

Abstract Submitted
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Coherent Raman Studies of Shocked Liquids SHAWN MCGRANE, KATHRYN BROWN, NHAN DANG, CYNTHIA BOLME, DAVID MOORE, Los Alamos National Laboratory — Transient vibrational spectroscopies offer the potential to directly observe time dependent shock induced chemical reaction kinetics. We report recent experiments that couple a hybrid picosecond/femtosecond coherent anti-Stokes Raman spectroscopy (CARS) diagnostic with our tabletop ultrafast laser driven shock platform. Initial results on liquids shocked to 20 GPa suggest that sub-picosecond dephasing at high pressure and temperature may limit the application of this nonresonant background free version of CARS. Initial results using interferometric CARS to increase sensitivity and overcome these limitations will be presented.

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