Most of the experimental data presented in the present volume have been obtained since 1966. In looking for developments on the theoretical side since that time, I took particular interest in the questions related to polarized beams and targets. There is no experimental datum mentioned in the book. Fascinating hints appear; on page 63, one finds a statement that in the sudden approximation or in first-order perturbation theory P_{yz} equals zero, where P_{yz} is a component of the tensor polarization of the excited nucleus. I should think that some experimentalist will want to measure P_{yz}. Appendices G and F tell how to do this, but the authors do not tell what would be learned about nuclei if the departure from zero were measured. Presumably the same sort of thing would be learned as is learned from the experiments discussed in the chapter on higher-order perturbation theory, but perhaps one could achieve more accuracy.

Chapter 10 takes up applications to experiments; this chapter should prove useful to experimentalists and theorists. TORBEN units come in for discussion in the second paragraph. The appendices are gems.

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Deformation Kinetics

A. S. Krausz, H. Eyring
398 pp. Wiley, New York, 1975. $24.95

After examining the book *Deformation Kinetics*, one takes away the impression that all deformation processes can be interpreted by the use of the Eyring theory and absolute reaction rates. While this may indeed be the case, the authors would have presented a far more valuable discussion had they contrasted this viewpoint with the conventional and more widely accepted theories.

The authors have divided the book into two parts. The first portion deals with the development of the molecular theory of deformation kinetics, the second with the analysis of deformation processes and applications both to polymers and to crystalline solids. Examples pertaining to such topics as fracture, hysteresis, stress relaxation of fibers in various environments and superplasticity appear; while this section may seem impressive, the authors could have found material of greater appeal. The examples permit of only minimal application to polymers, and even those that do so lack currency.

The authors either totally overlooked or deliberately ignored several good applications of kinetic theory to polymer systems, though they appear in the literature. Omitted topics include thixotropy.

In general, the book's authors have written clearly. Without a doubt, the volume presents a point of view that differs considerably from conventional viscoelastic theories of deformation. The book documents a vast amount of material that has appeared in the literature in fragmented form, and as such it represents a comprehensive text, useful as a reference source.

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book notes

The Compton Effect: Turning Point in Physics. R. H. Stuewer. 367 pp. Science History (Neale Watson), New York, 1975. $25.00

In late 1922 Arthur Holly Compton "calculated that a quantum of radiation undergoes a discrete change in wavelength when it experiences a billiard-ball collision with an electron at rest in an atom," begins Roger Stuewer, "and his x-ray scattering experiments confirmed this change in wavelength." Now the "long and difficult" route Compton pursued, which culminated in his discovery of the effect that bears his name, has been traced in detail. The essential fabric of Stuewer's book deals with the historical evolution of concepts behind Compton's work, but he also weaves in threads of biography and physical theory. More for physicists than for historians, this volume treats one particular development in the physics of the early twentieth century and examines its impact on subsequent work.

Vistas in Physical Reality: Festschrift for Henry Margenau. E. Laszlo, E. B. Sellon, eds. 228 pp. Plenum, New York, 1976. $25.00

Festschriften tend to be mixed bags, but this one is different—so say the editors, Ervin Laszlo and Emily B. Sellon. The distinguished contributors range over the scope of interest of Margenau's work: physics, philosophy and education. Eugene P. Wigner considers problems of communication and purpose in science, as well as of cosmology and epistemology. James L. Park draws some conclusions from the Einstein–Bohr controversy on the interpretation of quantum mechanics, and Håken Törnebohm defends special relativity theory from the charge of dealing only with clocks and measuring sticks. The other writers are Adolf Grünbaum, R. Bruce Lindsay, Wolfgang Yourgrau, Laszlo, Peter Caws, Siegfried Müller-Markus, John Bacon, Lee Thayer, Harold G. Cassidy and Sellon.

Effects of Noise on Hearing. D. Henderson, R. P. Hamernik, D. S. Dosanjh, J. H. Mills, eds. 565 pp. Raven, New York, 1976. $32.00

The essays in this volume represent the fruits of an interdisciplinary symposium (held at Cazenovia College, New York, June 1975) on noise-induced hearing loss. The book appears rather specialized and technical in nature, and many of the 39 contributors have peppered their writing substantially with acronyms and jargon, which may limit it to the *cognoscenti*.

