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ALESSANDRO CARDENAS

Ink Jet Textile Printing Elsevier
First published in 1962, and now in its fourth edition, *Physical properties of textile fibres* has become a classic, providing the standard reference on key aspects of fibre performance. The new edition has been substantially reorganised and revised to reflect new research. After introductory chapters on fibre structure, testing and sampling, the book reviews key fibre properties, their technical significance, factors affecting these properties and measurement issues. Each

chapter covers both natural and synthetic fibres, including high-performance fibres. The book first reviews properties such as fineness, length and density. It then considers thermal properties and reaction to moisture. A further group of chapters then reviews tensile properties, thermo-mechanical responses, fibre breakage and fatigue. Finally, the book discusses dielectric properties, electrical resistance and static, optical properties and fibre friction. Written by one of the world's leading authorities, the fourth edition of *Physical properties of textile fibres* consolidates its reputation as a standard work both for those working in the textile industry and those teaching and studying textile science. A standard reference on

key aspects of fibre performance An essential read and reference for textile technologists, fibre scientists, textile engineers and those in academia Provides substantial updated material on fibre structure and new test methods, data and theories regarding properties of textile fibres

[Process Control in Textile Manufacturing](#)
Woodhead Publishing

With a rising population and the increasing range of textiles for medical products, the need to understand and improve medical textiles is gaining in importance. The *Handbook of medical textiles* provides an overview of the different types of medical textiles currently available as well as specific information on more specialised

topics and applications. In part one, the types and properties of medical textiles are discussed, with chapters covering topics including reusable textiles, textiles for implants and textiles with cosmetic effects. Part two focuses on the interaction of textiles with the skin, examining key issues such as contact sensations, allergies and mechanical irritation. Chapters in part three provide information on the latest developments in textiles for hygiene and infection control, while part four provides a range of applications and case studies, including improvements in medical occupational clothing, medical filters and superabsorbent fibres. With its expert editor and contributions from some of the world's leading authorities, the Handbook of medical textiles is a standard reference for designers and manufacturers of medical textile products, as well as for biomaterials scientists and medical professionals. Explores the different types of medical textiles currently available as well as specific information on more specialised areas and applications. Chapters cover topics such as reusable textiles, textiles for implants and interaction of textiles with the skin. Is a

standard reference for designers and manufacturers of medical textile products, as well as for biomaterials scientists and medical professionals. *Handbook of Textile Fibres* Elsevier. Activated Carbon Fiber and Textiles provides systematic coverage of the fundamentals, properties, and current and emerging applications of carbon fiber textiles in a single volume, providing industry professionals and academics working in the field with a broader understanding of these materials. Part I discusses carbon fiber principles and production, including precursors and pyrolysis, carbon fiber spinning, and carbonization and activation. Part II provides more detailed analysis of the key properties of carbon fiber textiles, including their thermal, acoustic, electrical, adsorption, and mechanical behaviors. The final section covers applications of carbon fiber such as filtration, energy protection, and energy and gas storage. Features input from an editor who is an expert in his field: Professor Jonathan Chen has a wealth of experience in the area of activated carbon fiber materials. Provides systematic and

comprehensive coverage of the key aspects of activated carbon fiber textiles, from their principles, processing, and properties to their industrial applications. Offers up-to-date coverage of new technology for the fiber and textiles industries. Covers applications such as filtration, energy protection, and energy and gas storage.

Handbook of Textile Fibres 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

Electronic Textiles 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 1 begins with an introductory set of chapters on fibre structure and methods to characterise fibres. The second part of the book covers the structure of manufactured polymer fibres such as polyester, polyamides, polyolefin, elastomeric and aramid fibres

as well as high-modulus, high-tenacity polymer fibres. Chapters discuss fibre formation during processing and how this affects fibre structure and mechanical properties. A companion volume reviews natural, regenerated, inorganic and specialist 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. The first title of a authoritative two-volume collection that provides a comprehensive review of the structure of a range of textile fibres Provides an overview of the development of fibre structure and methods to characterise fibres Examines the structure of both traditional and new fibres and natural and manufactured fibres

