Supporting Information

Hierarchical Mo-doped CoP_3 Interconnected Nanosheet Arrays on Carbon Cloth as an Efficient Bifunctional Electrocatalyst for Water Splitting in Alkaline Electrolyte

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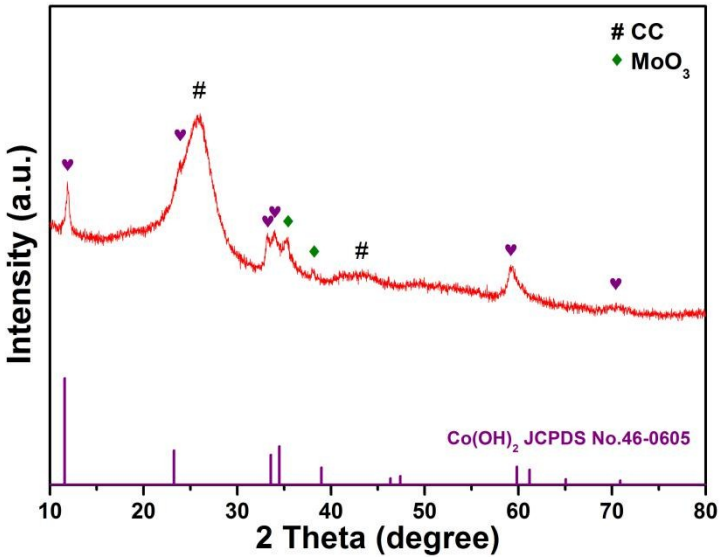

Figure S1. XRD patterns of $CoMo_2$-OH @CC.

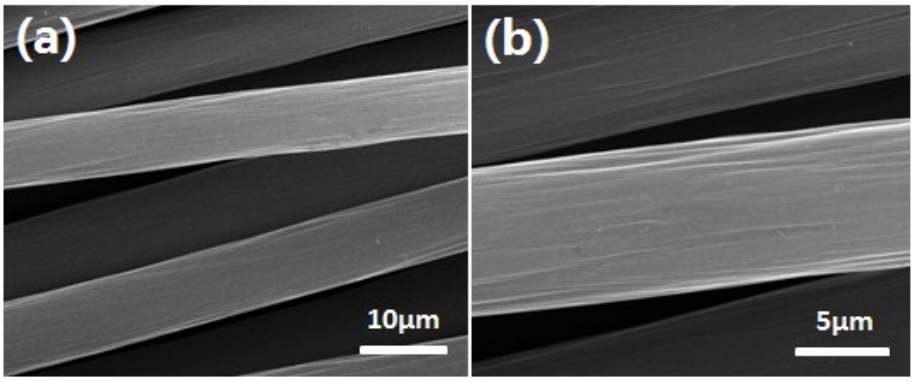

Figure S2. SEM images of CC.

