Abstract Submitted for the TSF16 Meeting of The American Physical Society

EPR Study of Superparamagnetism in  $Mn_3O_4$  Nanoparticle Ensembles MAHESH KOIRALA, ALEX PRICE, University of Texas at El Paso, RONALD TACKETT, Kettering University, CRISTIAN BOTEZ, University of Texas at El Paso — The superparamagnetic relaxation of  $Mn_3O_4$  nanoparticles has been investigated using Electron Paramagnetic Resonance (EPR) measurements carried out at low temperatures, between 20 and 120 K, in an applied sweeping magnetic field of 0 to 6000 G. Two nanoparticle ensembles were used, having average particle sizes of 10 nm and 5 nm as determined from X-Ray Diffraction (XRD) and Transmission Electron Microscopy (TEM).

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Date submitted: 26 Sep 2016

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