

## **Photocatalytic Degradation of p-Cresol by Zinc Oxide under UV Irradiation.**

### **ABSTRACT**

Photocatalytic degradation of p-cresol was carried out using ZnO under UV irradiation. The amount of photocatalyst, concentration of p-cresol and pH were studied as variables. The residual concentration and mineralization of p-cresol was monitored using a UV-visible spectrophotometer and total organic carbon (TOC) analyzer, respectively. The intermediates were detected by ultra high pressure liquid chromatography (UPLC). The highest photodegradation of p-cresol was observed at 2.5 g/L of ZnO and 100 ppm of p-cresol. P-cresol photocatalytic degradation was favorable in the pH range of 6-9. The detected intermediates were 4-hydroxy-benzaldehyde and 4-methyl-1,2-benzodiol. TOC studies show that 93% of total organic carbon was removed from solution during irradiation time. Reusability shows no significant reduction in photocatalytic performance in photodegrading p-cresol.

**Keyword:** photocatalytic degradation; p-cresol; mineralization; ZnO; UV