

## Supporting Information

### **CoP-modified CdS for enhanced stability and photocatalytic hydrogen production under visible light**

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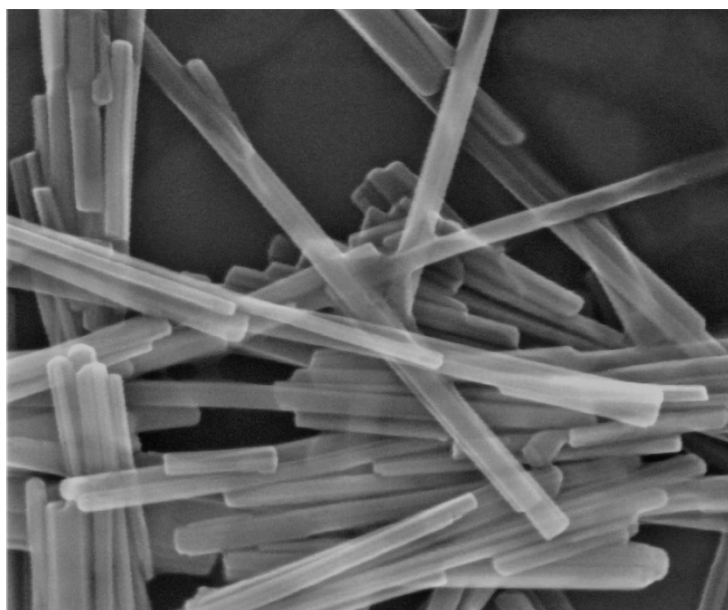


