DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

UCRL--53541-84

DE85 011863

Index of Laser Program Publications and Related Reports Calendar Year 1984

Lawrence Livermore National Laboratory

Manuscript Date: May 1985

MASTER

LAWRENCE LIVERMORE NATIONAL LABORATORY
University of California • Livermore, California • 94550

Available from: National Technical Information Service • U.S. Department of Commerce
5285 Port Royal Road • Springfield, VA 22161 • \$8.50 per copy • (Microfiche \$4.50)

DISSEMINATION OF THIS DOCUMENT IS UNLIMITED ²⁰

Index of Laser Program Publications and Related Reports

Lawrence Livermore National Laboratory Calendar Year 1984

This document provides a listing of titles and authors of publications from the LLNL Laser Program during calendar year 1984. It is presented as an aid for researchers in the field who may not otherwise have access to a full listing of laser-related work done at LLNL.

The intent is to provide a brief and concise listing. Publications are classified by subject, but cross references are not supplied and those documents that logically fall in more than one category may not appear to be in the obvious location.

We recognize that gaining access to the publications may be difficult, and have appended a listing of libraries that have microfiche copies of one or more years of LLNL Laser Program publications. Copies of individual publications can often be obtained from the author or from the LLNL Technical Library, Publication Services, L-658, P.O. Box 808, Livermore, CA 94550.

D. L. Buettner and V. J. Martin were responsible for the assembly and production of this report with its associated fiche collection, M. L. Rufer guided it through the Technical Information Department, and W. F. Krupke and S. A. Massey edited the index.

Index of Laser Program Publications and Related Reports—1984

Contents

Annual Report—1983	1
Inertial Confinement Fusion Reviews	1
Solid State Laser Systems	1
Review Papers	1
Laser Hardware and Power Conditioning	2
Structural Analysis	3
Control and Alignment Systems	4
Experimental Data Acquisition	5
Harmonic Conversion	5
Laser Materials	6
Laser Glasses and Other Optical Materials	6
Optical Coatings	8
Optically Induced Damage	9
Laser Fusion Theory	10
Laser-Plasma Interaction and Electron Transport	10
Atomic Theory	11
Asymmetry and Instabilities	12
Numerical Methods	12
Laser Fusion Experiments	13
Laser Plasma Interaction and Electron Transport	13
Ablative Compression and Related Experiments	15
X-Ray Lasers and Backlighting	15
Laser Fusion Targets	17
Review Papers	17
Cryogenic Targets	17
Target Fabrication	17
Laser Fusion Diagnostics	18
Review Papers	18
X-Ray Diagnostics	18
High Density Diagnostics	19
Related Diagnostics	19
Energy Applications	20
Review Papers	20
Fusion Reactor Concepts	21
The Cascade Reactor	21
Fusion Reactor Design Considerations	22
Advanced Lasers	23
X-Ray	23
Rare Gas Halide	23
Free Electron	23
Solid State	24
Advanced Concepts	25
Laser Isotope Separation	25
Review Papers	25
Related Reports	26
External Contract Reports	27
Related Reports	27
Report Index	31
Author Index	39
Access to the Publications	44

ANNUAL REPORT—1983

1983 Laser Program Annual Report

UCRL-50021-83

INERTIAL CONFINEMENT FUSION REVIEWS

Harlow G. Ahlstrom and Lamar W. Coleman
"Laser Fusion," July 1984.

LLL-TB-56

J. L. Emmett, W. F. Krupke, and J. I. Davis
"Laser R&D at the Lawrence Livermore National Laboratory for Fusion and Isotope Separation Applications," prepared for the IEEE Journal of Quantum Electronics, October 24, 1983.

UCRL-89945

William J. Hogan
"Inertial Confinement Fusion: Present Status and Future Potential," prepared for the IECEC Conference, San Francisco, California, August 19-24, 1984.

UCRL-90733

John F. Holzhrichter
"Progress in Inertial Confinement Fusion at Lawrence Livermore National Laboratory," prepared for the 10th International Conference on Plasma Physics and Controlled Nuclear Fusion Research, London, England, September 12-19, 1984.

UCRL-90558

John H. Nuckolls
"Economic Potential of Inertial Fusion," prepared for the Symposium on Fusion Power Development—The Next Decade, Livermore, California, April 2-3, 1984.

UCRL-90758

SOLID STATE LASER SYSTEMS

Review Papers

J. L. Emmett, W. F. Krupke, and W. R. Sooy
"The Potential of High-Average-Power Solid State Lasers," September 1984.

UCRL-53571

John L. Emmett, William F. Krupke, and John B. Trenholme
"Potential of Solid State Lasers for High Average Power Applications," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90174 Abst. & Summ.

William F. Krupke
"Modern Solid State Laser Materials," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90173 Summ.

W. F. Krupke
"Solid State Laser R&D at Lawrence Livermore National Laboratory," prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco, California, November 26-30, 1984.

UCRL-91155 Abst.

K. R. Manes, O. C. Barr, E. S. Bliss, P. Drake, R. O. Godwin, D. G. Gritton, J. S. Hildum, F. W. Holloway, C. A. Hurley, B. C. Johnson, D. J. Kuizenga, B. Merritt, R. G. Ozarski, F. Reinecker, J. R. Severyn, D. R. Speck, M. A. Summers, G. J. Suski, and E. P. Wallerstein

"Novette Facility: Activation and Experimental Results," prepared for Laser and Particle Beams, July 23, 1984.

UCRL-90054 Rev. 1

K. R. Manes
"The Novette Project—Cost & Schedule," April 24, 1984.

UCID-20108

W. W. Simmons

"Nova Laser Fusion Facility: Design, Construction, and Initial Performance," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-91785 Abst. & Summ.

Laser Hardware and Power Conditioning

William L. Bird, Jr. and Herbert H. Woodson

"Detailed Design, Fabrication, and Testing of an Engineering Prototype Compensated Pulsed Alternator," under Purchase Order No. 33525309, March 1980.

UCRL-15213

L. P. Bradley, K. S. Jancaitis, D. A. Masquelier, C. E. Thompson, and H. T. Powell

"Flashlamp Pumping of Nd:Glass," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90184 Abst. & Summ.

D. Eimerl and E. J. Goodwin

"Computer Design and Optimization of the Active Rotary Flux Compressor," December 6, 1983.

UCRL-53472

J. Goldhar and M. A. Henesian

"Large Aperture Optical Switching Devices," prepared for the SPIE Meeting, Los Angeles, California, January 22-27, 1984.

UCRL-90107

J. Goldhar and M. A. Henesian

"Large Aperture Electro-Optical Switch," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90154

C. W. Hartman, J. H. Hammer, and D. Meeker

"High-Power RF Compressor," March 30, 1984.

UCID-20054

M. A. Henesian and J. Goldhar

"Demonstration of Electro-Optical Switching at the 26×26 cm Aperture Using Plasma Electrodes," prepared for Optics Letters, May 25, 1984.

UCRL-90880

M. A. Henesian, J. Goldhar, and R. A. Haas

"Electro-Optically Tuned Harmonic Generation for Large Aperture Switching of Multi-Pass Laser Systems," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90153 Abst. & Summ.

M. A. Henesian, J. Goldhar, and R. A. Haas

"Electro-Optic Harmonic Conversion Switch for Large Aperture Multi-Pass Laser Systems," prepared for Optics Letters, February 14, 1984.

UCRL-90469

K. S. Jancaitis, D. A. Masquelier, and H. T. Powell

"Blackbody Pumping of Neodymium Laser Glass," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91898 Abst. & Summ.

Jackson C. Koo, Glen M. McWright, Michael D. Pocha, and Russel B. Wilcox

"A Low Leakage 10,000 Volt Silicon Photoconductive Switch," prepared for Applied Physics Letters, May 25, 1984.

UCRL-90893

Jackson C. Koo, Glen M. McWright, Michael D. Pocha, and Russel B. Wilcox

"Low Leakage, Long Recovery Time Silicon Photoconductive Switches," prepared for 1985 High Voltage Workshop, IEEE, Monterey, California, February 26-28, 1985.

UCRL-91629 Abst.

Kenneth R. Manes and William W. Simmons

"Statistical Optics Applied to High Power Glass Lasers," prepared for the Journal of the Optical Society of America, March 23, 1984.

UCRL-90158

J. E. Murray, A. C. Erlandson, W. F. Hagen, K. S. Jancaitis, H. T. Powell, and B. W. Woods

"High Efficiency Nd:Glass Disk Amplifier," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91893 Abst. & Summ.

J. E. Murray, M. O. Riley, R. J. Poli, and H. T. Powell

"Silicone Rubber Edge Claddings for Laser Disk Amplifiers," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90185 Abst. & Summ.

Thomas A. Nelson and Gerald L. Goudreau

"Analysis of Ultrasonic Waves in a Bounded Medium," prepared for CUBE Symposium, Los Alamos, New Mexico, October 10-12, 1984.

UCRL-90987 Abst.

J. A. Oicles and G. J. Krausse

"Power MOS Fast Switching Techniques," prepared for the 16th Power Modulator Symposium, Arlington, Virginia, June 18-20, 1984.

UCRL-91238

R. G. Ozarski, D. A. Bender, B. M. Gim, and L. G. Seppala

"High Power Target Plane Characterization Diagnostics for the Nova Laser," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91901 Abst. & Summ.

H. T. Powell, K. S. Jancaitis, J. B. Trenholme, C. E. Uhrich, and G. R. Wirtenson

"Recycling of Optical Radiation by Flashlamps," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91900 Abst. & Summ.

Lynn G. Seppala

"Optical Relaying Properties of Afocal Telescopes," prepared for Southwest Conference on Optics (S.P.I.E.), Albuquerque, New Mexico, March 4-8, 1984.

UCRL-91628 Abst.

D. G. Stearns

"Experimental Report on a Fiber Optic Light Guide Made by Galileo Electro-Optics Corp.," October 4, 1984.

UCRL-15643

R. B. Wilcox

"A Photoconductive Switch Pulse Shaping Device for the Nova Master Oscillator," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985

UCRL-91881 Abst. & Summ.

Structural Analysis

R. Bradley Burdick

"Modal Testing and Analysis of Nova Laser Structures," prepared for the 3rd International Modal Analysis Conference, International Society for Modal Testing and Analysis/Union College, Orlando, Florida, January 1985.

UCRL-90848 Abst.

R. Bradley Burdick

"Modal Testing and Analysis of Nova Laser Structures," prepared for CUBE Symposium, Los Alamos, New Mexico, October 10-12, 1984.

UCRL-90968 Abst.

David B. McCallen and Robert C. Murray

"Dynamic Analysis of the Nova Target Chamber to Assess Alignment Errors Due to Ambient Noise," October 3, 1984.

UCID-20242

John William Pastrnak
 "Bond Graph Time Simulations Using Extracted Modal Parameters from the Nova Spaceframe," prepared for a Masters Thesis, January 27, 1984.

UCRL-53525

John W. Pastrnak
 "Bond Graph Time Simulations Using Extracted Modal Parameters from the Nova Spaceframe," prepared for CUBE Symposium, Los Alamos, New Mexico, October 10-12, 1984.

UCRL-90969 Abst.

John W. Pastrnak and H. Joseph Weaver
 "Dynamic Testing of Nova Laser Structural Systems: The North Side Spaceframe Tower," June 22, 1984.

UCID-20116

H. Joseph Weaver
 "Overview of LLNL's Modal Analysis Capabilities and Tests," prepared for CUBE Symposium, Los Alamos, New Mexico, October 10-12, 1984.

UCRL-90963 Abst.

H. Joseph Weaver and R. Bradley Burdick
 "Modal Parameter Estimation via Shaker vs Speaker Excitation," May 1984.

UCID-20085

H. Joseph Weaver, John W. Pastrnak, and Douglas E. Fields
 "Dynamic Testing of Nova Laser Switchyard Tower," June 1, 1984.

UCID-20102

Control and Alignment Systems

E. S. Bliss, R. D. Boyd, C. D. Swift, R. Reeves, and P. J. VanArsdall
 "Automatic Alignment Experience on the Nova Fusion Laser," prepared for the 14th International Conference on Lasers and Electro-Optics, (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91902 Abst. & Summ.

E. S. Bliss, P. J. VanArsdall, R. D. Boyd, C. D. Swift, and L. G. Seppala
 "Features and Initial Performance of Automatic Alignment on the Nova Fusion Laser," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90211 Abst. & Summ.

Terrence Charles Coupe
 "Graphics with Remote Stepper Motor Control - A Laser Alignment System," prepared for CUBE Symposium, Los Alamos, New Mexico, October 10-12, 1984.

UCRL-90982 Abst.

D. W. Myers, R. G. Ozarski, J. B. Richards, and J. L. Wilkerson
 "Nova Laser Beam Diagnostic Data Acquisition System," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90210 Abst. & Summ.

Charles D. Swift, Erian S. Bliss, W. Alford Jones, and Lynn G. Seppala
 "Three Wavelength Optical Alignment of the Nova Laser," prepared for the Technical Symposium East '84, Arlington, Virginia, April 29-May 4, 1984.

UCRL-90034

C. D. Swift, E. S. Bliss, W. A. Jones, and L. G. Seppala
 "A Target Plane Imager for Inertial Confinement Fusion," prepared for Southwest Conference on Optics, Albuquerque, New Mexico, March 4-8, 1984.

UCRL-91658 Abst.

Paul J. VanArsdall, Frederick W. Holloway, David L. McGulgan, and Rendy T. Shelton
 "Nova Laser Alignment Control System," prepared for the Technical Symposium East '84, Arlington, Virginia, April 29-May 4, 1984.

UCRL-90033

Experimental Data Acquisition

J. M. Auerbach, B. J. DeMartini, and E. W. McCauley
 "Use of the ORACLE DBMS in Determining the Response of Complex Scientific Instrumentation," prepared for the 3rd International ORACLE User Group Conference, San Francisco, California, August 19-22, 1984.

UCRL-90636

J. M. Auerbach, J. R. Severny, D. E. Kroepfli, and R. A. Lerche
 "Acquisition and Processing of Experimental Data at the Novette and Nova Laser Fusion Facilities," prepared for the 13th Symposium on Fusion Technology, Varese, Italy, September 24-28, 1984.

UCRL-90633 Abst.

R. W. Carey and R. A. Lerche
 "User's Guide Fusion Experiments Analysis Facility," March 20, 1984.

UCID-20043

R. A. Lerche, J. M. Auerbach, B. J. DeMartini, and R. W. Carey
 "An 'Electronic Shotbook' for Easy Data Retrieval," prepared for the 1984 IEEE International Conference on Plasma Science, St. Louis, Missouri, May 14-16, 1984.

UCRL-90352 Abst. and Poster

R. A. Lerche and R. W. Carey
 "Operating Procedures for the Fusion Experiments Analysis Facility," March 20, 1984.

UCID-20044

Harmonic Conversion

David Eimerl
 "Frequency Conversion in Quadrature Schemes," prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco, California, November 26-30, 1984.

UCRL-91156 Abst.

D. Eimerl
 "High Average Power Harmonic Generation," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91897 Abst. & Summ.

B. C. Johnson, R. E. Hugenberger, F. T. Marchi, R. G. Ozarski, S. Warshaw, and K. R. Bradley
 "An Optical System for Precision Orientation of Frequency Conversion Array Crystals," prepared for the Workshop on Optical Fabrication and Testing, Monterey, California, April 18-20, 1984.

UCRL-90274 Abst. & Summ.

B. C. Johnson, J. D. Williams, and M. A. Summers
 "Performance of 74-cm Aperture Third Harmonic Crystal Arrays," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90164 Abst. & Summ.

R. G. Ozarski, R. E. Hugenberger, B. C. Johnson, W. A. Jones, S. Warshaw, and K. R. Bradley
 "Phase Match Orientation of Crystals for Frequency Conversion Arrays," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90209 Abst. & Summ.

W. L. Smith, F. P. Milanovich, and M. A. Henneslan
 "Spontaneous and Stimulated Raman Scattering Measurements in KDP Crystal Segments and Benzene," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90152 Abst. & Summ.

