Handbook Of Textile Fibres Woodhead Publishing Series In Textiles

Getting the books **Handbook Of Textile Fibres Woodhead Publishing Series In Textiles** now is not type of inspiring means. You could not single-handedly going afterward ebook stock or library or borrowing from your associates to entrance them. This is an unconditionally easy means to specifically get guide by on-line. This online revelation Handbook Of Textile Fibres Woodhead Publishing Series In Textiles can be one of the options to accompany you as soon as having further time.

It will not waste your time. believe me, the e-book will entirely ventilate you further concern to read. Just invest tiny mature to gate this on-line broadcast **Handbook Of Textile Fibres Woodhead Publishing Series In Textiles** as capably as review them wherever you are now.

Fibre Structure J. W. S. Hearle 2013-09-03 Fibre Structure is a 19-chapter text that emerged from lectures presented at the Manchester College of Science and Technology. The interest of fiber studies lies to some extent in the important part textile materials play in general living and in industrial products and operations. The first chapters deal with the chemistry of fiber-forming polymers, followed by considerable chapters on the controversial subject of the fine structure of fibers. The remaining chapters describe the special features of all the important fibers, including glass and asbestos. Textile scientists, researchers, and manufacturers will find this book invaluable.
Handbook of Textile Fibres J Gordon Cook 1984-01-15 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.
Recycling in Textiles Youjiang Wang 2006-03-20 An increasing amount of waste is generated each year from textiles and their production. For economic and environmental reasons it is necessary that as much of this waste as possible is recycled instead of being disposed of in landfill sites. In reality the rate of textile recycling is still relatively low. On average, approximately ten million tonnes of textile waste is currently dumped in Europe and America each year. Considering the diversity of fibrous waste and structures, many technologies must work in concert in an integrated industry in order to increase the rate of recycling. Recycling in textiles shows how this can be achieved. The first part of the book introduces the subject by looking at the general issues involved and the technologies concerned. Part Two explores the chemical aspects of textile recycling. Part Three focuses on recycled textile products, including nonwovens and alternative fibres. Finally, the last part of the book discusses possible applications of recycled textiles, including using recycled products in the operating theatre, for soil stabilisation and in concrete reinforcement. Recycling in textiles presents several promising technologies and ideas for recycling systems. This is the first book of its kind to bring together textile recycling issues, technology, products, processes and applications. It will prove an invaluable guide to all those in the industry who are now looking for ways to recycle their textile waste. Provides

extensive coverage of this hot topic An invaluable guide for all in the textile industry Learn how to increase the rate of recycling

Handbook of Nonwovens S. J. Russell 2022-06-03 Handbook of Nonwovens, Second Edition updates and expands its popular interdisciplinary treatment of the properties, processing, and applications of nonwovens. Initial chapters review the development of the industry and the different classes of nonwoven material. The book then discusses methods of manufacture such as dry-laid, wet-laid, and polymer-laid web formation. Other techniques analyzed include mechanical, thermal, and chemical bonding, as well as chemical and mechanical finishing systems. The book concludes by assessing the characterization, testing, and modeling of nonwoven materials. Covering an unmatched range of materials with a variety of compositions and manufacturing routes, this remains the indispensable reference to nonwovens for designers, engineers, materials scientists, and researchers, particularly those interested in the manufacturing of automotive, aerospace, and medical products. Nonwovens are a unique class of textile material formed from fibers that are bonded together through various means to form a coherent structure. The range of properties they can embody make them an important part of a range of innovative products and solutions, which continues to attract interest from industry as well as academia. Describes in detail the manufacturing processes of a range of nonwoven materials Provides detailed coverage of the mechanical and thermal properties of non-woven fabrics Includes extensive updates throughout on the characterization and testing of nonwovens Explains how to model nonwoven structures

Handbook of Sustainable Textile Production Marion I Tobler-Rohr 2011-06-27 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 manufactures 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

Handbook of Textile Fibres J Gordon Cook 1984-01-01 A comprehensive survey of the natural fibres animal, vegetable and mineral on which we depended for our textiles until comparatively recently.

