

## عنوان مقاله:

A comparative study of modified and raw zeolite in adsorption  $\text{NH}_4^+$  from wastewater

## محل انتشار:

دهمین سمینار ملی شیمی و محیط زیست ایران (سال: 1400)

تعداد صفحات اصل مقاله: 2

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## خلاصه مقاله:

Various civilian, agricultural and industrial activities cause the presence of nitrogen compounds in surface and groundwater, where they are further converted into ammonia and its salts. The progressive increase in ammonium concentration in the environment represents a serious concern since it is one of the main causes of eutrophication and its transformation may lead to carcinogens. On the other hand, wastewater has recently been considered as a potential source of nitrogenous nutrients for plants, once adequate recovery processes have been provided. In this research used of modified and raw(unmodified) zeolite for adsorbition Ammonium ions from wastewater. At first, the adsorbents transfer to nano sizes by mechanical method. Among the modified and raw adsorbents, the modified adsorbent showed better capacity adsorb in adsorbition  $\text{NH}_4^+$ . Although  $\text{NO}_3^-$  had high adsorbition beside  $\text{NH}_4^+$ . The raw and modified samples were characterized by XRD, FT-IR, SEM, BET and TG. The effects of analytical parameters such as pH of solution, particle size, sorbent weight, dose of ligand, concentration of  $\text{NH}_4^+$  solution, pH of  $\text{NH}_4^+$  solution, contact time, shaking rate, regeneration and selectivity were studied. The sorbent weight was determined  $0.07\text{g}$  and such as, pH of solution of ligand was 5. The modified adsorbent processes on zeolite depend on pH and other parameters. The important method in experimental adsorbition of  $\text{NH}_4^+$  was ion exchange. Results suggest that modified adsorbent might be a potential material for ammonium and nitrate removal from water

## کلمات کلیدی:

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