D. R. Speck, R. O. Godwin, and W. W. Simmons
 "Harmonic Capabilities of the Nova Laser Fusion Facility," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91911 Abst. & Summ.

M. A. Summers, J. D. Williams, B. C. Johnson, and D. Elmerl
"Design and Performance of the Nova Frequency Conversion System," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91904 Abst. & Summ.

C. L. Verclimack, D. Milam, and R. A. McGee
"Laser-Induced Damage in Index-Matching Liquids for Potassium Dihydrogen Phosphate Crystals," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90187 Abst. & Summ.

Sandy Warshaw
"Second Generation Fielded Nova Color Conversion Crystal Alignment Systems," prepared for CUBE Symposium, Los Alamos, New Mexico, October 19-12, 1984.

UCRL-90980 Abst.

J. D. Williams, B. C. Johnson, T. F. Marchl, R. G. Murray, and M. A. Summers
"Diverse Optical Fabrication Technologies Used in the Nova KDP Arrays," prepared for the Workshop on Optical Fabrication and Testing, Monterey, California, April 18-20, 1984.

UCRL-90275 Abst. & Summ.

J. D. Williams, B. C. Johnson, D. Milam, R. G. Murray, and M. A. Summers
"Mechanical Design of 74-cm Aperture KDP Crystal Arrays for the Nova Laser," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90163 Abst. & Summ.

LASER MATERIALS

Laser Glasses and Other Optical Materials

J. A. Caird, W. F. Krupke, M. D. Shinn, L. K. Smith, and R. E. Wilder, Jr.
"Characterization of Nd:Cr:GSGG Laser Materials," prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco, California, November 26-30, 1984.

UCRL-91152 Abst.

J. A. Caird, W. F. Krupke, M. D. Shinn, L. K. Smith, and R. E. Wilder, Jr.
"Measurements of Losses and Lasing Efficiency in Nd:Cr:GSGG Laser Rods," prepared for the 14th Annual Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91894 Abst. & Summ.

John F. Cooper and Mary F. Singleton
"Rapid Growth of Potassium Dihydrogen Phosphate Crystals," prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco, California, November 26-30, 1984.

UCRL-91795 Abst. & Summ.

David Elmerl
"New Materials for Frequency Conversion," prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco, California, November 26-30, 1984.

UCRL-91154 Abst.

William F. Krupke
"Modern Solid State Laser Materials," June 20, 1984.

UCID-20119

William F. Krupke
"Modern Solid State Laser Materials," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90173 Summ.

William F. Krupke
"Advanced Crystalline Laser Materials," prepared for the NASA Workshop on Tunable Solid State Lasers for Remote Sensing, Menlo Park, California, October 1-3, 1984.

UCRL-91670

W. F. Krupke, J. A. Caird, M. D. Shinn, H. W. Newkirk, and H. J. Guggenheim
"Spectroscopic and Laser Properties of Chromium Doped Fluoride Garnets and Perovskites," prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco, California, November 26-30, 1984.

UCRL-91157 Abst.

John E. Marion

"Strengthening of Solid State Laser Materials," prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco, California, November 26-30, 1984.

UCRL-91760 Abst. & Summ.

John E. Marion

"Strengthening of Solid State Laser Materials," prepared for the 14th Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91895 Abst. & Summ.

K. B. Schwartz

"Electrical Conductivity of a Synthetic Rare-Earth Scandium Gallium Garnet," prepared for American Geophysical Union Spring Meeting, Cincinnati, Ohio, May 14-18, 1984.

UCRL-90398 Abst.

K. B. Schwartz and A. G. Duba

"Electrical Transport Properties of Gadolinium Scandium Gallium Garnet," prepared for the Journal of Physics and Chemistry of Solids, October 11, 1984.

UCRL-91683

M. D. Shinn, W. F. Krupke, J. A. Caird, L. K. Smith, R. Uhrin, and R. F. Belt

"Optical Properties of Cr^{3+} and Nd^{3+} Ions in $\text{GGG}(\text{Ca,Zr})$ and $\text{GGG}(\text{Ca,Mg,Zr})$," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91899 Abst. & Summ.

M. D. Shinn, W. F. Krupke, J. A. Caird, and R. E. Wilder, Jr.

"Spectroscopic and Laser Properties of GGG:Ca:Zr Crystals Doped with Nd and Cr Ions," prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco, California, November 26-30, 1984.

UCRL-91153 Abst.

S. E. Stokowski, L. Cook, H. Mueller, and M. J. Weber

"Concentration Quenching in Nd-Doped Glasses," prepared for International Conference on Luminescence—1984, Detroit, Michigan, April 29-30, 1984.

UCRL-90627 Abst. & Summ.

S. E. Stokowski and J. E. Marion

"Spectroscopic and Thermo-Mechanical Properties of New Neodymium-Doped Laser Materials," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91895 Abst. & Summ.

Randall T. Swimm, Michael Bass, and Xiao Yiming

"Calorimetric Study of Optical Absorption of Suprasil W-1 Fused Quartz," under Purchase Order 1593405, September 1984.

UCRL-15638

Marvin J. Weber

"Computer Simulations of Rare Earth Sites in Glass: Experimental Tests and Applications to Laser Materials," prepared for the International Conference on Defects in Insulating Crystals, Salt Lake City, Utah, August 20-24, 1984.

UCRL-90682

Marvin J. Weber

"Ab Initio Calculations of the Optical Properties of Ions in Glass," prepared for the Journal of Non-Crystalline Solids and the Symposium on Glass Science and Technology, Vienna, Austria, July 2-6, 1984.

UCRL-91384

M. J. Weber

"Local Structure in Amorphous Materials: Computer Simulations and Measurements of Rare-Earth-Doped Glasses," prepared for Colloquium, Physics Department, University of Connecticut, November 2, 1984.

UCRL-91555 Abst.

W. T. White, M. A. Hennesan, and M. J. Weber

"Measurement of Two-Photon Induced Solarization in BK-3, BK-7, and BK-10 at 532 nm," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90170 Abst. & Summ.

W. T. White, III, M. A. Henehan, and M. J. Weber
 "Photothermal Lensing Measurements of Two-Photon Absorption and
 Two-Photon-Induced Color Centers in Borosilicate Glasses at 532 nm," prepared for the
 Journal of the Optical Society of America (B), October 28, 1984.

UCRL-91738

N. W. Winter and R. M. Pitzer
 "Theoretical Methods for the Study of Transition Metals in Crystals," prepared for the
 Conference on Tunable Solid State Lasers, La Jolla, California, June 13-15, 1984.

UCRL-91294

Yury Zundevich
 "Chemical Engineering Principles of Constant Temperature-Constant Supersaturation
 Growth of Potassium Dihydrogen Phosphate (KDP) Crystals," August 23, 1984.

UCID-20155

Optical Coatings

T. Tuttle Hart, C. K. Carniglia, and M. C. Staggs
 "Effect of Overcoats on 351 nm Reflectors," prepared for Boulder Damage Symposium,
 Boulder, Colorado, October 15-17, 1984.

UCRL-91427 Abst.

P. Paul Hed
 "Novolac as Stain Protective Film During Optical Glass Fabrication," prepared for the
 Workshop on Optical Fabrication and Testing, Monterey, California, April 18-20, 1984.

UCRL-90194 Abst.

Robert W. Hopper
 "Broadband Reduced Reflectivity on Silica Using Etched Nuclear Tracks," prepared for
 Applied Optics, February 17, 1984.

UCRL-90463

W. Howard Lowdermilk
 "Porous Silica Antireflection Coatings with High UV Laser-Damage Thresholds,"
 prepared for Optics News, July 25, 1984.

UCRL-91296 Abst.

W. Howard Lowdermilk
 "Laser Induced Damage to Thin Films and Graded-Index Surfaces," prepared for the
 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland,
 May 21-24, 1985.

UCRL-91946 Abst. & Summ.

David Milam
 "Technical and Historical Overview of the Study at Livermore of Porous Antireflection
 Coatings," prepared for Southwest Conference on Optics (S.P.O.), Albuquerque,
 New Mexico, March 4-8, 1984.

UCRL-91737 Abst.

D. Milam, W. H. Lowdermilk, J. G. Wilder, I. M. Thomas, and B. E. Yoldas
 "Damage-Resistant Porous Silica Antireflection Coatings for Use at 351 nm," prepared
 for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim,
 California, June 19-22, 1984.

UCRL-90186 Abst. & Summ.

David Milam, Giles G. Peterson, and W. Howard Lowdermilk
 "Variation of Transmittance Spectra of Porous Antireflection Coatings with Index
 Profile," prepared for Boulder Damage Symposium, Boulder, Colorado,
 October 15-17, 1984.

UCRL-91430 Abst.

J. E. Murray, M. O. Riley, R. J. Poli, and H. T. Powell
 "Silicone Rubber Edge Claddings for Laser Disk Amplifiers," prepared for the 13th
 International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California,
 June 19-22, 1984.

UCRL-90185 Abst. & Summ.

F. Rainier, W. H. Lowdermilk, D. Milam, C. K. Carniglia, T. Tuttle Hart, and
 T. L. Lichtenstein

"Materials for Optical Coatings in the UV," prepared for Applied Optics, July 31, 1984.

UCRL-91323

Ian M. Thomas

"Anti-Reflective Coating for KDP Crystals," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90454 Abst. & Summ.

Ian M. Thomas, John G. Wilder, W. Howard Lowdermilk, and Michael C. Staggs

"High Damage Threshold Porous Silica Antireflection Coating," prepared for Boulder Damage Symposium, Boulder, Colorado, October 15-17, 1984.

UCRL-91428 Abst.

J. G. Wilder

"Porous Silica Antireflection Coating for Use at 248 nm or 266 nm," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984, and Applied Optics, February 21, 1984.

UCRL-90464

G. Richard Wirtenson, Ian M. Thomas, Norman J. Brown, and John G. Wilder

"Chemical Treatment of Silicate Glasses for Producing Anti-Reflection Surfaces," prepared for the Workshop on Optical Fabrication and Testing, Monterey, California, April 18-20, 1984.

UCRL-90218

B. E. Yoldas, D. Milam, J. G. Wilder, W. H. Lowdermilk, and I. M. Thomas

"Polymer Oxide Antireflection Coatings for Fused Silica and Their Damage Susceptibility to Laser Radiation," prepared for the International Conference on Metallurgical Coatings, San Diego, California, April 9-13, 1984.

UCRL-90136 Abst.

Optically Induced Damage

T. Tuttle Hart, C. K. Carniglia, F. Rainer, and M. C. Staggs

"Recent Damage Results for Antireflection Coatings at 355 nm," prepared for the Boulder Damage Symposium, Boulder, Colorado, November 14-16, 1983.

UCRL-89872

D. Kohler, B. A. Watson, J. L. Guttman, and Michael Gerasimenko

"Pulsed X-Ray Induced Damage to Metal and Multi-Layer Mirrors," prepared for the 5th APS Topical Conference on High Temperature Plasma Diagnostics, Tahoe City, California, September 16-20, 1984.

UCRL-15636 Abst.

W. Howard Lowdermilk and David Milam

"Review of Ultraviolet Damage Threshold Measurements at Lawrence Livermore National Laboratory," prepared for the Technical Symposium East '84, Arlington, Virginia, April 29-May 4, 1984.

UCRL-90866

W. H. Lowdermilk, J. G. Wilder, N. J. Brown, C. A. Gunderson, D. Milam, F. Rainer, and M. C. Staggs

"Laser Damage in Porous-Silica Antireflection Films," prepared for the Boulder Damage Symposium, Boulder, Colorado, November 14-16, 1983.

UCRL-89863

D. Milam

"Measurement at Lawrence Livermore National Laboratory of Thresholds of Samples in the Balzer's Round-Robin Laser-Damage Experiment," prepared for Applied Optics, July 11, 1984.

UCRL-90618 Rev. I

D. Milam and S. E. Peluso

"Beam Profiling in Gigawatt 1064-nm Lasers Used in Research on Optical Materials at Livermore," prepared for SPIE's 28th Annual International Technical Symposium on Optics and Electro-Optics, San Diego, California, August 19, 1984.

UCRL-90540

David Milam, Ian M. Thomas, Carolyn Weinzapfel, and John G. Wilder

"Pulse Duration Dependence of 1064-nm Laser-Damage Thresholds of Porous Silica Antireflection Coatings on Fused Silica Substrates," prepared for Boulder Damage Symposium, Boulder, Colorado, October 15-17, 1984.

UCRL-91429 Abst.

F. Rainer, C. L. Vercimak, D. Milam, C. K. Carniglia, and T. Tuttle Hart
 "Measurements of the Dependence of Damage Thresholds on Laser Wavelength, Pulse Duration, and Film Thickness," prepared for the Boulder Damage Symposium, Boulder, Colorado, November 14-16, 1983.

UCRL-89864

M. C. Staggs and F. Rainer
 "Damage Thresholds of Fused Silica, Plastics and KDP Crystals Measured with 0.6-ns 353-nm Pulses," prepared for the Boulder Damage Symposium, Boulder, Colorado, November 14-16, 1983.

UCRL-89866

C. L. Vercimak, D. Milam, and R. A. McGee
 "Laser-induced Damage in Index-Matching Liquids for Potassium Dihydrogen Phosphate Crystals," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90187 Abst. & Summ.

LASER FUSION THEORY

Laser Plasma Interaction and Electron Transport

B. Afeyan and E. A. Williams
 "Spotsize Effects on Raman Sidelobe Scatter," prepared for the Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90531 Abst.

B. B. Afeyan and E. A. Williams
 "On the Hybrid Two Plasmon Decay, Raman Instability," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91163 Abst.

B. B. Afeyan and E. A. Williams
 "Stimulated Raman Sidelobe Scattering with the Effects of Oblique Incidence," prepared for Physics of Fluids, September 27, 1984.

UCRL-91595

J. R. Albritton
 "Electron-Ion Collisions in Laser-Fusion Plasmas," prepared for the Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90526 Abst.

W. Edward Alley
 "Generalized Hydrodynamics," prepared for the Conference on Statistical Mechanics, Davis, California, March 29-31, 1984.

UCRL-89652 Abst.

Remy Fabbro, Claire Max, and Edouard Fabre
 "Planar Laser-Driven Ablation: Effect of Inhibited Electron Thermal Conduction," prepared for Physics of Fluids, October 26, 1984.

UCRL-87047 Rev. I

G. Krafft, J. W. K. Mark, L. Smith, and T. F. Wang
 "Longitudinal and Transverse Coupling in Accelerator Beam Plasmas," prepared for the 4th International Topical Conference on High Power Electronic and Ion Beam Research and Technology, Palaiseau, France, June-July 1981.

UCRL-88925

W. L. Kruer and Kent Estabrook
 "JXB Heating by Very Intense Laser Light," prepared for Physics of Fluids, August 27, 1984.

UCRL-90483 Rev. I

W. L. Kruer and Kent Estabrook
 "Thermal Self-Focusing of Laser Beams and Hot Spots," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91159 Abst.

W. L. Kruer, Kent Estabrook, B. F. Lasinski, and W. C. Mead
 "Laser Plasma Coupling in Long Scale Length, High Z Plasmas," prepared for the Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90528 Abst.

A. Bruce Langdon and D. C. Barnes

"Direct Implicit Plasma Simulation," prepared for Computational Techniques, March 27, 1984.

UCRL-90602

Y. T. Lee

"An Ionization Balance Model for Non-Equilibrium Plasmas," prepared for the 1984 IEEE International Conference on Plasma Science, St. Louis, Missouri, May 14-16, 1984.

UCRL-90361 Abst.

J. D. Lindl and J. W.-K. Mark

"Recent Livermore Estimates on the Energy Gain of Cryogenic Single-Shell Ion Beam Targets," prepared for the International Symposium on Heavy Ion Accelerators and Their Application to Inertial Fusion, Tokyo, Japan, January 23-27, 1984.

UCRL-90241

R. A. London, M. D. Rosen, P. L. Hagelstein, and M. S. Maxon

"Photoresonant Fluorine X-Ray Laser Design," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91164 Abst.

