Iron nanoparticles (FeNP’s) have the ability to absorb heavy metals, such as cadmium, lead and arsenic. Currently in México, there are communities as Zimapán, Hidalgo, where it has been reported contamination of drinking water with heavy metals, mainly arsenic.

In this paper the green synthesis of FeNPs process is explained using the extract from the leaves of *Chenopodium Ambrosioide* and using a solution of FeCl₃ 6H₂O as precursor. The particle formation was monitored by UVVis, where a formation corresponding to plasmon FeNPs was obtained. The FTIR analysis performed to the plant (*Chenopodium Ambrosioide*) indicated that some organic species are bound to the particle’s surface, which confers stability. By means of Scanning Electron Microscopy were obtained specimens with a ranging size between 224 and 59 Nm.

It is also performed various tests on samples contaminated with As, in which, by means of atomic absorption spectroscopy, it was observed a decrease of the concentration of As in the samples by adding FeNPs, which confirms its possible use in the Treatment of contaminated water by As.

**Keywords:** iron nanoparticle, green synthesis, treatment of contaminated water by arsenic

**References:**


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