REDUCTION OF CHEMICAL OXYGEN DEMAND (COD) IN HOSPITAL LIQUID WASTE WITH ADSORPTION METHOD USING ZEOLITE AND KAOLINE WITH FLOW SYSTEM

ABSTRACT

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Research has been carried out to reduce the level of chemical oxygen demand (COD) in hospital wastewater using the adsorption method. The purpose of this study was to reduce COD levels in hospital waste. The research used zeolite and kaolin as adsorbents. This research was carried out using variations in the adsorbent and variations in the weight of the adsorbent to determine the most optimum adsorbent. The series of tools in this study were arranged in a flow system. The results of the adsorption process were digested in closed system and analyzed using a UV-Vis spectrophotometer at a wavelength of 600 nm. The levels of COD before the adsorption process were 228.9194 ppm and after adsorption using 50 g zeolite was decreased 87.18% and adsorption using 50 g kaolin was decreased 93.01%. The best-operating conditions to reduce COD levels in hospital waste used kaoline as adsorbent, therefore this study focus using heavy variations and weight repetition of kaolin as adsorbent. The results showed that the optimum adsorbent was kaolin in a variation of weight repetition of the adsorbent with a percentage reduction in COD of 100%. The adsorption method using adsorbent zeolite and kaolin with flow systems can reduce COD levels.

Keywords: adsorption, zeolite, kaolin, hospital wastewater, flow system.