Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Effect of Bi incorporation on the carrier mobility in the dilute bismide alloy, GaAsBi[1] RAJEEV KINI, AARON PTAK, RYAN FRANCE, ANGELO MASCARENHAS, National Renewable Energy Laboratory, Golden, CO 80401 — Results from our study of carrier mobilities in doped GaAs1-xBix epilayers will be presented and compared with the dilute nitride alloy, GaAsN. We observed no significant degradation in the electron mobility with Bi incorporation in GaAs, up to a concentration of 1.2%. At higher Bi concentration ($\geq$1.6%) some degradation of the electron mobility was observed, although there is no apparent trend. Temperature dependant Hall measurements of the electron mobility suggest neutral impurity scattering to be the dominant scattering mechanism. We will also present data on the effect of Bi alloying on the hole mobility.

[1]This work was supported by the DOE/SC/BES/DMS under Contract No. DE-AC36-08GO28308 with the National Renewable Energy Laboratory. This abstract is subject to U. S. government rights

Rajeev Kini
National Renewable Energy Laboratory, Golden, CO 80401

Date submitted: 20 Nov 2009 Electronic form version 1.4