Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

† Electronic Supplementary Information

Copper-nickel embedded into nitrogen-doped carbon octahedron as effective bifunctional electrocatalyst

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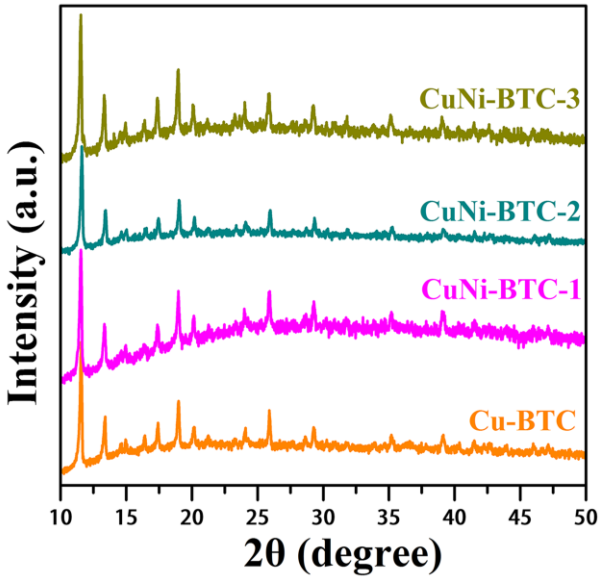

Fig. S1 XRD patterns of as-prepared CuNi-BTC and Cu-BTC precursors.

