

Abstract Submitted
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Using High Coercivity Magnet Particle for High Sensitivity Magnetic Resonance Force Microscopy K.C. FONG, I.H. LEE, P. BANERJEE, Y. CHE, YU. OBUKHOV, D.V. PELEKHOV, P.C. HAMMEL, Physics Department, Ohio State University — We report on the application of a 40 micron diameter, high coercivity NdFeB magnetic particle for high sensitivity electron spin resonance detection using Magnetic Resonance Force Microscopy. The relatively large NdFeB magnetic particle allows us to obtain large field gradients at relatively large tip-sample separations which can reduce surface induced noise. Force signals due to two different spin manipulation protocols in high field gradient will be presented. Model of the forces generated by these excitation schemes provide insight, into the various spin manipulation techniques and the impact of magnetic particle size on high sensitivity spin detection.

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