

## Decolorization of reactive orange 16 dye by copper oxide system

### ABSTRACT

The decolorization of reactive orange 16 dye (RO16) from aqueous solution by CuO/H<sub>2</sub>O<sub>2</sub> 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, H<sub>2</sub>O<sub>2</sub> 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 H<sub>2</sub>O<sub>2</sub>. The combination of CuO, H<sub>2</sub>O<sub>2</sub> 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/H<sub>2</sub>O<sub>2</sub> > CuO/H<sub>2</sub>O<sub>2</sub> > CuO/UV= CuO > UV/H<sub>2</sub>O<sub>2</sub>> H<sub>2</sub>O<sub>2</sub>> UV.

**Keyword:** Copper oxide; Decolorization; Dye; H<sub>2</sub>O<sub>2</sub>; UV light