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Treatment of ointment pharmaceutical wastewater by electrocoagulation process

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ABSTRACT

In the present study, electrocoagulation process was investigated for the removal of chemical oxygen demand (COD) and turbidity from ointment pharmaceutical wastewater in batch operation under different conditions. The effects of solution temperature, type of electrode pair, current density, conductivity and initial COD concentration on the removal efficiency of COD and turbidity were investigated. Experimental results indicated that the removal efficiency of COD and turbidity are 95% and 98%, respectively, found with the use of Fe/Al as electrode pair and the specific energy consumption was 0.48 kWh/kg COD after 20 min of electrolysis time. The optimum temperature, current density, conductivity and initial COD concentration were found to be 298 K, 15.56 mA/cm^2, 3.20 mS/cm and 5,000 mg/L, respectively.

Keywords: Ointment pharmaceutical wastewater; Electrocoagulation; Aluminum; Iron

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