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Conference Presentations

The following presentations were made at the 17th Target Fabrication Meeting, San Diego, CA, 1–5 October 2006:

D. H. Edgell, R. S. Craxton, L. M. Elasky, D. R. Harding, S. J. Verbridge, M. D. Wittman, and W. Seka, "Three-Dimensional Characterization of Cryogenic Targets Using Systems Identification Techniques with Multiple Shadowgraph Views."

L. M. Elasky, S. J. Verbridge, A. Weaver, D. H. Edgell, and D. R. Harding, "Developments in Layering OMEGA D_2 Cryogenic Targets."

L. M. Elasky, A. Weaver, S. J. Verbridge, R. Janezic, and W. T. Shmayda, "Tritium Migration in MCTC's During DT Introduction."

R. Q. Gram and D. R. Harding, "Thermal Conductivity of Condensed D_2 and D_2 in RF Foam Using the 3-ω Method."

D. R. Harding, L. M. Elasky, S. J. Verbridge, A. Weaver, and D. H. Edgell, "Forming Cryogenic DT Ice Layers for OMEGA."

R. Janezic, "Operational Challenges in Filling and Transferring Cryogenic DT Targets."

R. Janezic, "Performance of the Tritium Removal Systems at LLE."

A. K. Knight and D. R. Harding, "Evaluating the Dependence of the Roughness of Polyimide Capsules and Processing Conditions."

L. D. Lund, D. Jacobs-Perkins, D. H. Edgell, R. Orsagh, J. Ulreich, and R. Early, "Cryogenic Target Positioning and Stability on OMEGA."

S. Scarantino, M. Bobeica, and D. R. Harding, "Performance of the Cryogenic Test Facility Used to Simulate the Effect of Injecting an Inertial Fusion Energy Target into a Hot Target Chamber."

W. T. Shmayda, M. J. Bonino, D. R. Harding, P. S. Ebey, and D. C. Wilson, "Hydrogen Isotope Exchange in Plastic Targets."

D. Turner, M. J. Bonino, J. Ulreich, and R. Orsagh, "Measuring and Optimizing the Dynamics of Spherical Cryogenic Targets on OMEGA."

M. D. Wittman and D. R. Harding, "Isotopic Fractionation During Solidification and Sublimation of Hydrogen-Isotope Mixtures."

The following presentations were made at Frontiers in Optics 2006/ Laser Science XXII, Rochester, NY, 8–12 October 2006:

W. Guan and J. R. Marciante, "Gain Apodization in Highly Doped Fiber DFB Lasers."

W. Guan and J. R. Marciante, "Single-Frequency, 2-cm, Yb-Doped Silica Fiber Laser."

Z. Jiang and J. R. Marciante, "Loss Measurements for Optimization of Large-Mode-Area, Helical-Core Fibers."

A. V. Okishev and J. D. Zuegel, "Highly Stable, Long-Pulse, Diode-Pumped Nd:YLF Regenerative Amplifier."

L. Sun and J. R. Marciante, "Filamentation Analysis in Large-Area-Mode Fiber Lasers."

J. D. Zuegel, J. H. Kelly, L. J. Waxer, V. Bagnoud, I. A. Begishev, J. Bromage, C. Dorrer, B. E. Kruschwitz, T. J. Kessler, S. J. Loucks, D. N. Maywar, R. L. McCrory, D. D. Meyerhofer, S. F. B. Morse, J. B. Oliver, A. L. Rigatti, A. W. Schmid, C. Stoeckl, S. Dalton, L. Folnsbee, M. J. Guardalben, R. Jungquist, J. Puth,

M. J. Shoup III, and D. Weiner, "New and Improved Technologies for the OMEGA EP High-Energy Petawatt Laser" (invited).

D. D. Meyerhofer, "Research Using Chirped-Pulse–Amplification Lasers at the University of Rochester," OSA Annual Meeting and APS Laser Science Meeting, Rochester, NY, 8–12 October 2006 (invited).

The following presentations were made at Optical Fabrication and Testing, Rochester, NY, 9–11 October 2006:

J. E. DeGroote, A. E. Marino, A. L. Bishop, and S. D. Jacobs, "Using Mechanics and Polishing Particle Properties to Model Material Removal for Magnetorheological Finishing (MRF) of Optical Glasses."

J. E. DeGroote, J. P. Wilson, T. M. Pfunter, and S. D. Jacobs, "Adding Chemistry and Glass Composition Data into a Mechanical Material Removal Model for Magnetorheological Finishing (MRF)."

S. N. Shafrir, J. C. Lambropoulos, and S. D. Jacobs, "A Magnetorheological Polishing-Based Approach for Studying Magnetic/Nonmagnetic WC Hard Metals," ASPE 21st Annual Meeting, Monterey, CA, 15–20 October 2006.

T. C. Sangster, R. L. McCrory, V. N. Goncharov, D. R. Harding, S. J. Loucks, P. W. McKenty, D. D. Meyerhofer, S. Skupsky, B. A. Hammel, J. D. Lindl, E. Moses, J. Atherton, G. B. Logan, S. Yu, J. D. Kilkenny, A. Nikroo, H. Wilken, K. Matzen, R. Leeper, R. Olsen, J. Porter, C. Barnes, J. C. Fernandez, D. Wilson, J. D. Sethian, and S. Obenschain, "Overview of Inertial Fusion Research in the United States," 21st IAEA Fusion Energy Conference, Chendu, China, 16–21 October 2006.