Fig. S1 SEM image of CdS

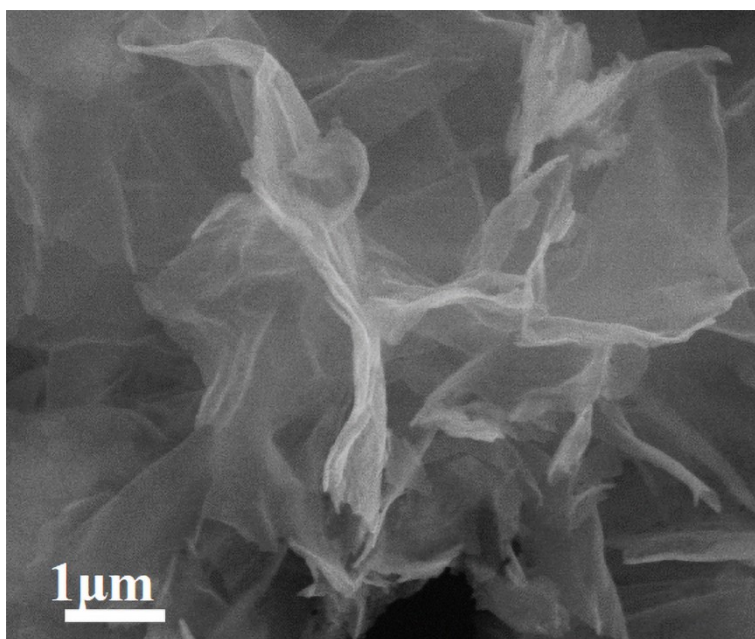


Fig. S2 SEM image of CoP

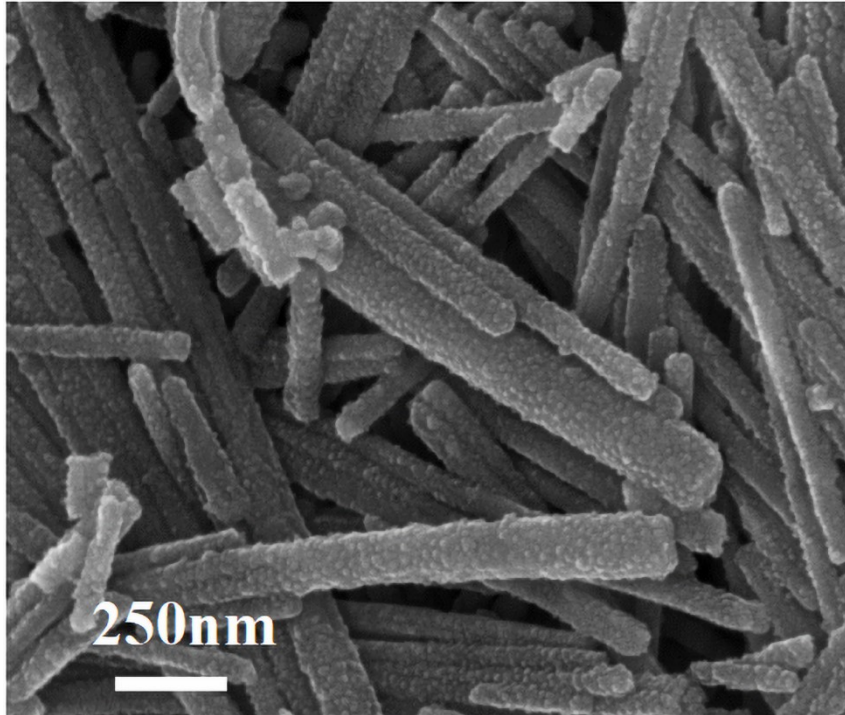


Fig. S3 SEM image of 10% CoP/CdS

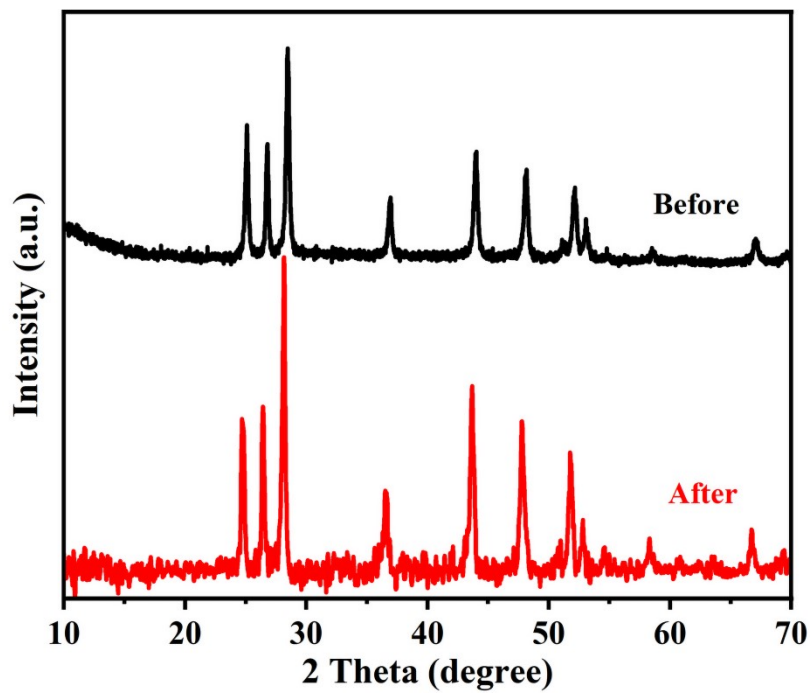


Fig. S4 XRD plot of 10% CoP/CdS before and after cycles

Table S1 The EDX of CoP

<b>Element</b>	<b>Atomic Fraction (%)</b>	<b>Atomic Error (%)</b>	<b>Mass Fraction (%)</b>	<b>Mass Error (%)</b>	<b>Fit error (%)</b>
Co	53.04	7.12	37.25	3.13	0.16
P	46.96	8.88	62.75	9.88	0.13

Table S2 Comparison of 10% CoP/CdS photocatalytic hydrogen production performance with other CdS-based photocatalytic materials

<b>Catalyst</b>	<b>Condition</b>	<b>Performance (<math>\mu\text{molh}^{-1}\text{g}^{-1}</math>)</b>	<b>Reference</b>
TiO <sub>2</sub> /CdS	$\lambda > 365 \text{ nm}$	1028	[S1]
V <sub>2</sub> O <sub>5</sub> /CdS/CuS	$\lambda > 420 \text{ nm}$	1457.1	[S2]
Co-N-C/CdS	$\lambda > 420 \text{ nm}$	905	[S3]
CdS/Cu <sub>2</sub> S/SiO <sub>2</sub>	$\lambda > 420 \text{ nm}$	1197	[S4]
SrTiO <sub>3</sub> /CdS	$\lambda > 420 \text{ nm}$	4537.9	[S5]
<b>10% CoP/CdS</b>	<b><math>\lambda &gt; 420 \text{ nm}</math></b>	<b>4430</b>	<b>This work</b>

Table S3 The AQY of all samples at 420 nm

<b>Sample</b>	<b>CdS</b>	<b>CoP</b>	<b>8% CoP/CdS</b>	<b>10% CoP/CdS</b>	<b>12% CoP/CdS</b>
AQY (%)	0.26	0	1.30	5.29	2.48

## References

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