

## Study on the photocatalytic properties differences between the 1-D and 3-D $\text{W}_{18}\text{O}_{49}$ particles

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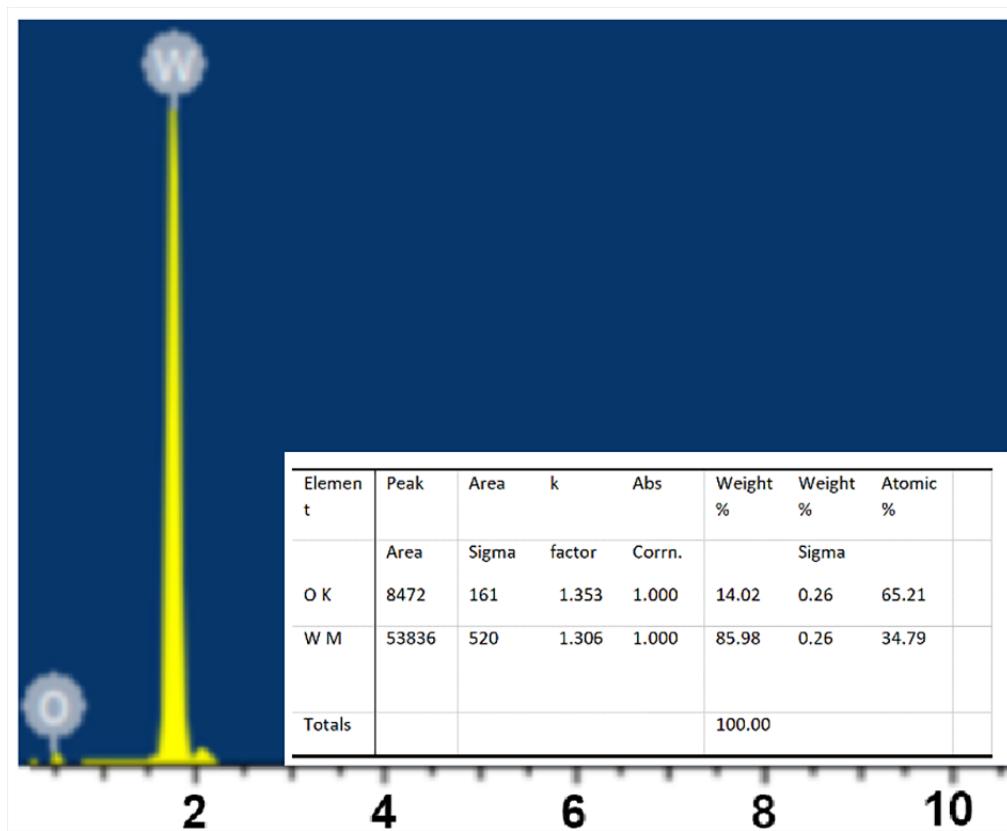
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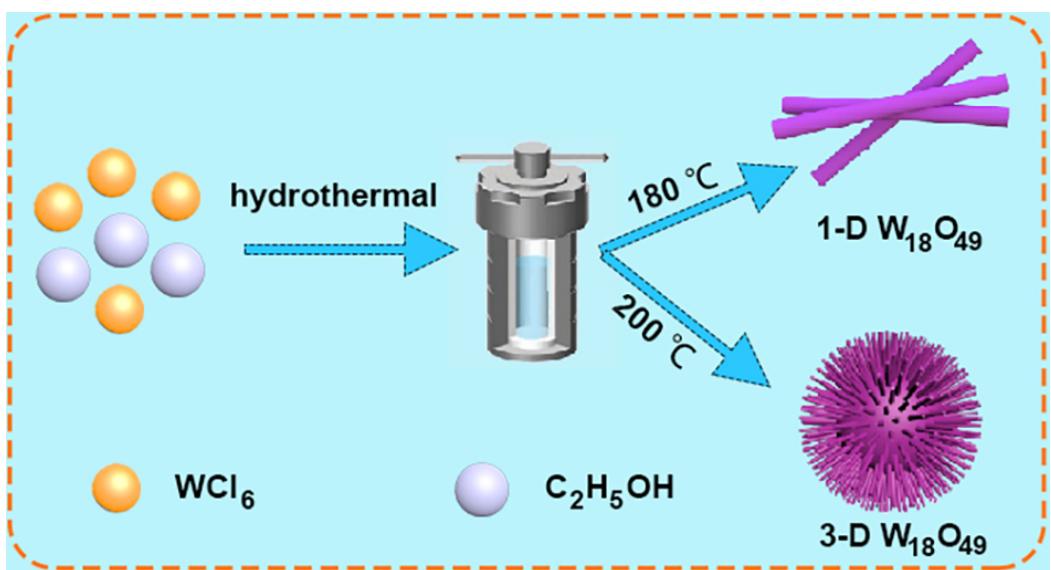
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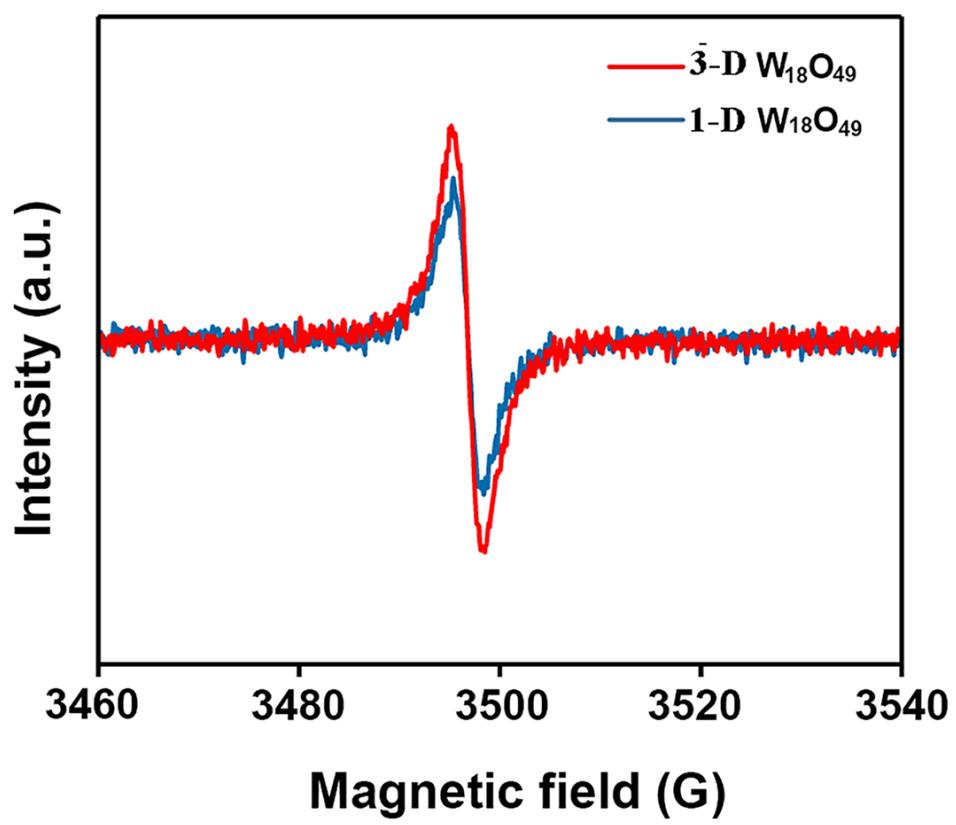
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[wzx13864176731@163.com](mailto:wzx13864176731@163.com) (Z. Wang); [lyly1901@126.com](mailto:lyly1901@126.com) (J. Gao); [yejin@nefu.edu.cn](mailto:yejin@nefu.edu.cn) (J. Ye)



