

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

^{55}Mn NMR for Antiferromagnetic $\alpha\text{-Mn}_2\text{O}_3$ EUNA JO, KAIST, CHANGSOO KIM, SOONCHIL LEE, KAIST — The zero-field ^{55}Mn NMR spectrum for antiferromagnetic $\alpha\text{-Mn}_2\text{O}_3$ was measured at low temperatures. Manganese sesquioxide (Mn_2O_3) is used in combustion catalysis, a method of reducing the emissions of organic compounds and nitrous oxide from waste gas, as an environmentally - friendly and inexpensive catalyzer instead of Pt and Pd. The magnetic moment estimated from the resonance frequency was $2.6\mu_B$ per Mn^{3+} ion. The temperature dependence of the sublattice magnetization fits not Bloch's T^2 law well but the exponential form applicable because there is an initial energy gap in the dispersion relation of the spin wave. From the fitting, an energy gap of 1.82 meV and an anisotropy energy of 0.22 meV were obtained. The spin-spin relaxation rate was measured as a function of the frequency and the Suhl-Nakamura interaction is suppressed by this energy gap.

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Date submitted: 19 Nov 2010

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