Research engineer in **scientific computing in biomechanics** M/F

"Numerical modeling of microcapsules under flow"

Laboratory	**Biomechanics & Bioengineering** (UMR 7338), CNRS – Université de Technologie de Compiègne, CS 60319, 60203 COMPIEGNE, France.
Supervisor	Dr **Anne-Virginie SALSAC** (a.salsac@utc.fr) *web site*: http://www.utc.fr/~salsacan/
Funding	**ERC Consolidator Grant**: *MultiphysMicroCaps* project
Duration	2 years (possible 1-year extension) – starting date: any time from January 2020
Gross salary	2 500€ - 3 000€/month depending on experience
Background	Trained as engineer in Numerical Methods or (Bio)Fluid/Solid Mechanics, with preferably a PhD, you will have a first successful experience of the use of computational codes and their environment (pre- and post-treatment tools...). You will master several programming languages (with a very good knowledge at least in Fortran and Matlab), and have strong skills in the modeling of the interactions between flows and deformable structures.

Context:

MultiphysMicroCaps is a large project that explores the use of deformable liquid-core capsules of micrometric size to efficiently transport active material, with a primary focus on health-related applications. It is focused on the design of innovative sophisticated numerical models and high-tech experiments, needed to determine the potential of such vectors for the protection of active substances, predict membrane breakup to control the delivery, and optimize their properties for specific industrial and biomedical applications.

The research engineer will be part of the Biological Fluid-Structure Interactions (BFSI) research team located within the Biomechanics & Bioengineering Laboratory. It is specialized in the study of biofluids and hemodynamics, from the microcirculation scale to the one of blood flows in large vessels, focusing on the fluid-structure interactions that occur with capsule/cell membranes, vessel walls or biomedical devices. One of its strength is to combine advanced numerical and experimental approaches, which enables to translate theoretical results into practical applications, such as the mechanical characterization of microcapsules.

Job description:

The recruited research engineer will have as main mission to contribute to the development and deployment of computing methods to simulate the deformation of microcapsules (liquid drops protected by a thin elastic membrane) suspended in flow, to help in the management of existing codes and guarantee their performance (eg simulations-experiments correlation). He/She will be in charge of the technical management of the numerical platform dedicated to the simulation of the fluid structures interactions occurring at the scales of microfluidics.

How to apply:

We are looking for highly motivated, dynamic and rigorous candidates, who will be fully involved in the project and eager to integrate the interdisciplinary BFSI research team.

Interested candidates should apply on https://emploi.cnrs.fr/Offres/CDD/UMR7338-CATLAC-003/Default.aspx) before October 7th by sending an application letter along with a full CV and reference letters (or at least the contact information of 2-3 referents).