Probing colloidal physics on the nanometer length scale

SUNIL SAINIS, Post Doc. Fellow, FRANK VOLLMER, Rowland Junior Fellow — The sharp spectral features associated with ultra-high Q microresonator modes are sensitive to changes in the local environment and surface of the resonator [1]. Microresonator cavities have been used to detect the binding of single molecules [2] and viruses in an aqueous medium. We report on recent experiments that use microresonators to access colloidal physics on the nanometer length scale. We examine shifts in the resonator as a function of bulk ionic strengths and surface adsorption in a colloid.