

# Supporting Information

## **Fabrication of Pit-structured ZnO Nanorods and Their Enhanced Photocatalytic Performance**

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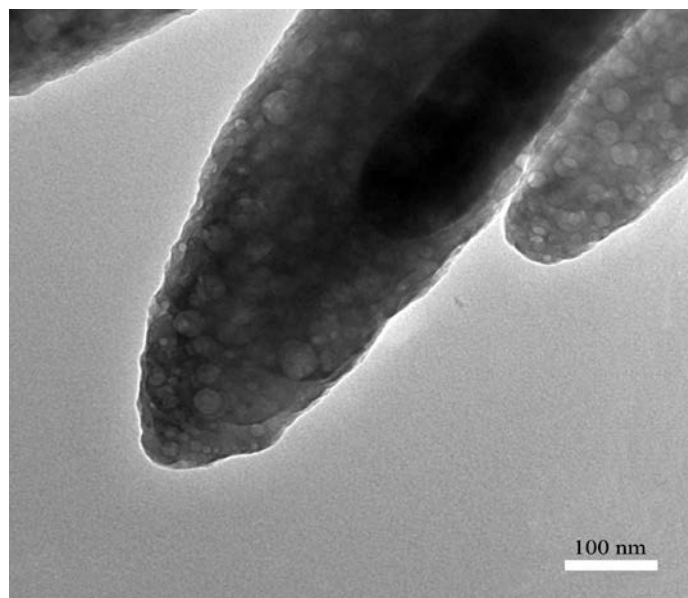
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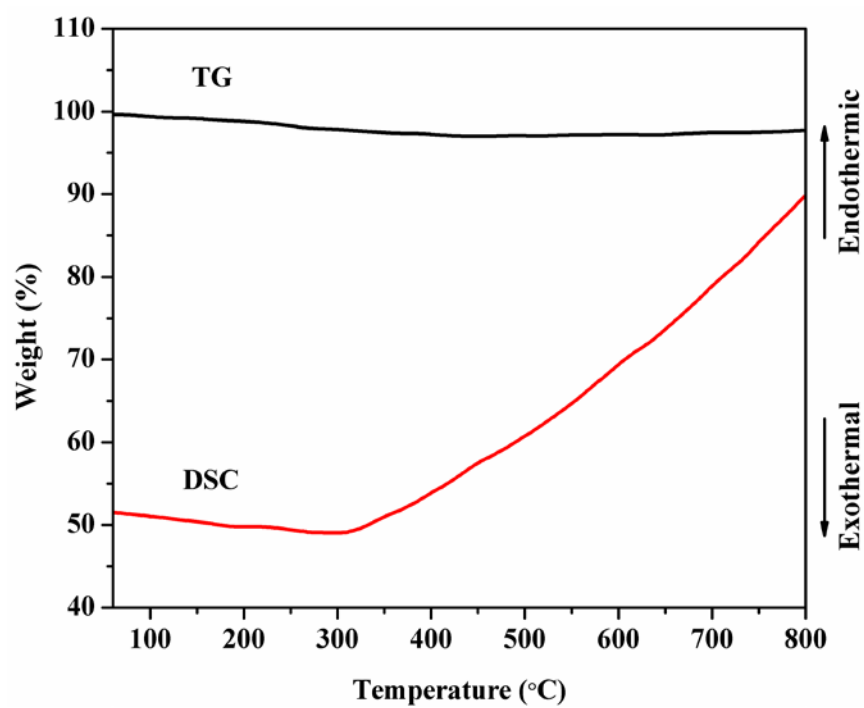
## Experiment Section in Supporting Information

**Preparation of ZnO nanorods in the absence of PEG.** ZnO nanorods were prepared by the same procedure only without PEG. A portion of the precipitate was also calcined in air at 300 °C for 2 h and then picked up for further characterization.

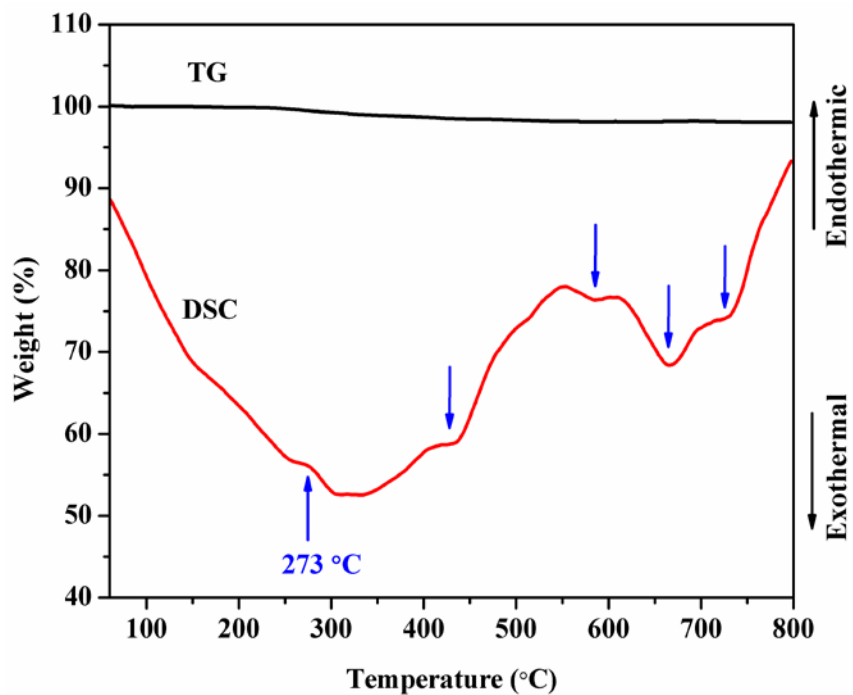
**Preparation of ZnO nanorods in the absence of ammonia.** ZnO nanorods were basically prepared according to the previous literature.<sup>S1</sup> Analytical zinc nitrate hexahydrate ( $\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ ) and sodium hydroxide (NaOH) (China Chemical Reagent Co. Ltd) were used as received without further purification. 5.95 g  $\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$  was dissolved in 50 mL de-ionized water and stirred for 30 min. Then, a 50 mL aqueous solution of NaOH (0.8 M) was added drop wise into the above  $\text{Zn}(\text{NO}_3)_2$  solution under vigorous stirring. The resulted mixture was continuously heated at 80 °C for 2 h. After the reaction, the resulting precipitate was filtered, washed with de-ionized water and ethanol several times, and finally dried at 60 °C for 24 h.



**Fig. S1** TEM image of the pit-structured ZnO prepared in the absence of PEG.



**Fig. S2** TG-DSC curves of the ZnO in the absence of ammonia.



**Fig. S3** TG-DSC curves of the uncalcined ZnO nanorods in the absence of PEG.

## Reference

- 1 A. Al-Hajry, A. Umar, Y. B. Hahn and D. H. Kim, *Superlattices Microstruct.*, 2009, **45**, 529.