
Publications and Conference Presentations

Publications

- G. P. Agrawal and D. N. Maywar, "Semiconductor Optical Amplifiers with Bragg Gratings," in *Nonlinear Photonic Crystals*, edited by R. E. Slusher and B. J. Eggleton, Springer Series in Photonics, Vol. 10 (Springer-Verlag, Berlin, 2003), Chap. 13, pp. 285–300.
- G. Chen, Y. Du, S. Wang, A. E. Marino, L. L. Gregg, S. R. Arrasmith, and S. D. Jacobs, "Effect of SnO on Chemical Durability of Phosphate Glasses," *Glass Technol.* **43C**, 97 (2002).
- Y. Geng, S. W. Culligan, A. Trajkovska, J. U. Wallace, and S. H. Chen, "Monodisperse Oligofluorenes Forming Glassy-Nematic Films for Polarized Blue Emission," *Chem. Mater.* **15**, 542 (2003).
- V. Yu. Glebov, C. Stoeckl, T. C. Sangster, D. D. Meyerhofer, P. B. Radha, S. Padalino, L. Baumgart, R. Coburn, and J. Fuschino, "Carbon Activation Diagnostic for Tertiary Neutron Measurements," *Rev. Sci. Instrum.* **74**, 1717 (2003).
- O. V. Gotchev, P. A. Jaanimagi, J. P. Knauer, F. J. Marshall, D. D. Meyerhofer, N. Bassett, and J. B. Oliver, "High-Throughput, High-Resolution, Kirkpatrick–Baez Microscope for Advanced Streaked Imaging of ICF Experiments on OMEGA," *Rev. Sci. Instrum.* **74**, 2178 (2003).
- Q. Guo, X. Teng, S. Rahman, and H. Yang, "Patterned Langmuir–Blodgett Films of Monodisperse Nanoparticles of Iron Oxide Using Soft Lithography," *J. Am. Chem. Soc.* **125**, 630 (2003).
- R. D. Petrasso, J. A. Frenje, C. K. Li, F. H. Séguin, J. R. Rygg, B.-E. Schwartz, S. Kurebayashi, P. B. Radha, C. Stoeckl, J. M. Soures, J. A. Delettrez, V. Yu. Glebov, D. D. Meyerhofer, and T. C. Sangster, "Measuring Implosion Dynamics through ρR Evolution in Inertial Confinement Fusion Experiments," *Phys. Rev. Lett.* **90**, 095002 (2003).
- F. H. Séguin, J. A. Frenje, C. K. Li, D. G. Hicks, S. Kurebayashi, J. R. Rygg, B.-E. Schwartz, R. D. Petrasso, S. Roberts, J. M. Soures, D. D. Meyerhofer, T. C. Sangster, J. P. Knauer, C. Sorce, V. Yu. Glebov, C. Stoeckl, T. W. Phillips, R. J. Leeper, K. Fletcher, and S. Padalino, "Spectrometry of Charged Particles from Inertial Confinement Fusion Plasmas," *Rev. Sci. Instrum.* **74**, 975 (2003).
- V. A. Smalyuk, S. B. Dumanis, F. J. Marshall, J. A. Delettrez, D. D. Meyerhofer, S. P. Regan, T. C. Sangster, B. Yaakobi, and J. A. Koch, "Radial Structure of Shell Modulations Near Peak Compression of Spherical Implosions," *Phys. Plasmas* **10**, 830 (2003).
- C. Stoeckl, V. Yu. Glebov, S. Roberts, T. C. Sangster, R. A. Lerche, R. L. Griffith, and C. Sorce, "Ten-Inch Manipulator-Based Neutron Temporal Diagnostic for Cryogenic Experiments on OMEGA," *Rev. Sci. Instrum.* **74**, 1713 (2003).
- F.-Y. Tsai, D. R. Harding, S. H. Chen, and T. N. Blanton, "High-Permeability Fluorinated Polyimide Microcapsules by Vapor-Deposition Polymerization," *Polymer* **44**, 995 (2003).
- B. Yaakobi, F. J. Marshall, T. R. Boehly, R. P. J. Town, and D. D. Meyerhofer, "Extended X-Ray Absorption Fine Structure Experiments Using a Laser-Imploded Target as a Radiation Source," *J. Opt. Soc. Am. B* **20**, 238 (2003).
- X. Zheng, Y. Xu, R. Sobolewski, R. Adam, M. Mikulics, M. Siegel, and P. Kordos, "Femtosecond Response of a Free-standing LT-GaAs Photoconductive Switch," *Appl. Opt.* **42**, 1726 (2003).

