

Characterization of Positive Porous Electrode Felt for Organic Redox Flow Battery Application

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ABSTRACT

The newly emerging organic redox flow battery (RFB) as one of the most promising technology for energy storage system due to their flexible molecule modification. Nevertheless, the study on treated electrode in electrocatalytic activity for organic chemistry is limited. Most of the conventional studies reported a single treatment for carbon porous electrode and mostly focus on vanadium electrochemistry. To investigate the effect of sulphonation and oxidation of carbon felt in organic active material, two-stage surface treatment involving acid with thermal treatment was introduced in this study. The electrochemical investigation of acid treated felt and pristine felt were performed using cyclic voltammetry (CV) for selected positive electrolyte benze-1,4-diol in supporting acid—sulfuric acid. The results disclosed the potential of acid treated felt with good reversibility in cyclic voltammetry analysis with increase anodic peak potential.

KEYWORDS: Carbon felt; Surface modification; Benze-1,4-diol

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