

Table of Contents

Preface and Committees

Chapter 1: Textile Science and Technology

The Application of Folkloric Textile Decorative Art to the Regional Character of the Hotel J. Zhu and Y.F. Chen	3
Impact of Soft Nursing Care on Drying Efficiency of Cotton Fabric C.J. Qian, J.L. Tu, H.Y. Ge and J.Q. Liu	9
The Effect of Calcination Temperature on the Surface Evolution and Photocatalysis Activity of Co-Doped PVAc/TiO₂ Composite Nanofibers N. Wu, Y.N. Jiao, Z.Q. Yuan, Y.X. Liang and L. Chen	14
Cell Immobilization with Textile Carriers for TA Biodegradation H.Q. Li, J.X. Gong, Q.J. Li, Z. Li, J.F. Zhang, K.N. Chen, Z.X. Tang, G.Q. Ding and S.Y. Lin	19
Study on Spunlaced Nonwoven Fabric's Moisture Absorption and Permeability Based on BP Network X.H. Wu, J.C. Lv and X.N. Jiao	23
Methods for Measuring the Surface Area of Nude Body Q. Li, J. Li and M. Wang	27
A Stochastic Simulation of Cotton Combing Process G.S. Yan, Y.H. Su and C.W. Yu	31
Research on Wearable Sensors Based on Knitted Fabrics with Silver Plating Fiber J.F. Wang and H.U. Long	36
Comparison of the Cost Performance between Pure Cashmere Siro-Spun Yarn and Pure Rabbit Hair Ring-Spun Yarn Y.L. Liu and B.K. Sun	40
Modelling and Simulating Textile Structures Using TexGen H. Lin, L.P. Brown and A.C. Long	44
Effect of Fabric Construction on Water Permeability Rate of Woven Filter Cloth C.D. Mao	48
Mechanical Properties of 2D Braided Polyester Ropes J.Q. Zhang and L. Cheng	52
Objective Evaluation Based on Main Factors Analysis of the Wool Knitted Fabric Style P.L. Li and L. Cheng	56
Preparation of Collagen/PVA Composite Fiber Z.H. Sui, Y.J. Wei and X. Zhao	61
Mechanical Properties of Ramie Fiber Woven Composites under Biaxial Tensile Loadings G. Wang, F.M. Chen, H.T. Cheng, Z.X. Yu, Z.H. Jiang, X.M. Chen and W.F. Zhang	65
Design and Research of the Foldable Decorative Screen with Ethnic Style Based on Weft-Backed Structure A.D. Zhang and X.Q. Wang	69
The Development and Status of the Stab-Resistant Body Armor Z.Z. Ding, Y.Q. Zhang and X.M. Qian	73
Research on the Clustering Color Separation of Fabric Based on Genetic-Fuzzy Algorithm B.J. Luo	77
Studies on the Composite Thermo-chromic Energy-Storage Materials Prepared by Sol-Gel Method Z.L. Wu and X.G. Ma	83
The Mechanical Properties of Bamboo/PLA Composites Made by Biaxial Weft Knitted Fabrics C. Zhao, G.L. Song and H.W. Liu	89
Graphene Modified Cotton Textiles W.L. Gu and Y.N. Zhao	93

