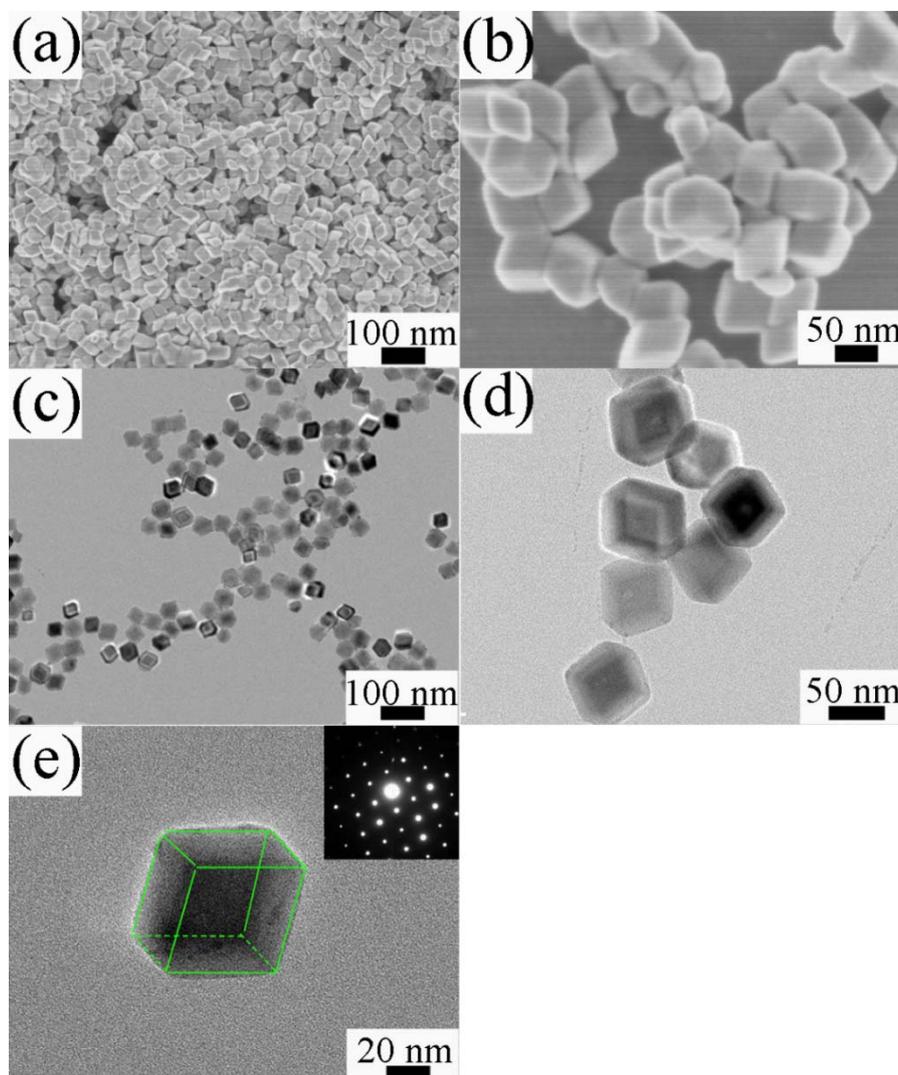


## Supplementary Information

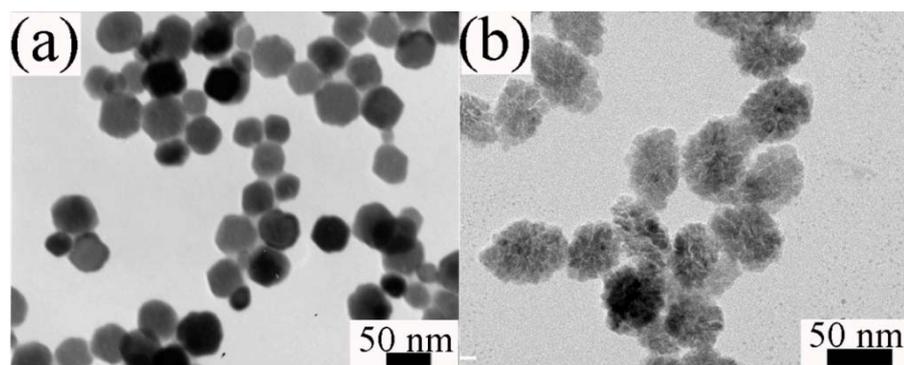
### Hematite nanostructures synthesized by silk fibroin-assisted hydrothermal method

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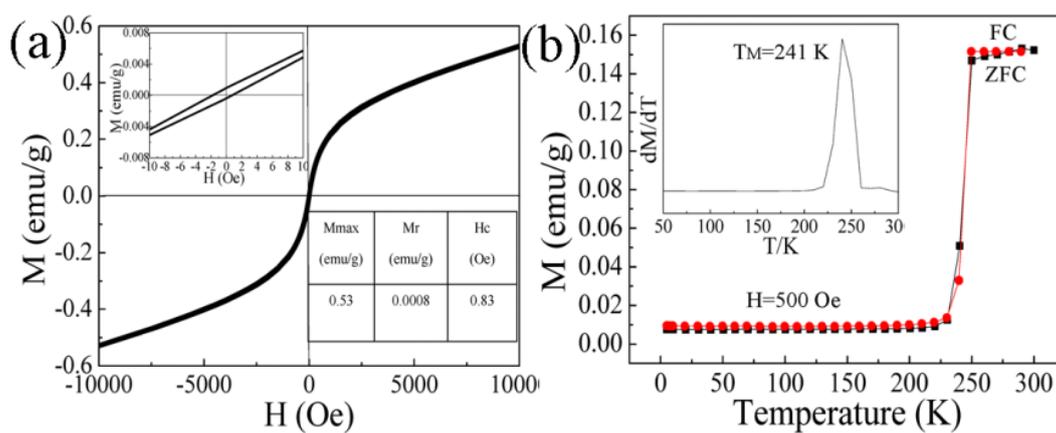
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**Fig. S1.** SEM (a, b) and TEM (c-e) images of the synthesized  $\alpha\text{-Fe}_2\text{O}_3$  obtained without the silk fibroin.



**Fig. S2.** TEM images of the synthesized  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> obtained with different silk fibroin concentration. (a) [RSF] = 0.063 wt%; (b) [RSF] = 0.250 wt%.



**Fig. S3.** The magnetic properties of pristine  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanocubes. (a) magnetic hysteresis loops measured at room temperature, (b) temperature dependence of ZFC and FC magnetization, inset is its corresponding differential ZFC curve.