

Coupling of NiFe-Based Metal-Organic Framework Nanosheet Arrays with Embedded Fe-Ni₃S₂ Clusters as Efficient Bifunctional Electrocatalysts for Overall Water Splitting

Xianbiao Hou^{1#}, Tianyuan Jiang^{1#}, Xiujuan Xv¹, Xingkun Wang¹, Jian Zhou¹, Huimin Xie¹, Zhicheng Liu¹, Lei Chu^{1*} and Minghua Huang^{1*}

¹School of Materials Science and Engineering, Ocean University of China, Qingdao 266100, China

*Corresponding authors. E-mails: chulei@ouc.edu.cn and huangminghua@ouc.edu.cn

These authors contributed equally to this work.

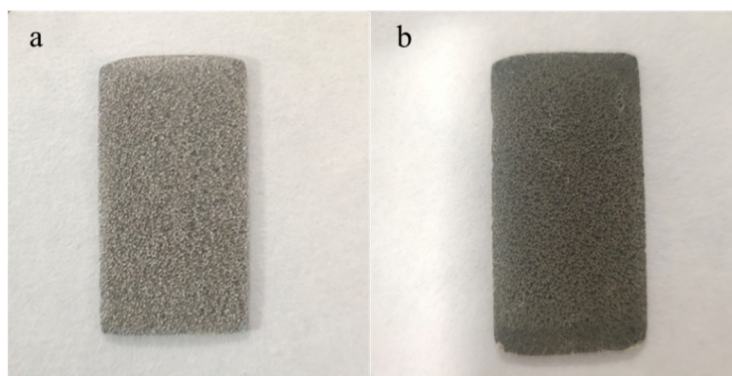


Figure S1. Photographs of (a) NF and (b) Fe-Ni₃S₂@NiFe-MOF/NF.

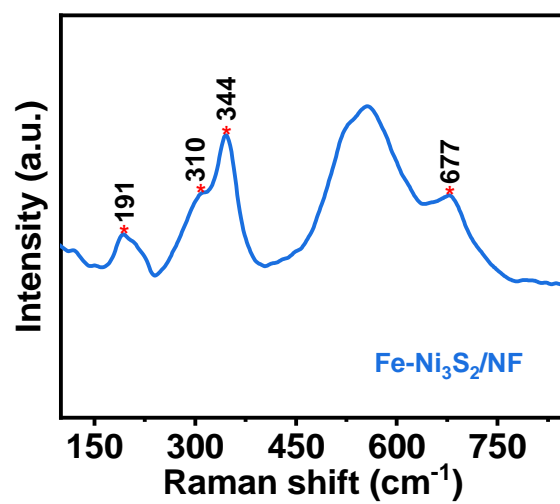


Figure S2. The Raman spectra of Fe-Ni₃S₂/NF.

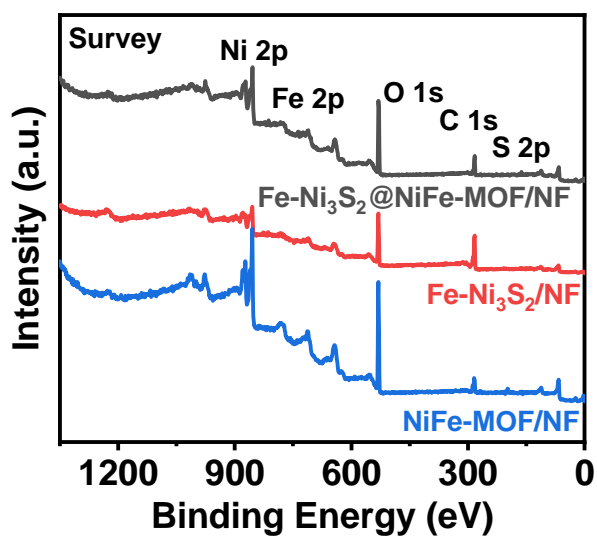


Figure S3. XPS survey spectra of different samples.

