Adsorption of the copper in solution by the kaolin

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Abstract: The physico-chemical characterization showed that this adsorbent is mostly silica and alumina and. The specific surface area measured is more important for purified. The proposed disposal is in batch system. The results of investigations carried out show that the equilibrium is reached after 30 minutes. This sorption is maximum at 20°C, for stirring speed of 200 tr/min a size of between 150 and 200 μm and at pH 4. The maximum amount adsorbed at equilibrium per gram is 46.18 mg/g. The model of adsorption obeys to the Langmuir equation. The plot of the sorption isotherm is confirmed by the presence of a slow landing. The kinetics is pseudo first order. The external transport of metal ions considered in the solution towards the adsorbent seems a step controlling the overall speed of the process. Therefore internal transport in the pores is not the only mechanism limiting the kinetics of sorption. The probably other mechanisms involved. This adsorption is divided into two zones: a diffusion region and a kinetic area controlled by the reaction. The thermodynamic parameters show that the sorption is spontaneous ($?G <0$), exothermic ($?H <0$) and no changes have been made in its structure ($?S <0$). Measured activation energy is 24.45 kj/mol

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