

## Advances In Apparel Production Woodhead Publishing Series In Textiles

In the textile industry, there is a pressing need for people who can facilitate the translation of creative solutions from designers into manufacturing language and data. The design technologist has to understand the elements and principles employed by designers and how these change for various textile media. One must also have a good understanding of the processes, materials and products for which the textile designer is required to produce creative solutions. This book will be for designers wishing to improve their technological knowledge, technologists wishing to understand the design process, and anyone else who seeks to work at this design-technology interface. Key Features:

- Provides a comprehensive information about textile production, apparel production and the design aspects of both textile and apparel production.
- Fills the traditional gap between design and manufacture changing with advanced technologies.
- Includes brief summary of spinning, weaving, chemical processing and garmenting.
- Facilitates translation of creative solutions from designers into manufacturing language and data.
- Covers set of workshop activities.

The development of digital textile printing at the end of the twentieth century has had a profound effect on the design, creation, use and understanding of textiles. This new technology - combined with advances in fabric and dye chemistry - has made it possible to produce complex images on fabric comprising millions of colours, quickly, inexpensively and in flexible quantities; a revolution that has led to a rapid increase in demand, which is predicted to rise still further. This book is the first to describe the historical and cultural context from which digital textile printing emerged, and to engage critically with the many issues that it raises: the changing role of the designer in the creation of printed textiles; the ways in which the design process is being transformed by new technology; the relationships between producers, clients and the textile industry; and the impact of digital printing on the wider creative industries. At the core of this study are two key questions: what constitutes authenticity in an age when printed textiles are created through the combined agency of the artist/designer and the computer? And how can this new technology be put to work in a sustainable way during a period of spiralling demand?

This major textbook is designed for students studying textiles and fashion at higher and undergraduate level, as well as those needing a comprehensive and authoritative overview of textile materials and processes. The first part of the book reviews the main types of natural and synthetic fibres and their properties. Part two provides a systematic review of the key processes involved first in converting fibres into yarns and then transforming yarns into fabrics. Part three discusses the range of finishing techniques for fabrics. The final part of the book looks specifically at the transformation of fabric into apparel, from design and manufacture to marketing. With contributions from leading experts in their fields, this major book provides the definitive one-volume guide to textile manufacture. Provides comprehensive coverage of the types and properties of textile fibres to yarn and fabric manufacture, fabric finishing, apparel production and fashion Focused on the needs of college and undergraduate students studying textiles or fashion courses Each chapter ends with a summary to emphasise key points, a comprehensive self-review section, and project ideas are also provided

Advances in Women's Intimate Apparel Technology discusses the design and manufacture of intimate apparel and how the industry is increasingly embracing novel materials, new technologies, and innovations in sizing and fit. The book reviews the ways in which new materials and methods are improving the range, function, and quality of intimate apparel, with particular focus on brassiere design. Part One introduces the advanced materials used for intimate apparel, including novel fabrics and dyes and finishes, along with materials for wiring and embellishments. Part Two discusses the role of seamless technology in intimate apparel production, covering lamination, moulding, and seamless knitting. Finally, Part Three reviews advances in design, fit, and performance. Provides systematic and comprehensive coverage on key trends in intimate apparel technology Presents chapters that follow a coherent sequence, beginning with advanced materials, then discussing new manufacturing techniques, and finishing with coverage of performance and fit Focuses on the needs of the apparel industry, covering materials, manufacturing, and design aspects Written by distinguished author and professor Winnie Yu who is the Director of the ACE Style Institute of Intimate Apparel at Hong Kong Polytechnic University

As consumer demands for specific attributes in their textiles increase and global competition intensifies, it is important that the industry finds ways of engineering certain performance requirements into textiles and apparel. This book reviews how fabrics and garments can be engineered to meet technical performance and other characteristics required for the specific end-use. Chapters begin with fabric and garment handle and making – up performance, followed by wear appearance issues, such as wrinkling, pilling and bagging. Further chapters include fabric and garment drape, durability related issues, as well as physiological and psychological comfort. Key topics of fire retardancy, waterproofing, breathability and ultraviolet protection are also discussed. Written by two highly distinguished authors, this is an invaluable book for a wide range of readers in the textile and apparel industries, ranging from textile and garment manufacturers, designers, researchers, developers to buyers. Reviews the engineering of fabrics to meet technical performance requirements for specific end-use Chapters examine various wear appearance issues such as wrinkling, bagging and fabric and garment drape Discusses durability related issues including fire retardancy and waterproofing as well as psychological and physiological fabric comfort