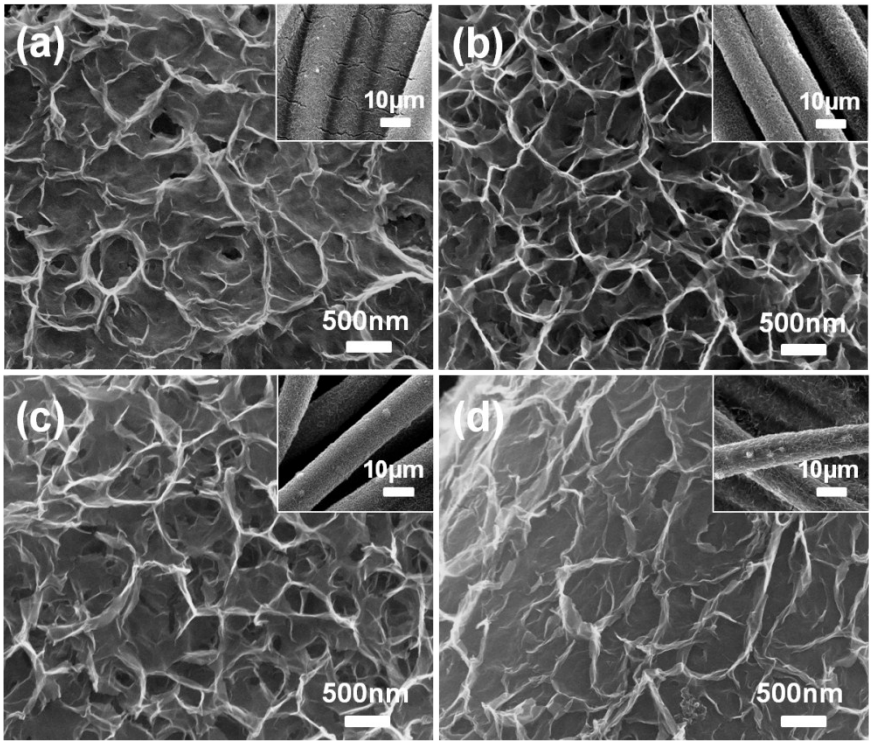

Figure S3. SEM images of (a) Mo-CoP_3-1@CC, (b) Mo-CoP_3-2@CC, (c) Mo-CoP_3-3@CC, and (d) Mo-CoP_3-4@CC.

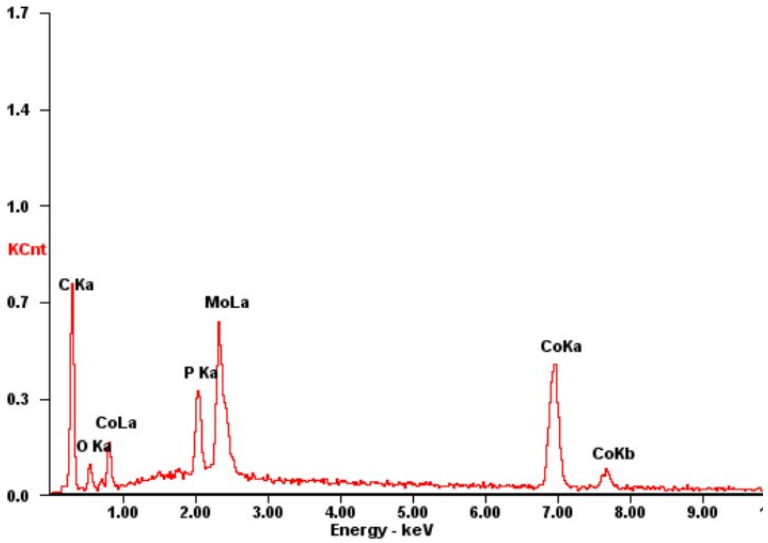

Figure S4. Typical EDS spectrum of Mo-CoP_3-2@CC.

