
Publications and Conference Presentations

Publications

- H.-M. P. Chen, S. W. Culligan, Y. H. Geng, D. Katsis, and S. H. Chen, "Photoresponsive Glassy Liquid Crystals for Tunable Reflective Coloration," *Polymer Preprints* **43**, 145 (2002).
- T. J. B. Collins and S. Skupsky, "Imprint Reduction Using an Intensity Spike in OMEGA Cryogenic Targets," *Phys. Plasmas* **9**, 275 (2002).
- W. R. Donaldson, J. H. Kelly, R. L. Keck, and R. Boni, "Predicting and Measuring Optical Pulse Shapes on the OMEGA Laser System," in *OSA Trends in Optics and Photonics (TOPS) Vol. 56, Conference on Lasers and Electro-Optics (CLEO 2001)* (Optical Society of America, Washington, DC, 2001), pp. 158–159.
- Y. Geng, D. Katsis, S. W. Culligan, J. J. Ou, S. H. Chen, and L. J. Rothberg, "Fully Spiro-Configured Terfluorenes as Novel Amorphous Materials Emitting Blue Light," *Chem. Mater.* **14**, 463 (2002).
- G. Gol'tsman, O. Okunev, G. Chulkova, A. Lipatov, A. Dzardanov, K. Smirnov, A. Semenov, B. Voronov, C. Williams, and R. Sobolewski, "Fabrication and Properties of an Ultrafast NbN Hot-Electron Single-Photon Detector," *IEEE Trans. Appl. Supercond.* **11**, 574 (2001).
- V. N. Goncharov, "Analytical Model of Nonlinear, Single-Mode, Classical Rayleigh–Taylor Instability at Arbitrary Atwood Numbers," *Phys. Rev. Lett.* **88**, 134502 (2002).
- M. J. Guardalben, A. Babushkin, R. S. Craxton, R. L. Keck, W. R. Donaldson, and K. A. Thorp, "Obtaining UV Energy Balance with 1-THz Spectral Bandwidth on the 60-Beam OMEGA Laser," in *OSA Trends in Optics and Photonics (TOPS) Vol. 56, Conference on Lasers and Electro-Optics (CLEO 2001)* (Optical Society of America, Washington, DC, 2001), p. 157.
- M. J. Guardalben, L. Ning, N. Jain, D. J. Battaglia, and K. L. Marshall, "Experimental Comparison of a Liquid-Crystal Point-Diffraction Interferometer (LCPDI) and a Commercial Phase-Shifting Interferometer and Methods to Improve LCPDI Accuracy," *Appl. Opt.* **41**, 1353 (2002).
- D. Katsis, Y. H. Geng, J. J. Ou, S. W. Culligan, A. Trajkovska, S. H. Chen, and L. J. Rothberg, "Spiro-Linked Ter-, Penta-, and Heptafluorenes as Novel Amorphous Materials for Blue Light Emission," *Chem. Mater.* **14**, 1332 (2002).
- D. Katsis, Y. H. Geng, J. J. Ou, S. W. Culligan, A. Trajkovska, S. H. Chen, and L. J. Rothberg, "Spiro-Linked Ter- and Pentafluorenes for Stable and Efficient Blue Emission," *Polymer Preprints* **43**, 118 (2002).
- J. M. Larkin, W. R. Donaldson, R. S. Knox, and T. H. Foster, "Reverse Intersystem Crossing in Rose Bengal. II. Fluence Dependence of Fluorescence Following 532-nm Laser Excitation," *Photobiochem. Photobiophys.* **75**, 221 (2002).
- J. A. Marozas, "Self- and Cross-Phase Modulation of High-Intensity Laser Beams Emerging from a Diamond-Turned KDP Wedge," *J. Opt. Soc. Am. B* **19**, 75 (2002).
- J. A. Marozas, S. P. Regan, J. H. Kelly, D. D. Meyerhofer, W. Seka, and S. Skupsky, "Laser Beam Smoothing Caused by the Small-Spatial-Scale *B*-Integral," *J. Opt. Soc. Am. B* **19**, 7 (2002).
- R. Sobolewski, Y. Xu, X. Zheng, C. Williams, J. Zhang, A. Verevkin, G. Chulkova, A. Korneev, A. Lipatov, O. Okunev, K. Smirnov, and G. N. Gol'tsman, "Spectral Sensitivity of the NbN Single-Photon Superconducting Detector," *IEICE Trans. Electron.* **E85-C**, 797 (2002).

