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Rapid detection and prediction of functional characteristics of dairy powders using near-infrared spectroscopy

A model for predicting the functional properties of dairy powders characterized using NIR spectroscopy

IP Status: Copyright; US Patent Pending; Application No. 18/950,842

Applications

- Dairy powder analysis
- Dairy powder quality control

Technology Overview

Dairy powders are susceptible to functional changes during storage and transportation that are challenging to rapidly analyze with conventional methods. Researchers at the University of Minnesota have developed a multivariate analysis to predict foaming capacity, foaming stability, and solubility using near-infrared spectroscopy. Measurements are made directly on the dairy powder, without any additional preparation. With this model, rapid predictions of functional dairy properties can be integrated into processing lines for real-time decision-making.

Phase of Development

TRL: 4-5
Code has been developed and validated using simulations and experimental studies using five different sets of commercial dairy powders stored at three different humidities and three different temperatures for 3 and 10 days.

Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

Please contact our office to share your business' needs and learn more.

Researchers

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Technology ID

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Category

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Engineering & Physical Sciences/MRI & Spectroscopy
Software & IT/Algorithms
Agriculture & Veterinary/Food Science & Nutrition

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