Electronic Supplementary Information

Shape-controlled hierarchical ZnO architectures: Photocatalytic and antibacterial activities

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Fig. S1. XRD patterns of ZnO nanostructures (a) SA, (b) NRA, (c) CFA and (d) MA.

Fig. S2. SEM micrographs of cauliflower-like ZnO nanostructures synthesized at different time intervals (a) 10, (b) 20 and (c) 30 min.
Fig. S3. TEM micrographs of ZnO nanostructures (a) SA, (b) NRA, (c) CFA, (d) MA and HRTEM images and the typical SAED pattern of SA are shown in (e, f), respectively.

Fig. S4. Room temperature micro-Raman spectra of SA, NRA, CFA and MA of ZnO nanostructures.
Fig. S5. The typical linear fitting of Tauc plot of SA, NRA, CFA and MA of ZnO nanostructures.
Fig. S6. (a) Time dependent absorption spectra of MB degradation over CFA of ZnO under UV irradiation and (b) its ln (C₀/C) vs. time curve.
Fig. S7. Viability assay of *S. aureus* using (a) control (without ZnO) and in presence of ZnO nanostructures (b) SA, (c) NRA, (d) CFA and (e) MA.
Fig. S8. Typical SEM micrographs of (a) control and (b) ZnO NRA treated with *S. aureus* for 6 h.