

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

High field magnetoresistance in p -(In,Mn)As/ n -InAs heterojunctions BRUCE WESSELS, STEVEN MAY, Materials Science and Engineering, Northwestern University — The high field magnetoresistive properties of a p -In_{0.96}Mn_{0.04}As/ n -InAs junction have been measured. The heterojunctions were formed by epitaxially depositing an InMnAs thin film on an InAs substrate using metal-organic vapor phase epitaxy. Under forward bias, a large, nonsaturating magnetoresistance is observed at temperatures from 25 to 295 K in fields up to 9 T. At room temperature, the magnetoresistance increases linearly with magnetic field from 1.5 to 9 T and is greater than 700 % at 9 T. The magnetoresistance can be simulated using a modified diode equation, including a field-dependent series magnetoresistance.

Bruce Wessels
Materials Science and Engineering, Northwestern University

Date submitted: 05 Dec 2005

Electronic form version 1.4