

part of which was obtained by the authors of the relevant chapters. In some future period, it is hoped, the theory will take cognizance of the peculiarities of real solid surfaces and will be able to account for many of these results.

People concerned with the physics of the solid-gas interface will be well advised to consult this collection.

* * *

Jacob J. Bikerman is a physical chemist with Horizons Inc., Cleveland, Ohio. His work is in the physics and chemistry of surfaces.

NEW BOOKS

NUCLEI

Unified Theory of Nuclear Models and Forces. (2nd edition) By G. E. Brown. 259 pp. North-Holland, Amsterdam (Interscience, New York) 1967. \$9.25

Use of Computers in Analysis of Experimental Data and the Control of Nuclear Facilities. Bernard I. Spinard, ed. Conf. proc. (Argonne, Ill., May 1966). 300 pp. Atomic Energy Commission, Washington, D. C., 1967. Paper \$3.00

ATOMS & MOLECULES

Spectroscopy, Vol. 2: Ultra-Violet, Visible, Infra-Red and Raman Spectroscopy. (Reprint of 1962 edition) By S. Walker, H. Straw. 386 pp. Barnes & Noble, New York, 1967. Cloth \$12.50, paper \$6.75

FLUIDS, PLASMAS

Collective Oscillations in a Plasma. By A. I. Akhiezer, I. A. Akhiezer, R. V. Polovin, A. G. Sitenko, K. N. Stepanov. Trans. from Russian by H. S. H. Massey. 190 pp. MIT Press, Cambridge, Mass., 1967. \$8.50

Detonation. Conf. proc. (Silver Spring, Maryland, Oct. 1965) 658 pp. Office of Naval Research, Washington, D. C., 1967. \$5.00

Mécanique des Suspensions. By A. Forster. 176 pp. Masson, Paris, 1967. 45 F.

SOLIDS

Atomic and Electronic Structure of Metals. Conf. proc. (Ohio, Oct. 1966) 259 pp. American Society of Metals, Metals Park, Ohio, 1967. \$12.50

Semiconductors and Semimetals, Vol. 3: Optical Properties of III-V Compounds. R. K. Willardson, Albert C. Beer, eds.

568 pp. Academic Press, New York, 1967. \$23.00

Ferroelectricity. By Ennio Fatuzzo, Walter J. Merz. 289 pp. North-Holland, Amsterdam (Interscience, New York) 1967. \$11.25

CLASSICAL PHYSICS

Die Beugungswelle in der Kirchhoffschen Theorie der Beugung. (2nd edition) By A. Rubinowicz. 411 pp. Springer-Verlag, Berlin, 1966. DM 48

Progress in High Temperature Physics and Chemistry, Vol. 1. Carl A. Rouse, ed. 242 pp. Pergamon Press, Oxford, 1967. \$11.50

Fiber Optics: Principles and Applications. By N. S. Kapany. 429 pp. Academic Press, New York, 1967. \$17.50

Interferometry. By W. H. Steel. 271 pp. Cambridge U. Press, London, 1967. \$11.50

Theory of Energy Transfers and Conversions. By Federico Grabiell. 217 pp. Wiley, New York, 1967. \$10.95

Thermodynamics: An Advanced Treatment for Chemists and Physicists. (5th edition) By E. A. Guggenheim. 390 pp. North-Holland, Amsterdam (Interscience, New York) 1967. \$14.00

Gyroscopic Theory. (Reprint of 1914 edition) By G. Greenhill. 275 pp. Chelsea, Bronx, 1966. \$9.50

MATHEMATICS & MATHEMATICAL PHYSICS

Physikalisch-Mathematische Monographien. By W. V. Ignatowsky. Trans. from Russian. 114 pp. Chelsea, Bronx, 1966. \$5.50

Stochastic Stability and Control. By Harold J. Kushner. 161 pp. Academic Press, New York, 1967. \$7.50

New Methods for Solving Elliptic Equations. By I. N. Vekua. 358 pp. Trans. from Russian. North-Holland, Amsterdam (Interscience, New York) 1967. \$16.00

Nonlinear Autonomous Oscillations: Analytical Theory. By Minoru Urabe. 330 pp. Academic Press, New York, 1967. \$16.00

INSTRUMENTATION & TECHNIQUES

Bubble and Spark Chambers: Principles and Use, Vol. 2. R. P. Shutt, ed. 319 pp. Academic Press, New York, 1967. \$16.00

Advances in Microwaves, Vol. 2. Leo Young, ed. 418 pp. Academic Press, New York, 1967. \$17.00

COMPILATIONS

Table of Isotopes. (6th edition) By C. M. Lederer, J. M. Hollander, I. Perlman.