Papers on the demographics of noise pollution and cochlear anatomy and biochemistry precede accounts of hearing-loss studies. One avowed purpose of the symposium was to consider scientific and other factors in the establishment of damage-risk criteria—the last portion of the book focuses on this task.

new books

Elementary Particles and Fields

Pion–Pion Interactions in Particle Physics. B. R. Martin, D. Morgan, G. Shaw. 460 pp. Academic, London, 1976. $40.50

Relativität, Gruppen, Teilchen: Spezielle Relativitätstheorie als Grundlage der Feld- und Teilchenphysik. R.U. Sexl, H.K. Urbantke. 301 pp. Springer-Verlag, Vienna, 1976. DM 58.00

General Relativity and Gravitation (Proc. of the Seventh Int. Conf., Tel-Aviv University, Israel, June 1974). G. Shaviv, J. Rosen, eds. 344 pp. Halsted, New York, 1976. $38.50

Nuclei, Nuclear Physics

Nuclear and Particle Physics at Intermediate Energies (Lectures presented at Brentwood Summer Institute, Brentwood College, Victoria, Canada, June–July 1975). J. B. Warren, ed. 608 pp. Plenum, New York, 1976. $49.50

Atoms and Molecules

Vibrational States. S. Califano. 335 pp. Wiley, New York, 1976. $39.95

Beam-Foil Spectroscopy, Vol. 1: Atomic Structure and Lifetimes, and Vol. 2: Collisional and Radiative Processes. I. A. Sellin, D. J. Pegg, eds. 987 pp. Plenum, New York, 1976. $45.00 each volume

Chemical Physics

Treatise on Solid State Chemistry, Vols. 6A and 6B: Surfaces 1 and 2. N. B. Hannay, ed. 491 and 418 pp., respectively. Plenum, New York, 1976. $45.00 each volume

Acoustics

Effects of Noise on Hearing. D. Henderson, R. P. Hamernik, D. S. Dosanjh, J. H. Mills, eds. 565 pp. Raven, New York, 1976. $32.00

Mechanisms of Speech Recognition (Int. Series in Natural Philosophy, Vol. 85). W. A. Ainsworth. 139 pp. Pergamon, Oxford, 1976. $16.00 clothbound, $10.00 paperbound

L'acousto-optique. J. Sapriel. 114 pp. Masson, Paris, 1976. 78.00 F

Ultrasonic Biophysics (Benchmark Papers in Acoustics, Vol. 7). F. Dunn, W. D. O'Brien Jr, eds. 410 pp. Dowden, Hutchinson and Ross, Stroudsburg, Pa., 1976. $30.00

Heat, Thermodynamics, Statistical Physics

Applications de la Thermodynamique de non-équilibre: Bases D'énergétique Pratique. P. Chartier, M. Gross, K. S. Spiegler. 191 pp. Hermann, Paris, 1975. 78.00 F

Equilibrium Thermodynamics, 2nd edition. C. J. Adkins. 284 pp. McGraw-Hill, New York, 1975. $7.95

Statistical Mechanics. D. A. McQuarrie. 641 pp. Harper and Row, New York, 1976. $29.95

Thermodynamic Equilibria of Boiling Mixtures (Landolt–Börnstein Numerical Data and Functional Relationships in Science and Technology, Vol. 3—New Series). J. Weishaupt (H. Hausen, ed.). 376 pp. Springer-Verlag, Berlin, 1975. $131.20

Thermodynamic Theory of Domain Structures. I. Privorotskii. 129 pp. Halsted, New York, 1976. $22.50

Modern Theory of Critical Phenomena (Frontiers in Physics, Vol. 46). S-K. Ma. 561 pp. W. A. Benjamin, Reading, Mass., 1976. $24.50 clothbound, $14.50 paperbound

Topics in Statistical Mechanics and Biophysics: A Memorial to Julius L. Jackson (AIP Conference Proceedings, Vol. 27). R. A. Piccirelli, ed. 209 pp. AIP, New York, 1976. $17.00

Theory and Application of the Boltzmann Equation. C. Cercignani. 415 pp. Elsevier, New York, 1976. $35.00

Energy

Energy and Environment: A Primer for Scientists and Engineers. E. H. Thorndike. 286 pp. Addison-Wesley, Reading, Mass., 1976.

Energy, Vol. 2: Non-nuclear Energy Technologies. S. S. Penner, L. Icerman. 673 pp. Addison-Wesley, Reading, Mass., 1975. $19.50 clothbound, $13.50 paperbound

Energy: The Solar–Hydrogen Alternative. J. O'M. Bockris. 365 pp. Halsted, New York, 1976. $27.50

Energy: Mathematics and Models (Proc. of a Conf., Alta, Utah, July 1975). F. S. Roberts, ed. 276 pp. Society for Industrial and Applied Mathematics, Philadelphia, 1976. $16.00

Student Texts

Solid State Physics. N. W. Ashcroft, N. D. Mermin. 826 pp. Holt, Rinehart and Winston, New York, 1976. $19.95

Problems in Physical Chemistry. I. M. Ritchie, R. A. Craig, P. J. Thistlethwaite. 170 pp. Wiley, New York, 1976. $7.95

Almost All About Waves. J. R. Pierce. 213 pp. MIT, Cambridge, Mass., 1974. $3.95