US 20230231170A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2023/0231170 A1

HUANG et al. (43) Pub. Date: Jul. 20, 2023

(54) METHOD FOR PREPARING VANADIUM ELECTROLYTE FOR ALL-VANADIUM REDOX FLOW BATTERY

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(21) Appl. No.: **18/157,013**

(22) Filed: **Jan. 19, 2023**

(30) **Foreign Application Priority Data**

Jan. 20, 2022 (CN) 202210069306.7

Publication Classification

(51) **Int. Cl.**
H01M 8/18 (2006.01)

(52) **U.S. Cl.**
CPC ***H01M 8/18*** (2013.01); *H01M 2300/0002* (2013.01)

(57) **ABSTRACT**

The application relates to battery materials, and particularly discloses a method for preparing vanadium electrolyte for an all-vanadium redox flow battery. An example method includes: heating high-purity vanadium pentoxide, and reducing the high-purity vanadium pentoxide by using a reducing gas to obtain a low-valence vanadium oxide; mixing low-valence vanadium oxide with an activating agent, and heating and activating to obtain vanadium-containing paste electrolyte; and adding water to dissolve the vanadium-containing paste electrolyte to obtain the vanadium electrolyte with the average valence of vanadium between positive three and positive four. Compared with a finished product vanadium electrolyte, the vanadium-containing paste electrolyte is small in size, and the sulfuric acid is solidified, so that the corrosion of the sulfuric acid to a container can be reduced, the cost for transporting the vanadium-containing paste electrolyte is lower than the cost for directly transporting the vanadium electrolyte, and the vanadium electrolyte is promoted.

Table 1 Composition data table of High-purity vanadium pentoxide

Element	V	Ca	Al	Co	Fe	Zn	As	Ni	Ba	Be
Content %	56.60	0.059	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05