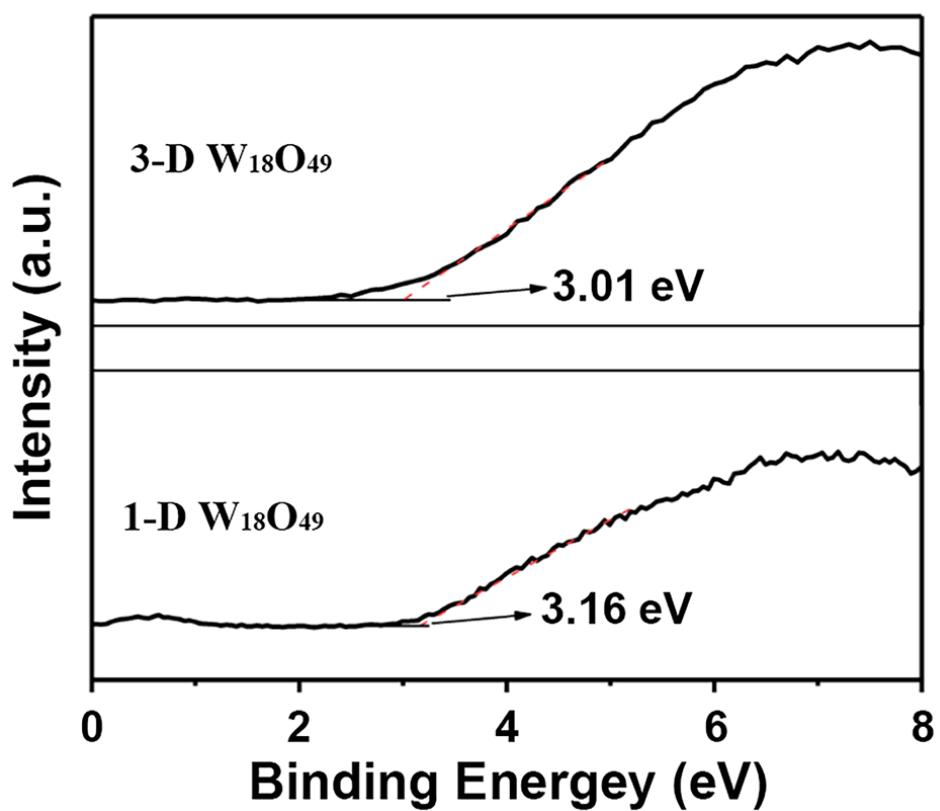
**Fig. S1.** the content of the elements O, W in 3-D urchin-like  $\text{W}_{18}\text{O}_{49}$