Handbook of Technical Textiles A. Richard Horrocks 2015-12-01 The second edition of Handbook of Technical Textiles, Volume 1: Technical Textile Processes provides

readers with a comprehensive understanding of the latest advancements in technical textiles. With revised and updated coverage, including several new chapters, this volume reviews recent developments and technologies in the field, beginning with an overview of the technical textiles industry that includes coverage of technical fibers and yarns, weaving, spinning, knitting, and nonwoven production. Subsequent sections include discussions on finishing, coating, and the coloration of technical textiles. Provides a comprehensive handbook for all aspects of technical textiles Presents updated, detailed coverage of processes, fabric structure, and applications An ideal resource for those interested in high-performance textiles, textile processes, textile processing, and textile applications Contains contributions from many of the original, recognized experts from the first edition who update their respective chapters

Handbook of Fibre Rope Technology H A McKenna 2004-04-22 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

Physical Testing of Textiles B P Saville 1999-01-08 This book examines the physical testing of textiles in the form of fibre, yarn and fabric, the emphasis throughout eing 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.

Wool W S Simpson 2002-05-09 In this book leading experts within the industry come together to give the first comprehensive treatments of the science and technology of wool to be published in over 20 years. The wool industry has been through a period of substantial change, with a major overhaul of trading methods, exciting innovations in wool-scouring and wool processing methods, and the development of modern technology reflecting a strong emphasis on environmental concerns and energy conservation. Research into wool science has continued to grow, and the technologist now has a better understanding of both the chemical and the physical properties of wool. Modern instruments can determine the structural differences between several types of wool proteins and how they interact, and this knowledge is leading to a deeper understanding of what can be done to create better products and more effective

processes. Wool: Science and technology is an essential reference resource for anyone involved in the worldwide wool industry whether as processor, manufacturer, or user for the garment and carpets trades. First new comprehensive treatment of wool for over 20 years Covers all aspects of processing, treatment and manufacture Contributions form distinguished experts worldwide
Woven Textile Structure B K Behera 2010-03-01 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 bebeneficial 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
Textile Design A Briggs-Goode 2011-04-15 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
Smart Fibres, Fabrics and Clothing Xiaoming Tao 2001-10-04 This important book provides a guide to the fundamentals and latest developments in smart technology for textiles and clothing. The contributors represent a distinguished international panel of experts and the book covers many aspects of cutting edge research and development. Smart fibres, fabrics and clothing starts

with a review of the background to smart technology and goes on to cover a wide range of the material science and fibre science aspects of the technology including: Electrically active polymeric materials and the applications of nonionic polymer gel and elastomers for artificial muscles; Thermally sensitive fibres and fabrics; Cross-linked polyol fibrous substrates stimuli-responsive interpenetrating polymer network hydrogel; Permeation control through stimuli-responsive polymer membranes; optical fibre sensors, hollow fibre membranes for gas separation; integrating fibre-formed components into textile structures; Wearable electronic and photonic technologies; Adaptive and responsive textile structures (ARTS); Biomedical applications including the applications of scaffolds in tissue engineering It is essential reading for academics in textile and materials science departments, researchers, designers and engineers in the textiles and clothing product design field. Product managers and senior executives within textile and clothing manufacturing will also find the latest insights into technological developments in the field valuable and fascinating.

Handbook of Textile and Industrial Dyeing M Clark 2011-10-25 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

Textile Fibre Composites in Civil Engineering Thanasis Triantafillou 2016-02-08 Textile Fibre Composites in Civil Engineering provides a state-of-the-art review from leading experts on recent developments, the use of textile fiber composites in civil engineering, and a focus on both new and existing structures. Textile-based composites are new materials for civil engineers. Recent developments have demonstrated their potential in the prefabrication of concrete structures and as a tool for both strengthening and seismic retrofitting of existing concrete and masonry structures, including those of a historical value. The book reviews materials, production technologies, fundamental properties, testing, design aspects, applications, and directions for future research and developments. Following the opening introductory chapter, Part One covers materials, production technologies, and the manufacturing of textile fiber composites for structural and civil engineering. Part Two moves on to review testing, mechanical behavior, and durability aspects of textile fiber composites used in structural and civil engineering. Chapters here cover topics such as the durability of structural elements and bond aspects in textile fiber composites. Part Three analyzes the structural behavior and design of textile reinforced concrete. This section includes a number of case studies providing thorough coverage of the topic. The final section of the volume details the strengthening and seismic retrofitting of existing structures. Chapters

investigate concrete and masonry structures, in addition to providing information and insights on future directions in the field. The book is a key volume for researchers, academics, practitioners, and students working in civil and structural engineering and those working with advanced construction materials. Details the range of materials and production technologies used in textile fiber composites Analyzes the durability of textile fiber composites, including case studies into the structural behavior of textile reinforced concrete Reviews the processes involved in strengthening existing concrete structures

