22nd MSS-Seminar

Wednesday, October 26th, 15:30, Nägelsbachstr. 49b

Fluids in contact with surfaces covered by tethered chains

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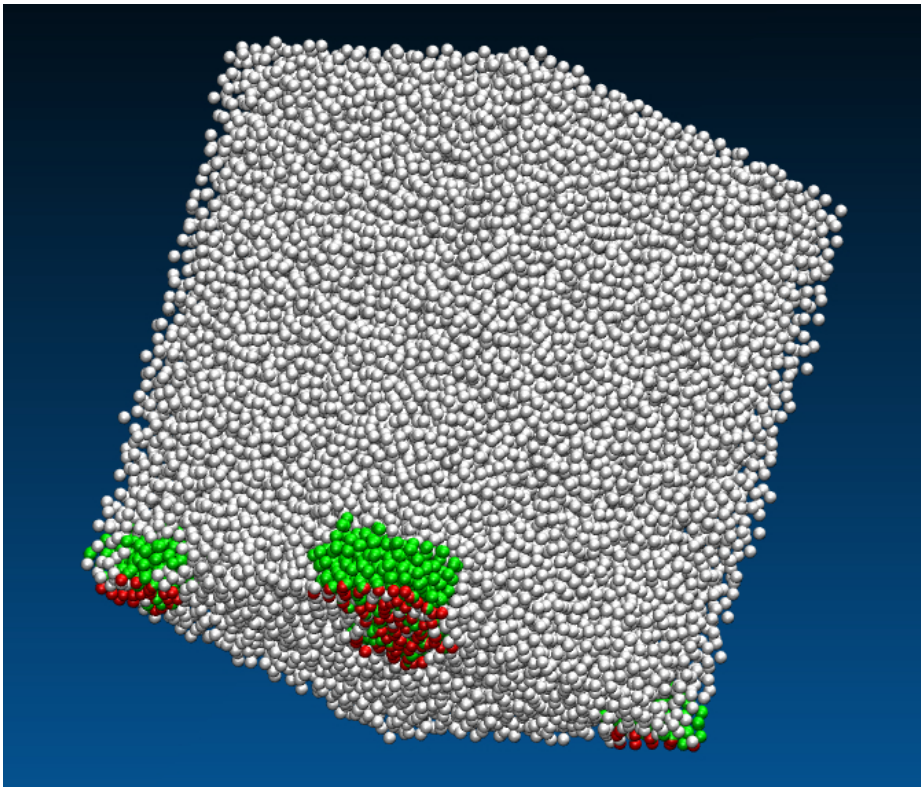

Substances obtained by attachment of chains to solid surfaces play an important role in several technological processes. In particular, surface modification is used as a method of stabilization of colloids, a method for development of protective films and adhesives, and so forth. Modified adsorbents are also used as stationary phases in chromatography.

Different theoretical approaches have been employed to describe such systems. Among them the theories based on the application of density functional approaches have been proven to be not only the most accurate, but also simple and convenient in numerical calculations.

In the present talk a version of the density functional theory is presented. After a brief description of the model and theory, I discuss a comparison of theoretical predictions with MC simulations. Next, the problem of a change of wettability of surfaces is considered. Finally, a novel type of phase behavior of a fluid confined in slits with modified walls is discussed.