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Optical Trapping and Torquing of Nanorods[1] DOUGLAS BONESSI, KEITH BONIN, Wake Forest University, Winston-Salem, NC 27109, THAD WALKER, University of Wisconsin, Madison, WI 53706 — We previously trapped and studied the motion of glass nanorods with diameters in the range of 260-500 nm and lengths of 1-4 microns. Here we plan to report on optical trapping experiments using smaller rods with diameters of 100 nm or less and with different electronic properties. Once trapped, we plan to manipulate them by applying a torque, which will enable us to measure the electro-optical properties of the trapped rods, specifically their polarizability. This torque will allow us to rotate the rods both away from and near a surface and observe how the motion changes as you approach the surface. Such surface interactions are critical in micro- and nanoscale fluidics and we hope to study the influence of such interactions on the motion of optically-trapped nanorods near surfaces.

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