

Thesis in Bioelectrochemistry and Vibrational Spectroscopy Group, University of Strasbourg

We are looking for a highly motivated student to join the 'bioelectrochemistry and spectroscopy group' in the UMR 7140, chimie de la matière complexe (<http://complex-matter.unistra.fr/equipes-de-recherche/laboratoire-de-bioelectrochimie-et-spectroscopie/accueil/>)

The project focuses on the study of the reaction mechanism of membrane proteins from the respiratory chain and the identification of inhibitors by means of electrochemical techniques and vibrational spectroscopies. The biosensor will be created by immobilizing the proteins on nanomaterials and the reaction followed by SEIRAS and SERS. We will focus on cytochrome bd oxidase as privileged enzyme target for future antibacterial drugs and a series of inhibitors tested. Similarly the NADH:ubiquinone reductase and the ATPase will be investigated. Further experiments will include the ^{35}S labeling of these proteins, in order to monitor redox induced conformational changes on the basis of an infrared probe.

This international project will be part of the binational PhD college "enzyme reactivities and their applications" CDFA 0407 between groups from the university of Strasbourg in France and the university of Freiburg in Germany. Sufficient command of French OR English is requested. Interested students should have a Master from an European University or equivalent with at least 12,5/20 and send us until end of august a short CV, a letter of motivation, the details of the master program and its result together with the name of two referees to hellwig@unistra.fr.