

# Handbook Of Textile Fibre Structure Volume 2 Natural Regenerated Inorganic And Specialist Fibres Woodhead Publishing Series In Textiles

Textile Design  
 Handbook of Textile and Industrial Dyeing  
 Identification of Textile Fibers  
 Handbook of Textile Fibres  
 Manufactured Fibre Technology  
 Handbook of Natural Fibres  
 Advances in Textile Biotechnology  
 Handbook of Tensile Properties of Textile and Technical Fibres  
 Handbook of Sustainable Textile Production  
 High-Performance Fibres  
 Handbook of Nonwovens  
 Applications of Dyes  
 Textiles and Fashion  
 Handbook of Natural Fibres  
 Handbook of Fibrous Materials, 2 Volumes  
 Technical Textile Yarns  
 Handbook of Textile Fibres: Man-made fibres  
 Theory and Applications  
 Volume 2: Processing and Applications  
 Technology, Science and Economics  
 Handbook of Fibre Rope Technology  
 Handbook of Fiber Chemistry, Third Edition  
 Silk  
 Fibre Structure  
 Processing, Properties and Applications  
 Natural Fibres  
 Structure and Mechanics of Textile Fibre Assemblies  
 Textile Sizing  
 Man-Made Fibres  
 Physical Testing of Textiles  
 Handbook of Textile Fibre Structure  
 Handbook of Textile and Industrial Dyeing  
 Volume 2: Natural, Regenerated, inorganic and Specialist Fibres  
 Materials, Design and Technology  
 Handbook of Textile Fibre Structure  
 Man-made fibres  
 Handbook of Textile Fibre Structure: Fundamentals and manufactured polymer fibres  
 Textile Manufacturing Processes  
 Handbook of Textile Fibre Structure  
 Fundamentals and Manufactured Polymer Fibres

*Handbook Of Textile Fibre Structure  
 Volume 2 Natural Regenerated  
 Inorganic And Specialist Fibres* Downloaded from [process.ogleschool.edu](http://process.ogleschool.edu)  
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## HAYNES CAREY

*Textile Design* Elsevier

Textile design is a complex field of practice which operates in a competitive, global industry. Designers need to take into account not only the design but also the manufacture, technological development and application of the final product. Textile design provides a broad overview of the fundamentals of and advances in textile design, as well as practical case studies of relevant industries. Part one covers the principles of fabric construction as applied to textile design, with chapters on fundamental principles, woven and knitted textile design. Part two discusses surface approaches to textile design, with chapters on such topics as surface design of textiles, printed and embroidered textile design, dyeing and finishing and the use of colour in textile design. Finally, part three focuses on the applications and advances in textile design, including chapters covering colour trend forecasting, sustainable textile design, fashion, interior and 2D to 3D design considerations and new developments in technical and future textiles. With its distinguished editors and international team of contributors, Textile design is an essential reference for design professionals in the textile and fashion industries, as well as those who specialise in interior textiles and academics with a research interest in the area. A broad overview of textile design covering fundamental topics such as principles of fibres and fabrics, knitted fabric design, through to the dyeing, finishing and printing aspects of textile design Explores the design aspects of technical textiles and future textiles An invaluable source of information on textile design and suitable for design professionals in the textile and fashion industries, as well as those in academia  
*Handbook of Textile and Industrial Dyeing* Springer Science & Business Media

The field of fibre rope technology has witnessed incredible change and technological advance over the last few decades. At the forefront of this change has been the development of synthetic fibres and modern types of rope construction. This handbook updates the history and structural mechanics of fibre rope technology and describes the types and properties of modern rope-making materials and constructions. Following an introduction to fibre ropes, the Handbook of fibre rope technology takes a comprehensive look at rope-making materials, rope structures, properties and mechanics and covers rope production,

focusing on laid strand, braided, low-twist and parallel yarn ropes. Terminations are also introduced and the many uses of rope are illustrated. The key issues surrounding the inspection and retirement of rope are identified and rope testing is thoroughly examined. The final two chapters review rope markets, distribution and liability and provide case studies from the many environments in which fibre rope is used. The Handbook of fibre rope technology is an essential reference for everyone assisting in the design, selection, use, inspection and testing of fibre rope. A comprehensive look at rope-making materials and structures, properties and mechanics Covers rope production including laid strand, braided, low-twist and parallel yarn ropes and rope terminations Rope testing is examined in depth, as well as the key issues surrounding rope retirement

