Accepted Manuscript

Title: Simple post-synthesis of mesoporous p-type Co₃O₄ nanochains for enhanced H₂S gas sensing performance

Authors: Pham Long Quang, Nguyen Duc Cuong, Tran Thai Hoa, Hoang Thai Long, Chu Manh Hung, Dang Thi Thanh Le, Nguyen Van Hieu

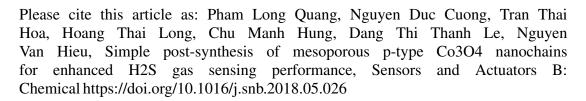
PII: S0925-4005(18)30927-4

DOI: https://doi.org/10.1016/j.snb.2018.05.026

Reference: SNB 24682

To appear in: Sensors and Actuators B

Received date: 29-10-2017 Revised date: 23-4-2018 Accepted date: 7-5-2018



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

Simple post-synthesis of mesoporous p-type Co₃O₄ nanochains for enhanced H₂S gas sensing performance

Pham Long Quang¹, Nguyen Duc Cuong^{1,2,*}, Tran Thai Hoa¹, Hoang Thai Long¹, Chu Manh Hung³, Dang Thi Thanh Le³, Nguyen Van Hieu^{3,*}

- 1) University of Sciences, Hue University, 77 Nguyen Hue, Hue City, Viet Nam
- 2) School of Hospitality and Tourism, Hue University, 22 Lam Hoang, Hue City, Viet Nam
- 3) International Training Institute for Materials Science, Hanoi University of Science and Technology, No 1, Dai Co Viet, Ha Noi, Viet Nam.

Correspoding authors

- * nguyenduccuong@hueuni.edu.vn (N D Cuong)
- * hieu@itims.edu.vn/hieu.nguyenvan@hust.edu.vn (N V Hieu)

Highlights

- Facile method has employed to prepare mesoporous Co₃O₄ nanochains with high specific surface area.
- The Co₃O₄ nanochains has highly sensitive and selective toward H₂S gas with rapid response.
- Such a potential gas sensing strategy can be easily extended to other metal oxides.

Abstract: In this paper, cobalt carbonate hydroxide (Co(CO₃)_{0.5}(OH)·0.11H₂O) nanowires were successfully fabricated by a simple hydrothermal route without using surfactants and by subsequent heat treatment in air at 600 °C for 5 h to obtain mesoporous Co₃O₄ nanochains. Assynthesized nanochains with length of several micrometers consisted of well-linked Co₃O₄ nanoparticles with an average size of 50 nm. The sensor based on mesoporous Co₃O₄

Download English Version:

https://daneshyari.com/en/article/7139067

Download Persian Version:

https://daneshyari.com/article/7139067

<u>Daneshyari.com</u>