S. M. Pollaine and J. D. Lindl

"Impact of Variations in Pellet Aspect Ratio on Direct Drive Capsules," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91213 Abst.

M. D. Rosen, P. L. Hagelstein, D. L. Matthews, E. M. Campbell, R. A. London, R. W. Lee, A. G. Hazi, and B. L. Whitten

"Design and Analysis of X-Ray Laser Targets," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91165 Abst.

M. D. Rosen and J. D. Lindl

"Model for Gain vs. Laser Energy for Direct Drive Targets," prepared for the Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90529 Abst.

E. A. Williams

"Some Topics in Raman Scattering," prepared for the Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90530 Abst.

E. A. Williams

"Induced Forward Raman Scattering and the Absolute Raman Instability," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91160 Abst.

F. Ze, L. J. Suter, S. M. Lane, E. M. Campbell, J. D. Lindl, M. D. Rosen, D. W. Phillion, C. W. Hatcher, R. P. Drake, J. S. Hildum, and K. R. Manes

"Wavelength Scaling of Laser-Driven Implosions," prepared for Physical Review Letters, June 1, 1984.

UCRL-91087

Atomic Theory

J. K. Boyd, J. W. Mark, W. M. Sharp, and S. S. Yu

"Comparisons of Hydrodynamic Beam Models With Kinetic Treatments," prepared for the 5th International Conference on High-Power Particle Beams, San Francisco, California, September 12-14, 1983.

UCRL-89471 Rev. 1

R. B. Laughlin

"Temperature Dependence of Interatomic Forces in the Thomas-Fermi Approximation," prepared for Physical Review A, February 6, 1984.

UCRL-90304

Richard M. More
 "Thermal Occupation and Pressure of Resonance States," prepared for Physics Letters,
 January 19, 1984.

UCRL-90061

R. M. More
 "Pressure Ionization, Resonances, and the Continuity of Bound and Free States,"
 prepared for Advances in Atomic and Molecular Physics, August 28, 1984.

UCRL-91452

B. L. Whitten and A. U. Hazi
 "Autoionization Rates of Doubly Excited States for Sodium-Like Krypton," prepared for
 the 4th Topical Conference on Atomic Processes in High Temperature Plasmas,
 Princeton, New Jersey, April 13-15, 1983.

UCRL-88715 Abst.

B. L. Whitten and A. U. Hazi
 "Dielectric Recombination in Neon-Like Systems," prepared for the DEAP Meeting of
 the American Physical Society, May 30-June 1, 1984.

UCRL-90269 Abst.

Asymmetry and Instabilities

William L. Kruer
 "Ponderomotive and Thermal Filamentation of Laser Light," prepared for Comments on
 Plasma Physics and Controlled Fusion, July 25, 1984.

UCRL-91406

Edison P. Liang and John Garrison
 "Generalized Laser Filamentation Instability Coupled to Cooling and Other Acoustical
 Instabilities," prepared for the AIAA 17th Fluid and Plasma Dynamics Conference,
 Snowmass, Colorado, June 25-27, 1984.

UCRL-90139 Abst.

Edison P. Liang, Jack Wong, and John Garrison
 "Generalized Laser Filamentation Instability Coupled to Cooling Instability," prepared
 for the AIAA 17th Fluid and Plasma Dynamics Conference, Snowmass, Colorado,
 June 25-27, 1984.

UCRL-90711

C. J. Randall and J. R. Albritton
 "Chaotic Nonlinear Stimulated Brillouin Scatter," prepared for Physical Review Letters,
 April 17, 1984.

UCRL-90688

Numerical Methods

J. Denavit
 "Time Implicit Simulation of Particle-Fluid Systems," prepared for Second International
 School for Space Simulations, Kaula, Hawaii, February 3-16, 1985.

UCRL-91642 Abst.

Kent Estabrook, W. L. Kruer, and D. S. Bailey
 "2-D LASNEX Ray-Trace Calculations of Thermal Whole Beam Self-Focusing," prepared
 for Physical Review Letters, April 13, 1984.

UCRL-90684

Alex Friedman
 "First Tests of the LASNEX 3D Raytrace Laser," prepared for the Anomalous
 Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90527 Abst.

Alex Friedman
 "Modeling of Laser Light Transport, Scattering, and Deposition," prepared for the
 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts,
 October 29-November 2, 1984.

UCRL-91161 Abst.

D. W. Hewett and A. B. Langdon
 "Direct Implicit PIC Simulation of LH Penetration of Plasmas," prepared for the
 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts,
 October 29-November 2, 1984.

UCRL-91162 Abst.

David Kershaw
 "2-Dimensional Finite Difference Solution of the Radiation Transport Equation in LASNEX," prepared for Code Developer's Conference, San Diego, California, November 6-8, 1984.

UCRL-91672 Abst.

A. Bruce Langdon
 "Direct Implicit Plasma Simulation," prepared for Multiple Time Scales, Computational Technique, Academic Press, March 27, 1984.

UCRL-90602

A. Bruce Langdon
 "Implicit Plasma Simulation," prepared for Second International School for Space Simulations, Kauai, Hawaii, February 3-16, 1985.

UCRL-91641 Abst.

R. W. Lee, B. L. Whitten, and R. E. Strout II
 "SPECTRA - A Computer Model for Plasma Diagnostics," prepared for the 4th Topical Conference on Atomic Processes in High Temperature Plasmas, Princeton, New Jersey, April 13-15, 1983.

UCRL-88716 Abst.

LASER FUSION EXPERIMENTS

Laser-Plasma Interaction and Electron Transport

J. Bailey, R. Stewart, R. Fortner, J. Kilkenny, R. Lee, T. Phillips, and R. Walling.
 "Density Dependent Effects in L-shell Emission From a Laser Produced Plasma," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91175 Abst.

J. E. Balmer, J. D. Kilkenny, and R. W. Lee
 "X-Ray Spectroscopy and $3/2\omega_0$ - Emission from Laser-Irradiated Targets of Variable Z," prepared for the 10th International Conference on Plasma Physics and Controlled Nuclear Fusion Research, London, England, September 12-19, 1984.

UCRL-90484 Abst.

E. M. Campbell
 "Laser Plasma Interaction Experiments at the 0.53 μm Novette Facility," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90369 Abst. & Summ.

E. M. Campbell
 "Dependence of Laser-Plasma Interaction Physics on Laser Wavelength and Plasma Scalelength," prepared for the 1983 School of Radiation and Plasmas, Trieste, Italy, May 24-June 17, 1983.

UCRL-90677

R. Paul Drake
 "Results of Large-Plasma Experiments Using Multikilojoule, Sub-Micron Lasers," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91281 Abst. & Vg.

R. P. Drake, R. E. Turner, K. G. Estabrook, B. F. Lasinski, D. W. Phillion, R. L. Kauffman, S. A. Letts, E. A. Williams, E. M. Campbell, C. W. Hatcher, and W. L. Kruer
 "Long-Scalelength Plasma Experiments Using Thin Foil Targets," prepared for Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90563 Abst. & Vg.

R. P. Drake, R. E. Turner, B. F. Lasinski, K. G. Estabrook, E. M. Campbell, C. L. Wang, D. W. Phillion, E. A. Williams, and W. L. Kruer
 "Hot Electron Production by the Raman Instability in Laser-Plasma Experiments," prepared for Physical Review Letters, May 1, 1984.

UCRL-90764

R. P. Drake, R. E. Turner, B. F. Lasinski, K. G. Estabrook, E. M. Campbell, C. L. Wang, D. W. Phillion, E. A. Williams, and W. L. Kruer
 "Efficient Raman Backscatter and Hot Electron Production in Laser-Plasma Interaction Experiments," prepared for Physical Review Letters, August 3, 1984.

UCRL-91371

J. E. Heidrich, S. K. Ault, H. A. Koehler, S. M. Pollaine, V. W. Slivinsky, and R. A. Zacharias
 "Measurement of Hot-Electron Production and Microwave Emission by Laser-Irradiated CH Targets," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91174

R. L. Kauffman, R. P. Drake, R. E. Turner, B. F. Lasinski, G. T. Tirsell, J. Smith, W. C. Mead, and E. Stover
 "X-Ray Conversion Efficiency From Planar Au Disks at 0.53 μm and 0.26 μm at Novette," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91228 Abst. & Vg.

R. L. Kauffman, R. W. Lee, B. L. Whitten, R. P. Drake, R. E. Turner, K. G. Estabrook, B. F. Lasinski, D. W. Phillion, S. A. Letts, and E. M. Campbell
 "X-Ray Spectroscopic Studies of Exploding Foils," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90370 Abst. & Summ.

R. L. Kauffman, R. W. Lee, B. L. Whitten, R. P. Drake, R. E. Turner, K. G. Estabrook, B. F. Lasinski, D. W. Phillion, S. A. Letts, and E. M. Campbell
 "X-Ray Spectroscopy From Doped Thin Foil Targets," prepared for the Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90571 Abst.

P. H. Y. Lee and H. G. Ahlstrom
 "A Simple Model for Soft X-Ray Conversion Efficiency from Laser-Irradiated Gold Disk Targets," prepared for Laser and Particle Beams, January 6, 1984.

UCRL-90553

D. W. Phillion, R. L. Kauffman, K. G. Estabrook, R. E. Turner, R. P. Drake, E. M. Campbell, and B. F. Lasinski
 "Hydrodynamic Expansion of Thin Foil Targets," prepared for the Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90572 Abst.

S. M. Pollaine, V. W. Slivinsky, K. G. Ault, K. G. Estabrook, J. E. Heidrich, J. D. Kilkenny, H. A. Koehler, and R. A. Zacharias
 "Laser Generation of Suprathermals and Microwaves," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91212 Abst.

R. E. Turner, K. G. Estabrook, R. L. Kauffman, D. R. Bach, R. P. Drake, D. W. Phillion, and B. F. Lasinski
 "Stimulated Raman Scattering Measurements from 0.26 Micron Wavelength Experiments," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91226 Abst.

R. E. Turner, K. G. Estabrook, R. L. Kauffman, D. R. Bach, R. P. Drake, D. W. Phillion, B. F. Lasinski, W. L. Kruer, E. A. Williams, and E. M. Campbell
 "Evidence for Collisional Damping in High Energy Raman Scattering Experiments at 0.26 μm ," prepared for Physical Review Letters, August 15, 1984.

UCRL-91425

C. L. Wang, E. M. Campbell, R. P. Drake, K. G. Estabrook, G. R. Leipelt, and R. E. Turner
 "Energy, Space, and Time Distribution of Suprathermal X-Rays," prepared for the Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90616 Abst.

Ablative Compression and Related Experiments

E. M. Campbell, R. P. Drake, R. E. Turner, D. W. Phillion, W. L. Kruer, B. F. Lasinski, C. L. Wang, K. G. Estabrook, and C. W. Hatcher
 "Large Scalelength Experiments at 1.06 μm and 0.53 μm ," prepared for the Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90570 Abst.

N. D. Delamater, C. F. Hooper, Jr., R. F. Joyce, L. A. Woltz, N. M. Ceglie, R. L. Kauffman, R. W. Lee, and M. C. Richardson
 "Opacity Effects on Hydrogen-Like X-Ray Lines Emitted From Laser Driven Implosions," prepared for Physical Review Letters, May 24, 1984.

UCRL-90847

J. D.ilkenny, J. Bailey, K. G. Estabrook, R. W. Lee, B. J. MacGowen, and J. Tabstabel
 "Laser Ablation Diagnosed by the Spectroscopy of Thin K Shell Dots," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91219 Abst.

S. M. Lane
 "Neutron Activation Measurements at the Novette Laser Facility," prepared for 1984 IEEE International Conference on Plasma Science, St. Louis, Missouri, May 14-16, 1984.

UCRL-90387 Abst.

B. F. Lasinski, R. P. Drake, R. E. Turner, K. G. Estabrook, C. L. Wang, E. A. Williams, D. W. Phillion, W. L. Kruer, and E. M. Campbell
 "Analysis of Novette Disc Irradiations," prepared for Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90535 Abst.

David Munro
 "Rayleigh-Taylor Experiments on Nova," prepared for the 1984 Topical Conference on the Physics of Radiatively Driven ICF Targets, Las Vegas, Nevada, December 3-7, 1984.

UCRL-91529 Abst.

D. W. Phillion, K. G. Estabrook, R. P. Drake, R. E. Turner, E. M. Campbell, and B. F. Lasinski
 "Hydrodynamic Expansion of CH Foils," prepared for Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

MISC-4220

R. E. Turner, R. P. Drake, D. W. Phillion, K. G. Estabrook, B. F. Lasinski, R. E. Ellis, W. L. Kruer, and E. M. Campbell
 "Optical Spectroscopy from Thin Foil Targets," prepared for the Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11, 1984.

UCRL-90543 Abst. & Vg.

J. Wark, J. D.ilkenny, and A. J. Cole
 "Observation of Rayleigh-Taylor Instability in Laser Accelerated Targets," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91222 Abst. & Vg.

F. Ze, L. J. Suter, S. M. Lane, E. M. Campbell, J. D. Lindl, M. D. Rosen, D. W. Phillion, R. P. Drake, C. W. Hatcher, J. S. Hildum, G. W. Heaton, and K. R. Manes
 "Scaling of ICF Target Compression With Laser Wavelength: Experimental Results," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91225 Abst. & Vg.

F. Ze, L. J. Suter, S. M. Lane, E. M. Campbell, J. D. Lindl, M. D. Rosen, D. W. Phillion, C. W. Hatcher, R. P. Drake, J. S. Hildum, and K. R. Manes
 "Wavelength Scaling of Laser-Driven Implosions," prepared for Nuclear Fusion, December 1984.

UCRL-91087 Rev. 1

X-Ray Lasers and Backlighting

A. M. Hawryluk, D. R. Claio, and G. D. Rambach
 "X-Ray Laser Fabrication by Anisotropic Etching of Silicon," prepared for the Journal of Vacuum Science and Technology, and the Electron Ion and Photon Beam Technology Conference, Tarrytown, New York, May 29-June 1, 1984.

UCRL-90418

R. L. Kauffman

"Characteristics of an X-ray Laser," prepared for 2nd Topical Meeting on Laser Techniques in the Extreme Ultraviolet, Boulder, Colorado, March 5-7, 1984.

MISC-4206 Vg.

R. A. London, M. D. Rosen, P. L. Hagelstein, and M. S. Maxon

"Photoresonant Fluorine X-Ray Laser Design," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91164 Abst.

B. J. MacGowen, D. L. Matthews, J. E. Trebes, G. Charatis, and P. A. Vavra

"Resonantly-Pumped Photoexcitation of Hydrogen-Like Fluorine—Experiments Performed at the Novette and Chroma Lasers," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91280 Abst.

D. L. Matthews

"Results from Recent Attempts to Produce an XUV Laser," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91282 Abst.

D. L. Matthews, E. M. Campbell, K. Estabrook, C. Hatcher, R. L. Kauffman, R. W. Lee, and C. L. Wang

"Observation of Amplification of the OVIII H α Line in a Recombining Laser-Produced Plasma," prepared for Applied Physics Letters, January 1, 1984.

UCRL-90279

D. Matthews, P. Hagelstein, R. Kauffman, R. Lee, C. Wang, H. Medeck, M. Campbell, N. Ceglie, G. Stone, G. Leipelt, P. Lee, P. Drake, L. Pleasance, L. Seppala, C. Hatcher, G. Rambach, G. Heaton, R. Price, R. Ozarski, R. Speck, K. Manes, J. Underwood, A. Toor, T. Weaver, L. Coleman, B. DeMartini, J. Auerbach, R. Turner, W. Zagotta, A. Hawryluk, and M. Rosen

"Soft X-Ray Laser Experiments at the Novette Laser Facility," prepared for the 2nd Topical Meeting on Laser Techniques in the Extreme Ultraviolet, Boulder, Colorado, March 5-7, 1984.

UCRL-90334 Abst. & Summ.

