

Abstract Submitted
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The scattering experiment is one of the most widely used techniques in physics for understanding the nature of the microscopic world. This work describes a scattering experiment suitable for use with undergraduates. The theory of Mie Scattering describes the scattering of light from particles of any size. However, if one confines his attention to light with a wavelength that is significantly larger than the particle size, the scattering is described by a simpler theory known as Rayleigh Scattering. In this case, Rayleigh Scattering predicts that the intensity of the scattered radiation is inversely proportional to the fourth power of the wavelength of the light. In this experiment, visible light (500-600 nm) from a tunable dye laser is incident on a sample of latex microspheres with a diameter of 30 nm. The scattered light intensity is monitored with a photomultiplier tube and plotted as a function of laser wavelength. The details of the experiment setup and plots of the results will be presented.

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