

## Supporting Information

# **A<sub>2</sub>AgO-Decorated Multi-dimensional Chrysanthemum-like NiCo<sub>2</sub>O<sub>4</sub> Mounted on Nickel Foam as Highly Efficient and Stable Electrocatalysts for Oxygen Evolution Reaction**

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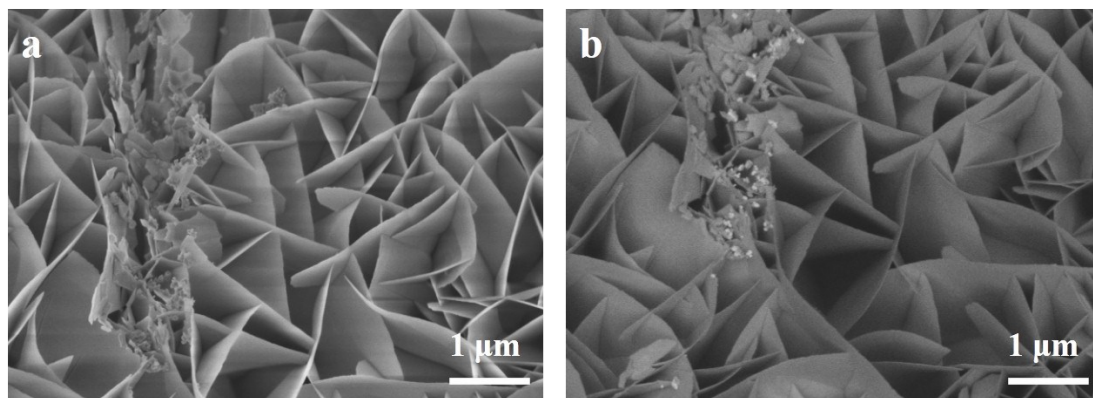
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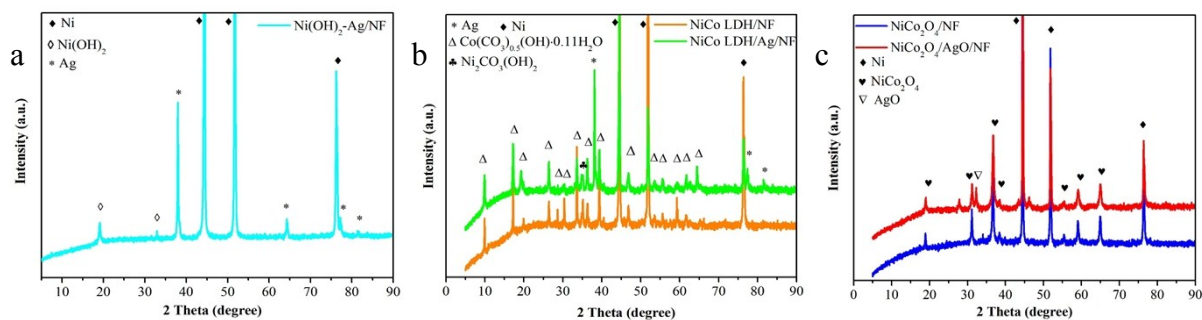
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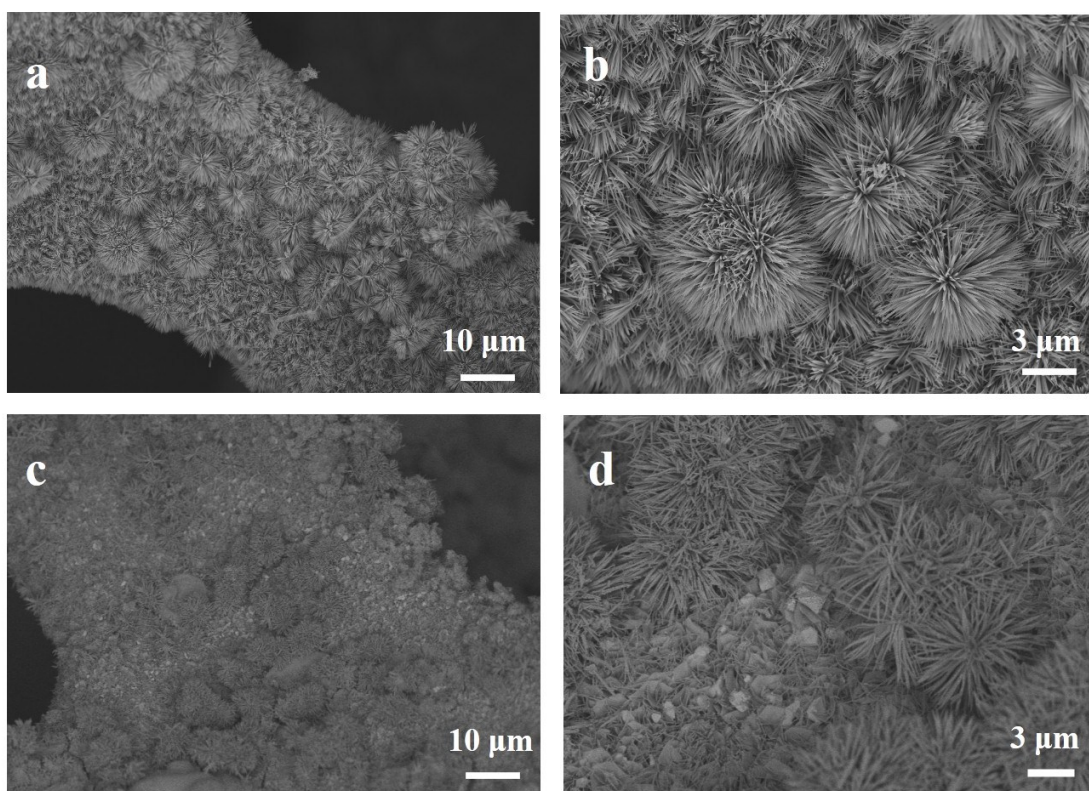
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**Figure S1.** SEM image of Ni(OH)<sub>2</sub>-Ag/NF (a). Back scattering SEM image of Ni(OH)<sub>2</sub>-Ag/NF (b).



