3rd INTERNATIONAL WORKSHOP
ADVANCES IN CLEANER PRODUCTION

''CLEANER PRODUCTION INITIATIVES AND CHALLENGES FOR A SUSTAINABLE WORLD''

Use of Red Mud Treated with Hydrogen Peroxide and Activated by Heat Treatment as a Means Adsorption of the Dye Reactive Blue 19

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Abstract

The effluents generated by textile industries have an undesirable level of staining due to the dyeing step, leading to changes in water quality resulting in harmful effects to the environment. Adsorption is a technique that has been used successfully in the treatment of textile effluents, but due to the high cost of some conventional adsorbents such as activated carbon, research has been directed to the use of alternative low cost adsorbents. Among the materials with great potential adsorbent that may be used instead of activated charcoal is the red mud, a waste generated on a large scale in the manufacturing process of aluminum. As a result, the objective of this study was to use the red mud activated by chemical treatment by hydrogen peroxide and heat treatment at a temperature of 500 ° C as a means adsorption of the dye Reactive Blue 19. Through the model of Langmuir was possible to obtain the adsorption capacity of red mud of approximately 192.3 mg / g, and can thus be concluded that the conditions used in the adsorption process were appropriate and conducive to the removal of the dye in aqueous solution, and that the red mud when activated by heat and chemical treatment is presented as an alternative adsorbent and low cost.

Keywords: *red mud, dye, adsorption, isotherm.*