

PUBLICATIONS AND CONFERENCE PRESENTATIONS

Publications

G. J. Linford, B. C. Johnson, J. S. Hildum, W. E. Martin, K. Snyder, R. D. Boyd, W. L. Smith, C. L. Vercimak, D. Eimerl, J. T. Hunt, W. Seka, R. S. Craxton, S. D. Jacobs, L. D. Lund, R. L. McCrory, and J. M. Soures. "Large Aperture Harmonic Conversion Experiments at LLNL: Comments," *Appl. Optics* **22**, 1957-1958 (1983).

J. Delettrez, A. Entenberg, Y. Gazit, D. Shvarts, J. Virmont, T. Bristow, J. M. Soures, and A. Bennish, "Time Decay of Electric Fields Probed by Charged Reaction Products in Six Beam Symmetrical Implosion Experiments," *Nucl. Fusion* **23**, 1135-1141 (1983).

P. A. Jaanimagi and M. C. Richardson, "Streak Camera for Picosecond X-Ray Diagnostics," *Rev. Sci. Instrum.* **54**, 1095-1099 (1983).

J. A. Abate and R. Roides, "Spatially Resolved Absorption and Detection of Microscopic Impurities in Optical Thin Films by Photo-thermal Detection," *J. Phys. (Paris) supplément au n°10*, **44**, C6-497 (1983).

A. Simon, R. W. Short, E. A. Williams, and T. Dewandre, "On the Inhomogeneous Two-Plasmon Instability," *Phys. Fluids* **26**, 3107-3118 (1983).

B. Yaakobi, H. Kim, and J. M. Soures, "Submicron X-Ray Lithography Using Laser Produced Plasma as a Source," *Appl. Phys. Lett.* **43**, 686-688 (1983).

B. Weinstein, T. Orlowski, W. Knox, T. Nordlund, and G. Mourou, "Pico-second Luminescence and Competing Nonradiative Process in As_2S_3 Glass," *Phys. Rev. B* **26**, 4777-4780 (1983).

S. A. Letzring, E. I. Thorsos, W. D. Friedman, W. Seka, and J. E. Rizzo, "An Absolutely Timed X-Ray Streak Camera for Laser Fusion Experiments," *J. Appl. Phys.* **54**, 6302-6306 (1983).

I. Lubezky and A. Lubezky, "Practical Design and Double Layer Anti-Reflective Coatings for High Index Substrates," *Opt. Engineer.* **22**, 753-755 (1983).

W. Knox and L. Forsley, "Data Acquisition System for A Jitter-Free Signal Averaging Streak Camera," ACS Symposium Series No. 236 Multichannel Image Detectors **2**, ACS, 1983.

Forthcoming Publications

S. Skupsky, R. L. McCrory, R. S. Craxton, J. Delettrez, R. Epstein, K. Lee, and C. Verdon, "Uniformity of Energy Deposition for Laser-Driven Fusion," *Laser Interaction and Related Plasma Phenomena*, edited by H. Hora and G. Miley (Plenum Press, New York, 1983, in press).

H. Kim, T. Powers, and J. Mason, "Inertial Fusion Target Fabrication Using Polystyrene Mandrels," accepted for publication by *Journal of Vacuum Science and Technology*.

W. Knox and L. Forsley, "Interactive Programming Applied to a Jitter-Free Signal Averaging Streak Camera," to be published in the *Proceedings on Multichannel Detectors* by the American Chemical Society.

B. Yaakobi, J. Delettrez, R. L. McCrory, R. Marjoribanks, M. C. Richardson, D. Shvarts, S. Skupsky, J. M. Soures, C. Verdon, D. Villeneuve, T. Boehly, R. Hutchison, and S. Letzring, "Thermal Transport Measurements in 1.05- μ m-Laser Irradiation of Spherical Targets," accepted for publication by *Physics of Fluids*.

B. Yaakobi and A. Burek, "Crystal Diffraction Systems for X-Ray Spectroscopy Imaging and Interferometry of Laser Fusion Targets," accepted for publication by *IEEE Journal of Quantum Electronics*.

M. C. Richardson, R. Marjoribanks, S. Letzring, J. Forsyth, and D. Villeneuve, "Spectrally Discriminating Time-Resolved and Space-Resolved X-Ray Plasma Diagnostics," accepted for publication by *IEEE Journal of Quantum Electronics*.

