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Conference Presentations

The following presentations were made at the International Conference on Ultrahigh Intensity Lasers: Development, Science, and Emerging Applications, North Lake Tahoe, NV, 3–7 October 2004:

J. Bromage, J. D. Zuegel, D. Vickery, L. J. Waxer, D. Irwin, R. Boni, R. Jungquist, and C. Stoeckl, "High-Intensity Diagnostics for OMEGA EP."

T. J. Kessler, J. Bunkenburg, H. Hu, C. Kellogg, L. S. Iwan, and W. Skulski, "Design Strategies and Technology Demonstrations for the Tiled Grating Compressor."

A. W. Schmid, T. Z. Kosc, A. Kozlov, A. L. Rigatti, and J. B. Oliver, "A Short-Pulse, Laser-Damage Update on OMEGA EP."

C. Stoeckl, "OMEGA EP: A High-Energy Petawatt Laser at LLE."

J. D. Zuegel, V. Bagnoud, I. A. Begishev, M. J. Guardalben, and J. Puth, "Performance of the OMEGA EP's Prototype—OPCPA Front End."

J. R. Marciante, J. I. Hirsh, D. H. Raguin, and E. T. Prince, "Polarization-Insensitive, High-Dispersion TIR Diffraction Gratings," Diffractive Optics and Micro-Optics, Rochester, NY, 10–13 October 2004.

The following presentations were made at Optical Fabrication and Testing, Rochester, NY, 10–13 October 2004:

C. Bouvier, J. C. Lambropoulos, and S. D. Jacobs, "Fracture Toughness of ULE, Zerodur, Astrosital, and Corning 9600."

J. E. DeGroote, S. N. Shafrir, J. C. Lambropoulos, and S. D. Jacobs, "Surface Characterization of CVD ZnS Using Power Spectral Density."

S. D. Jacobs, "Innovations in Optics Manufacturing" (invited).

J. Keck, J. B. Oliver, V. Gruschow, J. Spaulding, and J. D. Howe, "Process Tuning of Silica Thin-Film Deposition."

I. A. Kozhinova, H. J. Romanofsky, and S. D. Jacobs, "Polishing of Prepolished CVD ZnS Flats with Altered Magnetorheological (MR) Fluids."

A. E. Marino, K. Spencer, J. E. DeGroote, and S. D. Jacobs, "Chemical Durability of Phosphate Laser Glasses."

F. H. Mrakovcic, J. A. Randi, J. C. Lambropoulos, and S. D. Jacobs, "Subsurface Damage in Single-Crystal Sapphire."

J. B. Oliver, "Thin-Film-Optics Design and Manufacturing Challenges for Large-Aperture, High-Peak-Power, Short-Pulse Lasers" (invited).

S. N. Shafrir, J. C. Lambropoulos, and S. D. Jacobs, "Loose Abrasive Lapping of Optical Glass with Different Lapping Plates and Its Interpretation."

The following presentations were made at Frontiers in Optics, The 88th Annual Meeting—Laser Science XX, Rochester, NY, 10–14 October 2004:

V. Bagnoud, "A Front End for Multipetawatt Lasers Based on a High-Energy, High-Average-Power Optical Parametric Chirped-Pulse Amplifier."

S. G. Lukishova, A. W. Schmid, C. M. Supranowitz, A. J. McNamara, R. W. Boyd, and C. R. Stroud, Jr., "Dye-Doped, Liquid-Crystal, Room-Temperature, Single-Photon Source."

D. D. Meyerhofer, "Progress in Direct-Drive Inertial Confinement Fusion" (invited).

B. Yaakobi, D. D. Meyerhofer, T. R. Boehly, J. J. Rehr, B. A. Remington, P. G. Allen, S. M. Pollaine, and R. C. Albers, "Dynamic EXAFS Probing of Laser-Driven Shock Waves and Crystal-Phase Transformations" (invited).

L. D. Merkle, M. Dubinskii, L. B. Glebov, L. N. Glebova, V. I. Smirnov, S. Papernov, and A. W. Schmid, "Photo-Thermo-Refractive Glass Resistance to Laser-Induced Damage Near

One Micron," 7th Annual Directed Energy Symposium, Rockville, MD, 18–21 October 2004.

D. R. Harding, M. Bobeica, and R. Q. Gram, "Target Injection Studies," 10th High Average Power Laser Meeting, Princeton, NJ, 27–27 October 2004.

B. Yaakobi, "EXAFS Study of Laser-Shocked Metals," 11th International Workshop on Radiative Properties of Hot Dense Matter, Santa Barbara, CA, 1–5 November 2004.

