

BOOK REVIEWS

Thesaurus of scientific, technical, and engineering terms
Hemisphere Publishing Corp. 1988,
1216 pp.

A first rule of bibliography should require all books to be signed. We are told that the *Thesaurus of Scientific, Technical, and Engineering Terms* was written by NASA and DOD. But NASA and DOD are not people, and they cannot write books. Those employees of NASA and DOD who assembled this work have hidden their names from view. Responsibility had been quite completely abjured by all involved. Yet respectable compendia of this sort, always list editors, assistants, and the authors of specific articles.

No book of words is ever complete, but I really puzzle over what I find in this one. *Indiana* and *Tunisia* are included, but *caloric* and *phlogiston* are not. One would think that recently obsolete terms of such major importance would rank high in the list. *Calves* is given in the sense of being Elsie's offspring, but not as the manifestation of *gastrocnemius* muscles in the leg.

We are told that *enthalpy* is a word related to *entropy* (How?), but nothing is said of *disorder* or *time's arrow*. Under *equilibrium* we read that *stability* is a related idea. I find that scary. Without explanation it encourages the kind of error that substitutes *nonequilibrium* for *unstable*. The popular misuse that makes a noun out of the adjective, *schematic*, is perpetuated without comment, although the *only* synonym offered is *circuit diagram*.

One might pick any thesaurus apart this way. But in this case, I run into some such problem almost every time I look up a word. This work would be more useful if — like *Samuel Johnson's Dictionary* — it flagrantly presented one man's prejudice. Then, at least, you could use it within a pattern of disagreement. Then the book would be *something* rather than a cipher.

The Foreword suggests that the work is intended for computer manipulation of keywords. Perhaps that would explain the lack of any of the value judgments that are so gracefully expressed in my copy of *Roget's Thesaurus* (Jay Luzzatto and Loy Moreheads, eds.) That lack does not give me great confidence in computer searches.

What we have here is the fruit of an enormous labor, not of love, but of salaried employees. I look at it and see taxpayer's dollars — lots of 'em. In the end

I cannot imagine ever reaching to take this book from the shelf. In the end, the weaknesses are all traceable to the lack of personal responsibility.

J. H. Lienhard

Innovation in process energy utilization

edited by A. Ross
Hemisphere Publishing, \$9.50 (U.S.
and Canada), 445 pp.

This book is the proceedings of a three-day symposium organized by The Institution of Chemical Engineers (South Western Branch) and The Institute of Energy (South Wales and West of England Section) held at the University of Bath in September 1987. With the common thread of "process energy saving" being what ties these papers together, one can imagine that there might be papers on a diverse set of topics. Such is clearly the case. The Chairman of the Organizing Committee for the conference states in the Foreword of the book the hope that successful developments in one industry may be applied to other industries. Whether or not this will be accomplished with this text is difficult to estimate. However, the number of industries represented in the papers is very large (breweries to palm oil mills), as is the breadth of topics (fuel cells to fluidized beds).

Many papers are related to the chemical process industry. Most deal with actual equipment (e.g., "Performance of a 600kw Pump-Around Heat Recovery System on Humid Pneumatic Conveyor Exhausts"), but a few are devoted to new theoretical and/or more generally applicable developments (e.g., "A New Approach to Distillation Sequence Synthesis"). A very small number of papers may be of value only to workers in a geographical region in, or around, the UK (e.g., "Funding of Innovative Projects—Tapping Resources in the UK and Europe"). Many of the papers not long nor are they too much into theoretical development.

The book should be examined by those engineers concerned with industrial energy conservation, with particular emphasis in the chemical process industries. Academics in fields related to this will also find some areas of interest. Relationships between consecutive papers in the book are usually not very

clear, hence a reader will need to go through the book quite carefully to see what might apply to his or her needs. Because of the breadth and practicality of this book, however, those interested in industrial energy conservation will find one or more concepts of value here.

R. F. Boehm

Heat transfer in gas-cooled annular channels

J. Vilemas, B. Cesna, and V. Survila
Washington, D.C., Hemisphere
Publishing Corporation, 1987, \$73.95,
U.S. and Canada, 226 pp.

This book is of likely interest to mechanical, chemical, and nuclear engineers interested in fluid flow and heat transfer in the case of gas flows in annuli. Much material useful in the design of high-performance equipment is presented.

The book can be described as a lengthy and carefully detailed report of a series of experiments performed at the Institute of Physical and Technical Problems of Energetics of the Academy of Sciences of the Lithuania SSR. These experiments were performed on carefully constructed equipment, arranged to provide for a wide variation of several parameters. The experiments provide detailed information on drag coefficients and Nusselt numbers for gas flows in annuli. The variations that have been considered include entrance effects and developing flow, effects of radius ratio, physical properties of the gas dependent on temperature, ratio of wall to freestream temperature, one-sided and two-sided heating, the attachment of a turbulence generating mechanism, and the use of a helical-shaped inner pipe. In all cases, the outer pipe was circular.

Data have been reduced to nondimensional form and expressed in dimensionless equations, which have been presented in forms compatible with standard dimensionless equations. Efforts have also been made to relate the results to standard theory. Numerous graphs have been presented, mostly in dimensionless form. A chapter summarizing the nondimensional equations, as well as a very lengthy appendix of selected original data are included.

The order of presentation of the material appears logical and desired