**Supplementary Figures**



Figure S1: UV-Visible spectra of aqueous dispersion of Ag and Ag@ZnO nanoparticles synthesized by chemical reduction and sonochemical technique respectively



Figure S2: XRD patterns of the Ag@ZnO core-shell nanoparticles synthesized by the sonochemical technique and heat treated for 2h at different temperatures



Figure S3: FTIR spectrum of Ag@ZnO core-shell nanoparticles synthesized by the sonochemical technique and dried at 80oC for 2 h



Figure S4: Room-temperature photoluminescence spectrum of Ag@ZnO core-shell nanoparticles synthesized by the sonochemical technique and dried at 80oC for 2 h



Figure S5: TEM (a) and HRTEM (b) images of Ag@ZnO nanoparticles synthesized by the sonochemical technique and dried at 80oC for 2 h



Figure S6: Nitrogen adsorption/desorption isotherms obtained at 77 K and inset shows the pore size distribution of the as-synthesized Ag@ZnO nanoparticles synthesized by the sonochemical technique and dried at 80oC for 2 h