

Equilibrium Studies For The Adsorption Of Cd (Ii) Using Treated Maize Stalk Biochar

Kiplangat Hillary

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Abstract

The release of overwhelming metals into nature has turned into a matter of concern in Kenya over the last few years. These pollutants are introduced into the environment significantly as a result of various industrial processes. Industrialization in some parts of Kenya has begun as the economy of the country continues to grow. Heavy metals such as lead, chromium, mercury, arsenic, cadmium, gold, silver and copper came as a result of industrialization. The main sources of these wastes are from sludge disposal, wastes from incinerators and so on. In basic engineering, heavy metals, which includes zinc, lead and chromium finds their application. Also in other industries such as paper pulp and so on. The equilibrium, thermodynamic and kinetics of biosorption of cadmium (II) from water effluence into the treated maize stalk biomass will be investigated at different conditions in several batches. The influence of some parameters such as pH, an initial concentration of the cadmium (II), and temperature and sorption time will be investigated. The optimum sorption conditions for this heavy metal will be presented. Under these conditions, the maximum sorption capacity for this metal by the biomass is taken into consideration. The adsorption data that will be obtained will be fed to the Langmuir isotherm models. The kinetic biosorption would be model using both first and second order equations