

Sulfuric acid concentration in vanadium flow battery electrolyte

Jul 21, 2020; The most frequently used electrolyte mainly consists of vanadium ions dissolved in diluted sulfuric acid. The solubility of the vanadium ions strongly depends on the sulfuric acid ...

Abstract: The effects of sulfuric acid concentration in VO_2^+ solutions were investigated via electrochemical methods and electron paramagnetic resonance. The viscosity of solutions containing ...

The above results indicate that 3.0 M and 3.5 M of H_2SO_4 should be used as supporting electrolytes to achieve efficient and stable vanadium flow batteries.

In VRFBs, the positive and negative electrolytes are stored separately in external tanks. Conventionally, the positive electrolyte consists of V (V) and V (IV) ions in sulfuric acid solution, while ...

The two main all-vanadium flow battery chemistries use either sulfuric acid or sulfuric acid/HCl mixtures as the supporting electrolyte, with low concentrations of phosphoric acid often included in the sulfuric ...

These reactions depict the charge and mass balance, but the counter ions are usually omitted and not considered, even though the vanadium species are ion-paired with sulfate counter ions at battery ...

In this study, the concentration effects of sulfuric acid solution and V (V) on positive electrolyte component of vanadium redox batteries were investigated by cyclic voltammetry and ...

In this work: Modification of commercial VFB electrolyte ($\text{V}^{3.5+}$) by with acid and water dilution

The concentration of H_2SO_4 has a great influence on the viscosity and conductivity of the vanadium electrolyte. Increasing the concentration of H_2SO_4 from 1.5 M to 4.0 M leads to an ...

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