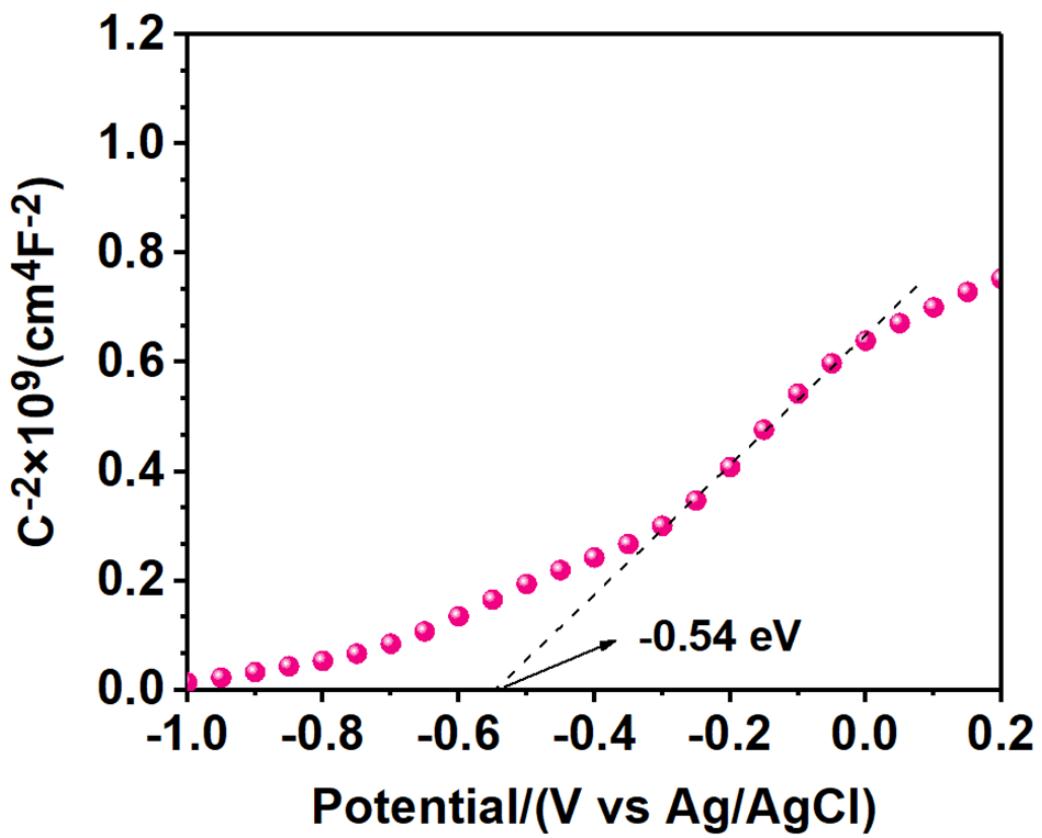
**Fig. S2.** The schematic diagram for the preparation process of  $\text{W}_{18}\text{O}_{49}$ .