Natural fibres Elsevier

'Chemical Principles of Textile Conservation' provides must-have knowledge for conservators who do not always have a scientific background. This vital book brings together from many sources the material science necessary to understand the properties, deterioration

and investigation of textile artefacts. It also aids understanding of the chemical processes during various treatments, such as: cleaning; humidification; drying; disinfestation; disinfection; and the use of adhesives and consolidants in conservation of historical textiles. Textile conservators will now have ready access to the necessary knowledge to understand the chemistry of the objects they are asked to treat and to make informed decisions about how to preserve textiles. The combination of a chemist and a conservator provides the perfect authorial team. It ensures a unique dual function of the text which provides textile conservators with vital chemical knowledge and gives scientists an understanding of textile conservation necessary to direct their research. The many practical examples and case studies illustrate the utility of the relatively large chemical introduction and the essential chemical information which is included. The case studies, many illustrated in colour, range from the treatment of the Ghandis' clothes, high-altitude flying suits and a Mary Quant raincoat, to the Hungarian Coronation Mantle.

Handbook of Textile Fibre Structure
Elsevier

Textile structure and mechanics are fundamental to the way textiles are designed, manufactured, tested and used. Structure and mechanics of textile fibre assemblies discusses aspects of fabric structure and mechanical properties such as tensile, bending and shear properties for a range of fabrics. After a general introduction illustrating the role of fabric structure and mechanics, subsequent chapters discuss the structural, tensile, bending and shear properties of woven, knitted and nonwoven fabrics. Other chapters review the structure and mechanics of yarns, coated fabrics, 2D and 3D textile composites. Testing methods for the measurement of fabric mechanical properties and structure parameters are also explored. With its renowned editor and contributions from some of the world's leading authorities, Structure and mechanics of textile fibre assemblies is an important reference for textile scientists, technologists, engineers and those designing and manufacturing textiles. It will also be suitable for those within the academic sector. Examines

aspects of fabric structure and mechanical properties for a range of fabrics Discusses structure and mechanics of yarn and woven, nonwoven and knitted fabrics Explores testing methods enabling the measurement of fabric mechanical properties and structural parameters
Handbook of Textile Fibres: Man-made fibres Elsevier

A comprehensive survey of the natural fibres animal, vegetable and mineral on which we depended for our textiles until comparatively recently.

Handbook of Textile Fibres. 3rd Ed
Woodhead Publishing

Despite the world's aging population, suitable clothing for the older community is a largely neglected area. This book considers the needs of the growing number of active older people and investigates how recent developments in textiles, fibres, finishes, design and integrated technology can be deployed to serve this group and improve quality of life. Part I provides an understanding of the active aging population by considering the group's experiences of and attitudes towards clothing and reviewing the barriers to their adoption of new wearable

technologies. Part II focuses on the needs of the older population, including effective communication with designers and the age-related anatomical and physiological changes that designs should consider. Part III reviews design requirements and processes, and finally Part IV reviews the manufacture of suitable apparel, with chapters on suitable textile fibres, balancing technology and aesthetics and wearable electronics. Summarises the wealth of recent research on attitudes to clothing amongst the active ageing population Looks into how their aspirations can be investigated and appropriate apparel designed to meet their needs Examines design and manufacturing issues, including ways of accommodating physiological changes with age and the use of wearable electronics

Advances in 3D Textiles Elsevier

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.

Handbook of Technical Textiles
Elsevier

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.

Handbook of textile fibres. 1.: natural fibres. 4th ed Elsevier

Given its importance to consumer safety, fire resistant textiles are one of the fastest growing sectors in industrial textiles. Handbook of fire resistant textiles provides a comprehensive review of the considerable advances that have occurred in the field of fire resistant textiles in recent years. It draws together scientific and technical expertise from around the world to produce an important source of current knowledge on fire resistant textiles and their use for protection in hostile

