



## Non-Ionic Binary Surfactant Systems and Microemulsions as Model Systems for Thermal Diffusion Studies

By Sascha Datta

Cuvillier Verlag Dez 2011, 2011. Taschenbuch. Book Condition: Neu. 211x148x30 mm. Neuware - Thermal diffusion (or the Soret effect) describes the diffusion of matter in the presence of a temperature gradient. Although this process is studied and applied since more than 100 years the underlying molecular mechanism in liquids is still far from being understood. Colloidal dispersions are versatile model systems to study the thermal diffusion behavior of large particles in a solvent. However, the synthesis of colloidal particles with identical morphology is a complex task. On the other hand aqueous surfactant solutions and microemulsions are promising systems to study the Soret effect. Compared to colloidal particles the aggregates form spontaneously and do not require any additional stabilisation. Furthermore the radius and the shape of the diffusing aggregates, as well as their interfacial tension can be systematically adjusted via the variation of the composition and temperature. In order to address some important aspects of the thermal diffusion behavior three different types of self-assembled surfactant systems were formulated and systematically studied: (i) At first the role of the ionic dye Basantol(r) Yellow 215, which causes an unexpected two-mode signal in the classical Thermal Diffusion Forced Rayleigh Scattering (TDFRS) experiment (Ning et...



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