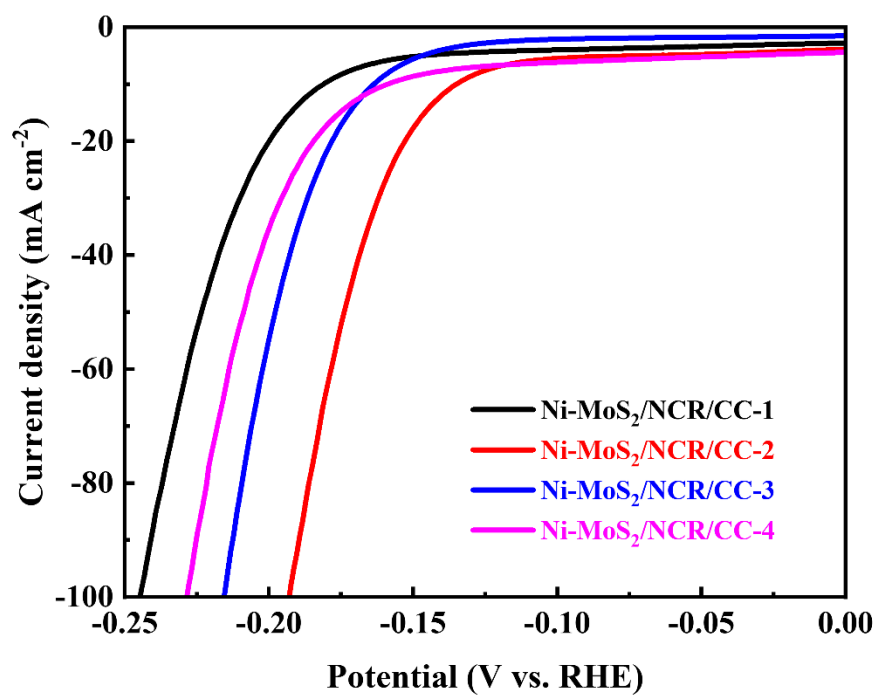


Figure S6. LSV curves of the Ni-MoS₂/NCR/CC-1, -2, -3, and -4.

