

Accepted Manuscript

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PII: S1350-4177(17)30345-0

DOI: <http://dx.doi.org/10.1016/j.ultsonch.2017.07.041>

Reference: ULTSON 3796

To appear in: *Ultrasonics Sonochemistry*

Received Date: 19 June 2017

Revised Date: 27 July 2017

Accepted Date: 28 July 2017



Please cite this article as: A.R. Abbasi, M. Rizvandi, Influence of the ultrasound-assisted synthesis of Cu–BTC metal–organic frameworks nanoparticles on uptake and release properties of rifampicin, *Ultrasonics Sonochemistry* (2017), doi: <http://dx.doi.org/10.1016/j.ultsonch.2017.07.041>

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**Influence of the ultrasound-assisted synthesis of Cu–BTC metal–organic
frameworks nanoparticles on uptake and release properties of
rifampicin**

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Abstract

In this work, we study uptake and release properties of rifampicin (denoted henceforth as **Rif**) from ultrasound-assisted synthesis Cu-BTC nanoparticles in comparison with bulk Cu-BTC and activated carbon. To explore the absorption ability of the Cu-BTC to **Rif**, fresh sample of Cu-BTC was immersed in an aqueous solution of **Rif** and were monitored in real time with UV/vis spectroscopy. Results show that the adsorbed quantity of **Rif** over nano Cu-BTC (denoted henceforth as **I**) is much higher than those over a bulk Cu-BTC (denoted henceforth as **II**) and activated carbon. In compound **I** and all of the nano-MOFs the channel length is decreased so that the amount of adsorption is increased a little. The samples were characterized with X-ray powder diffraction (XRD), Scanning electron microscopy (SEM), Fourier transform infrared spectroscopy (FT-IR), and UV/vis spectroscopy.

Keywords: Rifampicin; Nano; Porous; Metal–organic frameworks.

1. Introduction

The field of metal–organic frameworks (MOFs), which are also called porous

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