Forthcoming Publications

A. Babushkin, M. J. Harvey, and M. D. Skeldon, "The Output Signal-to-Noise Ratio of a Nd:YLF Regenerative Amplifier," to be published in *Applied Optics*.

G. N. Gol'tsman, K. Smirnov, P. Kouminov, B. Voronov, N. Kaurova, V. Drakinsky, J. Zhang, A. Verevkin, and R. Sobolewski, "Fabrication of Nanostructured Superconducting Single-Photon Detectors," to be published in *IEEE Transactions on Applied Superconductivity*.

V. N. Goncharov, J. P. Knauer, P. W. McKenty, T. C. Sangster, S. Skupsky, R. Betti, R. L. McCrory, and D. D. Meyerhofer, "Improved Performance of Direct-Drive ICF Target Designs with Adiabatic Shaping Using an Intensity Picket," to be published in *Physics of Plasmas* (invited).

C. K. Li, F. H. Séguin, J. A. Frenje, S. Kurebayashi, J. R. Rygg, B. E. Schwartz, R. D. Petrasso, R. L. Keck, J. A. Delettrez, P. W. McKenty, F. J. Marshall, D. D. Meyerhofer, P. B. Radha, T. C. Sangster, J. M. Soures, and C. Stoeckl, "Capsule Areal-Density Asymmetries and Time Evolution Inferred from 14.7-MeV Proton Line Structure in OMEGA D³He Implosions," to be published in *Physics of Plasmas* (invited).

D. L. McCrorey, R. C. Mancini, V. A. Smalyuk, S. P. Regan, and B. Yaakobi, "Spectroscopic Determination of Compressed-Shell Conditions in OMEGA Implosions Based on Ti K-Shell Line Absorption Analysis," to be published in *Review of Scientific Instruments*.

R. L. McCrory, D. D. Meyerhofer, R. Betti, T. R. Boehly, R. S. Craxton, T. J. B. Collins, J. A. Delettrez, R. Epstein, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, R. L. Keck, J. H. Kelly, J. P. Knauer, S. J. Loucks, L. Lund, J. A. Marozas, P. W. McKenty, F. J. Marshall, S. F. B. Morse, P. B. Radha, S. P. Regan, S. Roberts, W. Seka, S. Skupsky, V. A. Smalyuk, C. Sorce, C. Stoeckl, J. M. Soures, R. P. J. Town, B. Yaakobi, J. A. Frenje, C. K. Li, R. D. Petrasso, F. H. Séguin, K. Fletcher, S. Padalino, C. Freeman, and C. Sangster, "Direct-Drive Inertial Confinement Fusion Research at the Laboratory for Laser Energetics," to be published in the proceedings of *Current Trends in International Fusion Research: A Review*.

R. L. McCrory, D. D. Meyerhofer, S. J. Loucks, S. Skupsky, R. E. Bahr, R. Betti, T. R. Boehly, R. S. Craxton, T. J. B. Collins, J. A. Delettrez, W. R. Donaldson, R. Epstein, J. A. Frenje, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, P. A. Jaanimagi, R. L. Keck, J. H. Kelly, T. J. Kessler, J. P. Knauer, C. K. Li, L. D. Lund, J. A. Marozas, P. W. McKenty, F. J. Marshall, S. F. B. Morse, R. D. Petrasso, P. B. Radha, S. P. Regan, S. Roberts, T. C. Sangster, F. H. Séguin, W. Seka, V. A. Smalyuk, C. Sorce, J. M. Soures, C. Stoeckl, R. P. J. Town, B. Yaakobi, and J. D. Zuegel, "Progress in Direct-Drive Inertial Confinement Fusion Research at the Laboratory for Laser Energetics," to be published in *Nuclear Fusion*.

