## **Electronic Supplementary Information**

for

## Highly efficient hydrogen evolution from water electrolysis using nanocrystalline transition metal phosphide catalysts

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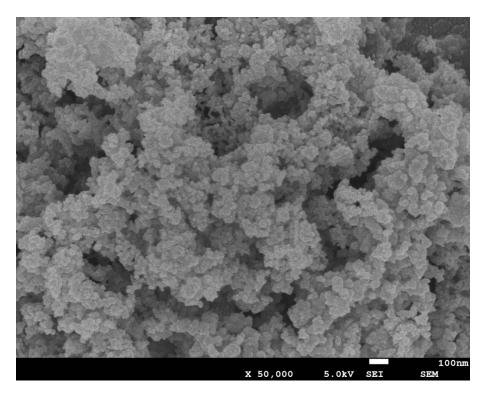
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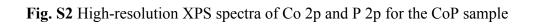
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Fig. S1 SEM image of the CoP sample.





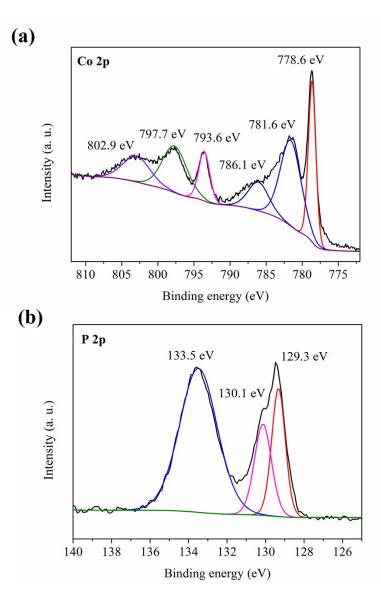
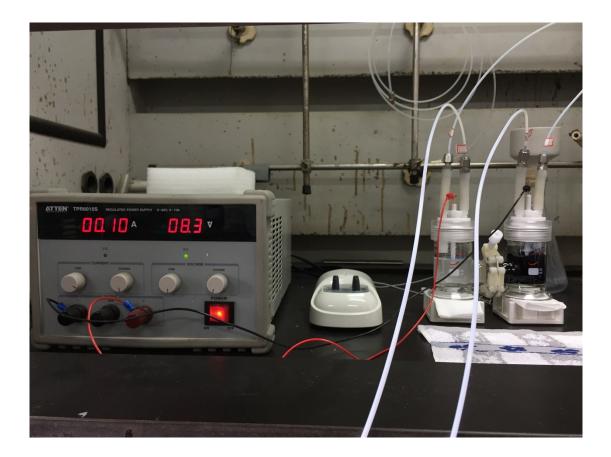


Fig. S3 Electrochemical reduction of  $H_4SiW_{12}O_{40}$  by a two-compartment home-made H-cell by using a classical two-electrode configuration.



**Fig. S4** Production of hydrogen and oxygen during the durability experiment for the CoP sample.



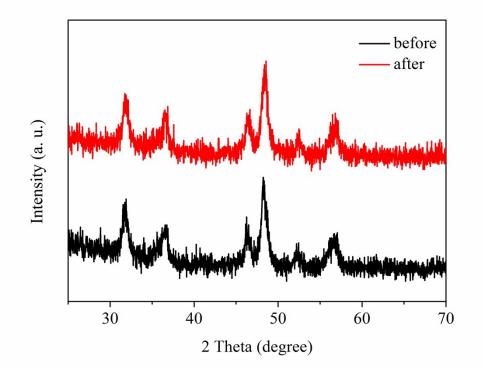
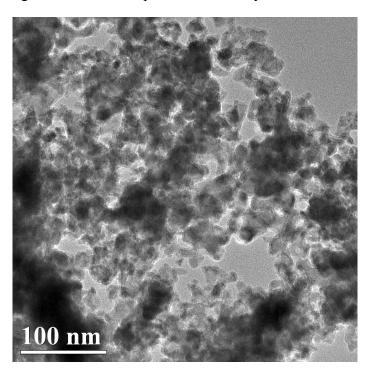


Fig. S5 XRD patterns for the CoP sample before and after the catalytic test.

Fig. S6 TEM image for the CoP sample after the catalytic test.



**Fig. S7** High-resolution XPS spectra of Co 2p and P 2p for the CoP sample before and after the catalytic test.

