

CHEM 5785 Electrochemical Energy Conversion and Storage

Course Description:

Electrochemistry is playing a more and more important role in the application of renewable energy. This course will cover the theory and practice of a broad spectrum in electrochemistry especially in electrochemical energy storage and conversion systems. It will provide a brief introduction to the basic chemistry and physics concepts in electrochemistry. The further application in electrocatalysis, batteries and fuel cells will also be introduced.

Prerequisite:

CHEM1300 & CHEM2300

Main Course Outline (for reference only):

1. Introduction to Electrochemistry
2. Electrode and Potentials
3. The double layer
4. Thermodynamics and Kinetics
5. Mass Transport
6. Electrochemical Methods
7. Applications in electrochemical energy conversion and storage: electrocatalysis, fuel cell, batteries