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Polarizability of Optically Trapped Nanorods[1] DOUGLAS BONESSI, KEITH BONIN, Wake Forest University, THAD WALKER, University of Wisconsin Madison — We optically trapped C60 polymer nanorods with diameters of 300-500 nm and lengths of 1-3 microns in water in a single beam trap. While in the trap, the nanorods were optically torqued by rotating the plane of polarization of the trapping light. The polarizability of the rod can be found by measuring the rod rotation rate as a function of the polarization rotation rate, and then finding a theoretical fit to this curve that uses a computation of the applied torque as a function of polarizability. We used a discrete dipole approximation (DDA) routine to calculate torques on these trapped C60 rods.

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