

Supporting Information

CoP₂/Fe-CoP₂ yolk-shell nanoboxes as efficient electrocatalysts for oxygen evolution reaction

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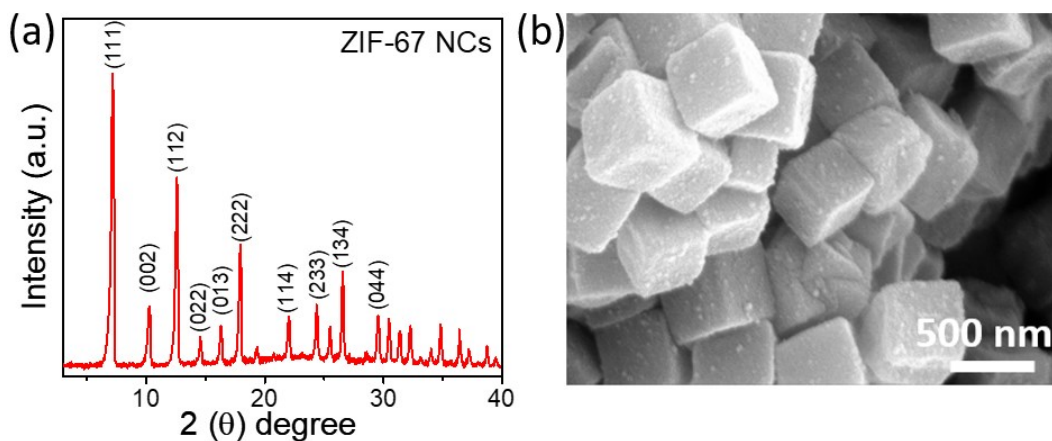


Fig. S1. (a) XRD pattern of ZIF-67 NCs. (b) Corresponding XRD pattern.

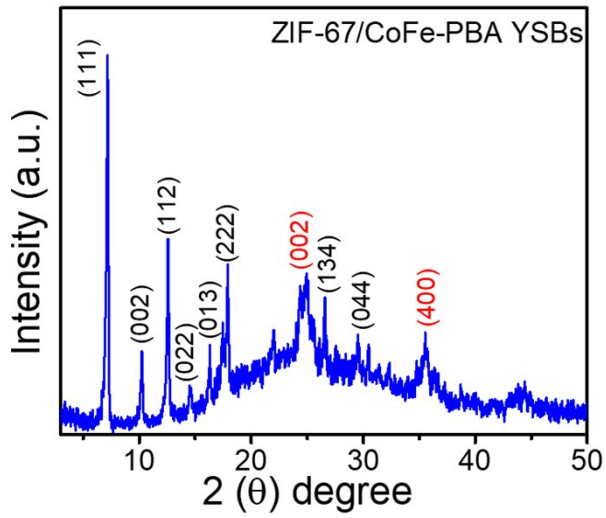


Fig. S2. XRD pattern of ZIF-67/CoFe-PBA YSBs.

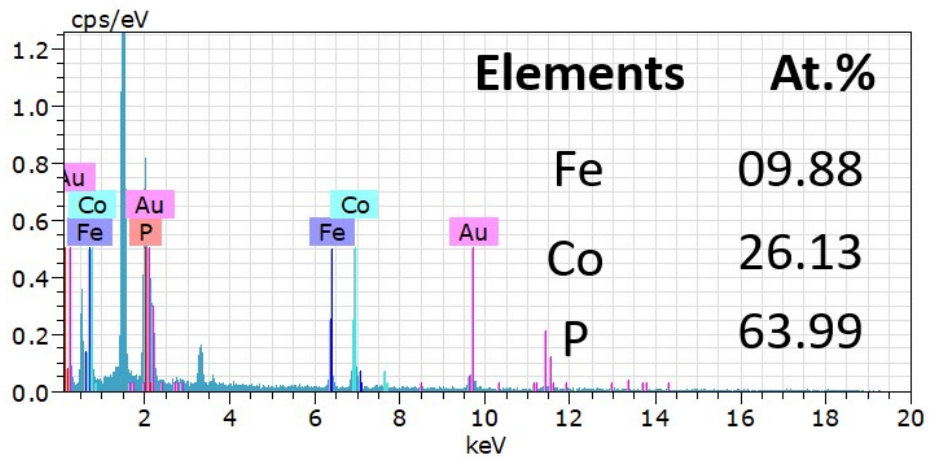


Fig. S3. EDS spectrum of CoP₂/Fe-CoP₂ YSBs.

