Cobalt Phosphide/Carbon dots Composite as an Efficient

Electrocatalyst for Oxygen Evolution Reaction

Supporting information



Figure S1. High-resolution XPS O 1s spectrum of the CoP/CDs composite.



Figure S2. (a) TEM, HRTEM images and size distribution of CDs. (b) FT-IR; (c) Raman and (d) UV-vis spectra of CDs.



Figure S3. HAADF-STEM image and corresponding elemental mappings of CoP/CDs composite.



Figure S5. EDS spectra of (a) CoP, (b) CoP/CDs (2 mg), (c) CoP/CDs (4 mg), (d) CoP/CDs (6 mg), (e) CoP/CDs (8 mg) and (f) CoP/CDs (10 mg).



Figure S6. (a) Nyquist plots of CDs, CoP and CoP/CDs. (b) electrical equivalent circuit (EEC) used for modeling the EIS data of CDs, CoP and CoP/CDs.



Figure S7. EDS spectra of CoP/CDs(6 mg) (a) before and (b) after OER catalysis.



Figure S8. (a)TEM and (b) HRTEM images of CoP/CDs composites before OER catalysis; (c) TEM and (d) HRTEM images of CoP/CDs composite after OER catalysis.



CoP/CDs composite after long-term stability test.

Catalysts	Overpotential	Tafel plot (mV dec ⁻¹)	Electrolyte	Ref.
	(mV)			
CoP hollow	400	57	1M KOH	S 1
polyhedron				
CoP-based	430	83	1M KOH	S2
nanoparticles				
CoP NPs	400	80	0.1M NaOH	S 3
CoPi	413	59	0.1M KPi	S4
CoP/CDs	400	93	1М КОН	Our work

 Table S1.
 The comparison with different catalysts for electrocatalysis performance.

References:

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