

PUBLICATIONS AND CONFERENCE PRESENTATIONS

Publications

S. Alexandrou, R. Sobolewski, H. Nakano, B. C. Tousley, and T. Y. Hsiang, "Picosecond Characterization of Bent Coplanar Waveguides," *IEEE Microwave and Guided Wave Letters* **1**, 236–238 (1991).

E. M. Epperlein, G. J. Rickard, and A. R. Bell, "A Code for the Solution of the Vlasov-Fokker-Planck Equation in 1-D or 2-D," *Comput. Phys. Commun.* **52**, 7–13 (1991).

D. Golini and S. D. Jacobs, "Physics of Loose Abrasive Microgrinding," *Appl. Opt.* **30**, 2761–2777 (1991).

T. Gong, P. Mertz, W. L. Nighan, Jr., and P. M. Fauchet, "Femtosecond Refractive-Index Spectral Hole Burning in Intrinsic and Doped GaAs," *Appl. Phys. Lett.* **59**, 721–723 (1991).

T. Gong, P. M. Fauchet, J. F. Young, and P. J. Kelly, "Femtosecond Gain Dynamics Due to Initial Thermalization of Hot Carriers Injected at 2 eV in GaAs," *Phys. Rev. B* **44**, 6542–6545 (1991).

M. J. Guardalben, A. Bevin, K. L. Marshall, A. W. Schmid, and F. Kreuzer, "1053-nm High-Field Effect in Monomeric and Polymeric Conjugated Systems," in *Natl. Inst. Stand. Technol. (U.S.), Spec. Publ. 775* (U.S. Government Printing Office, Washington, DC, 1989), pp. 462–469 (1991).

J. D. Kilkenny, P. M. Bell, B. A. Hammel, R. L. Hanks, O. L. Landen, T. E. McEwan, D. S. Montgomery, R. E. Turner, J. D. Wiedwald, and D. K.

Bradley, "Sub 100 psec X-Ray Gating Cameras for ICF Imaging Applications," in *19th International Congress on High-Speed Photography and Photonics* (SPIE, Bellingham, WA, 1990), Vol. 1358, pp. 117–133 (1991).

S. Krishnamurthy and S.-H. Chen, "New Thermotropic Chiral Nematic Copolymers. 2. A Study of Helical Sense and Twisting Power Based on Copolymers Containing (S)-(-)-1-Phenylethyl Alcohol and (R)-(-)-Methyl Mandelate," *Macromolecules* **24**, 3481–3484 (1991).

S. Krishnamurthy and S. H. Chen, "Facilitating the Formation of the Grandjean Texture in Thermotropic Chiral Nematic Side-Chain Copolymers via Modulation of Backbone Flexibility," *Macromolecules* **24**, 4472–4474 (1991).

G. G. Luther, C. J. McKinstrie, and A. L. Gaeta, "Transverse Modulational Instability of Counterpropagating Light Waves," in *OSA Proceedings on Nonlinear Dynamics in Optical Systems*, edited by N. B. Abraham, E. M. Garmire, and P. Mandel (Optical Society of America, Washington, DC, 1991), Vol. 7, pp. 205–209 (1991).

M. D. Skeldon, M. S. Jin, D. J. Smith, and S. T. Bui, "Performance of Longitudinal Mode KD*P Pockels Cells with Transparent Conductive Coatings," in *Solid State Lasers II* (SPIE, Bellingham, WA, 1991), Vol. 1410, pp. 116–124 (1991).

R. Sobolewski, "Applications of High- T_c Superconductors in Optoelectronics," in *Infrared and Optoelectronic Materials and Devices* (SPIE, Bellingham, WA, 1991), Vol. 1512, pp. 14–27.

J. M. Wallace and E. M. Epperlein, "Weibel Instability with Constant Driving Source," *Phys. Fluids B* **3**, 1579–1586 (1991).

Forthcoming Publications

J. W. Herman and H. E. Elsayed-Ali, "Time-Resolved Study of Surface Disorder of Pb(110)," to be published in *Physical Review Letters*.

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*.

R. H. Hwang-Schweitzer, R. S. Knox, P. B. Gibbs, and J. Biggins, "Fluorescence Studies of Photoregulation in the Chrysophyte *Ochromonas danica*," to be published in the *Journal of Luminescence*.

J. H. Kelly, "Instrumentation Integration in Large Systems: the OMEGA Laser Upgrade at the University of Rochester as an Example," to be published in the *Proceedings of the OSA 1991 Annual Meeting*, San Jose, CA, 3–8 November 1991 (invited paper).

J. H. Kelly, M. Shoup III, M. D. Skeldon, and S. T. Bui, "Design and Energy Characterization of a Multi-Segment Glass Disk Amplifier," to be published

in the *Proceedings of the SPIE's OE/LASE '91 Symposium*, Los Angeles, CA, 20–25 January 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,” to be published in the *Proceedings of the IAEA Technical Committee Meeting on Drivers for Inertial Confinement Fusion*, Osaka, Japan, 15–19 April 1991.

