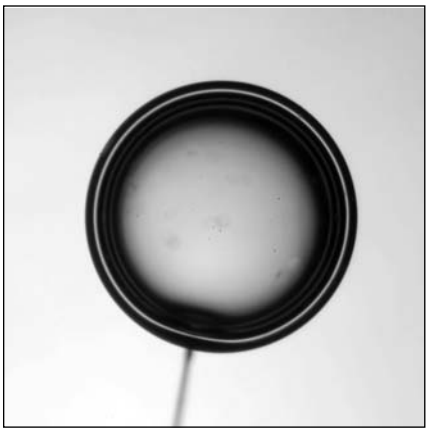
About the Cover:

Cryogenic deuterium–tritium capsules have been imploded on the OMEGA Laser System, creating the highest-ever areal densities ($\rho R \sim 300$ mg/cm^2) in a cryogenic inertial confinement fusion implosion (see p. 1). The photograph seen on the cover shows the cryogenic target that yielded the highest areal density to date as it was imploded in the OMEGA target chamber. This high areal density was achieved using a triple-picket laser pulse [shown in inset (a)] to drive a stalk-mounted target. The areal density was measured by the magnetic recoil spectrometer (MRS), which is reported on in this issue (p. 33). The white feature to the right of center is the front foil of the MRS diagnostic device. The plot in inset (b) presents raw data collected from the MRS for this implosion. The peak areal density was inferred from this data. The demonstration of high areal density is critical to ignition experiments on the National Ignition Facility.



The photo at the left shows a shadowgraph of the cryogenic target imploded in the cover photo. Analysis of the circular bright band in the shadowgraph provides a measure of the smoothness of the inner surface of the cryogenic-DT layer. Characterization of this layer smoothness is crucial for understanding the hydrodynamic stability of the implosion since target roughness can have a large effect on target performance. The inner surface roughness for this target was approximately 2-μm root-mean-square in all modes.

The work described in this volume includes current research at the Laboratory for Laser Energetics, which is supported by New York State Energy Research and Development Authority, the University of Rochester, the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302, and other agencies.

Printed in the United States of America
Available from
National Technical Information Services
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
Price codes: Printed Copy A04
Microfiche A01

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Worldwide-Web Home Page: http://www.lle.rochester.edu/