Carbon felt composition of all-vanadium liquid flow battery

In this study, the carbon felt used as the electrode was pretreated in various ways to improve the performance of the vanadium redox flow battery. The pretreatment conditions of carbon ...

Activated carbon felt electrodes are widely used in the vanadium redox flow batteries. However, the direct correlation between felt properties, redox reaction kinetics, and battery ...

The results showed that the all vanadium flow battery containing boron doped carbon felt electrode exhibited higher energy efficiency (80.56%) than the original carbon felt battery (63.40%) at a current ...

A high-performance carbon felt electrode for all-vanadium redox flow battery (VRFB) systems is prepared via low-temperature atmospheric pressure plasma treatment in air to improve the ...

Moreover, the cyclic voltammetry (CV) and electrochemical impedance spectroscopy (EIS) analysis results show that the resistance between electrolyte and carbon felt electrode decreased.

It was observed that the carbon fibers in CF were successfully wrapped by vertically grown graphene nanowalls, which not only increase the electrode specific area, but also exposing a ...

Therefore, in this research the modification method of felt electrodes to reduce the resistivity of a flow battery cell. The modification is carried out by thermal catalytic decomposition of ...

Aiming at the shortcoming of low specific surface area of the most commonly used carbon felt (CF) electrodes in vanadium flow battery (VFB), there are mainly two approaches to ...

The modified carbon felt exhibits higher energy efficiency (EE) and voltage efficiency (VE) in a single cell VRFB test at the constant current density of 160 mA cm -2, and also maintains good ...

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In the present research, the performance of three commercial graphite felts (a 6 mm thick Rayon-based Sigracell®, a 4.6 mm thick PAN-based Sigracell®, and a 6 mm thick PAN-based ...

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