

Supporting information

# **Solvothermally Doping NiS<sub>2</sub> Nanoparticles on Carbons with Ferric Ions for Efficient Oxygen Evolution Catalysis**

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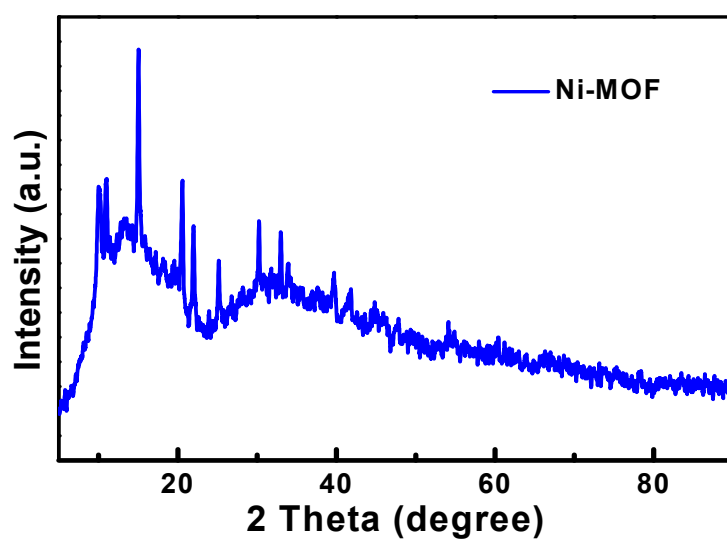


Figure S1. XRD profile of Ni-MOF.

