

Ferromagnetic resonance in magnetic nanoparticle assemblies

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Nanoparticle physics is of broad interest in the scientific community, offering an enormous range of potential applications and possibilities for testing fundamental science. In this paper we consider the magnetic properties of nanosized particles in a non-magnetic matrix. In particular we shall discuss how the technique of ferromagnetic resonance (FMR) can be applied to nano-systems. In such we shall show how to account for dipole interactions between magnetic particles and the surface anisotropy which also plays a vital role in determining the overall magnetic properties of such systems. We shall give an outline of the basic FMR theory to account for these effects and show some examples of experimental data.