### Accepted Manuscript

Title: High performance symmetric supercapacitor based on zinc hydroxychloride nanosheets and 3D graphene-nickel foam composite



Authors: S. Khamlich, Z. Abdullaeva, J.V. Kennedy, M. Maaza

 PII:
 S0169-4332(17)30457-9

 DOI:
 http://dx.doi.org/doi:10.1016/j.apsusc.2017.02.095

 Reference:
 APSUSC 35204

 To appear in:
 APSUSC

 Received date:
 21-10-2016

 Revised date:
 11-1-2017

 Accepted date:
 12-2-2017

Please cite this article as: S.Khamlich, Z.Abdullaeva, J.V.Kennedy, M.Maaza, High performance symmetric supercapacitor based on zinc hydroxychloride nanosheets and 3D graphene-nickel foam composite, Applied Surface Science http://dx.doi.org/10.1016/j.apsusc.2017.02.095

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

# High performance symmetric supercapacitor based on zinc hydroxychloride nanosheets and 3D graphene-nickel foam composite

S. Khamlich<sup>a,b,\*</sup>, Z. Abdullaeva<sup>c</sup>, J.V. Kennedy<sup>d</sup>, M. Maaza<sup>a,b</sup>

<sup>a</sup>UNESCO-UNISA Africa Chair in Nanosciences-Nanotechnology, College of Graduate Studies, University of South Africa, Muckleneuk Ridge, PO Box 392, Pretoria, South Africa

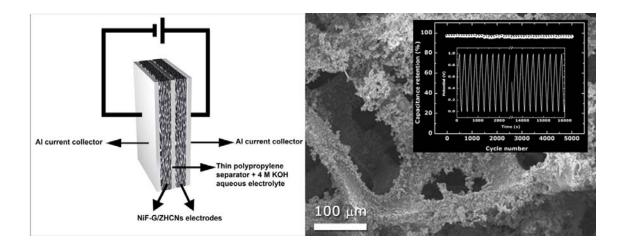
<sup>b</sup>Nanosciences African Network (NANOAFNET), iThemba LABS-National Research Foundation, 1 Old Faure Road, Somerset West 7129, PO Box 722, Somerset West, Western Cape Province, South Africa

<sup>c</sup>Department of Materials Science and Engineering, Kumamoto University, 860-8555, Japan

<sup>d</sup>National Isotope Centre, GNS Science, 30 Gracefield Road, P O Box 31312, Lower Hutt, 5010.New Zealand.

**Corresponding author:** S. Khamlich, Email: <u>skhamlich@gmail.com</u>

#### **Graphical Abstract**



The fabricated symmetric supercapacitor based on NiF-G/ZHCNs as the negative and positive electrodes exhibited a specific areal capacitance of 222 mF cm<sup>-2</sup> at 1.0 mA cm<sup>-2</sup> and 96% specific capacitance retention after 5000 cycles. These results showed that electrical and ionic conductivities of the NiF-G/ZHCNs are suitable for symmetric supercapacitor application.

Download English Version:

# https://daneshyari.com/en/article/5352173

Download Persian Version:

## https://daneshyari.com/article/5352173

Daneshyari.com