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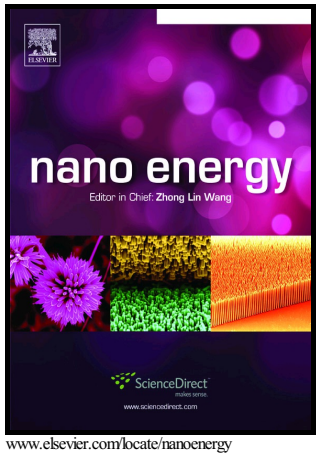

www.elsevier.com/locate/nanoenergy

PII: S2211-2855(17)30104-0
DOI: http://dx.doi.org/10.1016/j.nanoen.2017.02.026
Reference: NANOEN1802

To appear in: *Nano Energy*

Received date: 17 January 2017
Revised date: 13 February 2017
Accepted date: 16 February 2017

Cite this article as: Lu-Lu Zhang, Zhen Li, Xue-Lin Yang, Xiao-Kai Ding, Ying-Xian Zhou, Hua-Bin Sun, Hua-Chao Tao, Ling-Yun Xiong and Yun-Hui Huang, Binder-free $Li_3V_2(PO_4)_3$/C membrane electrode supported on 3D nitrogen-doped carbon fibers for high-performance lithium-ion batteries, *Nano Energy* http://dx.doi.org/10.1016/j.nanoen.2017.02.026

Binder-free $Li_3V_2(PO_4)_3$/C membrane electrode supported on 3D nitrogen-doped carbon fibers for high-performance lithium-ion batteries

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Abstract

An *in-situ* prepared binder-free $Li_3V_2(PO_4)_3$/C membrane electrode supported on 3D N-doped carbon fibers (LVP/C@NCF) has been developed. The residual carbon in LVP/C@NCF consists of the pyrolytic carbon from glucose and the N-doped carbon fibers decomposed from filter paper. The former uniformly covers on the surface of LVP particles, while the latter is functioned as both a 3D conductive network and a current collector for LVP. Compared with the traditional LVP/C electrode supported on Al foil (LVP/C@Al), the LVP/C@NCF membrane electrode