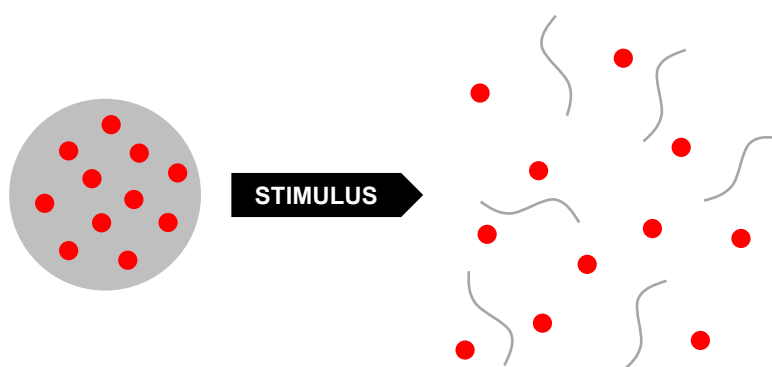


From the synthesis of new degradable polymers to their production into nanoparticles for drug encapsulation and release for the treatment of cancer

Ph.D. position at the Institut Charles Sadron, Strasbourg (France) starting on February 1, 2025

Background

Head and neck squamous cell carcinomas (HNSCC) have a high prevalence and lethality, mainly due to: i) their late diagnosis, ii) the low availability of therapeutic alternatives for HNSCC patients and iii) the acquisition of resistance to conventional therapies. As part of a European consortium, the aim of the NANORESCAN project is to combat HNSCC tumors resistant to conventional therapies by proposing an approach based on nanoparticles loaded with drugs to induce their release under the effect of an external stimulus.



Mission

As part of the project, the doctoral student will develop nanoparticles of degradable polymers. The particles will be prepared in continuous flow from commercial biodegradable polymers, as well as from self-immolating polymers synthesized by the doctoral student. Nanoparticles will be obtained by formulating polymers with drugs, modulating operating parameters to control nanoparticle size, the drug load and its release profile in environments simulating biological systems, in the presence or absence of the degradation trigger. The doctoral student will have the opportunity to spend a short period in the laboratory of one of the consortium members in Barcelona (Spain), in order to familiarize himself/herself with the method of modifying nanoparticles to make them stimutable.

Requirements and candidature

The candidate should hold a Master degree or equivalent with a profile in molecular chemistry (organic synthesis, purification, and characterization of organic compounds). He/She should be interested in strengthening his/her skills in polymer chemistry and processes and in evolving on a project at the interface of chemistry and biology. A previous experience in polymer processes and/or physical chemistry of polymers would be appreciated. No skills in biology are requested.

All applications should be submitted directly on the website of CNRS emploi (<https://emploi.cnrs.fr/>) to the offer referenced as UPR22-DELCHA-008. The application should include your curriculum vitae, a cover letter describing your interest for this project, your transcripts of your Master degree, and the name and email address of two persons that could be contacted.