Abstract Submitted
for the SHOCK09 Meeting of
The American Physical Society

Ultrafast Dynamics of Coherent Acoustic Phonons in the GaMnAs/GaAs Heterostructure System JINGBO QI, YING XU, ANDREW STEIGERWALD, NORMAN TOLK, Vanderbilt University, XINYU LIU, JACEK FURDYNA, University of Notre Dame, VANDERBILT UNIVERSITY COLLABORATION, UNIVERSITY OF NOTRE DAME COLLABORATION — Pronounced oscillations were found in the reflectivity curves of ferromagnetic GaMnAs/GaAs heterostructure using pump-probe spectroscopy that are caused by coherent acoustic phonons propagating through the sample. The difference in the oscillations period, damping and amplitude as the phonons travel across the GaMnAs/GaAs interface reflect sin electronic structures and optical properties of these materials. Analysis of the oscillation amplitude indicates that this method provides a novel, non-invasive, and non-destructive way to depth profiling.

Jingbo Qi
Vanderbilt University

Date submitted: 24 Feb 2009 Electronic form version 1.4