S. Papernov and A. W. Schmid, "Damage Behavior of SiO₂ Thin Films Containing Gold Nanoparticles Lodged on a Pre-determined Distance from the Film Surface," to be published in the *Proceedings of the XXXIV Annual Symposium on Optical Materials for High Power Lasers*.

T. C. Sangster, J. A. Delettrez, R. Epstein, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, J. P. Knauer, R. L. Keck, J. D. Kilkenny, S. J. Loucks, L. D. Lund, R. L. McCrory, P. W. McKenty, F. J. Marshall, D. D. Meyerhofer, S. F. B. Morse, S. P. Regan, P. B. Radha, S. Roberts, W. Seka, S. Skupsky, V. A. Smalyuk, C. Sorce, J. M. Soures, C. Stoeckl, K. A. Thorp, J. A. Frenje, C. K. Li, R. D. Petrasso, F. H. Séguin, K. A. Fletcher, S. Padalino, C. Freeman, N. Izumi, J. A. Koch, R. A. Lerche, M. J. Moran, T. W. Phillips, and G. J. Schmid, "Direct-Drive Cryogenic Target Implosion Performance on OMEGA," to be published in *Physics of Plasmas* (invited).

V. A. Smalyuk, J. A. Delettrez, V. Yu. Glebov, V. N. Goncharov, J. P. Knauer, F. J. Marshall, D. D. Meyerhofer, P. B. Radha, S. P. Regan, T. C. Sangster, S. Skupsky, J. M. Soures, C. Stoeckl, R. P. J. Town, B. Yaakobi, J. A. Frenje, C. K. Li, R. D. Petrasso, F. H. Séguin, D. L. McCrorey, and R. C. Mancini, "Hydrodynamic Growth of Shell Modulations in the Deceleration Phase of Spherical Direct-Drive Implosions," to be published in *Physics of Plasmas* (invited).

V. A. Smalyuk, P. B. Radha, J. A. Delettrez, V. Yu. Glebov, V. N. Goncharov, D. D. Meyerhofer, S. P. Regan, S. Roberts, T. C. Sangster, J. M. Soures, C. Stoeckl, J. A. Frenje, C. K. Li, R. D. Petrasso, and F. H. Séguin, "Time-Resolved Areal-Density Measurements with Proton Spectroscopy in Spherical Implosions," to be published in *Physical Review Letters*.

R. Sobolewski, A. Verevkin, G. N. Gol'tsman, A. Lipatov, and K. Wilsher, "Ultrafast Superconducting Single-Photon Optical Detectors and Their Applications," to be published in *IEEE Transactions on Applied Superconductivity*.

A. Sunahara, J. A. Delettrez, C. Stoeckl, R. W. Short, and S. Skupsky, "Time-Dependent Electron-Thermal-Flux Inhibition in Direct-Drive Laser Implosion," to be published in *Physical Review Letters*.

F.-Y. Tsai, T. N. Blanton, D. R. Harding, and S. H. Chen, "Temperature Dependency of the Properties of Vapor-Deposited Polyimide," to be published in the *Journal of Applied Physics*.

Y. Xu, M. Khafizov, A. Plecenik, P. Kús, L. Satrapinsky, and R. Sobolewski, "Femtosecond Optical Characterization of MgB₂ Superconducting Thin Films," to be published in *IEEE Transactions on Applied Superconductivity*.

J. Zhang, W. Slysz, A. Verevkin, R. Sobolewski, O. Okunev, G. Chulkova, A. Lipatov, and G. N. Gol'tsman, "Time Delay of the Resistive-State Formation in Superconducting NbN Stripes Excited by Single Optical Photons," to be published in *Physical Review B*.

