

# PUBLICATIONS AND CONFERENCE PRESENTATIONS

## Publications

H. Kim, T. F. Powers, and J. F. Mason, "Inertial Fusion Target Fabrication Using Polystyrene Mandrels," *J. Vac. Sci. Technol. A* **2**, 649-652 (1984).

M. C. Richardson, S. A. Letzring, W. Friedman, and G. Gregory, "Time-Resolved X-Ray Photography of Uniformly Irradiated Spherical Targets," *SPIE Proceedings, Vol. 427, High Speed Photography, Videography, and Phototonics*, 91-96 (1984).

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," *SPIE Vol. 380, Proceedings of the Los Alamos Conference on Optics '83*, 473-478 (1984).

R. W. Short, W. Seka, K. Tanaka, and E. A. Williams, "Two-Plasmon Decay and Three-Halves Harmonic Generation in Filaments in a Laser-Produced Plasma," *Phys. Rev. Lett.* **52**, 1496-1499 (1984).

B. Yaakobi, H. Kim, and J. M. Soures, "Summary Abstract: Submicron X-Ray Lithography Using Laser Produced Plasma as a Source," *J. Vac. Sci. Technol. A* **2**, 367-368 (1984).

S. Williamson, G. Mourou, and J. C. M. Li, "Time-Resolved Laser-Induced Phase Transformation in Aluminum," *Phys. Rev. Lett.* **52**, 2364-2367 (1984).

## Forthcoming Publications

J. A. Abate, A. W. Schmid, M. J. Guardalben, D. J. Smith, and S. D. Jacobs, "Characterization of Micron-Sized, Optical Coating Defects by Photothermal Deflection Microscopy," to be published in *Proceedings of the 15th Annual Symposium on Optical Materials for High Power Lasers*.

W. E. Behring, J. F. Seely, S. Goldsmith, L. Cohen, M. C. Richardson, and V. Feldman, "Transitions of the Type 2s-2p in Highly Ionized Zn, Ga, and Ge," accepted for publication by *Journal of the Optical Society of America*.

R. S. Craxton and R. L. McCrory, "Hydrodynamics of Thermal Self-Focusing in Laser Plasmas," accepted for publication by *Journal of Applied Physics*.

J. M. Forsyth and R. D. Frankel, "An Experimental Facility for Nano-second Time-Resolved, Low Angle X-Ray Diffraction Experiments Using a Laser-Produced Plasma Source," accepted for publication by *Review of Scientific Instruments*.

R. Keck, L. M. Goldman, M. Richardson, W. Seka, and K. Tanaka, "Observation of High Energy Electron Distributions in Laser Plasmas," accepted for publication by *Physical Review*.

S. Kacenjar, L. M. Goldman, A. Entenberg, and S. Skupsky, "<math>\rho R</math> Measurements in Laser Produced Implosions Using Elastically Scattered Ions," accepted for publication by *Journal of Applied Physics*.

E. L. Lindman and K. Swartz, "Some Applications of the Hot Electron Transport Equation," to be published in the 1983 *Proceedings for the CECAM Workshop on 'The Flux Limiter and Heat Flow Instabilities in Laser-Fusion Plasmas.'*

G. A. Mourou and K. E. Meyer, "Subpicosecond Electro-Optic Sampling Using Coplanar Strip Transmission Lines," accepted for publication by *Applied Physics Letters*.

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

A. Schmid, D. Smith, M. Guardalben, and J. Abate, "Photothermal-Deflection Analysis of UV Optical Thin Films," accepted for publication by *SPIE Volume 476, Technical Symposium East—Eximer Lasers, Their Applications and New Frontiers in Lasers*.

W. Seka, E. A. Williams, L. M. Goldman, R. W. Short, and K. Tanaka, "Convective Stimulated Raman Scattering Instability in UV Laser Plasmas," accepted for publication by *Physics of Fluids*.

J. M. Soures, review of *The High-Power Iodine Laser*, by G. Brederlow, E. Fill, and K. J. Witte, accepted for publication by *Journal of Quantum Electronics*.

K. Tanaka, W. Seka, L. M. Goldman, M. C. Richardson, R. W. Short, J. M. Soures, and E. A. Williams, "Evidence of Parametric Instabilities in Second Harmonic Spectra from 1054 nm Laser-Produced Plasmas," accepted for publication by *Physics of Fluids*.

## Conference Presentations

R. L. Keck, "Short Wavelength Laser-Plasma Interaction Experiments in a Spherical Geometry," presented at the IEEE International Conference on Plasma Science, St. Louis, Missouri, May 1984 (invited talk).

A. Schmid, D. Smith, M. Guardalben, and J. Abate, "Photothermal-Deflection Analysis of UV Optical Thin Films," presented at the SPIE Technical Symposium East—Eximer Lasers, Their Applications and New Frontiers in Lasers, Alexandria, Virginia, May 1984.

S. D. Jacobs and A. W. Schmid, "Thin Film Defects and Laser Induced Damage," presented at the DARPA/DEO Space Beam Control Technology Workshop, McLean, Virginia, May 1984.

W. Seka, "Laser-Plasma Interaction Experiments at 351 nm," presented at the Canadian Association of Physicists, Sherbrooke Conference, Quebec, Canada, June 1984.

A. Simon and R. Short, "A New Model of Raman Spectra in Laser Produced Plasma," presented at the International Conference on Plasma Physics, Lausanne, Switzerland, June 1984.

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The following presentations were made at the Fourteenth Annual Anomalous Absorption Conference, Charlottesville, Virginia, May 1984:

O. Barnouin, J. Delettrez, L. M. Goldman, R. Marjoribanks, M. C. Richardson, J. M. Soures, and B. Yaakobi, "Thermal Transport Measurements in Six-Beam, UV Irradiation of Spherical Targets."

