PUBLICATIONS AND CONFERENCE PRESENTATIONS

Publications

K. A. Cerqua, A. Lindquist, S. D. Jacobs, and J. Lambropoulos, "Strengthened Glass for High-Average-Power Laser Applications," *New Slab and Solid-State Laser Technologies and Applications* (SPIE, Bellingham, WA, 1987), Vol. 736, pp. 13–21.

H. E. Elsayed-Ali and G. A. Mourou, "Phase Transitions in the Picosecond Time Domain," *Interfaces, Superlattices, and Thin Films,* edited by J. D. Dow (Materials Research Society, Pittsburgh, PA, 1987), Vol. 77, pp. 51–57.

P. D. Goldstone, S. R. Goldman, W. C. Mead, J. A. Cobble, G. Stradling, R. H. Day, A. Hauer, M. C. Richardson, R. S. Marjoribanks, P. A. Jaanimagi, R. L. Keck, F. J. Marshall, W. Seka, O. Barnouin, B. Yaakobi, and S. A. Letzring, "Dynamics of High-Z Plasmas Produced by a Short-Wavelength Laser," *Phys. Rev. Lett.* **59,** 56–59 (1987).

H. Kim and M. D. Wittman, "X-Ray Microscopy of Inertial Fusion Targets Using a Laser-Produced Plasma as an X-Ray Source," *J. Vac. Sci. Technol. A* **5**, 2781–2784 (1987).

K. A. Cerqua, S. D. Jacobs, and A. Lindquist, "Ion-Exchange Strengthened Phosphate Laser Glass: Development and Applications," *J. Non-Cryst. Solids* **93**, 361–376 (1987).

S. M. Gracewski and R. Q. Gram, "Analysis of Forces on Inertial Confinement Fusion Targets During Ablation Layer Coating," *J. Vac. Sci. Technol. A* **5**, 2941–2944 (1987).

Forthcoming Publications

The following papers are to be published in the *Proceedings of the 17th Annual Boulder Damage Symposium*, Boulder, CO, October 1985:

K. A. Cerqua, S. D. Jacobs, B. L. McIntyre, and W. Zhong, "Ion Exchange Strengthening of Nd-Doped Phosphate Laser Glass."

B. Liao, D. J. Smith, and B. L. McIntyre, "The Development of Nodular Defects in Optical Coatings."

D. J. Smith, B. Krakauer, C. J. Hayden, A. W. Schmid, and M. J. Guardalben, "Yttrium-Oxide-Based Anti-Reflection Coating for High Power Lasers at 351 nm."

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.).

G. Mourou, "Picosecond Electro-Optic Sampling," to be published in the *Proceedings of the High Speed Electronics Conference*, Stockholm, Sweden, August 1986.

W. R. Donaldson, "High-Speed, High-Repetition-Rate, High-Voltage Photoconductive Switching," to be published in the *Proceedings of the 2nd Topical Meeting on Picosecond Electronics and Optoelectronics*, Lake Tahoe, NV, January 1987.

G. Mourou, K. Meyer, J. Whitaker, M. Pessot, R. Grondin, and C. Caruso, "Ultrafast Optics Applied to Modern Device Research," to be published in the *Proceedings of the 2nd Topical Meeting on Picosecond Electronics and Optoelectronics*, Lake Tahoe, NV, January 1987.

R. W. Short, W. Seka, and R. Bahr, "Stimulated Raman Scattering in Self-Focused Light Filaments in Laser-Produced Plasmas," to be published in *Physics of Fluids*.

J. Delettrez, R. Epstein, M. C. Richardson, P. A. Jaanimagi, and B. L. Henke, "Effect of Laser Illumination Nonuniformity on the Analysis of Time-Resolved X-Ray Measurements in UV Spherical Transport Experiments," to be published in *Physical Review A*.

R. L. McCrory and J. M. Soures, "Inertially Confined Fusion," to be published in *Applications of Laser Plasmas*, Chapter 7.

K. A. Cerqua, J. Hayden, and W. C. LaCourse, "Stress Measurements in SOL-GEL Films," to be published in the *Journal of Non-Crystalline Solids*.

J. F. Whitaker, R. Sobolewski, D. R. Dykaar, T. Y. Hsiang, and G. A. Mourou, "Propagation Model for Ultrafast Signals on Superconducting Dispersive Striplines," to be published in a special issue of *IEEE Transactions on Microwave Theory and Techniques*.

T. Jackson, J. Nees, R. Vallee, and G. Mourou, "A Novel Method for Ultrahigh Frequency Electro-Optic Time-Domain Reflectometry," to be published in *Electronics Letters*.