**Figure S2.** XRD patterns of Ni(OH)<sub>2</sub>-Ag/NF (a). XRD patterns of NiCo LDH/Ag/NF and NiCo LDH/NF (b). XRD patterns of NiCo<sub>2</sub>O<sub>4</sub>/AgO/NF and NiCo<sub>2</sub>O<sub>4</sub>/NF (c).



**Figure S3.** SEM images of NiCo<sub>2</sub>O<sub>4</sub>/AgO/NF at different multiples (a-b). Back scattering SEM images of NiCo<sub>2</sub>O<sub>4</sub>/AgO/NF at different multiples (c-d).

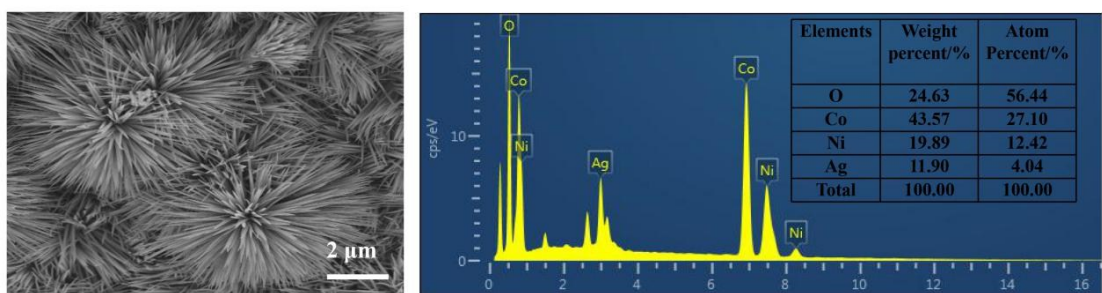


Figure S4. EDS spectrum of NiCo<sub>2</sub>O<sub>4</sub>/AgO/NF in a large scale.

