Research Engineer Position in Optofluidic Instrumentation for Biological Applications

We are seeking a full-time research engineer to support the development of an optofluidic platform for integrated cell therapy within the framework of the CPER "TecSanté" at the University of Lille involving the PhLAM, IEMN, and GRITA laboratories. This device will enable an efficient transfection method based on contact-free nanoparticle-mediated photoporation, addressing current concerns regarding potential long-term toxicity of viral vectors or nanoparticles. Additionally, we plan to develop a single-cell sorter based on a photo-actuated flow valves to isolate targeted cell populations, achieving cell sorting independent of cell properties with processing speeds significantly higher than current microfluidic cell sorters, while ensuring high-throughput production of highly viable, healthy, and potent transfected cell samples in a sterile manner with minimal human handling.

Responsibilities: The selected candidate will be responsible for technological realization and experimental studies for the development of cytometry-type microfluidic systems. The selected candidate will work on optical, microfluidic, fluidic simulation and instrumental interfaces, as well as biological validation of the system.

Candidate activities:

- Fabricating microfluidic devices at the microfabrication center of the TecSanté microfluidic platform
- Adapting or modifying existing devices according to technical specifications
- Drafting technical specifications, design, and implementation documents associated with instrumental devices
- Implementing qualification of experimental devices, testing, and calibration
- Coordinating and conducting experiments
- Processing and analyzing data

Required profile and skills: Applicants must possess either a PhD in Physics or Engineering, or holding a Master's degree in Physics or to graduate of an engineering school with a professional experience, with expertise in optics, microfluidics, simulation and substantial experience in conducting experiments with custom hardware instruments and software interfaces. Strong communication, presentation, autonomy, organization, multitasking, and teamwork skills will be appreciated.

Contract and application: This is a 18-month fixed-term contract at the University of Lille, which must start before June 30th 2024. Salary will be based on previous professional experience. Candidates must send their detailed curriculum vitae, cover letter, and at least one letter of reference before April 30th 2024 to the following email address: emmanuel.courtade@univ-lille.fr.