

# PUBLICATIONS AND CONFERENCE PRESENTATIONS

## Publications

J. F. Seely, C. M. Brown, U. Feldman, M. Richardson, B. Yaakobi, and W. E. Behring, "Evidence for Gain on the C VI 182 Å Transition in a Radiation-Cooled Selenium/Formvar Plasma," *Opt. Commun.* **54**, 289–294 (1985).

Georg F. Albrecht, Mark T. Grunersen, and David Smith, "An Active Mode-Locked Q-Switched Oscillator Using Nd<sup>3+</sup> Doped Glass as the Active Medium," *IEEE J. Quantum Electron.* **21**, 1189–2914 (1985).

B. L. Henke and P. A. Jaanimagi, "Two-Channel, Elliptical Analyzer Spectrograph for Absolute, Time-Resolving Time-Integrating Spectrometry of Pulsed X-Ray Sources in the 100–10,000-eV Region," *Rev. Sci. Instrum.* **56**, 1537–1552 (1985).

R. L. Schrieffer, J. L. Emmett, R. L. McCrory, D. Giovanielli, S. Bodner, and G. Yonas, "Progress and Directions in Inertial Fusion," *J. Fusion Energy* **4**, 115–128, (1985).

R. L. McCrory, O. Barnouin, R. S. Craxton, J. Delettrez, R. Epstein, L. Forsley, L. M. Goldman, R. J. Hutchison, R. L. Keck, H. Kim, W. Lampeter, S. A. Letzring, R. S. Marjoribanks, P. McKenty, M. C. Richardson, W. Seka, R. W. Short, A. Simon, S. Skupsky, J. M. Soares, K. Swartz, K. Tanaka, C. Verdon, and B. Yaakobi, "Short Wavelength, Direct Drive Laser Fusion Experiments at the Laboratory for Laser Energetics," in *Plasma Physics and Controlled Nuclear Fusion Research* (IAEA, Vienna, 1984), pp. 37–48.

C. J. McKinstrie and A. Simon, "Nonlinear Saturation of Stimulated Raman Scattering in a Collisional Homogeneous Plasma," *Phys. Fluids* **28**, 2602-2613 (1985).

W. Seka, B. B. Afeyan, R. Boni, L. M. Goldman, R. W. Short, and K. Tanaka, "Diagnostic Value of Odd-Integer Half-Harmonic Emission from Laser-Produced Plasmas," *Phys. Fluids* **28**, 2570-2579 (1985).

P. Bado and M. Bouvier, "Multikilohertz Pockels Cell Driver," *Rev. Sci. Instrum.* **56**, 1744-1745 (1985).

K. A. Tanaka, B. Boswell, R. S. Craxton, L. M. Goldman, F. Guglielmi, W. Seka, R. W. Short, and J. M. Soures, "Brillouin Scattering, Two-Plasmon Decay, and Self-Focusing in Underdense Ultraviolet Laser-Producing Plasma," *Phys. Fluids* **28**, 2910-2914 (1985).

R. L. McCrory, "Inertial Fusion at a Critical Juncture," Editorial, *Laser Focus*, p. 14 ff. (September 1985).

T. Sizer II, "Fast and Flexible Fortran Programming in a Femtosecond Laser Lab," *Journal of Fortran Applications and Research* **3**(1), 23 (1985).

## Forthcoming Publications

U. Feldman, J. F. Seeley, M. C. Richardson, W. E. Behring, and S. Goldsmith, "Transitions of the Type 2s-2p in Fluorine-Like and Oxygen-Like As, Se, Br and Rb<sup>x</sup>," to be published in the *Journal of the Optical Society of America B*.

P. Horn, P. Braunlich, and A. Schmid, "Photoacoustic Determination of Three-Photon Absorption Cross Sections in Thallium Halides at 1.06  $\mu\text{m}$ ," to be published in the *Journal of the Optical Society of America B*.

S. Williamson, G. Mourou, and J. C. M. Li, "Time-Resolved Laser-Induced Phase Transformation in Aluminum," to be published in the *Proceedings of MRS Symposium on Energy Beam-Solid Interactions and Transient Thermal Processing*.

J. F. Seeley, C. M. Brown, U. Feldman, M. Richardson, B. Yaakobi, and W. E. Behring, "Evidence for Lasing on the 182-Å Transition of CVI in a Radiation-Cooled Plasma," to be published in *Optics Communications*.

W. A. Lampeter, "Computerized Search of Chest Radiographs for Tumors," to be published in *Investigative Radiology*.

W. A. Lampeter, "ANDS-VI Computer Detection of Lung Nodules," to be published in the *Proceedings of Medical Imaging and Instrumentation 1985, Society of Photographic Scientists and Engineers*.

B. Yaakobi, R. D. Frankel, J. M. Forsyth, and J. M. Soures, "Laser Generated X-Ray Source for Time-Resolved Biological and Material Structure Studies," to be published in the *Proceedings of a Symposium on New Methods in X-Ray Absorption, Scattering, and Diffraction*.

D. P. Butler, T. Y. Hsiang, and G. A. Mourou, "Transient Relaxation of the Normal State Resistance of Tin Microstrips in the Presence of Current Bias," to be published in the *Journal of Low Temperature Physics*.

