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### FEATURES AND REVIEWS

#### 1 Apply Statistic to Improve Dyeing and Printing Enterprises Management

By Hui YANG, Xinyang Quality & Technology Supervision Bureau, Xinyang, Henan

**Abstract:** This paper introduces briefly statistical technology, mainly elaborates how to plan the application of statistical technology to the dyeing and printing enterprises in order to use statistical technology in quality management.

**Key words:** statistical technology; planning; application

#### 6 New Dyeing Techniques of Cellulose Fibres

By Shan LI, Qinggong REN, Junling JI. College of Chemistry and Chemical Engineering, Changzhou University, Changzhou, Jiangsu

**Abstract:** Since there are some defects in common dyeing techniques of cellulose fibres at present, an introduction is made to several new dyeing techniques of cellulose fibres such as supercritical carbon dioxide dyeing, ultrasonic dyeing, microwave dyeing, gas-fog dyeing, etc. The current research situation of these techniques is analyzed, as well as related problems and further directions of research.

**Key words:** cellulose fibres; supercritical carbon dioxide dyeing; ultrasonic dyeing; microwave dyeing

#### 16 Enhancing Colour Fastness of Flos Sophora Buds Dyed Fabric

By Fei Fei GOU, Lin JIAO, Xi'an Polytechnic University, Xi'an, Shanxi

**Abstract:** The pigment was extracted from flos sophora buds by water boiling method. The flos sophora buds dyes was used to dye cotton fabrics by direct dyeing method. Then the dyed fabrics were subjected to the treatments with cross-linking agent(2518) and fixing agent(CX-100) in order to enhance the colour fastness. Experimental results revealed that the optimum extraction conditions for flos sophora buds: amount of flos sophora buds 15g/L, boiling with water at 100°C; when used by direct dyeing, the optimum conditions: pH=9, dyeing at 90°C for 60min; the optimum crosslinking process: dyed fabrics→double-dip-double-nip (fixing agent 50g/L, pickup 60%)→pre-drying (70°C×3min)→curing (110°C×3min); the optimal fixing process: fixing agent concentration 9% (o.m.f), treating at 50°C for 15min.

**Key words:** Flos Sophora buds; natural dyes; cotton fabric; colour fastness

### PRODUCTION TECHNIQUE

#### 21 Pretreatment of Package Yarn with Standing Bath

By Xiao-jian LI, Li-shan SHAO, Jin-be REN, Shandong Demian Stock Co., Ltd, Dezhou, Shandong

**Abstract:** The normal pretreatment of package yarn needs a lot of water, electricity, steam, resulting in great waste. Adoption of standing bath without draining the liquid but adding certain amount of agents and water as supplement to continue the pretreatment of package yarn can save a great deal of energy and reduce emission.

**Key words:** standing bath; pretreatment; energy saving and consumption reduction

## 23 Softening Agent for Fabrics

By Chun-fang DONG, Hualong Computer Knitting Company Limited, Yantai, Shandong

**Abstract:** The paper introduces the softening agents for fabrics in terms of the developing process, classification, main kinds, and acting principle in order to provide reference for improvement of the effect, R&D, and application of softeners, in order to meet higher and higher requirements of textile quality by customers.

**Key words:** softening agent; principle; application

## DYES AND AUXILIARIES

## 29 Rabbit Hair Protein Agent for Hydrogen Peroxide Bleaching of Cotton Fabrics

By Houyang ZHAO, Xueyan WANG, Jing WU, College of Textile and Material, Xi'an Polytechnic University, Xi'an, Shanxi

**Abstract:** It is found by comparing whiteness and capillary effect that the best bleaching effect of cotton is obtained when the amount of sodium silicate, sodium pyrophosphate, and rabbit hair protein is 8g/L, 2-8g/L, 2-4g/L respectively, in which, rabbit hair protein has better stabilizing effect than the other two. When in compounding, the amount of sodium silicate, sodium pyrophosphate, and rabbit hair protein is 2g/L, 4g/L, 2g/L respectively. The product compounded with all the above three materials can get better whiteness and capillary effect than that compounded with any two.

**Key words:** cotton fabric; hydrogen peroxide; agent; rabbit hair protein; bleaching

## MACHINERY

## 39 Analyzing Energy Saving Value Obtained by Controlling the Humidity of Exhaust Air from Stenter Heat Setting Range

By Jiliang ZHU<sup>1</sup>, Shuqing CAI<sup>2</sup>, Xinshun DUAN<sup>3</sup>, 1.Changling Textile Electromechanical Science and Technology Co., Ltd, Baoji, Shanxi; 2.The 27<sup>th</sup> Research Institute of China Electronic Science and Technology Group Company, Zhengzhou, Henan; 3.Yuanjian Textile Dyeing & Printing Data Equipment Co., Ltd, Zhengzhou, Henan

**Abstract:** This article describes the basic principle of exhaust air humidity control technology and energy saving by utilizing the technology in stenter machine, the difference between exhaust air humidity control technology and exhaust heat recovery technology. By calculating and practice, it analyzes the value space of energy saving with exhaust air humidity control technologies, we consider that it is necessary to implement the control of the humidity of exhaust air of all kinds of stenters and driers.

**Key words:** exhaust air humidity; heat setting stenter range; hot air drying technology; energy saving

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