S. D. Jacobs, "Manipulating Mechanics and Chemistry in Precision Optics Finishing," International 21st Century COE Symposium on Atomistic Fabrication Technology, Osaka, Japan, 19–20 October 2006.

W. Guan and J. R. Marciante, "Dual-Frequency Ytterbium-Doped Fiber Laser," LEOS 2006, Montreal, Quebec, Canada, 29 October–2 November 2006.

The following presentations were made at the 48th Annual Meeting of the APS Division of Plasma Physics, Philadelphia, PA, 30 October–3 November 2006:

K. S. Anderson, R. Betti, P. W. McKenty, P. B. Radha, and M. M. Marinak, "2-D Simulations of OMEGA Fast-Ignition Cone Targets."

R. Betti, K. S. Anderson, C. Zhou, L. J. Perkins, M. Tabak, P. Bedrossian, and K. N. LaFortune, "Shock Ignition of Thermonuclear Fuel with High Areal Density."

T. R. Boehly, V. N. Goncharov, D. D. Meyerhofer, J. E. Miller, T. C. Sangster, V. A. Smalyuk, P. M. Celliers, G. W. Collins, D. Munro, and R. E. Olson, "Direct- and Indirect-Drive Shock-Timing Experiments on the OMEGA Laser."

D. T. Casey, J. A. Frenje, C. K. Li, J. R. Rygg, F. H. Séguin, R. D. Petrasso, V. Yu. Glebov, B. Owens, D. D. Meyerhofer, T. C. Sangster, P. Song, S. W. Haan, S. P. Hatchett, R. A. Lerche, M. J. Moran, D. C. Wilson, R. Leeper, and R. E. Olson, "Diagnosing Cryogenic DT Implosions Using the Magnetic Recoil Spectrometer (MRS)."

T. J. B. Collins, J. A. Marozas, R. Betti, D. R. Harding, P. W. McKenty, P. B. Radha, S. Skupsky, V. N. Goncharov, J. P. Knauer, and R. L. McCrory, "One-Megajoule, Wetted-Foam Target Design Performance for the NIF" (invited).

J. A. Delettrez, J. Myatt, C. Stoeckl, and D. D. Meyerhofer, "Hydrodynamic Simulations of Integrated Fast-Ignition Experiments Planned for the OMEGA/OMEGA EP Laser Systems."

D. H. Edgell, R. S. Craxton, L. M. Elasky, D. R. Harding, L. S. Iwan, R. L. Keck, L. D. Lund, S. J. Verbridge, A. Weaver, M. D. Wittman, and W. Seka, "Layering and Characterization of Cryogenic-DT Targets for OMEGA."

R. Epstein, H. Sawada, V. N. Goncharov, D. Li, P. B. Radha, and S. P. Regan, "K-Shell Absorption Spectroscopy at Low Temperatures in Preheat Conditions."

J. A. Frenje, D. T. Casey, C. K. Li, J. R. Rygg, F. H. Séguin, R. D. Petrasso, P. B. Radha, V. Yu. Glebov, D. D. Meyerhofer, and T. C. Sangster, "Diagnosing Cryogenic D_2 and DT Implosions on OMEGA Using Charged-Particle Spectroscopy."

M. Ghilea, D. D. Meyerhofer, T. C. Sangster, D. J. Lonobile, A. Dillenbeck, R. A. Lerche, and L. Disdier, "Developmental Status of a Liquid-Freon Bubble Chamber for Neutron Imaging."

V. Yu. Glebov, T. C. Sangster, P. B. Radha, W. T. Shmayda, M. J. Bonino, D. R. Harding, D. C. Wilson, P. S. Ebey, A. Nobile, Jr., R. A. Lerche, and T. W. Phillips, "Measurement of the Neutron Energy Spectrum in T-T Inertial Confinement Fusion."

V. N. Goncharov, V. A. Smalyuk, W. Seka, T. R. Boehly, R. L. McCrory, I. A. Igumenshchev, J. A. Delettrez, W. Manheimer, and D. Colombant, "Thermal Transport Modeling in ICF Direct-Drive Experiments."

O. V. Gotchev, M. D. Barbero, N. W. Jang, J. P. Knauer, and R. Betti, "A Compact, TIM-Based, Pulsed-Power System for Magnetized Target Experiments on OMEGA."

S. Hu, V. N. Goncharov, V. A. Smalyuk, J. P. Knauer, and T. C. Sangster, "Analysis of the Compressibility Experiments Performed on the OMEGA Laser System."

I. V. Igumenshchev, V. N. Goncharov, V. A. Smalyuk, W. Seka, D. H. Edgell, T. R. Boehly, and J. A. Delettrez, "Effects of Resonant Absorption in Direct-Drive Experiments on OMEGA."

N. W. Jang, R. Betti, J. P. Knauer, O. V. Gotchev, and D. D. Meyerhofer, "Theory and Simulation of Laser-Driven Magnetic-Field Compression."

J. P. Knauer, P. W. McKenty, K. S. Anderson, T. J. B. Collins, and V. N. Goncharov, "Direct-Drive, Foam-Target ICF Implosions."

