

Abstract Submitted
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Magnetic Anisotropy of single crystal $\text{Fe}_{1-x}\text{Ga}_x$ films deposited on $\text{ZnSe}(110)$ ¹ H. LI, A. MCCLURE, I. VRABLE, G. MALOVICHKO, Y.U. IDZERDA, Physics Department, Montana State University — Magnetoelastic alloys in the thin film form that are pinned to a substrate are of current interest as materials for controlled spin dynamic damping. Because of the strain generated in the thin film plus the anisotropic strain relaxation, the magnetic anisotropy properties change. In this research, single crystal $\text{Fe}_{1-x}\text{Ga}_x$ films were grown on $\text{ZnSe}(110)$ using MBE and characterized using ferromagnetic resonance. As the Ga concentration increases, the uniaxial and cubic anisotropy terms changed signed. Cubic anisotropy showed similar value as bulk material while uniaxial anisotropy is much larger than that for films grown on (100) surfaces. The increased term is attributed to the larger anisotropic lattice relaxation in $\text{Fe}_{1-x}\text{Ga}_x/\text{ZnSe}(110)$ films.

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