
Vanadium redox flow battery (VRFB) is a very promising solution for large-scale energy storage, but some technical issues need to be addressed. Crossover, i.e., the ...

Critically analyses the ion transport mechanisms of various membranes and compares them and highlights the challenges of membranes for vanadium redox flow battery ...

To increase the time between regeneration cycles and to improve the overall efficiency of vanadium flow batteries, we investigate ...

As a critical component of the electrochemical cell, the membrane influences battery performance, cycle stability, initial investment and maintenance costs. This review ...

We present a composite membrane for the vanadium redox flow battery (VRFB) consisting of a composite of a porous polypropylene ...

According to the polarization analysis of a VFB, the limiting factor to improve battery power density is the low ion con-ductivity of a membrane4, which plays the role of impeding ...

However, most of the thin-film electrodes developed to date suffer from high mass transport resistance and deliver unsatisfactory performance. In this work, we proposed a dual ...

We present a composite membrane for the vanadium redox flow battery (VRFB) consisting of a composite of a porous polypropylene separator laminated with a thin film of ...

In this case, vanadium redox flow batteries (VRFBs) have emerged as one of the most promising electrochemical energy storage systems for large ...

To increase the time between regeneration cycles and to improve the overall efficiency of vanadium flow batteries, we investigate the use of an ultrathin, graphene coating ...

Innovative membranes are needed for vanadium redox flow batteries, in order to achieve the required criteria; i) cost reduction, ii) long cycle life, iii) high discharge rates and iv) ...

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