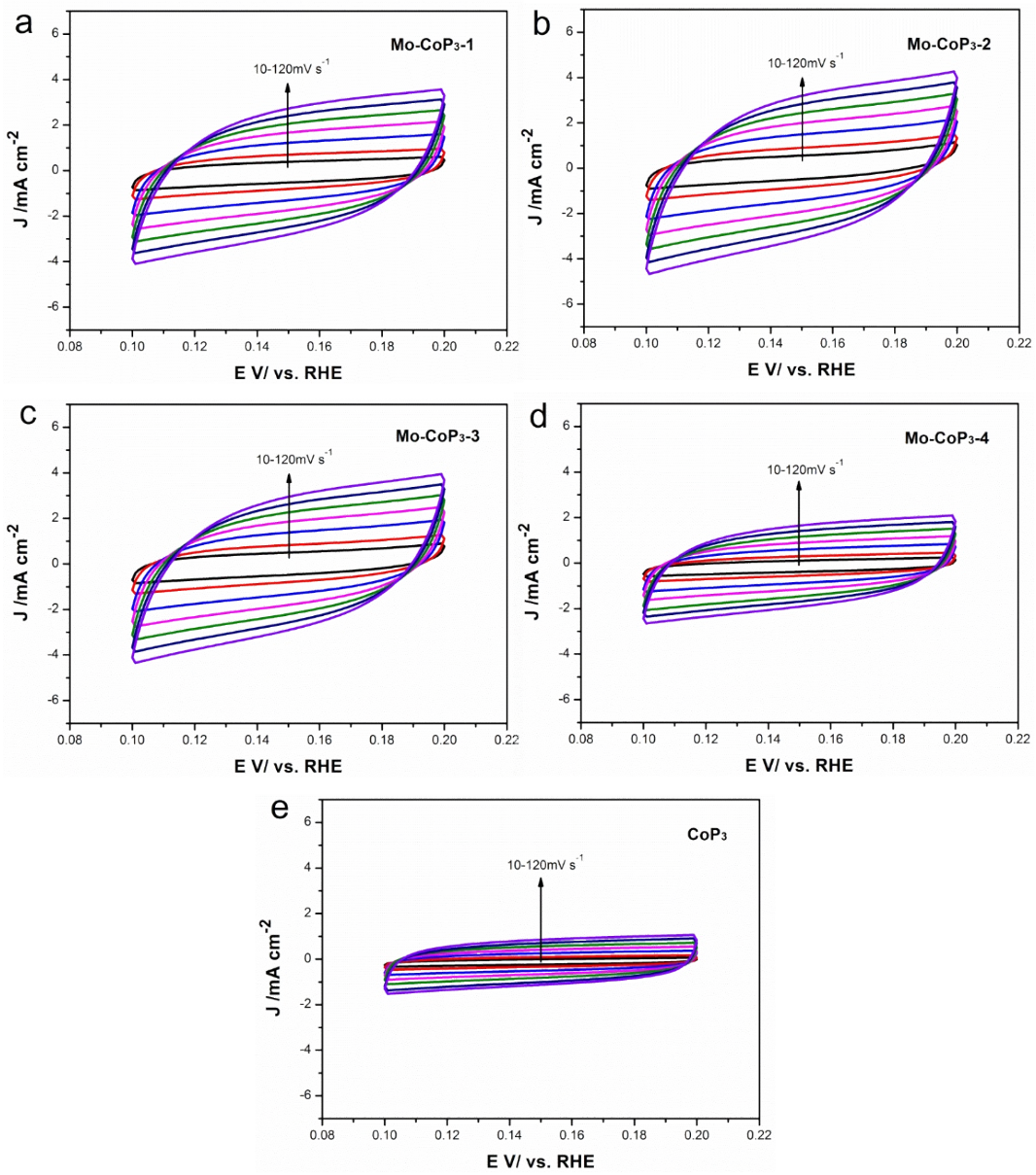

Figure S5. Cyclic voltammograms for catalysts with different Mo/Co ratios and CoP_3 in the region of +0.1 to +0.2 V at scan rates of 10, 20, 40, 60, 80, 100, 120 mV s^{-1}.

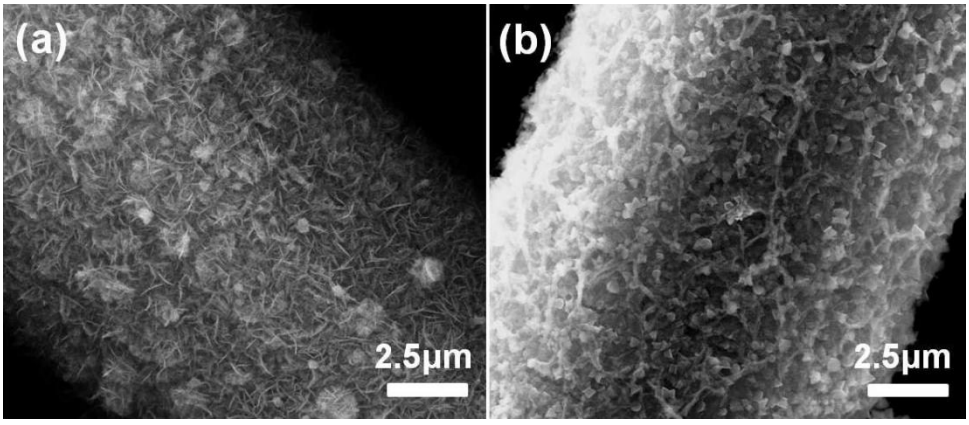

Figure S6. SEM images of the Mo-CoP_3-2@CC: (a) after HER stability test; (b) after OER stability test.

