

Abstract

In order to remove Pb(II) ion from aqueous solutions, chitosan magnetic nanocomposite on the basis of a new Schiff base-functionalized (MCS-Sch) was synthesized and characterized by ^1H NMR, FT-IR, XRD, SEM, EDX, DLS, and VSM techniques. The effects of pH, contact time and initial concentration on the adsorption process to obtain the optimum condition for maximum adsorption capacity of Pb(II) were evaluated. The equilibrium data were fitted to Langmuir and Freundlich isotherm models. The maximum monolayer adsorption capacity obtained from the Langmuir isotherm was 142.857 mg/g. The effects and interaction between different parameters affecting the adsorption using design of experiment methodology were studied.

Keywords: Schiff-base, chitosan, adsorbent, heavy metal, central composite design.



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Title:

**Removal of Pb (II) ion from aqueous solution by an engineered
novel chitosan functionalized Schiff-base adsorbent**

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