R. L. McCrory, S. P. Regan, S. J. Loucks, D. D. Meyerhofer, S. Skupsky, R. Betti, T. R. Boehly, 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. P. Knauer, J. Marciante, J. A. Marozas, F. J. Marshall, A. V. Maximov, P. W. McKenty, J. Myatt, P. B. Radha, T. C. Sangster, W. Seka, V. A. Smalyuk, J. M. Soures, C. Stoeckl, B. Yaakobi, J. D. Zuegel, C. K. Li, R. D. Petrasso, F. H. Séguin, J. A. Frenje, S. Padalino, C. Freeman, and K. Fletcher, "Direct-Drive Inertial Confinement Fusion Research at the Laboratory for Laser Energetics: Charting the Path to Thermonuclear Ignition," 20th IAEA Fusion Energy Conference, Vilamoura, Portugal, 1–6 November 2004.

The following presentations were made at the 46th Annual Meeting of the APS Division of Plasma Physics, Savannah, GA, 15–19 November 2004:

K. Anderson, R. Betti, J. P. Knauer, V. A. Smalyuk, and V. N. Goncharov, "Simulations and Experiments on Adiabat Shaping by Relaxation."

R. Betti and J. Sanz, "Nonlinear Ablative Rayleigh–Taylor Instability."

T. R. Boehly, E. Vianello, J. E. Miller, R. S. Craxton, V. N. Goncharov, I. V. Igumenshchev, D. D. Meyerhofer, D. G. Hicks, and P. M. Celliers, "Direct-Drive Shock-Timing Experiments Using Planar Targets."

M. Canavan, J. A. Frenje, C. K. Li, C. Chen, J. L. DeCiantis, J. R. Rygg, F. H. Séguin, and R. D. Petrasso, "A Modified Accelerator for ICF Diagnostic Development."

C. Chen, C. K. Li, J. A. Frenje, F. H. Séguin, R. D. Petrasso, T. C. Sangster, R. Betti, D. R. Harding, and D. D. Meyerhofer, "Monte Carlo Simulations and Planned Experiments for Studying Hot-Electron Transport in H_2 and D_2."

T. J. B. Collins, S. Skupsky, A. Frank, A. Cunningham, and A. Poludnenko, "Shock Propagation in Wetted Foam."

R. S. Craxton, F. J. Marshall, M. J. Bonino, R. Epstein, P. W. McKenty, S. Skupsky, J. A. Delettrez, I. V. Igumenshchev, D. W. Jacobs-Perkins, J. P. Knauer, J. A. Marozas, P. B. Radha, and W. Seka, "Polar Direct Drive—Proof-of-Principle Experiments on OMEGA and Prospects for Ignition on the NIF" (invited).

J. L. DeCiantis, F. H. Séguin, J. A. Frenje, C. Chen, C. K. Li, R. D. Petrasso, J. A. Delettrez, J. P. Knauer, F. J. Marshall, D. D. Meyerhofer, S. Roberts, T. C. Sangster, and C. Stoeckl, "Studying the Burn Region in ICF Implosions with Proton Emission Imaging."

J. A. Delettrez, S. Skupsky, C. Stoeckl, J. Myatt, and P. B. Radha, "Simulation of Enhanced Neutron Production for OMEGA EP Cryogenic Implosions."

D. H. Edgell, W. Seka, R. S. Craxton, L. M. Elasky, D. R. Harding, R. L. Keck, M. Pandina, M. D. Wittman, and A. Warrick, "Shadowgraphic Analysis Techniques for Cryogenic Ice-Layer Characterization at LLE."

D. H. Edgell, W. Seka, R. S. Craxton, L. M. Elasky, D. R. Harding, R. L. Keck, M. Pandina, M. D. Wittman, and A. Warrick, "Three-Dimensional Characterization of Ice Layers for Cryogenic Targets at LLE."

R. Epstein, R. S. Craxton, J. A. Delettrez, F. J. Marshall, J. A. Marozas, P. W. McKenty, P. B. Radha, and V. A. Smalyuk, "Simulations of X-Ray Core Images from OMEGA Implosions Driven with Controlled Polar Illumination."

J. A. Frenje, C. K. Li, F. H. Séguin, J. L. DeCiantis, J. R. Rygg, M. Falk, R. D. Petrasso, J. A. Delettrez, V. Yu. Glebov, C. Stoeckl, F. J. Marshall, D. D. Meyerhofer, T. C. Sangster,

V. A. Smalyuk, and J. M. Soures, "Measurements of Time Evolution of Ion Temperature of D^3He Implosions on OMEGA."

M. C. Ghilea, D. D. Meyerhofer, T. C. Sangster, R. A. Lerche, and L. Disdier, "First Results from a Penumbral Imaging System Design Tool."

V. Yu. Glebov, C. Stoeckl, T. C. Sangster, C. Mileham, S. Roberts, and R. A. Lerche, "NIF Neutron Bang-Time Detector Development on OMEGA."

V. N. Goncharov, D. Li, and A. V. Maximov, "Effects of the Ponderomotive Terms in the Thermal Transport on the Hydrodynamic Flow in Inertial Confinement Fusion Experiments."