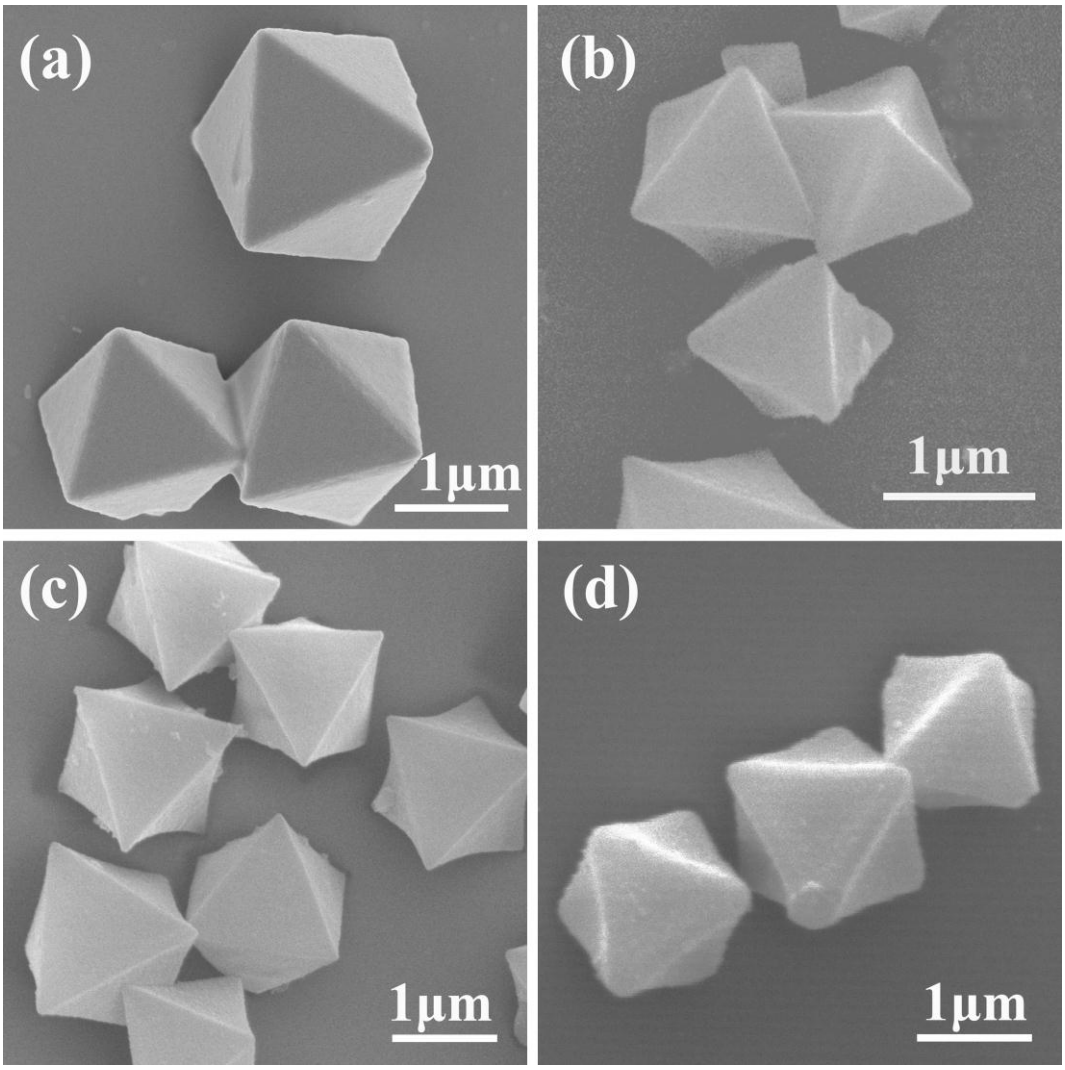

Fig. S2 SEM images of as-prepared precursors. (a) Cu-BTC, (b) CuNi-BTC-1, (c) CuNi-BTC-2, (d) CuNi-BTC-3.

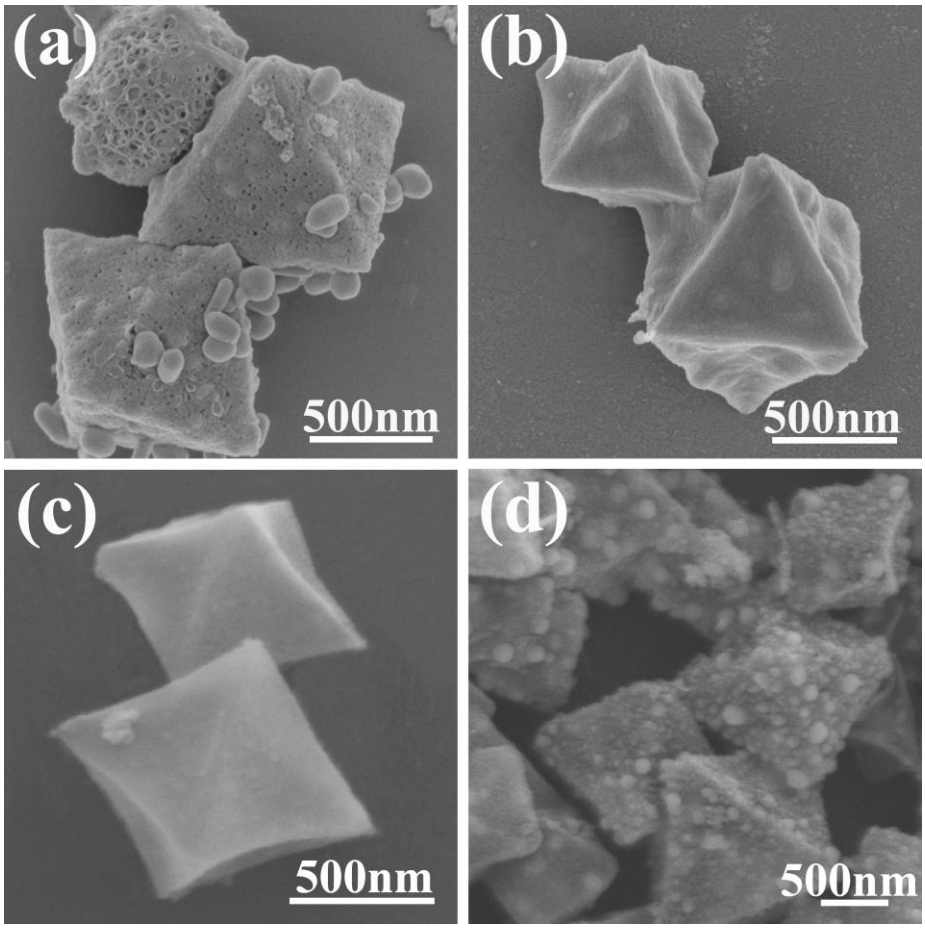

Fig. S3 SEM images of as-synthesized samples. (a) Cu-NC, (b) CuNi-NC-1, (c) CuNi-NC-2, (d) CuNi-NC-3.

