

CAMBRIDGE: The Authority in Optics

Theoretical Problems in Cavity Nonlinear Optics

Paul Mandel

This book provides a thorough description of cavity nonlinear optics in terms of modern dynamical systems theory. Several of the topics treated cannot be found in other books, including swept control parameter dynamics, laser stability, multimode rate equations, and antiphase dynamics.

Cambridge Studies in Modern Optics 21

1997 200 pp. 55385-7 Hardback \$59.95

Laser Fundamentals

William T. Silfvast

"...Silfvast does an excellent job of presenting a well-organized and thoughtful book. The figures are exceptionally clear and informative, and the use of highlighting equations throughout is particularly useful...would be a welcome addition to the home or office bookshelf."

—Jim Tatum, Optics & Photonics News

"Silfvast is an excellent explainer...a fresh approach. Laser Fundamentals is a good read, and I recommend it to students and teachers alike."

—Physics Today

Laser Fundamentals provides a clear, up-to-date, and comprehensive introduction to the physical and engineering principles of laser operation and design.

1996 543 pp. 55424-1 Hardback \$95.00
55617-1 Paperback \$39.95

Simulations for Solid State Physics

An Interactive Resource for Students and Teachers

Robert H. Silsbee and Jörg Dräger

This new and exciting interactive resource centers around fourteen high quality computer simulations covering essential topics in solid state physics.

The simulations cover x-ray diffraction, phonons, electron states and dynamics, semiconductors, magnetism, and dislocations. Selected material from the simulations may be explored at the Web site <http://www.ruph.cornell.edu/sss/sss.html>

1997 335 pp.
59094-9 Hardback includes CD-ROM \$59.95
59911-3 Paperback \$19.95

Available in bookstores or from

CAMBRIDGE
UNIVERSITY PRESS

40 West 20th Street, New York, NY 10011-4211
Call toll-free 800-872-7423. Web site: <http://www.cup.org>
MasterCard/VISA accepted. Prices subject to change.

The Art and Science of Optical Design

Robert R. Shannon

This comprehensive introduction to lens design covers the fundamental physical principles and key engineering issues. Several practical examples of modern computer-aided lens design are worked out in detail from start to finish, beginning with basic lens design forms, and progressing to advanced systems, such as gradient index and diffractive optical components.

1997 512 pp. 45414-X Hardback \$100.00
58868-5 Paperback \$39.95

Introduction to Optical Engineering

Francis T. S. Yu and Xiangyang Yang

This book provides a detailed introduction to modern optical engineering, covering the fundamental concepts as well as practical techniques and applications. Basic optical principles are presented, particularly reflection, refraction, diffraction and interference. Building on this foundation, a wide variety of optical devices and processes are then discussed, including photodetectors, spatial light modulators, holography and lasers. Two chapters are devoted to linear system transforms and signal processing, and the book concludes with a chapter on fiber optics.

1997 448 pp. 57366-1 Hardback \$110.00
57493-5 Paperback \$44.95

Now in Paperback...

The Art of Molecular Dynamics Simulation

D. C. Rapaport

"What Press et al.'s Numerical Recipes did for scientific computing in general, Dennis Rapaport's new book will do for the field of molecular-dynamics simulation..."

designed to be useful to both beginners and experts... While many scientists have embraced the idea of purchasing off-the-shelf molecular-modeling codes complete with visualization tools, there will always be a hard core of theorists who insist on building their own codes from scratch and controlling what goes into every line. Rapaport's book is useful to both camps, and it deserves wide readership."

—Robin L. Blumberg Selinger,
Computers in Physics

1997 414 pp. 59942-3 Paperback \$39.95

Information for Contributors

1. Manuscripts must be written in English. All manuscripts will be referred to acknowledged experts in the subject. Only those receiving favorable recommendations from the referees will be accepted for publication. Manuscripts may be sent to any Board member, any Associate Editor, or the Editor.
2. Manuscripts should be double spaced, on one side of good grade paper, allowing a reasonable left-hand margin. An original and two copies should be submitted with the author's full postal address, phone and/or fax numbers, position, and affiliations. Authors are urged to send in their final manuscripts on disks as well as on hard copy.
3. The title and section headings should highlight the significant points. A short abstract should precede the main text.
4. One copy of photographs, prints, or transparencies of good quality and unmarked should be submitted. Where lines or lettering are to appear on the photograph, an additional print should be supplied appropriately marked. Each should have, lightly written on the back, the author's name, the figure number, and an indication of which is the top of the picture.
5. One copy of each line diagram should be submitted at approximately twice final size and unlettered. Diagrams must be drawn in indian ink on plain white or transparent paper. A second copy should be supplied with lettering included. The author's name and the figure number should be written on this copy.
6. Tables should be typewritten on separate sheets. Avoid, where possible, very wide tables.
7. References and footnotes should be cited according to the Harvard (Author/date) system, also known as the "British form." In the text, author and year are cited in parentheses, e.g. "... was found by McCarthy (1980, 1980a)..." or "(Emmett *et al.* 1972)". Full references are listed in alphabetic order at the end of the paper. References are not numbered. An example of a reference list is:

DEUTSCH, C. & KLARFELD, S. 1973 *Phys. Rev. A* 7, 2081.
NICHOLSON, D.R. 1983 *Plasma Theory* (John Wiley, New York).
OOMURA, H. *et al.* 1982a *Res. Rep. ILE*, ILE-8207p.
OOMURA, H. *et al.* 1982b *Trans. Ans.* 43, 617.