C. Williams, G. Sabouret, and R. Sobolewski, "Experiments and Simulations of Electrical Pulse Modulation of Y-Ba-Cu-O Thin Films," *IEICE Trans. Electron.* **E85-C**, 733 (2002).

C. Williams, Y. Xu, R. Adam, M. Darula, O. Harnack, J. Scherbel, M. Siegel, F. A. Hegmann, and R. Sobolewski, "Ultrafast YBCO Photodetector Based on the Kinetic-Inductive Process," *IEEE Trans. Appl. Supercond.* **11**, 578 (2001).

Forthcoming Publications

A. Babushkin, M. J. Harvey, and M. D. Skeldon, "The Output Signal-to-Noise Ratio of a Nd:YLF Regenerative Amplifier," to be published in *Applied Optics*.

R. Betti, K. Anderson, V. N. Goncharov, R. L. McCrory, D. D. Meyerhofer, S. Skupsky, and R. P. J. Town, "Deceleration Phase of Inertial Confinement Fusion Implosions" to be published in *Physics of Plasmas*.

T. R. Boehly, T. J. B. Collins, O. Gotchev, T. J. Kessler, J. P. Knauer, T. C. Sangster, and D. D. Meyerhofer, "Observations of Modulated Shock Waves in Solid Targets Driven by Spatially Modulated Laser Beams," to be published in the *Journal of Applied Physics*.

H. Brunnader, W. T. Shmayda, D. R. Harding, L. D. Lund, and R. Janezic, "Advanced Tritium Recovery System," to be published in *Fusion Science and Technology*.

Y. Cao, H. Li, J. A. Szpunur, and W. T. Shmayda, "Effects of Textures on Hydrogen Diffusion in Nickel," to be published in *Materials Science Forum*.

W. R. Donaldson, R. Boni, R. L. Keck, and P. A. Jaanimagi, "A Self-Calibrating, Multichannel Streak Camera for Inertial Confinement Fusion Applications," to be published in the *Review of Scientific Instruments*.

R. Epstein, J. A. Delettrez, V. Yu. Glebov, V. N. Goncharov, P. W. McKenty, P. B. Radha, S. Skupsky, V. A. Smalyuk, and C. Stoeckl, "One-Dimensional Simulation of the Effects of Unstable Mix on Neutron and Charged-Particle Yield from Laser-Driven Implosion Experiments," to be published in *Lasers and Particle Beams*.

Y. Geng, A. Trajkovska, D. Katsis, J. J. Ou, S. W. Culligan, and S. H. Chen, "Synthesis, Characterization, and Optical Properties of Monodisperse Chiral Oligofluorenes," to be published in the *Journal of the American Chemical Society*.

T. Z. Kosc, K. L. Marshall, S. D. Jacobs, J. C. Lambropoulos, and S. Faris, "Electric-Field-Induced Motion of Polymer Cholesteric Liquid Crystal Flakes in a Moderately Conductive Fluid," to be published in *Applied Optics*.

M. V. Kozlov and C. J. McKinstrie, "Sound Waves in One-Ion Plasmas," to be published in *Physics of Plasmas*.

M. V. Kozlov and C. J. McKinstrie, "Sound Waves in Two-Ion Plasmas," to be published in *Physics of Plasmas*.

J. A. Marozas and J. D. Zuegel, "The Smoothing Performance of Ultrafast Pickets on the NIF," to be published in the *Journal of the Optical Society of America B*.

