UNIVERSITÉ DE NAMUR

POST-DOCTORAL POSITION IN VIBRATIONAL NONLINEAR OPTICAL SPECTROSCOPY OF BIOLOGICAL INTERFACES

A postdoctoral position in vibrational nonlinear optical spectroscopy of biological interfaces is available at the Namur Institute of Structured Matter (NISM) (https://nism.unamur.be/) of the University of Namur (Belgium).

The research project is an interdisciplinary study aiming at understanding the molecular basis of a membrane protein refolding method, by exploiting the interfacial sensitivity of vibrational second order nonlinear optical (NLO) processes, as obtained from sum frequency generation (SFG) spectroscopy. The goal of this project will be unveiling the molecular interactions, the structural modifications and the kinetics properties occurring at the membrane protein interface upon renaturation, and then providing a full molecular picture of the protein refolding mechanism.

The candidate must have a PhD degree obtained at maximum 10 years before the starting date of the postdoctoral fellowship, and must not have resided or carried out his/her main activity (job, studies...) in Belgium for more than 24 months during the last 3 years before the beginning of the postdoctoral fellowship. He/she must have a strong background in physics, biophysics, physical chemistry or surface sciences. Candidates with experience in experimental optics, vibrational spectroscopies, and/or nonlinear optical spectroscopies will have preference. He/she will conduct advanced interdisciplinary research at the frontiers between physics, chemistry, optics and life sciences. Knowledge of protein chemistry is a plus.

The research project will be carried out jointly in the Laboratory of Lasers and Spectroscopies (LLS) and in the Laboratory of Physical Chemistry of Biomolecules (CPB) of the NISM Institute. The LLS laboratory applies NLO spectroscopies to the characterization of light-matter interactions, to the investigation of the physicochemical properties of (bio-)molecular films on surfaces, and to the study of the NLO responses of nanostructured interfaces, for fundamental or applied researches. The CPB laboratory investigates the structure-function relationships of soluble and membrane proteins combining experimental (spectroscopy, calorimetry,…) and theoretical methods. The main research topics of the group include the study of membrane protein refolding, the analysis of protein-protein interactions involved in therapeutics and the design of new pest control strategies.

This project will exploit the scientific resources of the technological platforms of UNamur, such as LOS (Lasers, Optics & Spectroscopies) and MorphIm (Morphology–Imaging) (https://platforms.unamur.be/).

The position is available for 12 months, starting between January 1st 2022 and March 31st 2022. Interested candidates should send an application, a CV, and the names of two referees to Prof. Francesca Cecchet (francesca.cecchet@unamur.be) or Prof. Catherine Michaux (catherine.michaux@unamur.be) before November 30th 2021.