

Accepted Manuscript

Activated carbons by a hydrothermal-assisted activated method for Li-ion batteries

Minsheng Chen, Dongliang Yan, Xiuyun Zhang, Zhaozhe Yu, Guisheng Zhu, Yunyun Zhao, Shouqiang Lu, Guangcun Chen, Huarui Xu, Aibing Yu

PII: S0167-577X(17)30455-X
DOI: <http://dx.doi.org/10.1016/j.matlet.2017.03.121>
Reference: MLBLUE 22360

To appear in: *Materials Letters*

Received Date: 9 January 2017
Revised Date: 7 March 2017
Accepted Date: 21 March 2017

Please cite this article as: M. Chen, D. Yan, X. Zhang, Z. Yu, G. Zhu, Y. Zhao, S. Lu, G. Chen, H. Xu, A. Yu, Activated carbons by a hydrothermal-assisted activated method for Li-ion batteries, *Materials Letters* (2017), doi: <http://dx.doi.org/10.1016/j.matlet.2017.03.121>

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.



Activated carbons by a hydrothermal-assisted activated method for Li-ion batteries

Minsheng Chen ^{a,b}, Dongliang Yan ^{a,b,*}, Xiuyun Zhang ^{a,b}, Zhaozhe Yu ^a, Guisheng Zhu ^a, Yunyun Zhao ^{a,*}, Shouqiang Lu ^a,
Guangcun Chen ^c, Huarui Xu ^{a,b,*}, Aibing Yu ^d

^aGuangxi Key Laboratory of Information Materials, Guilin University of Electronic Technology, Guilin 541004, PR China

^bGuangxi Experiment Center of Information Science, Guilin University of Electronic Technology, Guilin 541004, PR China

^cSuzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences, Suzhou 215123, PR China

^dDepartment of Chemical Engineering, Monash University, Clayton, Vic 3800, Australia

Corresponding author Tel.:+86 773 2291159; fax:+86 773 2191903

E-mail addresses: dlyan@guet.edu.cn (DL Yan), yunyzhao@163.com (YY Zhao), huaruixu@guet.edu.cn (HR Xu)

ABSTRACT

Activated carbons are prepared by a hydrothermal-assisted alkali activated (HAA) process with sugarcane bagasse as the carbon precursor and KOH as the activated reagent. The physical and chemical properties of the hydrothermal-assisted alkali activated carbons (HAAC) are characterized using X-ray diffraction (XRD), scanning electron microscopy (SEM), nitrogen adsorption-desorption tests and electrochemical performance measurements. Compared to the activated carbons obtained from the traditional alkali activated (TAA) process, HAAC display much improved electrochemical performance when the samples are used as anode material for lithium ion batteries, which attributed to their higher specific surface area, favorable pore size distribution and inter-connected frameworks.

Keywords: carbon materials; sugarcane bagasse; anode material; energy storage and conversion

Download English Version:

<https://daneshyari.com/en/article/5463200>

Download Persian Version:

<https://daneshyari.com/article/5463200>

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