

Supplementary Information for

Amorphous Co-Fe-P Nanospheres for Efficient Water Oxidation

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Figure S1 to S7

Table S1

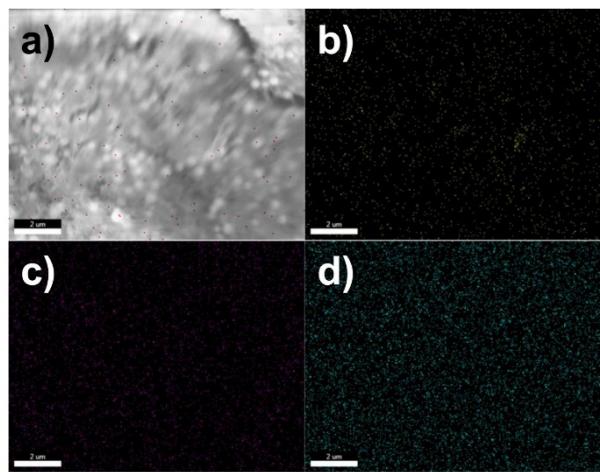


Fig. S1. (a) SEM image of $\text{Co}_{0.63}\text{Fe}_{0.21}\text{P}_{0.16}$ nanospheres. Elemental mapping images of (b) P, (c) Fe, and (d) Co.

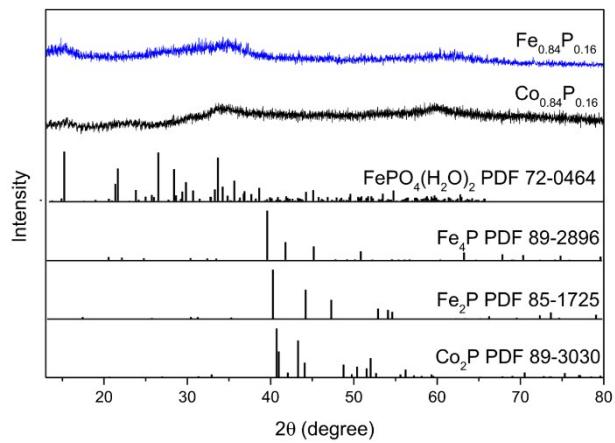


Fig. S2. XRD patterns of $\text{Co}_{0.84}\text{P}_{0.16}$ and $\text{Fe}_{0.84}\text{P}_{0.16}$ samples.

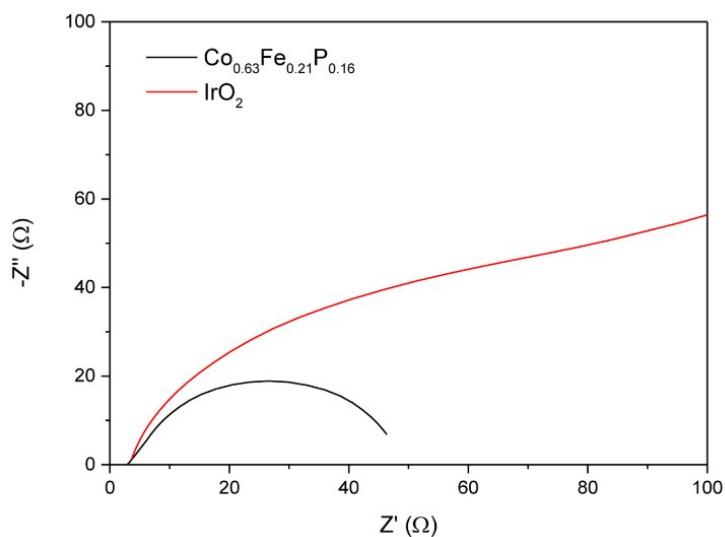


Fig. S3. Nyquist plots of $\text{Co}_{0.63}\text{Fe}_{0.21}\text{P}_{0.16}$ and IrO_2 at an overpotential of 210 mV.

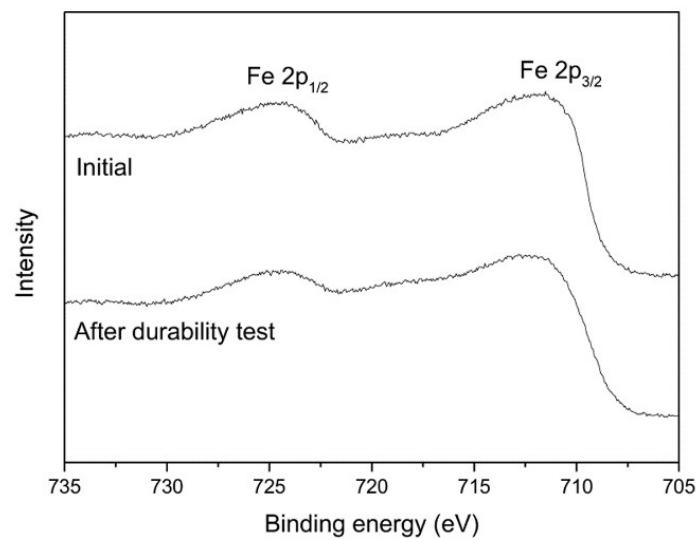


Fig. S4. High resolution Fe 2p XPS spectra of $\text{Co}_{0.63}\text{Fe}_{0.21}\text{P}_{0.16}$ before and after durability test.

