

5

NEW
MODELS
OPEN A
WHOLE
NEW WORLD
IN LASER
VERSATILITY



HADRON/TRG
Model 104 Series
Laser System

You're involved in atmospheric studies, or ballistic research, or chemistry. Maybe you're a medical and biological researcher. Or any one of dozens of other scientific or industrial activities for which you need lasers. Like micro-welding, high speed photography, holography or hole-drilling.

The **HADRON/TRG** Model 104 series now provides up to twenty-four different basic configurations to meet your requirements today, next year, and for a long time to come. Characteristics include normal mode output to 10 joules, peak power output to 100 megawatts, and repetition rates to 30 ppm. Rugged, simple, modular design is the reason for such unprecedented flexibility and versatility.

Plus the most complete line of accessories you can find in any medium power laser system.

Tell us your laser problem or requirement. We'll come up with the best answer...for you.

HADRON^{INC.}

800 SHAMES DRIVE, WESTBURY, N.Y. 11590 • 516-334-4402

Most of the content is at a general graduate level, and the appropriate physics prerequisites are assumed. There is relatively little more advanced material. The coverage of today's solid-state field is as broad and comprehensive as one could ask. It is understandable that a lot of the older content should be retained in this present edition (and much of the experimental material is no worse for being long in the tooth). Some duplication of topics, among the five parts, is nothing amiss. But it is a pity that the opportunity was not taken to replace some pedestrian and unenlightening exposition or to provide, with a meager first appearance of a notion, directions to ampler versions elsewhere in the book. Perhaps from sampling more in part one than elsewhere, I found the text a discouragingly flat progression of items, so that the student would get little indication of which were the more important in implications or in need of deeper study. It passes over opportunities to help him build a unified understanding of a topic.

It appears to me that this book would be useful as a supplementary text, together with an intensively pedagogical work such as J. M. Ziman's *Electrons and Phonons* (Oxford U. P., 1960), for a graduate course and as a reference work on the professional's shelves. As a handbook, it covers at least adequately a great deal of essential material.

Peter J. Price
IBM Research Division

new books

CONFERENCE PROCEEDINGS

Developments in High Energy Physics (Conf. proc. IX Internationale Universitätswochen für Kernphysik 1970 der Karl-Franzens-Universität Graz, Schladming, Austria, 23 Feb.-7 Mar. 1970). P. Urban, ed. 633 pp. Springer-Verlag, New York, 1970. \$30.00

Handling of Nuclear Information (Conf. proc. 16-20 Feb. 1970, Vienna). 671 pp. International Atomic Energy Agency, Vienna, 1970. \$18.00

Methods and Problems of Theoretical Physics. J. E. Bowcock, ed. 440 pp. American Elsevier (North-Holland), New York, 1970. \$21.75

Proceedings of the Third Hawaii Topical Conference in Particle Physics (Conf. proc. University of Hawaii, Honolulu, Hawaii, 18-29 Aug. 1969). W. A. Simmons, S. F. Tuan, eds. 169 pp. Western Periodicals, Los Angeles, Calif., 1970.

Spectrum Formation in Stars With Steady-State Extended Atmospheres (Conf. proc. International Astronomical Union Colloquium No. 2, Commission 36,

G. Groth, P. Wellmann, eds. 332 pp. National Bureau of Standards Special Publication 332, Washington, D. C., 1970. \$1.75

Technical Report Series No. 115: Radioisotope X-ray Fluorescence Spectrometry (Panel proc. Vienna, 13-17 May 1968). 102 pp. International Atomic Energy Agency, Vienna, 1970. \$3.00

Ultraviolet Stellar Spectra and Related Ground-Based Observations (Conf. proc. Symposium no. 36 of the International Astronomical Union, Luntenen, Netherlands, 24-27 June 1969). L. Houziaux, H. E. Butler, eds. 361 pp. Springer-Verlag (D. Reidel), New York, 1970. \$19.80

CHEMICAL PHYSICS

Advances in Radiation Chemistry, vol. 2. M. Burton, J. L. Magee, eds. 410 pp. Interscience, New York, 1970. \$19.50

