UNIVERSITÄT HOHENHEIM

Institute of Food Science and Biotechnology | Department of Process Engineering and Food Powders (150c)

# Master Thesis/Project Work/Bachelor Thesis: Characterization of the swelling of food powders

**Background:** Prior to further processing or consumer use, food powders typically have to be rehydrated. During rehydration, swelling often occurs. This can lead to undesired effects, e.g. lump formation and delayed sinking or dispersion. To enable prediction of swelling effects on powder rehydration, swelling of food powders needs to be quantified.

**Objective:** The objective of this study is to evaluate one or several methods (e.g. NMR, NIR, rheology, confocal distance measurement) regarding their applicability to swelling measurements of different food powders and to interpret the data based on a physical model.

**Tasks:**

- Characterization of a range of food powders
- Evaluation of applicability of method using a reference substance (e.g. gelatine)
- Transfer of knowledge gained from gelatine measurements to other food powders (e.g. dairy or plant-based protein powders)

Contact: Heike Teichmann (heike.teichmann@uni-hohenheim.de)