Note that the year of publication appears after the author's name. If possible, all authors names should be listed in preference to "*et al.*" If one author or team is referred to more than once in any year, the letters *a*, *b*, etc., should be added after the year to distinguish the individual references.
8. Correction to proofs should be restricted to printers' errors only. Authors are entitled to 25 offprints of their article free of charge. Additional offprints may be purchased if they are ordered on the form sent with the proofs.

ISSN 0263-0364

© 1997 Cambridge University Press

Printed in the United States of America

Cambridge University Press

40 West 20th Street, New York, NY 10011, USA

The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU

10 Stamford Road, Oakleigh, Melbourne 3166, Australia

LASER AND PARTICLE BEAMS

Pulse Power and High Energy Densities

Volume 15, Number 2, 1997

Regular Papers

Yuelin Li (Shanghai Institute of Optics and Fine Mechanics, Academia Sinica, Shanghai, China): Analytical study of recombination X-ray lasers in an adiabatic expanding plasma 215

P. Spiller (Gesellschaft für Schwerionenforschung (GSI), Darmstadt, Germany) and **V.L. Varentsov** (St. Petersburg Institute for Informatics and Automation, St. Petersburg, Russia): New concept on the application of supersonic gas jets for space charge neutralized beam transport in an ICF reactor chamber 231

Qihong Lou (Shanghai Institute of Optics and Fine Mechanics, Academia Sinica, Shanghai, China): Excimer laser plasma to control laser pulse duration 235

H. Chuaqui, E. Wyndham, C. Friedli, and M. Favre (Pontificia Universidad Católica de Chile, Santiago, Chile): LLAMPÜDKEÑ: A high-current, low-impedance pulser employing an auxiliary exponential transmission line 241

K. Masugata, S. Tsuchida, H. Saitou, K. Yatsui (Nagaoka University of Technology, Nagaoka, Niigata, Japan), **K. Shibata, and M. Shigeta** (TDK Corporation, Chiba, Japan): Fast-charging Blumlein pulse forming line 249

T. Johzaki, Y. Nakao, A. Oda, K. Kudo (Kyushu University, Hakozaki, Fukuoka, Japan), **H. Nakashima** (Kyushu University, Kasuga, Fukuoka, Japan), and **H. Takabe** (Institute of Laser Engineering, Osaka University, Suita, Osaka, Japan): Effects of neutron heating on ignition and energy gain of laser-imploded D-T pellets 259

B.W. Boreham (Central Queensland University, Rockhampton, Australia) **H. Hora, M. Aydin, S. Eliezer, M.P. Goldsworthy, Gu Min, A.K. Gahatak, P. Lalouis, R.J. Stening, H. Szychman** (Univ. of New South Wales, Sydney, Australia) **B. Luther-Davies, K.G.H. Baldwin, R.A.M. Maddever, and A.V. Rode** (Laser Phys. Centre, Canberra, Australia): Beam smoothing and temporal effects: Optimized preparation of laser beams for direct-drive inertial confinement fusion 277

L.J. Dhareshwar, N. Gopi, C.G. Murali, B.S. Narayan, and U.K. Chatterjee (Laser and Plasma Technology Division, Bhabha Atomic Research Center, Trombay, Bombay, India): Studies of laser-driven shocks using a Nd:glass laser 297

H.J. Kong, S.S. Lee, H.S. Kim, K.G. Han, N.S. Kim, K.Y. Um, J.R. Park, and J.Y. Lee (Korea Advanced Institute of Science and Technology, Yusong-gu, Taejon, Korea): High-power Nd³⁺: glass laser system in KAIST (Sinmyung I) 317

K. Masugata, H. Okuda, K. Yatsui (Laboratory of Beam Technology, Nagaoka University of Technology, Nagaoka, Niigata, Japan), and **T. Tazima** (National Institute for Fusion Science, Nagoya, Japan): Evaluation of brightness of an intense pulsed ion beam by a Thomson spectrometer 325

M.I. Lomaev, A.N. Panchenko, V.S. Skakun, E.A. Sosnin, V.F. Tarasenko (High Current Electronics Institute, Tomsk, Russia), **M.G. Adamson, B.R. Myers, and F.T. Wang** (Lawrence Livermore National Laboratory, United States): Excilamp producing up to 130 W of output power and possibility of its applications 339

Book Review: by Robert Geoffrey Ashcroft 347

Book Review: by Edward C. Morse 347

CAMBRIDGE
UNIVERSITY PRESS



0263-0346(199705)15:2;1-#