

Low Permeable Hydrocarbon Polymer Electrolyte Membrane for Vanadium Redox Flow Battery

문건오, 임민화, 박미정, 노현준, 이정명, 정호영[†]

전남대학교

(jungho@chonnam.ac.kr[†])

Polymer electrolyte membrane (PEM) confirms the life span of vanadium redox flow battery (VRFB). Products from Dupont, Nafion membrane, is mainly used for PEM in VRFB. However, permeation of vanadium ion occurs because of Nafion's high permeability. Therefore, the efficiency of the VRFB decreases and the prices becomes higher, which are problems in the VRFB's commercialization. In order to solve this problem, poly(phenylene oxide)(PPO) is sulfonated for the preparation of low-priced hydrocarbon polymer electrolyte membrane. The sPPO membrane is characterized by fundamental properties and VRFB cell test.