

Using Redox Active Polymers as Anode and Cathode Species in a Redox Flow Battery

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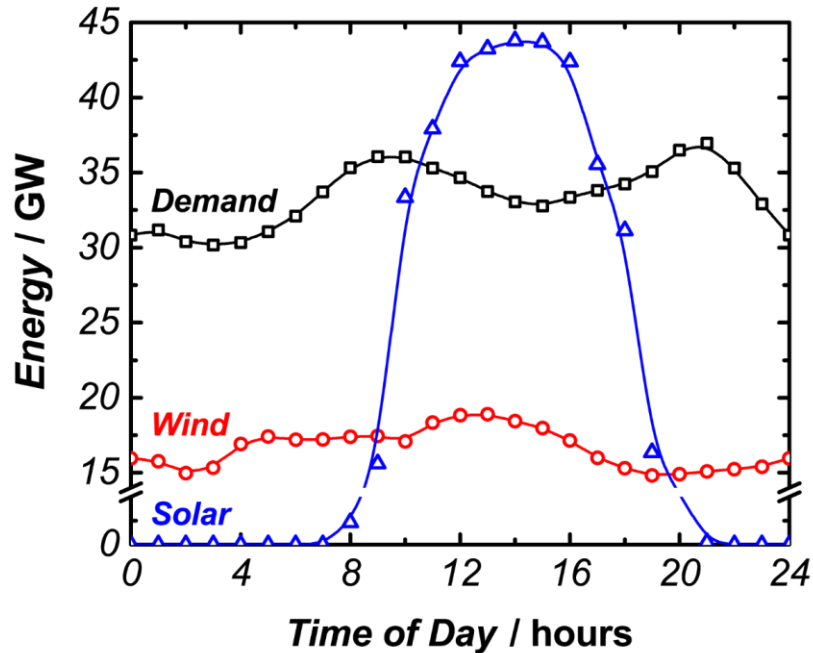