C. K. Li, F. H. Séguin, J. A. Frenje, J. R. Rygg, R. D. Petrasso, R. P. J. Town, P. A. Amendt, S. P. Hatchett, D. G. Hicks, O. L. Landen, V. A. Smalyuk, T. C. Sangster, and J. P. Knauer, "Measuring *E* and *B* Fields in Laser-Produced Plasmas Through Monoenergetic Proton Radiography."

D. Li, I. V. Igumenshchev, and V. N. Goncharov, "Effects of the Ion Viscosity on the Shock Yield and Hot-Spot Formation in ICF Targets."

G. Li, C. Ren, V. N. Goncharov, and W. B. Mori, "The Channeling Effect in the Underdense Plasma."

J. A. Marozas, P. W. McKenty, P. B. Radha, and S. Skupsky, "Imprint Simulations of 1.5-MJ NIF Implosions Using a Refractive 3-D Laser Ray Trace with an Analytic SSD Model."

F. J. Marshall, R. S. Craxton, M. J. Bonino, R. Epstein, V. Yu. Glebov, D. Jacobs-Perkins, J. P. Knauer, J. A. Marozas, P. W. McKenty, S. G. Noyes, P. B. Radha, W. Seka, S. Skupsky, and V. A. Smalyuk, "Optimized Polar-Direct-Drive Experiments on OMEGA."

A. V. Maximov, J. Myatt, and R. W. Short, "Laser–Plasma Coupling Near Critical Density in Direct-Drive ICF Plasmas."

P. W. McKenty, J. A. Marozas, V. N. Goncharov, K. S. Anderson, R. Betti, D. D. Meyerhofer, P. B. Radha, T. C. Sangster, S. Skupsky, and R. L. McCrory, "Numerical Investigation of Proposed OMEGA Cryogenic Implosions Using Adiabat-Shaping Techniques."

D. D. Meyerhofer, T. C. Sangster, K. S. Anderson, R. Betti, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, R. L. Keck, J. D. Kilkenny, J. P. Knauer, S. J. Loucks, L. D. Lund, F. J. Marshall, R. L. McCrory, P. W. McKenty, P. B. Radha, S. P. Regan, W. Seka, V. A. Smalyuk, J. M. Soures, C. Stoeckl, S. Skupsky, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "Studies of Adiabat Shaping in Direct-Drive, Cryogenic-Target Implosions on OMEGA."

J. E. Miller, T. R. Boehly, A. Melchior, and D. D. Meyerhofer, "Thermal and Kinetic Equation-of-State Experiments Using Decaying Shock Waves."

J. Myatt, A. V. Maximov, and R. W. Short, "Positron–Electron, Pair-Plasma Production on OMEGA EP."

J. Myatt, W. Theobald, J. A. Delettrez, C. Stoeckl, M. Storm, T. C. Sangster, A. V. Maximov, and R. W. Short, "High-Intensity Laser Interactions with Solid Targets and Implications for Fast-Ignition Experiments on OMEGA EP" (invited).

P. Nilson, "Magnetic Reconnection and Plasma Dynamics in Two Beam Laser–Solid Interactions."

R. D. Petrasso, C. K. Li, F. H. Séguin, J. A. Frenje, J. R. Rygg, M. Manuel, V. A. Smalyuk, R. Betti, R. S. Craxton, J. P. Knauer,

F. J. Marshall, D. D. Meyerhofer, J. Myatt, P. B. Radha, T. C. Sangster, W. Theobald, R. P. J. Town, P. A. Amendt, P. M. Celliers, S. P. Hatchett, D. G. Hicks, O. L. Landen, J. Cobble, N. M. Hoffman, and J. D. Kilkenny, "Monoenergetic Particle Backlighter for Radiography and Measuring *E* and *B* Fields and Plasma Areal Density."

P. B. Radha, V. Yu. Glebov, V. N. Goncharov, D. D. Meyerhofer, T. C. Sangster, S. Skupsky, J. A. Frenje, and R. D. Petrasso, "Inferring Areal Density in OMEGA DT-Cryogenic Implosions."

S. P. Regan, R. Epstein, V. N. Goncharov, I. V. Igumenshchev, D. Li, P. B. Radha, H. Sawada, T. R. Boehly, J. A. Delettrez, O. V. Gotchev, J. P. Knauer, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, T. C. Sangster, S. Skupsky, V. A. Smalyuk, B. Yaakobi, and R. Mancini, "Laser-Energy Coupling, Mass Ablation Rate, and Shock Heating in Direct-Drive Inertial Confinement Fusion" (invited).

S. P. Regan, D. D. Meyerhofer, T. C. Sangster, R. Epstein, L. J. Suter, O. S. Jones, N. B. Meezan, M. D. Rosen, S. Dixit, C. Sorce, O. L. Landen, J. Schein, and E. L. Dewald, "Hohlraum Energetics with Elliptical Phase Plates on OMEGA."

J. R. Rygg, J. A. Frenje, C. K. Li, F. H. Séguin, R. D. Petrasso, and V. N. Goncharov, "Time-Dependent Nuclear Measurements of Fuel–Shell Mix in ICF Implosions."

T. C. Sangster, R. Betti, R. S. Craxton, J. A. Delettrez, D. H. Edgell, L. M. Elasky, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, D. Jacobs-Perkins, R. Janezic, R. L. Keck, J. P. Knauer, S. J. Loucks, L. D. Lund, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, P. B. Radha, S. P. Regan, W. Seka, W. T. Shmayda, S. Skupsky, V. A. Smalyuk, J. M. Soures, C. Stoeckl, B. Yaakobi, J. A. Frenje, C. K. Li, R. D. Petrasso, F. H. Séguin, J. D. Moody, J. A. Atherton, B. D. MacGowan, J. D. Kilkenny, T. P. Bernat, and D. S. Montgomery, "Cryogenic DT and D_2 Targets for Inertial Confinement Fusion" (invited tutorial).

