

## Laboratoire Colloïdes et Matériaux Divisés

Postdoc/Engineer:

*Making magnetic microparticles with microfluidics*

The development of microfluidic technology allowed to revisit the fabrication of emulsions and offers now an efficient tool for making well calibrated emulsion droplets. In addition, to capability to encapsulate various components, to add process steps in serial, to parallelize droplet production and operations opened a new avenue for tailoring microparticles from emulsion droplet template. These functional microparticles find application in biotechnology where a precise control of particles features, like size or binding capacity, is needed.

For this project, we wish to develop microparticles having magnetic properties with the help of microfluidics. Ending with a high emulsion droplet throughput while keeping a homogeneous droplet size is essential. This requires to properly control flow properties, of both liquid phases and the emulsion under formation. Also, the formulation should fit with the emulsification process that involves the fragmentation of interfaces in a highly confined systems. This project will be conducted in collaboration with a material science company.

We therefore look for a candidate having accomplished a PhD or having an engineer degree in applied physics or chemistry or in physico-chemistry. Strong skills in microfluidics, fluid mechanics, automation and experimental work are desired. Knowledges in CAD, colloidal science or surface chemistry are welcomed. High motivation, flexibility, autonomy, the ability to work in a highly multidisciplinary team and good interpersonal and communication skills are essential. Since this project is much oriented towards applications, we will be sensitive to a candidate having a strong motivation to continue this adventure in a startup context.

Start date: April 2019

Duration: 12 months

Salary: depends on profile and experience

**Contact :**

A motivation letter and a CV, including referent persons or letters of reference, should be sent to Nicolas Bremond ([nicolas.bremond@espci.fr](mailto:nicolas.bremond@espci.fr)).