

# **PUBLICATIONS AND CONFERENCE PRESENTATIONS**

## **Publications**

S. Augst, D. D. Meyerhofer, D. Strickland, and S. L. Chin, "Laser Ionization of Noble Gases by Coulomb-Barrier Suppression," *J. Opt. Soc. Am. B* **8**, 858–867 (1991).

D. K. Bradley, T. Boehly, D. L. Brown, J. Delettrez, W. Seka, and D. Smith, "Early-Time 'Shine-Through' in Laser Irradiated Targets," in *Laser Interaction and Related Plasma Phenomena*, edited by H. Hora and G. H. Miley (Plenum Press, New York, 1991), Vol. 9, pp. 323–334.

Y.-H. Chuang, D. D. Meyerhofer, S. Augst, H. Chen, J. Peatross, and S. Uchida, "Suppression of the Pedestal in a Chirped-Pulse-Amplification Laser," *J. Opt. Soc. Am. B* **8**, 1226–1235 (1991).

W. R. Donaldson and L. E. Kingsley, "Optical Probing of Field-Dependent Effects in GaAs Photoconductive Switches," in *Optically Activated Switching* (SPIE, Bellingham, WA, 1990), Vol. 1378, pp. 226–236.

P. A. Jaanimagi, C. Hestdalen, J. Kelly, and W. Seka, "High Precision Measurements of the 24-Beam UV OMEGA Laser," in *19th International Congress on High-Speed Photography and Photonics* (SPIE, Bellingham, WA, 1990), Vol. 1358, pp. 337–343.

R. L. McCrory and C. P. Verdon, "Inertial Confinement Fusion: Computer Simulation," in *Computer Applications of Plasma Science and Engineering*, edited by A. Drobot (Springer-Verlag, New York, 1991), pp. 627–631.

E. A. Murphy, H. E. Elsayed-Ali, K. T. Park, J. Cao, and Y. Gao, "Angle-Resolved X-Ray-Photoemission Study of the Surface Disordering of Pb(100)," *Phys. Rev. B* **43**, 12,615–12,618 (1991).

N. Sampat, "The RS-170 Video Standard and Scientific Imaging: The Problems," *Advanced Imaging* **6**, 40–43 (1991).

W. Seka, D. Golding, B. Klein, R. J. Lanzafame, and D. Rogers, "Laser Energy Repartition Inside Metal, Sapphire, and Quartz Surgical Laser Tips," in *Application of Optical Engineering CAN-AM Eastern '90* (SPIE, Bellingham, WA, 1990), Vol. 1398, pp. 162–169.

L. J. Shaw-Klein, S. J. Burns, and S. D. Jacobs, "Thermal Conductivity of Aluminum Nitride Thin Films," in *Electronic Packaging Materials Science V*, edited by E. D. Lillie, P. S. Ho, R. Jaccodine, and K. Jackson (Materials Research Society, Pittsburgh, PA, 1991), Vol. 203, pp. 235–240.

J. M. Soures, "Progress in Inertial Fusion (Remarks of John M. Soures)," *J. Fusion Energy* **8**, 59–62 (1989).

C.J. Twomey and S.-H. Chen, "Solid Polymers Doped with Rare Earth Metal Salts I. Complex Formation and Morphology in Neodymium Chloride-Poly(Ethylene Oxide) System," *J. Polym. Sci., Polym. Phys. Ed.* **29**, 859–865 (1991).

C. P. Verdon, R. L. McCrory, R. Epstein, H. M. Van Horn, and M. P. Savedoff, "Some Effects of the UV Radiation from White Dwarfs on the Accretion of Interstellar Hydrogen," in the *Proceedings of the 7th European Workshop on White Dwarfs*, edited by G. Vauclair and E. Sion (Kluwer Academic Publishers, The Netherlands, 1991), pp. 295–304.

## Forthcoming Publications

S. Alexandrou, R. Sobolewski, H. Nakano, B. C. Tousley, and T. Y. Hsiang, "Picosecond Characterization of Bent Coplanar Waveguides," to be published in *IEEE Microwave and Guided Wave Letters*.

