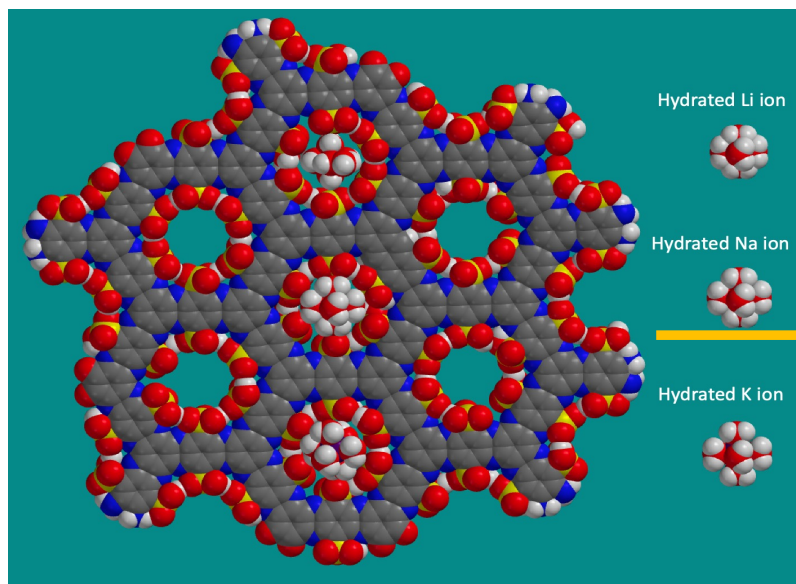


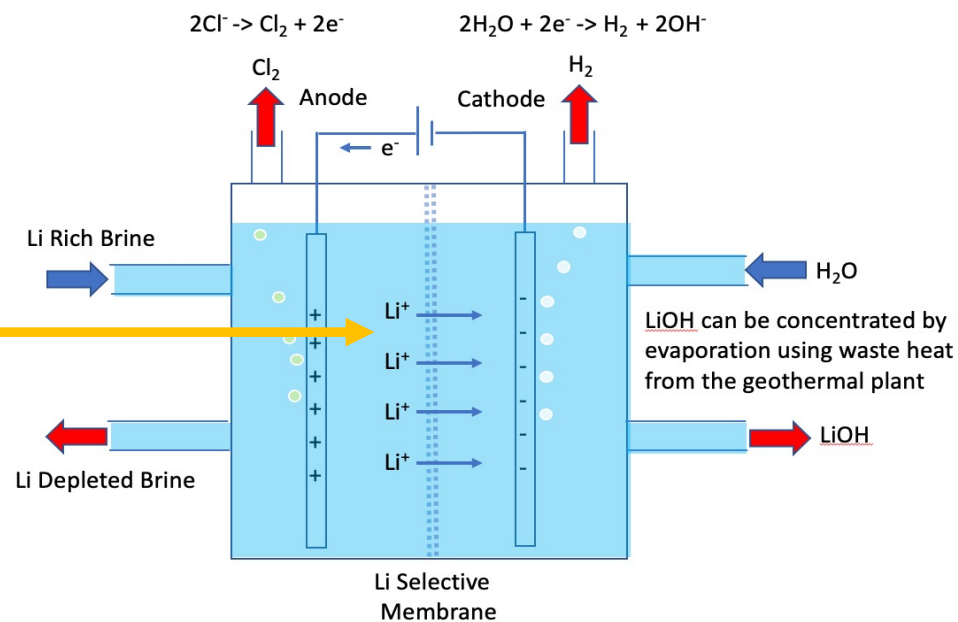
A Lithium Ion Selective Membrane Coupled to a Chlor-Alkali Electrolysis Cell to Concentrate Lithium from Salton Sea Brines and Produce LiOH and Other Valuable Chemical Products in One Step

Our Team: Professor Bruce Parkinson - Electrochemist/Materials Scientist
Professor John Hoberg - Synthetic Organic Chemist
Professor Jonathon Brant - Membrane Specialist

Scaling up our proposed process will produce LiOH, green hydrogen and chlorine by incorporating a lithium ion selective membrane in a chlor-alkali electrolysis cell adding considerable value to a Salton Sea geothermal power plant.



Space filling molecular model of a covalent organic framework (COF) membrane showing how the highly negatively charged pores with six sulfonate groups that strongly attracts cations is just the right size to allow lithium ions to go through while sodium and potassium ions are too large to pass.



A simplified diagram of the concept combining electrochemical concentration of lithium with the simultaneous production of LiOH, green hydrogen and chlorine.