

Adsorption Characteristics of Cadmium and Lead heavy Metals into Locally Synthesized Chitosan Biopolymer

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ABSTRACT: *Chitosan, a natural biopolymer synthesized from crustaceans shell, plays an influential role in accumulation of heavy metals from wastewater effluents because of its active functional groups. In this study, adsorption characteristics of cadmium and lead were studied using chitosan which was synthesized from locally available shrimps. Kinetic studies were conducted for batch systems using different pH values of initial metal ion solution and two different degree of deacetylation (DD) values of chitosan. Simplified models such as pseudo-first-order, pseudo-second-order, and intra-particle diffusion equations were used to determine the rate controlling step. A strong dependence of the adsorption capacity on pH and DD was observed, the capacity increases as pH and DD values increase.*

Keywords: *Adsorption, chitosan, degree of deacetylation, kinetic models*

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