

# Book Reviews

## Efficient Use of Energy

Hugh C. Wolfe, Series Editor, AIP Conference Proceedings, No. 25. The APS Studies on the Technical Aspects of the More Efficient Use of Energy. Published (1975) by American Institute of Physics, 335 East 45 St., New York, NY 10017. i-xv + 304 pp. 6½ × 9½ in. Price \$20.00.

In 1972 the American Physical Society established an Ad Hoc Committee to consider the Society's future direction in service to the physics community. The Committee strongly recommended assuming broader responsibilities for non-traditional activities in an attempt to meet emerging public needs. This volume, *Efficient Use of Energy*, comes from the meeting of the Summer Study Group on the Technical Aspects of the More Efficient Utilization of Energy at Princeton University from 8 July to 2 August 1974. There are three parts: (I) A Physics Perspective; (II) The Role of Physics in Combustion; (III) Energy Conservation and Window Systems.

From the Preface: "The main body of this

report is intended for persons with scientific training who are interested in energy but are not yet energy experts. It is unabashedly tutorial in character . . ." From the Introduction, Part I: "As every student of energy knows, there is a large and complex set of energy problems having economic, social, political, and technical components. In this report we focus on the *technical* aspects of energy use, with emphasis on energy efficiency. We also focus primarily on *end use* of energy. Our perspective is that of physics." Part II "represents one of the first attempts by the American Physical Society to identify physics research areas in specific energy-related engineering disciplines . . ." From Part III: "The goals of this study are to relate fundamental physics research and development to the practical problem of improving the energy transfer conditions of windows . . ."

Many engineers will appreciate the elucidation of the first and second laws of thermodynamics in Part I of this small volume. As for Part II (Combustion), perhaps its presentation of principles, problems and possibilities will prove

effective in the automotive engineering world, and the list of research opportunities is extensive and instructive for any reader. Part III, about energy conservation for homes, has two detailed technical sections: (1) Window Systems and Climate Control Performance; and (2) Infrared-Reflecting Selective Surface Materials. There are also Appendixes of "Some Speculative Ideas" and "Formulas for Computing Cost Effectiveness." We can only speculate about architects' interest and attention and hope that these are well received by the whole range of engineers who support the architects.

For a thesis supporting the value of Part I of the *AIP Proceedings* the reader is referred to the three-part article, "Energy," in *The New Yorker* magazine for 2, 9 and 16 February 1976 by Dr. Barry Commoner, Center for the Biology of Natural Systems, Washington University, St. Louis. (This has since been published under the title *The Poverty of Power* by Knopf; 265 pp. \$8.95.) He states the simple core: "The chief practical purpose of thermodynamics is to learn how energy can best be harnessed to work-requiring tasks." He leans on, and credits, the AIP Conference study for his own exposition of the physics of energy. Dr. Commoner's challenging approach to the overall problem (the interdependence of the ecosystem, the production system and the economic system) is not that of an amicus curiae in the court of public opinion upholding all parts of our present establishment. — *Victor H. Allen*, Old Sleepy Hollow Rd., Pleasantville, NY 10570.

## The Optical Industry and Systems Directory

Published (1976) by Optical Publishing Co., P.O. Box 1146, Pittsfield, MA 01201. 780 pp. Price \$32 (if prepaid) — \$35 in countries outside the United States.

The 22nd edition of The Optical Industry and Systems Directory continues its well-earned reputation as the most complete directory covering the fields of optical instrumentation, systems design and fabrication.

Issued in two sections and totaling over 780 pages, the directory is a must for anyone dealing in optics, whether he is the Chief Engineer, Purchasing Agent, or a student contemplating a career in optics.

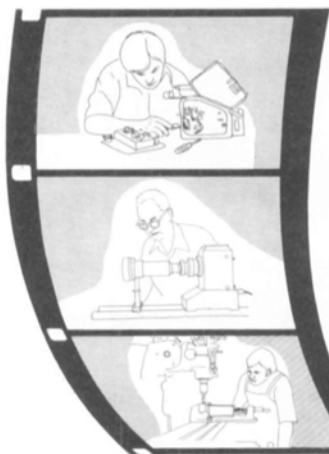
Volume I is divided into seven basic sections. To facilitate its use, there are two complete indexes to the over 900 categories or products and services. The first index is in alphabetical order, while the second is in alphabetical order within major product categories. Each category may contain as many as five sections: Manufacturers Stock Items or Custom Items, Supply, Design/Prototype and Import. Organizations are listed with their complete addresses, telephone numbers and names of key personnel to contact.

Product tables are listed in tabular form, giving complete satisfaction for lasers, laser accessories, lenses, etc.

Manufacturers are listed alphabetically, and geographically, foreign and domestic.

Volume II is subdivided into two sections. The first is an Encyclopedia. New for this year, it contains a complete series of short tutorial articles describing the principles and applications of optical/electro-optical/laser technology.

The second section is the Dictionary, completely revised and updated with over 3000 terms. This is the first and only dictionary of optical, electro-optical and laser technology available. — *Alex E. Alden*.



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