18-months engineer contract at NIMBE/LIONS – Joliot/SIMOPRO

Development of a microfluidic system for single cell analysis of their content in tritium-labeled drugs.

Context
The project MEDICAPLUS is a new CEA collaboration composed of biologists and physicist to work on the development of a novel digital autoradiography analyzer. The aim of the project is to build a detector prototype able to quantify the exact dose of the tritium-labeled drugs after in vivo administration to cell population.
One part of the project is related to microfluidics and specifically dedicated to the development of a microfluidic system for single cell trapping and further beta-imaging.

Mission
This project proposed the development of a microfluidic system for single cell analyzing. The system will allow to immobilize cells at specific positions and transferred them into a digital autoradiography analyzer to quantify drug accumulation in targeted cells. The successful candidate will contribute to the design, the microfabrication (photolithography, soft-lithography), the campaign measurements and the data analysis. The microfluidic work will be mainly done at LIONS. Tritium-labeled cells and beta-imaging will be done at the SIMOPRO. Immobilized cells will be imaged first on a commercial beta-imager available at SIMOPRO and compared to the new beta-imager in development with our partners.

Profile
Applicants could be graduated from an engineer school or could have a Master degree or a PhD in Microfluidics/Engineering/Physics or related disciplines and will be motivated by challenges in a multidisciplinary team.
Applicants will have an experimentalist profile.
Applicants shall speak English or French, and have good communication skills.

Duration: 18 months
Starting date: To be filled last trimester 2018

Localization: LIONS and SIMOPRO at CEA/Saclay, Gif sur Yvette France

Contacts CV, motivation letter and recommendation letter should be sent to both contacts.
Dr. Florent Malloggi : florent.malloggi@cea.fr
Dr. Vincent Dive : Vincent.DIVE@cea.fr