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

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Author: NPCS Board of Consultants & Engineers
Format: paperback
Code: NI215
Pages: 496
Price: Rs 1,100 | US$ 29.73
Publisher: NIIR PROJECT CONSULTANCY SERVICES
Shipping: 5 days

About the Book

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.

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