

the analog of the W boson and the "clapping" modes the analog of the graviton with less than overwhelming excitement. These analogies no doubt display a certain virtuosity, but it is not clear that they actually help our concrete understanding of either the condensed-matter or the particle-physics problems very much, especially when they have to be qualified as heavily as is done here.

To me the most interesting part of the book was that on the bulk orbital statics and, more particularly, dynamics (chapter 6)—an area where the author has certainly injected a number of novel and important ideas and where, if anywhere, the experience he draws from particle physics pays off. Even here, however, the scant and unsystematic attempt made to relate the often abstract theoretical concepts to experiment is frustrating. For example, the "density of the orbital [angular] momentum L of the Cooper pair rotation," an idea that is apparently fundamental to much of the work of chapter 6, is introduced just like that, in words, with no attempt made then or later to relate it directly to microscopic concepts or, as far as I can see, to anything that might be experimentally measurable. (It would have been easier to check this kind of statement if the book had an index!)

Despite the above reservations, there are many good things in this book, and the author is to be commended for not swamping his arguments with any heavier formalism than they need. However, the prospective reader should realize that to appreciate its virtues, he or she will need to come armed not only with a modicum of group theory and, ideally, phenomenological particle physics but, more importantly, with a working knowledge of the principal experimental properties of superfluid ^3He and their explanation in terms of BCS-type theory. Despite the implication to the contrary in the foreword to the series, this is not a book for the novice.

ANTHONY J. LEGGETT
University of Illinois
Urbana-Champaign

NEW BOOKS

Condensed Matter Physics

Liquid Crystals. Second edition. S. Chandrasekhar. Cambridge U.P., New York, 1992. 460 pp. \$100.00 hc ISBN 0-521-41747-3

Liquid Crystals: Applications and Uses, Vol. 3. B. Bahadur, ed. World Scien-

tific, River Edge, N. J., 1992. 401 p. \$74.00 hc ISBN 981-02-0403-5

Melt Processed High-Temperature Superconductors. M. Murakami, ed. World Scientific, River Edge, N. J., 1992. 361 pp. \$86.00 hc ISBN 981-02-1244-5

Nanostructures Based on Molecular Materials. W. Göpel, Ch. Ziegler, eds. VCH, New York, 1992, 377 pp. \$115.00 hc ISBN 1-56081-210-9

Nanotechnology: Research and Perspectives. B. C. Crandall, J. Lewis, eds. MIT P., Cambridge, Ma., 1992. 381 pp. \$39.95 hc ISBN 0-262-03195-7

Quantum Hall Effect. M. Stone, ed. World Scientific, River Edge, N. J., 1992. 365 pp. \$68.00 hc ISBN 981-02-0883-9

Structure of Solids, Vol. 1. Materials Science and Technology. V. Gerold, ed. VCH, New York, 1993. 621 pp. \$430.00 hc ISBN 3-527-26814-6

Geophysics

Mechanics of Coastal Sediment Transport. *Advanced Series on Ocean Engineering 3.* J. Fredsøe, R. Deigaard. World Scientific, River Edge, N. J., 1992. 369 pp. \$58.00 hc ISBN 981-02-0840-5

The Use of EOS for Studies of Atmospheric Physics. *Enrico Fermi International School of Physics Course 115.* Proc. Sch., Varenna, Italy, June-July 1990. J. G. Gille, G. Visconti, eds. North-Holland, New York, 1992. 579 pp. \$250.00 hc ISBN 0-444-89896-4

Materials Science

Concise Encyclopedia of Materials Characterization. R. W. Cahn, E. Lifshin, eds. Pergamon, New York, 1993. 641 pp. \$300.00 hc ISBN 0-08-040603-3

Concise Encyclopedia of Materials Economics, Policy and Management. M. B. Bever, ed. Pergamon, New York, 1993. 460 pp. \$240.00 hc ISBN 0-08-037056-X

Deep Centers in Semiconductors: A State-of-the-Art Approach. S. T. Pantelides, ed. Second edition. Gordon and Breach, New York, 1992. 928 pp. \$140.00 hc ISBN 2-88124-562-5

Diamond Films and Coatings. R. F. Davis, ed. Noyes, Park Ridge, N. J., 1993. 421 pp. \$78.00 hc ISBN 0-8155-1323-2

Encyclopedia of Materials Science and Engineering, Vol. 3. R. W. Cahn, ed. Pergamon, New York, 1993. 756 pp. \$500.00 hc ISBN 0-08-040590-8

Materials Interfaces: Atomic-Level Structure and Properties. D. Wolf, S. Yip, eds. Chapman and Hall, New York, 1992. 716 pp. \$175.00 hc ISBN 0-412-41270-5

The Metal-Hydrogen System: Basic Bulk Properties. *Springer Series in Materials Science 21.* Y. Fukai. Springer-Verlag, New York, 1993. 355 pp. \$98.00 hc ISBN 0-387-55637-0

Plastic Deformation and Fracture of Materials, Vol. 6. Materials Science and Technology. H. Mughrabi, ed. VCH, New York, 1993. 697 pp. \$430.00 hc ISBN 0-89573-694-2

Instrumentation and Techniques

Applied Laser Spectroscopy: Techniques, Instrumentation, and Applications. D. L. Andrews, ed. VCH, New York, 1992. 471 pp. \$125.00 hc ISBN 1-56081-023-8

Electron Diffraction Techniques, Vol. 1. IUCr Monographs on Crystallography 3. J. M. Cowley, ed. Oxford U.P., New York, 1992. 584 pp. \$85.00 hc ISBN 0-19-855558-X

Electron Microdiffraction. J. C. H. Spence, J. M. Zuo. Plenum, New York, 1992. 358 pp. \$49.50 hc ISBN 0-306-44262-0

Industrial and Technological Applications of Neutrons. Proc. Sch., Varenna, Italy, June 1990. North-Holland, New York, 1992. 523 pp. \$219.00 hc ISBN 0-444-89837-9

The Laboratory Handbook of Materials, Equipment and Techniques. G. S. Coyne. Prentice-Hall, Englewood Cliffs, N. J., 1992. 468 pp. \$45.00 hc ISBN 0-13-126228-9

Microelectronics Manufacturing Diagnostics Handbook. A. H. Landzberg, ed. Van Nostrand Reinhold, New York, 1993. 633 pp. \$89.95 hc ISBN 0-442-00471-0

Optics and Photonics

Fundamental Systems in Quantum Optics. *Les Houches 1990.* Proc. Sch., Les Houches, France, June-July 1990. J. Dalibard, J.-M. Raimond, J. Zinn-Justin, eds. North-Holland, New York, 1992. 1123 pp. \$272.00 hc ISBN 0-444-89736-4

Introduction to Photorefractive Nonlinear Optics. *Wiley Series in Pure and Applied Optics.* P. Yeh. Wiley, New York, 1993. 410 pp. \$79.95 hc ISBN 0-471-58692-7

Polarized Light: Fundamentals and Applications. E. Collett. Marcel Dekker, New York, 1993. 581 pp. \$175.00 hc ISBN 0-8247-8729-3

Rare Earth Doped Fiber Lasers and Amplifiers. M. J. F. Digonet, ed. Marcel Dekker, New York, 1993. 659 pp. \$165.00 hc ISBN 0-8247-8785-4

Plasmas and Fusion

Theory of Fusion Plasmas. *International School of Plasma Physics.* Proc. Wksp., Varenna, Italy, August 1992. Editrice Compositori, Bologna, Italy, 1992. 428 pp. 110 000 Lira hc ISBN 88-7794-049-2