environments. Part one provides an overview of fire resistant textiles. Chapters discuss burning and combustion mechanisms of textile fibers, chemical modification of natural and synthetic fibers to improve flame retardancy, multi-component flame resistant coating techniques for textiles, care and maintenance of fire resistant textiles, along with the safety, health and environmental aspects of flame retardants. Part two covers different types of fire resistant fibers and fabrics, including flame retardant cotton, wool, ceramic fibers and blends, composites and nonwovens. Part three reviews standards, regulations, and characterization of fire resistant textiles. Part four includes case studies of major applications of fire resistant textiles. The Handbook of fire resistant textiles is an invaluable resource for a broad spectrum of professionals in the textiles and apparel industries, including textile and garment manufacturers, engineers, researchers, designers, developers and buyers. Provides a comprehensive review of the considerable advances that have occurred in the field of fire resistant textiles in

recent years Discusses burning and combustion mechanisms of textile fibers and chemical modification of natural and synthetic fibers to improve flame retardancy Covers different types of fire resistant fibers and fabrics, including flame retardant cotton, wool, ceramic fibers and blends, composites and nonwovens

Textile-led Design for the Active Ageing Population Routledge

Fibres are used both for traditional textile applications as well as in advanced technical structures. Understanding the fatigue processes in these fibres can suggest ways of eliminating or reducing the probability of unforeseen failures. This book addresses key aspects of fatigue failure in textile fibres. Part one explains the different types of fatigue failure in textiles such as tensile, torsional and flex fatigue. It describes the mechanisms of each type of fatigue and illustrates the kinds of fatigue failure that can occur. Part two moves on to explain the factors that can affect fatigue life and fatigue behaviour. It underlines the relationship that fatigue has with the environment and looks at testing and modelling fatigue in

such areas as polymer matrices. Chapters relate actual fibre fatigue failures to those of laboratory tests and the way they influence mathematical modelling to predict potential failure. With an international range of contributors Fatigue failure of textile fibres is key reading for textile engineers, academics, textile technologists, fibre scientists and all those concerned with the topic of fatigue failure in textiles and textile-based assemblies. Addresses key aspects of fatigue failure in textile fibres including tensile, flex and torsional fatigue Examines factors that can effect fatigue life and fatigue behaviour including textile processing and environmental factors
Structure and Mechanics of Textile Fibre Assemblies Woodhead Publishing
The integration of electronics into textiles and clothing has opened up an array of functions beyond those of conventional textiles. These novel materials are beginning to find applications in commercial products, in fields such as communication, healthcare, protection and wearable technology. Electronic Textiles: Smart Fabrics and Wearable Technology opens with an initiation to the

area from the editor, Tilak Dias. Part One introduces conductive fibres, carbon nano-tubes and polymer yarns. Part Two discusses techniques for integrating textiles and electronics, including the design of textile-based sensors and actuators, and energy harvesting methods. Finally, Part Three covers a range of electronic textile applications, from wearable electronics to technical textiles featuring expert chapters on embroidered antennas for communication systems and wearable sensors for athletes. Comprehensive overview of conductive fibres, yarns and fabrics for electronic textiles Expert analysis of textile-based sensors design, integration of micro-electronics with yarns and photovoltaic energy harvesting for intelligent textiles Detailed coverage of applications in electronic textiles, including wearable sensors for athletes, embroidered antennas for communication and electronic textiles for military personnel

Handbook of Textile Fibres. Vol. 1

Woodhead Publishing

Industries worldwide have been impacted by environmental regulations, economics,

and ultimately consumers, which has led to more thought about the development of sustainable products. The textile industry is no exception. The preparation, dyeing, and finishing of textile fibres requires large amounts of water and other chemicals which may be toxic or hazardous. Green chemistry along with other green technologies may now play a leading role in this process. This book emphasises the importance of plasma treatment as a green and sustainable technology. A Novel Green Treatment for Textiles: Plasma Treatment as a Sustainable Technology discusses the plasma treatment of textile fibres and its environmental, economic, and social benefits. The book reviews the general properties of textiles and provides a description of the current treatment methods typically used today. The author then introduces the concept of plasma and its application in treating textile materials. The application of plasma as a pretreatment as well as a treatment in dyeing textiles is discussed. The book summarizes the application of plasma treatment in the printing and finishing of textiles. Also explored is the concept of sustainability and its role in the

development of plasma treatments in textile wet processing. The 12 Principles of Green Chemistry are incorporated throughout the book.

