

Supplementary Electronic Information

1. FT-IR spectra of ZnO nanopowder before and after SiO₂-coating

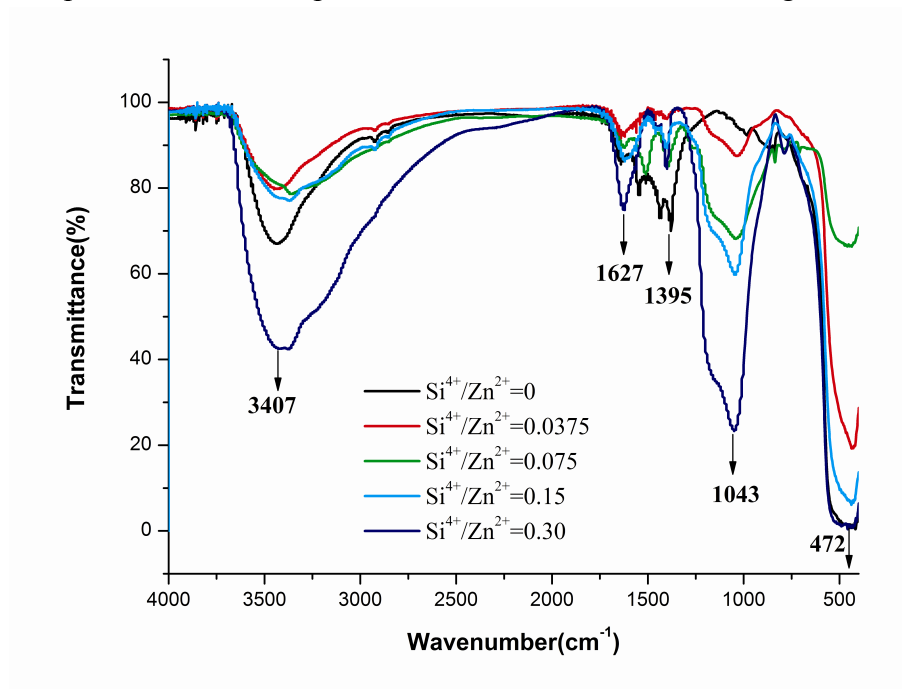


Fig. S1 FT-IR spectra of synthesized nanocomposites from different Si⁴⁺/Zn²⁺ molar ratios after the first coating step.

Peak assignment: 472cm⁻¹, Zn-O stretching; 1043cm⁻¹ asymmetric stretching of Si-O-Si; 1395cm⁻¹, symmetric stretching of COO⁻; 1627cm⁻¹, asymmetric stretching of COO⁻; 3407cm⁻¹, OH stretching.

2. TEM micrograph and EDS analysis of SiO₂-coated ZnO nanoparticles

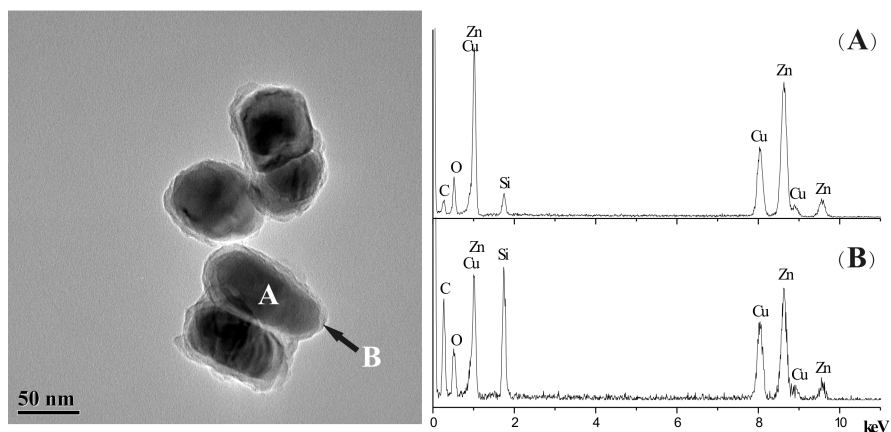


Fig. S2 TEM micrograph of the ZnO nanopowders after SiO₂ coating (left) and EDS point analysis of the core (A) and shell parts (B) (C and Cu signals are from the Cu grid).

3. TEM micrograph and EDS analysis of the nanocomposites calcined at 550°C after addition of additives (Sb, Bi, Mn, Ni, Co, Sn etc.) salts.

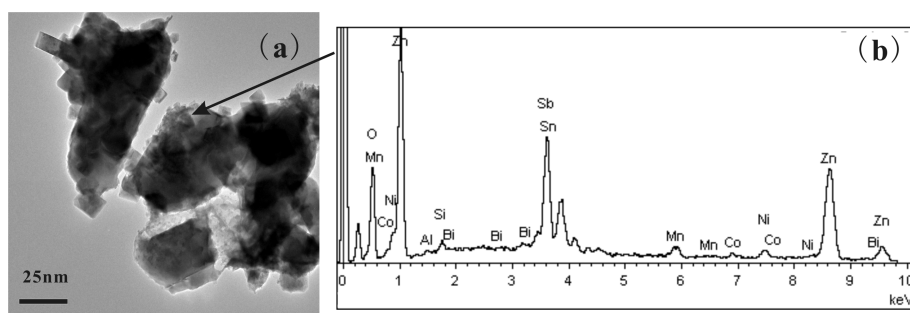


Fig. S3 (a) TEM micrograph and (b) one random point EDS analysis of the ZnO nanocomposites after coating of additive salts (calcined at 550°C) (Cu signal is from the Cu grid)