**Identification of Textile Fibers** Woodhead Publishing  
 Technical yarns are produced for the manufacture of technical textiles. As the range of technical textiles is rapidly increasing, an understanding of the range of yarns available and their properties is important, in order to be able to meet the requirements of the intended end-use. Part one of the book begins by reviewing the advances in yarn production. Topics examine the advances in textile yarn spinning, modification of textile yarn structures, yarn hairiness and its reduction and coatings for technical textile yarns. The second group of chapters describes the range of technical yarns, such as electro-conductive textile yarns, novel yarns and plasma treated yarns for biomedical applications. Technical sewing threads and biodegradable textile yarns are also discussed. Technical textile yarns provides essential reading for yarn and fabric manufacturers, textile scientists, technicians, engineers and technologists, covering a wide range of areas within textile applications. This book will also be an important information source for academics and students. Provides a comprehensive overview of the variety of technical textile yarns available along with individual characteristics and production methods Documents advances in textile yarn spinning and texturising featuring compact, rotor and friction spinning Assesses different types of technical yarns including plasma-treated yarns for biomedical applications and hybrid yarns for thermoplastic composites

*Handbook of Textile Fibres* Elsevier

This book offers a comprehensive survey of the man-made fibres, including rayons and other natural polymer fibres, and the true synthetic fibres which have made such rapid progress in modern times.

*Manufactured Fibre Technology* CRC Press

Dyeing is one of the most effective and popular methods used for colouring textiles and other materials. Dyes are employed in a variety of industries, from cosmetic production to the medical sector. The two volumes of the Handbook of textile and industrial dyeing provide a detailed review of the latest techniques and equipment used in the dyeing industry, as well as examining dyes and their application in a number of different industrial sectors. Volume 2 deals with major applications of dyes and is divided into two parts. Part one covers textile applications, with chapters dealing with the dyeing of wool, synthetic and cellulosic fibres, and textile fibre blends. In part two, industrial applications of dyes are examined, with topics including dyes used in food and in the cosmetics industry. With its distinguished editor and contributions from some of the world's leading authorities, the Handbook of textile and industrial dyeing is an essential reference for designers, colour technologists and product developers working in a variety of sectors, and will also be suitable for academic use. Provides a detailed review of the latest techniques and equipment used in the dyeing industry Industrial applications of dyes are examined, with topics including dyes used in food and in the cosmetics industry Is appropriate for a variety of different readers including designers, colour technologists, product developers and those in academia

*Handbook of Natural Fibres* Elsevier

Dyeing is one of the most effective and popular methods used for colouring textiles and other materials. Dyes are employed in a variety of industries, from cosmetic production to the medical sector. The two volumes of the Handbook of textile and industrial dyeing provide a detailed review of the latest techniques and equipment used in the dyeing industry, as well as examining dyes and their application in a number of different industrial sectors. Volume 1 deals with the principles of dyeing and techniques used in the dyeing process, and looks at the different types of dyes currently available. Part one begins with a general introduction to dyeing, which is followed by chapters that examine various aspects of the dyeing process, from the pre-treatment of textiles to the machinery employed. Chapters in part two then review the main types of dyes used today, including disperse dyes, acid dyes, fluorescent dyes, and many others for a diverse range of applications. With its distinguished editor and contributions from some of the world's leading authorities, the Handbook of textile and industrial dyeing is an essential reference for designers, colour technologists and product developers working in a variety of sectors, and will also be suitable for academic use. Examines dyeing and its application in a number of different industrial

sectors Deals with the principles of dyeing and techniques used in the dyeing process, as well as types of dyes currently available Chapters review various dye types right through to modelling and predicting dye properties and the chemistry of dyeing  
*Advances in Textile Biotechnology* Elsevier

The "Handbook of Smart Textiles" aims to provide a comprehensive overview in the field of smart textile describing the state of the art in the research sector as well as the well-established techniques applied in industries. The handbook is planned to cover from fundamental theories, experimental techniques, characterization methods, as well as real applications with successful commercialized examples. The book is structured in a way in which it is appropriate for graduate students, PhD candidates, and professionals in diverse scientific and engineering communities devoted to relevant fields, including textile engineering, chemistry, bioengineering, material engineering, mechanical engineering, electrical engineering. The book will also provide a solid reference for industrial players who look for innovative technologies as well as environmental, safety concerns for the development of smart textile related products.

