

ZnO/CuO pn heterojunction as a promising composite toward photocatalytic application by facile organic solvent synthesis

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Nano-semiconductors are recently employed for harvesting solar energy as well as converting it into chemical energy to tackle the demanding growth of energy and environmental problems around the world. In attempts to produce efficient photocatalysts, ZnO/CuO pn heterojunction was a promising composite owing to some plausible explanations. The suitable bandgap energy that was important in this application has been taken into account in a bunch of studies. In this study, a series of ZnO/CuO photocatalysts were synthesized by nonaqueous solvents with varying CuO contents as well as calcination temperatures ranging from 10 to 50% and from 250 to 750 °C. The as-prepared catalysts were measured via various analytical tools for optical studies like UV-DRS as well as PL spectra. Besides, XRD, HRTEM, Raman, and FTIR were also conducted to validate the crystal lattice, size, and formation of ZnO/CuO nanocomposites.