

## **Polymerization: An Alternative Technology for Heavy Metal Removal**

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**Abstract :** In this paper, the adsorption performance of a novel environmental friendly material, calcium alginate gel beads as a non-conventional technique for the successful removal of copper ions from aqueous solution are reported on. Batch equilibrium studies were carried out to evaluate the adsorption capacity and process parameters such as pH, adsorbent dosages, initial metal ion concentrations, stirring rates and contact times. It was observed that the optimum pH for maximum copper ions adsorption was at pH 5.0. For all contact times, an increase in copper ions concentration resulted in decrease in the percent of copper ions removal. Langmuir and Freundlich's isothermal models were used to describe the experimental adsorption. Adsorbent was characterization using Fourier transform-infrared (FT-IR) spectroscopy and Transmission electron microscopy (TEM).

**Keywords :** adsorption, alginate polymer, isothermal models, equilibrium

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