

Wir bieten ab sofort Masterarbeit, Bachelorarbeit, Forschungspraktikum

Drying of Micellar Casein: Structural Modification and Rehydration Characteristics

Background

- Micellar casein, the primary protein component in milk (~80%), is the reason for milk's white color. It is commonly spray-dried into powder form for ease of use by manufacturers.
- However, the dense structure of micellar casein, along with crust formation during the drying process, results in excessively long rehydration times for the powder.
- While chemical modification has been extensively reported as a means to improve rehydration, it may raise concerns among consumers.
- Here, we rely solely on adjustments to physical processes. Specifically, we use a custom-designed laboratory apparatus to enhance the convective drying details during spray drying, aiming to establish the relationship between the kinetics, physicochemical structure, and rehydration behavior of micellar casein powders.

Your task

- You will have your own independent small-scale research project, aimed at improving the rehydration performance of micellar casein powder. After completing the most critical phenotypic experiments, you will gain a certain level of research autonomy with guidance from the mentor.
- The mentor will develop an experimental plan based on the expected duration of each student's study, ensuring that every student can systematically present their scientific narrative during their reports.

We hope you

- Start Date: As soon as possible.
- Field of Study: Pharmaceutical, Food, Brewing, Biological, Chemical, or related disciplines. Candidates should have completed at least one practical laboratory course.
- Language Requirements: Thesis and presentation slides must be prepared in English; however, the oral defense does not necessarily need to be conducted in English.

We offer

- Publication Opportunity: You may have the chance to become a co-author of future publications, depending on your contributions.
- Facilities: Access to a student office and a pilot-scale facility with strong industrial connections, which can support your career development.
- Comprehensive Mentorship: Friendly and detailed guidance will be provided in areas such as experiments, data analysis and presentation, thesis writing, academic reporting, and personalized advice for future research interests. We aim to provide you with comprehensive research training during your time here, laying a solid foundation for your future studies.

Contact: M.Agr. Jinbo Ren (jinbo.ren@tum.de)

TUM School of Life Science
Professur für Food Process Engineering
Weihenstephaner Berg 1, 85354 Freising
www.lse.ls.tum.de/fpe

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