The Importance of Energy Storage

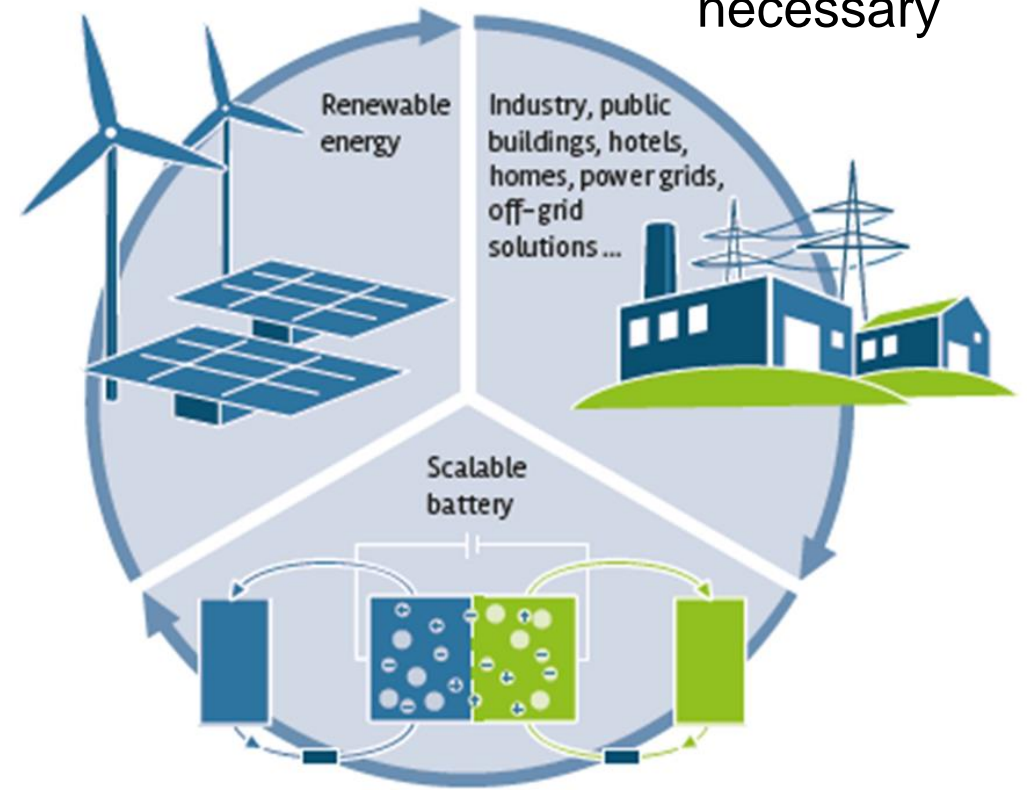


Depletion of fossil fuels

Grid scale energy storage necessary

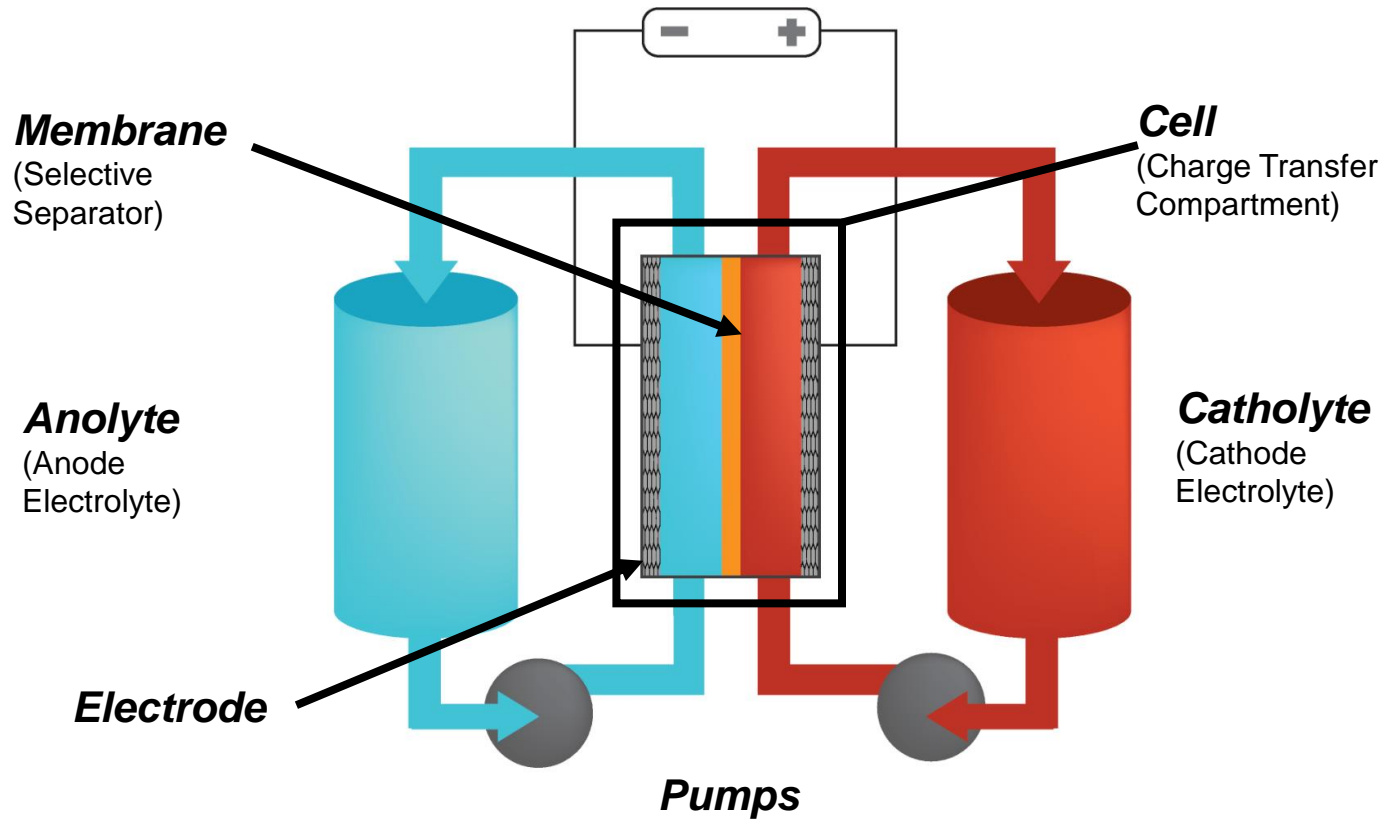


Intermittency of solar and wind power

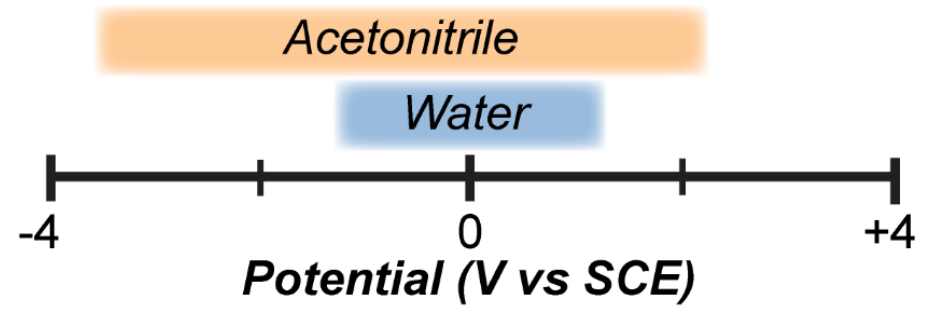




Battery Schematic



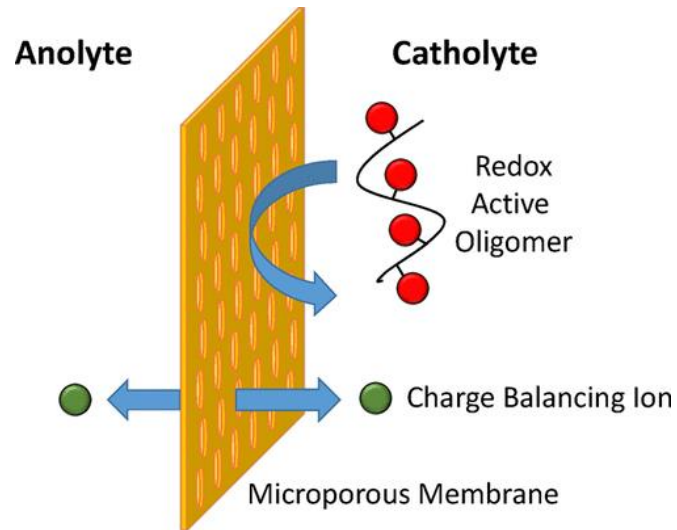