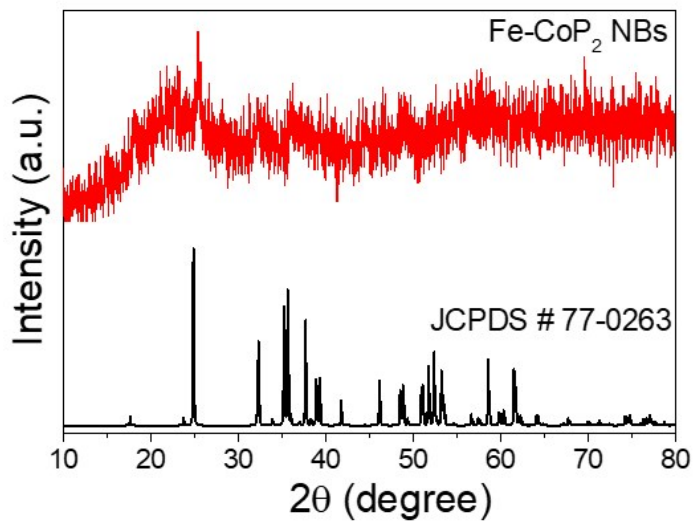


Fig. S4. XRD pattern of Fe-CoP₂ NBs.

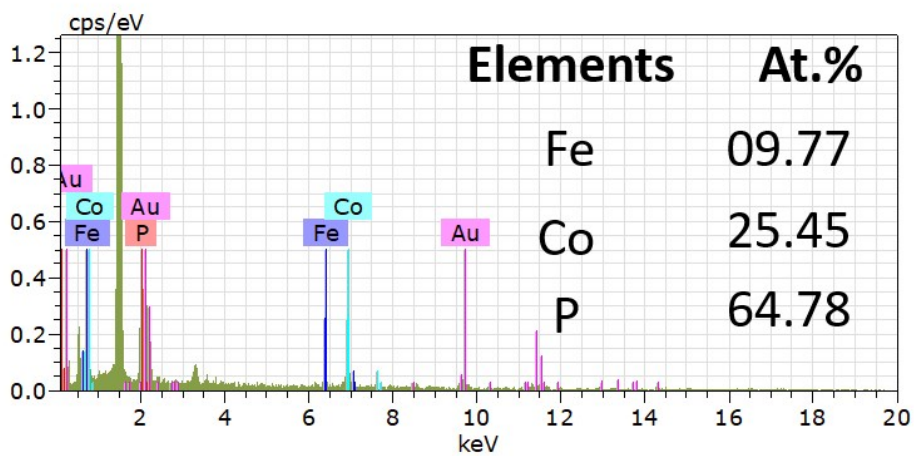


Fig. S5. EDS spectrum of Fe-CoP₂ NBs.

Synthesis of CoP_2 nanocubes (NCs).

The ZIF-67 NCs and NaH_2PO_2 put in two separate porcelain boats at a mass ratio of 1:20 respectively. The boat with NaH_2PO_2 was placed on the upper stream side of the furnace. Subsequently the mixture was heated to $300\text{ }^\circ\text{C}$ with incremental rate of $5\text{ }^\circ\text{C min}^{-1}$ and maintained for 2 h in an under a Ar atmosphere. After cooling to room temperature, the product was collected and used for further analysis.

