



2^{ème} Séminaire Nano/Microélectronique et Vivant

Lundi 18 décembre 2017, Montpellier, France

Salle de Séminaire, Bat 4

14h-17h30

Programme

14h : Reetu Raj Pandey

Research Fellow, LIRMM, UMR5506 CNRS Université de Montpellier

Fabrication of electrochemical glucose biosensor based on carbon nanotube field effect transistor

Abstract: Electrochemical biosensor is a class of sensor where the semiconducting, ionic or conducting material is directly in contact with biochemical analyte. This type of sensors transduces the biological signals into electrical signal. The device sensitivity and signal strength of such a sensor depends on analyte concentration, its composition and binding with electro conducting channel. One of the promising candidate material for such electrochemical biosensor are carbon nanotubes (CNTs) with exotic properties of signal detection.

14h45 : May C. Morris

Directeur de recherche CNRS, Institut des Biomolécules Max Mousseron, CNRS-UMR5247, Montpellier, France

Fluorescent Peptide Biosensors for probing kinase activities – new tools for cancer diagnostics and drug discovery

Abstract: One of the challenges of modern biology and nanomedicine consists in attempting to visualize biomolecules in their natural environment, in real-time and in a non-invasive fashion, so as to gain insight into their behaviour in both physiological and pathological settings. To this aim, we have developed a toolbox of fluorescent biosensors through conjugation of environmentally-sensitive probes to synthetic modular polypeptides, which serve as reporters of protein kinases activities in human cancers. In particular, we have engineered a CDK4/Cyclin D-specific biosensor which has been implemented to monitor kinase hyperactivity in melanoma cell extracts, xenografts and skin biopsies, and a CDK5/p25-specific biosensor which reports on the dynamic activation of this kinase in glioblastoma cells.. More recently, we have developed lanthanide-based and carbon nanotube-peptide hybrid nanobiosensors which penetrate readily into living cells and respond to kinase hyperactivation or to its therapeutic inhibition in a robust and sensitive and fashion. Taken together, these optical biosensors constitute attractive tools for cancer diagnostics and drug discovery programmes.

16h15 : Nicole JAFFREZIC-RENAULT

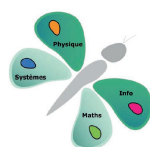
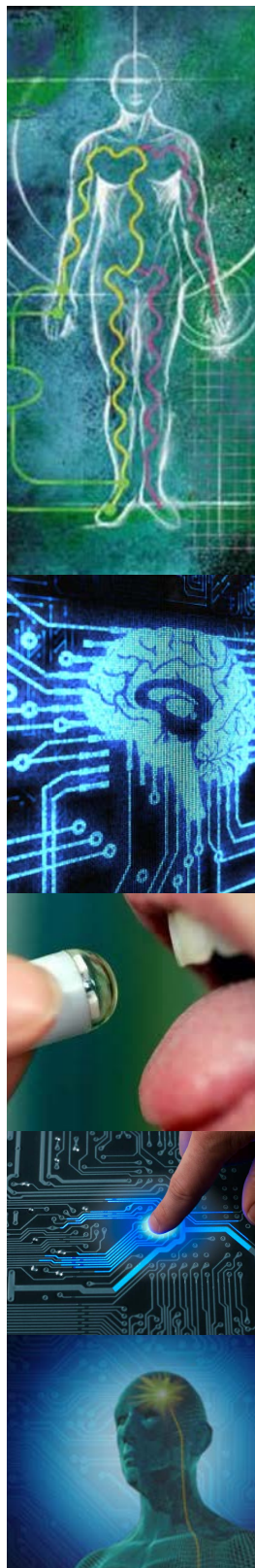
Directeur de Recherche Emérite au CNRS, Institut des Sciences Analytiques, UMR 5280 CNRS-UCBL-ENS, Université de Lyon

Concepts de biocapteurs électrochimiques

Abstract: Le séminaire s'articulera autour de la relation cible-réaction biochimique-transduction.

Différents exemples seront développés :

- BioFET enzymatiques
- Microconductimètres enzymatiques et effet de nanomatériaux
- Biocapteurs d'affinité impédancemétriques



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