

A Na- $\beta$ -alumina tubular membrane contained prototype tubular cell towards the development of non-aqueous redox flow battery

이보열, 문일식<sup>†</sup>  
순천대학교

(ismoon@sunchon.ac.kr<sup>†</sup>)

Utilization of Na- $\beta$ -alumina separator in non-aqueous redox flow batteries can be minimize the redox ions crossover. Here in, the Na- $\beta$ -alumina separator performance evaluated using different type of electrolytes on vanadium (III) acetylacetonate charging and discharging performance in acetonitrile medium. Electrolyte type was selected based on the solution resistance using impedance analysis. Then, charging-discharging of Na- $\beta$ -alumina was performed by galvanostatic mode using 0.01 mA/cm<sup>2</sup> and 0.0015 mA/cm<sup>2</sup> charging and discharging respectively. A columbic and voltage efficiencies were calculated using the charging-discharging data.

Key words: Na- $\beta$ -alumina, non-aqueous, RFB, V(III)(acetylacetonate), electrolyte