tions are given. These can be used by the circuit designer as input to his calculations on an integrated circuit. In the last chapter the applications for silicon nitride films are reviewed, including LOCOS process, EPROM devices, pH sensors, etc. This is done only briefly but a reader who needs more information can use the comprehensive literature list.

In summary, this book collects all the theoretical and practical aspects of the production of a silicon nitride film on a silicon-wafer. A user, who is working on this process and this material will certainly welcome this book as a process handbook or dictionary of the silicon nitride preparation process.

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Textile Structural Composites. Edited by *T.-W. Chou* and *F. Ko*. Elsevier Science Publishers, Amsterdam 1988. xiii, 480 pp., bound, US$ 155.25. – ISBN 0-444-42992-1

Textile composites can be defined as the combination of a resin system with a textile fiber, yarn or fabric system. The various textile composite systems are described with reference to chopped fiber and filament yarn constructions, the different fabric and non-woven fabric structures, behavior, and related composites.

Basic principles of the mechanics of tensile deformation and theories describing the non-linear stress-strain relations of fabrics are covered, concentrating on the two basic structures, plain woven and plain knitted fabrics.

The characteristics of the braiding process, the wide composite applications, and mechanical performance along with the structure, formation, properties and analysis of 3-D fabrics are reviewed.

Dr. *S. M. Bishop* discusses the properties of carbon fiber fabric laminates. Woven fabrics combined with unidirectional tape structures are investigated and their advantages in terms of tensile, compressive, impact and fatigue properties are described. Prof. *T.-W. Chou* presents analytical and calculational models for determining the thermal and mechanical properties of woven fabric laminates. The fabrics studied are either made of one material or are hybrid fabrics. The properties determined, such as stiffness, strength and thermal expansion, are partly compared with experimental data. The paper by Prof. *I. M. Yang* and Prof. *T.-W. Chou* deals with the thermo-elastic analysis of triaxial woven fabrics and the laminates made therefrom. This theoretical study also covers non-orthogonal fabrics, which are compared with triaxial fabrics.

Dr. *S. R. Moghe* describes the development of a mathematical model for designing woven fabric laminates taking into account the different material properties and process parameters. The calculated values are presented.

Additional materials covered are flexible composites and coated fabrics.

The book on the whole gives a good and up-to-date account of the theoretical and practical aspects of textile intermediates and their behavior in composites.

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PARAT. Index of Acronyms and Abbreviations in Electrical and Electronic Engineering. Compiled by *Büro Scientia*, Berlin. VCH Verlagsgesellschaft, Weinheim 1989. 538 pp., bound, DM 224. – ISBN 3-527-26842-1

The book lists about 45000 acronyms and abbreviations with their associated definitions. In an attempt to facilitate the use of the book the entries have been standardized by printing the acronyms and abbreviations in capital letters while the full texts of the comments appear in lower case. This is certainly helpful. Looking up terms is made easy by the large and clear print. The solid binding promises to stand well the heavy usage one expects for a reference book of this kind.

A German-speaking reader will look in vain for the explanation of BTX, DIN, EVU, or the like since only English terms are listed. This could be indicated in the title of the book by changing it to: "Index of English Acronyms...".

The book contains a wealth of valuable entries that are not restricted only to the area of electric and electronic engineering but that go far beyond. The terms reach from ACELSCO (associated civil engineers and land surveyors of santa clara county) on page 6 to YST (yukon standard time) on page 563. Of course, the reader will find most of the expressions he would look for in a book on electric and electronic terms e.g. CPU, TV, CRT, LCD, VHF, VLSI, WATS, ISDN, and many more. But one would also expect to see terms like MODEM or AI, and a materials scientist would be interested in MOS or HTSC (high-temperature superconductivity) all of which are not (yet) listed.

Many of the terms are related to computer technology or to military applications. Unavoidably many abbreviations have multiple meanings, for some of them, e.g. SP, MS, CC, or MC more than 50 different interpretations are listed. To show the broad scope of the book, here are some examples selected at random: referring to organizations/institutions/company names one finds entries like FCCN, CBO, ISO, IBM, PAA down to SAAD (san antonio air depot). Relating to projects/products there are ILLIAC, STAIRS or LLM (lunar landing mission or module). And among the more general concepts are listed DEPT, VAT, SQRT (square root), and PAYE (pay as you earn).