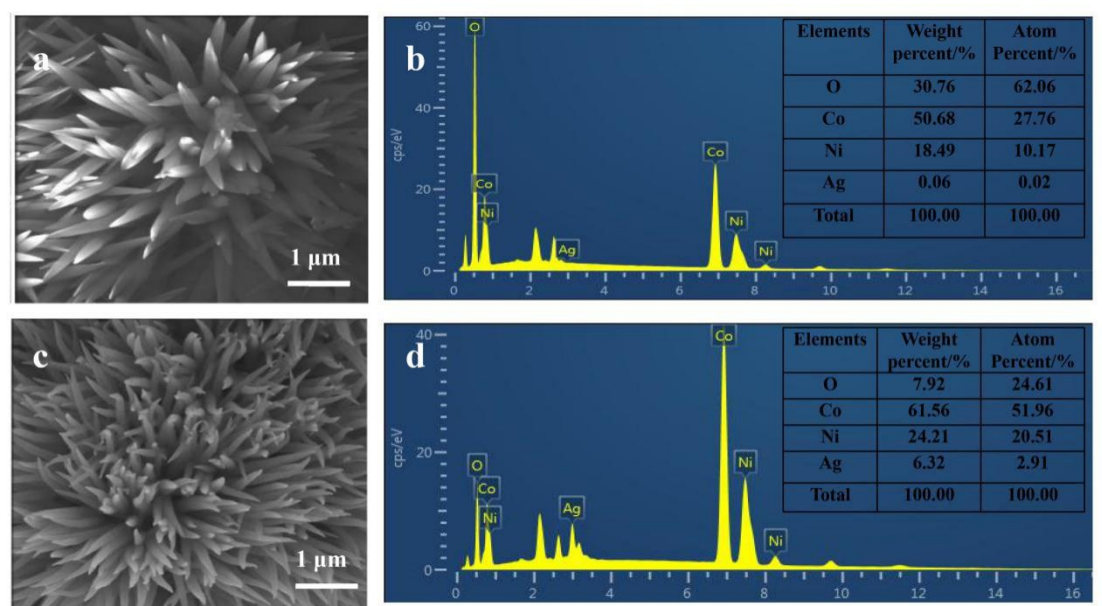
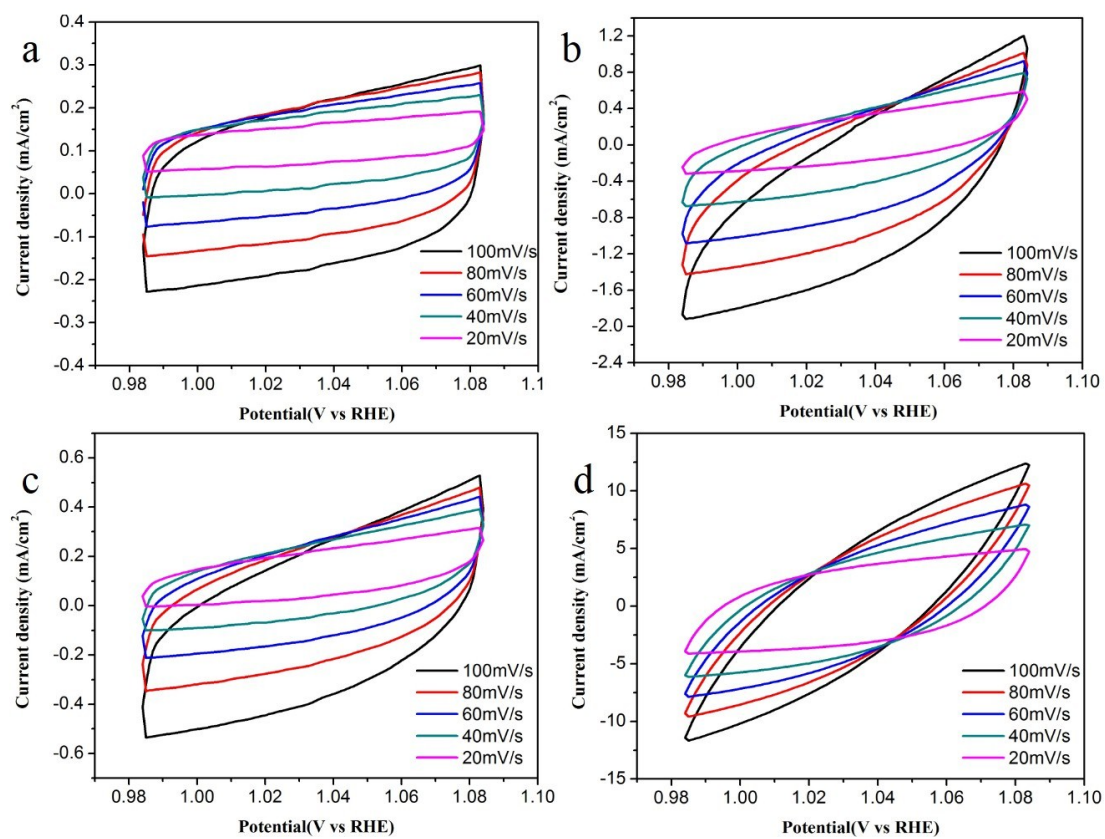


