

Photocatalytic degradation of 1,4-Benzoquinone in aqueous ZnO dispersions.

ABSTRACT

The present paper reports the UV-assisted degradation of 1,4-benzoquinone in ZnO suspensions. The variables studied include the concentration of 1,4-benzoquinone, photocatalyst, pH and the total organic carbon. The concentration of 1,4-benzoquinone and residue organic carbon were measured using UV-Visible spectrophotometer and TOC analyzer, respectively. The results showed that 1,4-benzoquinone photodegradation was independent of pH. The photoactivity of ZnO was maximum at 1.0 g L⁻¹ concentration and at 100 mg L⁻¹ 1,4-benzoquinone levels. Within pH 4-10 more than 80% of 1,4-benzoquinone can be removed. ZnO has demonstrated reusability in the process.

Keyword: Benzoquinone; Mineralization; Photocatalytic degradation; ZnO.