Abstract Submitted
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Ferromagnetic Resonance in Magnetic and Conducting Thin Films[1] TOM GEORGE, University of Nebraska, Lincoln, JUSTIN BAIZE, MIRCEA CHIPARA, The University of Texas Pan American, RALPH SKOMSKI, DAVID J. SELLMYER, University of Nebraska, Lincoln — Ferromagnetic resonance provides unique information concerning both electronic spin orientation and their interactions. A model for the simulation of magnetic resonance line shape in metallic and magnetic thin films, developed within the thermodynamic approximation is presented. The proposed model includes the contribution of the Gilbert term to the precession of magnetic moments in external magnetic fields, the effect of shape anisotropy, of magnetocrystalline anisotropy, and allows for different textures. The main features of the ferromagnetic resonance line (line position, line width, line asymmetry, and line shape) are analyzed while taking into account the competition between magnetic and conducting features. The model allows a detailed analysis of the angular dependence of the ferromagnetic resonance line. It has been tested on a multilayer consisting of 60 bilayers (Fe 0.16 nm/Pt 0.18 nm).

[1]ESR measurements were done within the laboratory of Professor A. Rajca from the Chemistry Department of the University of Nebraska Lincoln.

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