Figure S5. EDS spectrum of NiCo LDH/Ag/NF (a-b). EDS spectrum of NiCo<sub>2</sub>O<sub>4</sub>/AgO/NF (c-d).

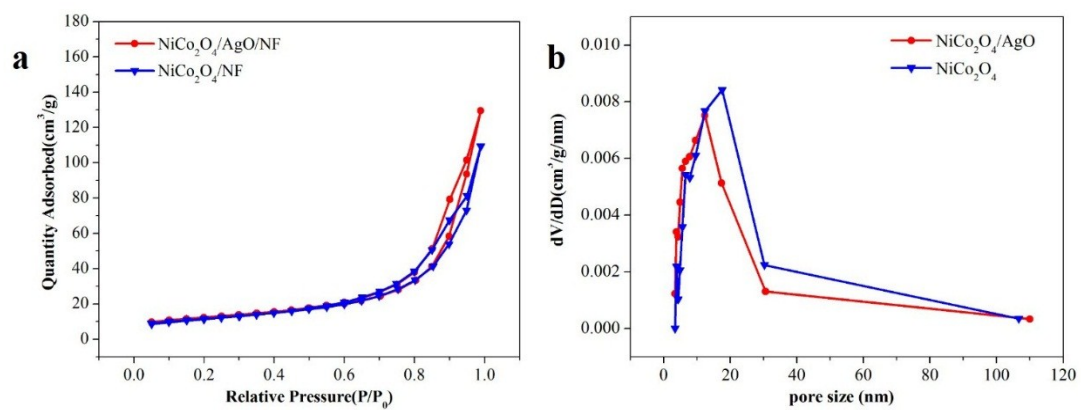
**Table S1.** Comparison of the OER activity for several recently reported highly active transition metal oxides electrocatalysts in 1.0 M alkaline solution.

Catalyst	Current density (mA/cm <sup>2</sup> )	Overpotential (mV)	Lifetime	Reference
NiCo <sub>2</sub> O <sub>4</sub> /AgO/NF	10	232	50h	This work
Ag-Decorated Co(OH) <sub>2</sub>	10	270	10h	[1]
NiO/NiCo <sub>2</sub> O <sub>4</sub> @3DPNN	10	264	40000s	[2]
Calixarene Intercalated NiCo LDH	10	290	28h	[3]
NiCo-LDH/NF	10	271	20h	[4]
NiCo/Fe <sub>3</sub> O <sub>4</sub> /MOF-74	10	238	36h	[5]

