

Abstract Submitted
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Resistivity and Anomalous Hall Effect of $\text{Ga}_{1-x}\text{Mn}_x\text{As}$ KIMBERLY L. ADAMS, Department of Physics, John Carroll University, XINYU LIU, JACEK K. FURDYNA, Department of Physics, University of Notre Dame, JEFFREY S. DYCK, Department of Physics, John Carroll University — Diluted magnetic semiconductors (DMS) are compounds in which there is a non magnetic semiconductor host doped with a small concentration of a magnetic element. DMS thin films are being investigated for their potential as spintronic devices that would utilize both the spin and charge properties of the electrons in a single material. Resistivity and Hall effect measurements were made on varying thicknesses of $\text{Ga}_{1-x}\text{Mn}_x\text{As}$ thin film samples through a temperature range of 10K-300K. The influence of the spin of the manganese ions is clearly evident in the electrical transport properties. The obtained data was compared to a model for the anomalous Hall Effect in these materials in an attempt to extract the free hole concentration. Funded by the Henry Luce Foundation and Research Corporation.

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