Electrochemistry

Component
École Nationale Supérieure d'Électrotechnique d'Électronique

In brief

- **Ametys Code:** N9EE35D
- **Open to exchange students:** Yes

Presentation

Description

Introduction: Measurable quantities in an electrochemical chain. Two centuries of electrochemical development.
Electrochemical chains at equilibrium. Electromotive force. Electrode potential. Nernst's law. Primary and secondary generators, fuel cells. Capacity, efficiency.
Current-carrying electrochemical chains: Heterogeneous electron transfer. Coupling of heterogeneous electron transfer and solution transport phenomena. Various kinetic regimes. Butler-Volmer law. Limiting current.
- Applications to the development of electrochemical synthesis processes. Applications to corrosion. Applications to the study of generator operation (charging, discharging).
- Overview of various electrochemical methods. Potentiostat.