T. C. Sangster, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, R. L. Keck, J. D. Kilkenny, J. P. Knauer, S. J. Loucks, L. D. Lund, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, P. B. Radha, S. P. Regan, W. Seka, V. A. Smalyuk, J. M. Soures, C. Stoeckl, S. Skupsky, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "Implosion Performance of Fully β-Layered Cryogenic-DT Targets on OMEGA" (invited).

J. Sanz and R. Betti, "Bubble Acceleration in the Ablative Rayleigh–Taylor Instability."

H. Sawada, S. P. Regan, R. Epstein, D. Li, V. N. Goncharov, P. B. Radha, D. D. Meyerhofer, T. R. Boehly, V. A. Smalyuk, T. C. Sangster, B. Yaakobi, and R. Mancini, "Investigation of Direct-Drive Shock Heating Using X-Ray Absorption Spectroscopy."

F. H. Séguin, C. K. Li, J. A. Frenje, J. R. Rygg, R. D. Petrasso, V. A. Smalyuk, R. S. Craxton, J. P. Knauer, F. J. Marshall, T. C. Sangster, S. Skupsky, A. Greenwood, and J. D. Kilkenny, "Using Target Shimming to Compensate for Asymmetric Drive in ICF Implosions."

W. Seka, V. N. Goncharov, J. A. Delettrez, D. H. Edgell, I. V. Igumenshchev, R. W. Short, A. V. Maximov, J. Myatt, and R. S. Craxton, "Time-Dependent Absorption Measurements in Direct-Drive Spherical Implosions."

R. W. Short and J. Myatt, "Instabilities of Relativistic Electron Beams in Plasmas: Spatial Growth and Absolute Instability."

S. Skupsky, "Nonlocal Ion-Heat Transport in ICF Implosions."

A. A. Solodov, R. Betti, J. A. Delettrez, and C. Zhou, "Gain Curves for Fast-Ignition Inertial Confinement Fusion."

J. M. Soures, T. R. Boehly, V. N. Goncharov, S. Hu, D. D. Meyerhofer, J. E. Miller, T. C. Sangster, W. Seka, and V. A. Smalyuk, "Spherical Shock-Breakout Measurements on OMEGA."

C. Stoeckl, J. Bromage, J. H. Kelly, T. J. Kessler, B. E. Kruschwitz, S. J. Loucks, R. L. McCrory, D. D. Meyerhofer, S. F. B. Morse, A. L. Rigatti, T. C. Sangster, W. Theobald, L. J. Waxer, and J. D. Zuegel, "Status of the OMEGA EP High-Energy Petawatt Laser Facility."

M. Storm, J. Myatt, and C. Stoeckl, "Characterization of Fast-Electron Beam Propagation Through Solid-Density Matter by Optical-Transition Radiation."

S. Sublett, J. P. Knauer, D. D. Meyerhofer, I. V. Igumenshchev, T. J. B. Collins, and A. Frank, "Influence of Episodic Mass Ejection on Hydrodynamic Jet Evolution."

W. Theobald, C. Stoeckl, C. Zhou, R. Betti, S. Roberts, V. A. Smalyuk, V. Yu. Glebov, J. A. Delettrez, T. C. Sangster, D. D. Meyerhofer, C. K. Li, and R. D. Petrasso, "High-Areal-Density Fuel-Assembly Experiments for the Fast-Ignitor Concept."

C. Zhou and R. Betti, "Fast-Ignition Fuel-Assembly Scaling Laws: Theory and Experiments."

The following presentations were made at the 9th International Fast Ignition Workshop, Cambridge, MA, 3–5 November 2006:

K. S. Anderson, R. Betti, P. W. McKenty, P. B. Radha, and M. M. Marinak, "2-D Simulations of OMEGA Fast-Ignition Cone Targets."

J. A. Delettrez, J. Myatt, C. Stoeckl, D. D. Meyerhofer, and M. G. Haines, "Hydrodynamic Simulations of Integrated Fast-Ignition Experiments Planned for the OMEGA/OMEGA EP Laser Systems."

D. D. Meyerhofer, R. Betti, V. N. Goncharov, D. H. Edgell, D. R. Harding, J. H. Kelly, T. J. Kessler, S. J. Loucks, L. D. Lund, R. L. McCrory, S. F. B. Morse, T. C. Sangster, W. Seka, C. Stoeckl, W. Theobald, L. J. Waxer, and J. D. Zuegel, "Preparations for Integrated Cryogenic Fast-Ignition Experiments on OMEGA/OMEGA EP" (invited).

J. Myatt, A. V. Maximov, and R. W. Short, "Laboratory Demonstration of e^+e^- Pair-Plasma Production on OMEGA EP."

J. Myatt, W. Theobald, J. A. Delettrez, C. Stoeckl, M. Storm, T. C. Sangster, A. V. Maximov, and R. W. Short, "High-Intensity Laser Interactions with Solid Targets and Implications for Fast-Ignition Experiments on OMEGA EP" (invited).

