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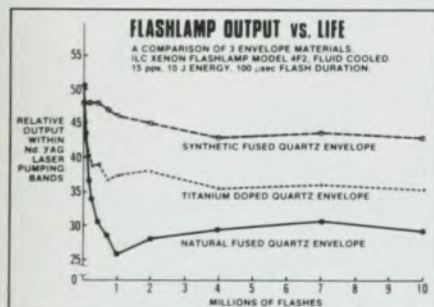
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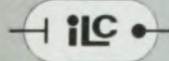
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The book covers a fairly wide range of topics, including the mandatory introduction to the Mössbauer effect and a good elementary discussion of the instrumentation used in the simplest transmission experiments. There is a heavy emphasis on chemical applications, with five of the nine chapters concerned with some aspects of chemistry. Even the section on solid-state physics has, to the reviewer, a chemical flavor. These sections are valuable in that they present numerous "case histories" of research applications, so that the reader can see by example the way in which experiments are performed.

It is difficult to find, outside of the Institute that spawned the book, an audience for which it would be useful in its entirety. I would find individual chapters useful in specific circumstances, but I do not feel that a course of university lectures based on the book would make sense. This is not due to specific shortcomings in the individual chapters, but they do not hang together to make a book. The frequency with which the book will be used is further reduced by the existence elsewhere in many cases, of review articles by the authors of the chapters in this book. The other articles are generally more complete and not necessarily more complex.

One point about the introductory article by Peter Debrunner and Frauenfelder should be mentioned. They give a pictorial description of the Mössbauer effect in terms of a cannon on a raft which, they feel, "may even amuse some physicists." They are correct.

M. BLUME

Brookhaven National Laboratories

Noise Abatement

C. Duerden

280 pp. Philosophical Library
New York. 1971. \$25.00

This is a narrow, pedestrian book. Its fund of practical advice on noise sources and noise control will please city officials and inspectors suddenly burdened with responsibility for noise abatement. But experienced scientists and engineers will shudder at its scientific ineptness.

The author draws on his long experience as a British public-health inspector concerned with noise from home appliances, laundries, industrial equipment, and so on, and presents literally hundreds of small essays on topics such as interviewing the complaining housewife, measuring the offending noise, deciding whether it is excessive, advising on how to reduce it. Diagrams,



charts, tables and worked problems abound. Technicians will find this material well worth the \$25.00 price.

Scientists and engineers will be aghast at the scientific incompetence and narrowness of scope. The initial explanation of what a wave train is not only clumsy but wrong; the diagrams, indicating laboriously that the leading edge of the train advances steadily, imply that the pressure at any given location remains fixed—frozen! Fundamental frequency is "the pure tone in a complex sound which has the same period as the periodic quantity which is that sound." A diaphragm vibrating to and fro makes its backward motion "... because of its mass ..." and because it is "... pulled backwards in order to fill the vacuum ..." Sound waves spread outward in all directions "... like bubbles which grow and grow until they become so thin they burst". A supersonic transport plane's sonic boom "... results from the polarization of the shock waves produced into two waves ..." and the sonic boom, "... precedes ..." the plane.

The book makes little mention of physical principles or basic causes, and mathematics and electronics are avoided almost entirely. The enormous problem of airport noise is given very little space, little more than is allotted to "go-kart racing."

Several tables have no titles, and some of the tables appear *before* being mentioned in the text. The seven-page index is good, but one looks in vain for these headings: annoyance, attenuation, deafness, injury, intensity, reflection. British regulations are quoted at length, but US regulations (and US apparatus and US books) are scarcely mentioned. The three-page bibliography contains virtually no entries more recent than 1968. Presumably the book was in press before the masterful books by American

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By Robert Jastrow, Director, Goddard Institute for Space Studies, and Malcolm H. Thompson, Dalton Schools

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A Solutions Manual will be available.

The text has been revised to better serve the needs of first-year students. Material has been re-organized, consolidated, and rewritten. New problems have been added, and Mathematical Notes have been inserted at the end of some chapters for students whose mathematics background may warrant some help.

