

## About the Cover:

The cover photo highlights Lawrence Livermore National Laboratory (LLNL) scientists Dr. Maria Barrios and Dr. Dayne Fratanduono discussing experimental details for shot campaigns being executed on the OMEGA Laser System. The scientists have worked on equation-of-state (EOS) measurements to characterize the high-pressure behavior of germanium-doped glow-discharge-polymer (GDP) ablator materials used for National Ignition Facility ignition targets as well as ramp-compression experiments for Fe and diamond. Robust ignition simulations require knowledge of the ablator equation of state. The article on p. 47 details the first EOS measurements on GDP and Ge-GDP films. The actual target setup displayed on the background video screen was used for the ramp-compression experiments.



The photo shows (from left to right) Dr. Thomas Boehly, Ph.D. advisor, and graduating students, Maria Barrios and Dayne Fratanduono, in their academic regalia at the University of Rochester's 2011 doctoral commencement. Dr. Barrios and Dr. Fratanduono are now working as scientists at LLNL; they continue to work collaboratively with Dr. Boehly and the Laboratory for Laser Energetics to study issues relevant to inertial confinement fusion and high-energy-density physics.

This report was prepared as an account of work conducted by the Laboratory for Laser Energetics and sponsored by New York State Energy Research and Development Authority, the University of Rochester, the U.S. Department of Energy, and other agencies. Neither the above named sponsors, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, mark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring

by the United States Government or any agency thereof or any other sponsor. Results reported in the LLE Review should not be taken as necessarily final results as they represent active research. The views and opinions of authors expressed herein do not necessarily state or reflect those of any of the above sponsoring entities.

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  
[www.ntis.gov](http://www.ntis.gov)

For questions or comments, contact Amy L. Rigatti, Editor, Laboratory for Laser Energetics, 250 East River Road, Rochester, NY 14623-1299, (585) 275-8016.

[www.lle.rochester.edu](http://www.lle.rochester.edu)