D. L. Matthews, P. L. Hagelstein, M. D. Rosen, M. J. Eckart, N. M. Ceglie, A. U. Hazi, H. Medeck, B. J. MacGowen, J. E. Trebes, B. L. Whitten, E. M. Campbell, C. W. Hatcher, A. M. Hawryluk, R. L. Kauffman, L. D. Pleasance, G. Rambach, J. H. Scofield, G. Stone, and T. A. Weaver

"Demonstration of a Soft X-Ray Amplifier," prepared for Physical Review Letters, October 27, 1984.

UCRL-91730

D. Matthews, P. Hagelstein, M. Rosen, R. Kauffman, R. Lee, C. Wang, H. Medeck, M. Campbell, N. Ceglie, G. Leipelt, P. Lee, P. Drake, L. Pleasance, L. Seppala, C. Hatcher, G. Rambach, A. Hawryluk, G. Heaton, R. Price, R. Ozarski, R. Speck, K. Manes, J. Underwood, A. Toor, T. Weaver, L. Coleman, B. DeMartini, J. Auerbach, R. Turner, W. Zagotta, C. Hailey, M. Eckart, A. Hazi, B. Whitten, G. Charatis, P. Rockett, G. Busch, D. Sullivan, C. Shepard, and R. Johnson

"Soft X-Ray Laser Experiments at the Novette Laser Facility," prepared for the 2nd Topical Meeting on Laser Techniques in the Extreme Ultraviolet, Boulder, Colorado, March 5-7, 1984.

UCRL-90334

S. Maxon, P. Hagelstein, K. Reed, and J. Scofield

"A Gas Puff Soft X-Ray Laser Target Design," prepared for Applied Physics Letters, May 16, 1984.

UCRL-90800

M. Rosen, P. Hagelstein, D. Matthews, E. Campbell, A. Hazi, B. Whitten, B. MacGowen, R. Turner, R. Lee, G. Charatis, G. E. Busch, C. Shepard, and P. Rockett

"The Exploding Foil Technique for Achieving a Soft X-Ray Laser," prepared for Physical Review Letters, November 1, 1984.

UCRL-91736

M. D. Rosen, P. L. Hagelstein, D. L. Matthews, E. M. Campbell, R. A. London, R. W. Lee, A. U. Hazi, and B. L. Whitten
 "Design and Analysis of X-Ray Laser Targets," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91165 Abst.

J. Trebes, M. Campbell, N. Ceglie, D. Christie, M. Eckart, M. Gerasimenko, P. Hagelstein, A. Hawryluk, A. Hazi, S. Hildum, R. Kauffman, R. Lee, R. London, B. MacGowen, K. Manes, D. Matthews, H. Medeckl, D. Nilson, L. Pleasance, G. Rambach, M. Rosen, G. Stone, A. Toor, R. Turner, T. Weaver, B. Whitten, and J. Wiedwald
 "Results From the Novette XIV Laser Experiment," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91224 Abst. & Vg.

LASER FUSION TARGETS

Review Papers

Yu-Li Pan and Stephen Hatchett
 "Using Spin-Polarized Fuel in ICF Reactor Targets," prepared for the 1984 Topical Conference on the Physics of Radiatively Driven ICF Targets, Las Vegas, Nevada, December 3-7, 1984.

UCRL-91530 Abst.

Cryogenic Targets

W. J. Comfort, III
 "Model for Condensing Liquid Film Motion on the Inside of an Externally Cooled Spherical Shell," prepared for CUBE Symposium, Los Alamos, New Mexico, October 10-12, 1984.

UCRL-91026 Abst.

Kyekeyoon Kim and Lawrence C. Mok
 "Temperature Effects on the Behavior of Liquid Hydrogen Isotopes Inside a Spherical-Shell, Directly Driven Inertial Confinement Fusion Target," prepared for Subcontract 4180405, May 1984.

UCRL-15647

J. H. Pitts, P. R. Landon, and M. A. Gerhard
 "Design Alternatives for Cryogenic Beryllium Windows in an ICF Cryostat," November 1984.

QCID-20257

Target Fabrication

J. H. Campbell, J. Z. Grens, and J. F. Poco
 "Preparation and Properties of Hollow Glass Microspheres for Use in Laser Fusion Experiments," November 1, 1983.

UCRL-53516

E. J. Hsieh, C. W. Hatcher, and D. E. Miller
 "Fabrication of Rayleigh-Taylor Instability Experiment Targets," prepared for the 31st National Symposium of the American Vacuum Society, Reno, Nevada, December 4-7, 1984.

UCRL-90939

P. Landon, K. W. Mahin, R. Juntz, R. Foley, and I. Stowers
 "Development of High Strength Braze Joints in Beryllium," prepared for the American Welding Society Meeting, Dallas, Texas, April 1984.

UCRL-90294

S. A. Letts, D. E. Miller, R. A. Corley, T. M. Tillotson, and L. A. Witt
 "Microspot Target Development with Seeded and Patterned Plasma Polymers," prepared for the 31st National Symposium of the AVS, Reno, Nevada, December 4-7, 1984.

UCRL-90938

LASER FUSION DIAGNOSTICS

Review Papers

L. W. Coleman

"Sub-Nanosecond Cinematography in Laser Fusion Research: Current Techniques and Applications at the Lawrence Livermore National Laboratory," prepared for the 16th International Congress on High Speed Photography and Photonics, Strasbourg, France, August 27-31, 1984.

UCRL-90750

X-Ray Diagnostics

J. M. Auerbach and K. G. Tirsell

"Software for Reflectivity Calculations of X-Ray Mirrors," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91230 Rev. I

N. M. Ceglio, A. M. Hawryluk, G. D. Rambach, and L. D. Plessance

"The Role of Microfabrication Technology in Advanced X-Ray Laser Research," prepared for Microcircuit Engineering '84, Berlin, West Germany, September 24-27, 1984.

UCRL-91093 Abst.

George Charatis

"KMSF X-Ray Laser Experiments," prepared for Purchase Order 4566005, July 1984.

UCRL-15630

D. J. Christie, D. G. Nilson, J. D. Wiedwald, and R. B. Wilcox

"An Ultrafast Turnoff Laser Triggered Gating System for Microchannel Plate Intensified X-Ray Spectrometers," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91227

Mark J. Eckart

"X-Ray Laser Diagnostics," prepared for Lasers '84, Society for Optical and Quantum Electronics, November 26-30, 1984.

UCRL-91467 Abst.

C. P. Hale, H. Medeck, and P. H. Y. Lee

"Photoemissive Materials for 0.35 μm Laser Fiducials in X-Ray Streak Cameras," prepared for the 2nd Topical Meeting on Laser Techniques in the Extreme Ultraviolet, Boulder, Colorado, March 5-7, 1984.

UCRL-90089

R. L. Kauffman, R. W. Lee, B. L. Whitten, R. P. Drake, R. E. Turner, K. G. Estabrook, B. F. Lasinski, D. W. Phillion, S. A. Letts, and E. M. Campbell

"X-Ray Spectroscopy from Doped Thin Foil Targets," prepared for Anomalous Absorption Conference, Charlottesville, Virginia, May 6-11 1984.

UCRL-90571 Abst.

R. L. Kauffman, D. L. Matthews, N. Ceglio, and H. Medeck

"Diagnostics for an XUV/Soft X-Ray Laser," prepared for the 2nd Topical Meeting on Laser Techniques in the Extreme Ultraviolet, Boulder, Colorado, March 5-7, 1984.

UCRL-90335

B. J. MacGowen, D. L. Matthews, J. E. Trebes, G. Charatis, and P. A. Vavra

"Resonantly-Pumped Photoexcitation of Hydrogen-Like Fluorine—Experiments Performed at the Novette and Chama Lasers," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91280 Abst.

D. Matthews, C. Hailey, P. Hagelstein, M. Rosen, M. Eckart, A. Toor, G. Power, G. Vayer, G. Charatis, P. Rockett, D. Steinman, D. Sullivan, P. Burkhalter, and B. MacGowen

"Spectroscopy to Determine Line Coincidences for X-Ray Lasing Scheme," prepared for the 2nd Topical Meeting on Laser Techniques in the Extreme Ultraviolet, Boulder, Colorado, March 5-7, 1984.

UCRL-90493 Abst., Summ., & Pstr.

D. G. Stearns and J. D. Wiedwald

"Development of an Ultrafast X-Ray Framing Camera," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91229 Abst.

C. L. Wang, G. R. Lelpelt, and D. G. Nilson

"Imaging 20-100 KeV X-Ray Emissions from Laser Fusion Targets," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90162 Abst. & Summ.

C. L. Wang, G. R. Lelpelt, and D. G. Nilson

"A Microchannel Plate Pinhole Camera for 20-100 KeV X-Ray Imaging," prepared for the 5th APS Topical Conference on High Temperature Plasma Diagnostics, Tahoe City, California, September 16-20, 1984.

UCRL-91223

High-Density Diagnostics

Robert L. Kauffman

"X-Ray Spectroscopy of Laser-Produced Plasmas," prepared for the 8th International Colloquium on EUV and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas, Washington, D.C., August 27-29, 1984.

UCRL-91411

R. L. Kauffman, H. Medeckl, R. W. Lee, B. L. Whitten, K. G. Estabrook, R. P. Drake, R. E. Turner, and S. Letts

"Time-Resolved X-Ray Line Intensities for Diagnostics of Laser Produced Plasmas," prepared for the 5th APS Topical Conference on High Temperature Plasma Diagnostics, Tahoe City, California, September 16-20, 1985.

UCRL-91466 Abst.

S. M. Lane

"Neutron Activation Measurements at the Novette Laser Facility," prepared for the 1984 IEEE International Conference on Plasma Science, St. Louis, Missouri, May 14-16, 1984.

UCRL-90387 Abst.

S. M. Lane

"Advanced Neutron Diagnostics for the Nova Laser Facility," prepared for the 5th APS Topical Conference on High Temperature Plasma Diagnostics, Tahoe City, California, September 16-20, 1984.

UCRL-91372 Abst.

D. R. Slaughter

"Nuclear Techniques for Determining the Spatial and Energy Distribution of Fast Confined Alpha Particles in Ignited DT Plasma," prepared for Review of Scientific Instruments, October 1984.

UCRL-91260

C. L. Wang, R. Kalibjian, M. S. Singh, J. D. Wiedwald, D. E. Campbell, E. M. Campbell, M. D. Cable, W. R. Graves, S. M. Lane, R. A. Lerche, R. H. Price, D. G. Stearns, G. A. Mourou, and S. G. Prussin

"Approaches to Ultrafast Neutron Detectors," prepared for the 5th APS Topical Conference on High Temperature Plasma Diagnostics, Tahoe City, California, September 16-20, 1984.

UCRL-91317

Related Diagnostics

N. M. Ceglie

"Measurement of Amplified Spontaneous Emission at 200 Å," prepared for the 5th APS Topical Conference on High Temperature Plasma Diagnostics, Tahoe City, California, September 16-20, 1984.

UCRL-91515 Abst.

Francoise Gex, Tony Huen, and Ralph Kalibjian

"S-11 and S-20 Photocathode Research Activity," August 27, 1984.

UCID-19946 Rev. 1

F. Gex, R. Kalibjian, and T. Huen

"Physical Parameters of S20 and S11 Photocathodes," prepared for the 16th International Congress on High Speed Photography and Photonics, Strasbourg, France, August 27-31, 1984.

UCRL-90581 Abst.

C. C. Lai, R. D. Lear, and L. B. Olk
 "Photoelectronic Trajectory Anatomy of RCA-C73435 Image Converter and Its Performance," prepared for IEEE Conference on Photoelectronic Imaging, London, England, September 10-11, 1985.

UCRL-91699 Abst.

H. Medeck, R. L. Kauffman, and N. M. Ceglio
 "Transmission Grating Streak Spectrometer," prepared for the 5th Topical Conference on High Temperature Diagnostics, Tahoe City, California, September 16-20, 1984.

UCRL-91516 Abst. & Vg.

R. H. Price and J. D. Wiedwald
 "High Image Quality Sub-100 Picosecond Gated Framing Camera Development," prepared for the Laser Institute of America 2nd International Conference, Los Angeles, California, November 14-17, 1983.

UCRL-89569

J. B. Richards, J. L. Wilkerson, R. G. Ozarski, and D. W. Myers
 "Diagnostic Streak Camera Package for the Nova Laser," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91903 Abst. & Summ.

S. W. Thomas, R. L. Griffith, and W. R. McDonald
 "Improvements in Avalanche Transistor Sweep Circuitry for Electro-Optic Streak Cameras," prepared for the 16th International Congress on High Speed Photography and Photonics, Strasbourg, France, August 27-31, 1984.

UCRL-90491

C. L. Wang
 "Studying Laser-Produced Plasmas with Microchannel Plate Electron Multipliers," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90371 Abst. & Summ.

C. L. Wang, H. Medeck, C. P. Hale, G. R. Leipelt, S. W. Thomas, and J. D. Wiedwald
 "A Microchannel Plate Streak Camera," prepared for the 16th International Congress on High Speed Photography and Photonics, Strasbourg, France, August 27-31, 1984.

UCRL-90393

C. L. Wang, H. Medeck, C. P. Hale, S. W. Thomas, and J. D. Wiedwald
 "Very Fast Gamma-Ray Detectors," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91231 Abst.

ENERGY APPLICATIONS

Review Papers

James A. Blink
 "Inertial Confinement Fusion Development Options: Facility Characteristics and Schedules from a Reactor Physics Viewpoint," prepared for Fusion Technology, October 22, 1984.

UCRL-91700

William J. Hogan
 "A Comparison of Three ICF Reactor Designs," prepared for the 13th Symposium on Fusion Technology, Varese, Italy, September 24-28, 1984.

UCRL-90665

William J. Hogan and Gerald L. Kulcinski
 "Advances in ICF Power Reactor Design," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-91647 Abst.

J. A. Maniscalco, D. H. Berwald, R. W. Moir, and J. D. Lee
 "The Fusion Breeder—an Early Application of Nuclear Fusion," prepared for Fusion Technology, February 23, 1984.

UCRL-87801 Rev. 1

Claire E. Max
 "Cesium Resources and the Development of Fission and Fusion Breeder Reactors," prepared for the Energy and Technology Review, October 1984.

UCRL-52000-84-10

Wayne R. Meier and William T. Hogan

"ICF Reactor Economics: Identifying the High Leverage Design Features," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-91648 Abst.

Fusion Reactor Concepts

J. A. Blink

"The Pulse-Star Inertial Confinement Fusion Reactor," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-91643 Abst.

M. W. McDowell and K. A. Murray

"Pulse-Star ICF Reactor - Heat Transfer Loop and Balance of Plant Considerations," prepared for Contract SANL 322-006, May 9, 1984.

UCRL-15598

Wayne R. Meier, D. H. Berwald, J. D. Gordon, T. J. McCarville, and W. G. Steele

"An ICF Tritium Production Reactor," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-91644 Abst.

Wayne R. Meier and Edward C. Morse

"Blanket Optimization Studies for the HYLIFE ICF Reactor," prepared for Fusion Technology, September 14, 1984.

UCRL-91522

The Cascade Reactor

Isaac Maya, Kenneth R. Schultz, Robert F. Bourque, and R. Lewis Creedon

"High Efficiency Heat Transport and Conversion System for Cascade," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-15640 Summ.

Isaac Maya, Kenneth R. Schultz, Robert F. Bourque, and R. Lewis Creedon

"An Integrated Cascade Reaction Chamber and Power Conversion System," prepared for the American Nuclear Society Annual Meeting, Boston, Massachusetts, June 9-14, 1984.

UCRL-15657 Summ.

I. Maya, K. R. Schultz, O. D. Erlandson, E. O. Winkler, and H. E. Levine

"Design and Fabrication of the Cascade Solid-Breeder Blanket Microspheres," prepared for the American Nuclear Society 1984 Annual Meeting, New Orleans, Louisiana, June 3-8, 1984.

UCRL-15579 Summ.

I. Maya, K. R. Schultz, D. F. Roelant, and J. J. Buksa

"Tritium Issues in the Solid-Breeder Cascade Reaction Chamber Study," prepared for the American Nuclear Society 1984 Annual Meeting, New Orleans, Louisiana, June 3-8, 1984.

UCRL-15577 Summ.

