

Accepted Manuscript

Wastewater treatment for Amoxicillin removal using magnetic adsorbent synthesized by ultrasound process

Khadijeh Jafari, Mohsen Heidari, Omid Rahmanian

PII: S1350-4177(18)30170-6
DOI: <https://doi.org/10.1016/j.ultsonch.2018.03.018>
Reference: ULTSON 4131

To appear in: *Ultrasonics Sonochemistry*

Received Date: 4 February 2018
Revised Date: 28 February 2018
Accepted Date: 20 March 2018

Please cite this article as: K. Jafari, M. Heidari, O. Rahmanian, Wastewater treatment for Amoxicillin removal using magnetic adsorbent synthesized by ultrasound process, *Ultrasonics Sonochemistry* (2018), doi: <https://doi.org/10.1016/j.ultsonch.2018.03.018>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Revised

**Wastewater treatment for Amoxicillin removal using magnetic adsorbent
synthesized by ultrasound process**

Khadijeh Jafari, Mohsen Heidari, Omid Rahmanian*

Department of Environmental Health, Faculty of Health, Hormozgan University of Medical Sciences, Bandar
Abbas, Iran

*Corresponding Author: Omid Rahmanian, E-Mail: om.rahmanian@gmail.com

Tel.: +98-76-3333-8583; FAX: +98-76-3333-8584.

ABSTRACT

In this study, the effect of magnetic adsorbent prepared from Olive kernel (MA-OK) was studied in the Amoxicillin (AMX) removal. The synthesized adsorbent, under a sonochemical method, were characterized using Field emission scanning electron microscope (FESEM), Fourier transform infrared spectroscopy (FTIR), Brunauer-Emmett-Teller (BET) and X-ray diffraction (XRD). The absorption functions in the batch experiments were studied using the expected parameters for the maximum absorption capacities (q_m) such as pH, contact time, the dosage adsorbent, and the initial concentration of AMX. The residual amount of AMX were recorded after injection into the HPLC. The proportion of the mobile phase was methanol to water (40:60) at a flow rate of 1 ml/min. Adsorption experimental results indicated that the removal efficiency reaches its maximum using 0.5 g/L of the adsorbent, concentration of AMX (200 mg/L) at contact time of 90 minutes and pH of 6. The kinetics of the reaction and the adsorption isotherm

Download English Version:

<https://daneshyari.com/en/article/7702540>

Download Persian Version:

<https://daneshyari.com/article/7702540>

[Daneshyari.com](https://daneshyari.com)