Table S1 Summary of element contents of CuNi-NC-2 and Cu-NC.

Samples	Relative content (At. %)			
	C	N	Cu	Ni
Cu-NC	**90.97**	**4.48**	**4.55**	**--**
CuNi-NC-2	**96.97**	**2.3**	**0.42**	**0.32**

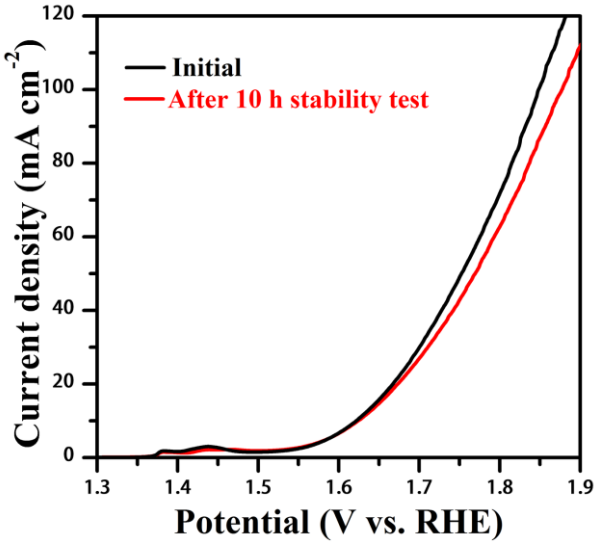

Fig. S4 LSV curves of CuNi-NC-2 sample before and after OER stability test for 10 h.

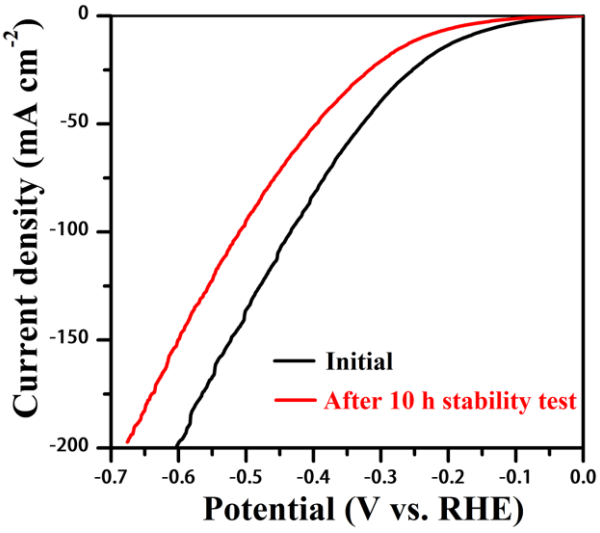

Fig. S5 LSV curves of CuNi-NC-1 sample before and after HER stability test for 10 h.