Advances in Knitting Technology K F Au 2011-02-26 Knitted textiles and apparel represent approximately one third of the global textile market. This book provides an updated reference to Knitting technology, with specific focus on the developments in knitted fabric production and textile applications. The first set of chapters begin with a brief review of the fundamental principles of knitting, including the types and suitability of yarns for knitting as well as the properties achieved through knitted fabrics. The second part of the book examines the major advances in knitting, such as intelligent yarn delivery systems in weft knitting, knitted fabric composites and advances in circular knitting. The concluding section of the book presents a selection of case studies where advanced knitted products are used. Topics range from knitted structures for moisture management to weft knitted structures for sound absorption. With its distinguished editor and array of international contributors, Advances in knitting technology is an important text for designers, engineers and technicians involved in the manufacture and use of knitted textiles and garments. It will also be relevant for academics and students. Provides both a timely and authoritative reference on developments in knitted fabric production Examines different types and suitability of yarns for knitting including the modelling of knitting Advances in knitting are explored in a number of different areas such as intelligent yarn delivery systems and current problems and limitations in weft knitted structures for industrial applications

Technical Textile Yarns R Alagirusamy 2010-06-30 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 Life Cycle Assessment (LCA) of Textiles and Clothing Subramanian Senthilkannan Muthu 2015-07-25 Life cycle assessment (LCA) is used to evaluate the environmental impacts of textile products, from raw material extraction, through fibre processing, textile manufacture, distribution and use, to disposal or recycling. LCA is an important tool for the research and

development process, product and process design, and labelling of textiles and clothing. Handbook of Life Cycle Assessment (LCA) of Textiles and Clothing systematically covers the LCA process with comprehensive examples and case studies. Part one of the book covers key indicators and processes in LCA, from carbon and ecological footprints to disposal, re-use and recycling. Part two then discusses a broad range of LCA applications in the textiles and clothing industry. Covers the LCA process and its key indicators, including carbon and ecological footprints, disposal, re-use and recycling Examines the key developments of LCA in the textile and clothing industries Provides a wide range of case studies and examples of LCA applications in the textile and clothing industries

Handbook of Natural Fibres Ryszard M. Kozlowski 2020-01-25 The Handbook of Natural Fibres: Volume Two, Processing and Applications, Second Edition provides detailed coverage of the latest processing techniques and industrial applications of a wide range of natural fibers. Natural fibrous resources, both lignocellulosic and protein ones, are renewable, biodegradable, and nontoxic, making them an important source of sustainable textile solutions. A broad range of sources of natural fibers are covered in the book, including flax, hemp, bast, jute, coir, linen, cotton and silk. This wealth of expert information provides a uniquely detailed reference for the processing, characterization, selection and application of natural fibers. Connects natural fibers to a wide range of industries, including construction, automotive, packaging and medical Helps readers appraise natural fibers on the basis of their mechanical, electrokinetic, antimicrobial or flame retardant qualities Provides a rare glimpse of emerging manufacturing methods for silk

Electronic Textiles Tilak Dias 2015-04-28 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 werable sensors for athletes, embroidered antennas for communication and electronic textiles for military personnel

Man-made fibres James Gordon Cook 1984 This book offers a comprehensive survey of the man-made fibers, including rayons and other natural polymer fibers, and the true synthetic fibers which have made such rapid progress in modern times.

Handbook of Textile Design J Wilson 2001-09-21 Designers in the textile industry have a wide range of roles and responsibilities and are frequently required to make design decisions throughout the manufacturing process. This very practical handbook provides a comprehensive overview of the role of the textile designer within the textile industry. It deals with the all aspects of the design process from the beginning - from how to go about attracting clients through range planning and development to presentation. It firmly locates the work of the textile designer within the wider context of the global textile and clothing industries and considers the process of design for both freelance and in-house designers. Commercial considerations are also covered,

together with trend forecasting and the factors influencing purchasing decisions. Based on the author's experience as a textile designer in industry and as a lecturer at UMIST, Manchester, UK, this book covers the entire textile design process from briefing through initial ideas, research and design development, to finished fabrics being sold to garment manufacturers and to retail. The Handbook of textile design is an invaluable reference for students of textile design as well as buyers and merchandisers of textile products, and anyone requiring an understanding of the textile design process. The range and diversity of textile design techniques available to the designer The professional practice of running a textile design studio How design work is carried out from the initial brief all the way through to invoicing the client