S. Augst, D. D. Meyerhofer, J. Peatross, and C. I. Moore, "Spatial Distribution of High-Order Harmonics Generated in the Tunneling Regime," to be published in the *Proceedings of the Topical Meeting on Short-Wavelength Coherent Radiation: Generation and Application*, Monterey, CA, 8–10 April 1991.

H. Chen, Y.-H. Chuang, J. A. Delettrez, S. Uchida, and D. D. Meyerhofer, "Study of X-Ray Emission from Picosecond Laser-Plasma Interaction," to be published in the *Proceedings of the SPIE's OE/LASE '91 Symposium*, Los Angeles, CA, 20–25 January 1991.

P.-C. Cheng, H. Kim, and T. H. Lin, "The Study of Silica Deposition in the Leaf Blade of *Zea mays* L. by X-Ray Contact Microradiography and Confocal Microscopy," to be published in *X-Ray Microscopy III*, edited by A. Michette *et al.* (Springer-Verlag, New York).

Y.-H. Chuang, J. Peatross, and D. D. Meyerhofer, "Modeling the Pedestal in a Chirped-Pulse-Amplification Laser," to be published in the *Proceedings of the SPIE's OE/LASE '91 Symposium*, Los Angeles, CA, 20–25 January 1991.

Y.-H. Chuang, L. Zheng, and D. D. Meyerhofer, "Propagation of Light Pulses in a Chirped-Pulse-Amplification Laser," to be published in *IEEE Journal of Quantum Electronics*.

J. Delettrez, R. Epstein, D. K. Bradley, P. A. Jaanimagi, R. C. Mancini, and C. F. Hooper, "Hydrodynamic Simulations, with Non-LTE Atomic Physics, of High-Density Implosions of Argon-Filled Polymer Shell Targets," to be published in the *Proceedings of the 1990 International Workshop on Radiative Properties of Hot Dense Matter*, Sarasota, FL, 22–26 October 1990.

W. R. Donaldson, "Optical Probing of Field Dependent Effects in GaAs Photoconductive Switches," to be published in the *Proceedings of the IEEE 8th Pulsed Power Conference*, San Diego, CA, 17–19 June 1991.

H. E. Elsayed-Ali, J. W. Herman, and K. K. Lo, "Picosecond Time-Resolved Electron Diffraction Studies of Laser Heated Metals," to be published in the *Proceedings of the International Conference on Lasers '90*, McLean, VA, 10–14 December 1990 (invited paper).

E. M. Epperlein, "Electron Kinetics in Laser-Driven Inertial Confinement Fusion," to be published in the *Proceedings of the Topical Conference on Research Trends in Nonlinear and Relativistic Effects in Plasmas*, La Jolla, CA, 5–8 February 1990.

E. M. Epperlein, "Laser Filamentation in Plasmas," to be published in the *Proceedings of Topical Conference on Research Trends in Inertial Confinement Fusion*, La Jolla, CA, 4–6 February 1991.

E. M. Epperlein, "Kinetic Simulations of Laser Filamentation in Plasmas," to be published in *Physics of Fluids*.

E. M. Epperlein and R. W. Short, "A Practical Nonlocal Model for Electron Heat Transport in Laser Plasmas," to be published in *Physics of Fluids*.

R. Epstein and B. Yaakobi, "The Effect of Photoelectric Fluorescence on the Formation of X-Ray Absorption Lines in Laser-Plasma Experiments," to be published in *Physical Review A*.

P. M. Fauchet, "Applied Optical Diagnostics of Semiconductors," to be published in *IEEE Journal of Quantum Electronics* (invited paper).

P. M. Fauchet, D. A. Young, W. L. Nighan, Jr., and C. M. Fortmann, "Picosecond Carrier Dynamics in a-Si<sub>0.5</sub>Ge<sub>0.5</sub>:H Measured with a Free Electron Laser," to be published in *IEEE Journal of Quantum Electronics*.

T. Gong and P. M. Fauchet, "Femtosecond Refractive and Absorptive Nonlinearities Due to Real Carriers in GaAs," to be published in the *Proceedings of the IEEE/Lasers and Electro-Optics Society of America, Picosecond Electronics and Optoelectronics Conference*, Salt Lake City, UT, 13–15 March 1991.

