

Possibility of using algae biomass for removing pb (II) ions from aqueous solutions

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In this study, the possibility of using algae biomass for removal of Pb(II) ions from aqueous solutions was studied. This material was chosen as adsorbent in this study due to being of its natural, renewable and low-cost. Batch adsorption experiments were carried out as a function of initial solution pH, adsorbent dose, initial Pb(II) concentration and contact time at 22 °C. About 0.2 g of algae biomass was found to be enough to remove 93 % of 175.6 mg/L Pb(II) from 25 mL of aqueous solution in 30 min. The optimum initial pH value was found to be 5.0. The Langmuir and Freundlich isotherm models were used to describe the equilibrium data and the isotherm constants were determined. The experimental adsorption capacity was 105.26 mg/g, at studied temperature. The biomass of the marine algae Ulva lactuca sp. demonstrated a good capacity for Pb (II) ions adsorption, and can be considered a potential adsorbent for effluents treatment process.