

## Removal of arsenic from drinking water using modified clinoptilolite

Baharak Divband, Maasoumeh khatamian, Reza Poor Rajab, N. Fathollah nejad, N. Kazemian

### Abstract

The arsenic discovery in ground waters from many parts of the world has warned the use as a source of drinking water. Fossil fuels combustion, activities of mining practices, pesticides containing arsenic, herbicides and arsenic use in the feed of livestock and other uses give birth to various effects [1]. Arsenic occurs in the oxidation state of -3, 0, +3 and + 5. Arsenic occurs in ground water mostly in the form As (III) which is called as arsenite and As (V) which is called as arsenate. Under oxidizing conditions (aerated surface water), the arsenite can be converted into arsenate and under reducing conditions (anaerobic ground water); the arsenate can be converted into arsenite [2]. In this paper modifying natural Iranian zeolite (Clinoptilolite) was investigated in order to increase its affinity for arsenic species, and its usage in removing of arsenic species from an aqueous medium. This local zeolite has a lot of minerals such as Iron salts, so it is suitable for absorbing arsenic species. For increasing its affinity, we modify this zeolite by using ion [Fe (II) & (III)] exchange process. This modification of the zeolite mineral increases its affinity for arsenic species so that it can be used efficiently to remove the level of (100 ppb) arsenic species in an aqueous solution to a level of 4 ppb. The present research satisfies the need for an inexpensive and safe method for removing arsenic species from an aqueous medium to be compliance with federal safety standards.

**Keywords:** Arsenic, Clinoptilolite, Removal

### References:

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