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BIOSORPTION OF LEAD FROM AQUEOUS SOLUTION BY USING CHEMICALLY TREATED *Saccharomyces cerevisiae*

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Abstract

Biosorption of lead (II) onto the biosorbent, represented by untreated *S. cerevisiae* and NaOH-treated *S. cerevisiae* was examined and the effects of contact time were investigated. The lead (II) biosorption was fast and equilibrium was attained within 90 mins. The maximum removal ratios of lead (II) for untreated *S. cerevisiae* and NaOH-treated *S. cerevisiae* after 3 h were 48.6% and 92.5%, respectively, with initial lead (II) concentration of 40 mg/L and optimum pH of 5.0. Data obtained from batch studies fitted well with the Langmuir isotherm model. Maximum adsorption capacity of lead (II) onto NaOH-treated *S. cerevisiae* was 21.6 mg/g at biosorbent dosage of 2 g/L at 25 °C. The nature of functional groups (i.e. amino, carboxyl and hydroxyl) and metal ion interactions was examined by the FT-IR technique.

Key words: biosorption, isotherm, lead, mechanism, *Saccharomyces cerevisiae*

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