Fatigue Failure of Textile Fibres Elsevier

With the rapid expansion of ink jet printing, textile printing and allied industries need to understand the principles underpinning this technology and how it is currently being successfully implemented into textile products. Considering the evolution of new print processes, technological development often involves a balance of research across different disciplines. Translating across the divide between scientific research and real-world engagement with this technology, this comprehensive publication covers the basic principles of ink jet printing and how it can be applied to textiles and textile products. Each step of the ink jet printing process is covered, including textiles as a substrate, colour management, pre-treatments, print heads, inks and fixing processes. This book also considers the range of textile printing processes using ink jet technology, and discusses their subsequent impact on the textile designer, manufacturer, wholesaler,

retailer and the environment. Covers the foundations and development of ink jet textile printing technology Discusses the steps of ink jet printing from colour management to fixing processes Analyses how ink jet printing has affected the textile industry

Handbook of Medical Textiles CRC Press
Advances in 3D Textiles presents the most recent advances in the production of three-dimensional fibrous structures and how their use has resulted in the creation of novel fabrics and applications. The text covers a wide range of fabric types, including their structures, properties, and uses in the textiles industry. Beginning with the various types of woven three-dimensional fabrics, the text then examines 3-D knitted, braided, and non-woven textiles, and the main applications and uses of three-dimensional textiles. Presents the most recent advances in the production of three-dimensional fibrous structures and how their use has resulted in the creation of novel fabrics and applications Examines many types of 3-D textiles, including knitted, braided, and non-woven textiles, and the main uses of three-dimensional textiles Covers their

structures, properties, and uses within the textiles industry

Handbook of Textile Fibres Elsevier
 Fibres usually experience tensile loads whether they are used for apparel or technical structures. Their form, which is long and fine, makes them some of the strongest materials available as well as very flexible. This book provides a concise and authoritative overview of tensile behaviour of a wide range of both natural and synthetic fibres used both in textiles and high performance materials. After preliminary chapters that introduce the reader to tensile properties, failure and testing of fibres, the book is split into two parts. Part one examines tensile properties and failure of natural fibres, such as cotton, hemp, wool and silk. Part two discusses the tensile properties and failure of synthetic fibres ranging from polyamide, polyester and polyethylene fibres to carbon fibres. Many chapters also provide a general background to the fibre, including the manufacture, microstructure, factors that affect tensile properties as well as methods to improve tensile failure. With its distinguished editor and array of international contributors, *Handbook of*

tensile properties of textile and technical fibres is an important reference for fibre scientists, textile technologists and engineers, as well as those in academia. Provides an overview of tensile behaviour of a wide range of both natural and synthetic fibres Examines tensile characteristics, tensile failure of textiles fibres and factors that affect tensile properties Discusses microstructures and each type of fibre from manufacture to finished product

Handbook of Textile Fibres Elsevier
 Polyolefins are one of the most widely used commercial polymers. This book reviews the most important polyolefins, including polyethylene and polypropylene. These versatile fibres are durable, chemically resistant, lightweight, economical and functional. Polyolefin fibres: industrial and medical applications provides a comprehensive review of the structure and properties of this group of fibres, together with methods to improve the functionality of polyolefins and their range of applications. The first set of chapters discusses the different types of polyolefins, their structural and chemical properties as well as their production

methods. The second group of chapters examines how to improve the functionality of polyolefin fibres. A final group of chapters addresses how polyolefins can be incorporated into specific applications such as industrial, medical and automotive products. Written by a distinguished team of international contributors, Polyolefin fibres: industrial and medical applications

is a quintessential reference for textile technologists, fibre scientists, yarn and fabric manufacturers and also those in academia. Reviews the most important polyolefins including polyethylene and polypropylene, their structural and chemical properties as well as production methods Examines methods to improve the functionality of polyolefin fibres

including production methods and quality control

Antimicrobial Textiles Woodhead Publishing

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.