Keeping in mind that it is impossible to please everybody, the editors did a good job in selecting the material and in including many "exotic" terms that are rarely found elsewhere. Altogether this volume is a comprehensive and up-to-date reference tool for the individual scientist or engineer as

well as a valuable addition to any collection of reference books.

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Fiber Reinforcement for Composite Materials. Edited by *A. R. Bunsell*, Elsevier, New York 1988, ix, 538 pp., bound, US $ 171. – ISBN 0-444-42801-1

This book is the second volume of a publication series on composite materials edited by *R. B. Pipes* (Center of Composite Materials, University of Delaware). It deals with various types of synthetic fibers used as reinforcements in advanced composite materials. This volume is subdivided into various chapters giving a clear description of the manufacture, structures and applications of the different fibers, as well as a brief compilation of characterizing methods for single fibers. The chapters are authored by internationally well-known experts and arranged as follows: Chapter 1. *A. R. Bunsell:* Fiber development for composite materials. Chapter 2. *P. K. Gupta:* Glass fibers for composite materials. Chapter 3. *E. Fitzer, M. Heine:* Carbon fiber manufacture and surface treatment. Chapter 4. *A. Oberlin, M. Guigon:* The structure of carbon fibers. Chapter 5. *G. Calundann, M. Jaffe, R. S. Jones, H. Yoon:* High performance organic fibers for composite reinforcement. Chapter 6. *H. H. Yang:* Aramid fibers. Chapter 7. *P. Bouriot:* Polyester and polyamide fibers for elastomeric matrix composite materials. Chapter 8. *F. E. Wawner, Jr:* Boron and silicon carbide/carbon fibers. Chapter 9. *A. R. Bunsell, G. Simon, Y. Abe, M. Akiyama:* Ceramic fibers. Chapter 10. *R. Hagege, A. R. Bunsell:* Testing methods for single fibers.

The book gives a clear overview over the current "state of the art" and is very informative. However, the subdivision into CVD- and ceramic fibers is astonishing because the presented CVD-fibers are counted as ceramic fibers as well. The main interest of this volume is concerned with carbon, glass and organic fibers although fibers of interest in ceramic matrix composites have not been sufficiently covered. This is probably due to recent improvements of the known fibers and the development of new fibers. In summary this book is of great interest for scientists working with reinforcing components.

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Conference Calendar

The black hand symbol ☛ denotes new entries into the calendar. Send information concerning conferences to the editorial office.

November 1989

11–14 **Solid-State Devices**
☛ 19th Eur. Conf.
Berlin (West)
Contact: H.-C. Petzold, Fraunhofer-Inst. f. Mikrostrukturtechnik, Dillenburger Str. 53, D-1000 Berlin 33.

14–15 **Polypropylene**
Madrid (Spain)
Contact: D. Varley, Plastics and Rubber Inst., 11 Hobart Place, London SW1W 0HL, UK

14–17 **Superconductivity**
2nd Int. Symp.
Ibaraki (Japan)
Contact: ISS '89 Secr., ISTEC, Eishin Kaihatsu Bldg., 34-3, Shimbaski 5-chome, Minato-ku, Tokyo 105, Japan, Tel. 03/431-4002, Fax 03/431-4044

22–24 **Euromat '89**
Eur. Conf. on Materials
Aachen (Fed. Rep. Germany)
Contact: Dtsch. Gesellsch. Metallkd., Adenauerallee 21, D-6370 Oberursel, FRG

23–24 **Superconductivity**
Int. Conf.
Paris (France)
Contact: Dr. R. Suryanarayam, Lab. de physique des solides de Bellevue, CNRS, F-92195 Mendon, France

27–29 **Electronic Packaging**
55th WE-Heraeus-Seminar
Bad Honnef (Fed. Rep. Germany)
Contact: Dr. V. Schäfer, WE-Heraeus-Stift., Heraeusstr. 12–14, D-6450 Hanau, FRG