P. Nilson, "Optical Probing of Underdense Laser–Plasma Interactions Using the Vulcan Petawatt Laser."

A. A. Solodov, R. Betti, J. A. Delettrez, and C. Zhou, "Gain Curves for Fast-Ignition Inertial Confinement Fusion."

C. Stoeckl, S.-W. Bahk, J. Bromage, V. Yu. Glebov, O. V. Gotchev, P. A. Jaanimagi, D. D. Meyerhofer, P. Nilson, T. C. Sangster, M. Storm, S. Sublett, W. Theobald, and J. D. Zuegel, "Diagnostics for Fast-Ignitor Experiments on OMEGA/OMEGA EP."

W. Theobald, C. Stoeckl, K. S. Anderson, R. Betti, T. R. Boehly, J. A. Delettrez, R. Epstein, V. Yu. Glebov, J. H. Kelly, T. J. Kessler, B. E. Kruschwitz, S. J. Loucks, R. L. McCrory, D. N. Maywar, D. D. Meyerhofer, J. E. Miller, S. F. B. Morse, J. Myatt, P. B. Radha, A. L. Rigatti, T. C. Sangster, V. A. Smalyuk, L. J. Waxer, B. Yaakobi, J. C. Zhou, J. D. Zuegel, R. D. Petrasso, C. K. Li, C. A. Back, G. Hund, R. B. Stephens, S. P. Hatchett, M. H. Key, A. J. MacKinnon, H.-S. Park, P. K. Patel, K. L. Lancaster, and P. A. Norreys, "Fast-Ignition Research at the Laboratory for Laser Energetics."

C. Zhou and R. Betti, "Fast-Ignition Fuel-Assembly Scaling Laws."

The following presentations were made at SPIE Photonics West, San Jose, CA, 20–25 January 2007:

C. Dorrer, "High-Speed Characterization for Optical Telecommunication Signals" (invited).

T. Z. Kosc, K. L. Marshall, A. Trajkovska-Petkoska, C. J. Coon, K. Hasman, G. V. Babcock, R. Howe, M. Leitch, and S. D. Jacobs, "Development of Polymer Cholesteric Liquid Crystal Flake Technology for Electro-Optic Devices and Particle Displays" (invited).

The following presentations were made at ASSP 2007, Vancouver, Canada, 28–31 January 2007:

I. A. Begishev, V. Bagnoud, C. Dorrer, and J. D. Zuegel, "Suppression of Optical Parametric Generation in the High-Efficient OPCPA System."

Z. Jiang and J. R. Marciante, "Impact of Spatial-Hole Burning on Beam Quality in Large-Mode-Area Fibers."

J. R. Marciante, "Effectiveness of Radial Gain Tailoring in Large-Mode-Area Fiber Lasers and Amplifiers."

A. V. Okishev and J. D. Zuegel, "Intracavity-Pumped Raman Laser Action in a Mid-IR CW MgO:PPLN Optical Parametric Oscillator."

J. M. Soures and D. D. Meyerhofer, "High-Energy-Density Physics Research at NLUF with the OMEGA and OMEGA EP Lasers," 2007 Stewardship Science Academic Alliance Program Symposium, Washington, DC, 5–7 February 2007.

R. L. McCrory, D. D. Meyerhofer, S. J. Loucks, S. Skupsky, K. S. Anderson, R. Betti, T. R. Boehly, M. J. Bonino, R. S. Craxton, T. J. B. Collins, J. A. Delettrez, D. H. Edgell, R. Epstein, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, R. L. Keck, J. H. Kelly, T. J. Kessler, J. P. Knauer, L. D. Lund, D. Jacobs-Perkins, J. R. Marciante, J. A. Marozas, F. J. Marshall, A. V. Maximov, P. W. McKenty, S. F. B. Morse, J. Myatt, S. G. Noyes, P. B. Radha, T. C. Sangster, W. Seka, V. A. Smalyuk, J. M. Soures, C. Stoeckl, W. Theobald, K. A. Thorp, M. D. Wittman, B. Yaakobi, C. D. Zhou, J. D. Zuegel, C. K. Li, R. D. Petrasso, J. A. Frenje, and F. H. Séguin, "Inertial Confinement Fusion Research at the Laboratory for Laser Energetics," 7th Symposium on Current Trends in International Fusion Research: A Review, Washington, DC, 5–9 March 2007.

J. R. Marciante, "Fiber Technologies for Terawatt Lasers," Optical Fiber Communication Conference 2007, Anaheim, CA, 25–29 March 2007.

The following presentations were made at SPIE Europe: Optics and Optoelectronics, Prague, Czech Republic, 16–19 April 2007:

D. Pan, W. R. Donaldson, and R. Sobolewski, "Femtosecond Laser-Pumped Source of Entangled Photons for Quantum Cryptography Applications."

R. Sobolewski, "Fiber-Coupled NbN Superconducting Single-Photon Detectors for Quantum Correlation Measurements."

The following presentations were made at CLEO/QELS 2007, Baltimore, MD, 6–11 May 2007:

P. Brijesh, T. J. Kessler, J. D. Zuegel, and D. D. Meyerhofer, "Spatially Shaping the Longitudinal Focal Distribution into a Horseshoe-Shaped Profile."

W. R. Donaldson, D. N. Maywar, and J. H. Kelly, "Measurement of the Self-Phase-Modulation–Induced Bandwidth in a 30-kJ-Class Laser-Amplifier System."