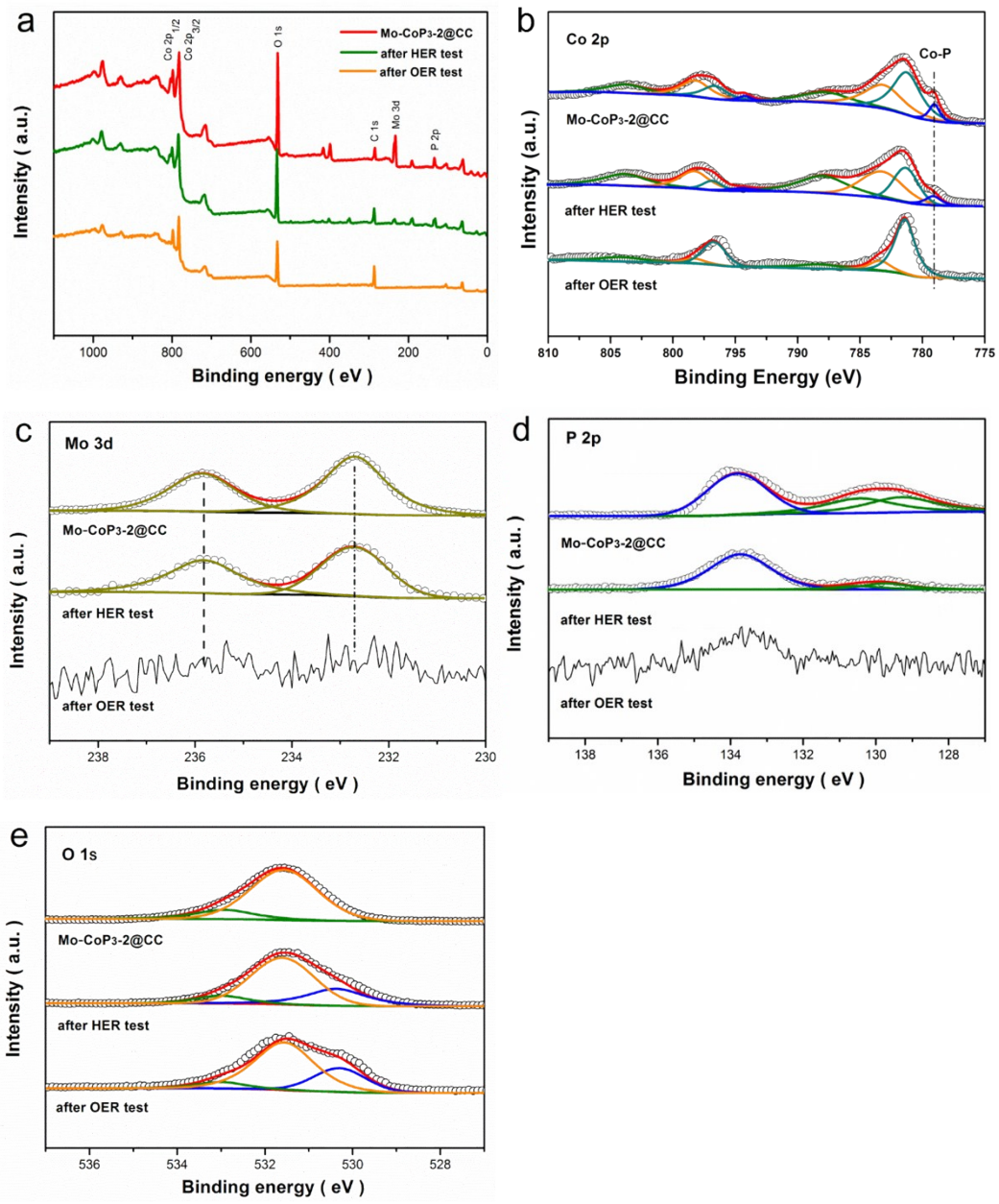

Figure S7. XPS survey spectra (a) and high-resolution spectra for the Mo-CoP_3-2@CC before and after stability test: (b) Co 2p; (c) Mo 3d; (d) P 2p; (e) O 1s.

