

Stabilization Mechanisms of Dispersed Systems and the Importance for Applications

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Dispersions of solid particles, droplets of liquids and gas bubbles in a liquid bulk phase play an important role in many applications, e. g. paints and coatings, cleaning processes, cosmetic and pharmaceutical products and the food industry. The formation of adsorption layers by low-molecular and polymer substances is the typical way to increase the stability of the dispersed phase.

There are various types of mechanisms of stabilize the dispersions. The amounts of the adsorbed substances and the structure of the adsorbed layer both influence the stability of the particles in the liquids. If one moves from dispersions of solid particles in liquids to emulsions of two liquids or the formation of foam by air bubbles in liquids, the kinetic aspects of the adsorption process become of increasing importance. This will be shown by different examples from applications.