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Figure S1. SEM images of ZnO particles prepared by using 1mM Zn(Ac)₂. 2H₂O and1M NaOH concentration at different temperatures: (a) 20°C; (b) 40°C; (c) 55°C; (d) 70°C



Figure S2. SEM images of ZnO nanoparticles prepared by using $1\text{mM} \text{Zn}(\text{Ac})_2$. $2\text{H}_2\text{O}$ at 55°C with different NaOH concentrations: (a) 0.5 M; (b) 1 M; (c) 2M



Figure S3. (a) Variation of ZnO content in PS/ZnO composite particles and [Zn]:[C] ratio as a function of NaOH concentration; (b)Wide-scan XPS-spectra, (c) C 1s spectra and (d) Zn 2p spectra of composite PS/ZnO, prepared by using 1mM Zn(Ac)₂.2H₂O at 0.5M NaOH and 55°C.



Figure S4. SEM images of hollow particles obtained from the core dissolution of PS/ZnO composite particles prepared by using different $Zn(Ac)_2.2H_2O$ concentrations: (a) 0.5 mM; (b) 1.5 mM; at 55°C and 0.2M NaOH. TEM images of PS/ZnO composite particles prepared by using 0.2M Zn(Ac)_2.2H_2O concentration at 55°C and 0.2M NaOH (c) before and (d) after core dissolution.