

عنوان مقاله:

Acid and Alkali Modified Cow Hoof Powder as Adsorbents for Chromium (VI) Removal from Aqueous aqueous phase

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خلاصه مقاله:

In this work, the feasibility of batch studies using hydrochloric acid modified cow hoofs (HCH), citric acid modified cow hoofs (CACH) and sodium hydroxide modified cow hoofs (SCH) for removing Cr (VI) from aqueous solution were investigated. Equilibrium data at four different temperatures (25, 35, 45 and 550C), by contacting Cr (VI) solution at different concentrations with CACH, HCH and SCH were also conducted. The results of this study showed that SCH recorded higher percentage Cr (VI) removal than both HCH and CACH. The pH of 2 was required for maximum removal of Cr (VI) by the three biosorbents. The data obtained for both CACH and SCH were best fitted by Langmuir model while the data obtained for HCH were best fitted by Freundlich model. Thermodynamic parameters for the removal of Cr (VI) revealed the process to be spontaneous and exothermic for HCH and SCH but endothermic for CACH. Therefore, the removal of Cr (VI) from wastewater using these low-cost biosorbents (particularly HCH and .SCH) would be economically feasible

کلمات کلیدی:

Adsorption isotherm, Chemical modification, Cow hoof, Biosorption

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