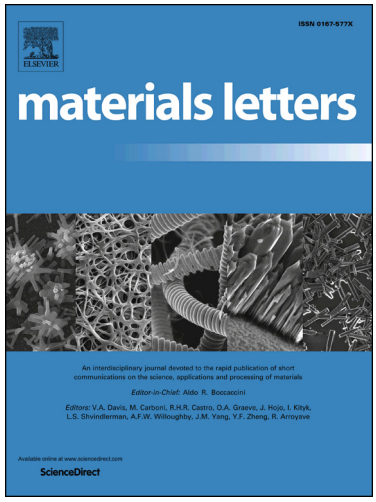

Potassium vanadate $K_2V_3O_8$ as a superior anode material for potassium-ion batteries

Ming Lu, Ke-fei Wang, Hong-di Ke, Qi Hu, Zheng-hong Liu, Hao-ran Wu

PII: S0167-577X(18)31337-5
DOI: https://doi.org/10.1016/j.matlet.2018.08.126
Reference: MLBLUE 24837

To appear in: *Materials Letters*

Received Date: 27 May 2018
Revised Date: 17 August 2018
Accepted Date: 22 August 2018

Please cite this article as: M. Lu, K-f. Wang, H-d. Ke, Q. Hu, Z-h. Liu, H-r. Wu, Potassium vanadate $K_2V_3O_8$ as a superior anode material for potassium-ion batteries, *Materials Letters* (2018), doi: https://doi.org/10.1016/j.matlet.2018.08.126

Potassium vanadate $K_2V_3O_8$ as a superior anode material for potassium-ion batteries

Ming Lu,* Ke-fei Wang, Hong-di Ke, Qi Hu, Zheng-hong Liu, Hao-ran Wu

Department of Information Engineering, *Jilin Business and Technology College*, *Changchun 130062, China.*

Corresponding Author Prof. Ming Lu

E-mail: Luming5035@gmail.com

Abstract

Layered $K_2V_3O_8$ (KVO) is successfully fabricated via simple hydrothermal reaction and employed as novel anode materials in potassium-ion batteries (KIBs). Benifitting from its specific layered structure and various oxidation states of V (V^{2+} to V^{5+}), KVO delivers high reversible capacity of 300 mAh g^{-1}. This works have significant implications in exploiting for potential anode materials, consequently speeding up the development of high-performance KIBs.

Keywords: Vanadate, Layered structure, Anode material, Potassium ion batteries.