TECHNISCHE UNIVERSITÄT CHEMNITZ

AKTUELLE PROBLEME DER NICHTLINEAREN DYNAMIK

Lehrstuhlseminar Komplexe Systeme und Nichtlineare Dynamik

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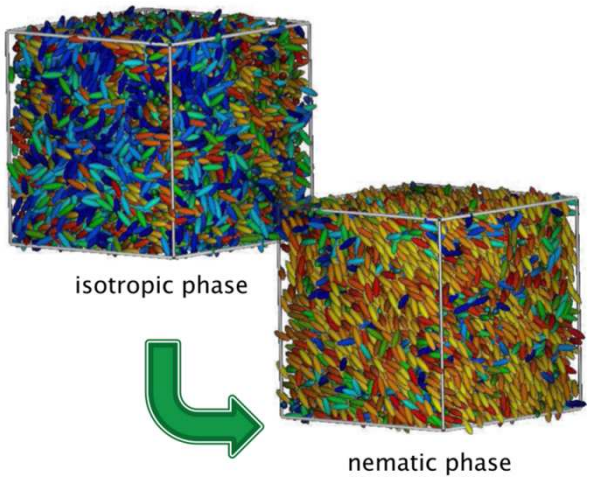
Reichenhainer Str. 70; Physikgebäude, Raum: 2/P033

Mario Heidernätsch, M.Sc.

TU Chemnitz



Introduction to Hydrodynamics of Liquid Crystals - From Simple Isotropic Liquids to Nematics

Liquid crystals are an intermediate state of matter, which exhibit properties of both isotropic liquids and crystalline solids. They possess for example on the one hand the high fluidity, the formation, and the coalescence of droplets of liquids. On the other hand they show anisotropy in their electrical, optical, and magnetic properties similar to crystals. Due to this anisotropy, which basically comes either from the anisotropic shape or from the anisotropic interaction of the molecules, their microrheological properties are quite different from that of isotropic liquids and not fully understood up to now.

In this talk an introduction to the hydrodynamic properties of liquid crystals will be given. Starting from isotropic liquids it is shown how equilibrium and non-equilibrium properties find entrance into the hydrodynamic equations following the argumentation of de Groot and Mazur [1]. Further, these considerations are applied to nematic liquid crystals [2].

[1] S.R. de Groot, P. Mazur, *Non-equilibrium Thermodynamics,* Dover Pubn. Inc. (1985)
[2] P.G. de Gennes, J. Prost, T*he Physics of Liquid Crystals,* Oxford Univ. Press (1993)

Interessenten sind herzlich eingeladen.

Informationen zum Vortrag erteilt Prof. Dr. Günter Radons, Tel. 0371/531-33205