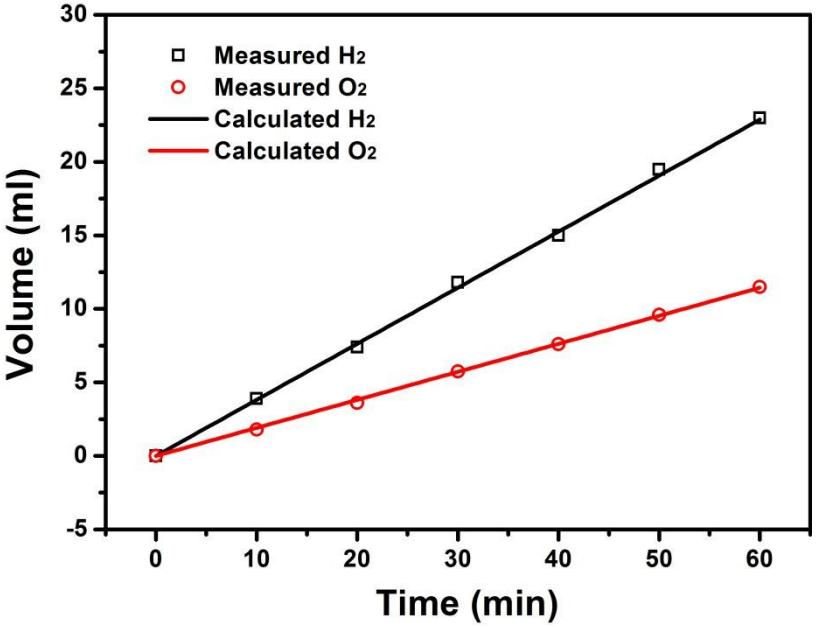

Figure S8. Faradaic efficiency of H_2 and O_2 production.

Table S1. Comparison of representative Co phosphides and CoMo-based water-splitting catalysts in alkaline electrolyte.

Materials	**Mass loading (mg cm-^{2})**	**Water electrolysis test (1.0M KOH)**	**Over-potential at 10 mA cm^{-2} (mV)**	**Tafel slope (mV dec^{-1})**	**Ref.**
Co-P film	2.6	HER	94	42	1
		OER	345	47	
		Over water splitting	＞400	-	
CoP-MNA	6.2	HER	54	51	2
		OER	290	65	
		Over water splitting	390	89	
CoP/NC	0.283	HER	154	51	3
		OER	319	52	
		Over water splitting	＞470	-	
CoS-$Co(OH)_2$@ $aMoS_{2+x}$	0.2	HER	143	68	4
		OER	380	68	
		Over water splitting	350	-	
CoP/rGO	~0.28	HER	150	38	5
		OER	340	66	
		Over water splitting	470	-	

$CoMoS_4$/CC	~1.0	HER	143	105	6
		OER	342	-	
		Over water splitting	490	-	
$NiCo_2O_4$	-	HER	110	49.7	7
		OER	290	53	
		Over water splitting	420	-	
Mn-CoP_3	-	HER	95	83	8
		OER	280	63	
		Over water splitting	360	-	
Fe-CoP_3 NAs/CC	1.03	HER	167	65.1	9
		OER	330 (η_{50})	82.5	
		Over water splitting	-	-	
CoMoO NSs@NF	-	HER	173	190.1	10
		OER	270	54.4	
		Over water splitting	450	-	
CoO/MoO_x	0.7	HER	163	44	11
		OER	310 (η_{20})	-	
		Over water splitting	490	-	
Mo-CoP_3@CC	2.0-3.0	HER	62	55.7	**This work**
		OER	300	71.4	
		Over water splitting	420	-	

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