

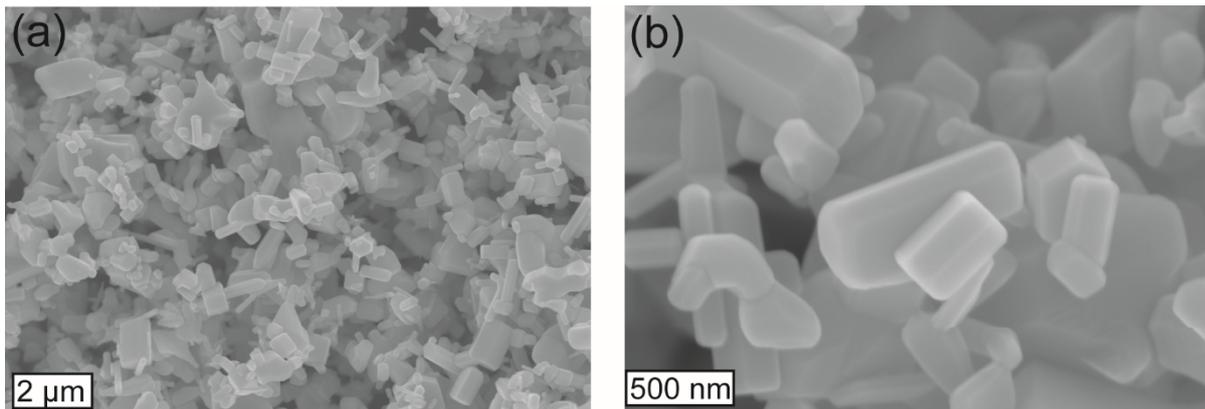
# **Enhanced photocatalytic and antibacterial performance of ZnO nanoparticles prepared by an efficient thermolysis method**

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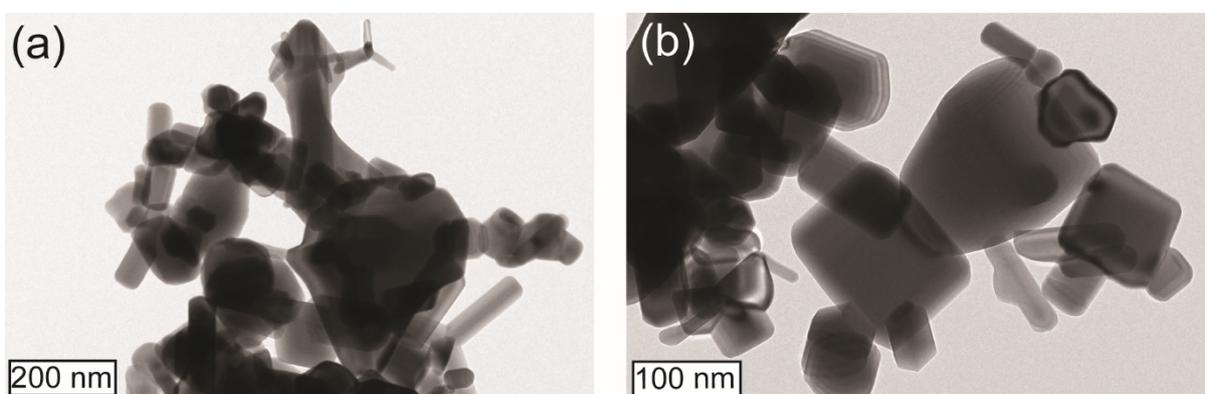
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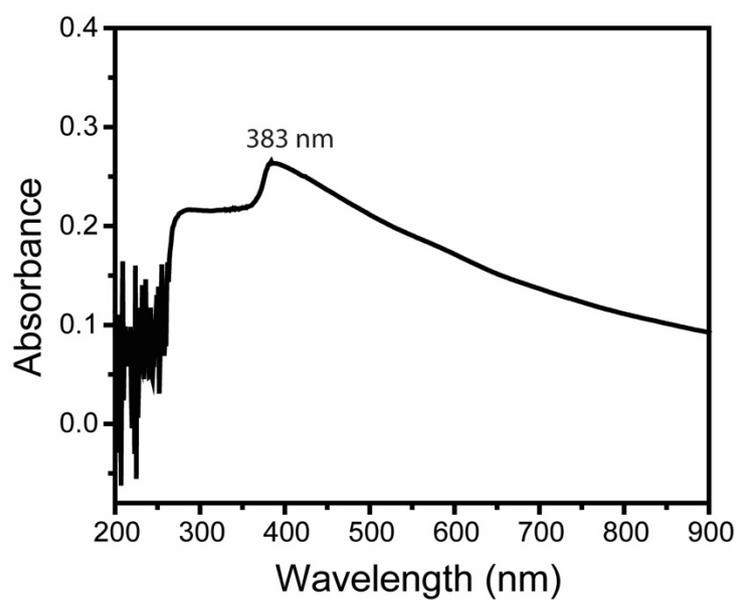
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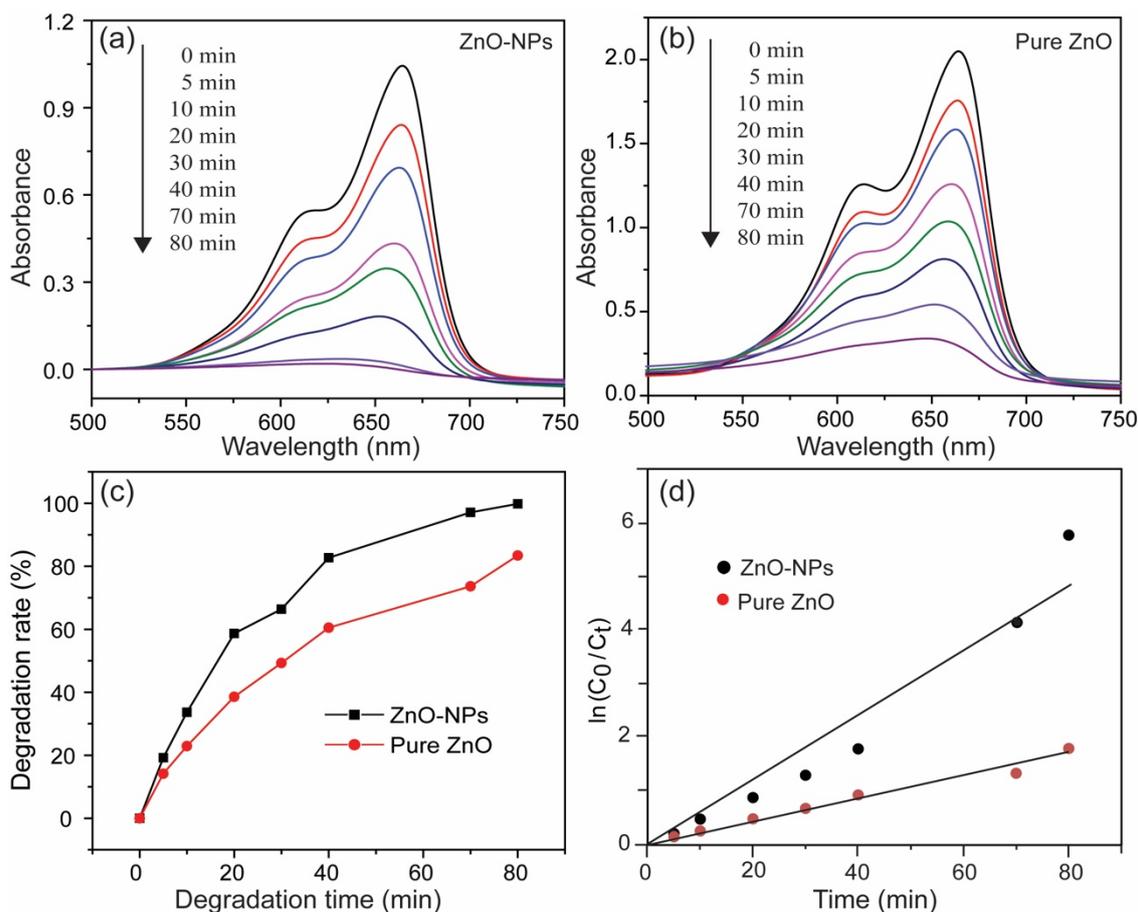
**Figure S1.** (a) and (b) FE-SEM images of the pure ZnO (ACS reagent) at different magnifications.



