

Highly Selective Perfluorosulfonic Acid Membrane for All-Vanadium Redox Flow Battery

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Our Motivation:

To increase H/V selectivity and reduce vanadium crossover self-discharge reactions.

Our Strategy:

Through reduce transport channel sizes by decreasing line density of sulfonic acids on Nafion backbone – keeping same chemical stability.

Our Results:

- (1) Coulombic efficiency > 99%;
- (2) Excellent capacity retention;
- (3) Reduction of both membrane cost and battery cycle cost.

