سمینار هفتگی ماده چگال نرم

Theoretical investigation of phase behavior of confined lyotropic liquid crystals between two walls

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Abstract

In this lecture, the phase behavior of colloidal fluids is studied. The colloids are typically classical objects and, consequently, the classical statistical mechanics is the framework usually used to describe colloids. Since the de Broglie thermal wavelength Λ is much smaller than the nearest neighbor separation between two particles, the quantum effects have been neglected. Therefore the phase behaviors of such fluids consisting of idealized modeled uniaxial colloidal particles are studied using Onsager, Parsons-Lee and scaled particle theories. At first, the phase behavior of hard rectangular rods with edge lengths and land cross section D×D (L>D), is studied in narrow slit-like pores using the Parsons-Lee density functional theory and the restricted orientation approximation. Then I explain about the ordering behavior of hard plate-like particles (L<D) in very narrow slit-like pores using the Parsons-Lee density functional theory and the restricted orientation approximation (Zwanzig).At last, we are studied binary mixtures of two dimensional particles. To study the phase behavior of binary mixtures of hard superellipses, the scaled particle theory is use.

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مکان(کلاس مجازی آقای دکتر اجتهادی) :

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