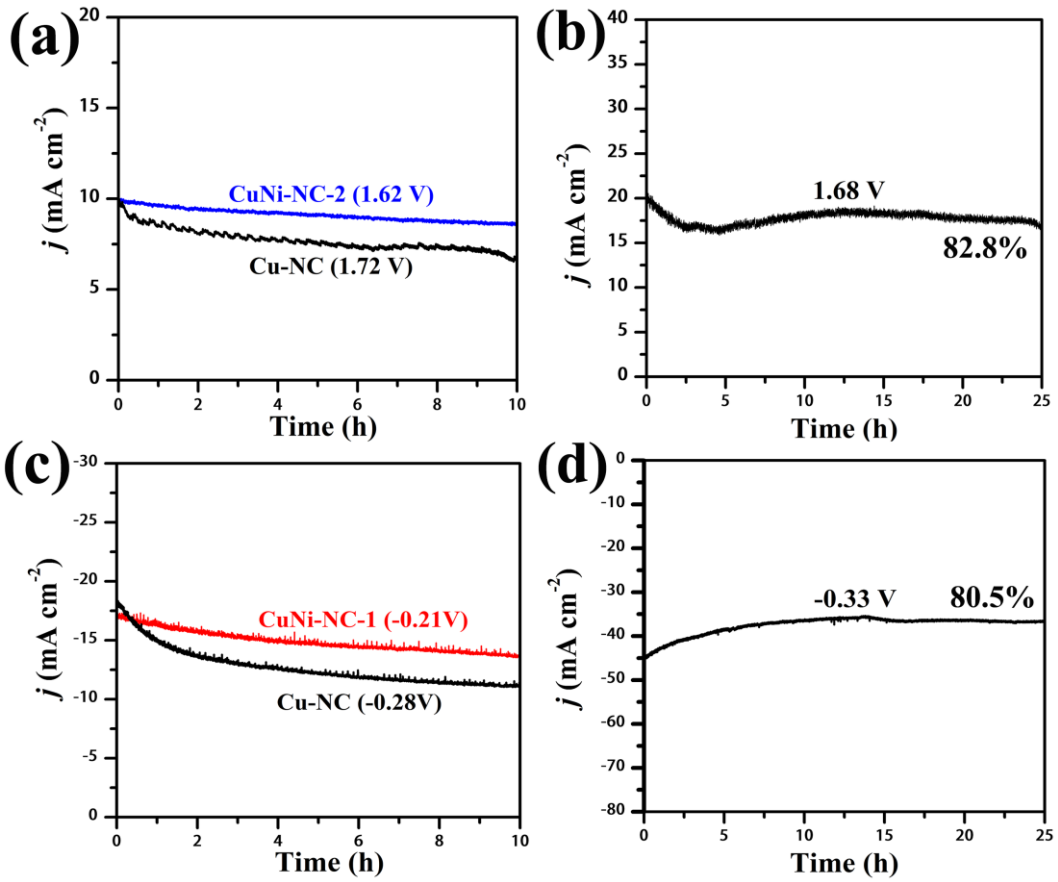

Fig. S6 Chronoamperometry curves of (a) Cu-NC and CuNi-NC-2 in OER process, (b) CuNi-NC-2 sample at a higher potential (1.68 V) for 25 h, (c) Cu-NC and CuNi-NC-1 in HER process, (d) CuNi-NC-1 sample at a higher potential (-0.33 V) for 25 h.

