

Surfaces and biosensing



En bref

- **Langue(s) d'enseignement:** English
- **Forme d'enseignement :** Cours magistral
- **Ouvert aux étudiants en échange:** Non

Présentation

DESCRIPTION

This teaching addresses the topics of biosensing and biomolecular diagnostics. The main challenge in biosensing and biomolecular diagnostic is to selectively reveal the reaction of the targeted molecule with a sensing unit (an immunoreaction, a DNA hybridization, an enzyme/substrate reaction...) and then translate it into an appropriate readout (electrical signal, optical signal ...). This can either involve homogenous (bio)-chemical reactions or more complex interfacial chemistry. This course will describe how the choice of sensing bioreceptor and transduction mode impact the analytical performances. The physico-chemical concept of surface chemistry, methods of surface modifications and their application for biosensing will be addressed. This course will also allow students to better understand the influence of thermodynamic and kinetic parameters of the surface biorecognition on the analytical performances of biosensors and immunoassays.

The course will be divided in the following sequences:

- * General concepts of biosensing (4 hrs CM + 2hrs TD)
- * Surface modification of sensing interfaces (2 hrs CM)
- * Immunoassays (4 hrs CM)
- * Kinetics and thermodynamics of biomolecular recognition on surfaces (2 hrs CM + 4hrs TD)
- * Cases studies (4 hrs of tutoring)
- * Seminar by a professional (industrial applications, reglementation)

HEURES D'ENSEIGNEMENT

Surfaces and biosensing	Cours Magistral	14h
Surfaces and biosensing	Travaux Dirigés	10h

PRÉ-REQUIS NÉCESSAIRES

Notions in structure of biomolecules

En bref

CONTACTS

Responsable pédagogique

Benoît Piro

✉ piro@u-paris.fr

Pour en savoir plus, rendez-vous sur > u-paris.fr/choisir-sa-formation

LIEU(X)

➤ Campus des Grands Moulins

Pour en savoir plus, rendez-vous sur > u-paris.fr/choisir-sa-formation