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EQUILIBRIUM STUDY OF Pb(II) AND Cd(II) BIOSORPTION FROM AQUEOUS SOLUTION ON MARINE GREEN ALGAE BIOMASS

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Abstract

The biosorption of Pb(II) and Cd(II) ions from aqueous solution on marine green algae biomass (*Ulva lactuca* sp.) was studied in batch systems, at initial solution pH of 5.0 and biomass dose of 8.0 g/L, considered as optimum experimental conditions. The obtained results from experiments of a single-component biosorption were analyzed using Langmuir, Freundlich and Dubinin-Radushkevich isotherm models. The Langmuir equation describe the biosorption isotherm of Pb(II) and Cd(II) ions with high correlation coefficient and better than other models. The maximum biosorption capacity of marine green algae biomass for Pb(II) and Cd(II), calculated from Langmuir isotherm model was 181.82 mg/g and 43.02 mg/g, respectively. The effect of temperature on the Pb(II) and Cd(II) biosorption process onto marine green algae biomass was also investigated, and various thermodynamic parameters, such as ΔG , ΔH , ΔS and E_a , have been calculated.

Key words: biomass, biosorption, equilibrium, heavy metal ions, marine green algae

Received: September, 2012; Revised final: December, 2012; Accepted: December, 2012

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