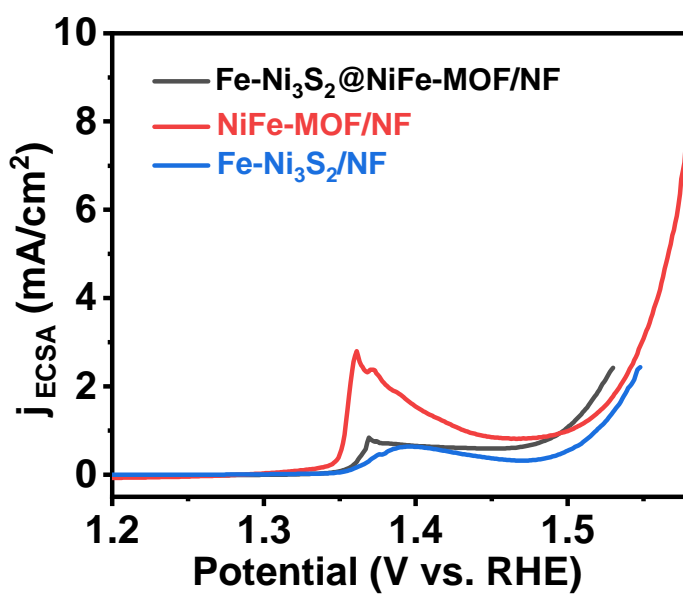


Figure S4. Polarization curves normalized to the electrochemical active surface area (ECSA).

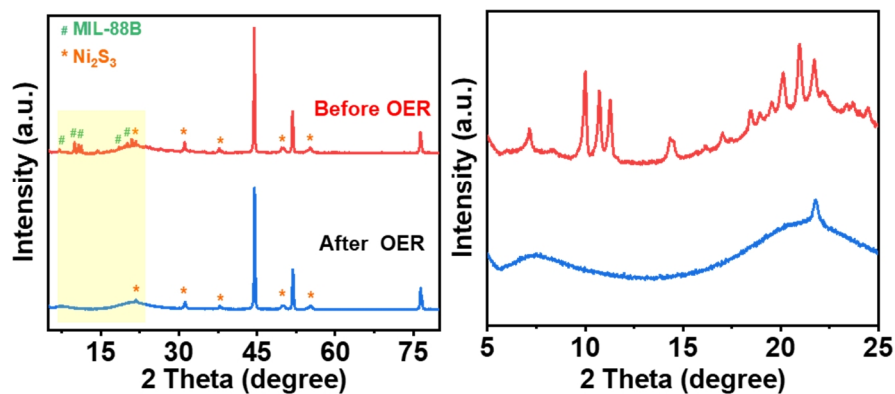


Figure S5. XRD pattern of the Fe-Ni₃S₂@NiFe-MOF/NF before and after OER test.

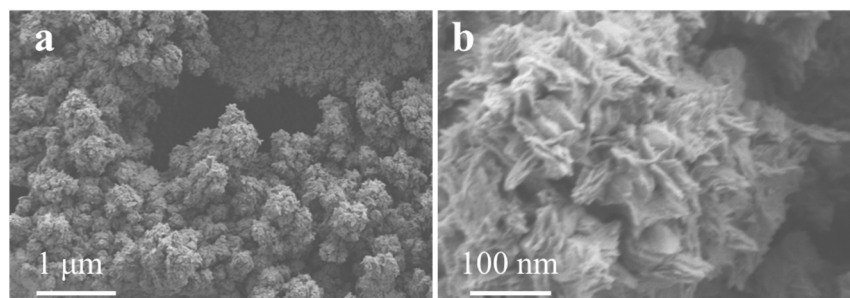


Figure S6. SEM images of the Fe-Ni₃S₂@NiFe-MOF/NF after OER test.

