

Postdoctoral fellowship: Emulsification with microfluidics

Laboratoire Colloïdes et Matériaux Divisés
ESPCI ParisTech
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Start date: October-November, 2013

Contract duration: one year

Project description:

The postdoc project will be performed in the frame of the Investissement d'Avenir Program DigiDiag. DigiDiag aims to develop miniaturized micro/nanofluidic lab on a chip systems for point-of-care (and other) applications in diagnostics, clinical management and personalized medicine. We aim to mature technologies to the point at which they can be successfully commercialised.

The goal of the postdoc project is to develop an efficient protocol for producing fine and calibrated emulsion droplets in large amounts having controlled bulk and interfacial properties. Magnetic and fluorescent features are two of the major desired properties. The emulsification process rests on microfluidic technologies. The candidate will design microsystems for achieving an efficient parallelisation of the droplet production, will work on the formulation for obtaining long term stability against coalescence and long term encapsulation of molecules of interest. Magnetic property of emulsion droplets is obtained by encapsulating superparamagnetic colloids. Therefore, colloidal stability under flow for avoiding microchannel clogging will also be addressed.

Skills and qualifications:

The candidate should be a PhD with expertise in physicochemistry of soft matter, fluid mechanics, microfluidics. Strong knowledge in emulsion and colloidal sciences would be appreciated and skill in optics would also be welcome.

Contact:

Application, including CV and cover letter, should be sent to Nicolas Bremond
(<mailto:nicolas.bremond@espci.fr?subject=Postdoc: emulsification with microfluidics>)