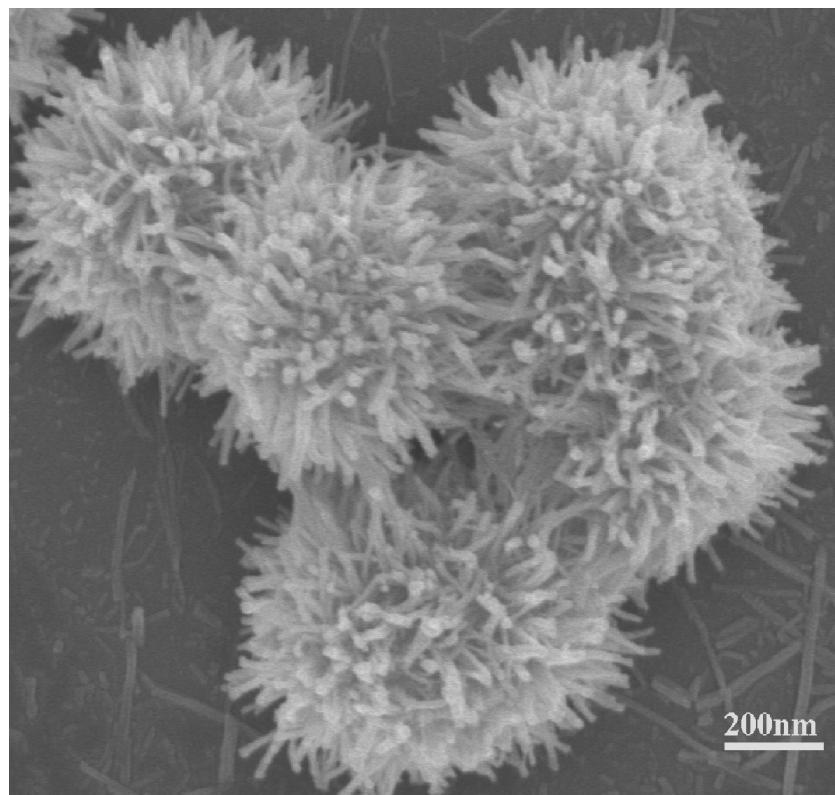
**Fig. S3.** EPR spectra of 1-D  $\text{W}_{18}\text{O}_{49}$  nanowires and 3-D urchin-like  $\text{W}_{18}\text{O}_{49}$ .



**Fig. S4.** XPS valence band spectra of 1-D  $\text{W}_{18}\text{O}_{49}$  nanowires and 3-D urchin-like  $\text{W}_{18}\text{O}_{49}$ .



**Fig. S5.** Mott-Schottky plots of 3-D  $\text{W}_{18}\text{O}_{49}$ .



**Fig. S6.** SEM image of 3-D  $\text{W}_{18}\text{O}_{49}$  particle obtained after the photocatalytic degradation of MB