A. V. Okishev, D. Battaglia, I. Begishev, and J. D. Zuegel, "All-Solid-State, Diode-Pumped Regenerative Amplifier for the OMEGA Laser System," to be published in *OSA Trends in Optics and Photonics (TOPS), Conference on Lasers and Electro-Optics, OSA Technical Digest*.

P. B. Radha, J. A. Delettrez, R. Epstein, V. Yu. Glebov, R. L. Keck, R. L. McCrory, P. W. McKenty, F. J. Marshall, S. P. Regan, S. Roberts, T. C. Sangster, W. Seka, S. Skupsky, V. A. Smalyuk, C. Sorce, C. Stoeckl, J. M. Soures, R. P. J. Town, B. Yaakobi, J. A. Frenje, C. K. Li, R. D. Petrasso, F. H. Séguin, K. Fletcher, S. Padalino, C. Freeman, N. Izumi, R. Lerche, and T. W. Phillips, "Inference of Mix in Direct-Drive Implosions on OMEGA," to be published in *Physics of Plasmas*.

S. P. Regan, J. A. Delettrez, P. A. Jaanimagi, B. Yaakobi, V. A. Smalyuk, F. J. Marshall, D. D. Meyerhofer, W. Seka, D. A. Haynes, Jr., and C. F. Hooper, Jr., "Characterization of Direct-Drive-Implosion Core Conditions on OMEGA with Time-Resolved Ar K-Shell Spectroscopy," to be published in *Physics of Plasmas*.

F. H. Séguin, C. K. Li, D. G. Hicks, J. A. Frenje, R. D. Petrasso, J. M. Soures, V. Yu. Glebov, C. Stoeckl, P. B. Radha, D. D. Meyerhofer, S. Roberts, C. Sorce, T. C. Sangster, and M. D. Cable, “Diagnostic Use of Secondary D^3He Proton Spectra for DD OMEGA Targets,” to be published in *Physics of Plasmas*.

W. Seka, H. A. Baldis, J. Fuchs, S. P. Regan, D. D. Meyerhofer, C. Stoeckl, B. Yaakobi, R. S. Craxton, and R. W. Short, “Multibeam Stimulated Brillouin Scattering from Hot Solid-Target Plasmas,” to be published in *Physical Review Letters*.

A. D. Semenov, G. N. Gol’tsman, and R. Sobolewski, “Hot-Electron Effect in Superconductors and Its Applications for Radiation Sensors,” to be published in *Superconductor Science & Technology*.

C. R. Shmayda, W. T. Shmayda, and N. P. Kherani, “Monitoring Tritium Activity on Surfaces: Recent Developments,” to be published in *Fusion Science and Technology*.

W. T. Shmayda, A. Bruggeman, J. Braet, and S. Vanderbiesen, “Treatment of Tritiated Solvents,” to be published in *Fusion Science and Technology*.

W. T. Shmayda and R. D. Gallagher, “Recovery of Tritium from Pharmaceutical Mixed Waste Liquids,” to be published in *Fusion Science and Technology*.

W. T. Shmayda, S. Zukotynski, D. Yeghikyan, and F. Gaspari, “Properties of Amorphous Carbon Films,” to be published in *Fusion Science and Technology*.

R. W. Short and A. Simon, “Damping of Perturbations in Weakly Collisional Plasmas,” to be published in *Physics of Plasmas*.

M. D. Skeldon, “An Optical-Pulse-Shaping System Based on an Electro-Optic Modulator Driven by an Aperture-Coupled-Stripline Electrical-Waveform Generator,” to be published in the *Journal of the Optical Society of America B*.

V. A. Smalyuk, J. A. Delettrez, V. N. Goncharov, F. J. Marshall, D. D. Meyerhofer, S. P. Regan, T. C. Sangster, and B. Yaakobi, “Rayleigh–Taylor Instability in the Deceleration Phase of Spherical Implosion Experiments,” to be published in *Physics of Plasmas*.