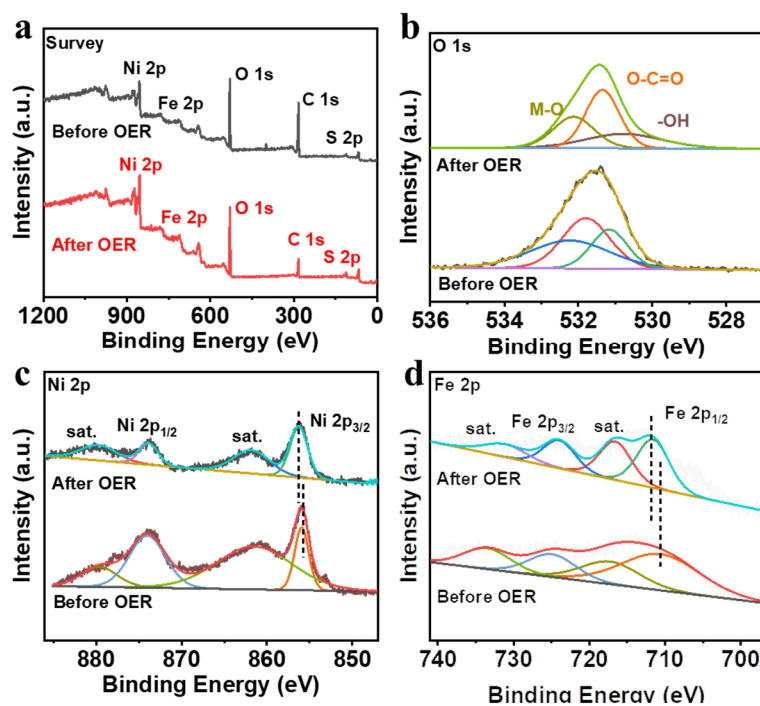


Figure S7. XPS spectra of (a) survey, (b) O 1s, (c) Ni 2p, and (d) Fe 2p for the Fe-Ni₃S₂@NiFe-MOF/NF before and after OER test.

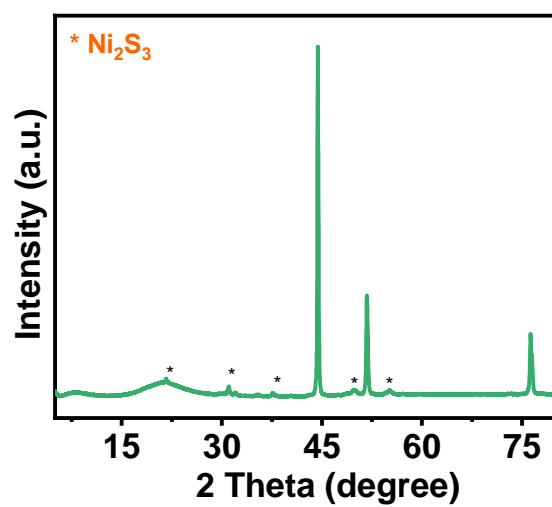


Figure S8. XRD pattern of the Fe-Ni₃S₂@NiFe-MOF/NF after HER test.

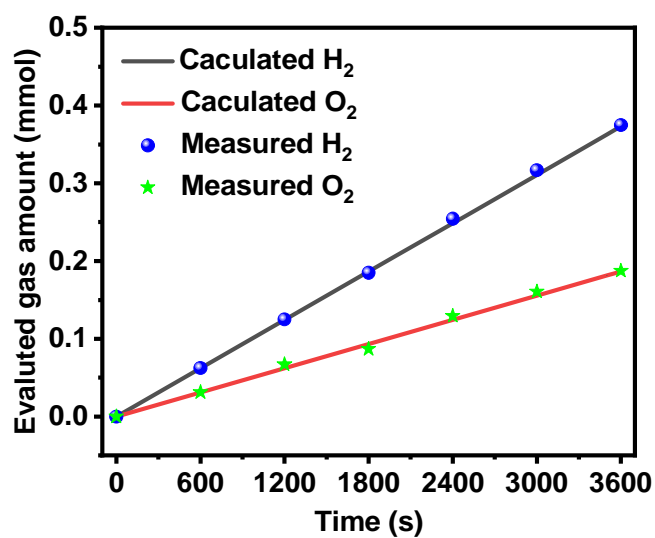


Figure S9. The theoretically calculated and experimentally measured gas amount vs. time in assembled Fe-Ni₃S₂@NiFe-MOF/NF//Fe-Ni₃S₂@NiFe-MOF/NF system.

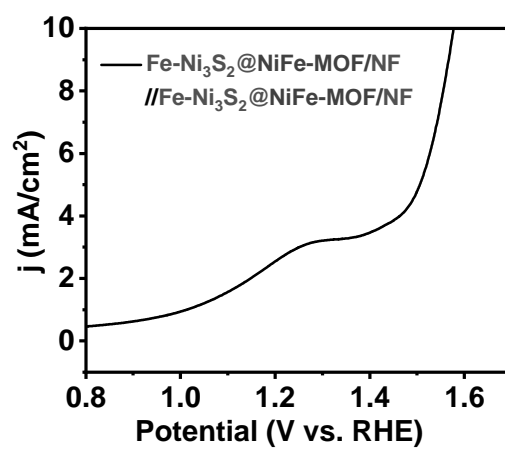


Figure S10. LSV curves for the couple of Fe-Ni₃S₂@NiFe-MOF/NF//Fe-Ni₃S₂@NiFe-MOF/NF and RuO₂//Pt/C in the voltage range of 0.8-1.7V.