*Handbook of Tensile Properties of Textile and Technical Fibres* CRC Press

This book examines the physical testing of textiles in the form of fibre, yarn and fabric, the emphasis throughout being on standard and reproducible tests. After an introductory explanation of sampling and measurement, the author explores the effects of moisture on textiles, then goes on to discuss fibre dimension, yarn tests for linear density, twist, evenness and hairiness, tensile strength, and dimensional stability and serviceability. Also covered are aspects of comfort and fabric handle, colour fastness and quality assurance. The book's comprehensive coverage of the physical properties of textiles makes it an essential reference for managers in the textiles industry concerned with quality assurance, garment and fabric technologists, and students of textile science and engineering.

*Handbook of Sustainable Textile Production* Woodhead Publishing  
Textile products are produced, distributed, sold and used worldwide. A quantitative assessment of sustainability in the textile manufacturing chain is therefore extremely important. The Handbook of sustainable textile production is a compilation of technical, economical, and environmental data from the various processes in this chain. This authoritative reference work provides a detailed study of the sustainable development of textiles. The book opens with an introduction to the topic. Chapters define the principles of sustainability and its use in legislation and industry before going on to investigate the impact of textiles throughout the supply chain, starting with the raw fibre through to fabric production, consumption and disposal. Textile process technology and methods for specifying quality and functions in textile products in order to reduce textile waste and improve sustainability are also examined. A series of Life Cycle Assessments (LCAs) carried out in the European textile industry are investigated. These studies comprise a range of processes from cotton growing, spinning and weaving to the recycling of textiles. The book concludes with a discussion on sustainable textiles from a product development and marketing perspective. With an internationally recognised expert author, the Handbook of sustainable textile production is a valuable reference tool for academics and students as well as for companies across the textile supply chain concerned with developing a sustainable environment, from fibre manufacturers and designers to regulatory bodies. A detailed, quantitative assessment of the sustainable development of textiles Provides a useful compilation of technical, economical, and environmental data from various processes in the textile manufacturing chain Chapters define the principles of sustainability and its use in legislation and industry, textile process technology, the impact of textiles throughout the supply chain, raw fibre through to fabric production, consumption and disposal

*High-Performance Fibres* Elsevier

Understanding and predicting the structure and properties of woven textiles is important for achieving specific performance characteristics in various woven applications. Woven textiles are used in a range of products such as apparel, technical and industrial textiles. Woven textile structure: Theory and applications provides comprehensive coverage of the structure, behaviour, modeling and design of woven fabrics and their relevance to the textile industry. The first group of chapters review the fundamental principles of woven fabric structures. Part two discusses the mechanics of woven fabrics, topics include shrinkage in woven fabrics, yarn behaviour in woven fabrics and bending behaviour of woven fabrics. Part three presents a selection of chapters on design engineering of woven fabrics, themes such as textile product design methods and modelling for woven fabric design are covered. A final group of chapters is dedicated to addressing practical applications of woven fabrics. Woven textile structure: Theory and applications is essential reading for designers, engineers and technicians involved in the design, manufacture and use of woven textiles and garments. It will also be beneficial to academics and students. Provides comprehensive coverage of the fundamentals of woven fabric structure including geometrical modeling Examines mechanisms

of woven fabric structure featuring shrinkage, buckling, bending and creasing behaviour of textiles Illustrates mathematical modeling and building predictive models for textile product design incorporating validation and testing

*Handbook of Nonwovens* BoD - Books on Demand  
Growing awareness of environmental issues has led to increasing demand for goods produced from natural products, including natural fibres. The two-volume Handbook of natural fibres is an indispensable tool in understanding the diverse properties and applications of these important materials. Volume 1: Types, properties and factors affecting breeding and cultivation is an essential guide to a wide range of natural fibres, and highlights key techniques for their improvement. Part one reviews key types and fundamental properties of natural textile fibres. The production, identification and testing of a range of cotton, bast, silk and wool fibres are discussed, alongside bioengineered natural textile fibres. Part two goes on to explore the improvement of natural fibre properties and production through breeding and cultivation, beginning with a discussion of fibrous flax and cotton. Improved natural fibre production through the prevention of fungal growth is explored, along with the use of genetic engineering and biotechnology to enhance desirable characteristics. Finally, the wider impact of natural textile production is discussed, using wild silk enterprise programs as an example. With its distinguished editor and international team of expert contributors, the two volumes of the Handbook of natural fibres are essential texts for professionals and academics in textile science and technology. Provides an essential guide to a wide range of natural fibres and highlights key techniques for their improvement Reviews key types and fundamental properties of natural textile fibres, addressing the production, identification and testing of a range of cotton, bast, silk and wool fibres Explores the improvement of natural fibre properties and production through breeding and cultivation, beginning with a discussion of fibrous flax and cotton

