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Implementation of Single-Shot Ellipsometry on Gas Gun Experiments SEAN GRANT, Center for High Energy Density Science, University of Texas at Austin, TOMMY AO, Sandia National Laboratories, AARON BERNSTEIN, Center for High Energy Density Science, University of Texas at Austin, JEAN-PAUL DAVIS, Sandia National Laboratories, TODD DITMIRE, Center for High Energy Density Science, University of Texas at Austin, DANIEL DOLAN, Sandia National Laboratories, JUNG-FU LIN, Department of Geological Sciences, University of Texas at Austin, CHRISTOPHER SEAGLE, Sandia National Laboratories — We have built and implemented a time-resolved ellipsometry diagnostic for dynamic testing at Sandia National Laboratories. This diagnostic measures refractive index of a sample under dynamic conditions with a time resolution of a few nanoseconds. We show and discuss results from our first dynamic experiments on a gas gun. Future work will study geophysical materials under relevant pressure-temperature conditions. Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. SAND2015-0376 A

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