I. Maya, K. R. Schultz, and C. P. C. Wong

"Tritium Inventory and Recovery in the Cascade ICF Reactor," prepared for Tritium Technology in Fission, Fusion and Isotopic Applications, Dayton, Ohio, April 30-May 2, 1985.

UCRL-15641 Summ.

Wayne R. Meier and Edward C. Morse

"Blanket Optimization Studies for Cascade," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-91646 Abst.

K. A. Murray and M. W. McDowell

"Primary Heat Transfer Loop Design for the Cascade Inertial Confinement Fusion Reactor," prepared for the American Nuclear Society 1984 Annual Meeting, New Orleans, Louisiana, June 3-8, 1984.

UCRL-15578

K. A. Murray and M. W. McDowell

"Cascade: A Review of Heat Transport and Plant Design Issues," prepared for Contract SANL-322-006, July 31, 1984.

UCRL-15632

John H. Pitts

"Performance of the Cascade Inertial-Confinement-Fusion Conceptual Reactor," prepared for the 13th Symposium on Fusion Technology, Varese, Italy, September 24-28, 1984.

UCRL-90666

John H. Pitts

"Development of the Cascade Inertial-Confinement Fusion Reactor," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-91589 Summ.

John H. Pitts

"Final Design Characteristics of the Cascade Inertial-Confinement-Fusion Reactor," prepared for 1984 American Nuclear Society Annual Meeting, Boston, Massachusetts, June 9-14, 1985.

UCRL-91929 Summ.

John H. Pitts and Otis R. Walton

"Flow Characteristics of the Cascade Granular Blanket," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-91590 Summ.

John H. Pitts, Otis R. Walton, and R. L. Creedon

"A High-Temperature, Low-Activation Design for the Cascade Reactor," prepared for the American Nuclear Society 1984 Annual Meeting, New Orleans, Louisiana, June 3-8, 1984.

UCRL-90199 Summ.

Fusion Reactor Design Considerations

James A. Blink and W. G. Hoover

"Disassembly of Isochorically Heated Liquids," prepared for the 3rd International Conference on Liquid Metal Eng. and Tech. in Energy Production, Oxford, England, April 9-13, 1984.

UCRL-90171

James A. Blink and William G. Hoover

"Liquid Fragmentation in ICF Reactors," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-91645 Abst.

James C. Doyle, Jr. and J. D. Lee

"14-MeV Neutron Multiplication in Thick Beryllium Assemblies," prepared for the American Nuclear Society 1984 Annual Meeting, New Orleans, Louisiana, June 3-8, 1984.

UCRL-90397 Summ.

Oscar H. Krikorian

"Estimation of the Thermophysical and Mechanical Properties and the Equation of State of Li_2O ," prepared for the 9th European Conference on Thermophysical Properties, Manchester, United Kingdom, September 17-21, 1984.

UCRL-90681 Abst.

I. Maya, K. R. Schultz, and Project Staff

"Inertial Confinement Fusion Reaction Chamber and Power Conversion System Study," prepared for Subcontract 2632605, September 1984.

UCRL-15642

Wayne R. Meier

"Displacement Damage in the First Structural Wall of an Inertial Confinement Fusion Reactor: Dependence on Blanket Design," July 13, 1984.

UCID-20121

Wayne Raymond Meier

"Multivariable Optimization of Fusion Reactor Blankets," prepared for a Ph.D. Thesis, April 1984.

UCRL-53543

Wayne R. Meier and Edward C. Morse

"A Nonlinear Simplex Method for Fusion Reactor Blanket Optimization," prepared for the American Nuclear Society 1984 Annual Meeting, New Orleans, Louisiana, June 3-8, 1984.

UCRL-90202 Summ.

Wayne R. Meier and Edward C. Morse

"Fusion Reactor Blanket Optimization: A Nonlinear, Multivariable Method," prepared for Fusion Technology, July 16, 1984.

UCRL-91291

J. H. Pitts, P. R. Landon, and M. A. Gerhard

"Design Alternatives for Cryogenic Beryllium Windows in an ICF Cryostat," November 1984.

UCID-20257

John H. Pitts and Otis R. Walton

"Granular Flow Along the Interior Surface of Rotating Cones," prepared for the 8th International Chisa Meeting, Prague, Czechoslovakia, September 3-7, 1984.

UCRL-90742

Calvin Wong, E. F. Plechaty, R. C. Haight, L. F. Hansen, R. J. Howerton, T. T. Komoto, J. D. Lee, S. T. Perkins, and B. A. Pohl

"Measurements and Calculations of the Leakage Multiplication from Hollow Beryllium Spheres," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3-5, 1985.

UCRL-91774 Summ.

ADVANCED LASERS

X-Ray

Andrew M. Hawryluk, Dino P. Ciarlo, and Glenn D. Rambach

"X-Ray Laser Fabrication by Anisotropic Etching of Silicon," prepared for The Journal of Vacuum Science and Technology Electron Ion Photo Beam Technical Conference, Westchester, New York, May 30-June 3, 1984.

UCRL-90418 Abst.

Rare Gas Halide

J. Goldhar, K. S. Janczitis, J. R. Murray, and L. G. Schlitt

"An 850 J, 150 ns Narrow-band Krypton Fluoride Laser," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90137

J. Harvey and A. Hazi

"Photoabsorption in the Rare Gas Excimer System KR_2 ," prepared for 1985 European Conference on Atomic and Molecular Physics, Amsterdam, Netherlands, April 15-19, 1985.

UCRL-91847 Abst.

Free Electron

W. A. Barletta, B. Anderson, W. M. Fawley, V. K. Neil, T. J. Orzechowski, D. Prosnitz, E. T. Scharlemann, S. M. Yarema, A. C. Paul, D. Hopkins, A. M. Sessler, and J. Wurtelle
"Enhancing the Performance of a High-Gain Free Electron Laser Operating at Millimeter Wavelengths," prepared for the Workshop on Coherent and Collective Properties of Relativistic E-beams and Electromagnetic Radiation, Como, Italy, September 13-16, 1984.

UCRL-91123

W. A. Barletta, J. K. Boyd, A. C. Paul, and D. S. Prono

"Brightness Limitations in Multikilowatt Electron Beam Sources," prepared for the 1984 Free Electron Laser Conference, Castelgandolfo, Italy, September 3-7, 1984.

UCRL-90914

D. L. Bix, S. A. Hawkins, S. E. Poor, L. L. Reginato, and M. W. Smith

"The Use of Induction Linacs as Electron Sources for Free Electron Lasers," prepared for 1984 Free Electron Laser Conference, Castelgandolfo, Italy, September 10-12, 1984.

UCRL-90928 Summ.

W. M. Fawley, D. Prosnitz, and E. T. Scharlemann
 "Synchrotron-Betatron Resonances in Free-Electron Lasers," prepared for Physical Review A, May 24, 1984.

UCRL-90636

W. M. Fawley and E. T. Scharlemann
 "Effects of External Focusing Upon FEL Amplifiers," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29–November 2, 1984.

UCRL-91074 Abst.

T. J. Orzechowski, B. Anderson, W. Fawley, D. Prosnitz, T. Scharlemann, D. Hopkins, A. M. Sessler, and J. Wurtele
 "A High Power Free Electron Laser Operating in the MM-Wave Regime," prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco, California, November 26–30, 1984.

UCRL-91236 Abst.

T. J. Orzechowski, B. Anderson, W. M. Fawley, D. Prosnitz, E. T. Scharlemann, S. Yarema, D. Hopkins, A. C. Paul, A. M. Sessler, and J. Wurtele
 "Microwave Radiation from a High-Gain Free Electron Laser Amplifier," prepared for Physical Review Letters, September 10, 1984.

UCRL-91559

T. J. Orzechowski, B. Anderson, S. Yarema, D. Prosnitz, D. B. Hopkins, A. C. Paul, A. M. Sessler, and J. Wurtele
 "Microwave Amplification Using a Tapered Wiggler Free Electron Laser," prepared for the 9th International Conference on Infrared and Millimeter Waves.

UCRL-90643 Abst.

T. J. Orzechowski, H. Koehler, W. Edwards, M. Nelson, and B. Marshall
 "A Novel Probe for Determining the Size and Position of a Relativistic Electron Beam," prepared for SPIE 28th Annual International Technical Symposium on Optics and Electro-Optics, San Diego, California, August 19, 1984.

UCRL-90555

Donald Prosnitz
 "Review of Free Electron Laser Theory and Experiments," prepared for 5th International Conference on High-Power Particle Beams, San Francisco, California, September 12–14, 1983.

UCRL-89648

D. Prosnitz and R. Haas
 "The Free Electron Laser ICF Driver," prepared for American Nuclear Society Transactions, New Orleans, Louisiana, June 3–8, 1984.

UCRL-90365 Summ.

D. Prosnitz and E. T. Scharlemann
 "High Gain Amplifiers," prepared for the 1984 Free Electron Laser Conference, Frascati, Italy, September 3–7, 1984.

UCRL-91235 Abst.

Donald Prosnitz and James C. Swingle
 "The Free-Electron Laser Amplifier," prepared for the Beam Research Program, April 1984.

LLL-TB-63

E. T. Scharlemann, A. M. Sessler, and J. S. Wurtele
 "Optical Guiding by a Free Electron Laser," prepared for the Workshop on Coherent and Collective Properties of Relativistic E-beams and Electromagnetic Radiation, Como, Italy, September 13–16, 1984.

UCRL-91476

Jack SooHoo
 "Laser Gain Induced by Relativistic Electrons in a Uniform DC Magnetic Field," prepared for IEEE Journal of Quantum Electronics on Free Electron Lasers, October 1984.

UCRL-91703

Solid State

D. Elmerl
 "High Average Power Harmonic Generation," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21–14, 1985.
 UCRL-91897 Abst. & Summ.

J. L. Emmett, W. F. Krupke, and W. R. Sooy

"The Potential of High-Average-Power Solid State Lasers," September 1984.

UCRL-53571

John L. Emmett, William F. Krupke, and John B. Trenholme

"Potential of Solid State Lasers for High Average Power Applications," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90174 Abst. & Summ.

M. A. Henesian, J. Goldhar, and R. A. Haas

"Electro-Optically Tuned Harmonic Generation for Large Aperture Switching of Multi-Pass Laser Systems," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90153 Abst. & Summ.

M. A. Henesian, J. Goldhar, and R. A. Haas

"Electro-Optic Harmonic Conversion Switch for Large Aperture Multi-Pass Laser Systems," prepared for Optics Letters, February 14, 1984.

UCRL-90469

John F. Holzrichter

"Solid State Laser Driver Technology for Inertial Confinement Fusion," prepared for the American Nuclear Society 1984 Annual Meeting, New Orleans, Louisiana, June 3-8, 1984.

UCRL-90420 Summ.

K. S. Jancaitis, D. A. Masquellier, and H. T. Powell

"Blackbody Pumping of Neodymium Laser Glass," prepared for the 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 21-24, 1985.

UCRL-91898 Abst. & Summ.

William F. Krupke

"Modern Solid State Laser Materials," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90173 Summ.

W. F. Krupke

"Solid State Laser R&D at Lawrence Livermore National Laboratory," prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco, California, November 26-30, 1984.

UCRL-91155 Abst.

N. W. Winter and R. M. Pitzer

"Modern Theoretical Methods for the Study of Impurities in Crystals," prepared for the Conference on Tunable Solid State Lasers, La Jolla, California, June 13-15, 1984.

UCRL-90683 Abst.

Advanced Concepts

A. J. Hazi

"Theory of Dissociative Attachment: Angular Distribution of Fragments," prepared for the DEAP Meeting of the American Physical Society, May 30-June 1, 1984.

UCRL-90263 Abst.

M. J. Kushner

"A Proposal for Nuclear Reactor Pumping the Atomic Fluorine Laser," prepared for Applied Physics Letters, October 4, 1983.

UCRL-89916

T. N. Rescigno

"Application of Complex Basis function Techniques to Calculation of Free-Free Amplitudes with Long-Range Forces," prepared for the DEAP Meeting of the American Physical Society, May 30-June 1, 1984.

UCRL-90339 Abst.

LASER ISOTOPE SEPARATION

Review Papers

James I. Davis

"Laser Applications: Isotope Separation," November 1984.

LLL-TB-067

J. I. Davis and E. I. Moses

"Review of AVLIS Technology for Production-Scale LIS Systems and Construction," prepared for Lasers '83 Conference, San Francisco, California, December 12-16, 1983.

UCRL-89722

J. L. Emmett, W. F. Krupke, and J. I. Davis

"Laser R&D at the Lawrence Livermore National Laboratory for Fusion and Isotope Separation Applications," prepared for the IEEE Journal of Quantum Electronics, October 24, 1983.

UCRL-89945

A. L. Lotts, M. L. Spaeth, and J. I. Davis

"AVLIS Industrial Access Program," November 15, 1984.

UCID-20160

Related Reports

David C. Camp

"K-Edge X-Ray Fluorescence Analysis for Actinide and Heavy Elements Solution Concentration Measurements," prepared for the Denver X-Ray Conference, Denver, Colorado, August 1-3, 1984.

UCRL-90700

Mark A. Havstad

"Verification and Application of MONT2D, A Specular Directional Radiation Heat Transfer Exchange Factor Algorithm," prepared for CUBE Symposium, Los Alamos, New Mexico, October 10-12, 1984.

UCRL-91031 Abst.

Sara M. Hilbert

"Information Model for Experiment Systems," February 14, 1983.

UCID-3C204

A. L. Lotts, M. L. Spaeth, and J. I. Davis

"AVLIS Documentation Overview and Tables of Contents," November 15, 1984.

UCID-20180

A. L. Lotts, M. L. Spaeth, and J. I. Davis

"AVLIS Production Plant Project Management Plan," November 15, 1984.

UCID-20189

A. L. Lotts, M. L. Spaeth, and J. I. Davis

"AVLIS Production Plant Work Breakdown Structure and Dictionary," November 15, 1984.

UCID-20190

A. L. Lotts, M. L. Spaeth, and J. I. Davis

"AVLIS Production Plant Project Schedule and Milestones," November 15, 1984.

UCID-20191

A. L. Lotts, M. L. Spaeth, and J. I. Davis

"AVLIS Production Plant Preliminary Quality Assurance Plan and Assessment," November 15, 1984.

UCID-20196

A. L. Lotts, M. L. Spaeth, and J. I. Davis

"AVLIS Production Plant Waste Management Plan," November 15, 1984.

UCID-20197

A. L. Lotts, M. L. Spaeth, and J. I. Davis

"AVLIS Production Plant Operations and Maintenance Plan," November 15, 1984.

UCID-20202

William F. Morris

"Ion Exchange Separation and Direct Current Plasma Emission Spectrometric Determination of Alloy and Impurity Metals in Plutonium," prepared for JOWOG-12, AWRE, Aldermaston, England, September 17-21, 1984.

UCRL-91334 Abst.

T. N. Rescigno and C. W. McCurdy

"Locally Complex Distortions of the Energy Spectrum and the Calculation of Scattering Amplitudes and Photolization Cross Sections," prepared for Physical Review A, July 17, 1984.

UCRL-91289

Nancy L. Schwartz
 "Experimental Verification of a TACO2D Thermal Model for a Laser Isotope Separation Facility," prepared for CUBE Symposium, Los Alamos, New Mexico, October 10-12, 1984.

UCRL-91056 Abst.

B. W. Shore, J. H. Eberly, and K. Wodkiewicz
 "Atomic Excitation by a Nolas Laser," prepared for the International Conference on Quantum Electronics, Rochester, New York, June 13, 1983.

UCRL-89326

Nancy A. Storch and Steven J. Telford
 "Key Elements of Dynamic Diagnostic System," prepared for CUBE Symposium, Los Alamos, New Mexico, October 10-12, 1984.

UCRL-90992

E. F. Worden, J. G. Conway, B. Comaskey, J. Brault, R. Hubbard and J. Wagner
 "Measurement of Frequencies and Intensities of Emission Lines of Actinide Elements for Determination of Energy Levels and Branching Ratios," prepared for Kitt Peak National Laboratory Annual Report 1983.

UCRL-88777-83 Summ.