C. Stoeckl, C. Chiritescu, J. A. Delettrez, R. Epstein, V. Yu. Glebov, D. R. Harding, R. L. Keck, S. J. Loucks, L. D. Lund, R. L. McCrory, P. W. McKenty, F. J. Marshall, D. D. Meyerhofer, S. F. B. Morse, S. P. Regan, P. B. Radha, S. Roberts, T. C. Sangster, W. Seka, S. Skupsky, V. A. Smalyuk, C. Sorce, J. M. Soures, R. P. J. Town, J. A. Frenje, C. K. Li, R. D. Petrasso, F. H. Séguin, K. Fletcher, S. Padalino, C. Freeman, N. Izumi, R. Lerche, and T. W. Phillips, “First Results from Cryogenic Target Implosions on OMEGA,” to be published in *Physics of Plasmas*.

A. Sunahara, J. A. Delettrez, C. Stoeckl, R. W. Short, and S. Skupsky, “Time-Dependent Electron-Thermal-Flux Inhibition in Direct-Drive Laser Implosions,” to be published in *Physical Review Letters*.

R. P. J. Town, V. N. Goncharov, P. W. McKenty, J. A. Delettrez, R. Epstein, R. L. McCrory, P. B. Radha, S. Skupsky, V. Yu. Glebov, D. R. Harding, D. D. Meyerhofer, F. J. Marshall, S. P. Regan, W. Seka, V. A. Smalyuk, C. Stoeckl, J. M. Soures, B. Yaakobi, and J. D. Zuegel, “OMEGA Direct-Drive Cryogenic Target Physics,” to be published in the proceedings of the 2nd International Conference on Inertial Fusion Sciences and Applications.

F.-Y. Tsai, E. L. Alfonso, S. H. Chen, D. R. Harding, and T. N. Blanton, “Effects of Processing Conditions on the Quality and Properties of Vapor-Deposited Polyimide Shells,” to be published in *Fusion Science and Technology*.

A. Verevkin, J. Zhang, R. Sobolewski, A. Lipatov, O. Okunev, G. Chulkova, A. Korneev, K. Smirnov, and G. N. Gol’tsman, “Detection Efficiency of Large-Active-Area NbN Single-Photon Superconducting Detectors in the Ultraviolet in Near-Infrared Range,” to be published in *Applied Physics Letters*.

L. J. Waxer, J. H. Kelly, J. Rothenberg, A. Babushkin, C. Bibeau, A. Bayramian, and S. Payne, “Precision Spectral Sculpting for Narrowband Amplification of Broadband FM Pulses,” to be published in *Optics Letters*.

B. Yaakobi, F. J. Marshall, T. R. Boehly, R. P. J. Town, and D. D. Meyerhofer, “EXAFS Experiments Using a Laser-Implored Target as a Radiation Source,” to be published in the *Journal of the Optical Society of America B*.

J. D. Zuegel and S. A. Letzring, “Bulk Microwave Phase Modulators for Smoothing by Spectral Dispersion,” to be published in *Applied Optics*.

Conference Presentations

D. D. Meyerhofer, B. Yaakobi, T. R. Boehly, F. J. Marshall, and R. P. J. Town, "EXAFS Detection of Heating of Metals by Shocks and Radiation," JOWOG 37, Lawrence Livermore National Laboratory, 28 January–1 February 2002.

A. V. Okishev, D. Battaglia, I. Begishev, and J. D. Zuegel, "Highly Stable, Diode-Pumped, Cavity-Dumped Nd:YLF Regenerative Amplifier for the OMEGA Laser Fusion Facility," OSA Advanced Solid-State Lasers, Quebec City, Canada, 3–6 February 2002.

W. Seka, "Laser–Plasma Interaction Studies on OMEGA Relevant to Direct-Drive NIF Ignition Targets," LULI Seminar, St. Lary, France, 4 March 2002.

W. T. Shmayda and R. D. Gallagher, "Recovery of Tritium from Pharmaceutical Mixed Waste Liquids and Solid Absorbents," 4th International Conference on Isotopes, Cape Town, South Africa, 10–14 March 2002.