

Abstract Submitted  
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**Construction of a THz-Time Domain Spectrometer in Reflection Geometry** LUKE MCCLINTOCK, JEREMY CURTIS, DAVID J. HILTON, University of Alabama at Birmingham — We have constructed a terahertz (THz) time-domain spectrometer in reflection geometry. THz time-domain spectroscopy (TTDS) is an ultrafast sampling technique that utilizes nonlinear optics to generate and detect the electric field reflected THz radiation. This unique sampling technique allows us to probe dynamics of materials that have absorption features in the THz frequency range at picosecond time scales. We have demonstrated the determination of optical constants of gallium arsenide using this spectrometer in the reflection geometry, which shows that this design overcomes many of the experimental difficulties traditionally associated with coherent terahertz measurements in the reflection geometry.

Luke McClintock  
University of Alabama at Birmingham

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