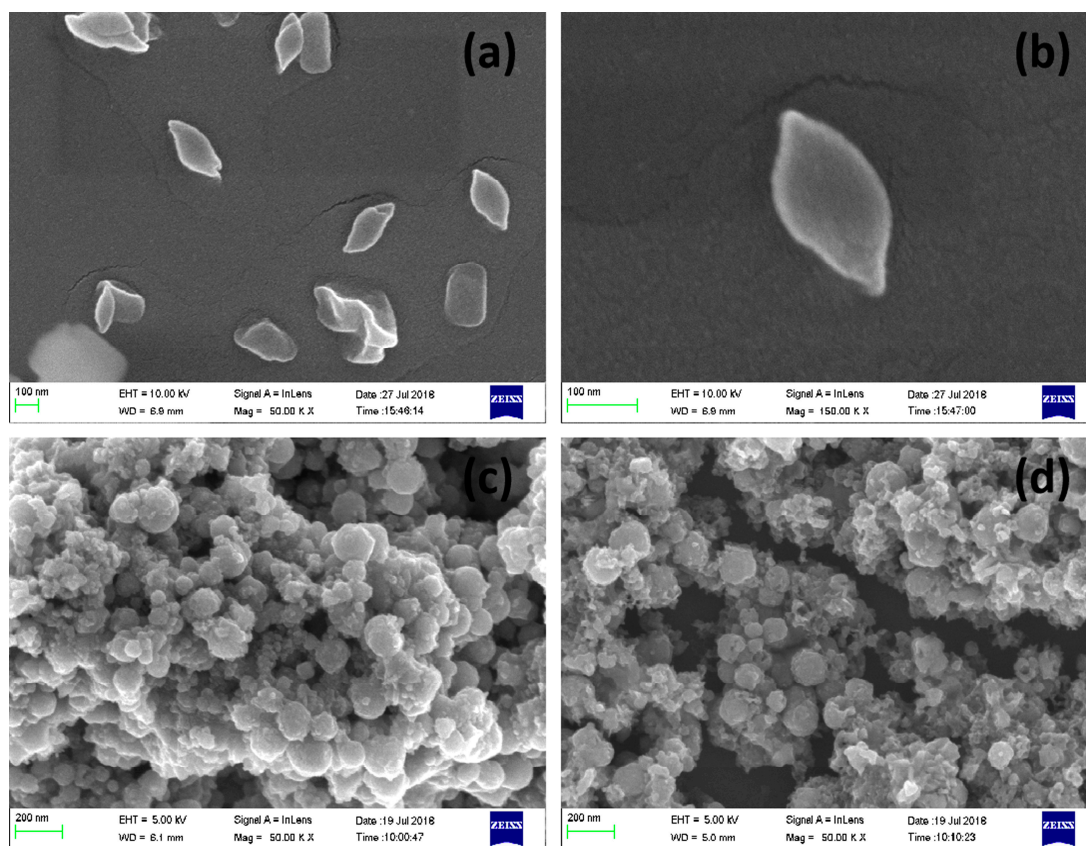
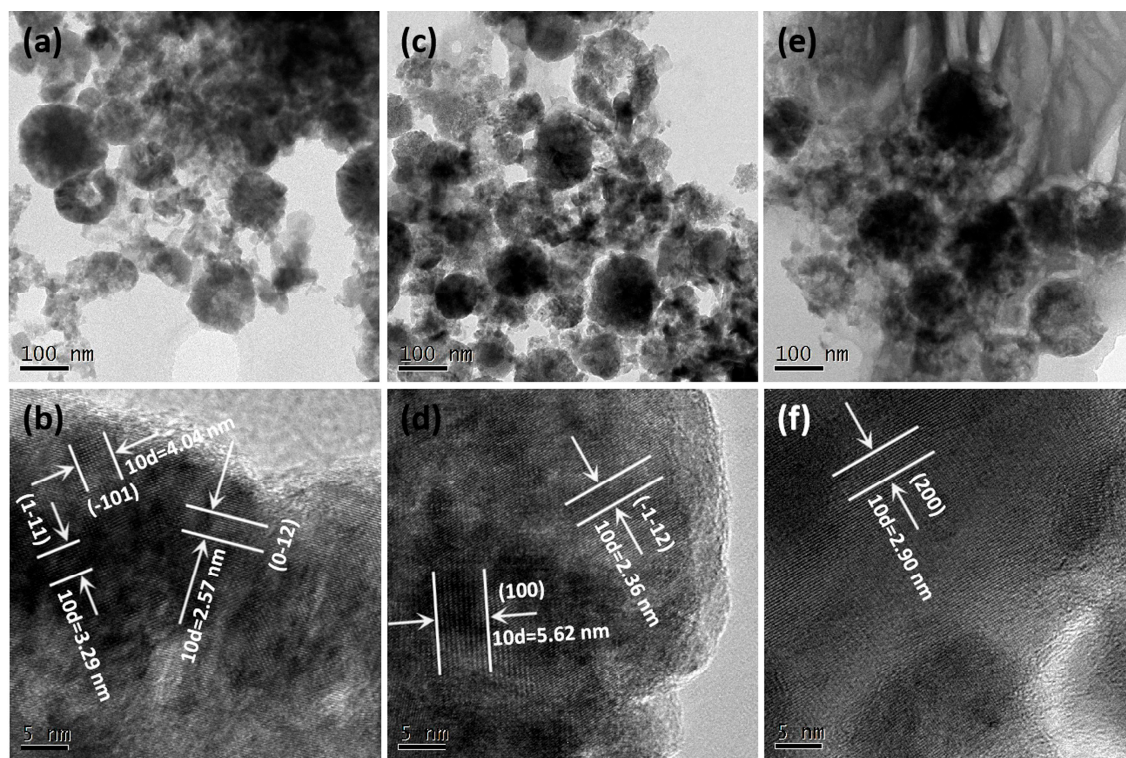
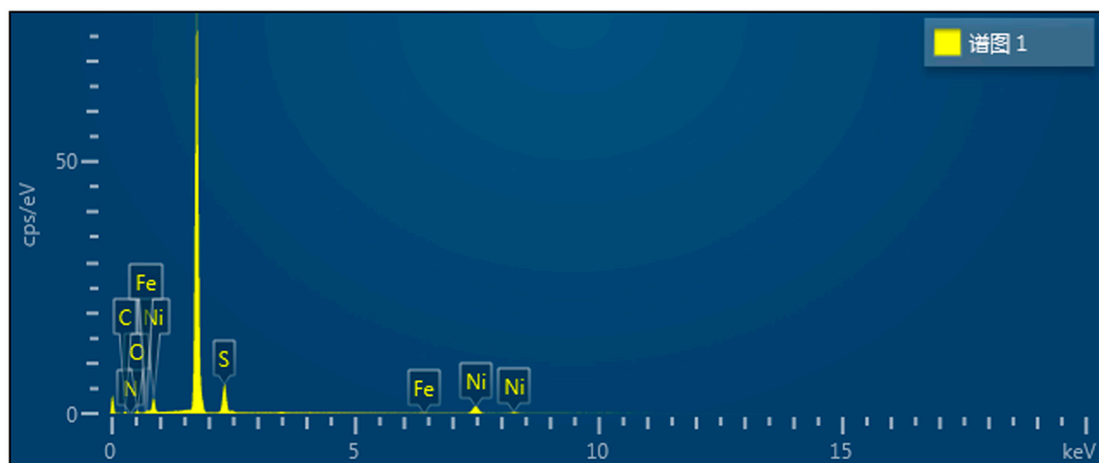


Figure S2. SEM images of (a,b) Ni-MOFs, (c) Fe-NiS<sub>2</sub>/C-10, and (d) Fe-NiS<sub>2</sub>/C-50.



