106-E, Kamla Nagar, New Delhi-110007, India.
Tel: 91-11-23843955, 23845654, 23845886, +918800733955
Mobile: +91-9811043595

Email: npcs.ei@gmail.com, info@entrepreneurindia.co
Website: www.entrepreneurIndia.co

Woollen Spinning, Weaving, Knitting, Dyeing, Bleaching and Printing Technology Handbook

Code: NI215	Format: paperback
Indian Price: ₹1100	US Price: \$125
Pages: 496	ISBN: 9788178331171
Publisher: Asia Pacific Business Press Inc.	

Description

Spinning is a major industry; it is part of the textile manufacturing process where three types of fibre are converted into yarn, then fabric, then textiles. The textiles are then fabricated into clothes or other artifacts. The fundamental operations for the stocks of fibers from which a woollen yarn is made are opening, cleaning, mixing, forming a slubbing or roving and finally thinning the roving to the required yarn number and twisting it to produce a yarn possessing the requirements for subsequent processing such as warping, winding, weaving, finishing and dyeing. These demands vary with the different conditions confronted in manufacturing but include the following features: strength, elasticity, uniformity in weight per unit length and even distribution of twist. Woollen spinning involves three principal operations, irrespective of whether the mule or the frame or ring spinner is used, namely: Drafting, final drawing out, Twisting, or insertion of twist, Winding on, or packaging. Weaving constitutes the actual production of cloth or fabric, i.e., to combine the essentially one dimensional textile structure thread or yarn in such a way as to result in an essentially two dimensional structure of cloth of certain appearance, hand and strength. Knitting is the art and science of constructing a fabric by inter lacing loops, there are two types of knitting: warp and weft knitting. In recent years whole new classes of dyes such as fiber reactive, disperse, cationic basic, neutral dying premetalized have been discovered and produced for the dyeing of the natural and new synthetic, hydrophobic fibers. Bleaching improves whiteness by removing natural coloration and remaining trace impurities from the cotton; the degree of bleaching necessary is determined by the required whiteness and absorbency. Cotton being a vegetable fibre will be bleached using an oxidizing agent, such as dilute sodium hypochlorite or dilute hydrogen

peroxide. If the fabric is to be dyed a deep shade, then lower levels of bleaching are acceptable, for example. However, for white bed sheetings and medical applications, the highest levels of whiteness and absorbency are essential. Wool fiber production technology necessitates full understanding of its growth, pristine structure, physical, chemical and functional properties as well as processes involving manufacture of textile fibers.

Some of the fundamentals of the book are woollen spinning, atmospheric conditions in wool manufacturing, Bradford system top gilling or top finishing, the principle of weaving, woollen and worsted weaves, knitting, the changing outlook of the knitting industry, influence of fiber fineness on quantity of dye required, altering the affinity of the wool fiber for dyes, dyeing of yarn according to the packing system, special wool finishes, water repellent, stain resistant treatments for worsted and woollen fabrics, the printing of wool piece goods, lustering of wool fabrics, fluorochemicals, mothproofing etc.

The present book is of its own kind which covers woollen spinning; knitting, dyeing, bleaching and printing, special wool finishes etc. This is an important reference book for wool technologists, scientists, new entrepreneurs, research scholars and all others related to this field.

