ABSTRACT

OPTIMIZATION OF CONTACT TIME IN THE ELIMINATION OF CADMIUM (Cd) IN SYNTHETIC WASTEWATER USING KEPOK BANANA PEEL BIOSORBENT (*Musa acuminate* L.) (Contact Time 15, 20, 45, 60, and 75 Minute)

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The industrial sector, apart from having a positive impact, also has a negative impact on the environment. One of the negative impacts that occur is water pollution. Among the various contaminants in waters, the presence of heavy metals is dangerous because they cannot be biodegraded, such as Cadmium which is founded in various modern industrial works today. Kepok Banana Peel biosorbent contains pectin and cellulose substances which can bind strongly to metal ions because there are active carboxylic functional groups (-COOH), hydroxyl (-OH), and amine ($-NH_2$). Contact time is a necessary factor in the heavy metal adsorption process. Therefore, this study aims to be able to find and determine the optimal contact time of the kepok banana peel adsorbent to be able to absorb heavy metal ions maximally. The percentage of Cadmium (Cd) metal ion adsorption reached the highest value at 45 minutes contact time variation of 84,8822%. From the results of this study it can be said that the kepok banana peel biosorbent is able to reduce Cadmium (Cd) metal ion contamination in synthetic wastewater, even without furnace procedur.

Keywords : Adsorption, Kepok Banana Peel, Cadmium, Contact Time