**Figure S4.** TEM images for (a, b) NiS<sub>2</sub>/C, (c, d) Fe-NiS<sub>2</sub>/C-10 and (e, f) Fe-NiS<sub>2</sub>/C-50

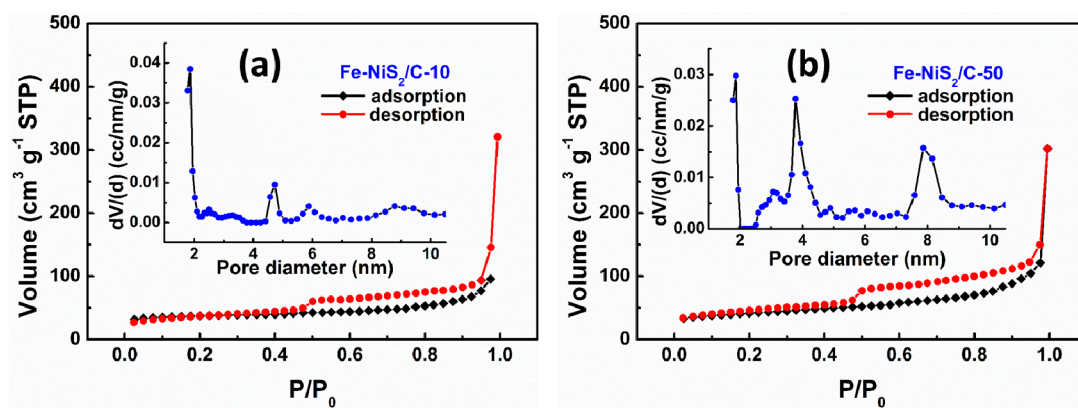


Figure S5. N<sub>2</sub> adsorption-desorption isotherms for (a) Fe-NiS<sub>2</sub>/C-10, and (b) Fe-NiS<sub>2</sub>/C-50. Inset in each panel is the corresponding pore diameter distribution plot.

