IN BRIEF

This volume of the LLE Review contains articles on the operations of the GDL and OMEGA facilities, energy measurement and beam characterization in the ultraviolet (UV), theoretical calculations of thermal self-focusing in laser plasmas, two aspects of the picosecond optics activities at the LLE, and the NLUF activities during this quarter (January through March 1984).

Highlights of these articles include the following:

- The OMEGA energy measurement system for the UV has shown an improved measurement consistency of 1% rms, and a photodiode system has been activated to measure the 1ω , 2ω , and 3ω output from the frequency-conversion crystals. The diodes are currently consistent to \pm 3% rms.
- Holography has been demonstrated as a potential method of characterizing the near field and equivalent-target-plane intensity distributions as well as the phase front of the pulsed UV output of GDL and OMEGA.
- Hydrodynamic simulations of thermal self-focusing in lasergenerated plasmas have been carried out in order to understand the basic scaling of this effect.
- A time-dependent semiclassical theory of gain-coupled distributed feedback lasers (DFL) has been developed and simulations of a dye DFL have been done.

• The shaping of electrical transients in microstriplines has been extended to the nanosecond regime which is of interest for optical pulse-shaping for inertial fusion.

In addition, Southern California Edison has signed on as a new industrial sponsor of the Laser Fusion Feasibility Project (LFFP) at the LLE. This addition of a west coast utility as a sponsor highlights the national scope of the inertial fusion effort at the LLE.

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Terrance Kessler, a research engineer in the Engineering Division, is shown adjusting the holographic beam-characterization setup used on the 351-nm GDL system. This apparatus has been used to provide intensity and phase information on the pulsed beam. See the article in this volume for more information on this technique.