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Abstract
The crosslinked chitosans synthesized by using the homogeneous and the heterogeneous reactions of chitosan in aqueous acetic acid solution with crosslinkers were used to investigate the adsorption behaviors of azo dyes in an aqueous solution. The influences of molar ratios of crosslinker/chitosan, concentrations of azo dyes, pHs, temperatures and sizes of adsorbents on the adsorptions of azo dyes were carried out. The dynamical data were found to be fitted well with the second-order kinetic model. The adsorption capacity increases largely with decreasing pH and with increasing initial dye concentration. In the studies of adsorption isotherms, the Langmuir model agreed very well with experimental data. Thermodynamic investigator was revealed to have free energy(△G0) in -3.38~-3.85 kJ/mol, enthalpy(△H0) in -10.93 kJ/mol and entropy(△S0) in -23.38 J/mol K.
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