IN BRIEF

This volume of the LLE Review, covering the period April-June 1988, contains an in-depth article on recent cryogenic target experiments on the OMEGA laser system; two articles on laser-plasma interactions; and an advanced technology article discussing laser damage in polymeric materials. Finally, the activities of the National Laser Users Facility and the GDL and OMEGA laser facilities are summarized.

The following are highlights of the research reports contained in this issue:

- Direct-drive laser-fusion experiments have been performed on cryogenically cooled targets. For the first time, compressed fuel density in the range of 100 to 200 times that of liquid DT was measured by direct means, using a knock-on technique developed at LLE.
- Anomalous burn-through of multilayer targets has been investigated. It was shown that initial low-intensity plasma formation effects might have a significant influence on subsequent hydrodynamics of laserfusion targets.
- Burn-through times have been measured for parylene-coated targets in an attempt to gauge time-resolved illumination uniformity. Evidence of high-intensity hot spots for a small fraction of the beam energy was observed.

• Laser damage in π -electron molecular and polymeric materials has been measured. The OMEGA laser system is one of the first to employ these organic materials in optics in large numbers. These materials may offer "designer" solutions to some optical problems.

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PUBLICATIONS AND CONFERENCE PRESENTATIONS



Kevin Skerrett, a laboratory engineer in the Optical Materials Group, is shown filling a liquid-crystal circular polarizer. The device is used to maintain circular polarization through the amplification stages of OMEGA.