

Author's Accepted Manuscript

N,B-codoped Defect-rich Graphitic Carbon Nanocages as High Performance Multifunctional Electrocatalysts

Ziyang Lu, Jing Wang, Shifei Huang, Yanglong Hou, Yanguang Li, Yueping Zhao, Shichun Mu, Jiujun Zhang, Yufeng Zhao



PII: S2211-2855(17)30681-X
DOI: <https://doi.org/10.1016/j.nanoen.2017.11.004>
Reference: NANOEN2305

To appear in: *Nano Energy*

Received date: 14 August 2017
Revised date: 5 October 2017
Accepted date: 2 November 2017

Cite this article as: Ziyang Lu, Jing Wang, Shifei Huang, Yanglong Hou, Yanguang Li, Yueping Zhao, Shichun Mu, Jiujun Zhang and Yufeng Zhao, N,B-codoped Defect-rich Graphitic Carbon Nanocages as High Performance Multifunctional Electrocatalysts, *Nano Energy*, <https://doi.org/10.1016/j.nanoen.2017.11.004>

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.

N,B-codoped Defect-rich Graphitic Carbon Nanocages as High

Performance Multifunctional Electrocatalysts

Ziyang Lu¹¹, Jing Wang¹¹, Shifei Huang¹, Yanglong Hou^{2*}, Yanguang Li^{3*}, Yueping Zhao¹, Shichun Mu⁴, Jiujuun Zhang⁵, Yufeng Zhao^{1*}

¹Key Laboratory of Applied Chemistry, Yanshan University, Qinhuangdao 066004, China

²Department of Materials Science and Engineering, College of Engineering, Peking University, Beijing Key Laboratory for Magnetoelectric Materials and Devices (BKLMMD), Beijing 100871, China

³Institute of Functional Nano and Soft Materials (FUNSOM), Jiangsu Key Laboratory for Carbon-Based Functional Materials and Devices, Soochow University, Suzhou 215123, China

⁴State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, China

⁵Institute of Sustainable Energy, Shanghai University, Shanghai, 200444, P. R. China

hou@pku.edu.cn

yanguang@suda.edu.cn

yufengzhao@ysu.edu.cn

*Corresponding authors.

Abstract

Nanocarbon materials recognized as effective and inexpensive catalysts for independent electrochemical reactions, are anticipated to possess a broader spectrum of multifunctionality toward oxygen reduction reaction (ORR), oxygen evolution reaction (OER), and hydrogen evolution reaction (HER). A rational design of trifunctional nanocarbon catalyst requires balancing the heteroatoms-doping and defect-engineering to afford desired active centers and satisfied electric conductivity, which however is conceptually challenging while desires in-depth research both experimentally and theoretically. This work reports a N,B-codoped graphitic carbon nanocage (NB-CN) with graphitic yet defect-rich characteristic as a promising

¹ These authors contribute equally to this work.

Download English Version:

<https://daneshyari.com/en/article/7953094>

Download Persian Version:

<https://daneshyari.com/article/7953094>

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