594 pp. Wiley, New York, 1967. Cloth \$7.95, paper \$4.95

Mössbauer Effect Data Index 1958-1965. By Arthur Muir Jr, Ken J. Ando, Helen M. Coogan. 351 pp. Interscience, New York, 1966. \$9.00

Index and Bibliography of Mass Spectrometry 1963-1965. By F. W. McLafferty, John Pinzelik. 170 pp. Interscience, New York, 1967. Paper \$12.00

Ulrich's International Periodicals Directory, Vol. 1: Scientific, Technical & Medical. (12th edition) Marietta Chicorel, ed. Bowker, New York, 1967. \$15.00

HISTORY & PHILOSOPHY

Erwin Schrödinger: An Introduction to His Writings. By William T. Scott. 175 pp. U. of Mass. Press, Amherst, Mass., 1967. \$6.50

Foundations of Physics. By Mario Bunge. 311 pp. Springer-Verlag, Berlin, 1967. \$14.00

Joseph Priestly: Revolutions of the Eighteenth Century. By F. W. Gibbs. 258 pp. Doubleday, New York, 1967. \$6.00

Problems of Modern Physics. (Reprint of 1927 edition) By H. A. Lorentz. 312 pp. Dover, New York, 1967. Paper \$2.25

ASTRONOMY, SPACE, GEOPHYSICS

Colloquium on Late-Type Stars. Conf. proc. (Trieste, Italy, June 1966) Margherita Hack, ed. 465 pp. Osservatorio Astronomico, Trieste, Italy, 1966. L. 6200

Magnetism and the Cosmos. (NATO Advanced Study Institute, Newcastle upon Tyne, 1965) W. R. Hindmarsh, F. J. Lowes, P. H. Roberts, S. K. Runcorn, eds. 436 pp. American Elsevier, New York, 1967. \$27.50

Debate About the Earth: Approach to Geophysics Through Analysis of Continental Drift. By H. Takeuchi, S. Uyeda, H. Kanamori. Trans. from Japanese. 253 pp. Freeman, Cooper, San Francisco, 1967. \$4.50

Advances in Geophysics, Vol. 12. H. E. Landsberg, J. Van Mieghem, eds. 445 pp. Academic Press, New York, 1967. \$18.50

Theory of Orbits: The Restricted Problems of Three Bodies. By Victor Szebehely. 668 pp. Academic Press, New York, 1967. \$25.00

BIOPHYSICS

Radiobiological Factors in Manned Space Flight. Wright H. Langham, ed. 274 pp. National Academy of Sciences-National Research Council, Washington, D. C., 1967. \$7.50

Radiation Research. G. Silini, ed. Conf. proc. (Cortina d'Ampezzo, Italy, June-

THE WELCH CRYO-REFRIGERATOR IS A NEW CONVENIENCE FOR LN₂ USERS



How convenient depends on whether you have . . . watched an experiment evaporate because your LN₂ (liquid nitrogen) delivery was late . . . or gone to the dewar and found it was dry . . . or run down the hall to "borrow a cup" . . . or been just plain fed up because you don't use LN₂ often enough to guarantee its availability when you need it. If you have been inconvenienced by LN₂, why not invest \$375 in a permanent cold source, a Welch Cryogenic Refrigerator? It's a low cost way to declare your independence from LN₂ troubles. Slightly more than one foot high, it weighs only 12 pounds . . . really portable.

The Welch Cryogenic Refrigerator operates on a standard laboratory source of compressed air to obtain temperatures in the -140°C region. There are specific models at \$395 for CEC, GE, NRC and Veeco leak detectors. A general purpose unit is available at \$375 which can be adapted for applications in mass spectrometry, gas chromatography, solid state circuit production, tissue freezing, etc.

If you'd like to declare your independence from LN₂ ask for Bulletin 112. Call or write The Welch Scientific Company, 7300 N. Linder Ave., Skokie, Illinois 60078. Telephone 312/677-0600

WELCH
SCIENTIFIC

July 1966) North-Holland, Amsterdam (Interscience, New York) 1967. \$39.00

CHEMISTRY & CHEMICAL PHYSICS

Electronic Absorption Spectra and Geometry of Organic Molecules: An Application of Molecular Orbital Theory. By Hiroshi Suzuki. 568 pp. Academic Press, New York, 1967. \$24.00

Progress in Nuclear Magnetic Resonance Spectroscopy, Vol. 2. J. W. Emsley, J. Feeney, L. H. Sutcliffe, eds. 269 pp. Pergamon Press, Oxford, 1967. \$14.00

Physical Chemistry of Surfaces. (2nd edition) By Arthur W. Adamson. 747 pp. Interscience, New York, 1967. \$15.00

Untersuchungen über die Leuchtanregung in hochfrequenten Plasmaflammen. By J. Calker, W. Tappe. 59 pp. Westdeutscher Verlag, Opladen, 1967. Paper DM 33.90

