

Adsorption of acid dyes from aqueous solutions onto acid-activated marble powder

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Abstract. Industrial Wastewater contains several type of dye, causing serious environmental hazard. Therefore, Adsorption is one of advanced and effective treatment processes in the removal of pollutants from effluents gives better results. This research was check the ability of a low-cost material Marble Powder (MP) which are considered as a waste in the industry of the marble available in Skikda which has proven to be a promising adsorbent has a best capacity for the adsorption of each dye in removing too acid dyes: acid dyes: Bezanyl Yellow (Acid Yellow 5G) and Nylomine Green (Acid Green 27) which are often met in the aqueous effluents of textile industry of tannery. The study is followed by modifications of the textural properties of the Marble Powder (activated) It could be successfully applied in the field of the purification and removal of contaminants from wastewaters of tannery industry, in order to remove two acid dyes. An improvement of the capacity of MP installed compared to MP no activated. The surface characterization of acid-activated MP was performed using the FTIR technique. The adsorption kinetics was investigated using the parameters such as contact time, pH, and temperature, solution initial dye concentration, and acid activation to provide information about the adsorption characteristics of activated marble powder.

Keywords: Activated Powder Marble, acid dyes, adsorption kinetic.