Potential window for water vs acetonitrile—more energy dense



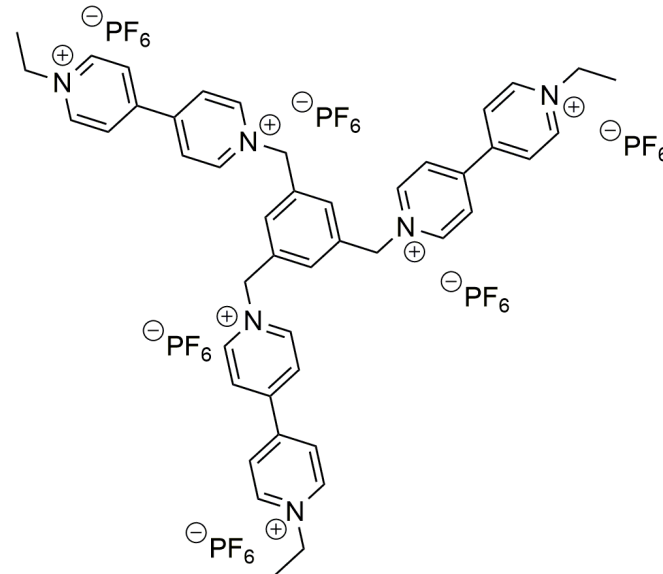


Minimizing Crossover

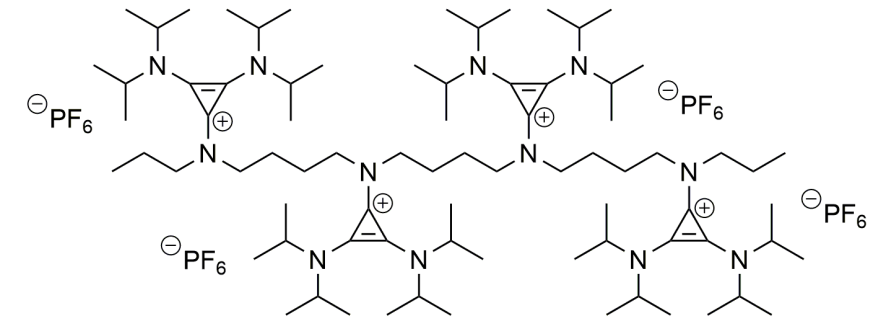
PIM-1 membrane



Anolyte (Anode material dissolved in solution)



Catholyte (Cathode material dissolved in solution)