Infrared Spectroscopy in Surface Chemistry. By Michael L. Hair. 314 pp. Dekker, New York, 1967. \$15.75

Spectroscopic Tricks. (Reprint collection) Leopold May, ed. 333 pp. Plenum Press, New York, 1967. \$9.50

Eleventh Symposium on Combustion. Conf. proc. (Berkeley, Aug. 1966) 1200 pp. Combustion Institute, Pittsburgh, Penn., 1967. \$42.00

Trace Characterization: Chemical and Physical. Conf. proc. (Gaithersburg, Md., Oct. 1966) W. Wayne Meinke, Bourdon F. Scribner, eds. 580 pp. National Bureau of Standards, Washington, D. C., 1967. \$4.50

Physics and Chemistry of II-VI Compounds. Manuel Aven, Jerome S. Prener, eds. 844 pp. North-Holland, Amsterdam (Interscience, New York) 1967. \$30.00

TEXTBOOKS

Introduction to the Quantum Theory of Scattering. By Leonard S. Rodberg, Roy M. Thaler. 398 pp. Academic Press, New York, 1967. \$11.50

Quantum Electronics. By Amnon Yariv. 478 pp. Wiley, New York, 1967. \$14.95

Engineering Mechanics, Vol. 2: Dynamics. By T. C. Huang. 441 pp. Addison-Wesley, Reading, Mass., 1967. \$7.95

Solid-State Chemistry. By N. B. Hannay. 225 pp. Prentice-Hall, Englewood Cliffs, N. J., 1967. Cloth \$6.95, paper \$4.95

The Elements of Physics: A New Approach. By F. A. Kaempffer. 291 pp. Blaisdell, Waltham, Mass., 1967. \$8.50

Physics of the Atom. (2nd edition) By M. Russell Wehr, James A. Richards Jr. 482 pp. Addison-Wesley, Reading, Mass., 1967. \$9.75

College Physics: A Programmed Aid Vol. 2: Heat, Wave Motion, and Sound. By Henry Semat, Ralph Blumenthal. 114 pp. Holt, Rinehart and Winston, New York, 1967. Paper \$3.95

Fundamental Principles of Physics. By F. Woodbridge Constant. 370 pp. Addison-Wesley, Reading, Mass., 1967. \$8.95

The Development of Physical Theories. By J. Gordon Stipe Jr. 480 pp. McGraw-Hill, New York, 1967. \$10.50

Introduction to Electronics. By Lane K. Branson. 594 pp. Prentice-Hall, Englewood Cliffs, N. J., 1967. \$12.00

Theory and Applications of Active Devices. By Herbert J. Reich, John G. Skafnik, Herbert L. Krauss. 739 pp. Van Nostrand, Princeton, N. J., 1966. \$12.75

Differential Operators of Mathematical Physics: An Introduction. By Günter Hellwig. 296 pp. Trans. from German. Addison-Wesley, Reading, Mass., 1967. \$12.50

Inductive Calculus. By Eugene V. Petrik. 278 pp. Allyn and Bacon, Boston, 1967. Paper \$3.50

Introduction to the Operational Calculus. (2nd edition) By Lothar Berg. Trans. from German. 294 pp. North-Holland, Amsterdam (Interscience, New York) 1967. \$12.00

A Second Course in Complex Analysis. By William A. Veech. 246 pp. Benjamin, New York, 1967. \$8.75

Topological Vector Spaces, Distributions and Kernels. By Francois Trèves. 565 pp. Academic Press, New York, 1967. \$18.50

Mathematics for Scientists, Vol. 1: Vectors, Tensors and Groups. By Thor A. Bak, Jonas Lichtenberg. 129 pp. Trans. from Danish. Benjamin, New York, 1966. Paper \$2.95

Mathematics for Scientists, Vol. 2: Functions of One and Several Variables. By Thor A. Bak, Jonas Lichtenberg. 189 pp. Trans. from Danish. Benjamin, New York, 1966. Paper \$2.95

Mathematics for Scientists, Vol. 3: Series, Differential Equations and Complex Functions. By Thor A. Bak, Jonas Lichtenberg. 168 pp. Trans. from Danish. Benjamin, New York, 1966. Paper \$2.95

POPULARIZATIONS

Weather on the Planets. By George Ohring. 144 pp. Doubleday, New York, 1966. Paper \$1.25

A Comprehensible World: On Modern Science and its Origins. By Jeremy Bernstein. 269 pp. Random House, New York, 1967. \$5.95

MISCELLANEOUS

Generalized Networks. Conf. proc. (New York, April 1966) J. Fox, ed. 789 pp. Polytechnic Press, Brooklyn (Interscience, New York) 1966. \$18.00

Science, Défense, Dissuasion. By M. E. Nahmias. 189 pp. Dunod, Paris, 1967. Paper 24 F. □