Proposition de financement doctorale
Université Paris Diderot – Paris 7
pour la rentrée 2018-2019

Titre de la thèse :

Light and electron coupling in Molecular junction

Directeur de thèse : Jean-Christophe LACROIX (lacroix@univ-paris-diderot.fr)

Laboratoire d'accueil : ITODYS – UMR 7086

The PHD proposal is focussed on multifunctional ultrathin films with switchable electronic conductivity and on emerging devices as defined in the ITRS roadmap within the resistive memory theme. It develops building blocks that can be used in high added value domains and are upstream for nanoelectronic and optoelectronic components. It addresses fundamental issues raised by electrochemistry and photochemistry in solid state nano-devices. By exploiting the coupling between light and active layers in the 5-20 nm thickness range, we seek to provide new electronic functions with possibly widespread applications, including nonvolatile memory and opto-devices. The proposed approach is based on a molecular electronic platform which tackles the principal limitations of the field (robustness, variability,..) and is "manufacturable" in a massively parallel format, and tolerant of operating temperatures of today's microelectronic devices.

Mots clés : Molecular electronic, electrochemistry, Plasmonic photo active devices

Ecole doctorale Chimie Physique & Chimie Analytique de Paris Centre – ED 388
4, place Jussieu - CC 63
Tour 32 – 1ère étage – Couloir 32 – 42 – Pièce 114
75252 Paris Cedex 05 France
Tel : 33 (0)1 44 27 32 07
Courriel : secretariat-ed388@upmc.fr