H. Kim, B. Yaakobi, J. M. Soures, and P.-C. Cheng, “Laser-Produced Plasma as a Source for X-Ray Microscopy,” to be published in *X-Ray Microscopy III*, edited by A. Michette *et al.* (Springer-Verlag, New York).

H. Kim, R. Q. Gram, M. D. Wittman, C. Immesoete, R. S. Craxton, N. Sampat, S. Swales, G. Pien, and J. M. Soures, “Uniform Liquid Fuel Layer Produced in a Cryogenic Target by a Time-Dependent Thermal Gradient,” to be published in the *Proceedings of the Seventh Target Fabrication Specialists Meeting*, Livermore, CA, 25–29 September 1989.

H. G. Kim, C. K. Immesoete, and S. Scarantino, “Computer-Assisted Microballoon Selection for Inertial Fusion Targets,” to be published in the *Proceedings of the Seventh Target Fabrication Specialists Meeting*, Livermore, CA, 25–29 September 1989.

J. C. Lambropoulos and S.-S. Hwang, “Film Thermal Conductivity and Laser Damage Resistance of Optical Thin Films,” to be published in the *Proceedings of a Symposium on Electro-Optics and Non-Linear Optics, 1st International Congress on Ceramic Science and Technology*, Anaheim, CA, 1–3 November 1989.

Y. Lin, W. Seka, J. H. Eberly, H. Huang, and D. L. Brown, “Experimental Investigation of Bessel Beam Characteristics,” to be published in *Applied Optics (Lasers and Photonics)*.

G. G. Luther and C. J. McKinstrie, “The Transverse Modulational Instability of Counterpropagating Light Waves,” to be published in the *Journal of the Optical Society of America B*.

R. L. McCrory, “Laser-Driven ICF Experiments,” to be published in *Nuclear Fusion by Inertial Confinement* (CRC Press).

R. L. McCrory and C. P. Verdon, “Computer Modeling and Simulation in Inertial Confinement Fusion,” to be published in *Il Nuovo Cimento*.

R. L. McCrory, J. M. Soures, J. Knauer, S. Letzring, F. J. Marshall, S. Skupsky, W. Seka, C. Verdon, D. Bradley, R. S. Craxton, J. Delettrez, R. Epstein, P. Jaanimagi, R. Keck, T. Kessler, H. Kim, R. Kremens, P. W. McKenty, R. Short, and B. Yaakobi, “Direct-Drive Implosion Experiments at the Laboratory for Laser Energetics,” to be published in the *Proceedings of the Thirteenth International Conference on Plasma Physics and Controlled Nuclear Fusion Research*, Washington, DC, 1–6 October 1990.

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," to be published in the *Proceedings of the IAEA Technical Committee Meeting on Drivers for Inertial Confinement Fusion*, Osaka, Japan, 15–19 April 1991, and in *Laser and Particle Beams*.

C. J. McKinstrie and M. Yu, "The Role of Ion Momentum in Stimulated Raman Scattering," to be published in *Physics of Fluids B*.

C. J. McKinstrie and R. Bingham, "Stimulated Raman Forward Scattering and the Relativistic Modulational Instability of Light Waves in Rarefied Plasma," to be published in *Physics of Fluids B*.

D. D. Meyerhofer, S. Augst, C. I. Moore, and J. Peatross, "Angular Distribution of High-Order Harmonics Generated in the Tunneling Regime," to be published in the *Proceedings of SPIE's 36th International Symposium on Optical Applied Science and Engineering and Scanning Microscopy Instrumentation*, San Diego, CA, 21–26 July 1991 (invited paper).

E. A. Murphy, H. E. Elsayed-Ali, K. T. Park, J. Cao, and Y. Gao, "Temperature Dependent Anisotropy of Pb(100) Surface Structure," to be published in *Physical Review B*.

S. Papernov, L. Pedulla, V. Zandy, A. W. Schmid, and P. Resnick, "Perfluorinated Copolymer Coatings for High-Power Laser Applications," to be published in *Applied Physics Letters*.

D. Y. Park, W. Seka, Y. Lin, and D. L. Brown, "Operational Characteristics of an Imaging, Unstable Ring Resonator Using Nd:YLF as Active Medium," to be published in the *Proceedings of the Ninth Workshop on Laser Interaction and Related Plasma Phenomena*, Monterey, CA, 6–10 November 1989.

J. Peatross, M. V. Fedorov, and D. D. Meyerhofer, "Laser Temporal and Spatial Effects on Ionization Suppression," to be published in the *Journal of the Optical Society B*.

J. K. Samarabandu, R. Acharya, C. D. Edirisinghe, P. C. Cheng, H. Kim, T. H. Lin, R. G. Summers, and C. E. Musial, "Analysis of Multi-Dimensional Confocal Images," to be published in the *Proceedings of the SPIE Symposium "Biomedical Imaging"*, San Diego, CA, 24 February 1991.

