

Laboratoire Colloïdes et Matériaux Divisés

Postdoc/Engineer:

Making magnetic microparticles with microfluidics

The development of microfluidics 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. A fine tuning of the bulk and interfacial properties of the different liquid phases as well as the solid-liquid surface features is a key aspect of this project. In addition, apart from the colloidal stability of the system, the formulation should fit with the emulsification process that involves the fragmentation of interfaces in a highly confined systems together with the flow of dense emulsion. Ending with a high emulsion droplet throughput is also essential. 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, colloidal science and experimental work are desired. Knowledges in chemistry processes, 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: from March 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).