O. V. Gotchev, T. J. B. Collins, V. N. Goncharov, J. P. Knauer, D. Li, and D. D. Meyerhofer, "Mass Ablation Rate and Self-Emission Measurements in Planar Experiments."

L. Guazzotto, R. Betti, J. Manickam, S. Kaye, and J. L. Gauvreau, "Magnetorheological Equilibria with Toroidal and Poloidal Flow" (invited).

D. R. Harding, M. D. Wittman, L. M. Elasky, S. Verbridge, L. D. Lund, D. Jacobs-Perkins, W. Seka, D. H. Edgell, and D. D. Meyerhofer, "OMEGA Direct-Drive Cryogenic Deuterium Targets."

I. V. Igumenshchev, "The Role of Viscosity in Simulations of Strong Shocks in Low-Density Foams."

P. A. Jaanimagi, R. Boni, R. L. Keck, W. R. Donaldson, and D. D. Meyerhofer, "The Rochester Optical Streak System."

J. P. Knauer, K. Anderson, P. B. Radha, R. Betti, T. J. B. Collins, V. N. Goncharov, P. W. McKenty, D. D. Meyerhofer, S. P. Regan, T. C. Sangster, and V. A. Smalyuk, "Improved Target Stability Using Picket Pulses to Increase and Shape the Ablator Adiabat" (invited).

C. K. Li, C. Chen, J. A. Frenje, F. H. Séguin, R. D. Petrasso, J. A. Delettrez, R. Betti, D. D. Meyerhofer, J. Myatt, and S. Skupsky, "Linear-Energy Transfer and Blooming of Directed Energetic Electrons in Dense Hydrogenic Plasmas."

D. Li and V. N. Goncharov, "Effects of the Temporal Density Variation and Convergent Geometry on Nonlinear Bubble Evolution in Classical Rayleigh–Taylor Instability."

G. Li and V. N. Goncharov, "The Effect of Electromagnetic Fields on Electron-Thermal Transport in Laser-Produced Plasmas."

J. A. Marozas, P. B. Radha, T. J. B. Collins, P. W. McKenty, and S. Skupsky, "Evolution of the Laser-Deposition Region in Polar-Direct-Drive Simulations on the National Ignition Facility (NIF)."

F. J. Marshall, R. S. Craxton, J. A. Delettrez, D. H. Edgell, L. M. Elasky, R. Epstein, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, R. Janezic, J. P. Knauer, P. W. McKenty, D. D. Meyerhofer, P. B. Radha, S. P. Regan, W. Seka, V. A. Smalyuk, C. Stoeckl, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "High-Performance, Direct-Drive, Cryogenic Target Implosions on OMEGA" (invited).

A. V. Maximov, J. Myatt, R. W. Short, W. Seka, and C. Stoeckl, "Two-Plasmon-Decay Instability in Plasmas Irradiated by Incoherent Laser Beams."

D. D. Meyerhofer, B. Yaakobi, T. R. Boehly, T. J. B. Collins, H. Lorenzana, B. A. Remington, P. G. Allen, S. M. Pollaine, J. J. Rehr, and R. C. Albers, "Dynamic EXAFS Probing of Laser-Driven Shock Waves and Crystal Phase Transformations."

J. E. Miller, W. J. Armstrong, T. R. Boehly, D. D. Meyerhofer, W. Theobald, E. Vianello, J. Eggert, D. G. Hicks, and C. Sorce, "Time-Resolved Measurement of Optical Self-Emission for Shock Wave and Equation of State Studies."

J. Myatt, A. V. Maximov, R. W. Short, J. A. Delettrez, and C. Stoeckl, "Numerical Studies of MeV Electron Transport in Fast-Ignition Targets."

P. B. Radha, T. J. B. Collins, J. A. Delettrez, Y. Elbaz, R. Epstein, V. Yu. Glebov, V. N. Goncharov, R. L. Keck, J. P. Knauer, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, S. P. Regan, T. C. Sangster, W. Seka, D. Shvarts, S. Skupsky, Y. Srebro, and C. Stoeckl, "Multidimensional Analysis of Direct-Drive Plastic-Shell Implosions on OMEGA" (invited).

S. P. Regan, J. A. Delettrez, V. Yu. Glebov, V. N. Goncharov, J. A. Marozas, F. J. Marshall, P. W. McKenty, D. D. Meyerhofer, P. B. Radha, T. C. Sangster, V. A. Smalyuk, C. Stoeckl, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "Experimental Investigation of the Effects of Irradiation Nonuniformities on the Performance of Direct-Drive Spherical Implosions."

J. R. Rygg, F. H. Séguin, C. K. Li, J. A. Frenje, J. L. DeCiantis, R. D. Petrasso, J. A. Delettrez, V. N. Goncharov, P. B. Radha, V. Yu. Glebov, D. D. Meyerhofer, and T. C. Sangster, "Inference of Imprint at Onset of Deceleration Phase Using Shock-Burn Measurements."