T. Gong, P. Mertz, W. L. Nighan, Jr., and P. M. Fauchet, "Femtosecond Carrier Induced Changes of Refractive Index in GaAs," to be published in *Applied Physics*.

T. Gong, J. F. Young, P. J. Kelly, and P. M. Fauchet, "Femtosecond Gain Dynamics Due to Initial Thermalization of Hot Carriers Injected at 2 eV in GaAs," to be published in *Physical Review B*.

A. Honig, N. Alexander, Q. Fan, R. Q. Gram, and H. Kim, "Absence of Molecular Deuterium Dissociation During Room-Temperature Permeation into Polystyrene ICF Target Shells," to be published in the *Journal of Vacuum Science and Technology A*.

## Conference Presentations

S. Augst, D. D. Meyerhofer, J. Peatross, and C. I. Moore, "Spatial Distribution of High-Order Harmonics Generated in the Tunneling Regime," presented at the Topical Meeting on Short-Wavelength Coherent Radiation: Generation and Application, Monterey, CA, 8–10 April 1991.

---

The following presentations were made at the 21st Annual Anomalous Absorption Conference, Banff, Alberta, Canada, 14–19 April 1991:

R. E. Bahr, W. D. Seka, R. S. Craxton, D. L. Brown, D. K. Bradley, and S. A. Letzring, "Characterization of Long-Scale-Length Plasmas on OMEGA."

D. K. Bradley, J. A. Delettrez, and C. P. Verdon, "Further Investigations of the Role of the Rayleigh-Taylor Instability in Burnthrough Measurements."

X. D. Cao and C. J. McKinstrie, "The Optimization of Sum-Frequency Generation."

H. Chen, Y.-H. Chuang, J. A. Delettrez, P. A. Jaanimagi, S. Uchida, B. Yaakobi, and D. D. Meyerhofer, "Studies of X-Ray Emission From 1 ps Laser-Plasma Interactions."

R. S. Craxton, W. D. Seka, and D. L. Brown, "Long-Scale-Length Plasmas for the OMEGA Upgrade."

J. A. Delettrez, P. Audebert, and D. D. Meyerhofer, "Modeling of Resonance Absorption in Hydrodynamic Simulations of 1-ps Laser Pulse Interaction."

E. M. Epperlein, "Fokker-Planck Simulations of Laser Filamentation in Plasmas."

R. Epstein, J. A. Delettrez, D. K. Bradley, P. A. Jaanimagi, R. C. Mancini, and C. F. Hooper, "Simulation of Absorption Spectra from High-Density Implosions of Argon Filled Polymer Shell Targets."

F. J. Marshall, J. A. Delettrez, R. S. Craxton, and C. P. Verdon, "Space-Resolved Spectroscopy of OMEGA CD Target Implosions."

C. J. McKinstrie, G. G. Luther, and M. V. Goldman, "Three-Dimensional Instabilities of Counterpropagating Light Waves."

D. D. Meyerhofer, "The Interaction of High Intensity Lasers with Short Scale-Length Plasmas" (invited talk).

W. D. Seka, A. Simon, R. W. Short, R. E. Bahr, R. S. Craxton, D. L. Brown, D. D. Meyerhofer, and L. Zheng, "Nonlinear Interaction Processes in Long-Scale-Length Plasma Experiments on OMEGA."

R. W. Short, "The Filamentation Instability in the Presence of More than One Pump Wave."

S. Uchida, H. Chen, Y.-H. Chuang, J. A. Delettrez, and D. D. Meyerhofer, "Characteristics of Ion Emission From 1 ps Laser Pulse Interactions with Short Scale-Length Plasmas."

M. Yu and C. J. McKinstrie, "The Role of Ion Momentum in Stimulated Raman Scattering."

---

The following presentations were made at the IAEA Technical Committee Meeting on Drivers for Inertial Confinement Fusion, Osaka, Japan, 15–19 April 1991:

J. H. Kelly, M. J. Shoup III, M. M. Tedrow, C. D. Kiikka, T. J. Kessler, S. A. Kumpan, A. W. Schmid, M. D. Skeldon, and D. J. Smith, "The 30 kJ OMEGA Upgrade at the University of Rochester, a Flexible, High-Performance Nd:Glass Driver."