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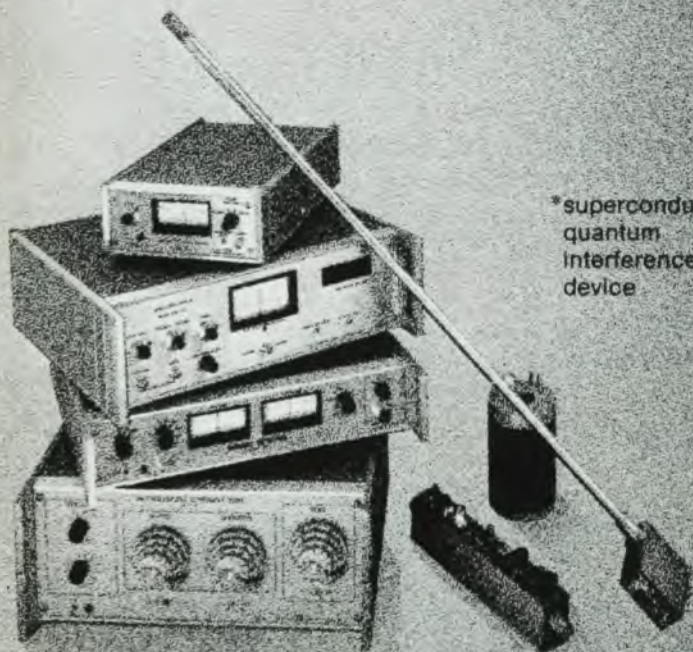
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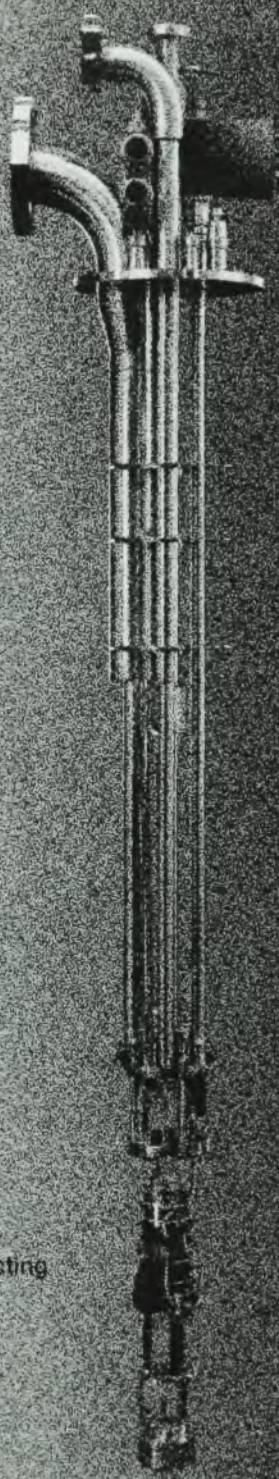


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WILLIAM A. SHURCLIFF
Cambridge, Mass.

References

1. *Noise as a Public Health Hazard*, Proceedings of the American Speech and Hearing Association National Conference, June 13-14, 1968, Washington, DC, W. D. Ward, J. E. Fricke, eds. (1969)
2. B. L. Welch, A. S. Welch, *Physiological Effects of Noise*, Plenum Press, New York. (1970)
3. T. Berland, *The Fight for Quiet*, Prentiss-Hall, Englewood Cliffs, N.J. (1970)
4. R. Taylor, *Noise*, Penguin Books, Middlesex, England. (1970)
5. R. A. Baron, *A Tyranny of Noise*, Harper and Row, New York, (1971)

Molecular Interactions and Electronic Spectra

Noboru Matoga, Tanekazu Kubota
504 pp. Marcel Dekker, New York, 1970.
\$28.50

The object of this book is to provide an introduction to the effects on molecular electronic spectra of molecules that result from interactions between molecules. Studies of these effects have been the basis for a very large number of experimental and theoretical papers during the past three decades. Such studies are of interest not only to the pure spectroscopist who notices these effects and wishes to understand them, but also they are fundamental to all branches of chemistry. After all, is not the basis for understanding chemical reactions provided by an understanding of the electronic changes that occur when two molecules come together to begin the reaction? Because this book is one of the first to undertake a unified treatment of these phenomena, it will certainly be welcomed by those who recognize the potential of such studies, but who have not previously been able to find any simple introduction to the subject. The book is written at a level suitable for graduate students, but it will certainly be helpful to anyone wishing an introduction to these problems, as well as stimulating to those already engaged in such studies.

The book begins with a brief introduction to the elements of quantum mechanics, with special emphasis on perturbation theory. This introduction is not for a beginner, but is a useful review for someone already familiar with introductory quantum mechanics.

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