

Accelerated lifetime prediction protocol for redox flow battery systems

조국진, 박진수[†], 오규현, 강문성

상명대학교

(energy@smu.ac.kr[†])

Vanadium redox flow batteries (VRFBs) have been recently attracted as a large scale energy storage system for renewable power generation. The membrane acts as a critical component, not only separating two different electrolytes, but also allowing the transport of ions during the charge and discharge process. In order to filter the developed membranes out for VRFBs, long-term performance evaluation is required. In this study, to save test time, accelerated lifetime prediction protocol for VRFBs was developed through short-term single cell performance evaluation at three different current densities. In each single cell performance, each calibration curve by using the starting voltage of each cycle was made..

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