

## Flaky Cobalt Phosphide Modified Manganese Iron Oxide as a Highly Efficient OER Catalyst

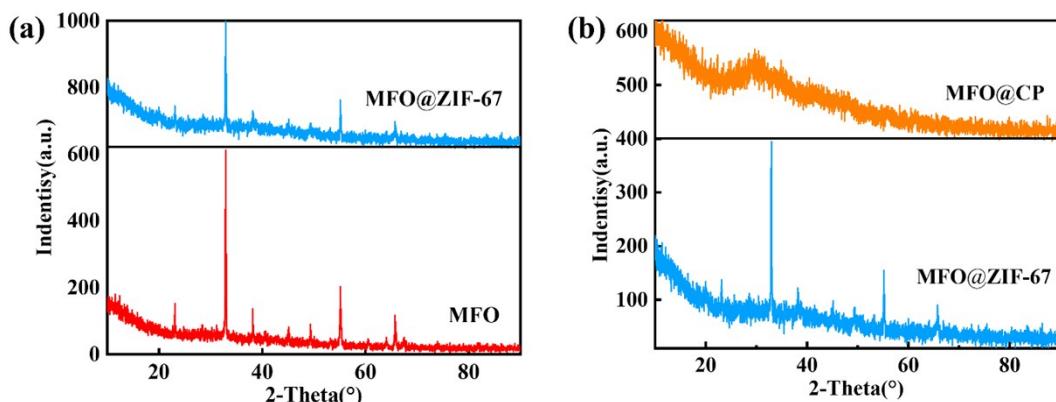
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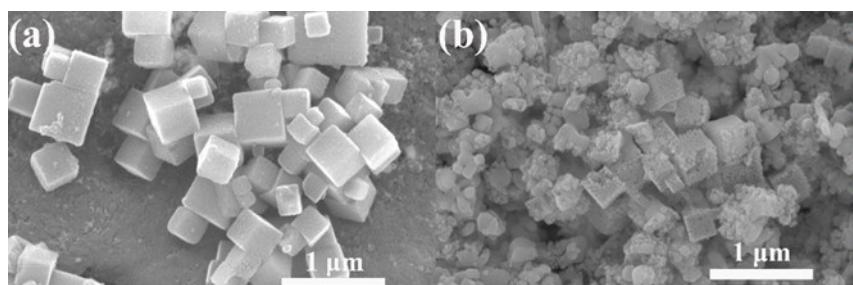
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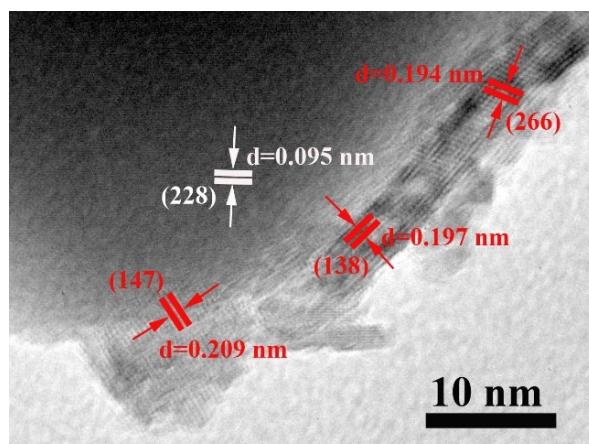
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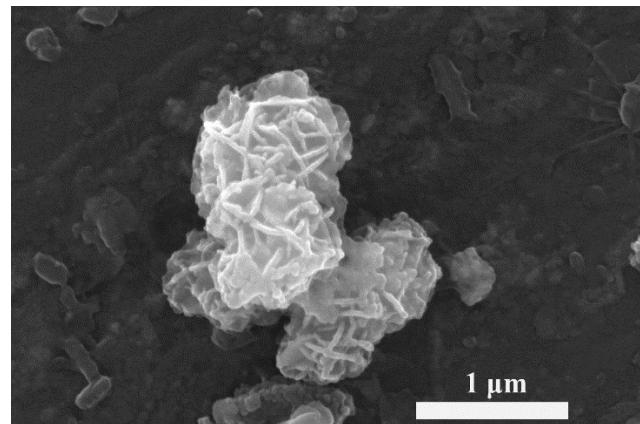
**Fig. S1** The XRD patterns (a) MFO@ZIF-67 and MFO; (b) MFO and MFO@CP



