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## BIOSORPTION OF CADMIUM (II) FROM AQUEOUS SOLUTION BY NaCl-TREATED *Ceratophyllum demersum*

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### Abstract

The biosorption characteristics of Cd(II) ions using the NaCl-treated *Ceratophyllum demersum* were studied. The effect of altering the conditions, such as solution pH, the biosorbent dosage and contact time for the biosorption of Cd(II), and the biosorption/desorption studies, were investigated. Langmuir, Freundlich, Dubinin-Radushkevich and Redlich–Peterson models were applied to describe the biosorption isotherms. Langmuir model fitted the equilibrium data better than the other isotherms ( $R^2=0.9903$ ). The biosorption capacity of NaCl-treated *C. demersum* biomass for Cd(II) ions was found to be  $35.71 \text{ mg g}^{-1}$  at optimum conditions of pH 6, biomass dosage of  $4 \text{ g L}^{-1}$  and contact time of 40 min. Evaluation of experimental data in terms of biosorption kinetics showed that the biosorption of Cd(II) on NaCl-treated *C. demersum* followed pseudo-second order kinetics well. Desorption data revealed that biosorption capacity of biomass did not decrease significantly after three biosorption/desorption cycles.

**Key words:** biosorption, *Ceratophyllum demersum*, Cd(II), kinetic, isotherm

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