"Gheorghe Asachi" Technical University of Iasi, Romania

DISCOLOURIZATION OF AMMONIUM LIGNOSULFONATE BY H_2O_2 ACTIVATED WITH Co (acac)$_2$ IMMOBILIZED ON FUNCTIONALIZED SILICA

Mauruşa-Elena Ignat[1]*, **Viorica Dulman[2]**, **Dumitru Gânju[2]**, **Valentin I. Popa[3]**

[1]*"Petru Poni" Institute of Macromolecular Chemistry, 41 A Gr. Ghica Vodã, 700487 Iaşi, România*
[2]*"Alexandru Ioan Cuza" University of Iasi, Faculty of Chemistry, 11 Carol I Blvd., 700506 Iaşi, România*
[3]*"Gheorghe Asachi" Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection,
73 Prof.dr.docent Dimitrie Mangeron Street, 700050 Iaşi, România*

Abstract

The potential of ammonium lignosulfonate (ALS) discolouring and partial degradation in aqueous solution was studied in heterogeneous system by using the hydrogen peroxide and Co (II) acetylacetonate immobilized on functionalized silica (HC-Co II) as a catalyst. In order to optimize the system efficiency, the influence of process parameters like H_2O_2 concentration, pH, contact time, ALS concentration, temperature and catalyst amount was evaluated. Lignosulfonate degradation was furthermore pointed out through modification of final pH and determination of phenolic compounds. The catalyst stability and its reusability have also investigated. The experimental results indicate that, in optimal conditions, the ammonium lignosulfonate solutions exhibit a total discolourization, associated with its significant degradation.

* Author to whom all correspondence should be addressed: e-mail: maurusa@yahoo.com; Phone: +40232217454; Fax: +40232211299