

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Carrier and Spin Dynamics in InAsP Ternary Alloys¹ MICHAEL MEEKER, KELLY MCCUTCHEON, MITHUN BHOWMICK, BRENDEN MAGILL, GITI A. KHODAPARAST, Virginia Tech, JOE G. TISCHLER, Naval Research Labs, SUKGEUN G. CHOI, NREL, CHRIS J. PALMSTRØM, Univ. of California Santa Barbara — The recent rapid progress in the field of spintronics involves extensive measurements of carrier and spin relaxation dynamics in III-V semiconductors. In addition, as the switching rates in electronic and optoelectronic devices are pushed to higher frequencies, it is important to understand carrier dynamic phenomena in semiconductors on femtosecond time-scales. In this work, we employed time and polarization-resolved differential transmission measurements in near and mid-infrared, to probe carrier and spin relaxation times in several InAsP ternary alloys. Our results demonstrate the unique and complex dynamics in this material system that can be important for electronic and optoelectronic devices. We present our experimental observations and compare them with the observations in InAs and InP.

¹Supported by: NSF-Career Award DMR-0846834 and Virginia Tech ICTAS

Giti Khodaparast
Virginia Tech

Date submitted: 03 Dec 2012

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