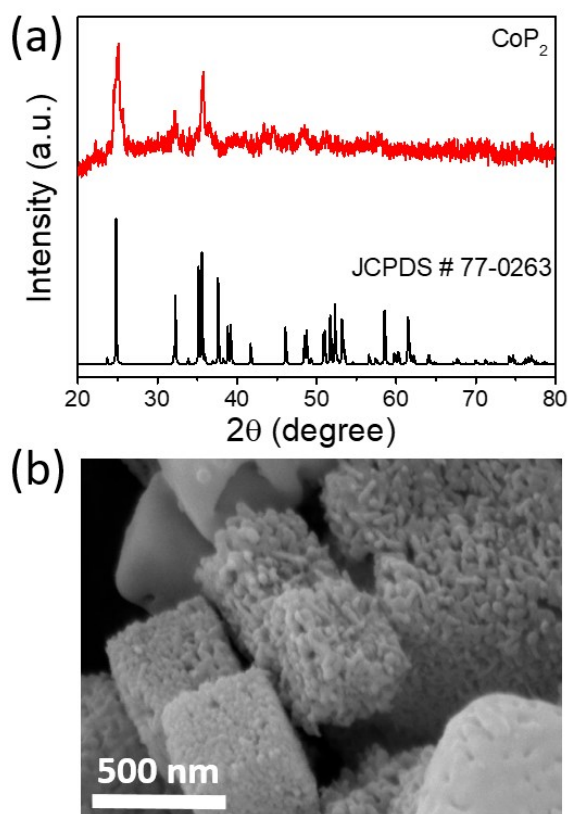


Fig. S6. (a) XRD pattern (b) corresponding SEM images of CoP_2 NCs.

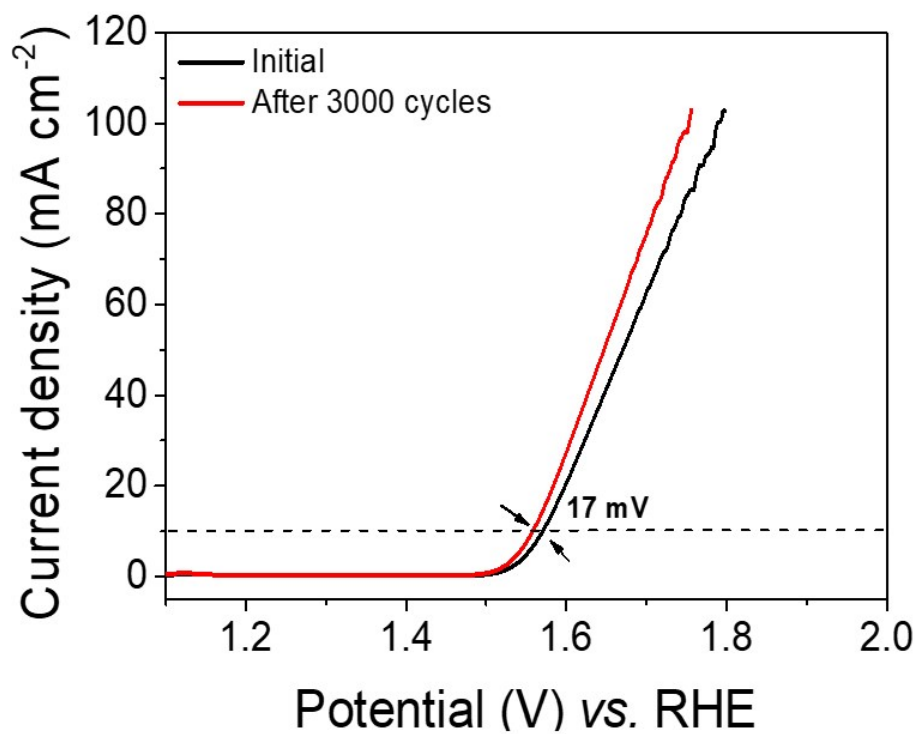


Fig. S7. OER curve of Fe-CoP₂ NBs before and after 3000 cycles.

