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REMOVAL OF Cd (II) FROM AQUEOUS SOLUTION BY ADSORPTION ONTO COIR PITH, AN AGRICULTURAL SOLID WASTE: BATCH EXPERIMENTAL STUDY

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Abstract

Coconut coir pith, an agricultural solid waste was used for the sorption of Cd (II) from aqueous solution in batch mode. Parameters like contact time, adsorbent dosage and pH effect were studied. Langmuir and Freundlich isotherms were used to model the adsorption equilibrium data and the system followed both the isotherms. Cd (II) adsorption capacity of coir pith was found to be 18.72 mg/g. Kinetic parameters of adsorption such as the Langergren pseudo-first-order, pseudo second order rate constant and the intraparticle diffusion rate constant were determined. Kinetic studies revealed that the adsorption process followed a pseudo-second order kinetic model.

Key words: adsorption, cadmium, coir pith, isotherms, kinetics

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