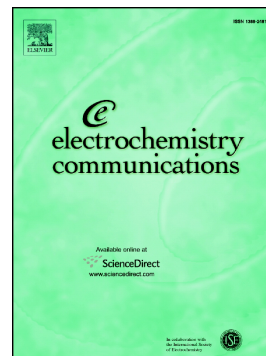


## Accepted Manuscript

MnO<sub>2</sub>-CoP<sub>3</sub> nanowires array: An efficient electrocatalyst for alkaline oxygen evolution reaction with enhanced activity

Xiaoli Xiong, Yuyao Ji, Maowen Xie, Chao You, Lin Yang, Zhiang Liu, Abdullah M. Asiri, Xuping Sun



PII: S1388-2481(17)30344-2  
DOI: doi:[10.1016/j.elecom.2017.12.008](https://doi.org/10.1016/j.elecom.2017.12.008)  
Reference: ELECOM 6104  
To appear in: *Electrochemistry Communications*  
Received date: 4 November 2017  
Revised date: 3 December 2017  
Accepted date: 8 December 2017

Please cite this article as: Xiaoli Xiong, Yuyao Ji, Maowen Xie, Chao You, Lin Yang, Zhiang Liu, Abdullah M. Asiri, Xuping Sun , MnO<sub>2</sub>-CoP<sub>3</sub> nanowires array: An efficient electrocatalyst for alkaline oxygen evolution reaction with enhanced activity. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. *Electrochemistry Communications* (2017), doi:[10.1016/j.elecom.2017.12.008](https://doi.org/10.1016/j.elecom.2017.12.008)

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.

# **MnO<sub>2</sub>-CoP<sub>3</sub> nanowires array: An efficient electrocatalyst for alkaline oxygen evolution reaction with enhanced activity**

Xiaoli Xiong,<sup>a</sup> Yuyao Ji,<sup>a</sup> Maowen Xie,<sup>a</sup> Chao You,<sup>a</sup> Lin Yang,<sup>b</sup> Zhiang Liu,<sup>c</sup> Abdullah M. Asiri,<sup>d</sup> and Xuping Sun<sup>b\*</sup>

<sup>a</sup> College of Chemistry and Materials Science, Sichuan Normal University, Chengdu 610068, Sichuan, China

<sup>b</sup> College of Chemistry, Sichuan University, Chengdu 610064, China

<sup>c</sup> College of Chemistry and Chemical Engineering, Qufu Normal University, Qufu 273165, Shandong, China

<sup>d</sup> Chemistry Department, King Abdulaziz University, Jeddah 21589, Saudi Arabia

E-mail: sunxp\_scu@hotmail.com; sunxp@scu.edu.cn

## **Abstract**

It is highly desired to enhance the catalytic activity of MnO<sub>2</sub> for the oxygen evolution reaction (OER) in alkaline media. Herein we report the development of MnO<sub>2</sub>-CoP<sub>3</sub> nanowires array on Ti mesh (MnO<sub>2</sub>-CoP<sub>3</sub>/Ti) as an efficient 3D OER electrocatalyst with good stability under basic conditions. In 1.0 M KOH, the MnO<sub>2</sub>-CoP<sub>3</sub>/Ti requires a current density of 10 mA cm<sup>-2</sup> at overpotential of only 288 mV, which is 120 mV less than that for MnO<sub>2</sub>/Ti. In addition, such MnO<sub>2</sub>-CoP<sub>3</sub>/Ti also exhibits high long-term electrochemical durability.

**Keywords:** MnO<sub>2</sub>-CoP<sub>3</sub>; nanowires array; electrocatalyst; water oxidation; alkaline solution

Download English Version:

<https://daneshyari.com/en/article/6601064>

Download Persian Version:

<https://daneshyari.com/article/6601064>

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