Accepted Manuscript

A systematic study on the use of ultrasound energy for the synthesis of nickelmetal organic framework compounds

A. Ghafarinazari, G. Sargazi, D. Afzali, H. Kazemian, N.P.S. Chauhan, Z. Sadeghian, T. Tajerian, M. Mozafari

PII: S1350-4177(15)00084-X

DOI: http://dx.doi.org/10.1016/j.ultsonch.2015.04.004

Reference: ULTSON 2827

To appear in: *Ultrasonics Sonochemistry*

Received Date: 23 October 2014
Revised Date: 22 March 2015
Accepted Date: 3 April 2015



Please cite this article as: A. Ghafarinazari, G. Sargazi, D. Afzali, H. Kazemian, N.P.S. Chauhan, Z. Sadeghian, T. Tajerian, M. Mozafari, A systematic study on the use of ultrasound energy for the synthesis of nickel–metal organic framework compounds, *Ultrasonics Sonochemistry* (2015), doi: http://dx.doi.org/10.1016/j.ultsonch.2015.04.004

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.

ACCEPTED MANUSCRIPT

A systematic study on the use of ultrasound energy for the synthesis of nickelmetal organic framework compounds

A. Ghafarinazari ¹, G. Sargazi ², D. Afzali ², H. Kazemian ³, N.P.S. Chauhan ⁴, Z. Sadeghian ⁵, T. Tajerian ⁶, M. Mozafari ^{7.*}

5 Research Institute of Petroleum Industry (RIPI), P.O. Box 14857–3311, Tehran, Iran

Abstract

A nickel metal-organic framework (Ni-MOF) was successfully synthesized using ultrasound irradiation. Further to this, X-Ray Diffraction (XRD), Scanning Electron Microscopy (SEM), Fourier Transform Infrared Spectroscopy (FT-IR), Thermo-Gravimetric Analysis (TGA), Differential Scanning Calorimetry (DSC) and nitrogen adsorption [i.e. Brunauer-Emmett-Teller (BET) Surface Area Analysis] techniques were used to characterize the synthesized Ni-MOF. In addition, the effect of sonication on the surface area, pore diameter and pore volume of the final

¹ Department of Biotechnology, University of Verona, I-37134, Strada Le Grazie 15, Verona

² Department of Nano Chemistry, Graduate University of Advanced Technology, 7631133131 Kerman, Iran

³ Department of chemical & Biochemical Engineering, Western University, London, ON, Canada, N6A 5B9

⁴ Department of Chemistry, Bhupal Nobles Post Graduate (B.N.P.G.) College, Udaipur 313001, Rajasthan, India

⁶ Department of Applied Physics, Technische Universiteit Eindhoven, P.O. Box 513, 5600 MB Eindhoven, The Netherlands

⁷ Bioengineering Research Group, Nanotechnology and Advanced Materials Department, Materials and Energy Research Center (MERC), P.O. Box 14155-4777, Tehran, Iran

^{*} Corresponding Author: M. Mozafari (mozafari.masoud@gmail.com)

Download English Version:

https://daneshyari.com/en/article/7703908

Download Persian Version:

https://daneshyari.com/article/7703908

<u>Daneshyari.com</u>