

연수 제안서

연구 분야	Polymer Membranes for electrochemical energy conversion and storage devices
연구 과제명	Flow Battery Development
연수 제안 업무	Membrane Development

(연수 내용)

In previous research, we developed a new membrane type which has superior performance (higher coulomb, voltage and energy efficiency). However, the capacity fade is larger.

To reduce the capacity fade, we want to

- a) use another blend component
- b) dip coat the membrane with a blocking layer

The student will prepare one of the blend components in a simple synthesis step, then prepare the blend membranes by doctor blade casting.

The materials will be characterised by spectroscopic methods (IR and nmr), and for their material properties (tensile strength, electrolyte uptake swelling behaviour, conductivity, vanadium crossover etc.). Application testing in the VRFB will be done in the lab of a collaboration partner. If the performance is sufficient, the optimised membrane will be build into a stack by an industrial project partner.

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