T. C. Sangster, J. A. Delettrez, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, J. P. Knauer, F. J. Marshall, P. W. McKenty, D. D. Meyerhofer, P. B. Radha, S. P. Regan, S. Skupsky, V. A. Smalyuk, C. Stoeckl, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "High-Areal-Density Cryogenic D_2 Implosions on OMEGA."

H. Sawada, S. P. Regan, T. R. Boehly, I. V. Igumenshchev, V. N. Goncharov, F. J. Marshall, B. Yaakobi, T. C. Sangster, D. D. Meyerhofer, D. Gregori, D. G. Hicks, S. G. Glenzer, and O. L. Landen, "Diagnosing Shock-Heated, Direct-Drive Plastic Targets with Spectrally Resolved X-Ray Scattering."

F. H. Séguin, J. L. DeCiantis, J. A. Frenje, C. K. Li, J. R. Rygg, C. Chen, R. D. Petrasso, V. A. Smalyuk, F. J. Marshall, J. A. Delettrez, J. P. Knauer, P. W. McKenty, D. D. Meyerhofer, S. Roberts, T. C. Sangster, K. Mikaleian, and H. S. Park, "Relationship of Asymmetries in Fusion Burn and ρR to Asymmetries in Laser Drive for ICF Implosions at OMEGA."

W. Seka, C. Stoeckl, V. N. Goncharov, R. E. Bahr, T. C. Sangster, R. S. Craxton, J. A. Delettrez, A. V. Maximov, J. Myatt, A. Simon, and R. W. Short, "Absorption Measurements in Spherical Implosions on OMEGA."

R. W. Short, "Convective Versus Absolute Two-Plasmon Decay in Inhomogeneous Plasmas."

V. A. Smalyuk, V. N. Goncharov, T. R. Boehly, D. Li, J. A. Marozas, D. D. Meyerhofer, S. P. Regan, and T. C. Sangster, "Measurements of Imprinting with Laser Beams at Various Angles of Incidence in Planar CH Foils."

J. M. Soures, F. J. Marshall, J. A. Delettrez, R. Epstein, R. Forties, V. Yu. Glebov, J. H. Kelly, T. J. Kessler, J. P. Knauer, P. W. McKenty, S. P. Regan, W. Seka, V. A. Smalyuk, C. Stoeckl, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "Polar-Direct-Drive Experiments on OMEGA."

C. Stoeckl, W. Theobald, J. A. Delettrez, J. Myatt, S. P. Regan, H. Sawada, T. C. Sangster, M. H. Key, P. Patel, R. Snavely, R. Clarke, S. Karsch, and P. Norreys, "*K*-Shell Spectroscopy Using a Single-Photon–Counting X-Ray CCD in Ultrafast Laser–Plasma Interaction Experiments."

S. Sublett, J. P. Knauer, I. V. Igumenshchev, D. D. Meyerhofer, A. Frank, P. A. Keiter, R. F. Coker, B. H. Wilde, B. E. Blue, T. S. Perry, J. M. Foster, and P. A. Rosen, "Hydrodynamic Jet Experiments on OMEGA."

W. Theobald, C. Stoeckl, T. C. Sangster, J. Kuba, R. Snavely, M. H. Key, R. Heathcoate, D. Neely, and P. Norreys, "X-Ray Line Emission Spectroscopy of 100-TW-Laser-Pulse–Generated Plasmas for Backlighter Development of Cryogenic Implosion Capsules."

E. Vianello, T. R. Boehly, R. S. Craxton, V. N. Goncharov, J. E. Miller, I. V. Igumenshchev, D. D. Meyerhofer, T. C. Sangster, D. G. Hicks, and P. M. Celliers, "The Effect of Incidence Angle on Laser-Driven Shock Strengths."

C. Zhou, J. Sanz, and R. Betti, "Asymptotic Bubble Evolution in the Bell–Plesset and Ablative Rayleigh–Taylor Instabilities."

C. W. Wu and D. R. Harding, "Growth of the Open-Networked Carbon Nanostructures at Low Temperature by Microwave Plasma Electron Cyclotron Resonance Chemical Vapor Deposition," 2004 MRS Fall Meeting, Boston, MA, 29 November–3 December 2004.

S. G. Lukishova, A. W. Schmid, R. S. Knox, P. Freivald, R. W. Boyd, and C. R. Stroud, Jr., "Deterministically Polarized Single-Photon Source," Quantum Optics II, Cozumel, Mexico, 6–9 December 2004.

H. L. Helfer, "The Dark Matter of Galactic Halos," 205th Meeting of the American Astronomical Society, San Diego, CA, 9–13 January 2005.

