

Semiconductor Supported Gold Nanoparticles for Photodegradation of Rhodamine B

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Abstract : Rhodamine B (RB) is a toxic dye used extensively in textile industry, which must be remediated before its drainage to the environment. In the present study, supported gold nanoparticles on commercially available titania and zincite were successfully prepared and then their activity on the photodegradation of RB under UV-A light irradiation were evaluated. The synthesized photocatalysts were characterized by ICP, BET, XRD, and TEM. Kinetic results showed that Au/TiO₂ was an inferior photocatalyst to Au/ZnO. This observation could be attributed to the strong reflection of UV irradiation by gold nanoparticles over TiO₂ support.

Keywords : supported AuNPs, semiconductor photocatalyst, photodegradation, rhodamine B

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