Applications of Biotechnology for Sustainable Textile Production is a practical guide to the fundamentals, methods, and future prospects for sustainable biotechnological and nanobiotechnological approaches to textile production. The textile industry is highly motivated to reduce its use of natural resources, reduce waste, and cost. Processes such as dyeing, printing and finishing fabrics traditionally require a lot of water and can produce hazardous wastes as a by-product. In order to help improve these processes, this book evaluates different technologies, comparing them as ways of saving water, energy, material waste, and time, in addition to the reduction of wastewater and sludge. Technologies investigated include enzymatic treatments, ultrasonic treatments, advanced cotton fiber pre-treatment to increase dye receptivity, nano-biotechnology, plasma technology, and foam technology in the finishing process. Health risk assessments and complications resulting from usage of chemicals and other traditional processing technologies are also examined. Addresses all five main stages of textile processing, including pre-treatment, dyeing, finishing, drying, and quality control Provides an overview of the techno-economic context of the modern textile industry, explaining where sustainability fits with other priorities Includes case studies throughout showing how these methods can be used for sustainable textile production

Costing for the Fashion Industry is a practical, easy-to-use guide to the manufacture, sourcing and risk management methods essential to make a new fashion business venture financially viable. Each chapter focuses on a theme, such as entrepreneurship, time constraints, global awareness and new markets and sourcing, alongside practical exercises and detailed industry case studies to put the theory into context. This second edition explores capital investment decisions, the changing nature of cost and the importance of global awareness and new markets, as well as expanded coverage of internationalization strategies for SMEs.

Practitioners in apparel manufacturing and retailing enterprises in the fashion industry, ranging from senior to front line management, constantly face complex and critical decisions. There has been growing interest in the use of artificial intelligence (AI) techniques to enhance this process, and a number of AI techniques have already been successfully applied to apparel production and retailing. Optimizing decision making in the apparel supply chain using artificial intelligence (AI): From production to retail provides detailed coverage of these techniques, outlining how they are used to assist decision makers in tackling key supply chain problems. Key decision points in the apparel supply chain and the fundamentals of artificial intelligence techniques are the focus of the opening chapters, before the book proceeds

to discuss the use of neural networks, genetic algorithms, fuzzy set theory and extreme learning machines for intelligent sales forecasting and intelligent product cross-selling systems. Helps the reader gain an understanding of the key decision points in the apparel supply chain Discusses the fundamentals of artificial intelligence techniques for apparel management techniques Considers the use of neural networks in selecting the location of apparel manufacturing plants

An increasingly important feature across the technical textile industry is to produce textiles faster and to have more effective new product development (NPD). New product development in textiles: Innovation and production not only provides a fascinating overview of how products are launched, but is also a source of practical guidance for developing textile products successfully. Part one provides a general overview of innovation and textile product development that introduces the reader to the principles of developing and defining new products. Part two goes on to discuss a collection of international studies from across the textile industry. Chapters describe actual new product development projects, identifying the problems that were faced and what can be learnt from these projects, such as customer co-creation and methods for reducing the risk in NPD. Topics range from technical textiles and apparel to the end uses of textiles used within the automotive and packaging industries. With its distinguished editor and international team of expert contributors New product development in textiles: Innovation and production is an essential guide for academics and textile development professionals worldwide, in sectors ranging from design, production and marketing through to management. Provides a fascinating overview of how products are launched A source of practical guidance for developing textile products successfully Covers topics from technical textiles and apparel to the end uses of textiles used within the automotive and packaging industries

