

Electrochemistry for Alternative Energy

Course Workload		Assessment form (examination/ graded test/ ungraded test)
ECTS	Hours	
3	108	Graded test

This course offers a complete overview of the main principles of electrochemistry, covering both the basic theory and practical applications. The course highlights the role of electrochemistry in alternative energy solutions.

Course structure:

1. Introduction to Electrochemistry

- 1.1. Terminology
- 1.2. Fundamental Equations
- 1.3. Electrodes and Electrochemical Cells

2. Electrochemical Analytical Methods

- 2.1. Overview of Electrochemical Methods
- 2.2. Electrochemical Impedance Spectroscopy
- 2.3. Voltammetry
- 2.4. Amperometry
- 2.5. Potentiometry
- 2.6. Electrochemical Sensors and Multisensor Systems

3. Electrochemistry in Synthesis and Industrial Processes

- 3.1. Electrosynthesis
- 3.2. Electrodeposition
- 3.3. Applied Electrochemistry
- 3.4. Electrochemical Engineering

4. Environmental Electrochemistry

- 4.1. Emerging Trends in Alternative Energy Sources
- 4.2. Electrocatalysis for Green Chemistry
- 4.3. Implementation and Future Perspectives of Environmental Electrochemistry