**Electrochemical Catalysis for Carbon Dioxide Conversion Lab**

Since the industrial revolution in the early 1800s, an enormous amount of fossil fuels have been consumed to produce electricity and provide energy for all human activities. Because of this, carbon dioxide (CO2) has been largely released into earth's atmosphere, causing global warming and climate change. This lab introduces an electrochemical reduction (ECR) of CO2 as one of the most popular approaches to reduce and convert CO2 into carbon monoxide (CO), which is an industrial gas widely used in bulk chemicals manufacturing. Starting from fabrication of catalyst films on appropriate substrates, chracterization of the resulting film and preparation of the electrochemical cells, the catalysts will be tested for their catalytic performance for the CO2-to-CO convertion and if time allows, catalyst stability test via contant potential electrolysis (CPE) will be performed as well.