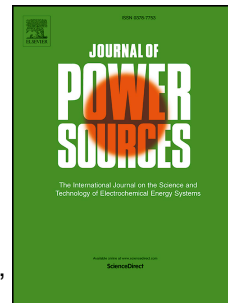


Accepted Manuscript

Hydrothermal deposition of manganese dioxide nanosheets on electrodeposited graphene covered nickel foam as a high-performance electrode for supercapacitors

Yiju Li, Dianxue Cao, Ying Wang, Sainan Yang, Dongming Zhang, Ke Ye, Kui Cheng, Jinling Yin, Guiling Wang, Yang Xu



PII: S0378-7753(14)02192-2

DOI: [10.1016/j.jpowsour.2014.12.153](https://doi.org/10.1016/j.jpowsour.2014.12.153)

Reference: POWER 20432

To appear in: *Journal of Power Sources*

Received Date: 25 September 2014

Revised Date: 19 November 2014

Accepted Date: 31 December 2014

Please cite this article as: Y. Li, D. Cao, Y. Wang, S. Yang, D. Zhang, K. Ye, K. Cheng, J. Yin, G. Wang, Y. Xu, Hydrothermal deposition of manganese dioxide nanosheets on electrodeposited graphene covered nickel foam as a high-performance electrode for supercapacitors, *Journal of Power Sources* (2015), doi: 10.1016/j.jpowsour.2014.12.153.

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.

**Hydrothermal deposition of manganese dioxide nanosheets on
electrodeposited graphene covered nickel foam as a
high-performance electrode for supercapacitors**

Yiju Li ^a, Dianxue Cao ^a, Ying Wang ^a, Sainan Yang ^a, Dongming Zhang ^a, Ke Ye ^a,
Kui Cheng ^a, Jinling Yin ^a, Guiling Wang ^{a*}, Yang Xu ^{a,b*}

^a *Key Laboratory of Superlight Materials and Surface Technology of Ministry of
Education, College of Materials Science and Chemical Engineering, Harbin
Engineering University, Harbin 150001, P.R.China*

^b *College of Pharmacy, Heilongjiang University of Traditional Chinese Medicine,
Harbin 150040, P.R.China*

Abstract

In this paper, the graphene oxide nanosheets are simultaneously reduced and deposited on nickel foam (denoted as Ni-foam@GNS) by one step electrodeposition method. The interconnected crumpled graphene nanosheets grown on Ni foam serve as a three-dimensional (3D) conductive skeleton for hydrothermal deposition of MnO₂ nanosheets by in-situ redox reaction. The MnO₂ nanosheets anchored on the graphene covered nickel foam (denoted as Ni-foam@GNS@MnO₂) show unique 3D porous interconnected networks. The samples are characterized by using X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), X-ray photoelectron spectroscopy (XPS), thermal gravimetric analysis (TGA), N₂ adsorption–desorption measurements and fourier transform infrared spectroscopy

* Corresponding author. Tel: 010-86-451-82589036, Fax: 010-86-451-82589036, E-mail address: wangguiling@hrbeu.edu.cn (Guiling Wang).

* Corresponding author. Tel: 010-86-451-82589036, Fax: 010-86-451-82589036, E-mail address: Xy7752928@163.com (Yang Xu).

Download English Version:

<https://daneshyari.com/en/article/7734056>

Download Persian Version:

<https://daneshyari.com/article/7734056>

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