

Abstract Submitted  
for the MAR15 Meeting of  
The American Physical Society

**NMR Spin-Lattice Relaxation Time T1 of Thin Films Obtained by Magnetic Resonance Force Microscopy** SUNGMIN KWON, SEUNG-BO SAUN, SOONCHIL LEE, KAIST, SOONHO WON, Advanced Metallic Materials Division, Korea Institute of Materials Science — NMR spectrum and spin-lattice relaxation time(T1) of CaF<sub>2</sub> thin film samples deposited on a silicon cantilever tip were obtained by magnetic resonance force microscopy(MRFM). Thickness of the thin films were 50nm and 150nm. In order to measure T1, a cyclic adiabatic inversion method was used with periodic phase inversion. A comparison of the bulk and two thin films showed that T1 becomes shorter as the film thickness decreases. To make the comparison as accurate as possible, all three samples were loaded onto different beams of a multi-cantilever array and measured in the same experimental conditions such as temperature and magnetic field.

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Date submitted: 29 Dec 2014

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