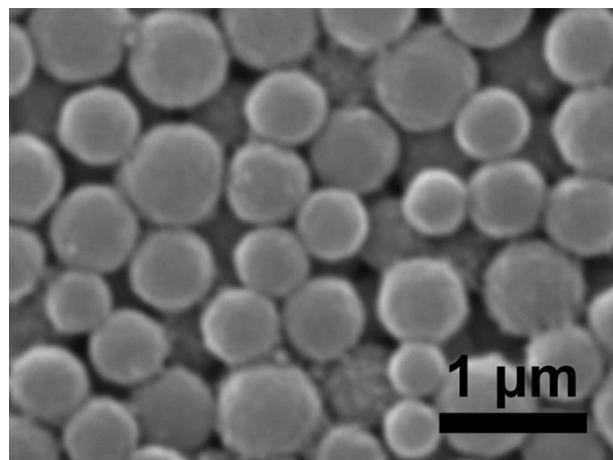


Fig. S5. SEM image of $\text{Co}_{0.63}\text{Fe}_{0.21}\text{P}_{0.16}$ after H_2/Ar (5%/95%) treatment.

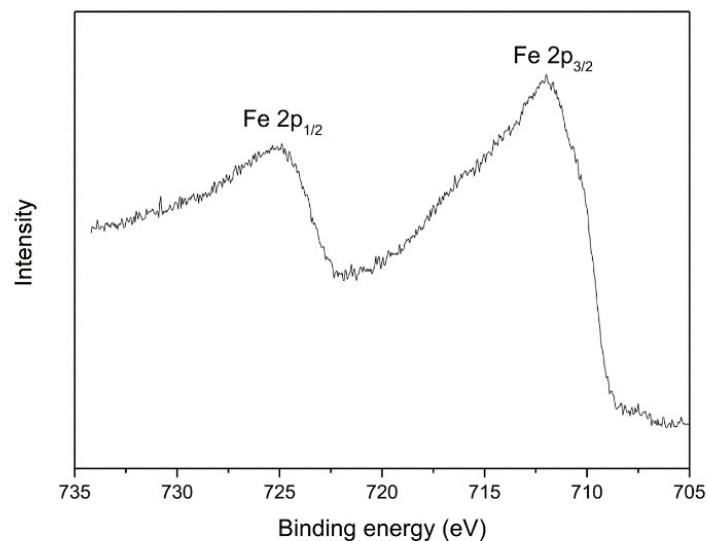


Fig. S6. High resolution Fe 2p XPS spectra of $\text{Co}_{0.63}\text{Fe}_{0.21}\text{P}_{0.16}$ after H_2/Ar (5%/95%) treatment.

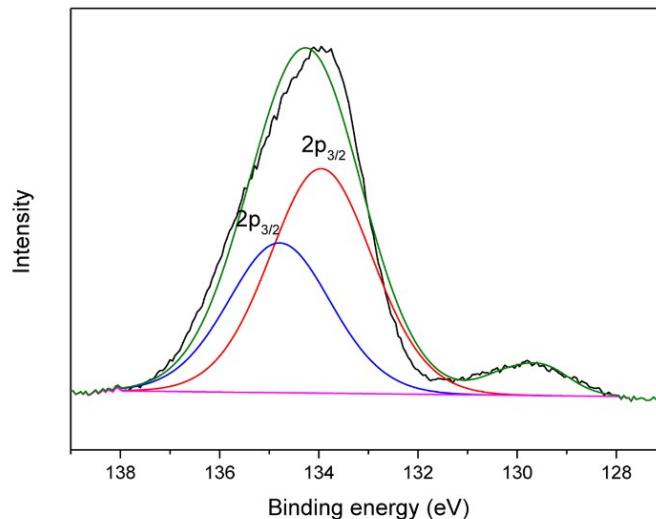


Fig. S7. High resolution P 2p XPS spectra of $\text{Co}_{0.63}\text{Fe}_{0.21}\text{P}_{0.16}$ after Ar/H₂ (95%/5%) treatment.

Table S1. OER performance of transition metal phosphide in 1 M KOH.

Sample	Overpotential at 10 mA cm ⁻² (mV)	Tafel slope (mV dec ⁻¹)	Reference
$(\text{Co}_{0.54}\text{Fe}_{0.46})_2\text{P}$	280	-	¹
Co-P films	345	47	²
Ni–Co mixed metal phosphide nanoboxes	330	96	³
Ni_2P	290	47	⁴
NiFeP	277	-	⁵
CoMnP	330	61	⁶
CoP	320	71	⁷
Carbon coated $\text{Ni}_5\text{P}_4/\text{Ni}_2\text{P}$	300	64	⁸
Surface oxidized amorphous	210	40	This work
$\text{Co}_{0.63}\text{Fe}_{0.21}\text{P}_{0.16}$			

References

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