E. F. Worden, J. G. Conway, B. Comaskey, R. Hubbard, and J. Wagner
 "Measurements of Frequencies and Intensities of Emission Lines of Actinide and Lanthanide Elements for Determination of Energy Levels and Branching Ratios," prepared for Bulletin of the American Astronomical Society, September 30, 1984.

UCRL-91782 Abst.

External Contract Reports

CETA Corporation
 "Final Report (Type C) on 15 kW Power Supply Development," prepared for Subcontract 9966101, March 1984.

UCRL-15625

Michael J. Hayford, Barry C. Broome, and Paul K. Manhart
 "Study in Optical Systems for Laser Isotope Separation," April 23, 1984, for PO 3881445.

UCRL-15626

RELATED REPORTS

J. E. Balmer, J. D. Kilkenny, and R. W. Lee
 "Comparison of $3\omega/2$ Emission and X-Ray Line Ratios as Temperature Diagnostics," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91218 Abst.

W. A. Barletta, W. M. Fawley, D. L. Judd, J. W-K. Mark, S. S. Yu
 "Heavy Ion Inertial Fusion: Interface Between Target Gain, Accelerator Phase Space and Reactor Beam Transport Revisited," prepared for the International Symposium on Heavy Ion Accelerators, Tokyo, Japan, January 23-27, 1984.

UCRL-90246 Rev. 1

H. D. Bissinger and W. L. Robinson
 "Development of a Multidetector Deflection Measurement System Final Report September 1982-August 1983," April 10, 1984.

UCRL-53509

H. D. Bissinger and W. L. Robinson
 "Development of a Multidetector Deflection Measurement System," prepared for the Technical Symposium East '84, Arlington, Virginia, April 29-May 4, 1984.

UCRL-90508

J. K. Boyd, J. W-K. Mark, W. M. Sharp and S. S. Yu
 "Developing Models for Simulation of Pinched-Beam Dynamics in Heavy Ion Fusion," prepared for the International Symposium on Heavy Ion Accelerators and Their Application to Inertial Fusion, Tokyo, Japan, January 23-27, 1984.

UCRL-90240

C. T. Cunningham and A. J. Spero

"Comparative Analysis of Directed Energy Defense Systems: Boost-Phase Through Mid-Course," prepared for the 10th DARPA Strategic Space Symposium, Monterey, California, October 16-19, 1984.

UCRL-90952 Abst.

Alan M. Frank and Donald F. Hein

"Laser Illuminated Nano-Second Microscope," prepared for the 16th International Congress on High Speed Photography and Photonics, Strasbourg, France, August 27-31, 1984.

UCRL-90416

Robert C. Haight

"A Nuclear Data Measurement Program for Fusion Energy Development," prepared for the American Nuclear Society 1984 Annual Meeting, New Orleans, Louisiana, June 3-8, 1984.

UCRL-90181

Andrew M. Hawryluk, Dino R. Ciarlo, and Glenn D. Rambach

"X-Ray Laser Fabrication by Anisotropic Etching of Silicon," prepared for the Journal of Vacuum Science and Technology and the Electron Ion and Photon Beam Technology Conference, Tarrytown, New York, May 29-June 1, 1984.

UCRL-90418 Abst.

Irving P. Herman

"Laser Fabrication of Integrated Circuits," prepared for Laser Processing and Diagnostics Meeting, Johannes Kepler Universitat, Linz, Austria, July 15-19, 1984.

UCRL-90564 Abst.

Irving P. Herman, Bruce M. McWilliams, Fred Mittlitsky, and Douglas S. Peters

"Wafer-Scale Laser Pantography VII. Advances in Laser-Fabrication of Integrated Circuits," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19-22, 1984.

UCRL-90408 Abst. & Summ.

Robert J. Howerton

"LLNL Nuclear Data Libraries Used for Fusion Calculations," prepared for the American Nuclear Society 1984 Annual Meeting, New Orleans, Louisiana, June 3-8, 1984.

UCRL-90200

Gary L. Johnson

"Thermo-Mechanical Analyses of Laser-Heated Surfaces," prepared for CUBE Symposium, Los Alamos, New Mexico, October 10-12, 1984.

UCRL-91015 Abst.

E. N. Kaufmann, R. J. Wallace, K. W. Mahin, C. J. Echer, and F. J. Huegel

"Biform Resolidification and Amorphous Phases in a Laser and Electron Beam Processed Tantalum-Iridium Alloy," prepared for the Symposium II, MRS-Europe Meeting, Strasbourg, France, June 5-8, 1984.

UCRL-90624

H. A. Koehler and D. E. Kotecki

"Developments of Optical Fast-Gated Imaging Systems," prepared for the 16th International Congress on High Speed Photography and Photonics, Strasbourg, France, August 27-31, 1984.

UCRL-90494

H. Koehler, M. Lowry, L. Moon, W. Morgan, and H. Schulte

"Fast Single Transient Data Diagnostic Systems for Pulsed-Radiation Source Applications," April 24, 1984.

UCRL-90635 Abst.

Paul B. Kunasz

"Efficiency of Optical Pumping in Layered Media," prepared for the Journal of Quantitative Spectroscopy and Radiative Transfer, January 23, 1984.

UCRL-90337

E. P. Lee, J. W-K. Mark, R. O. Bangerter, and R. Kopp

"The High-Temperature Experiment in Heavy-Ion Fusion: Some Physics Studies," prepared for the 26th Annual Meeting of the APS Division of Plasma Physics, Boston, Massachusetts, October 29-November 2, 1984.

UCRL-91211 Abst.

Y. T. Lee

"An Ionization Balance Model for Non-Equilibrium Plasmas," prepared for the 26th Annual Meeting of the Division of Plasma Physics, October 29–November 2, 1984.

UCRL-90361 Abst. Rev. 1

J. D. Lindl and J. W. K. Mark

"Recent Livermore Estimates on the Energy Gain of Cryogenic Single-Shell Ion Beam Targets," prepared for the International Symposium on Heavy Ion Accelerators and Their Application to Inertial Fusion, Tokyo, Japan, January 23–27, 1984.

UCRL-90241

A. C. Lingenfelter and T. J. Ramos

"Fusion Zone Defects Associated with the Laser Welding Process," prepared for the 65th Annual American Welding Society Meeting, Dallas, Texas, April 9–13, 1984.

UCRL-89682 Abst.

C. M. Logan, M. W. Guinan, D. W. Heikkinen, T. Iida, and T. Okada

"The Role of RTNS-II in the Development of Fusion Power," prepared for the 10th International Conference on Plasma Physics and Controlled Nuclear Fusion Research, London, England, September 12–19, 1984.

UCRL-90596 Abst.

Frank Magnotta and Irving P. Herman

"Infrared Laser Multiple-Photon Dissociation of CTCl_3 : Wavelength Dependence, Collisional Effects, and Tritium/Deuterium Isotope Selectivity," prepared for the Journal of Chemical Physics, March 30, 1984.

UCRL-90620

Frank Magnotta and Irving P. Herman

"Observations on the Spectral Dependence and T/D Isotope Selectivity in the CO_2 Laser Multiple-Photon Dissociation of Trifluoromethane," to Applied Physics B, October 17, 1984.

UCRL-91678

W. E. Martin, G. J. Caporaso, W. M. Fawley, D. Prosnitz, and A. G. Cole

"Electron Beam Guiding and Phase-Mix Damping by a Laser-Ionized Channel," prepared for Physical Review Letters, February 6, 1984.

UCRL-91698

Thomas E. McKone and David W. Layton

"Uncertainties About the Health and Environmental Effects from Tritium Released by Fusion Energy Systems," prepared for 1984 Annual Meeting of the Society for Risk Analysis, Knoxville, Tennessee, October 1–3, 1984.

UCRL-91679 Abst.

Bruce M. McWilliams, Hon Wah Chin, Irving P. Herman, Roderick A. Hyde, Fred Mitlitsky, John C. Whitehead, and Lowell L. Wood

"Wafer-Scale Laser Pantography: VI. Direct-Write Interconnection of VLSI Gate Arrays," prepared for the SPIE Meeting, Los Angeles, California, January 22–27, 1984.

UCRL-90295

D. J. Meeker, J. H. Hammer, and C. W. Hartman

"A High Efficiency I.C.F. Driver Employing Magnetically Confined Plasma Rings," prepared for the 6th Topical Meeting on the Technology of Fusion Energy, San Francisco, California, March 3–5, 1985.

UCRL-91721 Summ.

F. P. Milanovich, T. B. Hirschfeld, F. T. Wang, S. M. Klainer, and D. Walt

"Clinical Measurements Using Fiber Optics and Optodes," prepared for SPIE's 28th Annual International Technical Symposium on Optics and Electro-Optics, San Diego, California, August 19, 1984.

UCRL-90769

Julio A. Monjes, Calvin Gillespie, and David Edwards

"Imaging Corner Cube," prepared for Southwest Conference on Optics (S.P.I.E.), Albuquerque, New Mexico, March 4–8, 1984.

UCRL-91612 Abst.

T. J. Orzechowski, B. Anderson, W. M. Fawley, E. T. Scharlemann, D. Prosnitz,

S. M. Yarema, D. B. Hopkins, A. M. Sessler, and J. Wurtele

"Generation of Intense Microwave Radiation Using the Electron Laser Facility," prepared for the 13th International Conference on Lasers and Electro-Optics (CLEO), Anaheim, California, June 19–22, 1984.

UCRL-90814 Abst. and Summ.

- C. W. Price
"Simulations of Erosion/Corrosion Surface Chemical Reactions with a Laser Beam,"
 November 1, 1983. UCRL-53468
-
- T. J. Ramos, C. D. Anglin, J. R. Murchie, C. N. Westrich and A. C. Lingenfelter
"Precision Laser Cutting and Drilling," prepared for Golden Gate Metal Conference,
 San Francisco, California, February 1985. UCRL-91342 Abst.
-
- T. J. Ramos and A. C. Lingenfelter
"Laser Beam Diagnostics for Metal Working Applications," prepared for Laser Institute
 of America ICALEO '84, November 12-15, 1984. UCRL-90805
-
- F. J. Rogers, H. E. DeWitt, and D. B. Boercker
**"A Research Program for the Theoretical Study of the Thermodynamics and Transport
 Properties of Dense Plasmas: Final Report,"** November 20, 1984. UCID-20265
-
- M. C. Rushford and P. J. Kuzmenko
"Pointing Alignment by Orthogonal Phase-Lock Feedback Loops," prepared for the
 14th International Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland,
 May 21-24, 1985. UCRL-91874 Abst. & Summ.
-
- L. L. Shaw, L. L. Steinmetz, W. C. Behrendt, J. B. Sonderman, G. K. Beer, L. G. Seppala,
 E. Romero, and K. Mikkelsen
**"A High-Speed, Eight-Frame Electro-Optic Camera with Multipulsed Ruby Laser
 Illuminator,"** prepared for the 16th International Congress on High Speed Photography
 and Photonics, Strasbourg, France, August 27-31, 1984. UCRL-90478
-
- Charles G. Stevens and Lawrence W. Hrubesh
"Far Infrared Laser Techniques for Detection of Polar Gases," prepared for Advanced
 Laser Technology for Chemical Measurements, A Workshop at Brookhaven National
 Laboratory, October 23-25, 1984. UCRL-91663 Abst.
-
- C. G. Stevens, D. C. Johnson, L. W. Hrubesh, and E. A. Rinehart
"Pure Rotational Spectroscopy of Small Polar Molecules Using Far Infrared Lasers,"
 prepared for Lasers '84, Society for Optical and Quantum Electronics, San Francisco,
 California, November 26-30, 1984. UCRL-91735 Abst. & Summ.
-
- H. Joseph Weaver
"Overview of LLNL's Modal Analysis Capabilities and Tests," prepared for CUBE
 Symposium, Los Alamos, New Mexico, October 10-12, 1984. UCRL-90963 Abst.
-
- Calvin Wong, E. F. Plechaty, R. C. Haight, L. F. Hansen, R. J. Howerton, T. T. Komoto,
 J. D. Lee, S. T. Perkins, and B. A. Pohl
**"Measurements and Calculations of the Leakage Multiplication from Hollow Beryllium
 Spheres,"** prepared for the 6th Topical Meeting on the Technology of Fusion Energy,
 San Francisco, California, March 3-5, 1985. UCRL-91774 Summ.
-
- Barbara J. Y. Wuebbles and James S. Felton
"Evaluation of Laser Dye Mutagenicity Using the Ames/Salmonella Microsome Test,"
 prepared for submittal to Environmental Mutagenesis, August 21, 1984. UCRL-91604
-
- J. H. Yates, W. C. Ermler, and N. W. Winter
"The Radiative Properties of Ar₂," October 9, 1984. UCID-20224
-

REPORT INDEX

LLL-TB-56	
Page 1	
LLL-TB-63	
Page 24	
LLL-TB-067	
Page 25	
MISC-4206 Vg.	
Page 16	
MISC-4220	
Page 15	
UCID-19946 Rev. I	
Page 19	
UCID-20043	
Page 5	
UCID-20044	
Page 5	
UCID-20054	
Page 2	
UCID-20085	
Page 4	
UCID-20102	
Page 4	
UCID-20108	
Page 1	
UCID-20116	
Page 4	
UCID-20119	
Page 6	
UCID-20121	
Page 22	
UCID-20155	
Page 8	
UCID-20160	
Page 26	
UCID-20180	
Page 26	
UCID-20185	
Page 26	
UCID-20190	
Page 26	
UCID-20191	
Page 26	
UCID-20196	
Page 26	
UCID-20197	
Page 26	
UCID-20202	
Page 26	
UCID-20224	
Page 30	

UCID-20242	
Page 3	
UCID-20257	
Page 17	
UCID-20257	
Page 23	
UCID-20265	
Page 30	
UCID-30204	
Page 26	
UCRL-15213	
Page 2	
UCRL-15577 Summ.	
Page 21	
UCRL-15578	
Page 21	
UCRL-15579 Summ.	
Page 21	
UCRL-15598	
Page 21	
UCRL-15625	
Page 2	
UCRL-15625	
Page 27	
UCRL-15626	
Page 27	
UCRL-15630	
Page 18	
UCRL-15632	
Page 22	
UCRL-15636 Abst.	
Page 9	
UCRL-15638	
Page 7	
UCRL-15640 Summ.	
Page 21	
UCRL-15641 Summ.	
Page 21	
UCRL-15642	
Page 22	
UCRL-15643	
Page 3	
UCRL-15647	
Page 17	
UCRL-15657 Summ.	
Page 21	
UCRL-50021-83	
Page 1	
UCRL-52000-84-10	
Page 20	

UCRL-53468		UCRL-89945	
Page 30		Page 1	
UCRL-53472		UCRL-89945	
Page 2		Page 26	
UCRL-53509		UCRL-90033	
Page 27		Page 4	
UCRL-53516		UCRL-90034	
Page 17		Page 4	
UCRL-53525		UCRL-90054 Rev. 1	
Page 4		Page 1	
UCRL-53543		UCRL-90081	
Page 22		Page 12	
UCRL-53571		UCRL-90089	
Page 1		Page 18	
UCRL-53571		UCRL-90107	
Page 25		Page 2	
UCRL-87047 Rev. 1		UCRL-90136 Abst.	
Page 10		Page 9	
UCRL-87801 Rev. 1		UCRL-90137	
Page 20		Page 23	
UCRL-88715 Abst.		UCRL-90139 Abst.	
Page 12		Page 12	
UCRL-88716 Abst.		UCRL-90152 Abst. & Summ.	
Page 13		Page 5	
UCRL-88777-83 Summ.		UCRL-90153 Abst. & Summ.	
Page 27		Page 2	
UCRL-88925		UCRL-90153 Abst. & Summ.	
Page 10		Page 25	
UCRL-89326		UCRL-90154	
Page 27		Page 2	
UCRL-89471 Rev. 1		UCRL-90158	
Page 11		Page 3	
UCRL-89569		UCRL-90162 Abst. & Summ.	
Page 20		Page 19	
UCRL-89648		UCRL-90163 Abst. & Summ.	
Page 24		Page 6	
UCRL-89652 Abst.		UCRL-90164 Abst. & Summ.	
Page 10		Page 5	
UCRL-89682 Abst.		UCRL-90170 Abst. & Summ.	
Page 29		Page 7	
UCRL-89722		UCRL-90171	
Page 26		Page 22	
UCRL-89863		UCRL-90173 Summ.	
Page 9		Page 1	
UCRL-89864		UCRL-90173 Summ.	
Page 10		Page 25	
UCRL-89866		UCRL-90173 Summ.	
Page 10		Page 6	
UCRL-89872		UCRL-90174 Abst. & Summ.	
Page 9		Page 1	
UCRL-89916		UCRL-90174 Abst. & Summ.	
Page 25		Page 25	

