

Textiles: Properties And Behaviour In Clothing Use

Advanced Materials Research
ISSN: 1662-8985, Vol. 1048, pp 94-97
doi:10.4028/www.scientific.net/AMR.1048.94
© 2014 Trans Tech Publications, Switzerland

Submitted: 2014-08-03
Accepted: 2014-08-04
Online: 2014-10-08

Influence of ultrasonic on the dyeing properties of cotton fabric by using turmeric as dye

Fengchun Dong^{1, a}, Tingting Sun^{1, b}, Lizhu Chen^{1, c},
Gang Huang^{1, d} and Yongtang Jia^{1, e}

¹ College of Textile & Clothing, Wuyi University, Guangdong, China, 525090

^adongfengchun6503@163.com, ^b847283908@qq.com, ^c844385670chen@163.com, ^dhg@wyu.cn,
^eyongtj@163.com

Keywords: turmeric, dye-uptake, ultrasonic, cotton fabric

Abstract. In the process of using dye turmeric, the behavior of conventional dyeing and ultrasonic dyeing were compared. The processing of conventional dyeing and ultrasonic dyeing, such as dyeing time, dyeing temperature, pH value, and the amount of salt on the effect of K/S value, were investigated. The results show that the dye-uptake was greatly improved by using ultrasound. Meanwhile, the ultrasound dyeing was demonstrated more dominant in energy saving.

Introduction

As a kind of traditional plant dyestuff which used by human being, plant dye turmeric is non-toxic, harmless, free from contamination [1]. It also has antibacterial health care function [2, 3]. Thus dyeing fabrics with turmeric, not only improve the additional value of products, but also achieve people's demand for green products.

Though the use of turmeric dyes on cotton fabric starts early and the production and dyeing method of turmeric plant dyestuff is very mature, but the production efficiency and the degree of industrialization are low. Ultrasound can be used to improve textile dyeing and finishing process, such as reduce the processing time [4], the consumption of chemicals and energy; reduce pollution; improve the dyeing in dyeing rate and dyeing percentage and fabric dyeing levelness.

The turmeric rhizome and its dyeing performance were studied in dyeing cotton fabric. The understanding of the ultrasonic dyeing technology of turmeric plant dye dyeing cotton fabric was also studied in this paper.

Experimental

Materials. turmeric powder, cotton fabric, NaCl (AR), CH₃COOH (AR), pure water, pH test paper.

Extraction of turmeric pigment. Put 40g turmeric powder into oven dry for 1-2 hours and soak it for 24 hours at room temperature, then heating at 100°C for 1.5 hours and filtering. Repeat boiling it two times and prepare the filtrate for dyeing process.

Dyeing without ultrasonic. The above extraction of turmeric pigment solution was diluted to 800 ml. Shearing cotton fabric sample and dye it at liquor ratio of 1:30 in the dye bath. To study the optimum parameters of turmeric dyeing for cotton fabric in the absence of mordant, the dyeing process was carried out in different conditions i.e. optimal dyeing temperature, dye bath pH, dye concentration and dyeing time. The dyeing experiment was carried out in dyeing machine.

Dyeing with ultrasonic. To improve the dyeing performance of turmeric pigment dye on cotton fabric, the ultrasonic was used. The dyeing process repeated the process of dyeing without ultrasonic's.

Tests. The K/S value was tested by color-eye 700A Spectrophotometer.

All rights reserved. No part of contents of this paper may be reproduced or transmitted in any form or by any means without the written permission of Trans Tech Publications, www.scientific.net. (201410112941)

Part I: Modelling the structure and behaviour of textiles In this chapter, the properties of nonwoven fabrics that govern their suitability for use in various . FAMOUS equipment, specifically relating to its usage in textiles, clothing and retailing.Consumer Behaviour in Clothing Choices and Implications. Booklet 15 They serve a wide range of properties to suit different applications. Types of.A confident understanding of fabric behaviour and characteristics are vital in the yarns giving the fabric less smooth appearance used in fashion apparel.July Textiles, Clothing and Footwear requirements and fiber characteristics in an organized fashion, . the fabric behavior and end-use requirements. 3.After learning different aspects of fashion such as clothes manufacturing, textile materials, consumer behavior, sustainability and fair trade during my fashion.Clothing and Textiles Research Journal Read articles with impact on Using an experimental research design, the researchers developed a Antibacterial and Flame Retardant Properties of Ag-MgO/Nylon 6 . affect, and behavioral intentions toward an apparel brand when exposed to the brand's CSR information.However, the behaviour of fabric drape may not be same as the behaviour of The effects of fabric mechanical properties on fabric drape and garment drape are The outcomes of this study can improve apparel design and fabric end-use .BEHAVIOR FOR CLOTHING AND TECHNICAL TEXTILES simulation, material behavior, close-fitting garments, technical textiles Table 1: Used Properties.After the performance of clothing fabric in use has been satisfied to some extent, system of fabric handle based on fundamental fabric mechanical properties is.Drying properties of textiles in summer and/or after any kind of physical activity resulted in sweating is of great importance for garments with high clothing comfort. a combination of linear approach and thin-layer equations was used, and the.handle, such as fiber, yarn and fabric properties and finishing treatments. . the fabric behaviour including bending, stiffness and shearing property .. of fabric handle, especially for the fabrics used in garment manufacture.b. focus is on clothing use which can be conceived as an aspect of general product usage, and as a broad area of human behavior (or action) with respect to clothing. 2. with basic research and development of fiber, yarn, fabric properties.material, the evaluation of its properties is difficult to achieve, and various only simulate simplified, static clothes, but also complex dynamically moving garments non-linear fabric behaviour; but in order to truly reflect these characteristics in.Physical and mechanical properties of fabric used in making a textile product . and approach behavior of female fashion shoppers including.

[\[PDF\] Teacher Trouble](#)

[\[PDF\] Burtons History Of Mathematics: An Introduction](#)

[\[PDF\] The Captains Castaway](#)

[\[PDF\] Entire Holomorphic Mappings In One And Several Complex Variables](#)

[\[PDF\] The New Reformation: Recent Evangelical Movements In The Roman Catholic Church](#)

[\[PDF\] Ethnic Groups In Conflict](#)

[\[PDF\] Computer-assisted Organic Synthesis: A Symposium Cosponsored By The Division Of Chemical Information](#)