

## A NEW EDITION—AND A GOOD ONE

**Title** *Zone Melting*, 2nd ed.

**Author** William G. Pfann

**Publisher** John Wiley & Sons, Inc.,  
1966

**Pages** xiv + 310

**Price** \$11.75

**Reviewer** D. Robert Hay

The second edition of *Zone Melting* reflects the tenfold increase in number of papers in the technical literature since publication of the first edition in 1958. Zone melting finds its major application in purification and 6 of 11 chapters are devoted to this area in discussion of theory, techniques, and applications of zone refining and continuous zone refining. A reader contemplating the use of zone melting for purification will find in these chapters sufficient information to determine if such a procedure is feasible and to establish the technique. A referenced list of the materials, including elements and organic and inorganic compounds, which had been zone refined up to November, 1964, indicates what has been accomplished and the scope of the technique. New topics introduced in this new edition include zone chromatography, microscale zone refiners, and the use of phase transformations other than the solid-liquid.

Redistribution of solutes for reasons other than purification is discussed in sections on zone leveling and methods for perturbing the concentration. A section on crystal growth includes a discussion of the growth of high-perfection crystals. Other topics include uses of zone melting for preparation of eutectic structures and peritectic compounds, in phase diagram studies, and in analysis and the role of such factors

as an electric field on the effectiveness of zone refining. These sections will serve equally well as reference for the engineer preparing materials of specified solute concentration and distribution, and the scientist searching for new experimental techniques for studies of solute behavior and solidification.

The book is recommended not only for its review and summary of what has been reported in the literature, but also for the projected applications and improvements suggested by the author based on theory and his extensive experience with zone melting.

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## BOOK ANNOUNCEMENTS

Although the following books will not be reviewed, they may be of interest to some of our readers:

*Nuclear Reactor Theory*, John R. Lamarsh, Addison-Wesley Publ. Co., Inc., 1966, xi + 585 pp, \$15.00

*Modern Electronics*, H. de Waard and David Lazarus, Addison-Wesley Publ. Co., Inc., 1966, 385 pp, \$9.75

*Chemistry and Physics of Carbon*, Vol. 2, Philip L. Walker, Jr., Ed., Marcel Dekker, 1966, xiii + 384 pp, \$14.50

*Environmental Monitoring in Emergency Situations*, International Atomic Energy Agency, 1966, 122 pp, \$3.00

*Problems in Strength of Materials*, N. M. Belyayev, Pergamon Press, 1966, xiv + 531 pp, \$12.50

*Advances in Optical and Electron Microscopy*, Vol. 1, R. Barer and V. E. Cosslett, eds., Academic Press, Inc., 1966, 282 pp, \$11.50

*Positron Annihilation*, A. T. Stewart and L. O. Roellig, eds., Academic Press, Inc., 1966, 434 pp, approx. \$16.50

*Elementary Particles*, William R. Frazer, Prentice-Hall, Inc., 1966, ix + 190, \$6.95

*International Conventions on Civil Liability for Nuclear Damage*, International Atomic Energy Agency, 1966, 250 pp (58 papers in English), \$5.00

*Practices in the Treatment of Low- and Intermediate-Level Radioactive Wastes*, International Atomic Energy Agency-European Nuclear Energy Agency, 1966, 952 pp (36 papers in English), \$19.00

*Pressure Vessel Codes: Their Application to Nuclear Reactor Systems*, International Atomic Energy Agency, 1966, 32 pp, \$1.00.

*Criticality Control of Fissile Materials*, International Atomic Energy Agency, 1966, 757 pp (32 papers in English, all papers abstracted in English), \$15.00

*Nuclear Electronics*, International Atomic Energy Agency, 1966, 662 pp, (30 papers in English, discussions recorded in English), \$13.50

*Isotopes in Weed Research*, International Atomic Energy Agency, 1966, 237 pp (14 papers in English, all papers abstracted in English), \$5.00