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