

Investigation of Operational Conditions for Treatment of Industrial Wastewater Contaminated with Pesticides Using Electro-Fenton Process

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Abstract : This study aims to investigate various operating conditions that affect the performance of the electro-Fenton process for degradation of pesticides. Stainless steel electrodes were utilized in the electro-Fenton cell due to their relatively low cost. The favored conditions of current intensity, pH, iron loading, and pesticide concentration were deeply discussed. Complete removal of pesticide was attained at the optimum conditions. The degradation kinetics were described by pseudo-first-order pattern. In addition, a response surface model was developed to describe the performance of electro-Fenton process under different operational conditions. The model indicated that the coefficient of determination was ($R^2 = 0.995$).

Keywords : electro-Fenton, stainless steel, pesticide, wastewater

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