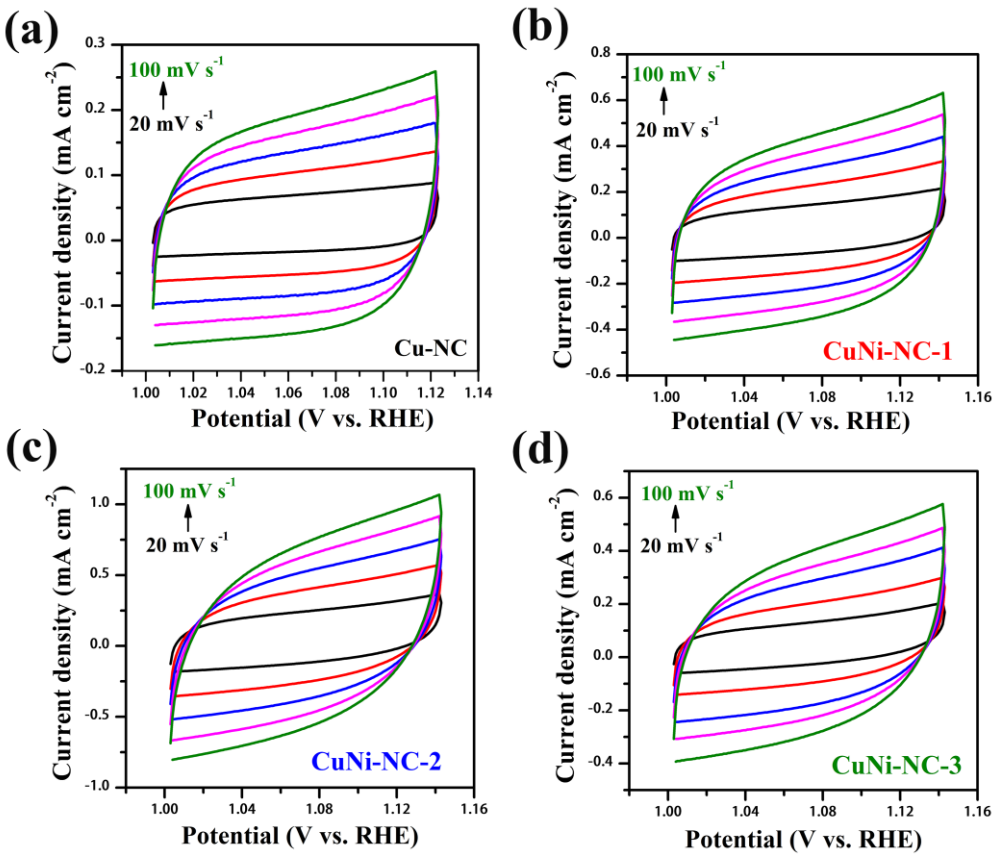

Fig. S7 CV curves of all samples. (a) Cu-NC, (b) CuNi-NC-1, (c) CuNi-NC-2, (d) CuNi-NC-3.

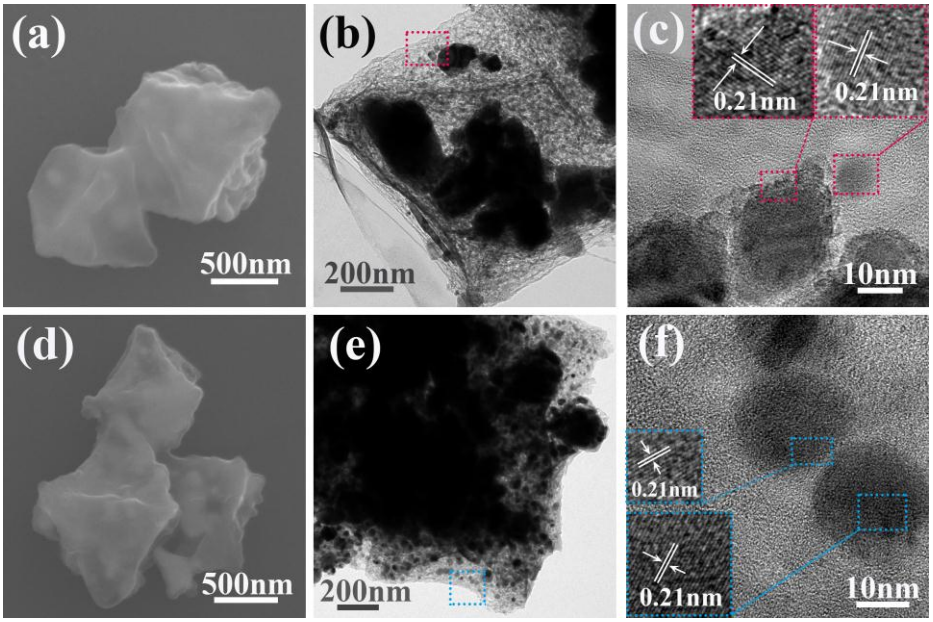

Fig. S8 (a) SEM image, (b) TEM and (c) HRTEM images (inset) of CuNi-NC-2 after 25 h stability test for OER, (d) SEM image, (e) TEM and (f) HRTEM images (inset) of CuNi-NC-1 after 25 h stability test for HER process.

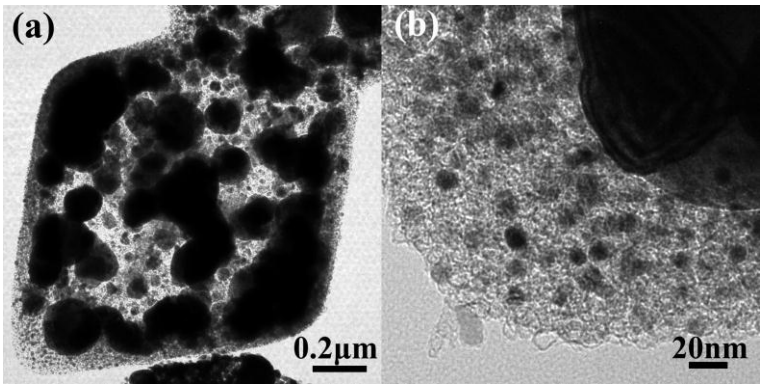

Fig. S9 (a) and (b) TEM images of as-obtained CuNi-NC-1 sample.