

confirm ionic conductivity by measuring impedance of the nafion membrane

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Redox Flow Battery(RFB) which state of the active electrode material is not solid like the existing batteries but solution is battery consisting of positive and negative electrode electrolyte different oxidation states. Because Vanadium Redox Flow Battery's(VRFB) electrolyte use active material mixing vanadium and strong acid, VRFB require excellent acid resistance, oxidation resistance, and ion permeability membrane. In this experiment, how to set up the standard measurement for manufacture membrane secured ion exchange capacity and acid resistance of VRFB is significant. Widely used nafion membrane have pretreatment in 3% hydrogen peroxide and sulfuric acid of 2M at 80°C. Pretreated nafion's ionic conductivity became increasing with the time dipped in the 3rd di-water but constant after 24hours. Measuring the impedance of nafion dipped in 3rd di-water for 24hours, calculated the ionic conductivity.