C. Dorrer, "Pulse Shaping Using Binary Sequences Designed with Error Diffusion."

C. Dorrer and J. D. Zuegel, "Characterization of High-Frequency Surface Modulation Using the Transport-of-Intensity Equation."

J. R. Marciante, "Effectiveness of Radial Index Tailoring in Large-Mode-Area Fiber Lasers and Amplifiers."

J. R. Marciante, "Gain Filtering for Single-Spatial-Mode Operation of Large-Mode-Area Fiber Amplifiers."

J. Qiao, D. Canning, G. King, M. J. Guardalben, J. Price, A. Kalb, R. Jungquist, A. L. Rigatti, and J. H. Kelly, "Interferometric Tiling for Large-Aperture Gratings for Petawatt Laser Systems."

The following presentations were made at Optifab 2007, Rochester, NY, 14–17 May 2007:

J. E. DeGroote, A. E. Marino, J. P. Wilson, A. L. Bishop, and S. D. Jacobs, "Material Removal Rate Model for Magnetorheological Finishing (MRF) of Optical Glasses with Nanodiamond MR Fluid."

S. N. Shafrir, J. C. Lambropoulos, and S. D. Jacobs, "Surface Finish and Subsurface Damage in Polycrystalline Optical Materials."

K. L. Marshall, K. Hasman, M. Leitch, G. Cox, T. Z. Kosc, A. Trajkovska-Petkoska, and S. D. Jacobs, "Doped Multilayer Polymer Cholesteric-Liquid-Crystal (PCLC) Flakes: A Novel Electro-Optical Medium for Highly Reflective Color Flexible Displays," SID 2007 Symposium, Long Beach, CA, 20–25 May 2007.

K. L. Marshall, V. Rapson, Y. Zhang, G. Mitchell, and A. L. Rigatti, "Contaminant Resistant Sol-Gel Coatings for High

Peak Power Laser Applications," Optical Interference Coatings (OSA-OIC), Tucson, AZ, 3–8 June 2007.

S. G. Lukishova, L. J. Bissell, S. K. H. Wei, A. W. Schmid, Z. Shi, H. Shin, R. Knox, P. Freivald, R. W. Boyd, C. R. Stroud, Jr., S.-H. Chen, and K. L. Marshall, "Room-Temperature Single Photon Sources with Fluorescent Emitters in Liquid Crystal Hosts," International Conference on Quantum Information, Rochester, NY, 13–15 June 2007.

The following presentations were made at the 15th APS Topical Conference on Shock Compression of Condensed Matter, Fairmont Orchard, HI, 24–29 June 2007:

T. R. Boehly, J. E. Miller, J. H. Eggert, D. G. Hicks, P. M. Celliers, D. D. Meyerhofer, and G. W. Collins, "Measurements of the Release of Alpha Quartz: A New Standard for Impedance-Match Experiments."

S. Brygoo, J. H. Eggert, P. Loubeyre, R. S. McWilliams, D. G. Hicks, P. M. Celliers, T. R. Boehly, R. Jeanloz, and G. W. Collins, "The Equation of State and Optical Conductivity of Warm Dense He and H_2."

J. Eggert, D. Bradley, P. Celliers, G. Collins, D. Hicks, D. Braun, S. Prisbey, R. Smith, and T. Boehly, "Ramp Compression of Diamond to Over 1000 GPa."

D. Hicks, J. Eggert, P. Celliers, H.-S. Park, S. LePape, P. Patel, B. Maddox, G. Collins, T. Boehly, and B. Barbrel, "Measurement of Shock Wave Density Using Quantitative X-Ray Phase Contrast Imaging."

J. E. Miller, T. R. Boehly, D. D. Meyerhofer, J. H. Eggert, S. C. Wilks, J. H. Satcher, and J. F. Poco, "Equation-of-State Measurements in Ta_2O_5 Aerogel."

The following presentations were made at the ITER-LMJ-NIF International Workshop, Cadarache, France, 27–29 June 2007:

V. Yu. Glebov, T. C. Sangster, C. Stoeckl, S. Roberts, M. Cruz, C. Mileham, M. J. Moran, R. A. Lerche, J. M. Mack, H. Herrmann, C. S. Young, J. L. Bourgade, O. Landoas, J. Raimbourg, G. A. Chandler, and K. Miller, "Environmental Challenges for the Nuclear Diagnostics on the NIF and LMJ."

W. T. Shmayda, "Tritium Management on OMEGA."

A. Trajkovska-Petkoska, T. Z. Kosc, K. L. Marshall, and S. D. Jacobs, "Electro-Optics of Polymer Cholesteric Liquid Crystal Flakes: Applications Toward Electronic Paper," ECLC 2007, 9th European Conference on Liquid Crystals, Lisbon, Portugal, 2–6 July 2007.

K. L. Marshall, A. Trajkovska-Petkoska, K. Hasman, M. Leitch, G. Cox, T. Z. Kosc, and S. D. Jacobs, "Polymer Cholesteric Liquid Crystal (PCLC) Flake/Fluid Host Electro-Optic Suspensions and Their Applications in Color Flexible Reflective Displays," International Display Manufacturing Conference 2007, Taipei, Taiwan, 3–6 July 2007.

T. Z. Kosc, A. Trajkovska-Petkoska, K. L. Marshall, S. D. Jacobs, K. Hasman, and C. Coon, "Polymer Cholesteric Liquid Crystal Flakes: A Novel Medium for Electro-Optical Particle-Based Technologies," Particles 2007, Toronto, Canada, 18–21 August 2007.

