

Adsorption of Hg(II) from aqueous solution onto *Borassus Flabellifer*: equilibrium and kinetic studies

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ABSTRACT

Palm shell (*Borassus Flabellifer*), a ligno-cellulosic agrowaste is used as adsorbent for the removal of Hg(II). A series of experiments were conducted in a batch system to evaluate the effect of system variables. The optimal pH value of mercury(II) adsorption onto palm shell powder was found to be pH 3.0–7.0. The maximum uptake capacity was found 0.04425 mg/g. The pseudo second order rate equation was found to be the best fit for the kinetic data obtained. The equilibrium data were found to follow both Freundlich and Langmuir isotherm models with high coefficients of determination.

Keywords: Natural adsorbent; Mercury; Palm shell powder; Adsorbent kinetics; Thermodynamic parameters

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