



## Post-Doctoral Position

### 24 months



## Impact of environmental conditions on biophysical properties of food matrices

Laboratoire d'Ingénierie des Biomolécules – LIBio Nancy – France

Laboratoire de Chimie Physique et Microbiologie pour l'Environnement – LCPME Nancy – France

The research activity to be performed is related to evaluation of biomaterial biophysical properties. The project is funded by a food manufacturer and the research will be conducted mainly at LCPME and partially at LIBio.

Environmental stresses may change the properties of agro-industrial powders and it is of particular matter for industries needing reliable transport protocols. In this project, to characterize food powders, the main techniques will be atomic force microscopy (AFM) and Raman spectroscopy. Sample surface properties will be evaluated during a defined period where samples will be submitted to different environmental conditions (temperature, relative humidity and residence time). Material surface properties include chemical properties that can be determined by force spectroscopy with functionalized AFM tips and the obtained maps will be correlated to Raman signals in order to elucidate mechanisms responsible for biophysical changes during time. Additionally, mechanical surface properties will be followed thanks to nanoindentation tests.

All the data will be correlated to physicochemistry results, whose operations will be performed by a technician.

### **Expected skills:**

- Excellent skills in atomic force microscopy, and more generally biophysics techniques
- Management skills as the candidate will have to work with a technician and to manage experiments, plannings, presentations, meetings
- Fluent in English (written, spoken)
- Ability to work between two laboratories and two different scientific communities

**Starting time:** January 2019, duration 24 months

**Type of funding:** industrial

### **Project leader:**

Pr. Claire GAIANI - Membre de l'Institut Universitaire de France

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### **Researchers strongly implicated in the project:**

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