

Abstract Submitted
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Construction and Investigation of Optical Tweezers¹ HAOHAO WU, RYAN CLAIR, JOHN COLLINS, Wheaton College, Norton MA — We have constructed a single-beam optical tweezers for our Experimental Physics course. The design is meant to be safely handled by undergraduates, and is a modified version of a design suggested by Bechhofer and Wilson (Am. J. Phys., 70 (4) 2002 393-400). We will present the components of the system as well as an analytic geometrical model for estimating the force exerted by the laser beam on the one micron-sized silicon dioxide particles captured by the beam. Other interesting features of the tweezers will also be presented, including (1) the ability to capture many particles, and (2) the conversion of the microscope component of the system into a fluorescence microscope.

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