N. S. Murthy and H. Kim, "Molecular Packing in Alkylated and Chlorinated Poly-p-paraxylylenes," accepted for publication by *Polymer*.

D. M. Villeneuve, R. Keck, B. Afeyan, W. Seka, and E. Williams, "Production of Hot Electrons by Two Plasmon Decay Instability in UV Laser Plasma," accepted for publication by *Physics of Fluids*.

M. C. Richardson, S. Skupsky, J. Kelly, L. Iwan, R. Hutchison, R. Peck, R. L. McCrory, and J. M. Soures, "Laser Fusion Target Irradiation Uniformity with the 24-Beam OMEGA Facility," accepted by *SPIE Vol. 380, Proceedings of 1983 Los Alamos Conference on Optics*.

M. C. Richardson, S. A. Letzring, W. Friedman, and G. Gregory, "Time-Resolved X-Ray Photography of Uniformly Irradiated Spherical Targets," accepted by *SPIE Vol. 427, Proceedings of High-Speed Photography, Videography, and Phototonics*, San Diego, CA, 1983.

Conference Presentations

L. P. Forsley, "Real Time Interactive Spectroscopy," presented at the National Forth Convention, Palo Alto, California, October 1983.

J. F. Whitaker and D. Smith, "Electrical Pulse Shaping Using Multiple Solid State Switches," presented at the IEEE Electron Device Conference at the Rochester Institute of Technology, Rochester, New York, October 1983.

R. L. McCrory, "Inertial Fusion Research at the University of Rochester: Progress in Direct Drive," presented at the International Atomic Energy Agency (IAEA) Technical Committee Meeting on Advances in Inertial Confinement Fusion, Kobe, Japan, November 1983.

J. Abate, A. Schmid, M. Guardalben, D. Smith, and S. Jacobs, "Characterization of Micron-Sized, Optical Coating Defects by Photo-thermal Deflection Microscopy," presented at the Fifteenth Annual Symposium on Optical Materials for High Power Lasers, Boulder, Colorado, November 1983.

The following presentations were made at the Annual Meeting of the Optical Society of America, New Orleans, Louisiana, October, 1983:

T. G. Dziura and D. G. Hall, "A Semiclassical Theory of Bistable Semiconductor Lasers."

R. Frankel and J. M. Forsyth, "Observation of Photostructural Activity in Bacteriorhodopsin Using a Laser Driven X-Ray Source."

S. D. Jacobs and K. A. Cerqua, "Liquid Crystal Laser Blocking Filter."

J. H. Kelly, "Beam Profile Control in the OMEGA Laser System."

L. D. Lund, "Active Mirror Nd:Glass Amplifiers" (invited).

The following presentations were made at the 1983 Nuclear Science Symposium, San Francisco, California, October 1983:

G. Mourou, J. Valdmanis, and S. Williamson, "New Approaches to Electrical Transient Sampling Systems with Picosecond Resolution" (invited).

G. Mourou, W. Knox, and S. Williamson, "Picosecond High Power Switching and Applications" (invited).

The following presentations were made at the Thirtieth National Symposium of the American Vacuum Society, Boston, Massachusetts, November 1983:

H. Kim, T. Powers, and J. Mason, "Inertial Fusion Target Fabrication Using Polystyrene."

B. Yaakobi, H. Kim, and J. M. Soures, "Sub-Micron X-Ray Lithography Using UV-Laser Produced Plasma as a Source."

The following presentations were made at the Twenty-Fifth Annual Meeting of the APS Division of Plasma Physics, Los Angeles, California, November 1983:

B. B. Afeyan, E. A. Williams, R. W. Short, and A. Simon, "Improvements to the Linear Theory of the Absolute S.R.S. Instability."

T. Boehly, L. M. Goldman, W. Seka, and R. S. Craxton, "Hydrodynamic Efficiency of Planar Targets Irradiated with 0.35- μm Laser Light."

R. S. Craxton and R. L. McCrory, "Thermal Self-Focusing in Laser-Plasmas with Self-Consistent Hydrodynamics."

J. Delettrez, R. S. Craxton, R. Epstein, O. Barnouin, M. C. Richardson, J. M. Soures, and B. Yaakobi, "Simulation of the Thermal Electron Transport Experiments in Spherical Irradiation at $\lambda=0.35 \mu\text{m}$."

R. Epstein, S. Skupsky, J. Delettrez, and B. Yaakobi, "Spectral Signatures of Non-Maxwellian and Non-LTE Effects in Thermal Transport Experiments."