R. S. Craxton and R. L. McCrory, "Thermal Self-Focusing at Oblique Incidence."

J. Delettrez, R. Epstein, M. C. Richardson, and B. Yaakobi, "Limits on the Flux Limiter and Preheat from Simulations of Experiments on the OMEGA System at 1054 nm and 351 nm."

R. Epstein, S. Skupsky, J. Delettrez, and B. Yaakobi, "Non-LTE Considerations in Spectral Diagnostics of Thermal Transport and Implosion Experiments."

L. M. Goldman, W. Seka, K. Tanaka, A. Simon, and R. Short, "Observation of Scattered Light Between  $\omega/2$  and  $3\omega/2$  in Short Wavelength Laser Produced Plasmas."

R. S. Marjoribanks, M. C. Richardson, B. Yaakobi, O. Barnouin, J. Delettrez, R. Epstein, and W. Beich, "Time-Resolved Measurements of the Ionization Front in Transport Studies."

M. C. Richardson, R. Keck, B. Yaakobi, S. Letzring, J. Delettrez, C. Verdon, J. M. Soures, and G. Gregory, "Irradiation of Spherical Shell Targets with Six UV OMEGA Beams."

W. Seka, L. M. Goldman, K. Tanaka, B. Afeyan, A. Simon, and R. Short, "How Useful are Odd-Integer Half-Harmonics?"

R. W. Short and K. Swartz, "Localized Heat Flow Instabilities in Laser Plasmas."

A. Simon, C. J. McKinstrie, and E. A. Williams, "Nonlinear Saturation of the Parametric Instability for Three Coupled Oscillators."

A. Simon and R. W. Short, "A New Model of Raman Spectra in Laser Produced Plasma."

S. Skupsky and J. Delettrez, "The Effect of Thermal Flux Saturation on Lateral Heat Transport — a Multi-Group Analysis."

K. Swartz and R. W. Short, "Nonlocal Heat Transport by Non-Maxwellian Electrons."

K. Tanaka, B. Boswell, R. S. Craxton, L. M. Goldman, M. C. Richardson, W. Seka, R. W. Short, and J. M. Soures, "Brillouin Scattering in Underdense UV Laser-Produced Plasmas."

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The following presentations were made at the Topical Meeting on Ultrafast Phenomena, Monterey, California, June 1984:

K. E. Meyer and G. A. Mourou, "Subpicosecond Electro-Optic Sampling Using Coplanar Strip Transmission Lines" (invited talk).

T. Norris, T. Sizer, and G. Mourou, "Generation of 90 fs Pulses with a CPM Laser Pumped by a Frequency-Doubled CW Mode-Locked Nd:YAG."

S. Williamson, G. Mourou, and J. C. M. Li, "Time-Resolved Laser-Induced Phase Transformation in Aluminum."

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The following presentations were made at the Conference on Lasers and Electro-Optics, Anaheim, California, June 1984:

W. Beich, M. Dunn, R. Hutchison, L. Iwan, S. Jacobs, L. Lund, R. Peck, D. Quick, M. C. Richardson, F. Rister, and J. M. Soures, "Performance Characterization of the OMEGA Short-Wavelength Laser Facility."

L. Iwan, D. Quick, W. Seka, and K. Walsh, "A System to Measure the Output Energy of a Frequency-Tripled Neodymium Glass Laser."

J. Kelly and D. Smith, "Beam Profile Control on the OMEGA Laser System."

T. J. Kessler and J. M. Forsyth, "Holographic Recording of a Pulsed High Power Laser."

K. E. Meyer and G. A. Mourou, "Subpicosecond Electro-Optic Sampling Using Coplanar Strip Transmission Lines."

M. C. Richardson, S. Skupsky, J. M. Soures, W. Lampeter, S. Tomer, R. Hutchison, M. Dunn, and W. Beich, "Irradiation Uniformity with Multiple Beam UV Irradiation Facility."

J. F. Whitaker, T. Norris, and G. Mourou, "Pulse Shaping in Dispersive Transmission Lines."

I. N. Duling, P. Bado, S. Williamson, G. Mourou, and T. Baer, "A Stable Kilohertz Nd:YAG Regenerative Amplifier."

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The following presentations were made at the Thirteenth International Conference on Quantum Electronics, Anaheim, California, June 1984:

M. C. Richardson, O. Barnouin, R. S. Craxton, J. Delettrez, R. L. Keck, R. S. Marjoribanks, W. Seka, J. M. Soures, and B. Yaakobi, "Absorption Physics at 351 nm in Spherical Geometry."

W. Seka, R. W. Short, L. M. Goldman, S. Letzring, M. C. Richardson, J. M. Soures, K. Tanaka, R. S. Craxton, J. Delettrez, R. Boni, and D. Quick, "Half-Integer Harmonic Emission from Laser Plasmas as Coronal Temperature Diagnostic."

T. Sizer II and M. G. Raymer, "Picosecond Optical Collisions."

K. Tanaka, B. Boswell, R. S. Craxton, L. M. Goldman, M. C. Richardson, W. Seka, R. W. Short, and J. M. Soures, "Self-Focusing in Underdense UV Laser-Produced Plasmas."

S. Williamson, G. Mourou, and J. C. M. Li, "Time-Resolved Laser-Induced Phase Transformation in Aluminum."

T. Norris, T. Sizer, and G. Mourou, "Generation of 90 fs Pulses with a CPM Laser Pumped by a Frequency-Doubled CW Mode-Locked Nd:YAG."

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