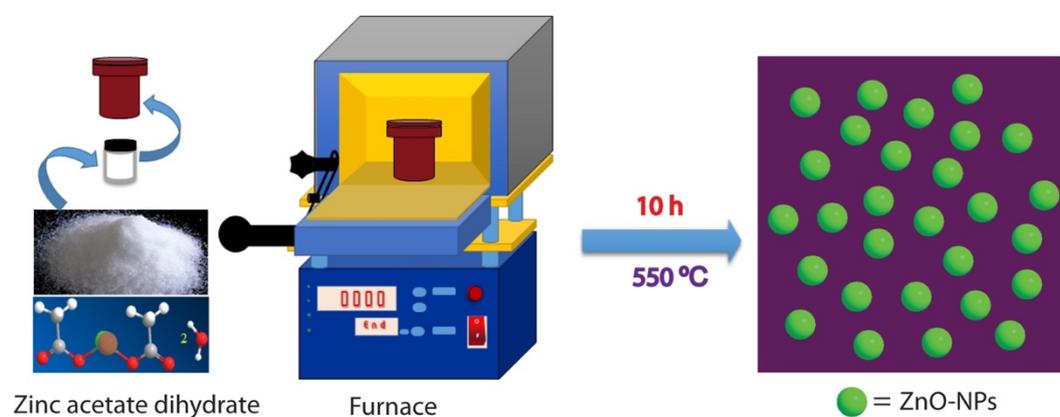
**Figure S2.** (a) and (b) TEM images of the pure ZnO (ACS reagent) at different magnifications.



**Figure S3.** UV-vis absorption spectrum of synthesized ZnO-NPs in the range 200-900 nm.



**Figure S4.** UV-vis absorbance spectra showing the decomposition of methylene blue (MB) in the presence of (a) the ZnO-NPs and (b) the pure ZnO (ACS reagent); (c) degradation rates of MB and (d) kinetic plots in presence of the ZnO-NPs or the pure ZnO. The rate constant ( $k$ ) was obtained from the slope of the equation of absorbance vs. time; the calculated value was  $0.0781 (\pm 0.01) \text{ min}^{-1}$  in the presence of the ZnO-NPs and  $0.0224 (\pm 0.01) \text{ min}^{-1}$  in the presence of the pure ZnO, respectively. The decomposition of MB was carried out at  $29^\circ\text{C}$ .



**Figure S5.** Schematic diagram for preparation of ZnO-NPs.