*Applications of Dyes* Handbook of Textile Fibre Structure  
Biotechnology has impacted the textiles industry through the development of more efficient and environmentally friendly manufacturing processes, as well as enabling the design of improved textile materials. This book will provide a thorough overview of current and future focuses of biotechnology in the fibre and textile industry. Part one of the book opens with a review of technologies involved in textile biotechnology. Chapters explore the design and engineering of novel enzymes for textile applications and developments in processes and equipment for enzymatic textile treatments. Part two investigates the modification of particular fibres through the use of biotechnology. Key topics include the treatment of wool and silk fibres and the enzymatic treatment versus conventional processing of cotton. With expert contributions from leaders in their fields, *Advances in textile biotechnology* is a comprehensive guide for those in the textile and fibre industry, as well as experts in the biology, chemical and environmental engineering industries. Provides a thorough overview of current and future focuses of biotechnology in the fibre and textile industry Explores production of enzymes, searching for efficient production systems and also documents the advantages and limitations associated with the process Reviews the debate surrounding enzymatic treatment versus conventional processing of cotton along with engineering of plants for improved fibre qualities

*Textiles and Fashion* Elsevier

*Silk: Processing, Properties and Applications*, Second Edition, examines all aspects of silk technology, including its manufacture, processing, properties, structure-property relationships, dyeing, printing and finishing, and applications. This new edition is updated and expanded to include the very latest developments in silk production. Detailed chapters discuss silk reeling and silk fabric manufacture, the structural aspects of silk, its mechanical and thermal properties, and silk dyeing. Further chapters focus on the latest developments in terms of processing and applications, covering emerging topics, such as spider silks, non-mulberry silks, the printing and finishing of silk fabrics, and by-products of the silk industry. This book will be a highly valuable source of information for textile technologists, engineers and manufacturers, fiber scientists, researchers and academics in natural fibers or textile technology. Offers in-depth coverage of silk production, properties and structure-property relationships Provides an authoritative reference on sericulture, silk fabric processing and applications of silk Expanded to include non-mulberry silks, printing and finishing of silk fabrics, and by-products of sericulture

*Handbook of Natural Fibres* Woodhead Publishing  
Structure and Mechanics of Textile Fibre Assemblies, Second Edition, offers detailed information on all aspects of textile structure and mechanics. This new edition is updated to include the latest technology and techniques, as well as fiber assembly for major application areas. Chapters discuss the mechanics of materials and key mechanical concepts, such as stress, strain, bending and shear, but also examine structure and mechanics in-depth, including fabric type, covering yarns, woven fabrics, knitted fabrics, nonwovens, tufted fabrics, textile composites, laminated and coated textile fabrics, and braided structures.

Finally, structure and mechanics are approached from the viewpoint of key applications areas. This book will be an essential source of information for scientists, technologists, engineers, designers, manufacturers and R&D managers in the textile industry, as well as academics and researchers in textiles and fiber science. Provides methodical coverage of all essential fabric types, including yarns, woven fabrics, knitted fabrics, nonwovens, tufted fabrics, textile composites, laminated and coated textile fabrics, and braided structures Enables the reader to understand the mechanical properties and structural parameters of fabric at a highly detailed level Expanded update includes an analysis of fiber assemblies for key technical areas, such as protective fabrics and medical textiles

*Handbook of Fibrous Materials, 2 Volumes* Springer

Structure and Properties of High-Performance Fibers explores the relationship between the structure and properties of a wide range of high-performance fibers. Part I covers high-performance inorganic fibers, including glasses and ceramics, plus carbon fibers of various types. In Part II, high-performance synthetic polymer fibers are discussed, while Part III reviews those natural fibers that can be used to create advanced textiles. The high-performance properties of these fibers are related to their chemistry and morphology, as well as the ways in which they are synthesized and spun. High-performance fibers form the basis of textile materials with applications in protection, medicine, and composite reinforcement. Fibers are selected for these technical applications due to their advanced physical, mechanical, and chemical properties. Offers up-to-date coverage of new and advanced materials for the fiber and textile industries Reviews structure-property relationships of high-performance inorganic, carbon, synthetic polymer, and natural fibers Includes contributions from an international team of authors edited by an expert in the field Reviews those natural fibers that can be used to create advanced textiles

