

Material science approaches to meet consumer demands whilst ensuring product stability

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ABSTRACT

Statement of the Problem: in the age of rapidly evolving consumer trends and demands, it is vital that food and ingredient manufacturers are capable to quickly adapt processes to meet these needs. For instance, the demand for clean label and transparent ingredients/additives is accelerating, particularly when it comes to certain anticaking agents that could be considered as nanomaterials. Another example is the rising concerns about the use of non-recyclable packaging materials and the implications that these have on the environment, especially regarding waste in the oceans. However, in attempts to remove or replace undesired additives and packing materials, one often faces hurdles linked to product stability, most notably in products with a large overall surface area such as food powders. In the present talk we demonstrate material science-driven approaches – modifying product recipes, processes, storage & distribution and packaging materials - that have been employed to optimize the functional behaviour of food powders while meeting consumer demands.

BIOGRAPHY

Linda Bruetsch graduated from the ETHZ (Zurich) with a Ph.D in Food Process Engineering, in collaboration with Buehler Group (Uzwil). As a scientist at Nestle Research in Lausanne, Switzerland since February 2018 she specializes in employing novel process technologies and ingredients to promote innovation across a variety of business units, most notably with an emphasis on plant-based dairy alternatives and ultra-affordable products.

PUBLICATIONS

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- Mapping the rate-limiting regimes of food powder reconstitution in a standard mixing vessel. W.R. Mitchell, et al. (2015). Powder Technology. 270(B): 520-527.
- Manufactured Nanomaterials: Analytical & Scientific challenges related to water (2019). L.Forn, W.R.Mitchell, et al.. ISOPOW 14, Dijon, France. 24 August 2019.
- Relating physical characteristics of food particles to dynamic flow behaviour. S. Samain, W.R. Mitchell, et al.. 9th International Conference on Conveying and Handling of Particulate Solids (CHoPS 2018). London. 10-14 September 2018.
- Industrial Roller Milling Process Characterisation for Targeted Bread Quality Optimization (2017). L. Brüttsch, I. Huggler, S. Kuster & E. J. Windhab. Food and Bioprocess Technology volume 10, pages 710-719.



4th Global Summit on Food science and Healthcare Nutrition, Zurich | March 11-12, 2020

Nestle Institute of Material Sciences, Switzerland

Abstract Citation: Linda Bruetsch, Material science approaches to meet consumer demands whilst ensuring product stability, Food science 2020, 4th Global Summit on Food science and Healthcare Nutrition, Zurich, March 11-12, 2020, pp.5