

## Biosorption of Nickel (II) ions from aqueous solutions by using Chicken eggshells as low-cost biosorbent

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### ABSTRACT/RESUME

*Abstract: The aim of this present study was to evaluate the feasibility of using chicken eggshells as low-cost biosorbent for nickel(II) ions adsorption from aqueous solutions. In order to clarify the adsorption process, batch experiments were performed to study the effect of operating parameters such as biosorbent dose (1-10 g/L), initial concentration of nickel ions (10-50 mg/L), contact time (5-120 min) and temperature (20-50 °C). To describe the adsorption equilibrium, the experimental data were analyzed by the Langmuir, Freundlich and Temkin isotherm models. The Freundlich model showed better representation of data ( $R^2 > 0.999$ ). The maximum adsorption capacity of chicken eggshells for nickel ions was approximately  $2.3 \text{ mg g}^{-1}$  at 20 °C. The results of the present study suggest that chicken eggshells can be used beneficially as low-cost biosorbent for nickel (II) ions adsorption from aqueous solution.*

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