High-Performance Fibres J. W. S. Hearle 2001-10-26 This important new handbook provides comprehensive coverage of how high performance fibres are designed and manufactured and covers their capabilities and applications. The high-modulus, high-tenacity (HM-HT) fibres fall naturally into three groups - polymer fibres such as aramids and polyethylene fibres; carbon fibres such as Kevlar; and inorganic fibres based on glass and ceramic fibres. The books shows how high performance fibres are being increasingly used for a wide range of applications including goetextiles and geomembranes and for construction and civil engineering projects as well as in specialist fibres within composite materials where their ability to fulfil demanding roles makes them an effective choice for the engineer and materials scientist. Provides a comprehensive overview of how high performance fibres are designed and manufactured and covers their capabilities and applications Explains how high performance fibres are being increasingly used for a wide range of applications, including geotextiles and geomembranes and construction and civil engineering projects

Advances in Filament Yarn Spinning of Textiles and Polymers Dong Zhang 2014-02-15 Advances in Filament Yarn Spinning of Textiles and Polymers reviews the different types of spinning techniques for synthetic polymer-based fibers, and issues such as their effect on fiber properties, including melt, dry, wet, and gel spinning. Synthetic polymer-based fibers are used in a great variety of consumer and industrial textile applications ranging from clothing to home furnishings to surgical procedures. This book explores how a wide array of spinning techniques can be applied in the textile industry. Part one considers the fundamental structure and properties of fibers that determine their behavior during spinning. The book then discusses developments in technologies for manufacturing synthetic polymer films to produce different fibers with specialized properties. Part two focuses on spinning techniques, including the benefits and limitations of melt spinning and the use of gel spinning to produce high-strength and high-elastic fibers. These chapters focus specifically on developments in bi-component, bi-constituent, and electro-spinning, in particular the fabrication of nanocomposite fibers. The final chapters review integrated composite spinning of yarns and the principles of wet and dry spinning. This collection is an important reference for a wide range of industrial textile technologists, including spinners, fabric and garment manufacturers, and students of textile technology. It is also of great interest for polymer scientists. Reviews the different spinning techniques and issues such as their effect on fiber properties, including melt, dry, wet, and gel spinning Considers the fundamental structure and properties of fibers that determine their behavior during spinning Reviews integrated composite spinning of yarns and the principles of wet and dry spinning

Advances in 3D Textiles Xiaogang Chen 2015-05-28 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 Natural Fibres Ryszard M Kozłowski 2012-10-19 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 indispensible 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

Geosynthetics in Civil Engineering R W Sarsby 2006-12-22 Geosynthetics are man-made polymer-based materials which facilitate cost effective building, environmental, transportation and other construction projects. Given their versatility, geosynthetics are a vital material in all aspects of civil engineering. The first section of the book covers the fundamentals of geosynthetics. Chapters discuss the design and durability of geosynthetics together with their material properties and international standards governing their use. Building on these foundations, part two examines the various applications of geosynthetics in areas such as filters, separators, landfills, barriers and foundation materials. The book concludes by reviewing methods of quality assurance and the service life of geosynthetics. Written by an international team of contributors, Geosynthetics in civil engineering is an essential reference to all those involved in civil engineering. Discusses the fundamentals of geosynthetics Examines various applications in areas such as filters, separators, landfills and foundation materials Reviews quality assurance and the service life of geosynthetics

Clothing for Children and Teenagers Norsaadah Zakaria 2016-06-07 Clothing for Children and Teenagers: Anthropometry, Sizing and Fit addresses the complexities of developing size specifications for clothing aimed at seven to seventeen year olds. Children and teenagers experience rapid physical growth and alterations in body shape as they develop—changes that pose significant challenges in creating apparel sizing systems. The book begins by introducing the principles of apparel fit and

sizing systems. Drawing on the author's own fieldwork, it goes on to discuss methods of conducting anthropometric surveys in children and teenagers, and techniques for analyzing the resulting data in order to produce successful sizing systems. Introduces the principles of apparel fit and sizing systems, and discusses methods of conducting anthropometric surveys in children and teenagers Offers systematic and comprehensive coverage of the complexities associated with clothing for children and teenagers Reviews techniques in analysis and classification of children and teenagers' body shapes and sizes Covers the development, designation, and validation of an apparel sizing system for children and teenagers