R. Betti, K. Anderson, J. P. Knauer, and V. N. Goncharov, "Hydrodynamics of Inertial Confinement Fusion Implosions: What's

Next?" 25th International Workshop on Physics of High Density in Matter, Hirschegg, Austria, 30 January–4 February 2005.

K. L. Marshall, T. Z. Kosc, A. Trajkovska-Petkoska, E. Kimball, and S. D. Jacobs, "Polymer Cholesteric Liquid Crystal (PCLC) Flake/Fluid Host Electro-Optic Suspensions and Their Applications in Flexible Reflective Displays," 4th Annual Flexible Microelectronics and Displays Conference, Phoenix, AZ, 1–3 February 2005.

P. B. Radha, "Direct-Drive Inertial Confinement Fusion: Status and Future," AAAS Annual Meeting, Washington, DC, 17–21 February 2005.

The following presentations were made at JOWOG 37, Albuquerque, NM, 21–25 February 2005:

D. D. Meyerhofer, B. Yaakobi, T. R. Boehly, T. J. B. Collins, H. Lorenzana, B. A. Remington, P. G. Allen, S. M. Pollaine, J. J. Rehr, and R. C. Albers, "Dynamic EXAFS Probing of Laser-Driven Shock Waves and Crystal Phase Transformations."

T. C. Sangster, T. R. Boehly, D. D. Meyerhofer, T. J. B. Collins, P. M. Celliers, G. W. Collins, J. H. Eggert, and D. G. Hicks, "Recent Results from EOS Experiments of Low-Density Foams and D_2."

R. L. McCrory, D. D. Meyerhofer, S. J. Loucks, S. Skupsky, J. M. Soures, 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, 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, C. Stoeckl, K. A. Thorp, M. D. Wittman, B. Yaakobi, J. D. Zuegel, K. A. Fletcher, C. Freeman, S. Padalino, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "Direct-Drive Inertial Confinement Fusion Research at the Laboratory for Laser Energetics," 6th Symposium on Current Trends in International Fusion Research: A Review, Washington, DC, 7–11 March 2005.

L. Guazzotto, R. Betti, and J. P. Freidberg, "Progress in the Development of a Linear MHD Stability Code for Axisymmetric Plasmas with Arbitrary Equilibrium Flow," 2005 International Sherwood Fusion Theory Conference, Stateline, NV, 11–13 April 2005.

The following presentations were made at the 16th Target Fabrication Specialist's Meeting, Scottsdale, AZ, 1–5 May 2005:

M. J. Bonino, S. G. Noyes, F. J. Marshall, R. S. Craxton, D. W. Turner, and D. R. Harding, "Fabrication of Polar-Direct-Drive Targets for the National Ignition Facility."

D. H. Edgell, W. Seka, R. S. Craxton, L. M. Elasky, D. R. Harding, R. L. Keck, and M. D. Wittman, "Analysis of Cryogenic Target Shadowgraphs at LLE."

L. M. Elasky, S. Verbridge, D. H. Edgell, and D. R. Harding, "Improvements and Present Limitations of D_2 Ice Layers for OMEGA Cryogenic Targets."

R. Q. Gram and D. R. Harding, "Thermal Conductivity of Solid, Liquid, and Gaseous D_2 and Precise Thermometry Using an Embedded Pt Wire."

D. R. Harding, M. D. Wittman, L. M. Elasky, R. Q. Gram, M. J. Bonino, L. D. Lund, R. Janezic, S. Verbridge, S. Scarantino, and M. Bobeica, "Overview of Cryogenic Target Research at LLE."

A. K. Knight and D. R. Harding, "Modeling the Sensitivity of a Polymer Vapor Deposition Process to Different Operating Conditions and Parameters."

D. D. Meyerhofer, "Innovative Target Designs for Direct-Drive Ignition."

W. T. Shmayda, D. R. Harding, L. D. Lund, R. Janezic, and T. W. Duffy, "Handling Cryogenic DT Targets at the Laboratory for Laser Energetics."

D. Turner, M. J. Bonino, S. G. Noyes, R. Q. Gram, K. J. Lintz, S. Scarantino, S. Verbridge, and D. R. Harding, "Fabricating, Testing, and Fielding of Planar Cryogenic and X-Ray Scattering Targets."

M. D. Wittman and D. R. Harding, "Freezing Behavior of H_2–HD–D_2 Mixtures."

J. E. DeGroote, A. E. Marino, K. E. Spencer, and S. D. Jacobs, "Power Spectral Density Plots Inside MRF Spots Made with a Polishing Abrasive-Free MR Fluid," Optifab 2005, Rochester, NY, 2–5 May 2005.

The following presentations were made at ICONO/LAT 2005, St. Petersburg, Russia, 11–15 May 2005:

A. V. Okishev, "OMEGA EP (Extended Performance): Adding High-Energy, Short-Pulse Capability to the OMEGA Facility."

A. V. Okishev, K. P. Dolgaleva, and J. D. Zuegel, "Experimental Optimization of Diode-Pumped Yb:GdCOB Laser Performance for Broadband Amplification at 1053 nm."

