

Abstract Submitted  
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**Model colloidal system for interfacial adsorption kinetics** STEVEN HUDSON, PAUL SALIPANTE, NIST — An experimental colloidal model for sorption behavior may allow direct observation of the effects of particle shape and concentration on adsorption and desorption kinetics. Here we investigate spherical colloid adsorption to near a solid surface. The attraction is induced by depletion interaction. The colloid-interface interaction potential is tuned to be less than  $10 k_B T$  using a combination of depletion, electrostatic, and gravitational forces. The colloids transition between an entropically trapped adsorbed state and a desorbed state through Brownian motion. High resolution particle tracking is made using LED-based Total Internal Reflection Microscopy (TIRM). The observed adsorption and desorption rates obey different distributions and are compared to theoretical predictions based on the measured interaction potential and near wall particle diffusivity. This experimental system also allows for the study of more complex dynamics such as nonspherical colloids and collective effects at higher concentrations.

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