R. L. Keck, M. C. Richardson, W. Seka, J. M. Soures, and R. Hutchison, "Absorption and Hot Electron Generation for UV Laser Spherically Irradiated Targets."

S. A. Letzring, M. C. Richardson, J. Delettrez, and G. Gregory, "Time-Resolved X-Ray Photography of Imploding Large Aspect Ratio Targets."

R. S. Marjoribanks, M. C. Richardson, J. Delettrez, and S. A. Letzring, "Time-Resolved X-Ray Spectrometry Studies of Transport in Symmetric Layered Targets."

C. McKinstrie and A. Simon, "Non-Linear Saturation of the Stimulated Raman Instability."

D. Quick, S. P. Saraff, S. A. Letzring, and M. C. Richardson, "Thermal ($<10 \text{ keV/Z}$) and Non-Thermal ($>10 \text{ keV/Z}$) Ion Measurements of 0.35- μm Laser Produced Plasmas."

M. C. Richardson, J. Delettrez, R. L. McCrory, W. Seka, S. Skupsky, J. M. Soures, C. P. Verdon, B. Yaakobi, S. A. Letzring, and R. L. Hutchison, "Short Wavelength Direct Drive Laser Fusion Experiments."

M. C. Richardson, P. L. Hagelstein, M. J. Eckart, J. M. Forsyth, M. Gerrassimenka, and J. M. Soures, "Photoionization X-Ray Laser Studies in Neon."

S. P. Sarraf, S. A. Letzring, and M. C. Richardson, "Thermal ($<10 \text{ keV/Z}$) and Non-Thermal ($>10 \text{ keV/Z}$) Ion Measurements of 0.35- μm Laser Produced Plasmas."

W. Seka, "Single Beam Interaction Experiments at 0.35- μm at the University of Rochester" (invited).

W. Seka, R. Boni, L. M. Goldman, M. C. Richardson, K. Tanaka, R. Short, J. M. Soures, and E. A. Williams, "Half-Integer Harmonic Radiation from Laser Plasmas."

R. W. Short and E. A. Williams, "Underdense Parametric Phenomena in Filaments."

S. Skupsky, J. Delettrez, and C. P. Verdon, "The Effect of Thermal Flux Saturation on Lateral Heat Transport-Multigroup Analysis."

J. M. Soures, M. Dunn, R. Hutchison, L. Iwan, W. Lampeter, L. D. Lund, D. Quick, M. C. Richardson, W. Seka, and S. Skupsky, "Irradiation Uniformity of Multi-Beam, Short-Wavelength, Direct-Drive Laser Facility."

M. Strauss, G. Hazak, D. Shvarts, and R. S. Craxton, "Magnetic-Field Effects on Electron Heat Transport in Laser-Produced Plasma Physics."

K. Swartz, E. A. Williams, and J. R. Albritton, "Heat Front Penetration by a Non-Maxwellian Electron Tail."

K. Tanaka, L. M. Goldman, M. C. Richardson, W. Seka, R. W. Short, J. M. Soures, and E. A. Williams, "Evidence of Parametric Instabilities in Second Harmonic Spectra from Laser ($1\mu\text{m}$) Produced Plasma."

E. A. Williams, "Stimulated Emission From Convectively Unstable Inhomogeneous Plasma."

B. Yaakobi, O. Barnouin, J. Delettrez, L. M. Goldman, R. L. McCrory, M. C. Richardson, and J. M. Soures, "Thermal Transport and Preheat Measurements in Spherical Irradiation at $\lambda=0.35\mu\text{m}$."

The following presentations were made at the 1983 IEEE International Electron Devices Meeting, Washington, D.C., December 1983:

G. Mourou and J. Valdmanis, "Picosecond and Subpicosecond Electronics for Measurements of Future High-Speed Electronic Devices."

J. A. Valdmanis, G. Mourou, and C. W. Gabel, "Subpicosecond Electrical Sampling."

The following presentations were made at the Tenth Symposium on Fusion Engineering, Philadelphia, Pennsylvania, December 1983:

L. Lund, S. Skupsky, and L. M. Goldman, "Uniformity Analysis for a Direct Drive Laser Fusion Reactor."

J. M. Soures, R. J. Hutchison, S. D. Jacobs, L. D. Lund, R. L. McCrory, and M. C. Richardson, "OMEGA: A Short-Wavelength Laser for Fusion Experiments" (invited).

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