

Postdoc: Micro-factory/CBI-LCMD

ESPCI Paris PSL

ESPCI Paris PSL is a major institution of higher education (a French "Grande École d'ingénieurs"), an internationally renowned research centre (6 Nobel Prizes), and a fertile ground for innovation, with several start-ups founded each year. ESPCI is a highly multidisciplinary environment with teaching and research in physics, chemistry and biology.

Context

Microfluidic technology allowed for revisiting emulsification processes. This technology now offers an efficient tool for producing calibrated emulsion droplets. Additionally, the ability to encapsulate various components, add serial process steps, parallelize production and droplet operations has opened up a new avenue for creating functional microspheres. These microspheres are used in particular in applications in the field of life sciences where precise control of their characteristics, such as size or surface properties, is required. The laboratory has developed new microfluidic systems allowing the industrialization of the process. The valuation of this work is now in the hands of iSpheres, a spin-off of ESPCI.

Objectives, profile and missions

As part of the research work carried out in collaboration with the company iSpheres, ESPCI is recruiting a post-doctoral fellow over a period of 12 months with experience in the development of systems integrating mechanical, electrical and software architectures. The objective is to develop a micro-production unit using the microfluidic emulsification process. The candidate will have to supervise the development of a prototype integrating microfluidics, mechanical, electrical, optical and software modules.

Rigorous and with good communication skills, the candidate will have to adapt to teamwork involving staff from the laboratory, the company, and subcontractors. The candidate will be responsible for defining the functional specifications of the sub-assemblies of the micro-unit but also for validating the prototype on model systems. The candidate will coordinate the various trades for a global integration of the micro-unit and on time.

Training in automatic control and process control is required. Skills in microfluidics, optics and digital image analysis are also desired.

At the end of the 12-month temporary contract (CDD), a permanent job (CDI) may be offered to the candidate within the company iSpheres.

Recruitment

Start: as soon as possible

Duration: 12 months

Salary: The level of remuneration depends on the experience and motivation of the candidate.

Contact: Send a CV with referents and a cover letter to Nicolas Bremond: nicolas.bremond@espci.fr