

Abstract Submitted  
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**A comparison of infrared, Raman and coherent Raman spectroscopies in studies of shock-induced chemistry** DAVID MOORE, CYNTHIA BOLME, KATHRYN (KATIE) BROWN, MARGO GREENFIELD, SHAWN MCGRANE, Los Alamos National Laboratory — Vibrational spectroscopy allows identification of molecules with very high specificity. It is therefore often applied for the measurement of molecular species under shock compression, especially when chemical reactions are likely, such as in energetic materials. There are unique complications for each of these vibrational spectroscopic methods in their application to shock compressed materials, which are the subject of this presentation. Such complications include band broadening mechanisms as well as effects due to thin film interference, signal integration along a path, and convolutions with reaction rates. We will illustrate each of these effects using data from our ultrafast laser driven shock laboratory and the literature.

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