

Structuring foods by proteins and their supramolecular aggregates: the critical role of complementary techniques to observe structure dynamics in relevant environments.

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There is an increased need to change the way we manufacture foods to achieve carbon-neutral value chains. This may include the use of new ingredients from less known sources, fine tune processing conditions and formulations, and closely control the formation of structure to avoid overprocessing or to optimize the nutritional functionality of the food. A few systems have been studied in great detail at various length scales, and have demonstrated how it is possible to provide useful information by designing experimental environments as close as possible to relevant processes.

This presentation will review some examples of successful application of non disruptive, *in situ* studies using X-ray and neutrons that may serve as inspiration for future work on novel food systems. We will point out to some of the challenges we face when studying the formation of structures in complex environments; furthermore, the importance of a multidisciplinary effort in studying these food systems in their complexity can not be stressed enough, as a full characterization of the samples and their structuring dynamics using complementary traditional techniques is often needed.