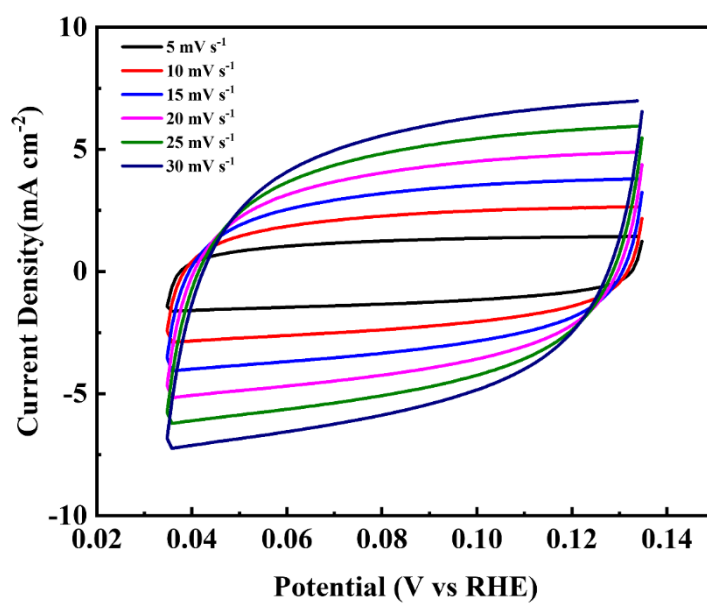


Figure S7. CV curves of Ni-MoS₂/NCR/CC-2 at different scan rates

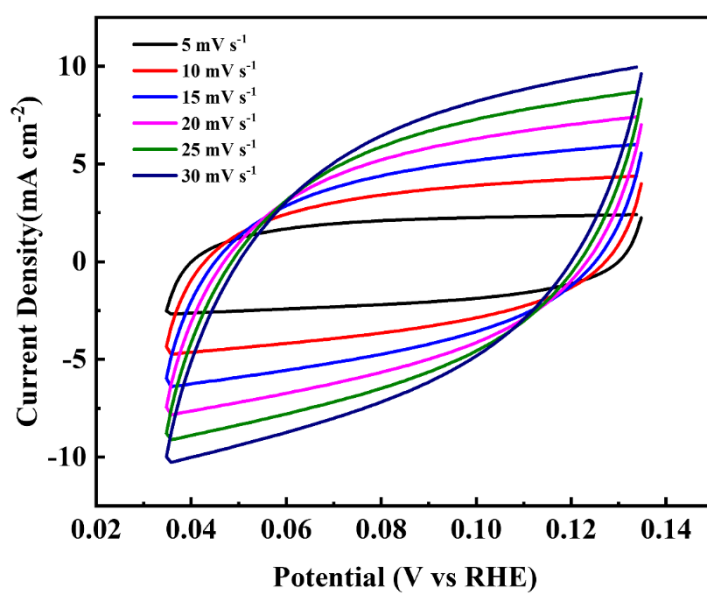


Figure S8. CV curves of MoS₂/NCR/CC at different scan rates

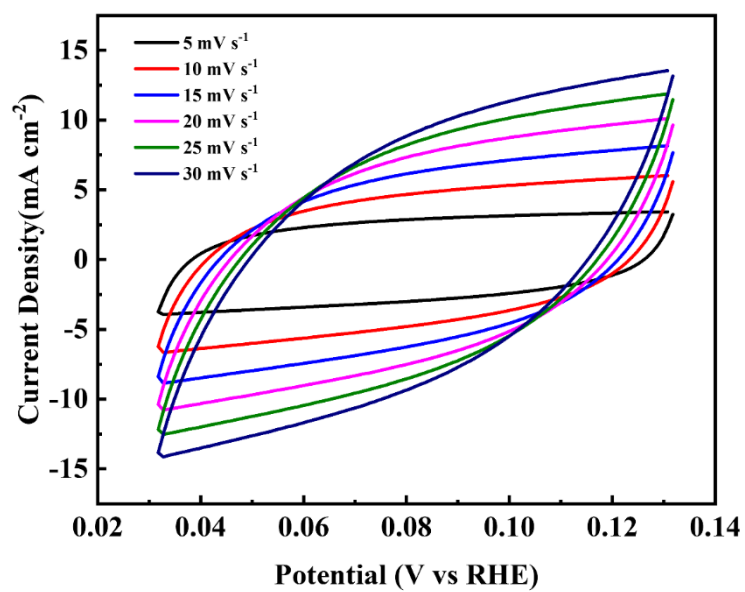


Figure S9. CV curves of MoS₂/CC at different scan rates

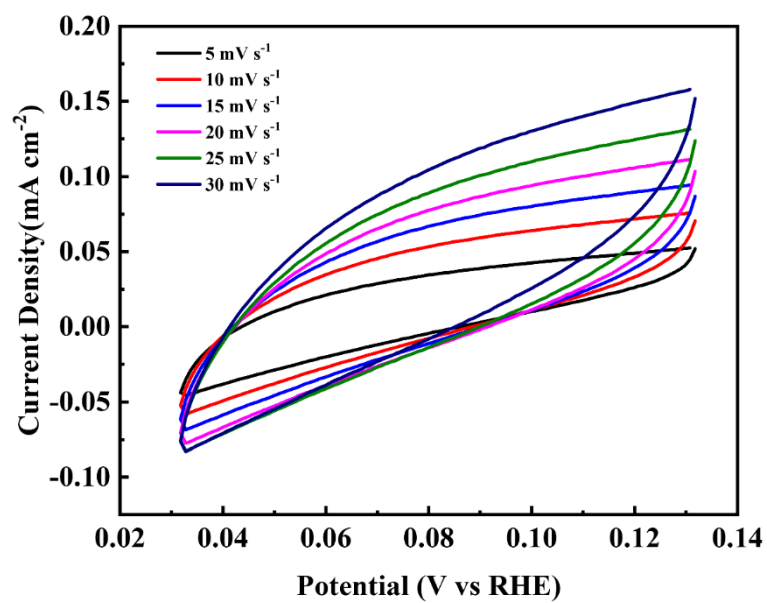


Figure S10. CV curves of NCS/CC at different scan rates

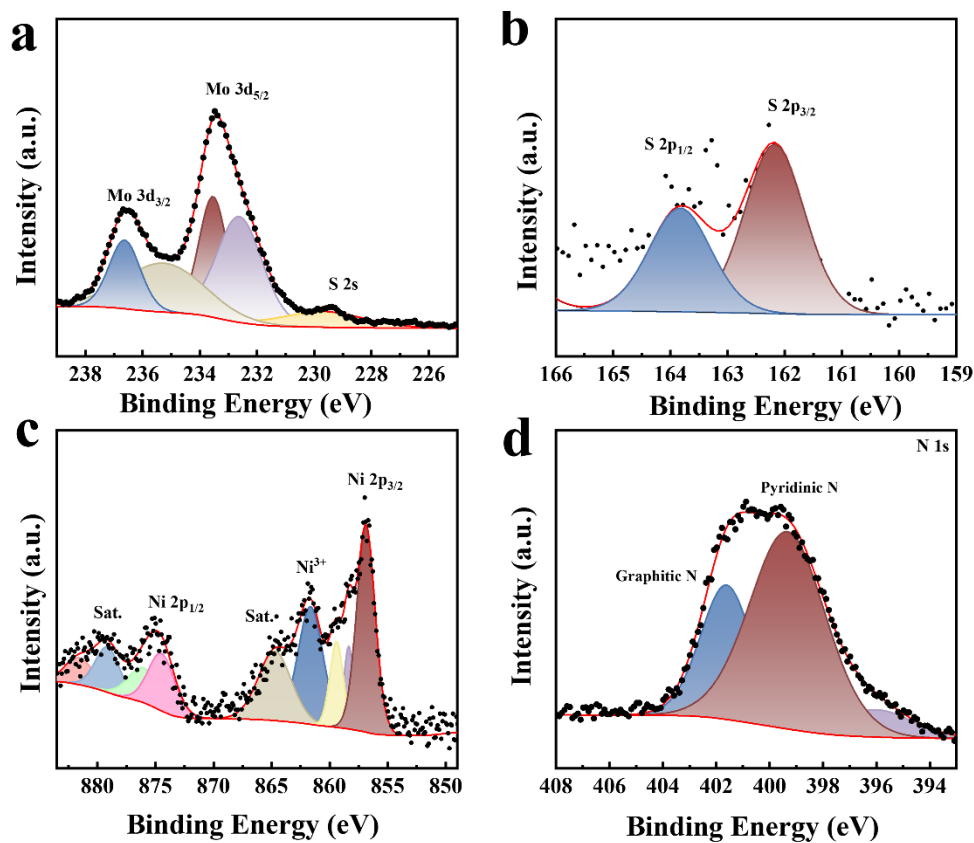


Figure S11. High-resolution XPS spectra of the Ni-MoS₂/NCR/CC-2 after 36 h stability test. (a) Mo 3d, (b) S 2p, (c) Ni 2p and (d) N 1S.

Table S1. Comparison of electrocatalytic hydrogen evolution performance of different catalysts

Material	Structure	η_{10} (mV)	Tafel slop (mA dec ⁻¹)	Ref.
MoS ₂ /Mo foil	Nanosheets	175	55	56
N-doped MoS ₂	Nanosheets	164	71	57
2H-TaS ₂	Nanoflakes	145	121	58
Zn _{0.1} Co _{0.9} Se ₂	Ployhedrons	140	49.9	59
Ni–MoS ₂ /NCR/CC –2	Nanoflakes	136	77	This work