Gmelin Handbook of Inorganic and Organometallic Chemistry: Silicon Supplement Volume B5d1, Silicon Nitride: Electrochemical Behavior and Chemical Reactions
R.C. Sangster and G. Bär
(Springer-Verlag, 1995)
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This is the first of a two-volume set that is to serve as a reference resource on the chemical behavior of silicon nitride; this first volume concentrates on electrochemical response and reactions with metals, nitrides, and oxides. A portion of the text also addresses thermal decomposition, radiation effects, and tribochemical reactions. The second volume is to address reactions with gaseous environments (e.g., oxygen, halogens, combustion products), salts, acids, and organic systems.

The citation listings are extensive (i.e., ~1,400 separate references) and include international technical journals, conference proceedings, patents, and resources that may be either difficult to access (e.g., reports and dissertations) or are not in English. However, the reader is assisted by citations to the relevant chemical abstracts article and/or English translations when available. Even with the extent of the citations, references dated after 1990 appear to represent a very small fraction of the works cited. With the magnitude of the undertaking this is perhaps understandable, but the reader should bear this in mind as an extensive body of literature continues to be published on the subject.

In terms of style, the text often consists of a listing of the studies on a specific topic without critique when conflicting results are presented. The authors' intent is to provide a wide range of references on specific topics to allow readers to study these and make their own judgments. In addition, few tables or figures are used to summarize topic areas. This is not a quick reference edition but intended for those who have a serious interest in delving into specific topics. Together with the remainder of the series on silicon nitride, this volume will form a truly extensive and valuable reference resource. Those interested in the processing of silicon nitride and the effects of oxide and nonoxide additives-related problems will find this particular volume of value.

Reviewer: Paul F. Becher is a Corporate Fellow and Structural Ceramics Group Leader at the Oak Ridge National Laboratory, who, with his colleagues, is examining the influence of composition and microstructure on the mechanical behavior of silicon-nitride ceramics.

The following recently published books and journals, relevant to materials science, have come to *MRS Bulletin's* attention. Some of the books listed here may be reviewed in future issues of *MRS Bulletin*.

Books

Analytical Fracture Mechanics, D.J. Unger. Academic Press, San Diego, 1995. Cloth, 313 pp, $99.95, ISBN 0-12-709120-3.

Concrete Admixtures Handbook: Properties, Science, and Technology, 2d ed., V.S. Ramachandran, ed. Noyes Publications, Park Ridge, New Jersey, 1995. Cloth, 1183 pp, $125.00, ISBN 0-8155-1373-9.

Engineering Materials Science, M. Ohring. Academic Press, San Diego, 1995. Cloth, 851 pp, $69.95, ISBN 0-12-524995-0.

Flat Panel Display Technologies, L.E. Tannas, Jr., W.E. Glenn, and J.W. Doane, et al. Noyes Publications, Park Ridge, New Jersey, 1995. Cloth, 592 pp, $72.00, ISBN 0-8155-1387-9.

High-Pressure Shock Compression of Solids II: Dynamic Fracture and Fragmentation, L. Davison, D.E. Grady, and M. Shahinpoor, eds. Springer-Verlag, New York, 1996. Cloth, 499 pp, $129.00, ISBN 0-387-94402-8.

Hot-Carrier Effects in MOS Devices, E. Takeda, C.Y. Yang, and A. Miura-Hamada, Academic Press, San Diego, 1995. Cloth, 324 pp, $69.95, ISBN 0-12-682240-9.

Interfaces in Crystalline Materials, A.P. Sutton and R.W. Balluffi. Oxford University Press, New York, 1995. Cloth, 851 pp, ISBN 0-19-851385-2.

Intermetallic Compounds: Principles and Practice, *vols. 1–2*, J.H. Westbrook and R.L. Fleischer, eds. Wiley & Sons, New York, 1995. Cloth, 1154 pp, ISBN 0-471-94219-7 (vol. 1), 778 pp, ISBN 0-471-93454-2 (vol. 2), $575.00.

Introduction to Engineering Materials: The Bicycle and the Walkman, C.J. McMahon, Jr. and C.D. Graham, Jr. Merion Books, Philadelphia, 1992. Paper, 314 pp, $35.00, ISBN 0-9646598-0-8.

Semiconductors and Semimetals. *Vol. 43*: **Semiconductors for Room Temperature Nuclear Detector Applications**, T.E. Schlesinger and R.B. James, eds. Academic Press, San Diego, 1995. Cloth, 623 pp, $140.00, ISBN 0-12-752143-7.

Theory and Application of Laser Chemical Vapor Deposition, J. Mazumder and A. Kar. Plenum, New York, 1995. Cloth, 407 pp, $89.50, ISBN 0-306-44936-6.

Understanding Smart Sensors, R. Frank. Artech House, Boston, 1996. Cloth, 285 pp, ISBN 0-89006-824-0.

Journals

Plasma and Polymers: An International Interdisciplinary Journal, Plenum Publishing Corporation, 233 Spring Street, New York, NY 10013-1578; fax 212-807-1047. Quarterly. Subscription rate: $50.00 in U.S.; $59.00 elsewhere. □

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