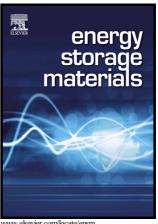
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#### ACCEPTED MANUSCRIPT

# Revitalized interest in vanadium pentoxide as cathode material for lithium-ion batteries and beyond

Jinhuan Yao <sup>a</sup>, Yanwei Li <sup>a,\*</sup>, Robert C. Massé <sup>b</sup>, Evan Uchaker <sup>b</sup>, Guozhong Cao <sup>b,\*</sup>

<sup>a</sup> Guangxi Key Laboratory of Electrochemical and Magneto-chemical Functional Materials, College of Chemistry and Bioengineering, Guilin University of Technology, Guilin 541004, China

<sup>b</sup> Department of Materials Science and Engineering, University of Washington, Seattle, WA 98195, USA 

gzcao@u.washington.edu

lywhit@126.com

Abstract: Revitalized interest in vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) arises from two very important developments in rechargeable batteries. One is the push on lithium-ion batteries for higher energy density batteries: using lithium metal as anode and searching for higher capacity and high voltage cathode. Using lithium metal anode eliminates the big obstacle for V<sub>2</sub>O<sub>5</sub> cathode that does not come with lithium ions. V<sub>2</sub>O<sub>5</sub> possesses the highest reversible capacity among known cathode materials. Another is the recent intensive research for cathode materials beyond Li-ion batteries (LIBs). In the past several years, interest in complementary alkali-ion battery technologies has seen a tremendous resurgence. Out of the set of alternative chemistries, V<sub>2</sub>O<sub>5</sub> has seen the most

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