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Hall effect in magnetic semiconductor InMnSb epitaxial thin films NIKHIL RANGARAJU, NIDHI PARASHAR, BRUCE WESSELS, Materials Research Center and Department of Materials Science and Engineering, Northwestern University — The magnetotransport properties of ferromagnetic  $In_{1-x}Mn_xSb$ semiconductor films with x=0.01 to 0.035 were measured from 1.5 K to 298K and magnetic fields up to 18T. The vapor phase epitaxial films are p-type with a hole concentration of  $10^{19}$  cm<sup>-3</sup> and mobility of  $10^2$  cm<sup>2</sup>/Vs. The Hall resistivity is described by the equation  $\rho_{xy} = R_0B + R_AM$  where  $R_0$  and  $R_A$  are the normal and anomalous hall coefficients, B is the applied magnetic field and M is the magnetization. The films exhibited an anomalous Hall effect over entire temperature range. It was observed that  $R_A$  is proportional to the longitudinal resistivity ( $\rho_{xx}$ ) leading to a magnetoresistance dependant Hall voltage.

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