Atomic Absorption Spectroscopy: A Practical Guide. By R. J. Reynolds, K. Aldous. 201 pp. Barnes and Noble, New York, 1970. \$15.00

The Chemical Consequences of Nuclear Spin. By P. J. Wheatley. 192 pp. American Elsevier (North-Holland), New York, 1970. \$10.00

pH Meters. By A. Wilson. 119 pp. Barnes and Noble, New York, 1970. \$6.50

SOLID STATE

Diffusion in Semiconductors. By B. L. Sharma. 200 pp. Trans Tech Publications, Clausthal, Germany, 1970. \$9.80

Festkörper Probleme X: Advances in Solid State Physics. O. Madelung, ed. 432 pp. Pergamon, New York, 1970. \$23.00

Halbleiterphysik II: Sperrschichten und Randschichten, Bauelemente. By D. Geist. 228 pp. Friedr. Vieweg, Sohn Braunschweig, Germany 1970.

Physics of Solid State Devices. By T. H. Beeforth, H. J. Goldsmid. 204 pp. Pion, London, UK, 1970. £ 3.00

Solid State Physics: Advances in Research and Applications, Vol. 25. H. Ehrenreich, F. Seitz, D. Turnbull, eds. 420 pp. Academic, New York, 1970. \$24.00

Solid State Plasmas. By M. F. Hoyaux. 159 pp. Pion, London, UK, 1970. £2.50

ASTRONOMY, SPACE, GEOPHYSICS

Progress in Aerospace Sciences, Vol. 11. D. Küchemann, ed. 351 pp. Pergamon, New York, 1970. \$27.00

Stellar Atmospheres. By D. Mihalas. 463 pp. Freeman, San Francisco, 1970. \$16.00

Vistas in Astronomy, Vol. 12: The Henry Norse Russell Memorial Volume. A. Beer, ed. 426 pp. Pergamon, New York, 1970. \$27.00

THEORY AND MATHEMATICAL PHYSICS

Electromagnetic Fields and Waves. By V. Rojansky. 464 pp. Prentice-Hall, Englewood Cliffs, N. J., 1971. \$11.50

Introduction to the Theory of Linear Systems. By E. A. Faulkner. 89 pp. Barnes and Noble, New York, 1969. \$3.25

The Irreducible Representations of Space Groups. J. Zak, ed. 271 pp. Benjamin, New York, 1969.



PARTNERS IN RESEARCH



KLINGER announces the new Spindler and Hoyer partners in research—the HeNe 500N Laser, freshly and imaginatively redesigned in single unit construction to accommodate any desired components of the famous Micro Optical Bench.



In minutes, a micro optical system containing (among other things) a spatial filter, a beam expander, and a beam steerer has been coupled to the laser to make up a specialized instrument with precise automatic alignment and quickly available microadjustments.

The power supply for the 5.8 mw laser is built into the base; the resonators are dust-proof but readily accessible for dismantling; the mirror holders may be easily removed for mounting the laser and resonators on a standard optical bench. The ease with which the system may be switched from one application to another is unbelievable until you see it done or do it yourself.

We believe that this partnership will do more to minimize alignment problems, reduce development costs, increase flexibility, encourage experimental design changes, and improve prototype precision than anything you have ever used before.

Price and all other details free upon request. Send for our Bulletin No. 500N. A postcard will do.

KLINGER SCIENTIFIC APPARATUS CORP.

83-45 Parsons Blvd., Jamaica, New York 11432
(212) 657-0335

INTEGRATED PHOTOELECTRIC SENSORS



Completely
integrated
multiplier phototube
and high reliability
power supply, available
in a single packaged
design.

