324d The Effect of Nonadsorbing Macromolecules on the Particle Dynamics near an Interface

Ratna J. Oetama and John Y Walz

The optical technique of total internal reflection microscopy (TIRM) was used to study the normal Brownian motion of a single colloidal particle near an interface. Using our data analysis method, the particle's spatially-varying diffusion coefficient can be determined without any knowledge of the forces acting on the particle. Experiments were performed in solution containing small silica nanospheres, polyacrylic acid, and clay platelets to investigate the effect of nonadsorbing species on the dynamics of near-contact particle motion. This talk will focus on the dynamic particle behavior near a solid wall in dilute colloidal suspensions of synthetic clay particles (laponite) that are slowly thickening. Measurements of the equilibrium potential energy profile were also obtained which indicate the development of structures in the laponite solution over time.