*Technical Textile Yarns* Woodhead Publishing

The identification of fibers is important to the textile industry, forensic science, fashion designers and historians among others. Identifying fibers involves observing the physical and chemical properties of the fiber for which there are a wide diversity of instruments available. This book provides a comprehensive review of fiber structure, the diversity of instruments available to identify fibers and applications for a range of industries. The first part of the book examines the main fibers, their structure and characteristics. Part two focuses on methods of fiber identification, ranging from microscopic to DNA analysis. Specific applications, including how textiles are identified in forensic investigations. Identification of textile fibers is an important text for forensic scientists, police and lawyers who may be involved with the use of textile fibers to provide evidence in criminal cases. It will also be relevant for textile designers, technologists and inspectors wishing to assess fiber quality and understand fiber damage. Provides a comprehensive review of the main types of fibre together with their structure, characteristics and identification Assesses methods of fibre identification from optical microscopy to DNA analysis as well as instruments available to identify fibres

*Handbook of Textile Fibres: Man-made fibres* Elsevier

Due to their complexity and diversity, understanding the structure of textile fibres is of key importance. This authoritative two-volume collection provides a comprehensive review of the structure of an extensive range of textile fibres. Volume 2 begins by reviewing natural fibres such as cellulosic, cotton, protein, wool and silk fibres. Part two considers regenerated cellulosic, protein, alginate, chitin and chitosan fibres. The final part of the book discusses inorganic fibres such as glass, carbon and ceramic fibres as well as specialist fibres such as thermally and chemically-resistant fibres, optical and hollow fibres. Chapters review how fibre structure contributes to key mechanical properties. A companion volume reviews the structure of manufactured polymer fibres. Edited by leading authorities on the subject and with a team of international authors, the two volumes of the Handbook of textile fibre structure is an essential reference for textile technologists, fibre scientists, textile engineers and those in academia. Discusses how fibre structure contributes to key mechanical properties Reviews natural fibres such as cellulosic, cotton and silk fibres and considers various regenerated fibres Examines inorganic fibres including glass and carbon as well as specialist fibres such as chemically-resistant and optical fibres

*Theory and Applications* John Wiley & Sons

Due to their complexity and diversity, understanding the structure of textile fibres is of key importance. This authoritative two-volume collection provides a comprehensive review of the structure of an extensive range of textile fibres. Volume 2 begins by reviewing natural fibres such as cellulosic, cotton, protein, wool and silk fibres. Part two considers regenerated cellulosic, protein, alginate, chitin and chitosan fibres. The final part of the book discusses inorganic fibres such as glass, carbon and ceramic fibres as well as specialist fibres such as thermally and chemically-resistant fibres, optical and hollow fibres. Chapters review how fibre structure contributes to key mechanical properties. A companion volume reviews the structure of

manufactured polymer fibres. Edited by leading authorities on the subject and with a team of international authors, the two volumes of the Handbook of textile fibre structure is an essential reference for textile technologists, fibre scientists, textile engineers and those in academia. Discusses how fibre structure contributes to key mechanical properties Reviews natural fibres such as cellulosic, cotton and silk fibres and considers various regenerated fibres Examines inorganic fibres including glass and carbon as well as specialist fibres such as chemically-resistant and optical fibres

**Volume 2: Processing and Applications** Woodhead Publishing  
A comprehensive survey of the natural fibres animal, vegetable

and mineral on which we depended for our textiles until comparatively recently.

Technology, Science and Economics Elsevier

The role of the textile finisher has become increasingly demanding, and now requires a careful balance between the compatibility of different finishing products and treatments and the application processes used to provide textiles with desirable properties. In one comprehensive book, Chemical finishing of textiles details the fundamentals of final chemical finishing, covering the range of effects that result from the interplay between chemical structures and finishing products. After an introductory chapter covering the importance of chemical finishing, the following chapters focus on particular finishing

techniques, from softening, easy-care and permanent press, non-slip and soil-release, to flame-retardant, antistatic and antimicrobial. Within each chapter, sections include an introduction, mechanisms, chemistries, applications, evaluations and troubleshooting. The book concludes with a chapter on the future trends in chemical finishing. Chemical finishing of textiles is an essential reference for all academic and industrial textile chemists and for those studying textile education programmes. Discusses the advantages and disadvantages of every important type of chemical finish Combines technical understanding and practical experience concisely Essential tool to assist in the demanding challenge of chemical finishing for textiles

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