EMR PHOTOELECTRIC

BOX 44 PRINCETON, NEW JERSEY

EMR DIVISION OF WESTON INSTRUMENTS, INC., A SCHLUMBERGER COMPANY

REGIONAL OFFICES

Eastern
3012 College Avenue
College Park, Md. 20740
301-864-6340

Central
7801 E. Belleview Ave.
Englewood, Colo. 80110
303-771-6042

Western
5939 W. Century Blvd.
Los Angeles, Cal. 90045
213-670-8745

with the student
and teacher in mind... **PHYSICS
TEXTS
FROM
ADDISON-
WESLEY**

**CONCEPTS IN PHYSICAL SCIENCE,
Preliminary Edition**

by O. P. Puri, J. D. Wise, G. H. Walker, W. P. Thompson, E. Burt, H. Rogers, and C. S. Kiang, *Cooperative General Science Project*

Aimed at the nonscience major, this book emphasizes the historical, humanistic, and developmental aspects of the physical sciences. The material is presented at a realistic conceptual level of comprehension. Practical applications and numerous illustrations help integrate theory with contemporary technological problems. 399 pp, 250 illus, paperbound (1970) \$6.95
Teacher's Guide available

Also available:

**EXPERIMENTS IN PHYSICAL SCIENCE,
PRELIMINARY EDITION**

by Puri et al

This laboratory manual, complementing the authors' text as well as most physical science survey texts, stresses graphical analysis rather than mathematical manipulation. Concepts are related to previous experiences to make the presentation of practical use to the student. The experiments require the simplest, least expensive equipment.

83 pp, 42 illus, paperbound (1970) \$2.95

**INTRODUCTION TO THE PRINCIPLES OF
ELECTROMAGNETISM**

by Walter Hauser, *Northeastern University*

This text is designed for senior and first-year graduate courses at a sufficiently sophisticated level to help the serious student of physics, electrical engineering, and physical chemistry learn the fundamentals of electromagnetism and reach the point where he can profitably read and appreciate more advanced textbooks and original literature. The author presents a careful development and clear exposition of the subject and makes a special effort to motivate the advanced mathematical methods taken from physics.

March/April 1971

**INTRODUCTION TO THE THEORY OF
SOLID STATE PHYSICS**

by James D. Patterson, *South Dakota School of Mines and Technology*

This graduate-level text presents a logical development of the ideas of solid state physics, emphasizing the fundamentals and including more of the mathematics than is usual. A background in quantum mechanics and introductory solid state physics is assumed.

388 pp, 125 illus (1971) \$14.50

MECHANICS, THIRD EDITION

by Keith Symon, *University of Wisconsin, Madison*

This new edition of the most widely used text for intermediate mechanics courses builds on the strengths of the Second Edition. Numerous problem sets, offering a greater range of difficulty, have been added as well as a new chapter on relativistic mechanics. The text is self-contained in its presentation of the mathematics and theory; only calculus and introductory physics are prerequisite.

April 1971

Solutions Manual available

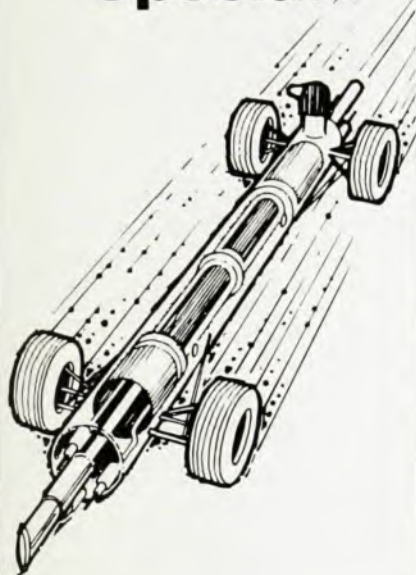
Addison-Wesley
PUBLISHING COMPANY, INC.
Reading, Massachusetts 01867



THE SIGN OF
EXCELLENCE

NO PIT STOPS

Control Laser Special



The Indy 500 winner goes more miles with less pit stops. The Control Laser Special goes 1000 (or more) hours without a refill. This long distance laser saves costly man hours of down-time.

Control Laser's pyrolytic graphite anodic bore* tubes prove themselves immune to thermal shock in high temperature torture tests. Thermal conductivity at high operational temperatures exceeds that of many competing bore materials.

If you're ready for a winner . . . test run our Argon Ion Laser Systems Model 901 (1 watt), 902 (2 watts) and 906 (6 watts). Our factory demonstration team can be at your office shortly after your phone call. Go with a winner—Control Laser.



