IN BRIEF

This volume of the LLE Review, covering the period January–March 1987, contains an improved x-ray microscopy technique for characterization of inertial fusion targets; improvements in the coefficient for inverse bremsstrahlung laser absorption; an analysis of new geometries for x-ray laser studies and the results of inertial experiments; and the National Laser Users Facility activities for this period. Finally, the laser activities on GDL and OMEGA are summarized.

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

- The x-ray microradiography technique for the characterization of inertial fusion targets has been improved through the use of a laser-produced plasma as an x-ray source. This new method has extended the resolution to which layer thicknesses can be measured to 0.4 μm.
- The logarithmic factor in the classical coefficients for inverse-bremsstrahlung absorption of laser light has been derived to take into account the high electron density conditions near the critical surface of a target irradiated with 351-nm laser light. Comparison with previously used models shows variations of 20 to 50%.
- New geometries have been proposed for x-ray laser studies; they include two exploding foils, two ablating slabs, and a pair of exploding/ablating foils. Simulation and experimental results show higher electron density in the lasing region and improved transverse electron density profiles.

CONTENTS

Hyo-gun Kim, senior scientist and group leader of target fabrication, is making adjustments to a parylene coating chamber in which ablation layers are deposited onto inertial fusion targets.