

Abstract Submitted
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Magnetic Dipole Scattering of Polarized Light from Nanoparticle Suspensions NATTHI L. SHARMA, ERNEST R. BEHRINGER, RENE C. CROMBEZ, Eastern Michigan University — Scattering induced by the magnetic field of polarized light has been identified for the first time using nanoparticle scatterers and a transverse scattering geometry. Apart from the dominant electric dipole scattering, we find a fraction (up to $\sim 10\%$) of scattered light with an angular distribution and polarization that match those of magnetic dipole radiation produced by the oscillatory magnetization of nano-scatterers driven by the often inconsequential (in the case of molecular scattering) magnetic field of the incident light. This latter radiation cannot be explained by impurity of laser polarization, optical anisotropy of scatterers, multiple scattering, and optical activity.

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