Report Index

UCRL-90181	
Page 28	
UCRL-90184 Abst. & Summ.	
Page 2	
UCRL-90185 Abst. & Summ.	
Page 3	
UCRL-90185 Abst. & Summ.	
Page 8	
UCRL-90186 Abst. & Summ.	
Page 8	
UCRL-90187 Abst. & Summ.	
Page 10	
UCRL-90187 Abst. & Summ.	
Page 6	
UCRL-90194 Abst.	
Page 8	
UCRL-90199 Summ.	
Page 22	
UCRL-90200	
Page 28	
UCRL-90202 Summ.	
Page 23	
UCRL-90209 Abst. & Summ.	
Page 5	
UCRL-90210 Abst. & Summ.	
Page 4	
UCRL-90211 Abst. & Summ.	
Page 4	
UCRL-90218	
Page 9	
UCRL-90240	
Page 27	
UCRL-90241	
Page 11	
UCRL-90241	
Page 29	
UCRL-90246 Rev. 1	
Page 27	
UCRL-90263 Abst.	
Page 25	
UCRL-90269 Abst.	
Page 12	
UCRL-90274 Abst. & Summ.	
Page 5	
UCRL-90275 Abst. & Summ.	
Page 6	
UCRL-90279	
Page 16	
UCRL-90294	
Page 17	
UCRL-90295	
Page 29	

UCRL-90304	
Page 11	
UCRL-90334	
Page 16	
UCRL-90334 Abst. & Summ.	
Page 16	
UCRL-90335	
Page 18	
UCRL-90337	
Page 28	
UCRL-90339 Abst.	
Page 25	
UCRL-90352 Abst. and Poster	
Page 5	
UCRL-90361 Abst.	
Page 11	
UCRL-90361 Abst. Rev. 1	
Page 29	
UCRL-90365 Summ.	
Page 24	
UCRL-90369 Abst. & Summ.	
Page 13	
UCRL-90370 Abst. & Summ.	
Page 14	
UCRL-90371 Abst. & Summ.	
Page 20	
UCRL-90387 Abst.	
Page 15	
UCRL-90387 Abst.	
Page 19	
UCRL-90393	
Page 20	
UCRL-90397 Summ.	
Page 22	
UCRL-90398 Abst.	
Page 7	
UCRL-90408 Abst. & Summ.	
Page 28	
UCRL-90416	
Page 28	
UCRL-90418	
Page 15	
UCRL-90418 Abst.	
Page 23	
UCRL-90418 Abst.	
Page 28	
UCRL-90420 Summ.	
Page 25	
UCRL-90454 Abst. & Summ.	
Page 9	
UCRL-90463	
Page 8	

UCRL-90464	UCRL-90571 Abst.
Page 9	Page 18
UCRL-90469	UCRL-90572 Abst.
Page 2	Page 14
UCRL-90469	UCRL-90581 Abst.
Page 25	Page 19
UCRL-90478	UCRL-90598 Abst.
Page 30	Page 29
UCRL-90483 Rev. I	UCRL-90602
Page 10	Page 11
UCRL-90484 Abst.	UCRL-90602
Page 13	Page 13
UCRL-90491	UCRL-90616 Abst.
Page 20	Page 14
UCRL-90493 Abst., Summ., & Pstr.	UCRL-90618 Rev. I
Page 18	Page 9
UCRL-90494	UCRL-90620
Page 28	Page 29
UCRL-90508	UCRL-90624
Page 27	Page 28
UCRL-90526 Abst.	UCRL-90627 Abst. & Summ.
Page 10	Page 7
UCRL-90527 Abst.	UCRL-90633 Abst.
Page 12	Page 5
UCRL-90528 Abst.	UCRL-90635 Abst.
Page 10	Page 28
UCRL-90529 Abst.	UCRL-90636
Page 11	Page 5
UCRL-90530 Abst.	UCRL-90643 Abst.
Page 11	Page 24
UCRL-90531 Abst.	UCRL-90665
Page 10	Page 20
UCRL-90535 Abst.	UCRL-90666
Page 15	Page 22
UCRL-90540	UCRL-90677
Page 9	Page 13
UCRL-90543 Abst. & Vg.	UCRL-90681 Abst.
Page 15	Page 22
UCRL-90553	UCRL-90682
Page 14	Page 7
UCRL-90555	UCRL-90683 Abst.
Page 24	Page 25
UCRL-90558	UCRL-90684
Page 1	Page 12
UCRL-90563 Abst. & Vg.	UCRL-90688
Page 13	Page 12
UCRL-90564 Abst.	UCRL-90700
Page 28	Page 26
UCRL-90570 Abst.	UCRL-90711
Page 15	Page 12
UCRL-90571 Abst.	UCRL-90733
Page 14	Page 1

Report Index

UCRL-90742		UCRL-90992	
Page 23		Page 27	
UCRL-90750		UCRL-91015 Abst.	
Page 18		Page 28	
UCRL-90758		UCRL-91026 Abst.	
Page 1		Page 17	
UCRL-90764		UCRL-91031 Abst.	
Page 13		Page 26	
UCRL-90769		/UCRL-91056 Abst.	
Page 29		Page 27	
UCRL-90800		UCRL-91074 Abst.	
Page 16		Page 24	
UCRL-90805		UCRL-91087	
Page 30		Page 11	
UCRL-90814 Abst. and Summ.		UCRL-91087 Rev. I	
Page 29		Page 15	
UCRL-90838		UCRL-91093 Abst.	
Page 24		Page 18	
UCRL-90847		UCRL-91123	
Page 15		Page 23	
UCRL-90848 Abst.		UCRL-91152 Abst.	
Page 3		Page 6	
UCRL-90866		UCRL-91153 Abst.	
Page 9		Page 7	
UCRL-90880		UCRL-91154 Abst.	
Page 2		Page 6	
UCRL-90893		UCRL-91155 Abst.	
Page 2		Page 1	
UCRL-90914		UCRL-91155 Abst.	
Page 23		Page 25	
UCRL-90928 Summ.		UCRL-91156 Abst.	
Page 23		Page 5	
UCRL-90938		UCRL-91157 Abst.	
Page 17		Page 6	
UCRL-90939		UCRL-91159 Abst.	
Page 17		Page 10	
UCRL-90952 Abst.		UCRL-91160 Abst.	
Page 28		Page 11	
UCRL-90963 Abst.		UCRL-91161 Abst.	
Page 30		Page 12	
UCRL-90963 Abst.		UCRL-91162 Abst.	
Page 4		Page 12	
UCRL-90968 Abst.		UCRL-91163 Abst.	
Page 3		Page 10	
UCRL-90969 Abst.		UCRL-91164 Abst.	
Page 4		Page 11	
UCRL-90980 Abst.		UCRL-91164 Abst.	
Page 6		Page 16	
UCRL-90962 Abst.		UCRL-91165 Abst.	
Page 4		Page 11	
UCRL-90987 Abst.		UCRL-91165 Abst.	
Page 3		Page 17	

UCRL-91174	UCRL-91291
Page 14	Page 23
UCRL-91175 Abst.	UCRL-91294
Page 13	Page 8
UCRL-91211 Abst.	UCRL-91296 Abst.
Page 28	Page 8
UCRL-91212 Abst.	UCRL-91317
Page 14	Page 19
UCRL-91213 Abst.	UCRL-91323
Page 11	Page 8
UCRL-91218 Abst.	UCRL-91334 Abst.
Page 27	Page 26
UCRL-91219 Abst.	UCRL-91342 Abst.
Page 15	Page 30
UCRL-91222 Abst. & Vg.	UCRL-91371
Page 15	Page 14
UCRL-91223	UCRL-91372 Abst.
Page 19	Page 19
UCRL-91224 Abst. & Vg.	UCRL-91384
Page 17	Page 7
UCRL-91225 Abst. & Vg.	UCRL-91406
Page 15	Page 12
UCRL-91226 Abst.	UCRL-91411
Page 14	Page 19
UCRL-91227	UCRL-91425
Page 18	Page 14
UCRL-91228 Abst. & Vg.	UCRL-91427 Abst.
Page 14	Page 8
UCRL-91229 Abst.	UCRL-91428 Abst.
Page 18	Page 9
UCRL-91230 Rev. I	UCRL-91429 Abst.
Page 18	Page 9
UCRL-91231 Abst.	UCRL-91430 Abst.
Page 20	Page 8
UCRL-91235 Abst.	UCRL-91452
Page 24	Page 12
UCRL-91236 Abst.	UCRL-91466 Abst.
Page 24	Page 19
UCRL-91238	UCRL-91467 Abst.
Page 3	Page 18
UCRL-91260	UCRL-91476
Page 19	Page 24
UCRL-91280 Abst.	UCRL-91515 Abst.
Page 16	Page 19
UCRL-91280 Abst.	UCRL-91516 Abst. & Vg.
Page 18	Page 20
UCRL-91281 Abst. & Vg.	UCRL-91522
Page 13	Page 21
UCRL-91282 Abst.	UCRL-91529 Abst.
Page 16	Page 15
UCRL-91289	UCRL-91530 Abst.
Page 26	Page 17

Report Index:

UCRL-91555 Abst.	
Page 7	
UCRL-91559	
Page 24	
UCRL-91589 Summ.	
Page 22	
UCRL-91590 Summ.	
Page 22	
UCRL-91595	
Page 10	
UCRL-91604	
Page 30	
UCRL-91612 Abst.	
Page 29	
UCRL-91628 Abst.	
Page 3	
UCRL-91629 Abst.	
Page 2	
UCRL-91641 Abst.	
Page 13	
UCRL-91642 Abst.	
Page 12	
UCRL-91643 Abst.	
Page 21	
UCRL-91644 Abst.	
Page 21	
UCRL-91645 Abst.	
Page 22	
UCRL-91646 Abst.	
Page 21	
UCRL-91647 Abst.	
Page 20	
UCRL-91648 Abst.	
Page 21	
UCRL-91658 Abst.	
Page 4	
UCRL-91663 Abst.	
Page 30	
UCRL-91670	
Page 6	
UCRL-91672 Abst.	
Page 13	
UCRL-91678	
Page 29	
UCRL-91679 Abst.	
Page 29	
UCRL-91683	
Page 7	
UCRL-91698	
Page 29	
UCRL-91699 Abst.	
Page 20	

UCRL-91700	
Page 20	
UCRL-91703	
Page 24	
UCRL-91721 Summ.	
Page 29	
UCRL-91730	
Page 16	
UCRL-91735 Abst. & Summ.	
Page 30	
UCRL-91736	
Page 16	
UCRL-91737 Abst.	
Page 8	
UCRL-91738	
Page 8	
UCRL-91760 Abst. & Summ.	
Page 7	
UCRL-91774 Summ.	
Page 23	
UCRL-91774 Summ.	
Page 30	
UCRL-91782 Abst.	
Page 27	
UCRL-91785 Abst. & Summ.	
Page 2	
UCRL-91795 Abst. & Summ.	
Page 6	
UCRL-91847 Abst.	
Page 23	
UCRL-91874 Abst. & Summ.	
Page 30	
UCRL-91881 Abst. & Summ.	
Page 3	
UCRL-91893 Abst. & Summ.	
Page 3	
UCRL-91894 Abst. & Summ.	
Page 6	
UCRL-91895 Abst. & Summ.	
Page 7	
UCRL-91896 Abst. & Summ.	
Page 7	
UCRL-91897 Abst. & Summ.	
Page 24	
UCRL-91897 Abst. & Summ.	
Page 5	
UCRL-91898 Abst. & Summ.	
Page 2	
UCRL-91898 Abst. & Summ.	
Page 25	
UCRL-91899 Abst. & Summ.	
Page 7	

UCRL-91900 Abst. & Summ.

Page 3

UCRL-91901 Abst. & Summ.

Page 3

UCRL-91902 Abst. & Summ.

Page 4

UCRL-91903 Abst. & Summ.

Page 20

UCRL-91904 Abst. & Summ.

Page 6

UCRL-91911 Abst. & Summ.

Page 5

UCRL-91929 Summ.

Page 22

UCRL-91946 Abst. & Summ.

Page 8

AUTHOR INDEX

A

Afeyan, B.	10
Ahlstrom, H. G.	1, 14
Albritton, J. R.	10, 12
Alley, W. E.	10
Anderson, B.	23, 24, 29
Anglin, C. D.	30
Auerbach, J. M.	5, 16, 18
Ault, S. K.	14
Ault, K. G.	14

B

Bach, D. R.	14
Bailey, D. S.	12
Bailey, J.	13, 15
Balmer, J. E.	13, 27
Bangerter, R. O.	28
Barletta, W. A.	23, 27
Barnes, D. C.	11
Barr, O. C.	1
Bass, M.	7
Beer, G. K.	30
Behrendt, W. C.	30
Belt, R. F.	7
Bender, D. A.	3
Berwald, D. H.	20, 21
Bird, Jr., W. L.	2
Birx, D. L.	23
Bissinger, H. D.	27
Blink, J. A.	20, 21, 22
Bliss, E. S.	1, 4
Boercker, D. B.	30
Bourque, R. F.	21
Boyd, J. K.	11, 23, 27
Boyd, R. D.	4
Bradley, L. P.	2
Bradley, K. R.	5
Braut, J.	27
Broome, B. C.	27
Brown, N. J.	9
Buasa, J. J.	21
Burdick, R. B.	3, 4
Burkhalter, P.	18
Busch, G. E.	16

C

CETA Corporation	27
Cable, M. D.	19
Calrd, J. A.	6, 7
Camp, D. C.	26
Campbell, D. E.	19
Campbell, E. M.	11, 13, 14, 15, 16, 17, 18, 19
Campbell, J. H.	17
Caporaso, G. J.	29

Carey, R. W.	5
Carniglia, C. K.	8, 9, 10
Ceglio, N. M.	15, 16, 17, 18, 19, 20
Charatis, G.	16, 18
Chin, H. W.	29
Christie, D. J.	17, 18
Clario, D. R.	15, 23, 28
Cole, A. J.	15
Cole, A. G.	29
Coleman, L. W.	1, 16, 18
Comaskey, B.	27
Comfort, III, W. J.	17
Conway, J. G.	27
Cook, L.	7
Cooper, J. F.	6
Corley, R. A.	17
Coupe, T. C.	4
Creedon, R. L.	21, 22
Cunningham, C. T.	28

D

Davis, J. I.	1, 25, 26
DeMartini, B. J.	5, 16
DeWitt, H. E.	30
Delamater, N. D.	15
Denavit, J.	12
Doyle, Jr., J. C.	22
Drake, R. P.	1, 11, 13, 14, 15, 16, 18, 19
Duba, A. G.	7

E

Eberly, J. H.	27
Echer, C. J.	28
Eckart, M. J.	16, 17, 18
Edwards, W.	24
Edwards, D.	29
Eimerl, D.	2, 5, 6, 24
Ellis, R. E.	15
Ernmett, J. L.	1, 25, 26
Erlandson, O. D.	21
Erlandson, A. C.	3
Ermler, W. C.	30
Estabrook, K. G.	10, 12, 13, 14, 15, 16, 18, 19

F

Fabbro, R.	10
Fabre, E.	10
Fawley, W. M.	23, 24, 27, 29
Felton, J. S.	30
Fields, D. E.	4
Foley, R.	17
Fortner, R.	13
Frank, A. M.	28
Friedman, A.	12

