

**The Kinetics of Sorption of Lead Ion onto Palm Kernel
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Abstract

Equilibrium analysis is fundamental for the evaluation of the affinity or capacity of a sorbent. However, thermodynamic data can only predict the final state of a system from an initial non-equilibrium mode. It is, therefore, important to determine how sorption rates depend on the concentrations of sorbate in a solution and how rates are affected by the sorption capacity or by the character of the sorbent in terms of kinetics. In the present research, kinetic studies were carried out using an agitation batch sorber to study the effects of the initial solution pH and fiber dose. A kinetics analysis was carried out to correlate the experimental data based on a pseudo-second-order kinetics model. In addition, an isotherm was predicted by changing fiber doses using the equilibrium concentration and equilibrium capacity obtained based on the pseudo-second-order constants.