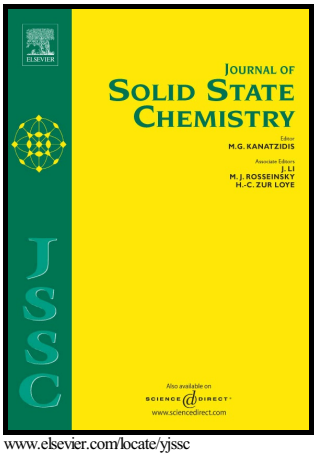
Author's Accepted Manuscript



www.elsevier.com/locate/yjssc

Mesoporous **aluminium organophosphonates: a reusable chemsensor for the detection of explosives**

Dongdong Li, Xiang Yu

PII: S0022-4596(16)30126-8
DOI: http://dx.doi.org/10.1016/j.jssc.2016.04.004
Reference: YJSSC19350

To appear in: *Journal of Solid State Chemistry*

Received date: 25 January 2016
Revised date: 22 March 2016
Accepted date: 3 April 2016

Cite this article as: Dongdong Li and Xiang Yu, Mesoporous **aluminiun organophosphonates: a reusable chemsensor for the detection of explosives** *Journal of Solid State Chemistry,* http://dx.doi.org/10.1016/j.jssc.2016.04.004

This is a PDF file of an unedited manuscript that has been accepted fo publication. As a service to our customers we are providing this early version o the manuscript. The manuscript will undergo copyediting, typesetting, an 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 whic could affect the content, and all legal disclaimers that apply to the journal pertain

ACCEPTED MANUSCRIPT

Mesoporous aluminium organophosphonates: a reusable chemsensor for the detection of explosives

Dongdong Li*, Xiang Yu

Department of Materials Science, Key Laboratory of Automobile Materials of MOE, Jilin University, Changchun, 130012, P. R. China

*Corresponding author. Tel: +86 431 85166879. E-mail: lidongdong@jlu.edu.cn

Abstract

Rapid and sensitive detection of explosives is in high demand for homeland security and public safety. In this work, electron-rich of anthracene functionalized mesoporous aluminium organophosphonates (En-AlPs) were synthesized by a one-pot condensation process. The mesoporous structure and strong blue emission of En-AlPs were confirmed by the N_2 adsorption-desorption isotherms, transmission electron microscopy images and fluorescence spectra. The materials En-AlPs can serve as sensitive chemosensors for various electron deficient nitroderivatives, with the quenching constant and the detection limit up to 1.5×10^6 M^{-1} and 0.3 ppm in water solution. More importantly, the materials can be recycled for many times by simply washed with ethanol, showing potential applications in explosives detection.

Keywords: Explosives detection; Mesoporous; Aluminium phosphate; Recyclable

1. Introduction

Download English Version:

https://daneshyari.com/en/article/7758159

Download Persian Version:

https://daneshyari.com/article/7758159

Daneshyari.com