

Decolorization of reactive orange 16 dye by copper oxide system

ABSTRACT

The decolorization of reactive orange 16 dye (RO16) from aqueous solution by CuO/H₂O₂ was investigated. The amount of dye removed was determined by measuring the concentration of the dye at its characteristic wavelengths by UV-Vis spectrophotometer. The effects of CuO dose, H₂O₂ concentration and UV light on the decolorization of the dye were investigated. It was found that the removal rate increased with increasing mass of CuO and increasing concentration of H₂O₂. The combination of CuO, H₂O₂ and UV light was the best system with dye removal of 100% after 6 h. The removal efficiency observed was in the order: CuO/ UV/H₂O₂ > CuO/H₂O₂ > CuO/UV = CuO > UV/H₂O₂ > H₂O₂ > UV.

Keyword: Copper oxide; Decolorization; Dye; H₂O₂; UV light