The following presentations were made at SPIE Optics and Photonics 2007, San Diego, CA, 26–30 August 2007:

J. E. DeGroote, A. E. Marino, J. P. Wilson, A. L. Bishop, and S. D. Jacobs, "The Role of Nanodiamonds in the Polishing Zone During Magnetorheological Finishing (MRF)."

K. L. Marshall, Z. Culakova, B. Ashe, C. Giacofei, A. L. Rigatti, T. J. Kessler, A. W. Schmid, J. B. Oliver, and A. Kozlov, "Vapor-Phase–Deposited Organosilane Coatings as 'Hardening' Agents for High Peak Power Laser Optics."

K. L. Marshall, R. Wang, M. Coan, A. G. Noto, K. Leskow, R. Pauszek, and A. Moore, "Using Time-Dependent Density Functional Theory (TDDFT) in the Design and Development of Near-IR Dopants for Liquid Crystal Device Applications."

C. Miao, K. M. Bristol, A. E. Marino, S. N. Shafrir, J. E. DeGroote, and S. D. Jacobs, "Magnetorheological Fluid Tem-

plate for Basic Studies of Mechanical-Chemical Effects During Polishing."

S. N. Shafrir, J. C. Lambropoulos, and S. D. Jacobs, "MRF Spotting Technique for Studying Subsurface Damage in Deterministic Microground Polycrystalline Alumina."

The following presentations were made at the 37th Anomalous Absorption Conference, Maui, HI, 27–31 August 2007:

J. A. Delettrez, V. N. Goncharov, P. B. Radha, C. Stoeckl, A. V. Maximov, T. C. Sangster, D. Shvarts, R. D. Petrasso, and J. A. Frenje, "Simulations of the Effect of Energetic Electrons Produced from Two-Plasmon Decay in the 1-D Hydrodynamics Code *LILAC*."

D. H. Edgell, W. Seka, J. A. Delettrez, R. S. Craxton, V. N. Goncharov, I. V. Igumenshchev, J. Myatt, A. V. Maximov, R. W. Short, T. C. Sangster, and R. E. Bahr, "Time-Dependent Spectral Shifts of Scattered Laser Light in Direct-Drive Inertial Confinement Fusion Implosion Experiments."

D. H. Edgell, W. Seka, V. N. Goncharov, I. V. Igumenshchev, R. S. Craxton, J. A. Delettrez, J. Myatt, A. V. Maximov, and R. W. Short, "Time-Resolved Scattered-Light Spectroscopy in Direct-Drive Implosion Experiments."

M. G. Haines and J. Myatt, "Competition Between the Resistive Weibel Instability and the Electrothermal Instability in Fast Ignition."

A. V. Maximov, J. Myatt, R. W. Short, W. Seka, and C. Stoeckl, "Modeling of Two-Plasmon-Decay Instability Under Incoherent Laser Irradiation."

J. Myatt, P. Nilson, W. Theobald, M. Storm, A. V. Maximov, and R. W. Short, "Determination of Hot-Electron Conversion Efficiency and Isochoric Heating of Low-Mass Targets Irradiated by the Multi-Terawatt Laser."

W. Seka, D. H. Edgell, J. P. Knauer, C. Stoeckl, V. N. Goncharov, I. V. Igumenshchev, J. A. Delettrez, J. Myatt, A. V. Maximov, R. W. Short, and T. C. Sangster, "Laser–Plasma Interaction Processes Observed in Direct-Drive Implosion Experiments."

R. W. Short and J. Myatt, "Modeling the Filamentation Instability of Relativistic Electron Beams for Fast Ignition."

D. Shvarts, V. A. Smalyuk, R. Betti, J. A. Delettrez, D. H. Edgell, V. Yu. Glebov, V. N. Goncharov, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, F. J. Marshall, P. B. Radha, T. C. Sangster, W. Seka, S. Skupsky, C. Stoeckl, B. Yaakobi, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "The Role of Fast-Electron Preheating in Low-Adiabat Cryogenic and Plastic (CH) Shell Implosions on OMEGA."

V. A. Smalyuk, D. Shvarts, R. Betti, J. A. Delettrez, D. H. Edgell, V. Yu. Glebov, V. N. Goncharov, S. X. Hu, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, P. B. Radha, T. C. Sangster, W. Seka, S. Skupsky, C. Stoeckl, B. Yaakobi, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "Effects of Hot-Electron Preheat in Direct-Drive Experiments on OMEGA."

A. A. Solodov, K. S. Anderson, R. Betti, V. Gotcheva, J. Myatt, J. A. Delettrez, and S. Skupsky, "Integrated Simulation of Fast-Ignition ICF."

The following presentations were made at IFSA 2007, Kobe, Japan, 9–14 September 2007:

R. Betti, W. Theobald, C. D. Zhou, K. S. Anderson, P. W. McKenty, D. Shvarts, and C. Stoeckl, "Shock Ignition of Thermonuclear Fuel with High Areal Densities."

V. N. Goncharov, P. B. Radha, R. Betti, T. J. B. Collins, J. A. Delettrez, R. Epstein, S. X. Hu, I. V. Igumenshchev, R. L. McCrory, P. B. McKenty, D. D. Meyerhofer, S. P. Regan, T. C. Sangster, W. Seka, S. Skupsky, V. A. Smalyuk, and D. Shvarts, "Modeling High-Compression, Direct-Drive ICF Experiments."

