

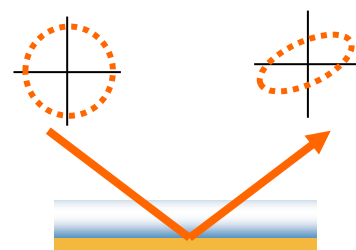
<b>Responsable du stage:</b>	<b>Ralf Richter</b>
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<u>Sujet du stage:</u>	<p><u>Stage Recherche</u></p> <p><i>L'ellipsométrie spectroscopique in situ à faible volume – un outil versatile pour la quantification des interactions biomoléculaires.</i></p> <p><i>In situ low volume spectroscopic ellipsometry – a versatile tool to quantify biomolecular binding events.</i></p>

### But du stage :

**Are you interested in the development and application of novel analytical techniques at the crossroads between physics, surface science and biology? We invite applications by motivated students to join our research efforts within a short-term internship.**

*The research team* is international and interdisciplinary. We create complex biological structures on surfaces and study them with state-of-the-art biophysical characterization techniques to understand fundamental biological questions. The team is part of a young research center for biomaterials, which offers excellent working conditions and has been recently equipped with state-of-the-art instruments, including atomic force, confocal, and electron microscopes, a variety of surface-sensitive (QCM-D, SPR, ellipsometry) and spectroscopic (ATR-FTIR, fluorescence) techniques.

**The project:** A key parameter in biological surface science and in many biosensing applications is the amount of biomolecules (proteins, lipids, DNA, virus particles, ...) that have been deposited on a surface of interest. Ideally, such data should be measurable *in situ* (i.e. in aqueous environment), in real time, and without the use of labels on a wide range of surfaces. Spectroscopic ellipsometry (SE) can do just this, yet conventional ellipsometry setups require rather large amounts of sample which restricts their application for often precious biological samples.



The objective of this short-term project will be to develop an SE setup that enables measurements in liquid volumes down to a few micrometers. Within the internship, you will contribute your physics and engineering skills to develop a novel analytical method. You will also be exposed to work with biomolecules and techniques of surface biofunctionalization. If successful, the developed method could find broad applications.

### Compétences requises :

**The applicant** should have keen interest to work in an international and interdisciplinary research team. A background in physics, physical chemistry, engineering or a closely related field is required. Skills in computer programming are an advantage. The working language is English.

**Interested? Please send an informal application with a motivation letter on why you want to join the project and your CV to Ralf Richter ([rrichter@cicbiomagune.es](mailto:rrichter@cicbiomagune.es)). Further information about the group can be found on [www.cicbiomagune.es](http://www.cicbiomagune.es) (Research/Biointerface Unit/Lab 3).**