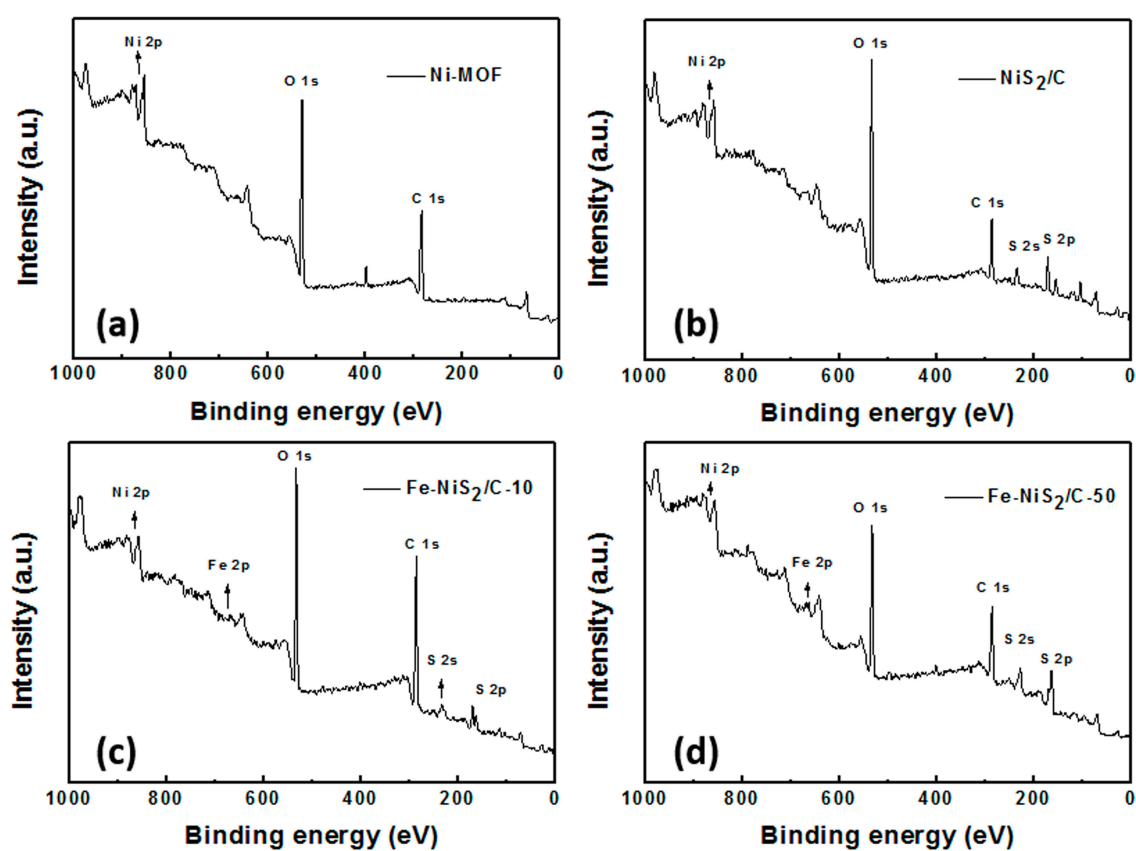


Figure S6. XPS spectra of (a) Ni-MOF, (b) NiS<sub>2</sub>/C, (c) Fe-NiS<sub>2</sub>/C-10 and (d) Fe-NiS<sub>2</sub>/C-50.



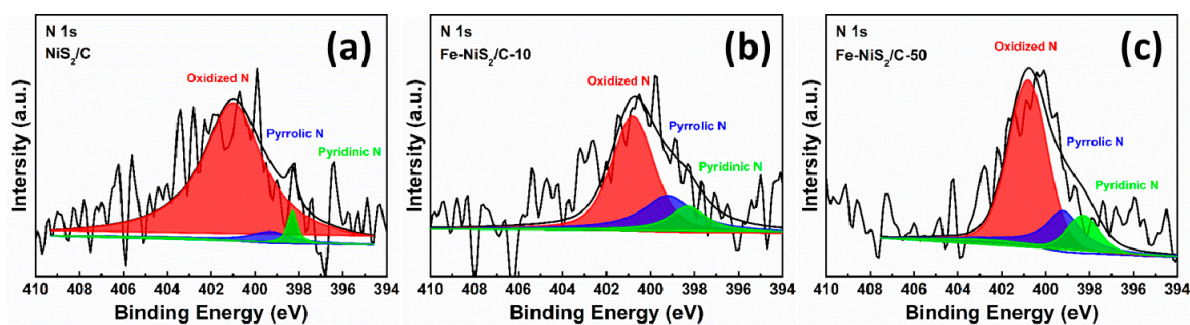


Figure S7. XPS high-resolution spectra of N 1s for (a) NiS<sub>2</sub>/C, (b) Fe-NiS<sub>2</sub>/C-10 and (c) Fe-NiS<sub>2</sub>/C-50

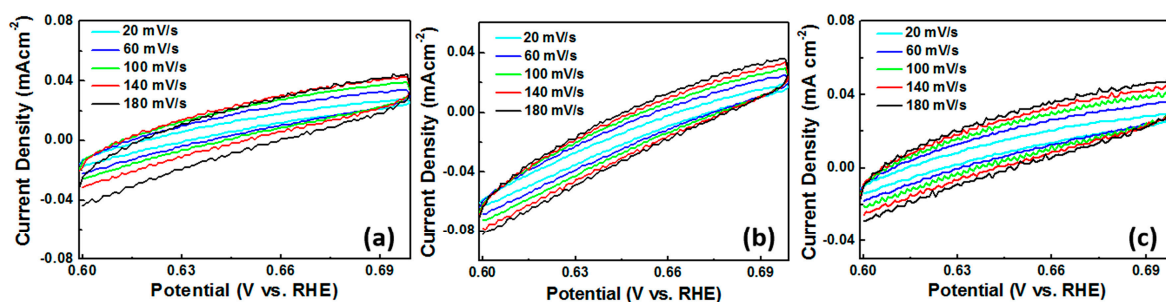


Figure S8. Cyclic voltammograms at different potential scan rates for (a) NiS<sub>2</sub>/C, (b) Fe-NiS<sub>2</sub>/C-10 and (c) Fe-NiS<sub>2</sub>/C-50 samples.

Table S1. Percentages of different types of N in the series samples in this work.

Catalyst	Pyridinic N (at.%)	Pyrrolic N (at.%)	Oxidized N (at.%)
Fe-NiS <sub>2</sub> /C-10	14.3	27.5	58.2
Fe-NiS <sub>2</sub> /C-30	7.1	9.8	83.1
Fe-NiS <sub>2</sub> /C-50	13.9	20.4	65.7
NiS <sub>2</sub> /C	3.3	5.0	91.7