



Adsorption of a model anionic dye on protonated crosslinked chitosan

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ABSTRACT

In the present study, chitosan has been chemically modified by crosslinking and protonation. Protonated crosslinked chitosan (PCC) was employed as an adsorbent to remove amido black 10B from aqueous solution. Adsorption experiments were performed by varying initial dye concentration, pH value of the solution, contact time, and temperature. The adsorption of amido black 10B onto PCC obeyed Langmuir isotherm. The adsorption capacity was 9.43 mg g^{-1} at 293 K. Thermodynamic studies revealed that the nature of amido black 10B adsorption was spontaneous and endothermic. Sorption kinetics was mainly controlled by pseudo-second-order model. About 0.1 M NaOH was identified as the best eluent.

Keywords: Amido black 10B; Adsorption; Isotherm; Protonated Crosslinked Chitosan

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