T. Y. Hsiang, J. F. Whitaker, R. Sobolewski, D. R. Dykaar, and G. A. Mourou, "Propagation Characteristics of Picosecond Electrical Transients on Coplanar Striplines," to be published in *Applied Physics Letters*.

J. C. Lee, S. D. Jacobs, and A. Schmid, "Retro-Self-Focusing and Pinholing Effect in a Cholesteric Liquid Crystal," to be published in *Molecular Crystals and Liquid Crystals*.

S. Skupsky, "The 'Coulomb Logarithm' for Inverse Bremsstrahlung Laser Absorption," to be published in *Physical Review A*.

P. Maine, D. Strickland, P. Bado, M. Pessot, and G. Mourou, "Generation of Ultrahigh-Peak-Power Pulses by Chirped Pulse Amplification," to be published in the *IEEE Journal of Quantum Electronics*.

J. H. Kelly, D. L. Smith, J. C. Lee, S. D. Jacobs, D. J. Smith, J. C. Lambropoulos, and M. J. Shoup III, "A High-Repetition-Rate Cr:Nd:GSGG Active-Mirror Amplifier," to be published in *Optics Letters*.

W. Watson, "Vacuum-Assisted Contaminated Particulate Removal," to be published in the *Journal of Vacuum Science and Technology*.

A. Simon and R. W. Short, "Comments on 'Motion of an Electron Bunch Through a Plasma'," to be published in *Physics of Fluids*.

B. Yaakobi, "Recent Progress in X-Ray Laser Research," to be published in *Photonics*.

J. F. Whitaker, R. Sobolewski, D. R. Dykaar, T. Y. Hsiang, and G. A. Mourou, "Subpicosecond Pulse Propagation on Superconducting Striplines," to be published in the *Proceedings of the 18th International Conference on Low Temperature Physics*, Kyoto, Japan, August 1987.

H. E. Elsayed-Ali and G. A. Mourou, "Picosecond Reflection High-Energy Electron Diffraction," to be published in *Applied Physics Letters*.

The following papers are to be published in the *Proceedings of SPIE's 31st Annual International Technical Conference*, San Diego, CA, 16–21 August 1987:

P. A. Jaanimagi, J. Delettrez, G. G. Gregory, R. S. Marjoribanks, M. C. Richardson, D. K. Bradley, and B. L. Henke, "Application of X-Ray Streak Cameras for Fusion Diagnostics."

P. A. Jaanimagi, J. Duff, G. G. Gregory, R. L. Keck, M. C. Richardson, W. Seka, D. J. Bowley, S. Majumdar, and J. Wright, "Multi-Channel Optical Streak Cameras."

P. A. Jaanimagi, G. G. Gregory, S. A. Letzring, R. S. Marjoribanks, and M. C. Richardson, "Time-Resolved Grating Spectrograph Incorporating a Reflection Photocathode for Soft X-Ray Spectroscopy."

R. S. Marjoribanks, M. C. Richardson, P. R. Audebert, D. K. Bradley, G. G. Gregory, and P. A. Jaanimagi, "Time-Resolved Spectroscopy for Detailed Studies ($\lambda/\Delta\lambda > 1000$) of Weak X-Ray Emitters in Laser Plasmas."

G. G. Gregory, P. A. Jaanimagi, P. W. McKenty, S. A. Letzring, and M. C. Richardson, "Precision Alignment Techniques for Time-Resolved X-Ray Photography."

D. Shvarts, B. Yaakobi, P. Audebert, T. Boehly, B. Boswell, D. Bradley, R. S. Craxton, R. Epstein, M. C. Richardson, M. Russotto, and J. M. Soures, "Studies of New Geometries for X-Ray Laser Experiments."

T. Boehly, P. Audebert, D. Shvarts, B. Yaakobi, B. Boswell, D. Bradley, R. S. Craxton, R. Epstein, S. Noyes, M. C. Richardson, M. Russotto, and J. M. Soures, "Experimental Studies of New Geometries for X-Ray Laser Experiments."

P. Audebert, D. K. Bradley, M. C. Richardson, R. Epstein, P. A. Jaanimagi, O. Barnouin, J. Delettrez, B. Yaakobi, F. J. Marshall, and B. L. Henke, "Time- and Space-Resolved X-Ray Spectra of Imploding Laser Fusion Targets."

P. R. Audebert, O. Barnouin, J. Delettrez, R. Epstein, P. A. Jaanimagi, R. S. Marjoribanks, M. C. Richardson, and B. Yaakobi, "Space-Resolved High Resolution Spectroscopy of Laser Plasmas."

