

Postdoctoral fellowship

“Generation and optimization of microcapsules for antioxidant encapsulation”

Laboratory	Biomechanics & Bioengineering (UMR 7338), CNRS – Université de Technologie de Compiègne, CS 60319, 60203 COMPIEGNE, France.
Supervisors	Anne-Virginie Salsac (DR CNRS BMBI) a.salsac@utc.fr , http://www.utc.fr/~salsacan/ Aude Cordin (Assistant Professor, GEC, UTC) aude.cordin@utc.fr Claire Rossi (Professor, GEC, UTC) claire.rossi@utc.fr
Funding	ERC Consolidator Grant: <i>MultiphysMicroCaps</i> project
Duration	1 year (potentially extended for another year) – starting date: June 1st 2023
Salary	25 000€ - 40 000€/year depending on experience
Background	Strong experience in rheological experiments and/or food science, solid knowledge in fields such as bioengineering / biochemistry / biological engineering / biomechanics., ...

Context of the post-doctoral fellowship:

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 to protect and deliver active substances, and to optimize their properties for specific industrial and biomedical applications.

The postdoctoral fellow will be part of the “Biological Fluid-Structure Interactions” research team (about 20 people) of BMBI laboratory (Biomechanics and Bioengineering), but will be based in the GEC laboratory (Enzymatic and Cellular Engineering), where a substantial part of the experiments will be carried out. The research work will be done in collaboration with Alla Nesterenko from TIMR laboratory (Integrated Transformations of Renewable Matter).

Description of the postdoctoral research project:

The main objective of the recruited person will be to contribute to the development of techniques to encapsulate antioxidants in matrices that are compatible with food applications and that allow a specific release under the physiological conditions of the small intestine. The antioxidant molecules will be extracted from beetroots and purified according to a well-established protocol. Different techniques of encapsulation will be studied varying matrices and process of encapsulation. The objective will be to measure the release and mechanical resistance of the capsules under digestive conditions. Another objective will be to use these capsules to enrich food products with antioxidants and evaluate their preservation under conditions which normally lead to their degradation, such as heat treatments.

Documents required 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 send an application letter along with a full CV, copies of the PhD reports and reference letters from 2-3 referents.