We are seeking a Postdoctoral Research Associate who will perform research in the area of selective electrocatalysis. The goal is to reveal the principles of selective catalysts design and utilize such principles for selective oxygen evolution in the presence of  chloride ions. Oxygen evolution reaction (OER) from H2O is more thermodinamically favorable than chlorine evolution reaction (CER) due to lower equilibrium potential. However, CER successfully competes with the OER due to faster kinetics. Situation can be reversed by a proper choice of catalyst that would inhibit the CER and/or promote OER. The effort will include investigation of reaction mechanisms (reactions' rate constants, limiting steps and reaction orders) on currently available catalysts that demonstrate selectivity towards the OER and translating these principles to future generation of materials. The methods being employed include, but are not limited to  thin-film rotating and ring-disk electrode electrochemistry, gas chromatography, titration, XPS and IR spectroscopy. Experience with materials electrodeposition is a plus.

US citizenship is required for this position