

Synthesis, Structure, Magnetism and Photocatalysis of α -Fe₂O₃ Nanosnowflakes *

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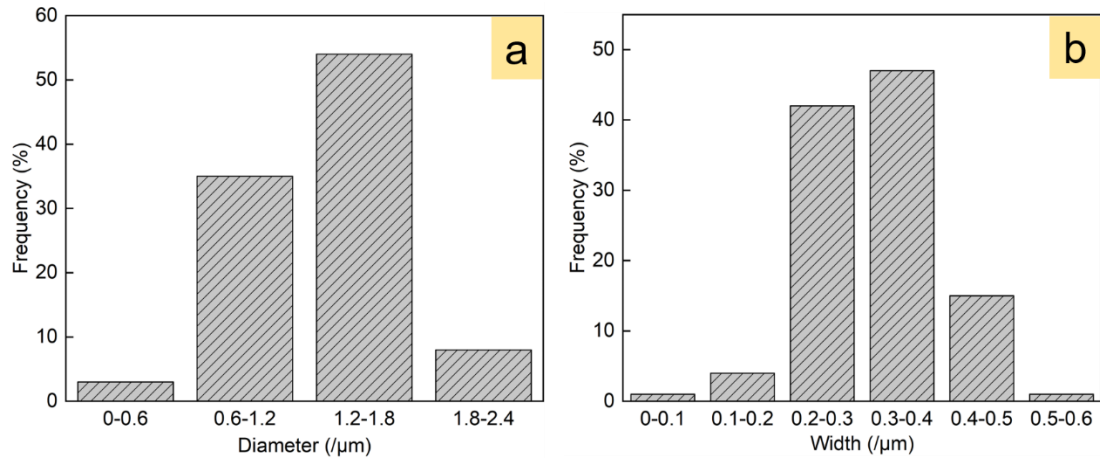


Figure S1. (a) The average diameter size distribution of the complete nanosnowflakes; (b) the average width size distribution of the petals.

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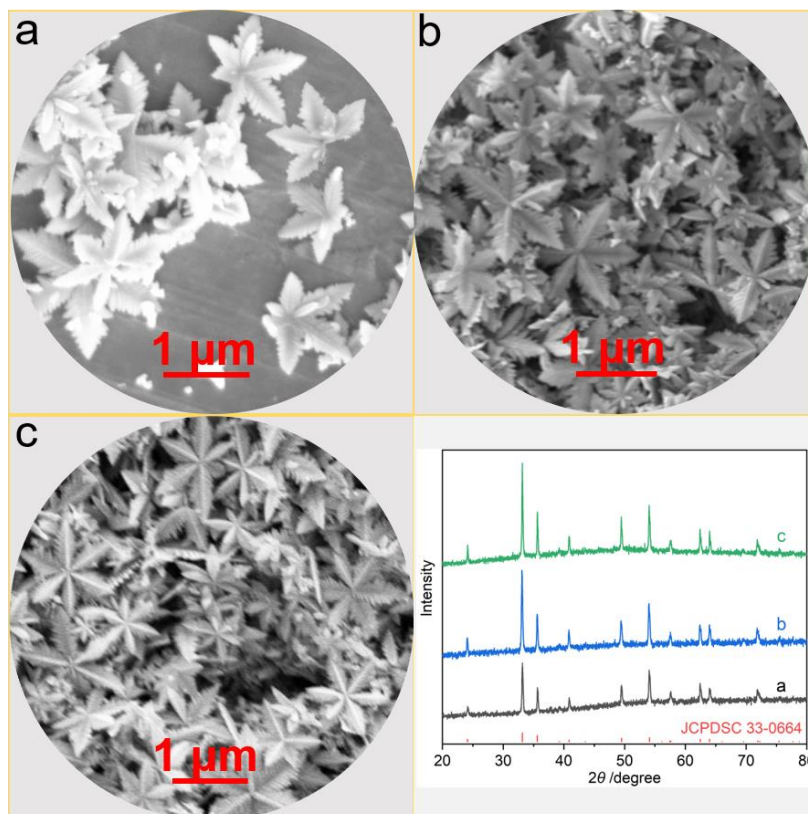


Figure S2. The SEM images and XRD patterns of the α -Fe₂O₃ samples obtained by a hydrothermal process of a) PVP/PF-3, b) -4 and c) -6 at 393 K for 6 h.

