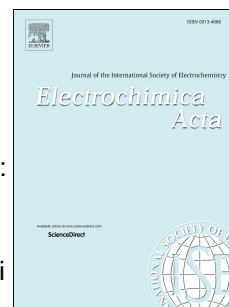


Accepted Manuscript

Flower-like CoP microballs assembled with (002) facet nanowires via precursor route:
Efficient electrocatalysts for hydrogen and oxygen evolution

Hongshuai Cao, Ying Xie, Honglei Wang, Fang Xiao, Aiping Wu, Lin Li, Zhikun Xu, Ni
Xiong, Kai Pan



PII: S0013-4686(17)32383-6

DOI: [10.1016/j.electacta.2017.11.032](https://doi.org/10.1016/j.electacta.2017.11.032)

Reference: EA 30622

To appear in: *Electrochimica Acta*

Received Date: 6 September 2017

Revised Date: 21 October 2017

Accepted Date: 4 November 2017

Please cite this article as: H. Cao, Y. Xie, H. Wang, F. Xiao, A. Wu, L. Li, Z. Xu, N. Xiong, K. Pan, Flower-like CoP microballs assembled with (002) facet nanowires via precursor route: Efficient electrocatalysts for hydrogen and oxygen evolution, *Electrochimica Acta* (2017), doi: 10.1016/j.electacta.2017.11.032.

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.

Flower-like CoP Microballs Assembled with (002) Facet Nanowires via Precursor Route: Efficient Electrocatalysts for Hydrogen and Oxygen Evolution

Hongshuai Cao¹, Ying Xie¹, Honglei Wang¹, Fang Xiao¹, Aiping Wu¹, Lin Li², Zhikun Xu², Ni Xiong¹, Kai Pan^{*,1}

¹Key Laboratory of Functional Inorganic Material Chemistry, Ministry of Education, Heilongjiang University, Harbin 150080, People's Republic of China

Tel.: +86 451 86609141; Fax: +86 451 8667 3647;

E-mail: kaipan@hlju.edu.cn

²Key Laboratory for Photonic and Electric Bandgap Materials, Ministry of Education, Harbin Normal University, Harbin, 150025, P. R. China

ABSTRACT:

It is important to prepare an environmental-friendly and earth-abundant electrocatalyst with excellent performance and superior stability for efficient hydrogen evolution reaction (HER) and oxygen evolution reaction (OER). Herein, a facile precursor route is developed to synthesize CoP nanostructure with different morphologies just by controlling the hydrothermal reaction temperature and time. The precursor $\text{Co}(\text{CO}_3)_{0.5}\text{OH}\cdot 0.11\text{H}_2\text{O}$ (CHCH) nanowire (NW) and uniform flower-like microball (MB) with exposed (001) facet were firstly successfully prepared at hydrothermal reaction temperature of 115 °C for 3 h and 10 h, respectively. And then a phosphorization treatment of CHCH was performed to get CoP NWs and flower-like CoP MBs assembled with ordered NWs that exposed (002) facets. The CoP MBs

Download English Version:

<https://daneshyari.com/en/article/6604988>

Download Persian Version:

<https://daneshyari.com/article/6604988>

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