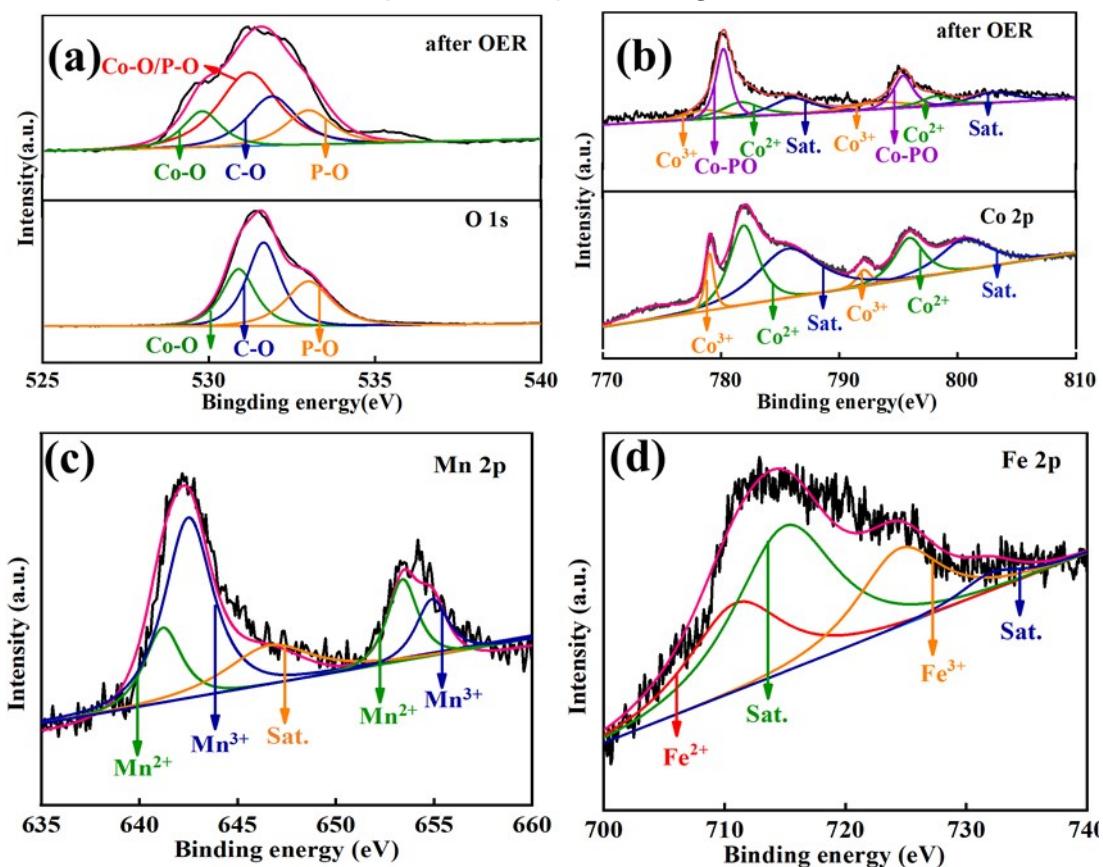
**Fig. S2** SEM images (a) Mn<sub>3</sub>[Fe(CN)<sub>6</sub>]<sub>2</sub>·nH<sub>2</sub>O; (b) MFO.