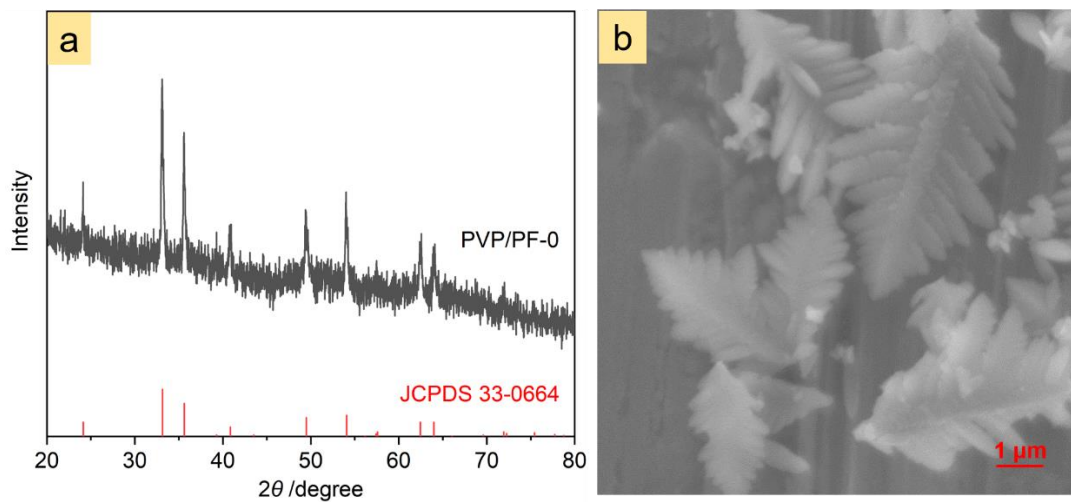


Figure S3. (a) The XRD pattern and (b) FE-SEM of the $\alpha\text{-Fe}_2\text{O}_3\text{-2}$ crystal with a branched dendritic-like nanostructure obtained from the hydrothermal process of the PVP/PF-0.

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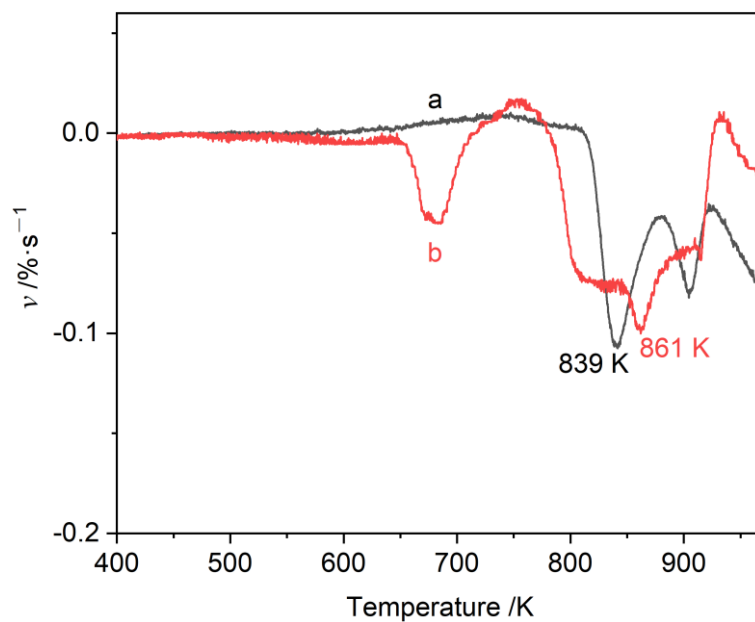


Figure S4. The fractional mass loss per second (v , $\% \cdot s^{-1}$) as a function of temperature for (a) PF and (b) PVP/PF-5 at heating rate of $10 \text{ K} \cdot \text{min}^{-1}$.