W. D. Seka, R. S. Craxton, R. E. Bahr, D. L. Brown, D. K. Bradley, P. A. Jaanimagi, B. Yaakobi, and R. Epstein, "Production and Characterization of Hot, Long-Scale-Length Laser Plasmas," to be published in *Physics of Fluids*.

L. J. Shaw-Klein, T. K. Hatwar, S. J. Burns, S. D. Jacobs, and J. C. Lambropoulos, "Anisotropic Thermal Conductivity of Rare Earth-Transition Metal Thin Films," to be published in the *Journal of Materials Research*.

M. D. Skeldon, R. S. Craxton, T. Kessler, W. Seka, R. Short, S. Skupsky, and J. M. Soures, "Efficient Harmonic Generation with a Broadband Laser," to be published in *IEEE Journal of Quantum Electronics*.

J. M. Soures, "Solid State Lasers," to be published in *Nuclear Fusion by Inertial Confinement*, edited by G. Velarde, Y. Ronen, and J. M. Martinez-Val.

J. M. Soures, "High-Technology Advances from LLE Research," to be published in the *Rochester Business Profiles Journal*.

J. M. Soures, "The OMEGA Upgrade Laser Facility for Direct-Drive Experiments," to be published in the *Proceedings of the Fusion Power Associates Annual Meeting and Symposium*, Princeton, NJ, 25–26 June 1991, and in the *Journal of Fusion Energy* (Plenum Press).

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," to be published in the *Proceedings of the IAEA Technical Committee Meeting on Drivers for Inertial Confinement Fusion*, Osaka, Japan, 15–19 April 1991, and in *Laser and Particle Beams*.

M. D. Wittman, D. Malacara, and H.-J. Kong, "High-Precision Characterization of Gas-Filled Shells," to be published in the *Proceedings of SPIE's 1991 International Symposium on Optical Applied Science and Engineering*, San Diego, CA, 21–26 July 1991.

B. Yaakobi, R. Epstein, and F. J. Marshall, "Diagnosis of Laser Compressed Shells Based on Absorption of Core Radiation," to be published in *Physical Review*.

X. Zhou and T. Y. Hsiang, "EMCUR: An Ensemble Monte Carlo Program for III-V Compound Semiconductor Device Modeling and Simulation," to be published in *IEEE Transactions on Computer-Aided Design*.

Conference Presentations

The following presentations were made at the Seventh International Conference on Hot Carriers in Semiconductors (HC/S-7), Nara, Japan, 1–5 July 1991:

P. M. Fauchet, T. Gong, P. J. Kelly, and J. F. Young, "Femtosecond Gain Dynamics in Thin GaAs Films."

T. Gong and P. M. Fauchet, "Femtosecond Carrier Scattering Processes in the Presence of a Cold Plasma."

H. Kim, "Investigation of Inertial-Fusion Targets by Confocal Microscopy and X-ray Microtomography," presented at 3D Microscopies '91, an International Conference on Three Dimensional Imaging, Taipei, Taiwan, 10–12 July 1991 (invited paper).

The following presentations were made at the SPIE International Symposium on Optical Applied Science and Engineering and Scanning Microscopy Instrumentation, San Diego, CA, 21–26 July 1991:

H. Kim, P.-C. Cheng, M. D. Wittman, J. M. Soures, R. S. Acharya, T. H. Lin, and J. Samarabandu, "Characterization of Inertial Fusion Targets with Confocal Light Microscopy."

D. D. Meyerhofer, S. Augst, C. I. Moore, and J. Peatross, "Angular Distribution of High-Order Harmonics Generated in the Tunneling Regime," (invited paper).

M. D. Wittman, D. Malacara, and H.-J. Kong, "High-Precision Characterization of Gas-Filled Shells."

L. J. Shaw-Klein, T. K. Hatwar, S. J. Burns, S. D. Jacobs, and J. C. Lambropoulos, "Thermal Conductivity of Amorphous Rare Earth-Transition Metal Thin Films for Magneto-Optic Recording," presented at the International Workshop on Science and Technology of Thin Films for the 21st Century, Evanston, IL, 28 July–2 August 1991.

The following presentations were made at the Eighth Target Fabrication Specialists Meeting, Albuquerque, NM, 23–26 September 1991:

H. Kim, S. G. Noyes, and J. M. Soures, "Fabrication of Polystyrene Shells Using the Microencapsulation Technique."

H. Kim, J. M. Soures, and P.-C. Cheng, "Investigation of Inertial Fusion Target by Confocal Microscopy and X-Ray Microtomography."

M. Wittman, R. Gram, H. Kim, and J. M. Soures, "Measurement of the Permeation Rate of Plastic Shells Using a Newly Developed Fabry-Perot Interferometer."

M. D. Wittman, A. S. Chow, and H. Kim, "Analysis of Newton Rings in ICF Targets Using Narrow-Band Illumination."

R. Sobolewski, "Prospects for High- T_c Superconducting Optoelectronics," presented at the Conference on Superconductivity and Applications, Buffalo, NY, 24–26 September 1991.

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