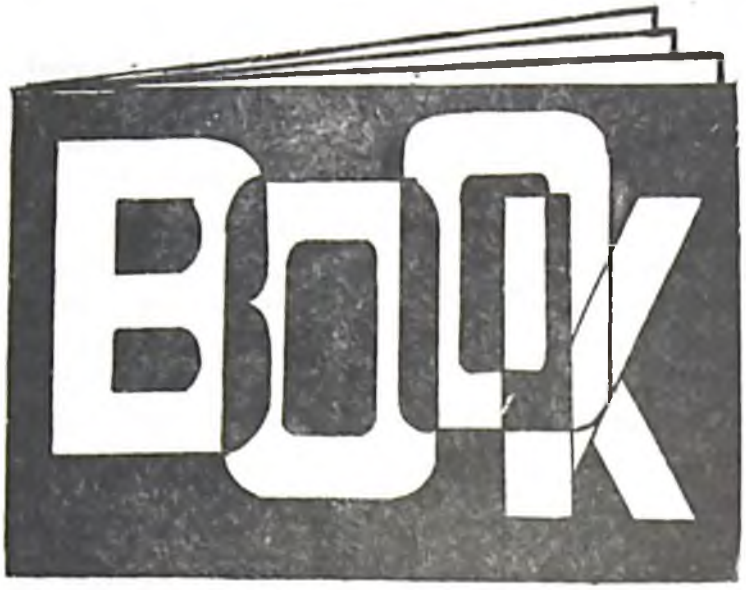


SECTION

BOOK REVIEWS

1. Critical Stability Constants, Vol. 4: Inorganic Complexes. Edited by Robert M. Smith and Arthur A. Martell; 1976 Plenum Press, New York.

With the recent developments and wide interest in [illegible]pic chemistry and solution, an enormous [illegible]ount of data on stability constants of ligands and their metal complexes under a variety of conditions have been accumulated. It is, therefore, practically impossible for a teacher and a research worker to lay his hand on reliable data without doing extensive literature survey. Unlike the previous compilations by the Chemical Society (London) the present editors (A.A.M. was one for the earlier also) have done a useful service by selecting critically evaluated reliable data on formation constants and heats entropies, and free energies of all available reactions They have exclued the less reliable data, giving the norms for such elimination. For the sake of systematisation, the data have been compiled in four volumes: the first one deals with amino acid complexes, the second with amine complexes with out carboxylate functional moiety and the third with the remaining organic ligands. The fourth volume under review contains selected, more reliable data on all reactions involving inorganic ligands. To name some representative ligands, they are hydrogen wolframate, borate, hydrazine hypophosphite, cyclo-tri-μ-imidatris (dioxophosphate), amido-and seleno-sulphate, telluride etc. The ligands have been arranged according to the position of the central atom of the ligand in the periodic table. Protonation for some other ligands are also included in a separate table. The literature survey covers almost a century from 1877 to 1974. The relevant bibliography is arranged yearwise.

The present compilations will be highly useful to the teachers and research workers in the field of chemistry, biochemistry and biophysics.

—**Prof C C. Patel**
(IPC, IISc)

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2. Water and Waste Control for the Plating Shop, by Joseph B. Kushner, 1976, published by Gardner Publications, Inc., 600 Main Street, Cincinnati Ohio 45202. 186 Pages.

Many scientists, engineers and industrialists are now realizing the growing scarcity and cost of good plating water as well as the pollution hazards to the natural water ways and sewers with toxic wastes from the metal finishing industries. Here is a book which will teach one how to reduce the water bills, how to improve the metal finishing results and how to eliminate or minimize the waste disposal and pollution problems.

The book is divided into 9 chapters and an Engineering Appendix of 5[illegible] pages. The titles of the chapters are: 1) Water the miracle fluid, 2) Water can be the cause of many plating troubles, 3) Water picks up pollution in the plating shop, 4) Plating water once used must be disposed of, 5) Some simple dragout theory, 6) Recovery systems, 7) The use of evaporation, ion exchange, osmosis and dialysis in waste control, 8) Total recycling of plating baths—natural and forced and 9) Complex aspects of rinsing. These are all topics of great interest. One would have hoped to see more of chemical treatments than is given in the book particularly with regard to some of the toxic plating bath components. And an index would have enhanced

the usefulness of the book. However, there is no doubt that the book will serve a useful purpose, particularly to those in the plating industries—consulting engineers, chemists and executives alike.

—J. Balachandra
IISc.

3. **Electroluminescence** (Topics in applied physics —Vol. 17)

Editor: J. I. Pankove, 1977 published by Springer-Verlog, Postfach, Heidelberger Platz 1, D—1000. BERLIN 33,212 pages (127 figures, 16 tables) $ 29.10.

Electroluminescence is the 17th Volume in the Series on Topics in Applied Physics founded by Helmut Lotsch (Already there are 21 volumes in this Series). The EL devices, Light Emithry Diodes (LED), thin film phosphors as in EL TV display panels etc. are all modern developments and this book is a timely publication of great value both for an introductory knowledge on the subject and for reference to specialists of the adjoining area of luminescence.

Pankove gives an introductory chapter on radiative transitions, non-radiative recombination, excitation mechanisms and psychophysical considerations. The second chapter is on Group IV materials, mainly SiC and EL devices based on SiC. This is followed by a Chapter on III-V compound semiconductors and another on recent advances in injection luminescence of II-VI compounds; there is a complete coverage of practically all componds of these categories The fifth chapter deals with chalcopyrites giving details of the technology of meterials and devices, and the last chapter is on phosphor films. Each chapter is written by experts in the field, and they have capably presented both the theoretical as well as the practical aspects. There is no doubt that this timely publication on a topical subject will go a long way in helping the beginners as will as the experts in the field.

—Dr. Y.V.R.K. Prasad,
IISc., Bangalore.

4. **Diffusional Creep of Polycrystalline Materials,** by B. Burton Published by Srans Tech Publications, Switzerland, 1977 119 pp., US $ 26.00

Diffusional creep is one of the most important deformation modes in technological applications. This book is one of "Diffusion and Defect Monograph Series" edited by Y. Adda et al. The author first reviews the early theoretical developments and then proceeds to discuss experiments on pure metals, solid solutions, two-phase materials and ceramics. The appropriate diffusion coefficient to be used in the creep rate equation is considered for alloys and non-stoichiometric compounds. Also discussed are related topics such as the effects of impurities and dopant additions, grain boundary sliding, cavity growth, sources and sinks for vacancies, grain growth, oxidation etc. Several other processes which are associated with or resemble diffusional creep are considered including superplasticity and irradiation creep. A short section is devoted to creep of planetary matter.

The author has tried to show that the discrepancies between experimental result and theory may be overcome by extensions or modification of the original theories to incorporate precise geometrical features involving relative movement of adjacent grains and aspects involving vacancy creation and annihilation at grain boundaries. The author has by and large succeeded in his attempt. As is the case with other Monographs in this series, this book has certainly reached a high level of maturity. The book is of lasting value to the researcher in the area of deformation.

—Dr D. H. Sastry
IISc., Bangalore.

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