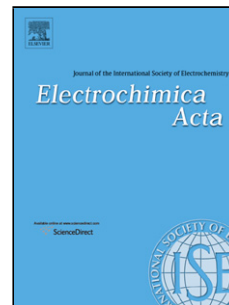


Accepted Manuscript

Title: In-situ synthesis of reduced graphene oxide modified lithium vanadium phosphate for high-rate lithium-ion batteries via microwave irradiation

Author: Zhaozhi Wang Haifu Guo Peng Yan



PII: S0013-4686(15)01317-1
DOI: <http://dx.doi.org/doi:10.1016/j.electacta.2015.05.154>
Reference: EA 25087

To appear in: *Electrochimica Acta*

Received date: 12-3-2015
Revised date: 25-5-2015
Accepted date: 27-5-2015

Please cite this article as: Zhaozhi Wang, Haifu Guo, Peng Yan, In-situ synthesis of reduced graphene oxide modified lithium vanadium phosphate for high-rate lithium-ion batteries via microwave irradiation, *Electrochimica Acta* <http://dx.doi.org/10.1016/j.electacta.2015.05.154>

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.

In-situ synthesis of reduced graphene oxide modified lithium vanadium phosphate for high-rate lithium-ion batteries via microwave irradiation

Zhaozhi Wang *, Haifu Guo, Peng Yan

School of Chemistry and Chemical Engineering, Zhaoqing University, ZhaoQing 526061, Guangdong China

*** Corresponding author.**

Telephones: 13827568930; **E-mail address:** zzwangedu@163.com

Graphical abstract

Highlights

1. Graphene-decorated $\text{Li}_3\text{V}_2(\text{PO}_4)_3$ is synthesized via microwave irradiation.
2. Both $\text{Li}_3\text{V}_2(\text{PO}_4)_3$ and RGO can be simultaneously achieved through this route.
3. The GO is reduced by microwave irradiation not the carbon.
4. $\text{Li}_3\text{V}_2(\text{PO}_4)_3/\text{RGO}$ displays excellent high-rate ability and cyclic stability.

Abstract

We report a simple and rapid method to synthesize graphene-modified $\text{Li}_3\text{V}_2(\text{PO}_4)_3$ as cathode material for lithium-ion batteries via microwave irradiation. By treating graphene oxide and the precursor of $\text{Li}_3\text{V}_2(\text{PO}_4)_3$ in a commercial microwave oven, both reduced graphene oxide and $\text{Li}_3\text{V}_2(\text{PO}_4)_3$ could be simultaneously synthesized within 5 min. The structure, morphology and

Download English Version:

<https://daneshyari.com/en/article/6611033>

Download Persian Version:

<https://daneshyari.com/article/6611033>

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