

Alumina Generated by Electrocoagulation as Adsorbent for the Elimination of the Iron from Drilling Water

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Abstract : Currently, the presence of pharmaceutical substances in the environment is an emerging pollution leading to the disruption of ecosystems. Indeed, water loaded with pharmaceutical residues is an issue that has raised the attention of researchers. The aim of this study was to monitor the effectiveness of the alumina electro-generated by the adsorption process the iron of well water for the production of drugs. The Fe²⁺ was removed from wastewater by adsorption in a batch cell. Performance results of iron removal by alumina electro-generated revealed that the efficiency of the carrier in the method of electro-generated adsorption. The overall Fe²⁺ of the synthetically solutions and simulated effluent removal efficiencies reached 75% and 65%, respectively. The application of models and isothermal adsorption kinetics complement the results obtained experimentally. Desorption of iron was investigated using a solution of 0.1M NaOH. Regeneration of the tests shows that the adsorbent maintains its capacity after five adsorption/desorption cycles.

Keywords : electrocoagulation, aluminum electrode, electrogenerated alumina, iron, adsorption/desorption

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