D. J. Smith, "Modeling of Nodular Defects in Thin Films for Various Deposition Techniques."

P. C. Cheng, H. Kim, and M. Wittman, "Microradiography with Laser-Produced Plasma Sources—Surface Roughness on PMMA Resist."

J. C. Lee, S. C. Jacobs, and R. J. Gingold, "Nd:YAG Laser with Cholesteric Liquid-Crystal Resonator Mirrors."

P. D. Goldstone, J. A. Cobble, A. Hauer, G. Stradling, W. C. Mead, S. R. Goldman, S. Coggeshall, M. C. Richardson, P. A. Jaanimagi, O. Barnouin, R. Marjoribanks, B. Yaakobi, F. J. Marshall, P. Audebert, and J. Knauer, "X-Ray Emission from High-Z Spherical Laser Plasmas: Implications for Plasma Dynamics."

J. F. Seely, U. Feldman, C. M. Brown, W. E. Behring, and M. C. Richardson, "High-Resolution XUV Spectroscopy Using the OMEGA Laser."

Conference Presentations

The following presentations were made at the 10th Korea Symposium on Science and Technology, Seoul, Korea, 7–18 July 1987:

H. Kim, "Recent Progress in Laser Fusion."

H. Kim, "Applications of Laser-Generated X-Ray Source."

K. A. Cerqua, J. E. Hayden, and W. C. LaCourse, "Stress Measurements in Sol-Gel Films," presented at the 4th International

Workshop on Glasses and Glass-Ceramics from Gels, Kyoto, Japan, 12–15 July 1987.

K. A. Cerqua, "Sol-Gel Processing of Materials," presented at Hoya Corporation, Research and Development Laboratories, Tokyo, Japan, July 1987.

J. S. Wark, "Short-Pulse X-Ray Diffraction from Laser-Shocked Crystals," presented at the APS Topical Conference on Shock Waves and Condensed Matter, Monterey, CA, July 1987 (invited).

The following presentations were made at SPIE's 31st Annual International Technical Conference, San Diego, CA, 16–21 August 1987:

P. A. Jaanimagi, J. Delettrez, G. G. Gregory, R. S. Marjoribanks, M. C. Richardson, D. K. Bradley, and B. L. Henke, "Application of X-Ray Streak Cameras for Fusion Diagnostics."

P. A. Jaanimagi, J. Duff, G. G. Gregory, R. L. Keck, M. C. Richardson, W. Seka, D. J. Bowley, S. Majumdar, and J. Wright, "Multi-Channel Optical Streak Cameras."

P. A. Jaanimagi, G. G. Gregory, S. A. Letzring, R. S. Marjoribanks, and M. C. Richardson, "Time-Resolved Grating Spectrograph Incorporating a Reflection Photocathode for Soft X-Ray Spectroscopy."

R. S. Marjoribanks, M. C. Richardson, P. R. Audebert, D. K. Bradley, G. G. Gregory, and P. A. Jaanimagi, "Time-Resolved Spectroscopy for Detailed Studies ($\lambda/\Delta\lambda > 1000$) of Weak X-Ray Emitters in Laser Plasmas."

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T. Boehly, P. Audebert, D. Shvarts, B. Yaakobi, B. Boswell, D. Bradley, R. S. Craxton, R. Epstein, S. Noyes, M. C. Richardson, M. Russotto, and J. M. Soures, "Experimental Studies of New Geometries for X-Ray Laser Experiments."

P. Audebert, D. K. Bradley, M. C. Richardson, R. Epstein, P. A. Jaanimagi, O. Barnouin, J. Delettrez, B. Yaakobi, F. J. Marshall, and B. L. Henke, "Time- and Space-Resolved X-Ray Spectra of Imploding Laser Fusion Targets."

P. R. Audebert, O. Barnouin, J. Delettrez, R. Epstein, P. A. Jaanimagi, R. S. Marjoribanks, M. C. Richardson, and B. Yaakobi, "Space-Resolved High Resolution Spectroscopy of Laser Plasmas."

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J. F. Seely, U. Feldman, C. M. Brown, W. E. Behring, and M. C. Richardson, "High-Resolution XUV Spectroscopy Using the OMEGA Laser."

J. F. Whitaker, R. Sobolewski, D. R. Dykaar, T. Y. Hsiang, and G. A. Mourou, "Subpicosecond Pulse Propagation on Superconducting Striplines," presented at the 18th International Conference on Low Temperature Physics, Kyoto, Japan, 20–26 August 1987.

R. Sobolewski, J. F. Whitaker, D. R. Dykaar, T. Y. Hsiang, and G. A. Mourou, "Dispersion in Superconducting Transmission Lines," presented at the International Superconductivity Electronics Conference, Tokyo, Japan, 28–29 August 1987.

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