

## Supplementary Information

### Microwave synthesis of ZnIn<sub>2</sub>S<sub>4</sub>/WS<sub>2</sub> composites for photocatalytic hydrogen production and hexavalent chromium reduction

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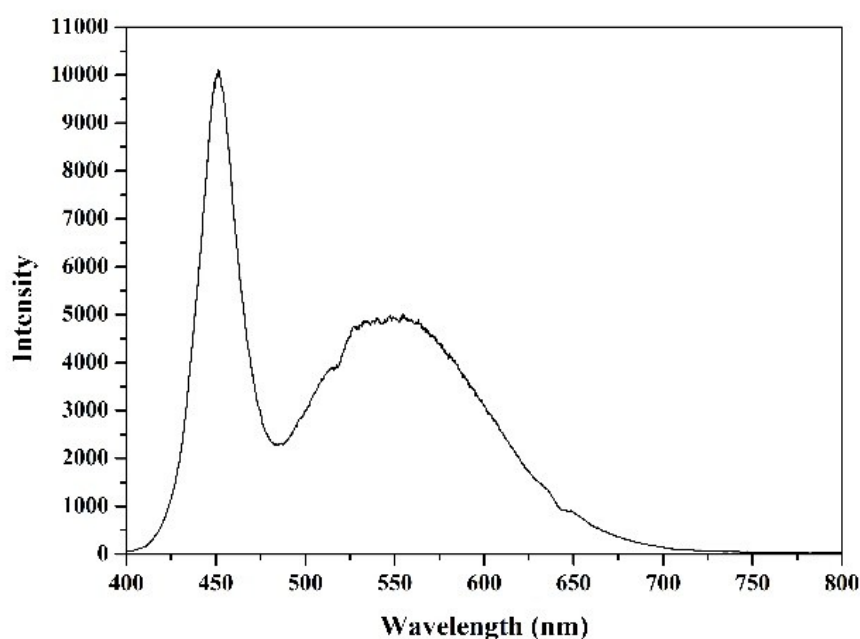
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**Fig. S1.** Spectral irradiance of the 50 W LED lamp.

**Table S1.** The apparent quantum yield (AQY) of the ZnIn<sub>2</sub>S<sub>4</sub>/WS<sub>2</sub> photocatalyst for the photocatalytic H<sub>2</sub> production compared with the previous literatures.

Photocatalyst	Weight of photocatalyst (mg)	Light source details	AQY (%)	Ref.
ZnIn <sub>2</sub> S <sub>4</sub> /WS <sub>2</sub> (Our work)	100	150 W Xe lamp ( $\lambda > 400$ nm)	0.27	-
ZnIn <sub>2</sub> S <sub>4</sub> /g-C <sub>3</sub> N <sub>4</sub>	500	300 W Xe lamp ( $\lambda > 400$ nm)	0.28	[1]
ZnIn <sub>2</sub> S <sub>4</sub> /RGO/MoS <sub>2</sub>	100	300 W Xe lamp ( $\lambda > 420$ nm)	0.4	[2]
ZnIn <sub>2</sub> S <sub>4</sub> /RGO/BiVO <sub>4</sub>	200	350 W Xe lamp ( $\lambda > 420$ nm)	0.8	[3]

**Table S2.** The apparent quantum yield (AQY) of the ZnIn<sub>2</sub>S<sub>4</sub>/WS<sub>2</sub> photocatalyst for the photocatalytic Cr(VI) reduction compared with the previous literatures.

Photocatalyst	Weight of photocatalyst (mg)	Light source details	AQY (%)	Ref.
ZnIn <sub>2</sub> S <sub>4</sub> /WS <sub>2</sub> (Our work)	100	150 W Xe lamp ( $\lambda > 400$ nm)	0.21	-
CuAl <sub>2</sub> O <sub>4</sub> /TiO <sub>2</sub>	100	200 W Xe lamp (under polychromatic light)	0.11	[4]
CoO	20	300 W Xe lamp ( $\lambda > 440$ nm)	0.17	[5]

## References

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