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ABSTRACT

ZnO/Cu₂O core-shell nanocomposites (ZnO/Cu₂O CSNCs) were successfully synthesized by a facile solution method. The samples were characterized by XRD, XPS, SEM, TEM and UV-vis absorption spectra. Results showed that ZnO nanorods coated by Cu₂O nanoparticles formed typical core-shell structures, and the ZnO/Cu₂O CSNCs were able to absorb a large part of visible light and exhibited an excellent photocatalytic activity. It was found that the n-ZnO/p-Cu₂O heterojunction played a key role in enhancing photocatalytic activity of the ZnO/Cu₂O CSNCs.

Graphical abstract

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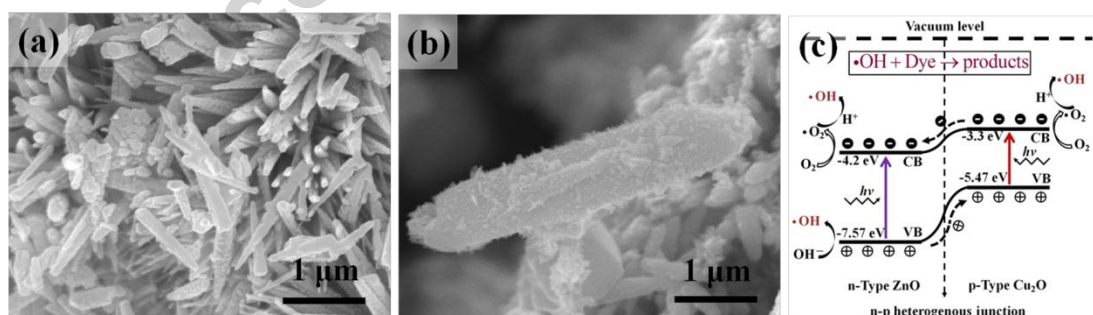


Fig. FESEM images of ZnO nanorods (a) and ZnO/Cu₂O core-shell nanocomposites (b); Schematic illustration of excitation and separation of photoinduced electron-hole pairs for ZnO/Cu₂O heterojunction under UV-vis irradiation (c).

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