A. V. Okishev, R. G. Roides, I. A. Begishev, and J. D. Zuegel, "All-Solid-State, Diode-Pumped, Multiharmonic Laser System for a Timing Fiducial."

The following presentations were made at CLEO 2005, Baltimore, MD, 22–27 May 2005:

V. Bagnoud, J. Puth, I. A. Begishev, J. Bromage, M. J. Guardalben, and J. D. Zuegel, "A Multiterawatt Laser Using a High-Contrast, Optical Parametric Chirped-Pulse Preamplifier."

Z. Jiang and J. R. Marciante, "Mode-Area Scaling of Helical-Core, Dual-Clad Fiber Lasers and Amplifiers."

J. R. Marciante and J. D. Zuegel, "High-Gain, Polarization Preserving, Yb-Doped Fiber Amplifier for Low-Duty-Cycle Pulse Amplification."

N. G. Usechak and G. P. Agrawal, "An Analytic Technique for Investigating Mode-Locked Lasers."

N. G. Usechak and G. P. Agrawal, "Pulse-Switching and Stability in FM Mode-Locked Fiber Lasers."

S. G. Lukishova, A. W. Schmid, R. Knox, P. Freivald, R. W. Boyd, C. R. Stroud, Jr., and K. L. Marshall, "Deterministically Polarized Fluorescence from Single-Dye Molecules Aligned in Liquid Crystal Host," QELS 2005, Baltimore, MD, 22–27 May 2005.

The following presentations were made at the 32nd IEEE International Conference on Plasma Science, Monterey, CA, 18–23 June 2005:

V. Yu. Glebov, R. A. Lerche, C. Stoeckl, G. J. Schmid, T. C. Sangster, J. A. Koch, T. W. Phillips, C. Mileham, and S. Roberts, "Progress with CVD Diamond Detectors for ICF Time-of-Flight Applications."

W. Theobald, T. R. Boehly, E. Vianello, J. E. Miller, R. S. Craxton, V. N. Goncharov, I. V. Igumenshchev, D. D. Meyerhofer, D. G. Hicks, P. M. Celliers, and G. W. Collins, "Direct-Drive Shockwave-Timing Experiments in Planar Targets" (invited).

The following presentations were made at the 35th Annual Anomalous Absorption Conference, Fajardo, Puerto Rico, 26 June–1 July 2005:

R. S. Craxton, F. J. Marshall, M. J. Bonino, V. Yu. Glebov, J. P. Knauer, S. G. Noyes, W. Seka, and V. A. Smalyuk, "Polar-Direct-Drive Experiments on OMEGA Using Saturn Targets."

R. Epstein, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, I. V. Igumenshchev, F. J. Marshall, J. A. Marozas, P. W. McKenty, P. B. Radha, S. Skupsky, and V. A. Smalyuk, "Numerical Investigation of X-Ray Core Images from OMEGA Implosions Driven with Controlled Polar Illumination."

V. N. Goncharov, O. V. Gotchev, and C. Cherfils-Clérouin, "Ablative Richtmyer–Meshkov Instability as a Test of Thermal Conduction Models Used in Hydrosimulations of ICF Experiments."

A. V. Maximov, "Electron Heat Transport in the Laser Field in Direct-Drive ICF Plasmas."

S. P. Regan, H. Sawada, T. R. Boehly, I. V. Igumenshchev, V. N. Goncharov, T. C. Sangster, D. D. Meyerhofer, B. Yaakobi, G. Gregori, D. G. Hicks, S. H. Glenzer, and O. L. Landen, "Diagnosing Shock-Heated, Direct-Drive Plastic Targets with Spectrally Resolved X-Ray Scattering."

T. C. Sangster, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, D. Jacobs-Perkins, J. P. Knauer, S. J. Loucks, 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, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "High-Performance Direct-Drive Implosions Using Cryogenic D_2 Fuel."

W. Seka, H. Baldis, A. V. Maximov, J. Myatt, R. W. Short, R. S. Craxton, R. E. Bahr, and T. C. Sangster, "Various Forms of Stimulated Brillouin Scattering in Long-Scale-Length Plasmas Relevant to Direct-Drive Inertial Confinement Fusion."

R. W. Short and J. Myatt, "Micro-Instabilities of Relativistic Electron Beams in Plasmas."

V. A. Smalyuk, O. Sadot, J. A. Delettrez, D. D. Meyerhofer, S. P. Regan, and T. C. Sangster, "Nonlinear Rayleigh–Taylor Growth Measurements on OMEGA."

