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Mie Scattering by Small Sphere Particles

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The objective of the research was to study how the size of the spherical particles and the wavelength of the incident electromagnetic waves affect the intensity of the scattered electromagnetic waves. We began the calculation by solving the Helmholtz equation to obtain the scalar wave equation which led to the scattered wave by the spheres. In the limit of far-field region, the radial component of the scattered wave may be neglected and the intensity of the wave can be represented in terms of a dielectric constant of a medium, the incident light wavelength and angles. Then the future work will be comparing the theoretical results with the experimental data of light scattering in silver nanoparticles.

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