

**Supporting Information for**

**Visible-Light-Induced Reduction of Hexavalent Chromium Utilizing**

**Cobalt Phosphate (Co-Pi) Sensitized Inverse Opal TiO<sub>2</sub> as A**

**Photocatalyst**

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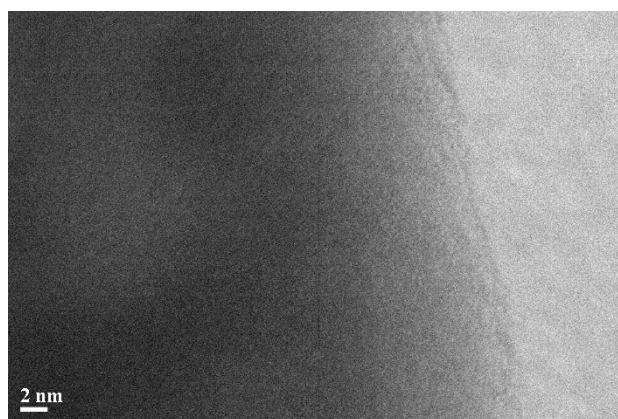
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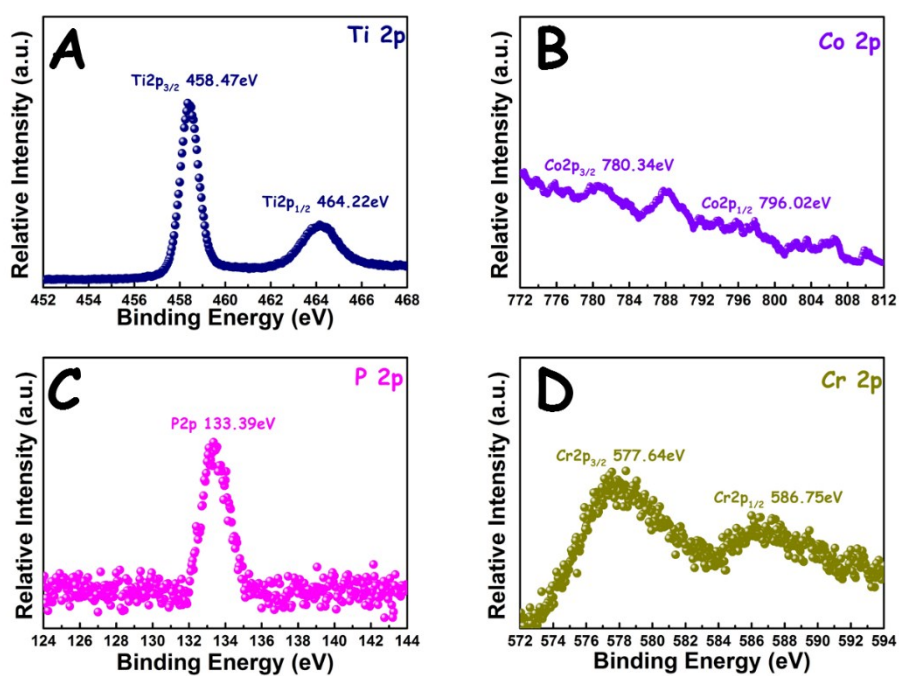
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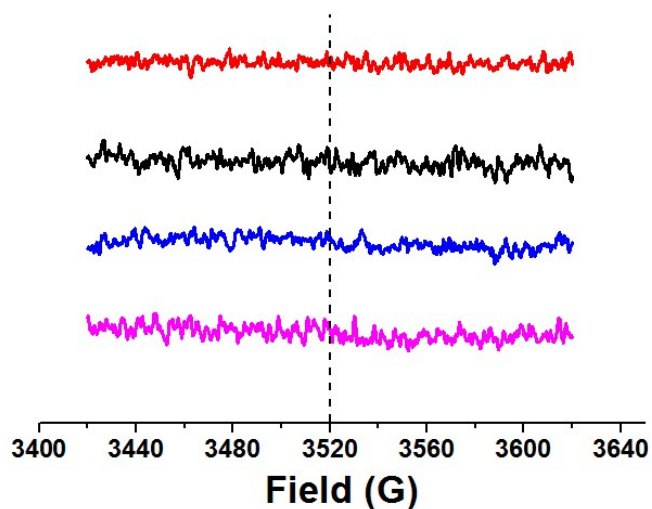
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**Fig.S1** HRTEM image of pure Co-Pi.



**Fig.S2** XPS spectra of Co-Pi/i.o.TiO<sub>2</sub> sample after photocatalytic reaction (A)Ti 2p (B) Co 2p (C) P 2p (D) Cr 2p..



**Fig.S3** ESR spectra of the sample with irradiation time of 1min (red line) and 5min (black line), and the sample mixing with Methanol solution with irradiation time of 1min (blue line) and 5min (pink line).

The results demonstrate that no obvious signals of  $\bullet\text{OH}$  and  $\bullet\text{O}_2^-$  were detected, which indicates there are few  $\bullet\text{OH}$  and  $\bullet\text{O}_2^-$  involving in the reaction. Moreover, the comparison between the system of Co-Pi/i.o.TiO<sub>2</sub> +Cr(VI) +phenol and the system of Co-Pi/i.o.TiO<sub>2</sub> +phenol (as shown in Fig.10 in manuscript) can provide the evidence that there are also few  $\text{h}^+$  involving in the reaction.

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