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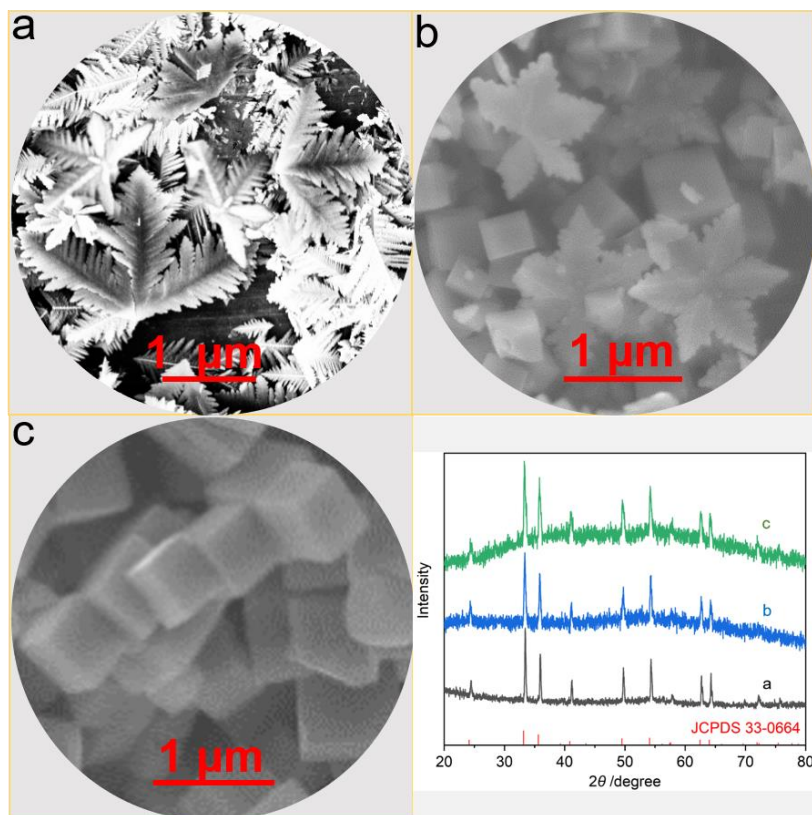


Figure S5. The SEM images and XRD patterns of the α -Fe₂O₃ samples obtained by a hydrothermal process of PVP/PF-5 for 6 h at a) 373, b) 413 and c) 433 K.

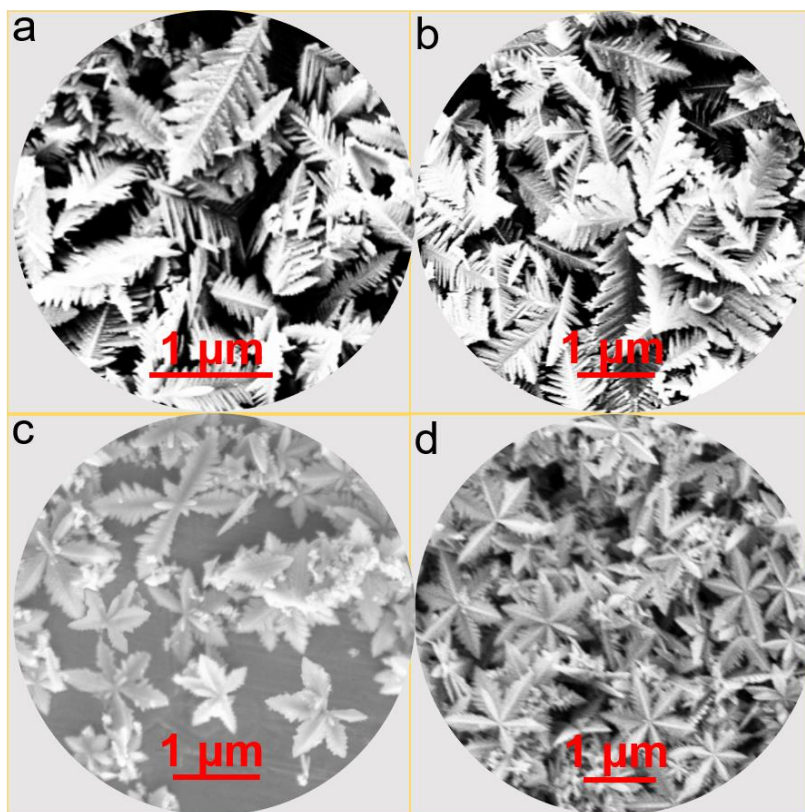


Figure S6. The SEM images of the α -Fe₂O₃ samples obtained by a hydrothermal process of PVP/PF-5 at 393 K for a) 3, b) 4, c) 5 and d) 7 h.

