

# Large Scale Facilities Applied to Food Science

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## ABSTRACT

My *Ph.D.*, started in October 2015, represents a synergistic collaboration between *AgroSup Dijon* (a public institute part of the French Ministry of Food, Agriculture and Forestry, and of the Ministry of Higher Education and Research) and the large scale facilities *Laboratoire Leon Brillouin* (CEA, Saclay) and the *Synchrotron SOLEIL*.

My project aims to study the interaction between polygalacturonate (polysaccharide presents in fruits) and iron (II) in order to formulate a high iron content food product. During my *PhD* I have the opportunity to use large scale facilities to study my system. Thanks to the use of neutrons (1) and X-ray (2) synchrotron sources, it is possible to unveil the structure of the mix and the oxidation state of iron when it is interacting with polygalacturonate and its local environment. These techniques represent a powerful structural tool that can be applied without modifying the initial formulation of the sample, thus allowing a direct comparison between different laboratory techniques.

Large scale facilities applied to food science can be a real opportunity to connect public institutions with private companies. Using this research approach during my doctoral training means the chance to make a choice between important food industry companies, large scale facilities centres or academic research for my future career.

## REFERENCES

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2. J. J. Rehr and R. C. Albers, *Reviews of Modern Physics*, Vol. 72, p621-654, 2000.