

## Abstract :

Adsorption of several chemical contaminants onto clay minerals is the most recommended technique applied in the wastewater treatment field, owing to its low economic cost, efficiency, and low power consumption. In this context, natural bentonite particles with 80- $\mu\text{m}$  diameter were investigated for the ammonium adsorption in aqueous solution using an incubator that kept the constant temperature and stirring speed at 200 RPM. The study of different experimental parameters effect on the adsorption process revealed that the raw bentonite have adsorbed approximately 53.36 % of the initial ammonium concentration at pH 7 and temperature of 30 °C. This percentage has been improved by increasing the adsorbent dosage in solution, which could reach up to 81.2 % at 40 g/L of bentonite with an initial ammonium concentration of 10 mg-NH<sub>4</sub><sup>+</sup>/L. Moreover, experimental data modeling allowed us to conclude that the adsorption isotherm obeys to both models of Langmuir and Freundlich.