Garment Manufacturing Technology provides an insiders' look at this multifaceted process, systematically going from design and production to finishing and quality control. As technological improvements are transforming all aspects of garment manufacturing allowing manufacturers to meet the growing demand for greater productivity and flexibility, the text discusses necessary information on product development, production planning, and material selection. Subsequent chapters covers garment design, including computer-aided design (CAD), advances in spreading, cutting and sewing, and new technologies, including alternative joining techniques and seamless garment construction. Garment finishing, quality control, and care-labelling are also presented and explored. Provides an insiders look at garment manufacturing from design and production to finishing and quality control Discusses necessary information on product development, production planning, and material selection Includes discussions of computer-aided design (CAD), advances in spreading, cutting and sewing, and new technologies, including alternative joining techniques and seamless garment construction Explores garment finishing, quality control, and care labelling

Sustainable Technologies for Fashion and Textiles combines the latest academic research and industrial practices to shed light on a wide range of activities that influence how the textiles industry affects the natural environment. Pressure from regulators, customers and other stakeholders has pressed companies to translate general sustainability concepts and ideas into business practices. This is leading to improvements in how the industry consumes water, electricity and chemicals, and to a reduction in the amount of waste generated by textile processes. This book groups approaches to these topics under four themes, fiber, yarn and fabric production, chemical processing, garment manufacturing and recycling. Addresses sustainability challenges that occur throughout the supply chain, from the sourcing of raw materials, to recycling finished products Provides introductions to sustainability—both in general and within the textiles industry—making this topic accessible for readers of all backgrounds Compares the advantages and disadvantages of different approaches to sustainability, helping readers avoid pitfalls when devising their own strategies

FLINS, originally an acronym for Fuzzy Logic and Intelligent Technologies in Nuclear Science, is now extended to include Computational Intelligence for applied research. The contributions to the 12th of FLINS conference cover state-of-the-art research, development, and technology for computational intelligence systems, both from the foundations and the applications points-of-view.

This book offers a practical, easy-to-use approach to costing for the fashion industry for general fashion students who lack any accounting experience.

This book aims to provide a broad conceptual and theoretical perspective of apparel manufacturing process starting from raw material selection to packaging and dispatch of goods. Further, engineering practices followed in an apparel industry for production planning and control, line balancing, implementation of industrial engineering concepts in apparel manufacturing, merchandising activities and garment costing have been included, and they will serve as a foundation for future apparel professionals. The book addresses the technical aspects in each section of garment manufacturing process with considered quality aspects. This book also covers the production planning process and production balancing activities. It addresses the technical aspects in each section of garment manufacturing process and quality aspects to be considered in each process. Garment engineering questions each process/operation of the total work content and can reduce the work content and increase profitability by using innovative methods of construction and technology. This book covers the production planning process, production balancing activities, and application of industrial engineering concepts in garment engineering. Further, the merchandising activities and garment costing procedures will deal with some practical examples. This book is primarily intended for textile technology and fashion technology students in universities and colleges, researchers, industrialists and academicians, as well as professionals in the apparel and textile industry.

The book includes the Proceedings of the Artificial Intelligence on Fashion and Textiles conference 2018 which provides state-of-the-art techniques and applications of AI in the fashion and textile industries. It is essential reading for scientists, researchers and R&D professionals working in the field of AI with applications in the fashion and textile industry; managers in the fashion and textile enterprises; and anyone with an interest in the applications of AI. Over the last two decades, with the great advancement of computer technology, academic research in artificial intelligence (AI) and its applications in fashion and textile supply chain has been becoming a very hot topic and has received greater attention from both academics and industrialists. A number of AI-related techniques has been successfully employed and proven to handle the problems including fashion sales forecasting, supply chain optimization, planning and scheduling, textile material defect detection, fashion and textile image recognition, fashion image and style retrieval, human body modeling and fitting, etc.