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The following papers are to be published in the *Proceedings of the Workshop on Physics of Laser Fusion*, Vancouver, B.C., June 1985 (*Canadian Journal of Physics*):

A. Simon, "Raman Scattering."

J. Delettrez, "Thermal Electron Transport in Direct-Drive ICF."

L. M. Goldman, "The Use of Laser Harmonic Spectroscopy as a Target Diagnostic."

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M. D. J. Burgess, R. Dragila, B. Luther-Davies, K. A. Nugent, A. J. Perry, G. J. Tallents, M. C. Richardson, and R. S. Craxton, "Characterization of Plasmas Produced by a Laser Line Focus," to be published in *Physical Review A*.

W. R. Donaldson and G. A. Mourou, "Improved Contacts on Intrinsic Silicon for High Voltage Photoconductive Switching," to be published in the *Proceedings of the Fifth IEEE Pulsed Power Conference*, Arlington, VA, June 1985.

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The following papers are to be published in the *Proceedings of the SPIE 29th Annual International Technical Symposium on Optical and Electro-Optic Engineering*, San Diego, CA, August 1985:

G. G. Gregory, S. A. Letzring, M. C. Richardson, and C. D. Kiiikka, "High Time-Space Resolved Photography of Laser Imploded Fusion Targets."

P. A. Jaanimagi, B. L. Henke, and M. C. Richardson, "An Absolutely Calibrated Time-Resolving X-Ray Spectrometer."

M. C. Richardson, G. G. Gregory, S. A. Letzring, R. S. Marjoribanks, B. Yaakobi, B. L. Henke, P. A. Jaanimagi, and A. Hauer, "Time-Resolved X-Ray Spectrographic Instrumentation for Laser Fusion and X-Ray Laser Studies."

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R. L. McCrory, "Inertial Confinement Fusion (ICF)," to be published in *Physics Today*, January 1986.

D. Strickland and G. Mourou, "Compression of Amplified Chirped Optical Pulses," to be published in *Optics Communications*.

R. Epstein, S. Skupsky, and J. Delettrez, "Effects of Non-Maxwellian Electron Populations in Non-LTE Simulations of Laser-Plasma Thermal and Implosion Experiments," to be published in the *Journal of Quantitative Spectroscopy and Radiative Transfer*.

A. Simon, W. Seka, L. M. Goldman, and R. W. Short, "Raman Scattering in Inhomogeneous Laser Produced Plasma," to be published in *Physics of Fluids*.

R. S. Craxton, R. L. McCrory, and J. M. Soures, "Progress Towards Controlled Thermonuclear Fusion Using Frequency-Converted Lasers," to be published in *Scientific American*.

M. C. Richardson, R. Epstein, O. Barnouin, P. A. Jaanimagi, R. Keck, H. G. Kim, R. S. Marjoribanks, S. Noyes, J. M. Soures, and B. Yaakobi, "Multibeam, Laser-Imploded Cylindrical Plasmas," to be published in *Physical Review A*.

A. Hauer, R. D. Cowan, B. Yaakobi, O. Barnouin, and R. Epstein, "Absorption Spectroscopy Diagnosis of Pusher Conditions," to be published in *Physical Review*.

R. Epstein and R. S. Craxton, "Stistical Ray Tracing in Plasmas with Random Density Fluctuations," to be published in *Physical Review*.

B. Yaakobi, "X-Ray Diagnostic Methods for Laser Imploded Targets" and "Thermal Transport, Mass-Ablation, and Preheat in Laser-Target Experiments," to be published in the *Proceedings of the Spring College on Radiation in Plasmas*, Trieste, Italy, June 1985 (World Scientific Publishing Co.).

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The following papers are to be published in *Picosecond Electronics and Optoelectronics*, edited by G. A. Mourou, D. Bloom, and C. H. Lee (Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1985):

K. E. Meyer and G. A. Mourou, "Two Dimensional E-Field Mapping with Subpicosecond Resolution."

S. Williamson and G. A. Mourou, "Picosecond Electro-Electron Optic Oscilloscope."

K. E. Meyer, D. R. Dykaar, and G. A. Mourou, "Characterization of TEGFETs and MESFETs Using Electro-Optic Sampling Technique."

C. J. Kryzak, K. E. Meyer, and G. A. Mourou, "Transmission Line Designs with a Measured Step Response of 3 ps per Centimeter."

D. R. Dykaar, T. Y. Hsiang, and G. A. Mourou, "Development of a Picosecond Cryo-Sampler Using Electro-Optic Techniques."

## Conference Presentations

The following presentations were made at the SPIE 29th Annual International Technical Symposium on Optical and Electro-Optic Engineering, San Diego, CA, August 1985:

G. G. Gregory, S. A. Letzring, M. C. Richardson, and C. D. Kiiikka, "High Time-Space Resolved Photography of Laser Imploded Fusion Targets."

P. A. Jaanimagi, B. L. Henke, and M. C. Richardson, "An Absolutely Calibrated Time-Resolving X-Ray Spectrometer."

M. C. Richardson, G. Gregory, S. A. Letzring, R. S. Marjoribanks, B. Yaakobi, B. L. Henke, P. A. Jaanimagi, and A. Hauer, "Time-Resolved X-Ray Spectrographic Instrumentation for Laser Fusion and X-Ray Laser Studies."

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W. Donaldson and G. Mourou, "Problems of High Power Photoconductive Switching in the Picosecond Time Scale," presented at New Directions in Solid State Power Switching, Farmingdale, NY, August 1985.

A. Simon, "Theory of Raman Scattering in Laser-Produced Plasma," presented at the CECAM Workshop on Interactions and Transport in Laser Plasmas, Orsay, Paris, September 1985.

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