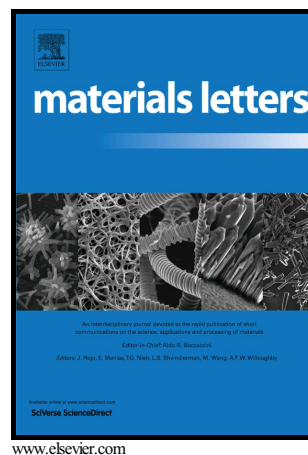


Author's Accepted Manuscript

Rapid room temperature synthesis of zeolitic imidazolate framework-7 (ZIF-7) microcrystals

Mostafa Ebrahimi, Mohammadreza Mansournia



PII: S0167-577X(16)31904-8
DOI: <http://dx.doi.org/10.1016/j.matlet.2016.12.025>
Reference: MLBLUE21837

To appear in: *Materials Letters*

Received date: 1 June 2016
Revised date: 27 October 2016
Accepted date: 7 December 2016

Cite this article as: Mostafa Ebrahimi and Mohammadreza Mansournia, Rapid room temperature synthesis of zeolitic imidazolate framework-7 (ZIF-7) microcrystals, *Materials Letters*, <http://dx.doi.org/10.1016/j.matlet.2016.12.025>

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 galley proof before it is published in its final citable 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.

Rapid room temperature synthesis of zeolitic imidazolate framework-7 (ZIF-7) microcrystals

Mostafa Ebrahimi, Mohammadreza Mansournia*

Department of Inorganic Chemistry, Faculty of Chemistry, University of Kashan, P.O. Box 87317-53153, Kashan, I. R. Iran

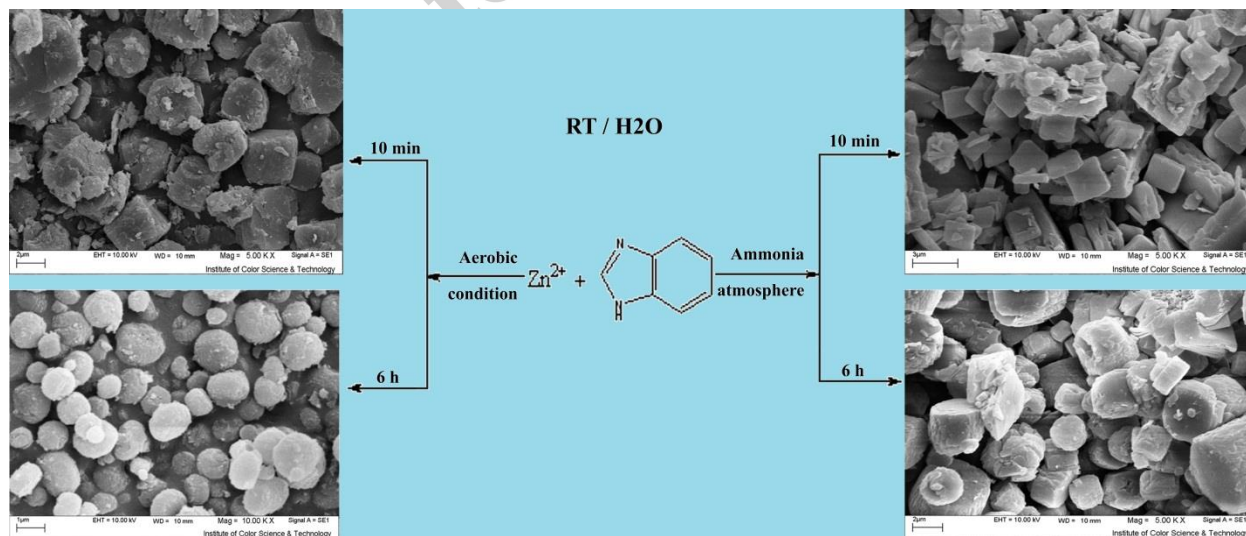
*Corresponding author. tel.: +98 315 591 2339; fax: +98 315 591 2397, E-mail address:

mansournia@kashanu.ac.ir

Abstract

For the first time we report the room temperature fabrication of zeolitic imidazolate framework-7 microcrystals in aqueous solution exposure to ammonia atmosphere (derived from concentrated NH_3). SEM images illustrated the effect of the ammonia atmosphere and synthesis time on the morphology of the product. On the basis of TG and XRD data, the as-made samples showed supreme thermal stability up to 400 °C. Other results revealed the significant chemical stability and microporous structure of the as-synthesized ZIF-7. This method is promising for the efficacious, eco-friendly and large scale production of microporous ZIF-7 at low cost.

Graphical abstract



Keywords: Microporous ZIF-7, Aqueous media, Ammonia atmosphere, Microcrystals

1. Introduction

Download English Version:

<https://daneshyari.com/en/article/5463642>

Download Persian Version:

<https://daneshyari.com/article/5463642>

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