The never-ending global search for a country with a low labour wage is almost bottoming out. The so-called labor-oriented apparel manufacturing industry is poised to change. Due to fierce global pressure on reducing price and lead time, the textiles and apparel producers will have to banish all waste from their supply chain. Lean manufacturing which removes waste and smoothens the process flow is gaining popularity among textiles and apparel producers and will be a key element for the survival of the industry in the years ahead. An overview of various lean tools with a balanced mix of conceptual knowledge and practical applications in the context of apparel manufacturing Valuable industry information which managers and engineers can follow themselves without the need to hire outside consultants Case studies and examples from apparel manufacturing demonstrating how lean tools are being used successfully by leading organizations; an academician's delight Possible use cases of several lean tools having potential use in the apparel manufacturing scenario

Advances in Apparel Production Elsevier

The basic concepts behind sizing systems currently used in the manufacture of ready-to-wear garments were originally developed in the 19th century. These systems are

frequently based on outdated anthropometric data, they lack standard labelling, and they generally do not accommodate the wide variations of body sizes and proportions that exist in the population. However, major technological improvements have made new population data available worldwide, with the potential to affect the future of sizing in many ways. New developments in computer-aided design and sophisticated mathematical and statistical methods of categorizing different body shapes can also contribute to the development of more effective sizing systems. This important book provides a critical appreciation of the key technological and scientific developments in sizing and their application. The first chapter in the book discusses the history of sizing systems and how this has affected the mass production of ready-to-wear clothing. Chapters two and three review methods for constructing new and adapting existing sizing systems, and the standardisation of national and international sizing systems. Marketing and fit models are reviewed in chapter four whilst chapter five presents an analysis of the grading process used to create size sets. Chapters six and seven discuss fit and sizing strategies in relation to function, and the communication of sizing. Mass customization and a discussion of material properties and their affect on sizing are addressed in chapters eight and nine. Military sizing and the aesthetics of sizing are detailed in chapters ten and eleven. The final chapter reviews the impact on sizing of production systems and specifications. Written by an international team of contributors, this book is an essential reference to researchers, designers, students and manufacturers in the clothing and fashion industry. Provides a critical appreciation of key technological and scientific developments in sizing and their application Discusses how developments in sizing affect the mass production of ready to wear clothing Reviews methods of constructing new and adapting existing sizing systems

Denim: Manufacture, Finishing and Applications provides exhaustive coverage of denim manufacture, jeans washing, novel applications and environmental impacts. It also contains information on the history and social influence of denim, and includes the details relevant to the fashion and apparel industry. The topics covered are comprehensive with contributions from experts the world over, and the book is offered as an authentic reference book for any relevant information on denim. Provides a thorough review of denim manufacturing and jeans washing technologies Includes details relevant to the fashion and apparel industry while maintaining a high level of technological content on spinning, dyeing, weaving, garments, washing, finishing and other applications Includes several contributions from industry experts

Apparel production is a complex process often involving an international supply chain which must respond rapidly to the changing needs and tastes of consumers. This important book discusses the technological improvements which are transforming the speed, flexibility and productivity of the industry. The first part of the book reviews advances in apparel design. There are chapters on modelling fabric and garment drape, computer-aided colour matching, yarn design and pattern making. Other chapters discuss key issues in apparel sizing and fit, and the role of 3-D body scanning in improving garment fit and design. The second part of the book surveys advances in production, beginning with product development before looking at advances in knitting, sewing, printing, finishing and fabric inspection. With its distinguished editor and international team of contributors, Advances in apparel production is a standard work for those researching and working in this important industry. Discusses the technological improvements transforming the speed, flexibility and productivity of the industry Examines computer aided colour matching, garment drape and yarn design Explores key issues in apparel sizing and fit, the role of three-dimensional body scanning in improving garment fit and design

High-Performance Apparel: Materials, Development, and Applications covers the materials and techniques used in creating high-performance apparel, the technical aspects of developing high-performance garments, and an array of applications for high-performance clothing and wearable technology. Part One covers fabric construction for high-performance garments, from fiber types and spinning methods, to weaving, knitting, finishing, and joining techniques. Development of high-performance apparel is covered in Part Two, with particular emphasis on design and product development for function and wearer comfort. Part Three covers a range of applications and wearable technology that make use of high-performance apparel, including chapters on sportswear, protective clothing, and medical, military, and intelligent textiles. The book provides an excellent resource for all those engaged in garment development and production, and for academics engaged in research into apparel technology and textile science. Offers a range of perspectives on high-performance apparel from an international team of authors with diverse expertise Provides systematic and comprehensive coverage of the topic from fabric construction, through apparel design and development, to the range of current and potential applications Presents an excellent resource for all those engaged in garment development and production, and for academics engaged in research