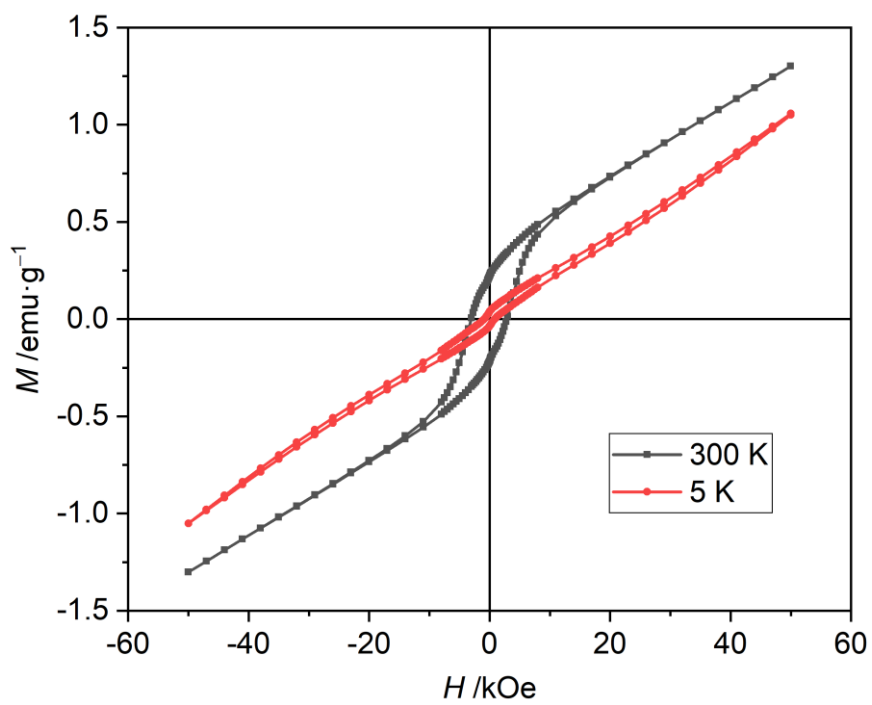


Figure S7. The field dependence of magnetization at 5 and 300 K of the $\alpha\text{-Fe}_2\text{O}_3\text{-2}$.

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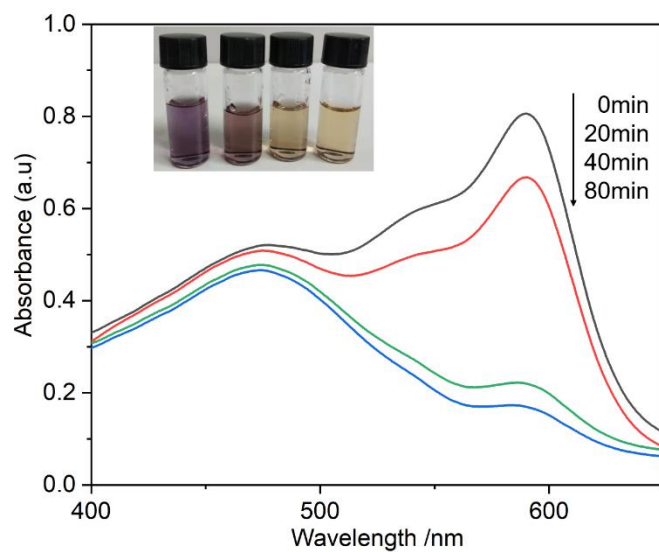


Figure S8. The absorption spectra of the mixed dyes (MO and CV) solutions on the $\alpha\text{-Fe}_2\text{O}_3\text{-1}$ in the presence of H_2O_2 with different illumination times: 0~80 min. 20 mg of the $\alpha\text{-Fe}_2\text{O}_3\text{-1}$ was added to a solution of the mixed dyes (40 mL MO and 40 mL CV, $10\text{ mg}\cdot\text{L}^{-1}$).