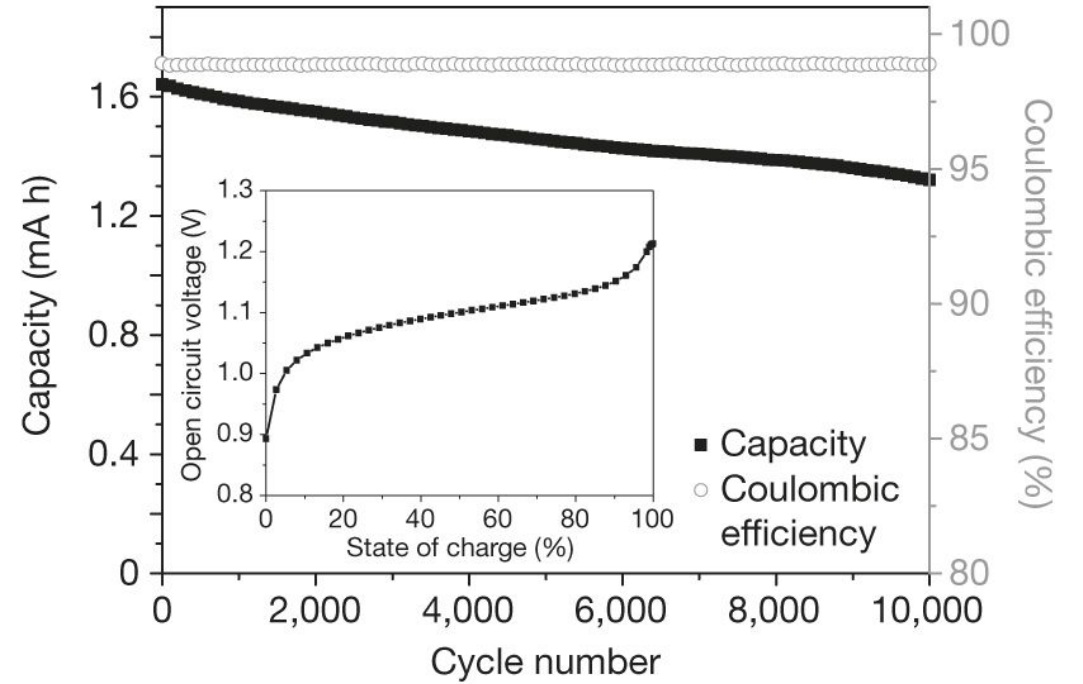
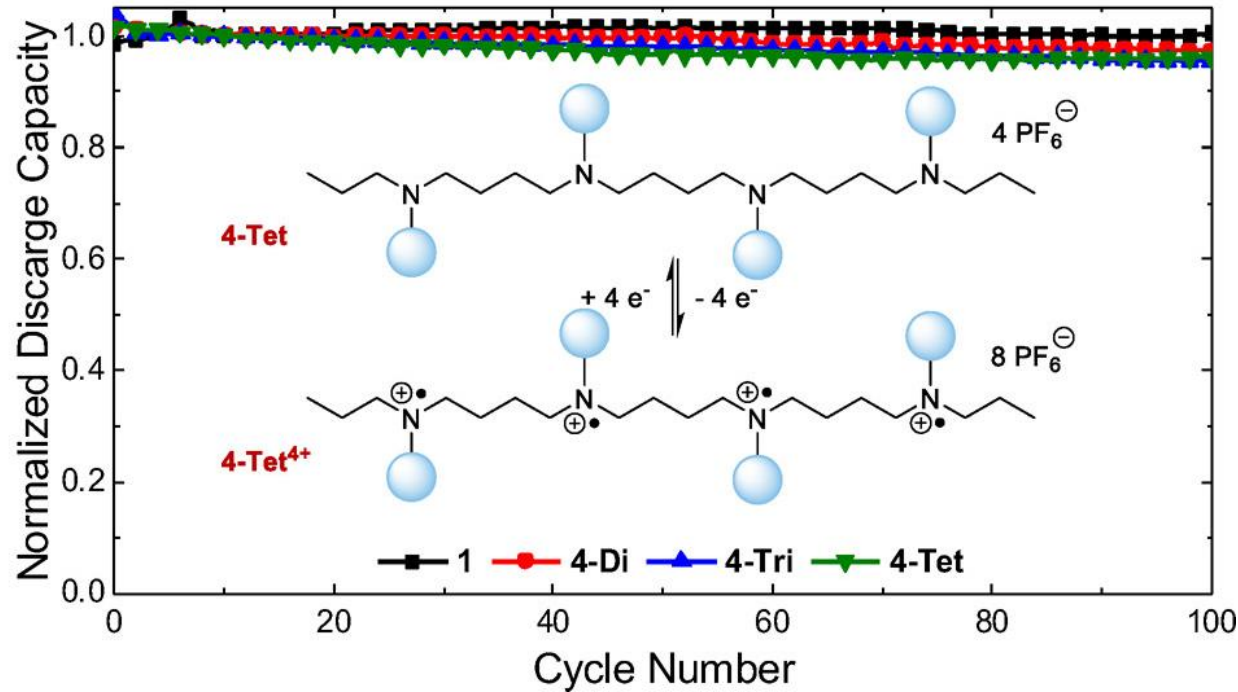


Doris, S. E. et. al. *Angewandte Chemie* **2017**, 56 (6), 1595–1599.

Hendriks, K. H. et. al. *ACS Central Science* **2018**, 4 (2), 189–196.



Expected Results



High cycling stability and battery capacity with redox active polymers

Hendriks, K. H. et. al. *ACS Central Science* **2018**, 4 (2), 189–196.

Janoschka, T., Martin, N., Martin, U. et al. *Nature* **527**, 78–81 (2015).



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