

KEMAMPUAN ADSORPSI KITOSAN UNTUK ION LOGAM TIMBAL (Pb²⁺) DAN KADMIUM (Cd²⁺)

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ABSTRACT

Chitosan is natural polymer that has been known to possess the capacity to adsorb various transition metals. This capacity of adsorption is resulted from the ability of chitosan to form complex compound with metal, especially Pb and Cd. The formation of chitosan-metal complex is enabled by the presence of active hydroxyl group in chitosan molecule. The results of this study on adsorption of Pb²⁺ and Cd²⁺ revealed the existence of linear relationship between the amount of the metal adsorbed with concentration of the metal tested. It was found that for Pb²⁺, the maximum adsorption was 10.32 mg/g which was achieved for the metal concentration of 50 mg/L, and 24.998 mg/g for Cd²⁺ at metal concentration of 100 mg/L. The optimum contact time for adsorption was found to be 24 hours for both metals. The adsorption was found to take place with the adsorption energy of 29.82 kJ/mol for Pb²⁺ and 17.23 kJ/mol for Cd²⁺.

Keywords: *chitin, chitosan, adsorption, transition metal, and toxic metal*

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