D. R. Harding, D. D. Meyerhofer, T. C. Sangster, S. J. Loucks, R. L. McCrory, R. Betti, J. A. Delettrez, D. H. Edgell, L. M. Elasky, R. Epstein, V. Yu. Glebov, V. N. Goncharov, S. X. Hu, I. V. Igumenshchev, D. Jacobs-Perkins, R. J. Janezic, J. P. Knauer, L. D. Lund, J. R. Marciante, F. J. Marshall, D. N. Maywar, P. W. McKenty, P. B. Radha, S. P. Regan, R. G. Roides, W. Seka, W. T. Shmayda, S. Skupsky, V. A. Smalyuk, C. Stoeckl, B. Yaakobi, J. D. Zuegel, D. Shvarts, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "Cryogenic Target-Implosion Experiments on OMEGA."

D. N. Maywar, J. H. Kelly, L. J. Waxer, S. F. B. Morse, I. A. Begishev, J. Bromage, C. Dorrer, J. L. Edwards, L. Folnsbee, M. J. Guardalben, S. D. Jacobs, R. Jungquist, T. J. Kessler, R. W. Kidder, B. E. Kruschwitz, S. J. Loucks, J. R. Marciante,

R. L. McCrory, D. D. Meyerhofer, A. V. Okishev, J. B. Oliver, G. Pien, J. Qiao, J. Puth, A. L. Rigatti, A. W. Schmid, M. J. Shoup, III, C. Stoeckl, K. A. Thorp, and J. D. Zuegel, "OMEGA EP High-Energy Petawatt Laser: Progress and Prospects."

P. W. McKenty, T. J. B. Collins, J. A. Marozas, S. Skupsky, D. R. Harding, J. D. Zuegel, D. Keller, A. Shvydky, D. D. Meyerhofer, and R. L. McCrory, "Multidimensional Numerical Investigation of NIF Polar-Direct-Drive Designs with Full Beam Smoothing."

S. P. Regan, T. C. Sangster, D. D. Meyerhofer, W. Seka, R. Epstein, S. J. Loucks, R. L. McCrory, C. Stoeckl, V. Yu. Glebov, O. S. Jones, D. Callahan, P. A. Amendt, N. B. Meezan, L. J. Suter, M. D. Rosen, O. L. Landen, E. L. DeWald, S. H. Glenzer, C. Sorce, S. Dixit, R. E. Turner, and B. MacGowan, "Hohlraum Energetics and Implosion Symmetry with Elliptical Phase Plates Using a Multi-Cone Beam Geometry on OMEGA."

D. Shvarts, V. A. Smalyuk, R. Betti, J. A. Delettrez, D. H. Edgell, V. Yu. Glebov, V. N. Goncharov, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, F. J. Marshall, P. B. Radha, S. P. Regan, T. C. Sangster, W. Seka, S. Skupsky, C. Stoeckl, B. Yaakobi, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "The Role of Fast-Electron Preheating in Low-Adiabat Cryogenic Implosions on OMEGA."

S. Skupsky, V. N. Goncharov, and D. Li, "Nonlocal Ion-Heat and Momentum Transport in ICF Implosions."

A. V. Okishev, C. Dorrer, V. I. Smirnov, L. B. Glebov, and J. D. Zuegel, "ASE Suppression in a Diode-Pumped Nd:YLF Regenerative Amplifier Using a Volume Bragg Grating," Frontiers in Optics 2007/Laser Science XXIII, San Jose, CA, 16–20 September 2007.

The following presentations were made at the 8th International Conference on Tritium Science and Technology, Rochester, NY, 16–21 September 2007:

T. Duffy, R. Janezic, and W. T. Shmayda, "LLE's High-Pressure DT-Fill-Process Control System."

R. T. Janezic, W. T. Shmayda, G. P. Wainwright, P. Regan, K. Lintz, D. R. Harding, and S. J. Loucks, "Operational Experience of Tritium Handling During LLE's Cryogenic Target Filling Operation."

W. T. Shmayda, S. J. Loucks, R. T. Janezic, G. P. Wainwright, and T. Duffy, "Tritium Management on OMEGA at the Laboratory for Laser Energetics."

W. T. Shmayda, C. R. Shmayda, C. Waddington, and R. D. Gallagher, "Operation of a 2.6-Mg/Year Heavy-Water Detritiation Plant."

G. P. Wainwright, W. T. Shmayda, R. T. Janezic, and P. Regan, "Tritium Capture with Getter-Bed Technology at the Laboratory for Laser Energetics."

D. N. Maywar, "Optical Control of Flip-Flops Based on Resonant-Type SOA's," University of Tokyo Seminar, Tokyo, Japan, 18 September 2007.

The following presentations were made at the Boulder Damage Symposium, Boulder, CO, 24–26 September 2007:

B. Ashe, C. Giacofei, G. Myhre, and A. W. Schmid, "Optimizing a Cleaning Process for Multilayer Dielectric (MLD) Diffraction Gratings."

S. Papernov, A. W. Schmid, J. B. Oliver, and A. L. Rigatti, "Damage Thresholds and Morphology of the Front- and Back-Irradiated SiO_2 Thin Films Containing Gold Nanoparticles as Artificial Absorbing Defects."