

# Multi-response modelling of the Maillard reaction in a model cheese

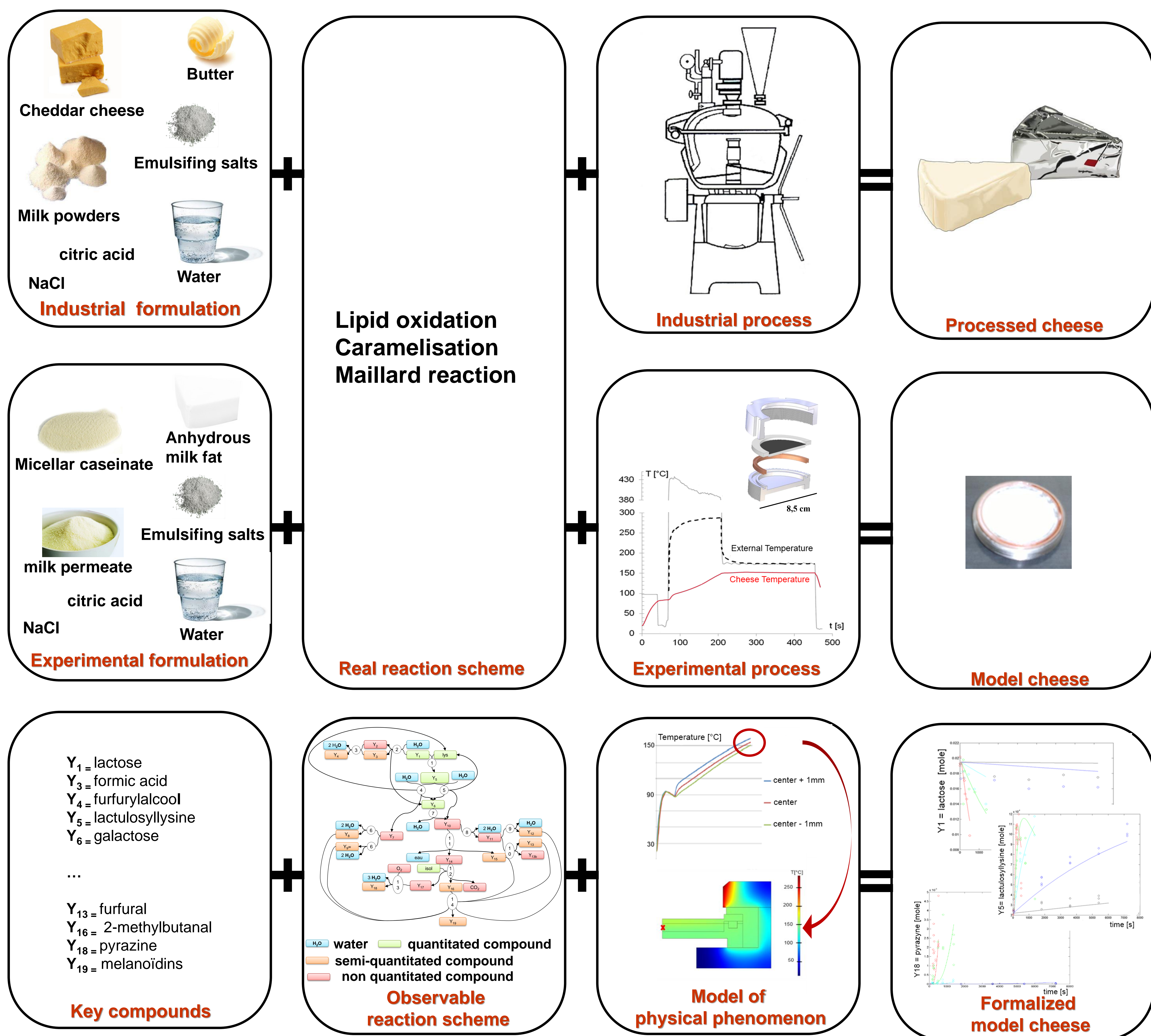
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## Context

The elaboration of food and especially their thermal treatment lead to major changes in food rheology, colour, nutritional value, microbiological stability and flavour properties. In the case of processed cheese, the first four points are relatively well known and taken into account for its production. However there is still a need to integrate the development of flavour in the multi-objectives optimisation strategies. This work aims at identify odorous key compounds, establish an observable reaction scheme, model and predict the behaviour of these compounds during the cooking of a model cheese.



## Conclusion and Prospects

Multi-response modeling methodology makes it possible to successfully monitor the evolution of selected key compounds involved in Maillard chemistry. To our knowledge, this is one of the first attempt to use such a methodology on a real food product. Our work is now focusing on introducing new parameters such a pH and water activity in order get closer to real processing conditions. In order to adapt the model to storage studies, reactions mechanisms and their kinetics involved at lower temperature are expected to be different. A combined model involving the whole life cycle of the product from the raw materials to its consumption could thereafter be developed.

