Environmental Bioengineering by Means of Laser Photoablation (Light-SABR)

Biomaterials & Microfluidics core facility (S. Gobaa)

The project

The *Biomaterials & Microfluidics core facility* of Institut Pasteur is opening a Postdoc position for developing a new Laser photoablation system capable of creating topographic structures within microfabricated devices. The idea is to further recapitulate the physiological and morphological properties of target human tissues and organs.
The aim of the project is to advance the "organ-on-chip" field by reconstructing faithful mimics of vascularized human adult and embryonic tissues. The project will be pursued as a collaboration involving top tier labs in the fields of quantitative imaging, infectious disease and biophysics.
The selected candidate will produce and interconnect microfluidic devices capable of supporting vasculogenesis and ultimately recapitulating the functional properties of specific vascular barriers (epithelial/endothelial interface, blood-brain barrier…) on-chip. Application in the fields of infectious disease and developmental biology will be sought with a particular emphasis on multidisciplinary technological development.

- **Activities**

The project entails designing and performing experiments using laser, microfluidic, and hydrogel technologies for recapitulating both the biogenesis and the perfusion of blood vessels in vitro. Validation will be based on immunostaining, confocal/lightsheet microscopy and tightness assessment. The selected candidate will oversee the design of experiments and the analysis of the corresponding results.
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- **Knowledge**

A good expertise in the fields of photolithography, microfluidics chip design and fabrication is required. Prior experience with mammalian cell culture and/or in vitro vascularization assays will be a strong plus.

- **Skills**

The candidate should be interested in the development of technology for biomedical research. She/He should be capable of efficiently interfacing with scientists across multiple labs specialized in quantitative imaging, biophysics and infectious diseases.

- **Education**

The candidate should have a PhD degree in bioengineering or equivalent with a good publication record. Good knowledge in cell biology will be a plus.

The lab

- The *Biomaterials & Microfluidics* core facility was launched in 2018 in order to address the bioengineering needs of Institut Pasteur.

https://research.pasteur.fr/en/team/biomaterials-and-microfluidics/

Application / Financial support

Applicants should send their CV, a summary of previous research experience and if possible, the names of two references to Samy Gobaa (bmcf.admin@pasteur.fr)
Funding body: DIM Elicit. Duration: 18 months