J. Zhang, W. Slysz, A. Verevkin, O. Okunev, G. Chulkova, A. Korneev, A. Lipatov, G. N. Gol'tsman, and R. Sobolewski, "Response-Time Characterization of NbN Superconducting Single-Photon Detectors," to be published in *IEEE Transactions on Applied Superconductivity*.

X. Zheng, S. Wu, R. Sobolewski, R. Adam, M. Mikulics, P. Kordos, and M. Siegel, "Electro-Optic Sampling System with a Single-Crystal 4-N, N-Dimethylamino-4'-N'-Methyl-Stilbazolium Tosylate Sensor," to be published in *Applied Physics Letters*.

Conference Presentations

S. D. Jacobs, "Innovations in Polishing of Precision Optics," EOS 2003 International Workshop on Extreme Optics and Sensors, Tokyo, Japan, 14–17 January 2003 (invited).

J. Li, W. R. Donaldson, and T. Y. Hsiang, "Very Fast Metal-Semiconductor-Metal Ultraviolet Photodetectors on GaN with Submicron Finger Width," *Ultrafast Electronics and Optoelectronics*, Washington, DC, 15–17 January 2003.

I. A. Begishev, V. Bagnoud, M. J. Guardalben, L. J. Waxer, J. Puth, and J. D. Zuegel, "Optimization of an Optical Parametric Chirped-Pulse Amplification System for the OMEGA EP Laser System," 2003 *Advanced Solid-State Photonics*, San Antonio, TX, 2–5 February 2003.

The following presentations were made at the 5th International Workshop on Laser Plasma Interaction Physics, Banff, Alberta, Canada, 19–22 February 2003:

W. Seka, H. Baldis, S. Depierreux, R. S. Craxton, S. P. Regan, C. Stoeckl, and R. W. Short, "Experimental Observations of the Landau Cutoff for Electron Plasma Waves Driven by the TPD Instability."

R. W. Short, "On the Role of Electron-Acoustic Waves in Two-Plasmon Decay."

C. Dorrer and D. N. Maywar, "800-GHz RF Spectrum Analyzer for Optical Signals," *Optical Fiber Communication*, Atlanta, GA, 23–28 March 2003.

R. L. McCrory, D. D. Meyerhofer, S. J. Loucks, S. Skupsky, R. E. Bahr, R. Betti, T. R. Boehly, R. S. Craxton, T. J. B. Collins, J. A. Delettrez, W. R. Donaldson, R. Epstein, J. A. Frenje, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, P. A. Jaanimagi, R. L. Keck, J. H. Kelly, T. J. Kessler, J. D. Kilkenny, J. P. Knauer, C. K. Li, L. D. Lund, J. A. Marozas, P. W. McKenty, F. J. Marshall, S. F. B. Morse, R. D. Petrasso, P. B. Radha, S. P. Regan, S. Roberts, T. C. Sangster, F. H. Séguin, W. Seka, V. A. Smalyuk, J. M. Soures, C. Stoeckl, K. A. Thorp, B. Yaakobi, and J. D. Zuegel, "Direct-Drive Inertial Fusion Research at the University of Rochester's Laboratory for Laser Energetics: A Review," 5th Symposium of the Current Trends in International Fusion Research: A Review, Washington, DC, 24–28 March 2003.

The following presentations were made at the Workshop on Experience in the Management of Wastes from Fusion Facilities, Abington, United Kingdom, 25–26 March 2003:

W. T. Shmayda, "Recovery and Enrichment of Tritium from Organic and Aqueous Liquid Waste Streams."

W. T. Shmayda, "Metal Decontamination."

S. G. Lukishova, A. W. Schmid, A. J. McNamara, R. W. Boyd, and C. R. Stroud, "Dye-Doped Cholesteric-Liquid-Crystal Single Photon Source," NIST Workshop on Single Photon Detectors, Applications, and Measurement Methods, Gaithersburg, MD, 31 March–1 April 2003.