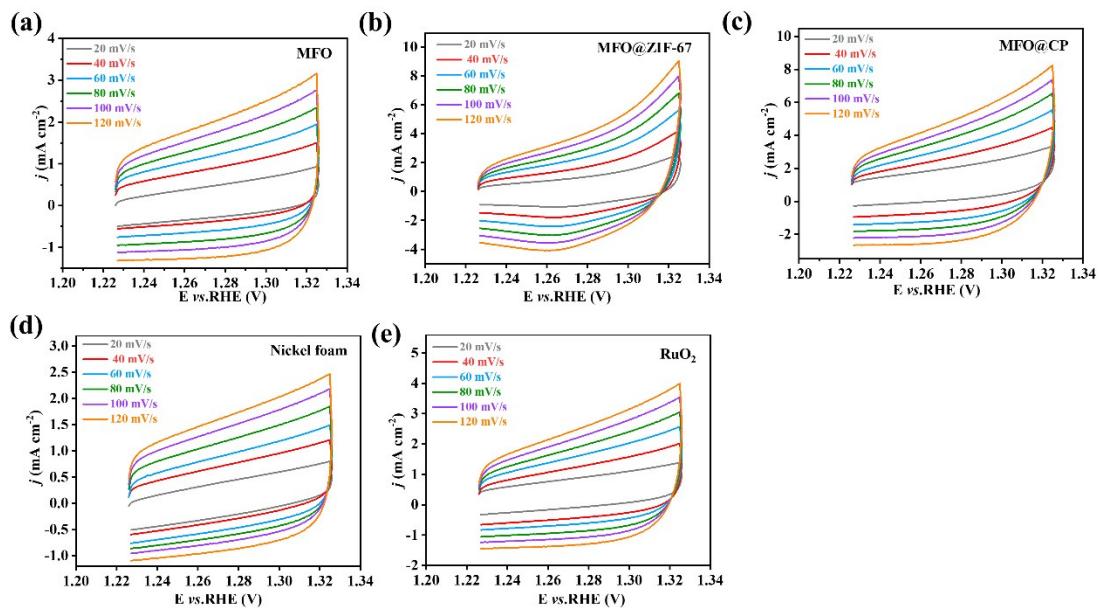
**Fig. S3** HRTEM images of MFO@ZIF-67



**Fig. S4** SEM images of MFO@CP



**Fig. S5** The XPS spectra of MFO@CP after OER (a) O 1s; (b) Co 2p; (c) Mn 2p; (d) Fe 2p



**Fig. S6** CV curves of samples at various scan rates from 20 to 120 mVs<sup>-1</sup> in 1.2-1.34 V vs

**Table S1.** Comparison of catalytic performance of the recently reported catalysts for OER in 1M KOH.

| Catalyst   | $\eta_{50}$ (mV) | $\eta_{100}$ (mV) | Tafel slope (mV dec <sup>-1</sup> ) | Ref.      |
|--|------------------|-------------------|-------------------------------------|-----------|
| MFO@CP   | 320              | 340               | 65.57                               | This work |
| Co/Fe 32   | 430              | 455               | 55                                  | 1         |
| P-NiFe <sub>2</sub> O <sub>4</sub>                   | 320              | 370               | 49                                  | 2         |
| NP-NiFe <sub>2</sub> O <sub>4</sub> /SWNTs           | 340              | 390               | 83.6                                | 3         |
| NiFe <sub>2</sub> O <sub>4</sub> /NiFeP-2            | 338              | -                 | 119                                 | 4         |
| CoF-3  | 465              | -                 | 72                                  | 5         |
| OP-NiFe <sub>2</sub> O <sub>4</sub> /NCNF            | 330              | -                 | 44.8                                | 6         |
| NiFeMnLDH/PPy/RGO                                    | 410              | -                 | 72                                  | 7         |
| CoFe <sub>2</sub> O <sub>4</sub>                     | 330              | 370               | 58.6                                | 8         |
| NiFe <sub>2</sub> O <sub>4</sub> -Ar-30              | 230              | 250               | 39.2                                | 9         |
| Ce <sub>0.2</sub> MnFe <sub>1.8</sub> O <sub>4</sub> | 410              | -                 |                                     | 10        |
| CoFe <sub>2</sub> O <sub>4</sub>                     | 500              | 580               | 61                                  | 11        |
| Ni-NiFe <sub>2</sub> O <sub>4</sub> @C               | 250              | 270               | 51                                  | 12        |

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