

Colloid Based Crystalline and Amorphous Structures

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Abstract

A few basic concepts of colloidal science and the simple DLVO theory are introduced in order to provide the participant with a crude understanding of colloidal interactions. Without going into numerical details, this insight leads directly to a generic phase diagram of colloids in terms of which processes of structure formation can be illustrated.

A few real examples of synthesised colloid based crystalline and amorphous structures will be shown in the presentation. The highlight will be a recently fabricated porous amorphous structure designed for the application in fuel cell electrodes. It is the authors intention not to give detailed explanations on recent improvements in colloidal science but to qualitatively illustrate how principles of colloidal science can be applied in the development of, e.g., novel fuel cell architectures.