

Process Control In Spinning Atira Fagity

With special reference to India.

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

This book is designed to provide a platform for the critical evaluation of deficits of classical cotton yarn engineering approach and how they were overruled by the development of today's ANN based scientific approach. Legendary ring spinning process is kept as a reference and various technological changes undergone by the different sectors of the yarn engineering system are elaborated. The entire book is divided into ten chapters. The opening chapter briefs on varieties of textile fibers available and amongst them identifies the significance of cotton fiber for the textile industry. It also covers up ring spinning pattern along with constraints handled due to natural fiber variations in transitory way. Artificial Neural Networking (ANN) is the upcoming software technique to replace Biological Neural Network (Human brain) for accurate resolution of complex problems, fifth chapter remits on this technology.

The Book is based on the latest technology involved in textile industry. It contains processes of textile spinning, weaving, finishing and printing. The book is very useful to the research scholars, technocrats, entrepreneurs, textile mill owners, their production and quality management officers etc.

A Straightforward Text Summarizing All Aspects of Process Control Textile manufacturing is one of the largest industries in the world, second only to agriculture. Spinning covers a prominent segment in textile manufacturing, and this budding industry continues to thrive and grow. Process Management in Spinning considers aspect of process management, and offers insight into the process control procedures and methods of spinning. Focusing on the technology as well as the management of the process, it examines both the economic and technological advancements currently taking place in the spinning industry. This text takes a close look at the advancing technology in manufacturing and process, and product quality control. It provides a basic overview of the subject, and also presents applications of this technology for practicing engineers. Incorporates Industry-Based, Real-World Examples The book contains 15 chapters that specifically address the stages of process control, energy management methods, humidification and ventilation systems basics, pollution management, process management tools, productivity, waste control, material handling, and other aspects of spinning mills. It also includes real-time case studies involving typical problems that arise in spinning processes and strategies used to contain them. The author provides a broad outlook on various topics including mixing, winding, raw material and optimizing raw material properties, bale management, yarn engineering systems, processing, and process management systems. He also details the defects associated with each and every process with causes, effects, and control measures. The book addresses process management as it relates to productivity, quality, and costs, as well as process control as it relates to man, machine, and material. Provides the scientific method for optimization/optimizing the properties of the fibers Familiarizes the reader with remedial measures to enhance the quality of the product Addresses productivity measurement and its role in controlling the cost of the manufacturing process Contains detailed examples, as well as linear programming and optimization techniques, and statistical applications Covers the areas of process control methods in spinning, defect analysis and rectification, improving productivity and quality, and using statistical tools Process Management in Spinning establishes the various process management measures required to help improve the process efficiency in spinning mills and the textile industry overall. Aimed at professionals in the textile industry, this text is a perfect resource for textile engineers/technologists/manufacturers, spin quality control engineers, spin quality assurance personnel, and other industry professionals.

Written a leading expert, 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 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 with more detailed technical data and worked examples, providing in-depth analysis of key topics. The book outlines the concepts of raw material selection, control of various process parameters in the preparatory processes like blow room, carding, combing preparatory and comber to optimize the process conditions, and analysis and interpretation of various types of test reports to find out the source of fault.

This book describes the purpose, functions, activities, and the care to be taken at different processes of a cotton spinning mill. The language is kept as simple as possible so that everyone can read and refer to it. The author hopes that the industry shall benefit from this book. Apart from dealing with the technology related activities for cotton spinning, the book also covers other related aspects such as monitoring humidity, assuring safety, maintenance practices, and man power requirements.

Soft computing refers to a collection of computational techniques which study, model and analyse complex phenomena. As many textile engineering problems are inherently complex in nature, soft computing techniques have often provided optimum solutions to these cases. Although soft computing has several facets, it mainly revolves around three techniques; artificial neural networks, fuzzy logic and genetic algorithms. The book is divided into five parts, covering the entire process of textile production, from fibre manufacture to garment engineering. These include soft computing techniques in yarn manufacture and modelling, fabric and garment manufacture, textile properties and applications and textile quality evaluation. Covers the entire process of textile production, from fibre manufacture to garment engineering including artificial neural networks, fuzzy logic and genetic algorithms Examines soft computing techniques in yarn manufacture and modelling, fabric and garment manufacture Specifically reviews soft computing in relation to textile properties and applications featuring garment modelling and sewing machines

Process Control in Spinning Process Control and Yarn Quality in Spinning CRC Press

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