Publications and Conference Presentations

Publications

U. Alon, J. Hecht, D. Ofer, and D. Shvarts, "Power Laws and Similarity of Rayleigh-Taylor and Richtmyer-Meshkov Mixing Fronts at All Density Ratios," Phys. Rev. Lett. **74**, 534 (1995).

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Forthcoming Publications

M. S. Adams, M. V. Fedorov, V. P. Krainov, and D. D. Meyerhofer, "Comparison of Quasiclassical and Exact Dipole Moments for Bound-Free Transitions in Hydrogen," to be published in Physical Review A.

T. R. Boehly, R. S. Craxton, T. H. Hinterman, J. H. Kelly, T. J. Kessler, S. A. Kumpan, S. A. Letzring, R. L. McCrory, S. F. B. Morse, W. Seka, S. Skupsky, J. M. Soures, and C. P. Verdon, "The Upgrade to the OMEGA Laser System," to be published in the Review of Scientific Instruments.

T. R. Boehly, R. S. Craxton, T. H. Hinterman, P. A. Jaanimagi, J. H. Kelly, T. J. Kessler, R. L. Kremens, S. A. Kumpan, S. A. Letzring, R. L. McCrory, S. F. B. Morse, W. Seka, S. Skupsky, J. M. Soures, and C. P. Verdon, "The Upgrade to the OMEGA Laser System," to be published in the Proceedings of the American Nuclear Society.

T. R. Boehly, R. S. Craxton, T. H. Hinterman, P. A. Jaanimagi, R. L. Keck, J. H. Kelly, T. J. Kessler, R. L. Kremens, S. A. Kumpan, S. A. Letzring, R. L. McCrory, S. F. B. Morse, W. Seka, S. Skupsky, J. M. Soures, and C. P. Verdon, "The Upgrade to the OMEGA Laser System," to be published in the Proceedings of IAEA, Paris, France, 14–18 November 1994.

X. D. Cao, L. Zheng, and D. D. Meyerhofer, "Measurement of Group-Velocity Walk-Off of Short Pulses in Nonlinear Crystals: A Novel Method," to be published in Optics Letters.

C. T. Cotton, "The Design of an All-Spherical, Three-Mirror, Off-Axis Telescope Objective," to be published in the OSA Proceedings of the International Optical Design Conference '94, Rochester, NY.

M. J. Cumbo, D. Fairhurst, S. D. Jacobs, and B. E. Puchebner, "Slurry Particle Size Evolution during the Polishing of Optical Glass," to be published in Applied Optics.

M. Currie, C.-C. Wang, D. Jacobs-Perkins, R. Sobolewski, and T. Y. Hsiang, "An Optoelectronic Testing System of Rapid, Single-Flux Quantum Circuits," to be published in IEEE Transactions on Applied Superconductivity.

W. R. Donaldson, L. Mu, D. Jacobs-Perkins, and T. Y. Hsiang, "Two-Dimensional Electro-Optic Sampling in GaAs Photoconductive Switches," to be published in the Proceedings of LEOS '94 7th Annual Meeting, Boston, MA.

J. D. B. Featherstone, N. A. Barrett-Vespone, D. Fried, Z. Kantorowitz, J. Lofthouse, and W. Seka, "Rational Choice of Laser Conditions for Inhibition of Caries Progression," to be published in the Proceedings of SPIE Biomedical Conference '95, San Jose, CA.

D. Fried, R. E. Glena, J. D. B Featherstone, and W. Seka, "Multiple Pulse Irradiation of Dental Hard Tissues at CO_2 Laser Wavelengths," to be published in the Proceedings of SPIE Biomedical Conference '95, San Jose, CA.

K. Green, W. R. Donaldson, R. Sobolewski, M. D. Skeldon, W. Seka, A. Okishev, and S. A. Letzring, "Microwave Bandwidth Measurements of Illuminated Silicon Switches Used in Pulse-Shape Control for Laser-Fusion Drivers," to be published in the SPIE Proceedings of the 1st Annual International Conference on Solid-State Lasers for Application to Inertial Confinement Fusion (ICF), Monterey, CA, 30 May–2 June 1995.

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J. Hecht, D. Ofer, U. Alon, D. Shvarts, S. A. Orszag, and R. L. McCrory, "Three-Dimensional Simulations and Analysis of the Nonlinear Stage of the Rayleigh-Taylor Instability," to be published in Laser and Particle Beams.

F. A. Hegmann, D. Jacobs-Perkins, S. H. Moffat, C.-C. Wang, R. A. Hughes, M. Currie, P. M. Fauchet, T. Y. Hsiang, J. S. Preston, and R. Sobolewski, "Electro-Optic Sampling of Picosecond Photoresponse Signals from $YBa_2Cu_3O_{7-8}$ Thin Films," to be published in Applied Physics Letters.

E. M. Korenic, S. D. Jacobs, S. M. Faris, and L. Li, "Cholesteric Liquid Crystal Inks and Paints," to be published in Research Highlights of the Army Research Office Physics Division.

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J. Peatross and D. D. Meyerhofer, "Intensity-Dependent Atomic Phase Effects in High-Order Harmonic Generation," to be published in Physical Review A.

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D. Shvarts, U. Alon, D. Ofer, R. L. McCrory, and C. P. Verdon, "Nonlinear Evolution of Multimode Rayleigh-Taylor Instability in Two and Three Dimensions," to be published in Physics of Plasmas.