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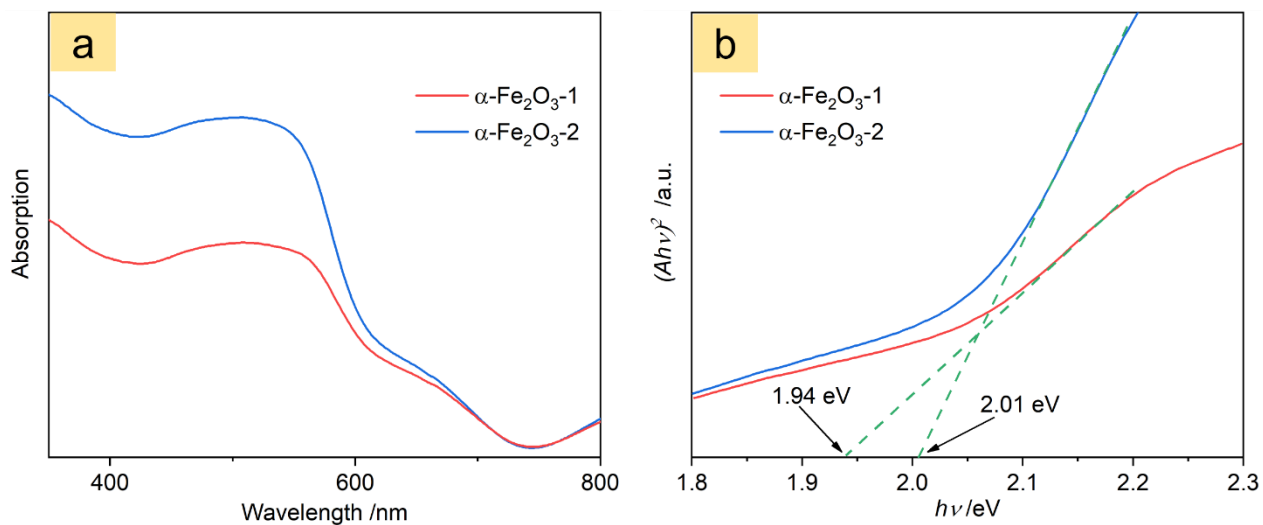


Figure S9. The room temperature UV/Vis DRS (a) and plots of $(Ah\nu)^2$ vs $h\nu$ (b) of the α -Fe₂O₃-1 and -2.

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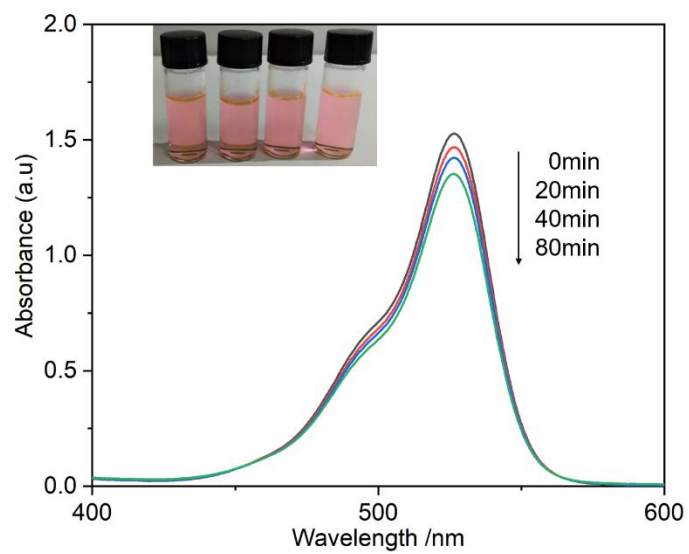


Figure S10. The absorption spectra of R6G on the $\alpha\text{-Fe}_2\text{O}_3\text{-1}$ in the absence of H_2O_2 with different illumination times: 0~80 min.

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