CONTROL LASER/ORLANDO
11222 Astronaut Boulevard
Orlando, Florida 32809
Telephone (305) 851-2540

*Control Laser Patent

Lecture Notes in Physics, 5: The Reduction of the Product of Two Irreducible Unitary Representations of the Proper Orthochronous Quantum mechanical Poincaré Group. By M. Schaaf, J. Ehlers, K. Hepp, H. A. Weidenmüller, eds. 120 pp. Springer-Verlag, New York, 1970. \$3.90

Modern Physics: An Introduction to its Mathematical Language. By W. A. Blaupied. Holt, Rinehart and Winston, New York, 1971. \$14.95

Quantum Chemistry, Vol. 1: Quantum Mechanics and Molecular Electronic Structure. By I. N. Levine. 591 pp. Allyn and Bacon, Boston, 1970. \$14.50

Quantum Kinematics and Dynamics. By J. Schwinger. 374 pp. Benjamin, New York, 1970. Cloth, \$17.50; paper, \$7.95

Quantum Mechanics: An Introduction. By J. G. Taylor. American Elsevier, New York, 1970. \$7.75

INSTRUMENTATION AND TECHNIQUES

Computer Logic: A Laboratory Workbook. By H. V. Malmstadt, C. G. Enke. 167 pp. Benjamin, New York, 1970. \$4.95

Experimental Neutron Resonance Spectroscopy. J. A. Harvey, ed. Academic, New York, 1970. \$29.50

Hot Electron Microwave Generators. By J. E. Carroll 306 pp. American Elsevier, New York, \$20.25

Modern Network Analysis. By W. H. Kim, H. E. Meadows, Jr. 431 pp. Wiley, New York, 1971. \$14.95

An Introduction to Electronics. By D. F. Shaw. 397 pp. American Elsevier, New York, 1970. \$9.00

Pulsed High Magnetic Fields. By H. Knoepfel. 372 pp. American Elsevier (North-Holland), New York, 1970. \$23.00

Technical Report Series No. 106: The Volume Reduction of Low-Activity Solid Wastes. J. Pradel, P. J. Parsons, E. Málašek, eds. 44 pp. International Atomic Energy Agency, Vienna, 1970. \$2.00

Technical Report Series No. 112: Neutron Moisture Gauges: A Guide-Book on Theory and Practice. 96 pp. International Atomic Energy Agency, Vienna, 1970. \$3.00

Technical Report Series No. 114: Training Manual on Food Irradiation Technology and Techniques. 134 pp. International Atomic Energy Agency, Vienna, 1970. \$4.00

Technical Report Series No. 116: Bituminization of Radioactive Wastes: Review of the Present State of the Development and Industrial Application. 135 pp. International Atomic Energy Agency, Vienna, 1970. \$4.00

Technical Report Series No. 120: Monitoring of Radioactive Contamination on Surfaces. By R. F. Clayton. 33 pp. International Atomic Energy Agency, Vienna, 1970. \$2.00

GENERAL PHYSICS TEXTS

Electromagnetic Theory: Problems and Solutions, Vols. 1 and 2. By K. Forster, R. Anderson. 211 and 238 pp. St. Martin's Press, New York, 1970. \$3.95 ea.

Physics Demonstration Experiments at William Jewel College. By W. A. Hilton. 124 pp. William Jewel College, Pillsbury Dept. of Physics, Liberty, Mo., 1971. \$4.00 □

Energy storage capacitors meet any power requirement



Think your energy storage capacitor requirement is impossible? So have hundreds of other designers in the past years. Then they discovered Condenser Products Corporation. We manufacture the most exotic line of special purpose capacitors in the world. Parameter combinations such as low-inductance, 50 KV, .05 mfd ratings and full-year guarantees are normal to us. You just can't stump us with power, voltage, PRF or capacity specifications. In most cases we have the product you need on the shelf, ready to ship. If we have to design something special for your application, we'll do it at no extra cost to you, and while we're at it, we'll also show you how to economize by selecting values and packages most suitable to your project. If your need is urgent, call right now. If you can wait a week or so, send for our free catalog and see what we have in our standard line.

condenser products corporation

P.O. Box 997
Brooksville, Florida 33512
Telephone (904) 796-3562