The following presentations were made at the 8th International Workshop on Fast Ignition Targets, Tarragona, Spain, 29 June–1 July 2005:

J. A. Delettrez, J. Myatt, P. B. Radha, C. Stoeckl, S. Skupsky, and D. D. Meyerhofer, "Hydrodynamic Simulations of Integrated Experiments Planned for the OMEGA/OMEGA EP Laser Systems."

J. Myatt, J. A. Delettrez, W. Theobald, C. Stoeckl, A. V. Maximov, R. W. Short, M. Storm, T. C. Sangster, R. P. J. Town, and L. A. Cottrill, "Hybrid-Implicit PIC Calculations of Laser-Generated MeV Electrons in Copper Targets."

C. Stoeckl, T. R. Boehly, R. B. Stephens, J. A. Delettrez, S. P. Hatchett, J. A. Frenje, V. Yu. Glebov, C. K. Li, J. Miller, R. D. Petrasso, F. H. Séguin, V. A. Smalyuk, W. Theobald, B. Yaakobi, and T. C. Sangster, "Fuel-Assembly Experiments with Gas-Filled, Cone-in-Shell, Fast-Ignitor Targets on OMEGA."

S. G. Lukishova, A. W. Schmid, R. Knox, P. Freivald, R. W. Boyd, C. R. Stroud, Jr., and K. L. Marshall, "Deterministically Polarized Fluorescence from Single-Dye Molecules Aligned in Liquid Crystal Host," IQEC/CLEO 2005, Tokyo, Japan, 11–15 July 2005.

The following presentations were made at the SPIE 50th Annual Meeting, San Diego, CA, 31 July–4 August 2005:

A. C.-A. Chen, J. U. Wallace, L. Zeng, A. K.-H. Wei, and S. H. Chen, "Novel Light-Emitting Organic Materials with Variable Electron and Hole Conductivities."

J. E. DeGroote, A. E. Marino, J. P. Wilson, K. E. Spencer, and S. D. Jacobs, "Effects of Nanodiamond Abrasive Friability in Experimental MR Fluids with Phosphate Laser Glass LHG-8 and Other Optical Glasses."

E. Fess, J. Schoen, M. Bechtold, and D. Mohring, "Ultraform Finishing Process for Optical Materials."

M. Haurylau, S. P. Anderson, K. L. Marshall, and P. M. Fauchet, "Electrical Tuning of Silicon-Based 2-D Photonic Bandgap Structures."

K. L. Marshall, K. Adelsberger, B. Kolodzie, G. Mhyre, and D. W. Griffin, "A Second-Generation Liquid Crystal Phase-Shifting Point-Diffraction Interferometer Employing Structured Substrates."

A. G. Noto and K. L. Marshall, "Application of Computational Chemistry Methods to the Prediction of Chirality and Helical Twisting Power in Liquid Crystal Systems."

The following presentations were made at the 14th APS Topical Conference on Shock Compression of Condensed Matter, Baltimore, MD, 31 July–5 August 2005:

T. R. Boehly, D. G. Hicks, J. H. Eggert, E. Vianello, J. E. Miller, J. F. Hansen, P. M. Celliers, G. W. Collins, and D. D. Meyerhofer, "Direct-Density Measurements of Multi-Mbar Shock Waves for Absolute Equation-of-State Studies."

D. D. Meyerhofer, "Creating Extreme Material Properties with High-Energy Laser Systems."

J. E. Miller, T. R. Boehly, E. Vianello, W. J. Armstrong, C. Sorce, W. Theobald, D. D. Meyerhofer, D. G. Hicks, J. H. Eggert, and P. M. Celliers, "Streaked Optical Pyrometer for Shock Wave and EOS Studies."

E. Vianello, T. R. Boehly, J. E. Miller, R. S. Craxton, V. N. Goncharov, I. V. Igumenshchev, D. D. Meyerhofer, D. G. Hicks, and P. M. Celliers, "Laser-Driven Shock-Timing Experiments in Planar CH and Cryogenic Deuterium Targets."

The following presentations were made at IFSA 2005, Biarritz, France, 4–9 September 2005:

R. Betti and C. Zhou, "Low-Adiabat Implosions for Fast-Ignition Inertial Confinement Fusion."

J. Bromage, J. D. Zuegel, S.-W. Bahk, D. S. Vickery, L. J. Waxer, D. Irwin, V. Bagnoud, R. Boni, M. D. Moore, R. Jungquist, and C. Stoeckl, "High-Intensity Laser Diagnostics for OMEGA EP."

D. H. Edgell, W. Seka, R. S. Craxton, L. M. Elasky, D. R. Harding, R. L. Keck, L. D. Lund, and M. D. Wittman, "Characterization of Cryogenic Direct-Drive ICF Targets During Layering Studies and Just Prior to Shot Time."

V. N. Goncharov, O. V. Gotchev, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, T. C. Sangster, S. Skupsky, and C. Cherfils-Clérouin, "Ablative Richtmyer–Meshkov Instability: Theory and Experimental Results."