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R. Sobolewski and T. Y. Hsiang, "Progress in Ultrafast Superconducting Electronics," to be published in the Proceedings of the International Workshop on Superconductivity and Particle Detection, Toledo, OH (invited).

E. A. Startsev and C. J. McKinstrie, "Wave Propagation in a Drifting Plasma," to be published in Physics of Plasmas.

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M. D. Wittman, R. Q. Gram, H. Kim, C. K. Immesoete, S. G. Noyes, and S. Scarantino, "Increased Retention Time for Hydrogen and Other Gases by Polymer Shells Using Optically Transparent Aluminum Layers," to be published in the Journal of Vacuum Science and Technology.

W. Xiong, Y. Kostoulas, X. Weng, P. M. Fauchet, and R. Sobolewski, "Femtosecond Study of Electronic Structure in Semiconducting Y-Ba-Cu-O," to be published in Physical Review B.

B. Yaakobi, D. Shvarts, R. Epstein, and Q. Qu, "X-Ray Backlighting Imaging of Mixed Imploded Targets," to be published in the Journal of Applied Physics.

M. Yu, C. J. McKinstrie, and G. P. Agrawal, "Modulational Instabilities in Dispersion-Flattened Fibers," to be published in Physical Review E.

M. Yu, G. P. Agrawal, and C. J. McKinstrie, "Pump-Wave Effects on the Propagation of Noisy Signals in Nonlinear Dispersive Media," to be published in the Journal of the Optical Society of America B.

L. Zheng and D. D. Meyerhofer, "A Linear Cross-Correlation Technique for Single-Shot Measurements of Weak Light Pulses," to be published in Optics Letters.

X. Zhou, S. Alexandrou, and T. Y. Hsiang, "Monte Carlo Investigation of the Mechanism of Subpicosecond Pulse Generation by Nonuniform Gap Illumination," to be published in Applied Physics Letters.

J. D. Zuegel and W. Seka, "Direct Measurements of Lower-Level Lifetime in Nd:YLF," to be published in the Bulletin of the American Physical Society and the IEEE Journal of Quantum Electronics.

Conference Presentations

A. Okishev, M. D. Skeldon, S. A. Letzring, W. Seka, and I. Will, "Nd:YLF Regenerative Amplifier for Pulse Shaping System of the 30-kJ (40-TW) UV OMEGA Laser System," OSA Topical Meeting: Advanced Solid-State Lasers, Memphis, TN, 30 January–2 February 1995.

The following presentations were made at the SPIE Conference–Biomedical Optics Conference '95, San Jose, CA, 5–10 February 1995:

J. D. B. Featherstone, N. A. Barrett-Vespone, D. Fried, Z. Kantorowitz, J. Lofthouse, and W. Seka, "Rational Choice of Laser Conditions for Inhibition of Caries Progression."

D. Fried, R. E. Glena, J. D. B Featherstone, and W. Seka, "Multiple Pulse Irradiation of Dental Hard Tissues at CO_2 Laser Wavelengths."

W. Seka, D. Fried, J. D. B. Featherstone, and R. E. Glena, "Time-Dependent Reflection and Surface Temperatures during CO_2 Laser Irradiation of Dental Hard Tissues with 50–500 μs Pulses."

The following presentations were made at the Tenth Target Fabrication Specialists' Meeting, Taos, NM, 6–10 February 1995:

C. M. Chen, H. Kim, M. Wittman, and S. Letzring, "Design of a Resonant Cavity for Plasma Heating Experiments."

H. Kim, E. L. Alfonso, and S.-H. Chen, "Fabrication of Plastic Shells by an Improved Microencapsulated Technique."

M. D. Wittman, H. Kim, and A. S. Chow, "Determination of the Wall Thickness and Uniformity of Inertial-Fusion Capsules Using the Self-Interference Fringes Produced with Narrow-Bandwidth Illumination."

R. L. McCrory, Jr., "Direct-Drive Scaling for High Gain," AAAS Meeting (American Association for the Advancement of Science), Atlanta, GA, 19 February 1995.

The following presentations were made at the Ultrafast Electronics and Optoelectronics Topical Meeting, Dana Point, CA, 13–15 March 1995:

F. A. Hegmann, S. H. Moffat, R. A. Hughes, J. S. Preston, D. Jacobs-Perkins, C.-C. Wang, T. Y. Hsiang, and R. Sobolewski, "Electro-Optic Sampling of Picosecond Photoresponse of Epitaxial $YBa_2Cu_3O_{7-x}$ Thin Films."

D. Jacobs-Perkins, M. Currie, C.-C. Wang, R. Sobolewski, M. J. Feldman, and T. Y. Hsiang, "First Direct Observation of Single-Flux Quantum Pulses."

C.-C. Wang, M. Currie, and T. Y. Hsiang, "All-Silicon, Ultrafast, Integrable Optoelectronic Interface."

C.-C. Wang, M. Currie, R. Sobolewski, and T. Y. Hsiang, "Picosecond Pulse Generation by Edge Illumination of Si and InP Photoconductive Switches."

F. A. Hegmann, D. Jacobs-Perkins, S. H. Moffat, C.-C. Wang, R. A. Hughes, M. Currie, P. M. Fauchet, T. Y. Hsiang, J. S. Preston, and R. Sobolewski, "Electro-Optic Sampling of Picosecond Photoresponse Signals from $YBa_2Cu_3O_{7-x}$ Thin Films," 1995 March Meeting of the American Physical Society, San Jose, CA, 20–24 March 1995.