

IN BRIEF

This volume of the LLE Review, covering the period October–December 1990, contains descriptions of a new phase-conversion technique designed to improve irradiation uniformity, a report on the interpretation of high-density implosion experiments of argon-filled targets, and an article on the use of absorption spectroscopy to diagnose compressed target layers. The section on advanced technology has a report on the application of KTP crystals as electro-optic amplitude modulators, and describes the use of chirped-pulse technology to measure $\chi^{(3)}$ by nearly degenerate four-wave mixing. Finally, the activities of the National Laser Users Facility and the GDL and OMEGA laser facilities are summarized.

The highlights of this issue are

- A new phase-conversion technique based on distributed polarization rotation has been developed to provide instantaneous smoothing of the intensity nonuniformities at the target plane.
- The one-dimensional hydrodynamic code *LILAC*, which includes an average-ion model, has been used to interpret the core conditions of high-density implosions of argon-filled polymer shell targets.
- The effect of temperature dependence of x-ray absorption features on the interpretation of target implosions has been investigated.

- An experimental study of KTP Pockels cells has demonstrated their use in both YLF regenerative amplifiers and Q-switched laser systems.
- Picosecond, chirped-pulse technology has been used to generate two spectrally separate, time-synchronized pulses for $\chi^{(3)}$ measurements by nearly degenerate four-wave mixing.

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Yung-Ho Chuang, Graduate Research Fellow, is shown adjusting the spectral windowing mask that allows the production of spectrally distinct laser pulses used in the measurement of the nonlinear index of refraction of materials.