

BIOPHYSICS SEMINAR

DISCOVERING THE NANOWORLD OF FATS: FROM BIOMEMBRANES TO CHOCOLATE

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Date & Time: November 26, 2019, 11:00 am

Location: Humboldtstr. 50/III, Workstation Room

Abstract

After a short introduction into the structural analysis of biomimetic model membrane, I will present how this knowhow had been recently applied to the study of food fats (triacylglycerols – TAGs) in their molten state and solid states (α -, β' - and β -polymorph). These studies are of fundamental importance for a deeper understanding of TAG-crystallization processes, which for instance are being applied in the processing of chocolate. Whilst different models have been proposed to explain the nanostructured nature of the fluid state of TAGs, none of them are fully satisfactory. We propose a new model consisting of positionally uncorrelated lamellar TAG-assemblies embedded in an isotropic medium, that assist as pre-nucleating structures. The application of the presented novel model not only explains the outstandingly structured fluid of molten TAGs, but also lays the basis for analysing first crystallization steps in greater detail.

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