**Investigation of the ammonium adsorption on the Algerian naturel bentonite**

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The adsorption of a large amount of several elements on clay minerals is essentially by a process of ion exchange, these two methods are commonly used in the wastewater treatment due to its economic cost, efficiency and low power consumption. The exchange process consist for the ion exchange between the soluble ions present in the surface of the bentonite with the ammonium ions of the aqueous phase. Therefore, the particles oft he bentonite with 80 µm of diameter have been considered and brought at contact with the ammonia solution under a static mechanical agitation at 200 rpm. At a pH of 7 and a temperature of 30°C the naturel bentonite could adsorb about 46.6% of the initial ammonium ions, which has been improved by the concentration of the amount of the bentonite, which could acheive about 81.2% with 40 g of bentonite in 1L of 10 mg-NH­4+/L of the ammonia solution. On the other hand, the modeling of experimental data allowed us to conclude that this adsorption process was fitted to both the Langmuir and Freundlich isotherms at a constant temperature equal to 30°C.