R. L. McCrory, J. M. Soures, J. P. Knauer, S. A. Letzring, F. J. Marshall, S. Skupsky, W. D. Seka, C. P. Verdon, D. K. Bradley, R. S. Craxton, J. A. Delettrez, R. Epstein, P. A. Jaanimagi, R. L. Keck, T. J. Kessler, H. Kim, R. L. Kremens, P. W. McKenty, R. W. Short, and B. Yaakobi, "Short-Wavelength-Laser Requirements for Direct-Drive Ignition and Gain."

J. M. Soures, R. L. McCrory, T. R. Boehly, R. S. Craxton, S. D. Jacobs, J. H. Kelly, T. J. Kessler, J. P. Knauer, R. L. Kremens, S. A. Kumpan, S. A. Letzring, W. D. Seka, R. W. Short, M. D. Skeldon, S. Skupsky, and C. P. Verdon, "OMEGA Upgrade Laser for Direct-Drive Target Experiments."

---

D. Golding, W. Seka, and R. J. Lanzafame, "Interaction of CO<sub>2</sub> Laser Light with Plume Resulting from Tissue Ablation," presented at the American Society for Laser Medicine and Surgery, San Diego, CA, 29 April–1 May 1991.

---

The following presentations were made at CLEO '91 Conference, Baltimore, MD, 12–17 May 1991:

S. Alexandrou, R. Sobolewski, H. Nakano, B. C. Tousley, and T. Y. Hsiang, "Propagation of Picosecond Transients on Bent Coplanar Waveguides."

J. M. Soures, R. L. McCrory, D. Bradley, R. S. Craxton, J. Delettrez, H. Kim, P. Jaanimagi, T. Kessler, J. Knauer, R. Kremens, S. Letzring, F. Marshall, W. Seka, R. Short, S. Skupsky, C. Verdon, and B. Yaakobi, "Direct-Drive Laser Fusion Experiments Using Smoothing by Spectral Dispersion (SSD)" (invited paper).

---

The following presentations were made at the QELS '91 Conference, Baltimore, MD, 12–17 May 1991:

S. Augst, D. D. Meyerhofer, J. Peatross, and C. I. Moore, "Spatial Distribution of High Order Harmonics Generated with a Nd:Glass Laser."

H. E. Elsayed-Ali, T. Juhasz, X. H. Hu, and W. E. Bron, "Temperature Dependence of Femtosecond Thermorefectivity of Thin Gold Films."

T. Gong and P. M. Fauchet, "Femtosecond Refractive and Absorptive Nonlinearities Due to Real Carriers in GaAs."

C. J. McKinstrie, G. G. Luther, and M. V. Goldman, "Three-Dimensional Instabilities of Counterpropagating Light Waves."

---

The following presentations were made at the IEEE 8th Pulsed Power Conference, San Diego, CA, 17–19 June 1991:

W. R. Donaldson, "Optical Probing of Field Dependent Effects in GaAs Photoconductive Switches."

W. Donaldson and L. Kingsley, "Electric-Field Profiles in GaAs Photoconductive Switches."

---

W. R. Donaldson, A. Kadin, P. Ballentine, and K. Kortkamp, "An Optically-Triggered, Superconducting, Opening Switch," presented at the SDIO Pulsed Power Workshop, Los Angeles, CA, 19–21 June 1991.

---

D. D. Meyerhofer, S. Augst, J. Peatross, and C. I. Moore, "Spatial Distribution of High Order Harmonics Generated with a ND:Glass Laser," presented at the Big Sky Workshop on Super-Intense Laser Atom Physics, Big Sky, Montana, 22–25 June 1991; and at the SPIE International Symposium on Optical Applied Science and Engineering, San Diego, CA, 21–26 July 1991 (invited talk).

#### ACKNOWLEDGMENT

The work described in this volume includes current research at the Laboratory for Laser Energetics, which is supported by New York State Energy Research and Development Authority, the University of Rochester, the U.S. Department of Energy Office of Inertial Confinement Fusion under agreement No. DE-FC03-85DP40200, and other agencies.



