



**Open position:
Postdoc in
Textile Microfluidics For Cancer.**

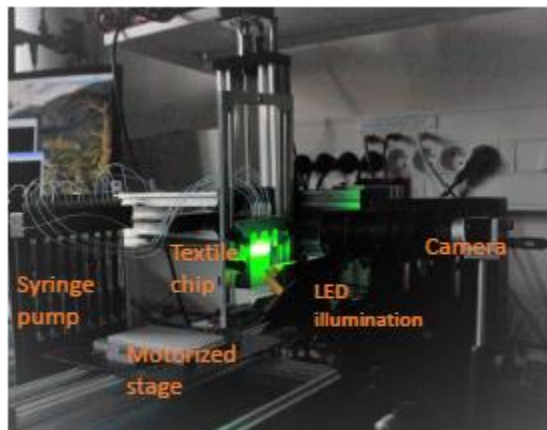
- *Type of contract : CNRS Postdoctoral researcher, 12 months with possible extension*
- *Location : Institut Pierre Gilles de Gennes pour la Microfluidique*

The team :

The MMBM team (Macromolecules and Microsystems in Biology and Medicine) is an interdisciplinary group of about 20 persons, developing new concepts and applications of microfluidics in biology and medicine. It is located in Institut Pierre Gilles de Gennes pour la Microfluidique (IPGG), Paris 5th; IPGG is an Institute with above 150 researchers in Microfluidics, equipped with a unique technological platform entirely dedicated to this domain. The team also belongs to CNRS and Institut Curie (UMR168), a highly renowned Institute for Research and Treatment in Cancer. Its affiliation to PSL Research University (36th and 1st French University in Shanghai ranking), and its location within the “Montagne Ste Geneviève” campus, provide an outstanding environment for science and research.

Project:

The team is developing, within a recently funded ANR project, a microfluidic system allowing the high-throughput culture and screening of cancer organoids or “tumoroids”. This system allows a strong reduction in the number of cells and time needed to form a clinically significant organoid. As a societal benefit, it will allow first to make large scale drug screening for research and drug discovery and validation, and in a longer term to support precision medicine by directly screening the efficiency of potential drugs on micro-biopsies from patients. The project relies on several technological innovations, regarding droplet microfluidics and microfabrication. In particular, it involves a new generation of microfluidic systems called “textile microfluidics”. The project is developed in collaboration with the team of Prof. O. Delattre, oncopediatrician and researcher à Curie Institute’s hospital, with ENSAIT in Roubaix, a major French Engineering Institute dedicated to textile technology, and the startup INOREVIA, developing droplet microfluidic instruments.



Research program

Building on previous proof-of-concept results and on a first prototype developed by a previous Postdoc, the recruited person will develop microfluidic strategies allowing the implementation of the protocols necessary for high specificity screening strategies. This will imply in particular mastering and optimizing interfacial

interactions between immiscible fluids and droplets, microfluidic control and automation. The “chips” will combine microfabrication technologies and textile technologies (provided by our collaborators at ENSAIT). The recruited person will also perform cell culture and cell screening experiments, and their statistical analysis. Finally, he/she will be in charge of technological transfer between the lab and the startup INOREVIA, regarding the instrumentation aspects of the project.

The recruited person will be involved in the supervision of students, of coordination with the project’s partners, and in the writing of publications and reports to ANR.

Candidate’s profile :

Training : PhD in microfluidics (preferably microfluidics for biology); knowledge in any of chemical physics, “soft matter”, chemical engineering, microsystems will be a strong added value to the application. Applications from candidates with experience in technical textiles will also be considered

Competences: The main competence needed for the project is Microfluidics. Protocols optimization will involve “soft matter” issues, notably regarding wetting and interfaces, so the person recruited will preferably have also a university training, or research training, in soft matter physics or chemistry. Additional experience in biological applications will be a “plus”, but the main competence in this area will be brought by our partners. The project will be mainly experimental, and involve an instrumentation component, so the person to be recruited must have strong experimental skills, and preferably a prior experience in instrumentation. An experience in microfabrication and clean room technology would also be a plus, but is not mandatory. He/she should also have good organizational and writing capabilities, the ability to work independently, and ease at collaboration in a multi-partners context. Easy communication in English, both oral and written, is mandatory.

Starting date: immediately available

Duration: The first contract will be for 12 months, with extension possible up to 36 months.

Please address CV (2P max), letter of motivation, and references to :
jean-louis.viovy@curie.fr

Reference websites:

<https://science.curie.fr/recherche/physique-chimie-biologie-multi-echelle-et-cancer/physico-chimie/equipe-descroix/membres-de-lequipe/>

<https://www.institut-pgg.fr/>