Handbook of Tensile Properties of Textile and Technical Fibres A. R. Bunsell 2009-10-19 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 characterisitics, tensile failure of textiles fibres and factors that affect tensile properties Discusses mircostructures and each type of fibre from manufacture to finished product

Handbook of Yarn Production Peter R. Lord 2003-07-11 Written by one of the world's leading experts, Handbook of yarn production: technology, science and economics is an authoritative and comprehensive guide to textile yarn manufacturing. The book is designed to allow readers to explore the subject in various levels of detail. The first three chapters provide an overview of yarn production, products and key principles. The major part of the book then reviews in detail the production processes for short-staple, long-staple and filament yarns.There are also chapters on quality control and the economics of staple-yarn production. The final part of the book consists of a series of appendices which provide in-depth analysis of key topics with detailed technical data and worked examples which is an invaluable reference in itself for anyone concerned with the behaviour, performance and economics of a textile mill. Handbook of yarn production: technology, science and economics is a standard work for both yarn manufacturers and those researching and studying in this important area of the textile industry. A practical and authoritative new handbook for yarn manufacturing Shows how problems can arise and how to deal with them Includes invaluable technical data, calculations, worked examples and case studies

Process Control in Textile Manufacturing Abhijit Majumdar 2012-11-27 Complex raw materials and manufacturing processes mean the textile industry is particularly dependent on good process control to produce high and consistent product quality. Monitoring and controlling process variables during the textile manufacturing process also minimises waste, costs and environmental impact. Process control in textile manufacturing provides an important overview of the fundamentals and applications of process control

methods. Part one introduces key issues associated with process control and principles of control systems in textile manufacturing. Testing and statistical quality control are also discussed before part two goes on to consider control in fibre production and yarn manufacture. Chapters review process and quality control in natural and synthetic textile fibre cultivation, blowroom, carding, drawing and combing. Process control in ring and rotor spinning and maintenance of yarn spinning machines are also discussed. Finally part three explores process control in the manufacture of knitted, woven, nonwoven textiles and colouration and finishing, with a final discussion of process control in apparel manufacturing. With its distinguished editors and international team of expert contributors, Process control in textile manufacturing is an essential guide for textile engineers and manufacturers involved in the processing of textiles, as well as academic researchers in this field. Provides an important overview of the fundamentals and applications of process control methods Discusses key issues associated with process control and principles of control systems in textile manufacturing, before addressing testing and statistical quality control Explores process control in the manufacture of knitted, woven, nonwoven textiles and colouration and finishing, with a discussion on process control in apparel manufacturing

Polyolefin Fibres S. C. O. Ugbolue 2009 Polyolefins, such as polyethylene and polypropylene, are among the most widely used commercial polymers. These versatile fibers are durable, chemically resistant, lightweight, economical, and functional. This book provides researchers in materials, as well as product development specialists in industry and biomedical engineering with a comprehensive resource that will assist them with material improvement and product development. The first chapters discuss the structural and chemical properties of different types of polyolefins, as well as production methods. Other chapters delve into functionality improvement and address how polyolefins can be incorporated into specific industrial, medical, and automotive products.

Handbook of Medical Textiles V Bartels 2011-08-19 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

Identification of Textile Fibers M M Houck 2009-01-30 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 applicications 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 and Industrial Dyeing M Clark 2011-10-25 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

Functional Finishes for Textiles Roshan Paul 2014-10-20 Functional finishes for textiles reviews the most important fabric finishes in the textile industry. It discusses finishes designed to improve the comfort and other properties of fabrics, as well as finishes which protect the fabric or the wearer. Each chapter reviews the role of a finish, the mechanisms and chemistry behind the finish, types of finish and their methods of application, application to particular textiles, testing and future trends. Describes finishes to improve comfort, performance, and protection of fabric or the wearer Examines the mechanisms and chemistry behind different types of finishes and their methods of application, testing and future trends Considers environmental issues concerning functional finishes

Handbook of Textile Fibre Structure Stephen Eichhorn 2009-10-19 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

Handbook of Fire Resistant Textiles F. Selcen Kilinc 2013-05-15 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

Handbook of Textile Fibre Structure Stephen Eichhorn 2009-10-26 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

Handbook of Weaving Sabit Adanur 2020-03-05 A mixture of

science and art, weaving is nearly as old as human history. Despite the many technological advances in the field, however, it is still virtually impossible to control each individual fiber in a woven structure. To help you meet this and other weaving challenges, Handbook of Weaving covers every step of the process clearly and systemati