G

Garrison, J.	12
Gerasimenko, M.	9, 17
Gerhard, M. A.	17, 23
Gex, F.	19
Gillespie, C.	29
Gim, B. M.	3
Godwin, R. O.	1, 5
Goldhar, J.	2, 23, 25
Goodwin, E. J.	2
Gordon, J. D.	21
Goudreau, G. L.	3
Graves, W. R.	19
Grens, J. Z.	17
Griffith, R. L.	20
Gritton, D. G.	1
Guggenheim, H. J.	6
Guinan, M. W.	29
Gunderson, C. A.	9
Guttman, J. L.	9

H

Häas, R. A.	2, 24, 25
Hagelstein, P. L.	11, 16, 17, 18
Hagen, W. F.	3
Haight, R. C.	23, 26, 30
Hailey, C.	16, 18
Hale, C. P.	18, 20
Hammer, J. H.	2, 29
Hansen, L. F.	23, 30
Hart, T. T.	8, 9, 10
Hartman, C. W.	2, 29
Harvey, J.	23
Hatcher, C. W.	11, 13, 15, 16, 17
Hatchett, S.	17
Havstad, M. A.	26
Hawkins, S. A.	23
Hawryluk, A. M.	15, 16, 17, 18, 23, 28
Hayford, M. J.	27
Hazi, A. U.	11, 12, 16, 17, 23, 25
Heaton, G. W.	15, 16
Hed, P. P.	8
Heldrich, J. E.	14
Helkkinen, D. W.	29
Hein, D. F.	28
Henesian, M. A.	2, 5, 7, 8, 25
Herman, I. P.	28, 29
Hewett, D. W.	12
Hilbert, S. M.	26
Hildum, J. S.	1, 11, 15, 17
Hirschfeld, T. B.	29
Hogan, W. J.	1, 20, 21
Holloway, F. W.	1, 4
Holzrichter, J. F.	1, 25
Hooper, Jr., C. F.	15
Hoover, W. G.	22

Hopkins, D. B.	23, 24, 29
Hopper, R. W.	8
Howerton, R. J.	23, 28, 30
Hrubesh, L. W.	30
Hsieh, E. J.	17
Hubbard, R.	27
Huegel, F. J.	28
Huen, T.	19
Hugenberger, R. E.	5
Hurley, C. A.	1
Hyde, R. A.	29

I

Iida, T.	29
----------	----

J

Jancaitis, K. S.	2, 3, 23, 25
Johnson, B. C.	1, 5, 6
Johnson, R.	16
Johnson, G. L.	28
Johnson, D. C.	30
Jones, W. A.	4, 5
Joyce, R. F.	15
Judd, D. L.	27
Juntz, R.	17

K

Kalibjian, R.	19
Kauffman, R. L.	13, 14, 15, 16, 17, 18, 19, 20
Kaufmann, E. N.	28
Kershaw, D.	13
Kilkenny, J. D.	13, 14, 15, 27
Kim, K.	17
Klainer, S. M.	29
Koehler, H. A.	14, 24, 28
Kohler, D.	9
Komoto, T. T.	23, 30
Koo, J. C.	2
Kopp, R.	28
Kotecki, D. E.	28
Krafft, G.	10
Kraus, G. J.	3
Krikorian, O. H.	22
Kroepfl, D. E.	5
Kruer, W. L.	10, 12, 13, 14, 15
Krupke, W. F.	1, 6, 7, 25, 26
Kulzenga, D. J.	1
Kulcinski, G. L.	20
Kunasz, P. B.	28
Kushner, M. J.	25
Kuzmenko, P. J.	30

L

Lai, C. C.	20
Landon, P. R.	17, 23

Author Index

Lane, S. M.	11, 15, 19
Langdon, A. B.	11, 12, 13
Lasinski, B. F.	10, 13, 14, 15, 18
Laughlin, R. B.	11
Layton, D. W.	29
Leas, R. D.	20
Lee, E. P.	28
Lee, J. D.	20, 22, 23, 30
Lee, P. H. Y.	14, 16, 18
Lee, R. W.	11, 13, 14, 15, 16, 17, 18, 19, 27
Lee, Y. T.	11, 29
Leipelt, G. R.	14, 16, 19, 20
Lerche, R. A.	5, 19
Letts, S. A.	13, 14, 17, 18, 19
Levine, H. E.	21
Liang, E. P.	12
Lichtenstein, T. L.	8
Lindl, J. D.	11, 15, 29
Lingenfelter, A. C.	29, 30
Logan, C. M.	29
London, R. A.	11, 16, 17
Lotts, A. L.	26
Lowdermilk, W. H.	8, 9
Lowry, M.	28

M

MacGowen, B. J.	15, 16, 17, 18
Magnotta, F.	29
Mahin, K. W.	17, 28
Manes, K. R.	1, 3, 11, 15, 16, 17
Manhart, P. K.	27
Maniscalco, J. A.	20
Marchi, F. T.	5
Marchi, T. F.	6
Marion, J. E.	7
Mark, J. W-K.	10, 11, 27, 28, 29
Marshall, B.	24
Martin, W. E.	29
Masquellier, D. A.	2, 25
Matthews, D. L.	11, 16, 17, 18
Max, C. E.	10, 20
Maxon, M. S.	11, 16
Maya, I.	21, 22
McCallen, D. B.	3
McCarville, T. J.	21
McCauley, E. W.	5
McCurdy, C. W.	26
McDonald, W. R.	20
McDowell, M. W.	21, 22
McGee, R. A.	6, 10
McGuigan, D. L.	4
McKone, T. E.	29
McWilliams, B. M.	28, 29
McWright, G. M.	2
Mead, W. C.	10, 14
Medeckl, H.	16, 17, 18, 19, 20
Meeker, D. J.	2, 29

Meier, W. R.	21, 22, 23
Merritt, B.	1
Mikkelsen, K.	30
Milam, D.	6, 8, 9, 10
Milanovich, F. P.	5, 29
Miller, D. E.	17
Militaky, F.	28, 29
Moir, R. W.	20
Mok, L. C.	17
Monjes, J. A.	29
Moon, L.	28
More, R. M.	12
Morgan, W.	28
Morris, W. F.	26
Morse, E. C.	21, 23
Moses, E. J.	26
Mourou, G. A.	19
Mueller, H.	7
Munro, D.	15
Murchie, J. R.	30
Murray, J. E.	3, 8
Murray, J. R.	23
Murray, K. A.	21, 22
Murray, R. C.	3, 6
Myers, D. W.	4, 20

N

Neil, V. K.	23
Nelson, M.	24
Nelson, T. A.	3
Newkirk, H. W.	6
Nilson, D. G.	17, 18, 19
Nuckolls, J. H.	1

O

Oicles, J. A.	3
Okada, T.	29
Olk, L. B.	20
Orzechowski, T. J.	23, 24, 29
Ozarski, R. G.	1, 3, 4, 5, 16, 20

P

Pan, Y-L	17
Pastrnak, J. W.	4
Paul, A. C.	23, 24
Peluso, S. E.	9
Perkins, S. T.	23, 30
Peters, D. S.	28
Peterson, G. G.	8
Phillion, D. W.	11, 13, 14, 15, 18
Phillips, T.	13
Pitts, J. H.	17, 22, 23
Pitzer, R. M.	8, 25
Pleasant, L. D.	16, 17, 18
Plechaty, E. F.	23, 30
Pocha, M. D.	2

Poco, J. F.	17
Pohl, B. A.	23, 30
Poli, R. J.	3, 8
Pollaine, S. M.	11, 14
Poor, S. E.	23
Powell, H. T.	2, 3, 8, 25
Power, G.	18
Price, C. W.	30
Price, R. H.	16, 19, 20
Project Staff	22
Prono, D. S.	23
Prosnitz, D.	23, 24, 29
Prussin, S. G.	19

R

Rainer, F.	8, 9, 10
Rambach, G. D.	15, 16, 17, 18, 23, 28
Ramos, T. J.	29, 30
Randall, C. J.	12
Reed, K.	16
Reeves, R.	4
Reginato, L. L.	23
Reinecker, F.	1
Rescigno, T. N.	25, 26
Richards, J. B.	4, 20
Richardson, M. C.	15
Riley, M. O.	3, 8
Rinehart, E. A.	30
Robinson, W. L.	27
Rockett, P.	16, 18
Roelant, D. F.	21
Rogers, F. J.	30
Romero, E.	30
Rosen, M. D.	11, 15, 16, 17, 18
Rushford, M. C.	30

S

Scharlemann, E. T.	23, 24, 29
Schlitt, L. G.	23
Schulte, H.	28
Schultz, K. R.	21, 22
Schwartz, N. L.	27
Schwartz, K. B.	7
Scofield, J. H.	16
Seppala, L. G.	3, 4, 16, 30
Sessler, A. M.	23, 24, 29
Severyn, J. R.	1, 5
Sharp, W. M.	11, 27
Shaw, L. L.	30
Shelton, R. T.	4
Shepard, C.	16
Shinn, M. D.	6, 7
Shore, B. W.	27
Simmons, W. W.	2, 3, 5
Singh, M. S.	19
Singleton, M. F.	6

Slaughter, D. R.	19
Silvinsky, V. W.	14
Smith, J.	14
Smith, L. K.	6, 7, 10
Smith, M. W.	23
Smith, W. L.	5
Sonderman, J. B.	30
SooHoo, J.	24
Sooy, W. R.	1, 25
Spaeth, M. L.	26
Speck, D. R.	1, 5, 16
Spero, A. J.	28
Staggs, M. C.	8, 9, 10
Stearns, D. G.	3, 18, 19
Steele, W. G.	21
Steinman, D.	18
Steinmetz, L. L.	30
Stevens, C. G.	30
Stewart, R.	13
Stokowski, S. E.	7
Stone, G.	16, 17
Storch, N. A.	27
Stover, E.	14
Stowers, I.	17
Strout, II, R. E.	13
Sullivan, D.	16, 18
Summers, M. A.	1, 5, 6
Suski, G. J.	1
Suter, L. J.	11, 15
Swift, C. D.	4
Swimm, R. T.	7
Swingle, J. C.	24

T

Tabatabaei, J.	15
Telford, S. J.	27
Thomas, I. M.	8, 9
Thomas, S. W.	20
Thompson, C. E.	2
Tillotson, T. M.	17
Tirrell, G. T.	14
Tirrell, K. G.	18
Toor, A.	16, 17, 18
Trebes, J. E.	16, 17, 18
Trenholme, J. B.	1, 3, 25
Turner, R. E.	13, 14, 15, 16, 17, 18, 19

U

Uhrich, C. E.	3
Uhrin, R.	7
Underwood, J.	16

V

VanArsdall, P. J.	4
Vavra, P. A.	16, 18

Author Index

Vayer, G.	18
Vercimak, C. L.	6, 10
<hr/>	
W	
Wagner, J.	27
Wallace, R. J.	28
Wallerstein, E. P.	1
Walling, R.	13
Walt, D.	29
Walton, O. R.	22, 23
Wang, C. L.	13, 14, 15, 16, 19, 20
Wang, F. T.	29
Wang, T. F.	10
Wark, J.	15
Warshaw, S.	5, 6
Watson, B. A.	9
Weaver, H. J.	4, 30
Weaver, T. A.	16, 17
Weber, M. J.	7, 8
Weinzapfel, C.	9
Westrich, C. N.	30
White, III, W. T.	7, 8
Whitehead, J. C.	29
Whitten, B. L.	11, 12, 13, 14, 16, 17, 18, 19
Wiedwald, J. D.	17, 18, 19, 20
Wilcox, R. B.	2, 3, 18
Wilder, J. G.	8, 9
Wilder, Jr., R. E.	6, 7
Wilkerson, J. L.	4, 20

Williams, E. A.	10, 11, 13, 14, 15
Williams, J. D.	5, 6
Winkler, E. O.	21
Winter, N. W.	8, 25, 30
Wirtenson, G. R.	3, 9
Witt, L. A.	17
Wodkiewicz, K.	27
Woltz, L. A.	15
Wong, J.	12
Wong, C. P. C.	21, 23, 30
Wood, L. L.	29
Woods, B. W.	3
Woodson, H. H.	2
Worden, E. F.	27
Wuebbles, B. J. Y.	30
Wurtele, J. S.	23, 24, 29

Y

Yarema, S. M.	23, 24, 29
Yates, J. H.	30
Yiming, X.	7
Yoldas, B. E.	8, 9
Yu, S. S.	11, 27

Z

Zacharias, R. A.	14
Zagotta, W.	16
Ze, F.	11, 15
Zundeleovich, Y.	8

Access to the Publications

The following libraries have microfiche copies of one or more years of LLNL Laser Program publications:

Electrical Engineering Library
Arizona State University
Tempe, AZ 85281

Optical Sciences Lab
Arizona State University
Tempe, AZ 85281

Physics Library
Arizona State University
Tempe, AZ 85281

Electrical Engineering Library
University of California
Berkeley, CA 94720

Physics Library
University of California
Berkeley, CA 94720

Tech Library (Code 343)
U.S. Naval Weapons Center
Michelson Laboratory
China Lake, CA 93555

Eng. & Math. Sciences Library
University of California
8270 Boelter Hall/Serials Sect.
Los Angeles, CA 90024

Physics Library
University of California
Los Angeles, CA 90024

Electrical Engineering Library
University of Southern California
Los Angeles, CA 90007

Physics Library
University of Southern California
Los Angeles, CA 90007

Electrical Engineering Library
California Institute of Technology
Pasadena, CA 91109

Physics Library
California Institute of Technology
Pasadena, CA 91109

Electrical Engineering Library
Stanford University
Stanford, CA 94305

Physics Library
Stanford University
Stanford, CA 94305

Electrical Engineering Library
Yale University
New Haven, CT 06520

Physics Library
Yale University
New Haven, CT 06520

Electrical Engineering Library
University of Florida
Gainesville, FL 32611

Physics Library
University of Florida
Gainesville, FL 32611

Electrical Engineering Library
University of Illinois
Urbana, IL 61801

Physics Library
University of Illinois
Urbana, IL 61801

Electrical Engineering Library
University of Maryland
College Park, MD 20742

Physics Library
University of Maryland
College Park, MD 20742

Electrical Engineering Library
Harvard University
Cambridge, MA 02139

Physics Library
Harvard University
Cambridge, MA 02139

Electrical Engineering Library
Massachusetts Inst. of Technology
Cambridge, MA 02139

Physics Library
Massachusetts Inst. of Technology
Cambridge, MA 02139

Avco-Everett Research Library
2385 Revere Beach Parkway
Everett, MA 02149

Electrical Engineering Library
University of Michigan
Ann Arbor, MI 48109

Physics Library
University of Michigan
Ann Arbor, MI 48109

Electrical Engineering Library
Princeton University
Princeton, NJ 08540

Library
Plasma Physics Laboratory
Princeton University
Princeton, NJ 08540

Physics Library
Princeton University
Princeton, NJ 08540

Electrical Engineering Library
Cornell University
Ithaca, NY 14853

Sandia National Laboratories
Technical Library, Org. 3140
P. O. Box 5800
Albuquerque, NM 87185

Los Alamos National Laboratory
Attn: Librarian (ISD-4), MS 364
P.O. Box 1664
Los Alamos, NM 87545

Physics Library
Cornell University
Ithaca, NY 14853

Electrical Engineering Library
New York University
10 Washington Square, South
New York, NY 10012

Physics Library
New York University
70 Washington Square, South
New York, NY 10012

University of Rochester Library
Rochester, NY 14627

Electrical Engineering Library
Rensselaer Polytechnic Institute
Troy, NY 12181

Physics Library
Rensselaer Polytechnic Institute
Troy, NY 12181

Technical Library
U.S. Air Force Avionics Laboratory
Wright Patterson AFB, OH 45433

Electrical Engineering Library
Oregon State University
Corvallis, OR 97331

Physics Library
Oregon State University
Corvallis, OR 97331

Electrical Engineering Library
University of Oregon
Eugene, OR 97403

Physics Library
University of Oregon
Eugene, OR 97403

Electrical Engineering Library
Washington State University
Pullman, WA 99163

Physics Library
Washington State University
Pullman, WA 99163

Electrical Engineering Library
University of Washington
Seattle, WA 98195

Physics Library
University of Washington
Seattle, WA 98195