

Department of Chemical and Biomolecular Nanotechnology Seminars

Merete Bøgelund Munk and Jens Risbo
Department of Food Science, University of Copenhagen, Demark

How to study and generate food structure and texture: Colloidal networks, Pickering stabilization, fat particles, dispersed oleogels and bacteria

Date

9:30 am
Nov 17th 2017

Location

“Sala d’actes” room
Institute of Advanced Chemistry of Catalonia (IQAC-CSIC)
C/Jordi Girona 18-26, 08034 Barcelona

Abstract

Whipping cream and ice cream are example of food products where fat particles or oil droplets enable magical transformation of texture and structure. The products can be transformed from liquid emulsions into textured materials due to reorganization of structure and inclusion of an air phase. The secret behind this transformation is a combination of Pickering stabilization of air bubbles and formation of colloidal networks of fat particles. We introduce to the subject of colloidal food material, such as whipping cream and ice cream. Results are presented from a structural study of 3D nano-structure of colloidal networks of fat particles based on X-ray ptychography and how solid fat can be replaced by dispersed oleogels, stabilized by food approved polymer, ethyl cellulose. Finally, we address the questions if micro particles of solid fat can be replaced by probiotic bacterial cells of same size for the making of emulsions and foam based food.