

Postdoc position in the area of physical chemistry for cell mechanics

Description:

A postdoctoral position is available for a highly motivated candidate to study the physical principles of cell motility in the Biophysics Group of the Interfaces & Complex Fluids Lab at the University of Mons in collaboration with the Bio- and Soft Matter Group of the Institute of Condensed Matter and Nanosciences at the Université catholique de Louvain.

The project focuses on the intriguing problem of cell migration, which is essential to many physiological and pathological processes, by using a physical chemistry approach to cross life science boundaries. Cell motility in response to fluctuating physiological and pathological conditions is very critical to the fate of the cell. Morphology, cytoskeletal organization, as well as changes in gene expression of non-motile cells are known to be influenced by the properties of their underlying environment, such as topography, rigidity and chemistry. However, the mechanisms of cellular responses of motile cells to these features remain poorly understood.

In collaboration with Dr. Karine Glinel (Institute of Condensed Matter and Nanosciences, UCL), we will develop in-vitro approaches using micro- and nanotechnologies to prepare topographically patterned platforms that will be used to investigate the cellular responses to the guidance signals emitted from their surrounding environment. By using advanced engineering technologies and physical chemistry of soft condensed matter, we aim to develop the next generation of synthetic nanotopographic substrates that will be used in tissue-engineering applications.

Workplaces:

The group of Physical Chemistry for Cell Mechanics belongs to the [Interfaces & Complex Fluids Laboratory](#) (Prof. Pascal Damman) at the University of Mons (Belgium) and develop a broad range of experimental tools (magnetic tweezers, microfluidics, micropatterning, ...) in combination with fluorescence microscopy (confocal and TIRF) and cell biology to address physiological questions at the single-cell and the tissue level.

<http://staff.umh.ac.be/Gabriele.Sylvain/Home.html>

The Institute of Condensed Matter and Nanosciences of the Université catholique de Louvain (Belgium) benefits from exceptional equipments for the preparation and the characterization of nano- and micro-patterned surfaces as well as access to the 1000 m² of WinFab clean rooms.

<http://www.uclouvain.be/en-315928.html>

Profile:

We offer a 12 months postdoctoral position, renewable for two additional years, and supported by the Belgian National Foundation for Scientific Research (FNRS). The candidate should have a PhD in experimental physics, chemical engineering or material engineering and shows interest for interdisciplinary work at the interface between physics, biology and medicine. Experience in nano- microfabrication, lithography and/or microscopy is highly desirable. Additional requirements include a strong experimental background, academic history, and publication record, as well as excellent verbal and written communication skills. Interested candidates should email (sylvain.gabriele@umons.ac.be) their CV and the names of 3 references in a single PDF file.