Waterproof and Water Repellent Textiles and Clothing provides systematic coverage of the key types of finishes and high performance materials, from conventional wax and silicone, through controversial, but widely used fluoropolymers and advanced techniques, such as atmospheric plasma deposition and sol-gel technology. The book is an essential resource for all those engaged in garment development, production and finishing, and for academics engaged in research into apparel technology and textile science. Rapid innovation in this field is driving new performance demands in many areas, including the sporting and military sectors. However, another innovation driver is the regulatory framework in the USA, Europe and globally, addressing both health concerns (e.g. with PFOS / PFOA) and environmental impacts (e.g. C8 fluorocarbon finishes). Both of these aspects are fully covered, along with the replacement materials / technologies currently available and under development. In addition, oleophobic and multifunctional coatings are discussed, as are aspects of performance, testing and applications in sportswear, protective clothing, and footwear. Introduces innovative materials and technologies, exploring their current and potential use across different sectors Provides expert guidance on the health and environmental aspects of key waterproof materials and coatings and their associated regulations Demystifies testing processes and design principles

Latest Material and Technological Developments for Activewear provides comprehensive coverage of academic research and industrial advances in this fast-moving field. As society becomes more health conscious, athleisure and sportswear have arrived as key fashion items in the global apparel market. In this book, designers and material scientists will find information on fibers and textiles, new processes, emerging technologies, and new applications that have helped to deliver this new wave of products. In addition to these technical details, the book covers consumer behavior, along with product design and manufacturing. Provides the detailed technical information needed to choose the correct material for demanding activewear products Identifies and analyzes emerging global trends in the activewear industry Covers the latest best practices that help designers create functional, comfortable and fashionable activewear Meets the requirements and standards of the apparel and fashion industry Explores emerging applications of wearable electronics and smart activewear

The intimate apparel business is undergoing major technological change. New measurement and design techniques, combined with innovative materials and production methods, are transforming the range, quality and applications of women's lingerie. This important book provides an authoritative review of these developments After an introductory chapter on the concept of body beauty, a first group of chapters discuss innovations in the manufacture of brassieres, including developments in breast measurement and sizing, innovations in bra design and improvements in bra pattern technology. The following sequence of chapters reviews key developments in girdles. Topics discussed include innovations in girdle design and use and research on the physiological effects of body shapers. The book concludes by assessing developments in intimate apparel with special functions such as sports bras, and innovation in knitted and seamless intimate apparel. Innovation and technology of women's intimate apparel is a standard reference for designers and engineers working in this important area of the textile industry. Reviews the technological and innovative developments of ladies intimate apparel Describes the research principles and scientific understandings of size, materials, pattern and fit to achieve functional and technical design Written by leading experts in the field Computer technology has transformed textiles from their design through to their manufacture and has contributed to significant advances in the textile industry. Computer technology for textiles and apparel provides an overview of these innovative developments for a wide range of applications, covering topics including structure and defect analysis, modelling and simulation, and apparel design. The book is divided into three parts. Part one provides a review of different computer-based technologies suitable for textile materials, and includes chapters on computer technology for yarn and fabric structure analysis, defect analysis and measurement. Chapters in part two discuss modelling and simulation principles of fibres, yarns, textiles and garments, while part three concludes with a review of computer-based technologies specific to apparel and apparel design, with themes ranging from 3D body scanning to the teaching of computer-aided design to fashion students. With its distinguished editor and international team of expert contributors, Computer technology for textiles and apparel is an invaluable tool for a wide range of people involved in the textile industry, from designers and manufacturers to fibre scientists and quality inspectors. Provides an overview of innovative developments in computer technology for a wide range of applications Covers structure and defect analysis, modelling and simulation and apparel design Themes range from 3D body scanning to the teaching of computer-aided design to fashion students