J. H. Kelly, L. J. Waxer, V. Bagnoud, I. A. Begishev, J. Bromage, 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, D. Weiner, and J. D. Zuegel, "OMEGA EP: High-Energy Petawatt Capability for the OMEGA Laser Facility."

B. E. Kruschwitz, R. Jungquist, J. Qiao, S. Abbey, S. E. Dean, D. N. Maywar, M. D. Moore, L. J. Waxer, and M. E. Wilson, "Large-Aperture Deformable Mirror Correction of Tiled-Grating Wavefront Error."

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, V. A. Smalyuk, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "Polar-Direct-Drive Experiments on OMEGA."

R. L. McCrory, D. D. Meyerhofer, S. J. Loucks, S. Skupsky, R. Betti, T. R. Boehly, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, K. A. Fletcher, C. Freeman, J. A. Frenje, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, I. V. Igumenshchev, R. L. Keck, J. D. Kilkenny, J. P. Knauer, C. K. Li, J. R. Marciante, J. A. Marozas, F. J. Marshall, A. V. Maximov, P. W. McKenty, S. F. B. Morse, J. Myatt, S. Padalino, R. D. Petrasso, P. B. Radha, S. P. Regan, T. C. Sangster, F. H. Séguin, W. Seka, V. A. Smalyuk, J. M. Soures, C. Stoeckl, B. Yaakobi, and J. D. Zuegel, "Progress in Direct-Drive Inertial Confinement Fusion Research at the Laboratory for Laser Energetics."

S. Skupsky, R. S. Craxton, F. J. Marshall, R. Betti, T. J. B. Collins, R. Epstein, V. N. Goncharov, I. V. Igumenshchev, J. A. Marozas, P. W. McKenty, P. B. Radha, J. D. Kilkenny, D. D. Meyerhofer, T. C. Sangster, and R. L. McCrory, "Polar Direct Drive—Ignition at 1-MJ."

J. D. Zuegel, V. Bagnoud, J. Bromage, I. A. Begishev, J. Puth, "High-Performance OPCPA Laser System."

S. D. Allen, S. I. Kudryashov, S. Papernov, and A. W. Schmid, "Nano-Spallation on Silica Film Surfaces by Acoustic Wave Emitted by Laser-Heated Artificial Absorbing Inclusions," 8th International Conference on Laser Ablation, Banff, Canada, 11–16 September 2005.

The following presentations were made at the Boulder Damage Symposium XXXVII, Boulder, CO, 19–21 September 2005:

J. Keck, J. B. Oliver, T. J. Kessler, H. Huang, J. Barone, J. Hettrick, A. L. Rigatti, T. Hoover, K. L. Marshall, A. W. Schmid, A. Kozlov, and T. Z. Kosc, "Manufacture and Development of Multilayer Diffraction Gratings."

J. B. Oliver, T. J. Kessler, H. Huang, J. Keck, A. L. Rigatti, A. W. Schmid, A. Kozlov, and T. Z. Kosc, "Thin-Film Design for Multilayer Diffraction Gratings."

J. B. Oliver, A. L. Rigatti, J. D. Howe, J. Keck, J. Szczepanski, A. W. Schmid, S. Papernov, A. Kozlov, and T. Z. Kosc, "Thin-Film Polarizers for the OMEGA EP Laser System."

S. Papernov, A. W. Schmid, A. L. Rigatti, J. B. Oliver, and J. D. Howe, "Damage Behavior of HfO_2 Monolayer Film Containing Gold Nanoparticles as Artificial Absorbing Defects."

K. L. Marshall, A. Trajkovska-Petkoska, T. Z. Kosc, and S. D. Jacobs, "Polymer Cholesteric Liquid Crystal (PCLC) Flake/Fluid Host Suspensions: A Novel Electro-Optical Medium for Reflective Color Display Applications," Eurodisplay 2005, Edinburgh, Scotland, 19–22 September 2005.

The following presentations were made at the 5th International Laser Operations Workshop, Livermore, CA, 20–22 September 2005:

M. J. Bonino, "Fielding Targets to Support OMEGA Experiments."

B. Kruschwitz, "High-Energy Capability for the OMEGA Laser Facility."

S. J. Loucks, "Laboratory for Laser Energetics Overview."

S. F. B. Morse, "Activation Operations Plan: OMEGA EP."

G. Pien, "Shot Specification Input Flow, Operational Use, and Lead Time Requirements."

K. A. Thorp, "OMEGA Availability and Experimental Effectiveness Data Collection and Analysis to Improve System Performance."

M. Bobeica, R. Q. Gram, and D. R. Harding, "An Experimental Method for Measuring the Response of a Target to the Thermal Environment of the Fusion Reaction Chamber," IEEE/NPSS Symposium on Fusion Engineering, Knoxville, TN, 26–29 September 2005.