

عنوان مقاله:

The Efficiency of Separate and Combined Modified Electrolysis Processes and Electric Coagulation in Removing Yellow Gold Dye (Gold Yellow X-GL) from Aqueous Solutions

محل انتشار:

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خلاصه مقاله:

Introduction: Disposal of the wastewater produced in the paper and paperboard industry without the refining process can add substances to the environment, which are harmful to humans, environment, and other organisms. With regard to process efficiency, the current methods used in wastewater treatment of this industry are economically unjustifiable. Therefore, in this research, the electrolysis / electrocoagulation method was investigated using a graphite / iron electrode for synthetic aqueous solutions containing golden yellow X-GL. Materials and Methods: In this test, two Plexiglas reactors with a volume of 3 liters were used. The impact of the operation parameters such as voltage, initial dye concentration, and reaction time were investigated. Dye concentration in specimens was determined by visible spectrophotometry using DR-5000 at 438nm wavelength. Results: In optimal conditions of voltage 12V, dye concentration 10 mg/l, and time 60 min, the removal efficiency rates of electrolysis reactors, electric coagulation, and combined reactor were 64.17%, 75.42%, and 84.19% respectively. By increasing the dye concentration and decreasing the voltage, the dye removal efficiency decreased. Conclusion: The electric coagulation process using an iron electrode is a suitable method for removing the yellow color of colored aqueous solutions from the paper and paperboard industry

کلمات کلیدی:

.Electrolysis, Electrocoagulation, Golden yellow X-GL

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