

Postdoctoral position

Untethered microrobot for cell sorting

Employer: Université de Franche-Comté

Research institute: FEMTO-ST Institute, AS2M department

Workplace: FEMTO-ST, 24 rue Alain Savary, 25000 Besançon, France

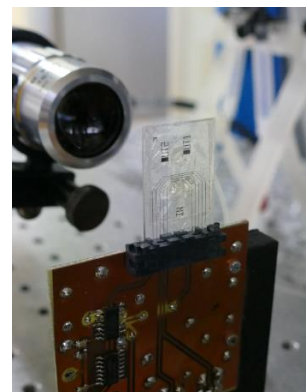
Salary: around 2880€ per month (gross salary)

Duration: one year full-time employment (renewable)

Contact information: Aude Bolopion, aude.bolopion@femto-st.fr

Context and responsibilities:

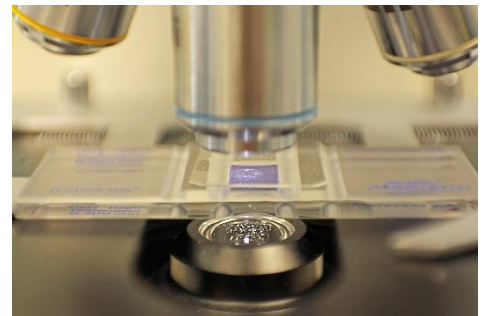
The FEMTO-ST Institute aims to develop a new untethered microrobot dedicated to the development of Advanced Therapy Medical Products. Advanced Therapy Medical Products (ATMPs) recently emerged in order to provide new therapy solutions for patients in therapeutic impasse or for new therapies. These ATMPs rely on the use of “drug cells” exhibiting new physiological functions, biological characteristics or reconstitution properties directly inspired from natural processes occurring in the human organism. However, developing these drug cells necessitates extracting a few lymphocytes from a blood sample.



The FEMTO-ST Institute aims to develop a microrobot equipped with gripping capabilities moved and actuated remotely. The robot should be able to navigate in a blood sample to grasp a given cell, and bring it to a desired location for further biological analysis. This microrobot should be less than 1 millimeter long, biocompatible and vision based controlled.

Working environment:

The postdoctorant will be hired by Universite de Franche Comte and will be working in the **FEMTO-ST research lab**. He/she will be responsible of the workpackage ‘autonomous microrobot for cell sorting’ on the **MiMedi** project (<http://projects.femto-st.fr/mimedi/>).



The **Mimedi** project involves 10 regional partners (6 companies, 3 laboratories and 1 transfer body). Mimedi was launched in December 2017 for 4 years. The global cost of the project is 13.6 mil. € and 75% are provided by the ERDF (European Development Regional Fund) and the Regional Innovation Fund of the Burgundy Franche-Comte Region.



The **FEMTO-ST Institute** is a CNRS lab (<https://www.femto-st.fr/en>) including 750 persons. FEMTO-ST includes many research departments, among which AS2M (Automation and MicroMecatronique systems) will host the postdoc. FEMTO-ST also includes cleanroom microfabrication facilities (<https://www.femto-st.fr/fr/Centrale-de-technologie-MIMENTO/Centrale-de-technologie-MIMENTO/presentation>) as well as a network of local manufacturing industries.

Qualification and responsibilities:

Solid background in one or more of the following areas:

- Mecatronics
- Robotics
- Vision based control

PhD in related field

Any of the following skills will be considered as an asset:

- Previous experience in microrobotics
- Strong motivation for experimental work
- Autonomy and communication skills
- Teamworking

The candidate will be in charge of the design, the fabrication and the control of the robot, as well as the experimental validation. He/she will also be responsible of all reporting and communication related to the work.

Position open until filled. Candidates should provide a cover letter, a CV and a list of references via email to aude.bolopion@femto-st.fr