

Application on Anion Characteristics of Bacterial Polysaccharide - Xanthan Gum

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ABSTRACT

The xanthan gum has been studied for forty years. The major applications of xanthan gum are on food, cosmetic, pharmaceutical, and other industries but rare on the adsorption of metal ions. In most biosorption processes, xanthan gum hasn't been as a biosorbent yet. The Langmuir isotherm model, which is a gas-sorption model, has been shown to be suitable for describing the short-term and mono-component adsorption of metal ions in the biosorption processes. In this study, xanthan gum was used as a biosorbent to investigate the adsorption capacity on Cu(II), Zn(II), Cd(II) at 25 °C aqueous solutions, and to calculate the equilibrium uptakes. The Langmuir isotherm model was developed and its regression constants, q_m and K , were obtained and discussed in this study. This experiment approved xanthan gum possessing the property in bioremoval of Cu(II), Zn(II) and Cd(II) and being a favorable adsorbent. The results showed that the metal adsorption capacity of xanthan gum was Cu(II) > Cd(II) > Zn(II).

Keywords : biosorption ; polysaccharide ; xanthan gum ; heavy metal ; equilibrium isotherm

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