

Accepted Manuscript

A new nano lead-doped mesoporous carbon composite as negative electrode additives for ultralong-cyclability lead-carbon batteries

Leying Wang, Hao Zhang, Wenfeng Zhang, Hao Guo, Gaoping Cao, Hailei Zhao, Yusheng Yang

PII: S1385-8947(17)32211-8
DOI: <https://doi.org/10.1016/j.cej.2017.12.089>
Reference: CEJ 18250

To appear in: *Chemical Engineering Journal*

Received Date: 7 September 2017
Revised Date: 17 December 2017
Accepted Date: 18 December 2017

Please cite this article as: L. Wang, H. Zhang, W. Zhang, H. Guo, G. Cao, H. Zhao, Y. Yang, A new nano lead-doped mesoporous carbon composite as negative electrode additives for ultralong-cyclability lead-carbon batteries, *Chemical Engineering Journal* (2017), doi: <https://doi.org/10.1016/j.cej.2017.12.089>

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.



A new nano lead-doped mesoporous carbon composite as negative electrode additives for ultralong-cyclability lead-carbon batteries

Leying Wang^{a,b}, Hao Zhang^{c,*}, Wenfeng Zhang^c, Hao Guo^d, Gaoping Cao^c, Hailei Zhao^b, Yusheng Yang^{b,c}

^a School of Materials Science and Engineering, Jingdezhen Ceramic Institute, Jingdezhen 333403, China

^b School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China

^c Research Institute of Chemical Defense, Beijing 100191, China

^d China Institute of Atomic Energy, P.O. Box 275(30), Beijing 102431, China

*Corresponding author:

Hao Zhang, Research institute of Chemical Defense, Beijing 100191, China

Tel.: +86-10-66705840; Fax: +86-10-66748572

E-mail: dr.h.zhang@hotmail.com

ABSTRACT

We propose and realize a new nano lead-doped mesoporous carbon composite as the negative electrode additives, which realize the abundant nano-lead electrodeposition into carbon pores and the remarkable suppression of irreversible sulfation, to effectively prolong the cycle life of lead-carbon batteries. We show that through NaOH activation and followed air oxidation, porous carbon could obtain more mesopore volume and appropriate acidic groups, which are two critical parameters for

Download English Version:

<https://daneshyari.com/en/article/6580527>

Download Persian Version:

<https://daneshyari.com/article/6580527>

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