

ABSTRACT

PRESENTER: Dr. Fengqiu Fan

COMPANY: Tate & Lyle

JOB TITLE: Application Development Specialist

Podium Title: *The next phase for sustainable, green and clean Ingredients*

Background information (Short introduction)

The cosmetics industry has reached a critical stage regarding sustainability and responsibility. Advancing the industry while meeting consumer expectations, is an urgent but difficult task. Products must create the desired appearance or finish, but also feel pleasant on the skin, be physiologically benign, and possibly provide therapeutic properties. The challenge is to meet these performance requirements while also satisfying growing consumer demand for products derived from natural ingredients

Objective

The food industry may be considered as an analog to the cosmetics industry. Food products often incorporate natural ingredients derived from natural resources; these ingredients function as thickeners, emulsifiers, film formers and gelling agents to offer desirable taste and other food properties. Formulators face several key challenges, including texture modification, product stability, and sustaining nutritional value throughout processing, as well as satisfying labeling requirements.

Methodology

Natural food additives can be used to create a wide range of textural properties in a variety of food systems. The desired qualities relate to flavor, texture, and mouth feel, which in turn result from structural properties and chemistry of the additives. The structural properties of food ingredients (like polysaccharides, oil, and other carbohydrates) lead to certain functionality that can be described in terms of sensory and performance attributes. Conversely, a natural food additive may be selected on the basis of measurable, desirable sensory attributes. For instance, once the customer defines the final food product sensory attributes, the natural food thickener can be selected based on phase volume and swelling power from the texture map. The swelling power and concentration of a thickening ingredient are the main parameters for predicting the textural attributes of final product.

Results

The same concepts and knowledge have been leveraged in the cosmetics industry to develop natural ingredients, including polysaccharides, guar gum etc. These natural ingredients can be incorporated into cosmetic formulations as thickeners, emulsifiers, film formers and gelling

agents to provide desired texture or other sensory attributes. In addition to meeting the challenge of consumer acceptance, they also offer process flexibility.

Conclusion

Improving the correlations between measured ingredient properties and sensory, processing and stability performance remains a dynamic challenge. In this talk, I will address these challenges and the principal to meet this challenge in developing new ingredients in food industry. Furthermore, the application in cosmetics will be discussed as well.

Why is this important to the industry?

The cosmetics industry has reached a critical stage regarding sustainability and responsibility. The methodology from food industry can be applied to cosmetic industry to solve the challenge of incorporating natural ingredients.



Dr. Fengqiu (Fred) Fan received his PhD in Material Chemistry from Tohoku University. His research and professional career covered polymer materials development of biodegradable polymers, silicone, fluoridated polymers and Polysaccharide that are applied in drug delivery, cosmetics, electronics, automotive and other industry area. Dr. Fan holds more than 20 patents and peer reviewed publications. Since 2017, he has been involving in Polysaccharide based ingredients development and application.