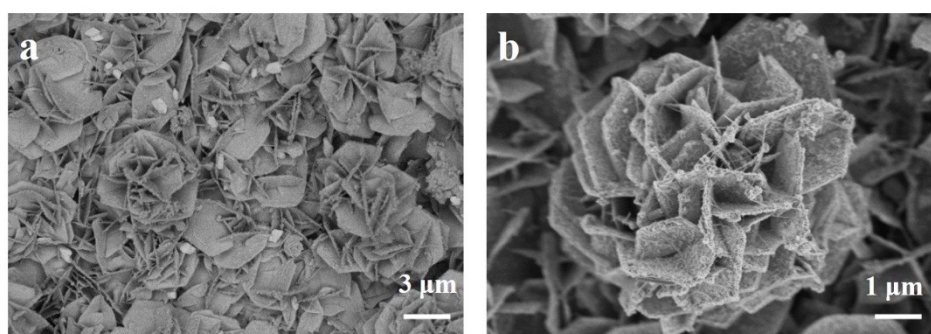


**Figure S6 .** Cyclic voltammograms (CVs) of NiCo LDH/NF (a), NiCo<sub>2</sub>O<sub>4</sub>/NF (b), NiCo LDH/Ag/NF (c), NiCo<sub>2</sub>O<sub>4</sub>/AgO/NF (d).

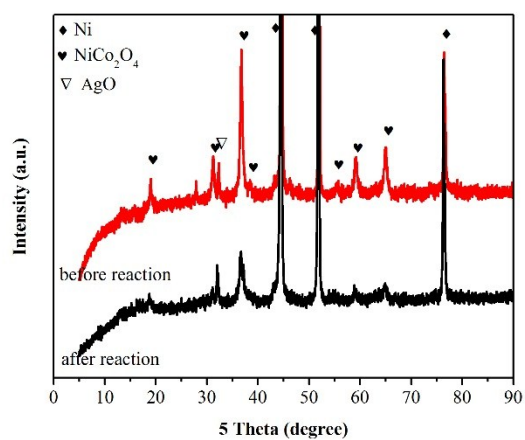




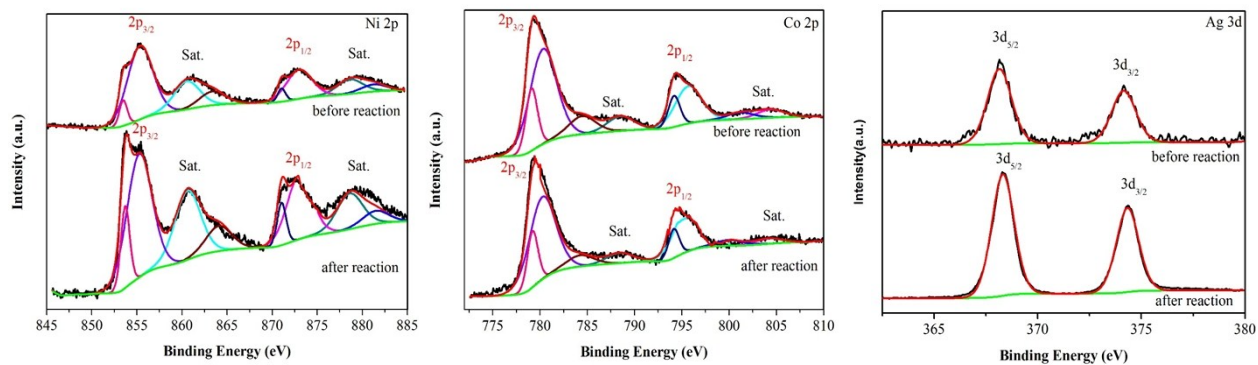
**Figure S7.** N<sub>2</sub> adsorption–desorption isotherms of NiCo<sub>2</sub>O<sub>4</sub>/AgO/NF and NiCo<sub>2</sub>O<sub>4</sub>/NF (a). Pore size distributions (b).



**Figure S8.** SEM images of NiCo<sub>2</sub>O<sub>4</sub>/AgO/NF after electrolysis.



**Figure S9.** XRD patterns of NiCo<sub>2</sub>O<sub>4</sub>/AgO/NF before and after electrolysis.



**Figure S10.** Core-level XPS spectra comparison of Ni 2p (a), Co 2p (b), Ag 3d (c) in NiCo<sub>2</sub>O<sub>4</sub>/AgO/NF before and after electrolysis.



## Reference

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