

Electrochimie des surfaces modifiées



Niveau
d'étude
BAC +5 /
master



ECTS
3 crédits



Composante
Faculté des
sciences

En bref

- › Langue(s) d'enseignement: Français
- › Ouvert aux étudiants en échange: Oui

Présentation

Description

The different conductive surface modification methods will be presented and their study will be detailed through practical work. The characterization of these nanomaterials will be studied via electrochemical and coupled techniques (electrochemical microbalance, spectro-electrochemistry, electrochemical microscopy). Finally, applications in catalysis, luminescence and energy storage will be the subject of case studies.

Objectifs

The objective of this module is to train students in surface functionalization at the nanometric scale and bring skills in the electrochemical characterization of surface and divided nanomaterials.

Heures d'enseignement

CM	Cours magistral	16h
TD	Travaux dirigés	11h
TP	Travaux pratique	8h

Compétences visées

Know the different surface functionalization processes for massive and divided materials (nanoparticles, carbon nanotubes, graphene).

Identify the variables allowing to play on the surface coverage, the interfacial activity and the electroactivity of the materials.

- # Know how to reason about the different parameters of a cyclic voltammogram (Epic, Ip_{pc} ...) and distinguish the electrochemical rules usable for electroactive materials
- # Calculate surface coverages via the study of voltammetric and gravimetric results.
- # Know which characterization technique to use to obtain structural information by exploiting simple spectra of advanced techniques.
- # Understand the processes that govern electrocatalysis, luminescence or energy storage on nanoscale materials.

Infos pratiques

Lieu(x)

➤ Angers

Campus

➤ Campus Belle-beille