Simulation studies on electrode thickness and performance in vanadium redox flow battery

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Vanadium redox battery (VRB) is well-known electrochemical energy storage system which used vanadium ion redox reactions. VRB capacity can be easily adjusted by changing size of electrolyte tank That flexibility makes VRB as prospect energy storage system for renewable energy systems such as smart-grid power supply network. Therefore, various approaches to advance VRB efficiency has developed for decades. Porous carbon is general electrodes material for VRB because of its conductivity and corrosion resistance. In this study, the pressure loss of the porous electrodes is focused. Electrode thickness is major parameter for simulation analysis. And channel existence comparison is also developed.