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Laser-driven shock-induced reaction in nitromethane and carbon disulfide CINDY BOLME, DANIEL EAKINS, SHAWN MCGRANE, DAVID MOORE, DAVID FUNK, Los Alamos National Laboratory — The experimental measurement technique of ultrafast dynamic ellipsometry (UDE) measures material motion and changes in optical properties of samples under laser driven shock loading, allowing the picosecond probing of material dynamics in a single shot. Nitromethane and carbon disulfide were investigated with UDE, and both liquids showed evidence of chemical reaction in the first 200 ps after the arrival of the shock wave. The material motion and optical properties data that indicate reaction will be presented.

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