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

The textile industry is focused in its search for alternative green fibres with the aim of providing high-quality products which are fully recyclable and biodegradable. Natural textile materials from renewable sources play an increasingly important role in the industry due to their unique properties and functionality over synthetic fibres, as well as their sustainability. Fundamentals of Natural Fibres and Textiles covers all the fundamental and basic information about natural fibres and textiles. Many different fibres are covered from their origin, through processing, properties, and applications. The latest methods for characterisation and testing of natural fibres are all addressed with reference to cutting-edge industry trends. This uniquely comprehensive approach to the topic provides the ideal entry point to natural fibres for textile and clothing scientists, engineers, designers, researchers, students, and manufacturers of such products. Explains the characteristics of natural fibres to show how they compare to synthetic fibres for a range of purposes Provides an overview of the environmental impact of the processing of fibres and how this creates industrial waste Covers a wide range of natural fibres in detail, from traditional silk and wool to electrospun biopolymers Provides the latest updates on technologies for designing natural fibres and applying them to the development of new products

The processes of modern clothing manufacture are explained here, alongside the equipment used. Latest developments are described as well as established methods. Manual, mechanised and automated processes are explained and their comparative advantages for certain purposes are considered as well as the applications of computer control and

robotics. The Fourth Edition has been updated throughout to reflect advances in technology and a new chapter is now devoted to colour management and colour technology (including a colour section for the first time). There is a new chapter on trouble-shooting in the sewing room, giving practical solutions to common problems. Other significant additions are alternative methods of joining materials (ultrasonics, RF welding and moulding) and new developments in the traditional areas of garment and machinery technology. Students in clothing and fashion as well as garment technologists in the clothing industry will find this an invaluable resource in their increasingly complex role. This book describes rubber nanocomposites and their applications in the automobile sector. Newly developed nanofibres and nanofinished textiles, with their novel characteristics and various applications in next-generation automobiles, are also discussed. Lastly, a comprehensive evaluation and overview of the impact of nanotechnology on the textiles in automobile industries are presented.

This book provides ergonomic principles of times, machines, production space, materials and organization, within contemporary demands of the international fashion industry. It presents the analysis of planning, layout and logistics in the production of clothing as key parameters of strategic and operating management. The book also discusses tools for control as well as methods for determining the time of technological operations are described, which can be useful not only to beginners, but also to professionals experienced in this field.

The era of mass manufacturing of clothing and other textile products is coming to an end; what is emerging is a post-industrial production system that is able to achieve the goal of mass-customised, low volume production, where the conventional borders between product design, production and user are beginning to merge. To continue developing knowledge on how to design better products and services, we need to design better clothing manufacturing processes grounded in science, technology, and management to help the clothing industry to compete more effectively. Design of clothing manufacturing processes reviews key issues in the design of more rapid, integrated and flexible clothing manufacturing processes. The eight chapters of the book provide a detailed coverage of the design of clothing manufacturing processes using a systematic approach to planning, scheduling and control. The book starts with an overview of standardised clothing classification systems and terminologies for individual clothing types. Chapter 2 explores the development of standardised sizing systems. Chapter 3 reviews the key issues in the development of a garment collection. Chapters 4 to 7 discuss particular aspects of clothing production, ranging from planning and organization to monitoring and control. Finally, chapter 8 provides an overview of common quality requirements for clothing textile materials. Design of clothing manufacturing processes is intended for R&D managers, researchers, technologists and designers throughout the clothing industry, as well as academic researchers in the field of clothing design, engineering and other aspects of clothing production. Considers in detail the design of sizing and classification systems Discusses the planning required in all aspects of clothing production from design and pattern making to manufacture Overviews the management of clothing production and material quality requirements

Sustainability is an issue that increasingly concerns all those involved in the apparel industry, including textile manufacturers, apparel designers, retailers and consumers. This important book covers recent advances and novel technologies in the key areas of production, processing and recycling of apparel. Part One addresses sustainable finishing and dyeing processes for textiles. The first two chapters concentrate on the environmental impact of fabric finishing, including water consumption, emissions and waste management. Further chapters focus on plasma and enzymatic treatments for sustainable textile processing, and the potential for improving the sustainability of dyeing technologies. Part Two covers issues of design, retail and recycling, and includes discussions of public attitudes towards sustainability in fashion, methods of measuring apparel sustainability and social trends in the re-use of apparel. Reviews sustainable finishing and dyeing processes for textiles Addresses social attitudes towards and methods for measuring sustainability in the apparel industry and retail sectors Covers recycling of apparel