Content

1. WOOLLEN SPINNING

Mule Spinning

The Self-acting Mule

The Operations of Mule Spinning

General Mechanical Details

Production of a Mule

Standspinner

Woollen Ring Frame Spinning

Reduced Balloonâ€"Balloonless Spinning

Main Technical Data

Twisting or Yarn Folding

Woollen Yarn Calculations

Woollen Yarns

Yarn Number and Wool Grade

Yarn Strength

Wool Blends with Man-made Fibers

Atmospheric Conditions in Wool Manufacturing

2. WORSTED TOPMAKING

Worsted Carding

Geelong Converter

Backwashing

Dryers

Top Steaming and Aging

Oiling

Gilling or Preparing

Worsted Combing

Combs and Combing

Bradford Worsted Combing

Principle of Combing

Punch or Ball Winding

Operation of the Noble Comb

Parts of the Noble Comb

Production of Noble Comb

Control of Noble Combing

Bradford System Top Gilling or Top Finishing

Can Gillbox or Conditioner

Top Gillbox or Top Baller

French Worsted Combing

Working Principle of the French Comb

French Finish Gilling

Noils

Amount and Type of Noils

Tow-to-Top Conversion Systems

Strerch-breaking Methods

Cutting Methods

3. THE PRINCIPLE OF WEAVING

The Essential Motions of a Loom

Details of Principal Components of Weaving Machinery

Shedding or Harness Motion

Let-off Motion

The Take-up Motion

Full Width Temples

Picking Motion

The Shuttle

Automatic Stop Motions and Controls

Warp Stop Motions

Weft Stop Motion

Protection Stop Motions

Weft Pirn Feeler Devices

Box Motion

Automatic Filling Replenishment and Multi-colour Weaving

Box Loader System

Unifil

Pirnless Weaving

The Sulzer Weaving Machine

Other Development in Weaving Machines

4. WOOLLEN AND WORSTED WEAVES

Methods of Describing Weaves

Use of Design Paper

The Plain Weave

Derivatives of the Plain Weave

The Twill Weave

Balanced or Even Twills

Effect of Yarn Twist on Twill

Steep and Reclining Twills

Pointed and Herringbone Twills

Broken or Reversed Twills

Corkscrew Twills

Inter-locking and Offset Twills

Undulating Twills

Diversified, Combination, and Fancy Twills

The Satin Weave

The Crepe Weaves

The Bedford and other Corded Weaves

Backed and Double Cloths

Filling-backed Cloths

Warp-backed Cloths

Double Cloths

Montagnacs, Chinchillas, and Felts

Triple Cloths

Plushes and Velvets

Filling Plushes

Warp Plushes

Practical Fundamentals of Fabrication and Design

Construction in Commercial Fabrics

Maximum Textures of Special Type of Fabrics

Relative Constructions of New Fabrics

5. KNITTING

Principles of Stitch Formation

Weft Knitting Machines

Plain, Rib, and Purl Stitches

Tuck and Miss Stitch Fabrics

Special Knitted Fabric Design Effects

The Changing Outlook of the Knitting Industry

6. DYEING, BLEACHING AND PRINTING

Modern Dyestuffs

Designation of Dyes

Trade Names

Letter Designations

Abbreviations and Percentages

Index Numbers

Theory of Dyeing

Wool Dyes

Acid Dyes

Chrome dyes

Metal-complex Dyes

Metal-complex Dyes

Vat Dyes

Solubilized Vat Dyes

Reactive Dyes

Influence of Fiber Fineness on Quantity of Dye Required

Some Sources of Faulty Dyeing

Tippy Dyeing

Scouring

Wetting Out

Mixed Stocks

Carbonizing and Neutralizing

Sun-bleached Yarns and Fabrics

Lime in Pulled Wools

Effects of Faulty Steaming

Matching Shades

Conditioning Samples before Matching

Feeding Dyes

Ring Dyeing

Excessive Crocking

Chlorinated Wool

Metal Contaminants

Stripping Dyed Wool

Abrasion Marks

Boiler Compounds

Machine and Spinning Oils

The Matching of Shades

Matching and Shade Control by Instruments

Low Temperature Dyeing

Irga Solvent Process

Collins Process

C.S.T.R.O. Process

Chrome Dyes

Acid Milling and 1:1 Metal-complex Dyes

Reactive Dyes

The Dyeing of Wool at High Temperatures

Ultrasonic Dyeing

Pad Dyeing Methods

Cibaphasol Technique

Irga Pad Process

C.S.I.R.O. Methods

Altering the Affinity of the Wool Fiber for Dyes

Decreasing the Affinity of Wool for Dyes

Increasing the Affinity of Wool for Dyes

Bicoloured Tippy Dyeing

Dyeing Wool Mixtures

Wool and Silk Mixtures

Wool and Vegetable Fiber Mixtures

Wool and Man-made Fiber Mixtures

Wool Dyeing Machinery

Construction of Dyeing Machines

Loose-stock Dyeing Machinery

Top or Slubbing Dyeing Machinery

Pot or Can Dyeing Machinery

Continuous Top Dyeing

The Machine Built by Fleissner

Segardâ€"Serracant Tunnel Equipment

Ilma Range

Konrad Peter Range

General Experiences

Yarn-dyeing Machinery

Dyeing of Yarn According to the Packing System

Dyeing of Yarn According to the Hanging System

Dyeing of Yarn According to the Spindle System

Machines for Drying of the Dyed Materials

Hank Dryers

Piece-dyeing Machinery

Jet Dyeing Machines

Beam Dyeing

The Pad-roll Piece Dyeing Machine

Continuous Woollen Piece Dyeing

Bleaching Wool

Hydrogen Peroxide Bleach

Peroxide "Dye-in† Bleach

Hydrosulfite Bleach

Double Bleach

Continuous Process

Potassium Permanganate Bleach

Bisulfite Bleach

Sodium Chlorite Bleach

Optical Bleaching Wool

Bleaching and Dyeing in One Bath

Effect of Stabilizers

Anti-yellowing Treatment

Vigoureux or Melange Printing

The Printing of Wool Piece Goods

Pretreatment

Acid Dyes

Basic Dyes

Direct Dyes

Vat Deys

Soluble Vat Dyes

Oxidation Colours

Spray Printing

7. SPECIAL WOOL FINISHES

Introduction

Flat Setting

Setting with Monoethanolamine Sulfite Solutions

Permanent Press

Lustering of Wool Fabrics

Luster on Pile Fabrics

Mechanism

Luster on Clear Finished Worsteds

Stretch Fabrics
Stretch Yarns
Inducing Yarn Crimp during Weaving
Yarn Crimp Development, Interchange and Chemical Setting
Finishing Helanca Ski Cloth
Water Repellent, Stain Resistant Treatments for Worsted and Woollen Fabrics
Silicones
Chromium Compounds
Fluorochemicals
Mothproofing

About NIIR Project Consultancy Services (NPCS)

NIIR Project Consultancy Services (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. Its various services are: Prefeasibility study, New Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Preparation of Project Profiles and Pre-Investment and Pre-Feasibility Studies, Market Surveys and Studies, Preparation of Techno-Economic Feasibility Reports, Identification and Selection of Plant and Machinery, Manufacturing Process and/or Equipment required, General Guidance, Technical and Commercial Counseling for setting up new industrial projects and industry. NPCS also publishes various technology books, directories, databases, detailed project reports, market survey reports on various industries and profit making business. Besides being used by manufacturers, industrialists, and entrepreneurs, our publications are also used by Indian and overseas professionals including project engineers, information services bureaus, consultants and consultancy firms as one of the inputs in their research.

NIIR PROJECT CONSULTANCY SERVICES 106-E, Kamla Nagar, New Delhi-110007, India. Tel: 91-11-23843955, 23845654, 23845886, +918800733955 Mobile: +91-9811043595

Email: npcs.ei@gmail.com, info@entrepreneurindia.co Website: www.entrepreneurIndia.co