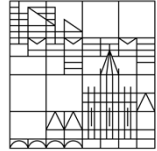


Physikalisches Kolloquium

Universität
Konstanz



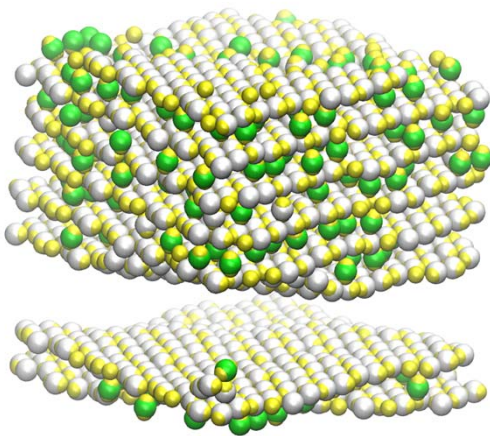
Di 14.02.17
15:15 Uhr
14:45 Uhr, Kaffee/Tee
R 513



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TU Wien, Austria

Colloidal particles with heterogeneously charged surfaces

Anisotropy -- be it in shape or in interactions -- is an essential feature that triggers self-assembly strategies of colloids into mesoscopic target structures. A rather novel class of colloids that feature anisotropy in their interactions are characterized by a heterogeneous surface decoration in terms of charges. The interplay of attraction and repulsion between differently charged surface regions guarantees that these colloids can form highly directional and strongly selective bonds. In this talk I will focus on simulation based investigations on the physics of charged particles, decorated by two oppositely charged patches. These colloids show an unexpected rich variety of self-assembly scenarios, which can be triggered by confinement and/or an electric field [1, 2]. One of the preferred ordered structures of these colloids are lamellar phases: they can emerge as hybrid crystal-liquid structures where transport of particles takes place through an otherwise stable layered structure [3].



- [1] E. Bianchi, C.N. Likos, and G. Kahl, ACS Nano **7**, 4657 (2013)
- [2] E. Bianchi, C.N. Likos, and G. Kahl, Nano Letters **14**, 3412 (2014)
- [3] S. Ferrari, E. Bianchi, and G. Kahl, Nanoscale (in press; 10.1039/C6NR07987C)