

Removal of Abamectine from wastewater by Fe-kaolin modified

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The aim of this paper is to evaluate the effectiveness of photocatalytic treatment modified kaolin with FeCl₂ as fenton reagent in the degradation of abamectin pesticide. The results reveal that the photocatalyst performance depends on catalyst loading, pH effect, hydrogen peroxide amount, UV irradiation, abamectin concentration, and reaction time. However, removal of abamectin is studied in the soil sample. COD and BOD₅ experiments were used to measure the mineralization of abamectin and the results shows 80% and 2.02 for COD and BOD₅, respectively. Catalyst is recoverable and remained catalytic activity after 5 runs. It was found that the photodegradation kinetics follows pseudo-first-order kinetics. In addition, the activation energy $E_a = 1512.1 \text{ KJ.mol}^{-1}$ was achieved based on the Arrhenius equation.

Keywords: Modified Kaolin, Photodegradation, Abamectin, BOD₅.

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