Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Time-resolved Terahertz spectroscopy using a Ti:Sapphire laser oscillator PRADOSH KHAREL, WASSAM WAQUAR, ETIENNE GAGNON, Franklin and Marshall College — In time-resolved terahertz spectroscopy, electromagnetic radiation in the frequency range 0.3 - 3 THz (corresponding to wavelengths of 0.1 - 1.0 mm) is used to probe the dynamic properties of charge carriers within materials. When a sample material is excited using an ultrafast optical laser pulse, the terahertz probe that passes through the sample a time later reveals the subsequent behavior of the charge carriers in the sample. Real-time mapping of the dynamics can then be achieved through a pump-probe delay experiment. To date, most time-resolved terahertz spectroscopy has relied on high-power laser systems in order both to excite the sample as well as to generate the probing terahertz radiation. Here, we investigate the feasibility of adapting this technology to a relatively less expensive Ti:sapphire laser oscillator. We present preliminary data and discuss challenges going forward.

Pradosh Kharel
Franklin and Marshall College

Date submitted: 08 Nov 2012 Electronic form version 1.4