Automation in Garment Manufacturing provides systematic and comprehensive insights into this multifaceted process. Chapters cover the role of automation in design and product development, including color matching, fabric inspection, 3D body scanning, computer-aided design and prototyping. Part Two covers automation in garment production, from handling, spreading and cutting, through to finishing and pressing techniques. Final chapters discuss advanced tools for assessing productivity in manufacturing, logistics and supply-chain management. This book is a key resource for all those engaged in textile and apparel development and production, and is also ideal for academics engaged in research on textile science and technology. Delivers theoretical and practical guidance on automated processes that benefit anyone developing or manufacturing textile products Offers a range of perspectives on manufacturing from an international team of authors Provides systematic and comprehensive coverage of the topic, from fabric construction, through product development, to current and potential applications

Understanding the techniques for joining fabrics together in a way that considers durability, strength, leak-tightness, comfort in wear and the aesthetics of the joints is critical to the production of successful, structurally secure fabric products. Joining textiles: Principles and applications is an authoritative guide to the key theories and methods used to join fabrics efficiently. Part one provides a clear overview of sewing technology. The mechanics of stitching, sewing and problems related to sewn textiles are discussed, along with mechanisms of sewing machines and intelligent sewing systems. Part two goes on to explore adhesive bonding of textiles, including principles, methods and applications, along with a review of bonding requirements in coating and laminating of textiles. Welding technologies are the focus of part three. Heat sealing, ultrasonic and dielectric textile welding are covered, as are laser seaming of fabrics and the properties and performance of welded or bonded seams. Finally, part four reviews applications of joining textiles such as seams in non-iron shirts and car seat coverings, joining of wearable electronic components and technical textiles, and the joining techniques involved in industrial and medical products including nonwoven materials. With its distinguished editors and international team of

expert contributors, *Joining textiles* is an important reference work for textile product manufacturers, designers and technologists, fibre scientists, textile engineers and academics working in this area. Provides an authoritative guide to the key theories and methods used to efficiently join fabrics Discusses the mechanics of stitching and sewing and problems related to sewn textiles, alongside mechanisms of sewing machines, and intelligent sewing systems Explores adhesive bonding of textiles, including principles, methods and applications, along with a review of bonding requirements in coating and laminating of textiles

This book provides a critical overview of technologies that are used within the fashion industry and supply chain, with a special emphasis on how they engender sustainability and the circular economy. The chapters present contemporary case studies alongside new research on technologies such as 3D printing, 3D scanning and recycling technology to assess the effect they will have on the future of fashion and its global supply chain.

Advances in technology, combined with the ever-evolving needs of the global market, are having a strong impact on the textile and clothing sector. The global textile and clothing industry: Technological advances and future challenges provides an essential review of these changes, and considers their implications for future strategies concerning production and marketing of textile products. Beginning with a review of trends in the global textile industry, the book goes on to consider the impact of environmental regulation on future textile products and processes. Following this, the importance of innovation-driven textile research and development, and the role of strategic technology roadmapping are highlighted. Both the present structure and future adaptation of higher education courses in textile science are reviewed, before recent advances in textile manufacturing technology, including joining techniques, 3D body scanning and garment design and explored in depth. Finally, The global textile and clothing industry concludes by considering automating textile preforming technology for the mass production of fibre-reinforced polymer (FRP) composites. With its distinguished editor and international team of expert contributors, *The global textile and clothing industry: Technological advances and future challenges* is an essential guide to key challenges and developments in this industrial sector. Comprehensively examines the implications of technological advancements and the evolving needs of the global market on the textile and clothing industry and considers their role on the future of textile manufacturing The importance of innovation-driven textile research and development and the role of strategic technology roadmapping are thoroughly investigated Recent advances in textile manufacturing technology, including joining techniques, 3D body scanning and garment design and explored in depth