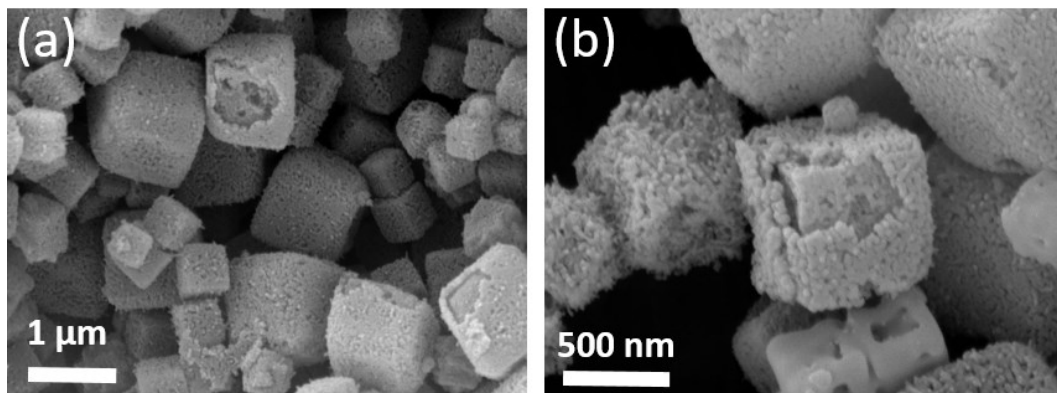


Fig. S8. (a,b) SEM images of CoP₂/Fe-CoP₂ YSBs after 10 hour stability test.

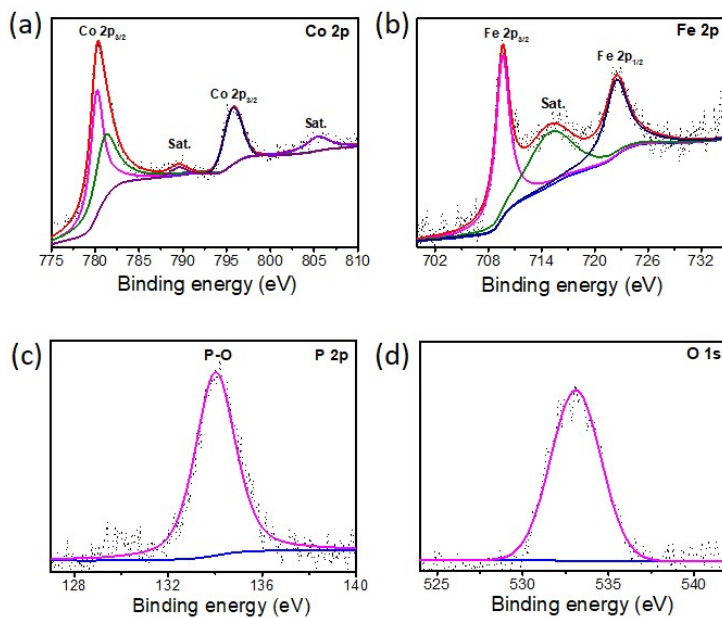


Fig. S9. High resolution XPS spectra of (a) Co 2p, (b) Fe 2p, (c) P 2p, and (d) O 1s for CoP₂/Fe-CoP₂ YSBs after OER.

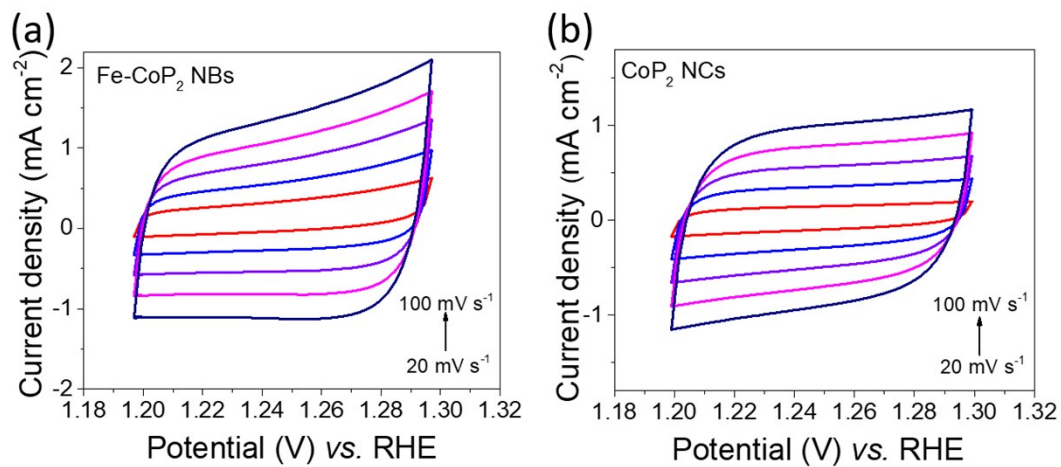


Fig. S10. Cyclic voltammogram curves at different scan rates of (20-100 mV s⁻¹). (a) Fe-CoP₂ NBs and (b) CoP₂ NCs.