

عنوان مقاله:

Evaluation of electrocoagulation process for the removal of reactive red 196 dye from textile industry Wastewater

محل انتشار:

یازدهمین سمینار سالانه الکتروشیمی ایران (سال: 1394)

تعداد صفحات اصل مقاله: 2

نویسندگان:

Maryam Dolatabadi - *Pharmaceutics Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran*

Hosein Alidadi - *Health Sciences Research Center, Department of Environmental Health Engineering, School of Health, Mashhad University of Medical Sciences, Mashhad, Iran*

Akram Ghorbanian - *Student Research Committee, Department of Environmental Health, School of Health, Mashhad University of Medical Sciences, Mashhad, Iran*

Nasrin Nemani Far - *Student Research Committee, Department of Environmental Health, School of Health, Mashhad University of Medical Sciences, Mashhad, Iran*

خلاصه مقاله:

the current study investigated the effect of electrocoagulation treatment on reactive red 196 removals from textile industry wastewater. Since reactive dyes residues in aqueous environments cause skin allergies, poisoning, cancer, mutation, and etc. Therefore, efficient and effective treatment methods against reactive dyes should be applied to overcome these problems [1]. The experiment conducted in a glass reactor with a working volume of 200 mL that equipped with 2 iron electrodes. The effects of operating parameters such as pH solution, initial dye concentration, time of reaction, voltage and inter electrode distance on the color removal efficiency and electrical energy consumption were investigated in the optimum operational condition. Electrocoagulation, is able to remove color as high as 98.6% by iron electrodes in pH 8.5 and initial dye concentration 180 mg/l and 10 min at 12.3 V and 1.5 cm inter electrode distance. Under this condition energy consumption was 10.66 KWh/m³ of treated wastewater. Increase in the inter electrode distance and initial dye concentration, lead to the decrease in efficiency of dye removal [2]. Figure 1 present the effect of the significant interactions between dye concentration and electrode distance on the dye removal (%) while as the voltage and time of reaction increased, energy consumption, electrode consumption, final pH and color removal, increased too [3]. The results indicate that the electro coagulation is a promising method for the removal of Reactive red 196 in textile industry wastewater.

کلمات کلیدی:

Electrocoagulation, iron electrode, removal, Reactive red 196, dye

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/546316>