In organizations today, knowledge on how to manage in a green environment is of a particular emphasis and is an important discussion topic amongst academics, researchers, and managers. Undertakings such as sustainability, not only in an environmental perspective but also in an organizational perspective; recycling; re-use; low costs; waste reduction; and high productivity are only some, among many others, that require a break in traditional management paradigms. Present organizations need to be managed with different models where innovation and change are key words as they drive the organization to success. At this level, green management appears as a new way to manage and understand organizations, making them more strategic and competitive in the markets where they are and where they will be in the future. *Advances in Intelligent, Flexible, and Lean Management and Engineering* introduces the newest models, theories, and tools along with the practices, policies, and strategies for management and engineering. This book reflects on the experiences and thoughts about the state-of-the-art research in the green management and engineering fields, as well as the future direction of this scope of research. It covers important topics such as green transformational leadership, artificial intelligence, production models, sustainable factories, and more. This book is an essential resource tool for engineers, executives, managers, economists, practitioners, researchers, academicians, and students looking for information on the advances in management and engineering for businesses.

Today, we are living in the New Space Age, where mass commercial space travel is almost within our grasp. This otherworldly possibility has opened up new cultural images of space, both real and fictional, and has caused fashion design and spacesuit engineering to intersect in new, exciting ways. *Spacewear* traverses this uncharted territory by exploring the changing imagination of space in fashion-and fashion in space-from the first Space Age to the 21st century. Exploring how space travel has stylistically and technologically framed fashion design on earth and how we need to revisit established design practices for the weightless environment, *Spacewear* connects the catwalk and the space station. This book draws together speculative fantasies in sci-fi films such as *Star Trek* and *2001: A Space Odyssey*, with the engineered spacesuits *Biosuit*, and the NASA Z-2 and with catwalk interpretations by the likes of Alexander McQueen, Hussein Chalayan, André Courrèges, and Iris van Herpen. While the development of commercial space agencies has led to new concerns for style in garments for outer space that re-think fundamental design principles such as drape, high fashion has experimented with new possibilities for weightlessness that extend far beyond the 1960s vision of Space Age metallic fabrics and helmet-style headwear. *Brownie* takes the reader on a fascinating journey from fantasy to function and to form, deepening our understanding of this new category of fashion that is prompting new approaches to garment design and construction both on earth and in outer space.

*Advanced Knitting Technology* provides complete coverage of the latest innovations and developments in knitting technology, including emerging methods as well as the latest best practice for classical processes. Many technologies can be used for the production of cloth such as weaving, knitting, nonwoven, and braiding. Knitting methods are being selected for a growing range of applications due to the spectacular properties of knitted fabric, such as softer tactile quality, higher stretchability, bulkiness, and functional properties that compare favorably with other woven fabrics. Beyond the well-known apparel applications, specially designed knitted structures are uniquely suitable for high performance applications like reinforcement for composites, medical implants, and geotextiles. This book presents recent advances in knitting technology, including structures, properties and applications of knitted fabrics in modern apparel, activewear, composites, medical textiles, and geotextiles. With reference to the latest industry practice, testing, quality and process control methods for knitting technologies are discussed. *Advanced Knitting Technology* covers recent advances in knitting technology, properties and performance of knitted structures, their applications in apparel and technical fields. Provides detailed and practical instructions for the sustainable production of knitted textiles, including sustainable chemical processing natural dyeing processes, and sustainability analysis methods Draws on the latest research to discuss the future of knitted apparels and high-tech applications of knitted structures as technical textiles Explores the latest applications of AI and machine learning to the knitting process

The garment manufacturing industry faces many global challenges due to various factors including competition, increased production costs, less productivity/efficiency and labor attribution. So, there is a need to focus and concentrate on identifying the real issues, taking corrective actions suited to the specific industrial centre of the unit, empowering the technical and managerial staff by enhancing their knowledge and ability, analysing orders efficiently and deciding whether actions are viable for the company. Industrial engineering in apparel production reviews the techniques for internal correction and openness for a knowledge/technology approach that needs to be built into the mind of the faculties to be upgraded as system run, rather than people run. The author emphasizes that the industrial engineering concept needs to be imparted to the facilities to increase productivity. With its highly distinguished author, Industrial engineering in apparel production is a valuable reference for students, researchers, industrialists, academics and professionals in the clothing and textile industry.

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