Analysis on Green Initiative Costume Design Concept J. Zhao	97
Study on Body Foundation of Brassiere Steel Ring Shapes S.Z. Liang	101
Microwave Promoted Effect of Starch-g-Butyl Acrylate Sizing Copolymer Grafting H.L. Wu and Y.Q. Shen	105
Study on the Mechanical Properties of Jute/Carbon Hybrid Composites J.M. Wang, L. Zhao and X. Qin	110
Exploration on the Production of Natural Green Anti-Bacterial Health-Care Textiles Y. Weng	115
Influence of Mechanical Properties of Lightweight Silk Fabrics on Seam Shrinkage Q.Y. Wu and W.B. Zhang	119
Statistical Property of Ideal Drafting Sliver Y.H. Su, W.L. Zou and G.S. Yan	123
Tensile Properties Study of Polyester/Cotton/Silk Tri-Component Sirofil Composite Yarn L.B. Lv and M. Du	129
Surface Modification of Polyester Fibers by Encasing Sucrose Ester and Grafting Soybean Protein S.H. Gao, G.X. Zhang and F.X. Zhang	133
Influences of Soft Monomers on the Application Properties of Hydrophilic Polyurethane with Mixed Polyether Segment H. Quan and Z.Y. Gu	139
Preparation and Properties of Cationic Graft Starch Sizing Agent H. Zhang, J.K. Wang, R. Wang and X.P. Fan	144
Evolutionary Engineering of Bacillus for Terephthalic Acid Degradation J.X. Gong, Z. Li, Q.J. Li and J.F. Zhang	148
Correction for Classical Theory of Yarn Cross-Section Shape in Woven Fabric L.H. Yang, Y.J. Yu and W.X. Liu	152
Analysis of Color Symbology Focused on Folk Costume Colors in Northern and Southern Regions of China during Republic Period Y. Qi, X.R. Fan, R.R. Cui and Q. Wang	156
Preparation of Chitosan/Acacia Microcapsule Facilitating Photo-Catalytic Degradation of Polypropylene Nonwovens X.M. Wang and C.R. Zhang	160
Surface Deposition of Chitosan on Wool Substrate by Electrospraying S. Islam, A. Jadhav, J. Fang, L. Arnold, L.J. Wang, R.J. Padhye, X.G. Wang and T. Lin	165
Study on Numetrical Representation of Topological Architecture of 3D Woven Composites S.L. Wang and L.H. Yang	171
The Effects of Fiber Volume Fraction on the Experiment Modal Behavior of 30°/-60° Carbon Fiber Plain Woven Fabric / Epoxy Resin Composites X.Y. Pei and J.L. Li	175
Structure and Properties Research of Multi-Antibacterial Polyamide Fibers W.W. Sun, H. Zhang and Y.K. Zhou	179
Thermal Comfort Properties of Knitted Fabrics Suitable for Skin Layer of Protective Clothing Worn in Extreme Hot Conditions N. Nawaz, O. Troynikov and C. Watson	184
A New Test Method for Weft Tension in Shed on Air-Jet Looms H.L. Ma, L.X. Leng, Z.Y. Zheng and X.H. Zhou	190
Annealing Treatment of the SnO₂ Thin Film Prepared by Sol-Gel Method Q. Xiao, R. Wang and L. Xu	194
Weave Structures Effect on the Shear Deformation of Annular Shaped Woven Fabrics H.C. Chen and X.F. Guo	198
Weaving 3D Fabric with a “” Shaped Cross-Section Y.T. Chang, X.M. Qian, H.W. Liu and H.W. Liu	202
Manufacture of Composite Nanofiber Mats with Fiber Diameters Grads by Electrospinning for Filtration Use S.S. Guo, X.Y. Jin, H. Wang and Q.F. Ke	206

Study on the Tensile Properties of the High-Performance Cored Rope Q.J. Zhao and Y.N. Jiao	210
The Application Study of the Fabric Reconstruction in the Design of Home Textiles M. Su	214
Predicting Yarn Unevenness Using Improved BP Neural Network H.J. Li and X.H. Wang	219

Chapter 2: Textile Dyeing and Finishing

The Printing Technology of New Pigment Used on Cashmere Products M.Z. Li, H. Yin and Y. Cheng	225
Research Progress of Fluoride-Containing Acrylate Derivatives and their Application on Textile H.H. Ye, Z.X. Li, G.Q. Chen, S.Q. Zhou and J.H. Cai	229
Effect of a Hydrophobic Finishing on Moisture Management Performance of Cotton Fabric T.H. He, J.B. Yao and S.Y. Chen	237
Combination Technology of Spunbond & Spunlace Z.M. Lu and X.M. Qian	241
Synthesis of Chelating Surfactant and its Application in Silk Degumming Y. Zhang, X.T. Sun and X.R. Wang	245
Characterization of Cotton Fabric Treated with a Si/P Flame Retardant R. Wang, Y.J. Bai, X.C. Wang and Y.Q. Wang	249
Application of Ionic Liquid in Silk Dyeing D.H. Cheng	253
Stability of <i>Salvia miltiorrhiza</i> Bge Extract and its Application on Silk S.S. Sun, J.J. Wang and R.C. Tang	257
Study on the Enzyme Desizing Process for Cotton Fabric Using Ultrasonication Q.M. Zhao and S.Y. Zhang	261
Synthesis and Application of Isothiazolinone as Durable Antibacterial D.J. Kong, Z.D. Liu and Y.L. Li	265
TiO₂ and ZnO Water Sol Preparation by Sol–Gel Method and Application on Polyester Fabric of Antistatic Finishing Y.Y. Chu, Q. Wang and S.Z. Cui	270
Sorghum Red Pigment Dyeing Properties of Tencel Loose Fibre Z.P. He, Z.M. Wu and X.L. Zhou	275
Investigation of Ultraviolet Protection Properties of Cotton Fabric via Azoic Dyeing with Green Tea Extract N. Punrattanasin	279
Application of Chitosan on Anti-Shrinkage of Wool Fabric Q.F. Zhang, W.F. Yang, Y.L. Qiao and X.X. Shen	283
Dyeing of Silk and Nylon 6 Fibers with Baicalin X.C. Li and J.L. Cao	287
Adsorption Kinetic Study of Reactive Dyes on Silk with Octyl Trimethyl Ammonium Bromide as Accelerant L. Zhong, G.X. Zhang, F.X. Zhang and X.T. Xue	291
Dyeing Analysis of Jade Polyester Fiber Knitted Fabric H.X. Hu	298
Dyeing of Natural Dyestuff Extracted from Henna to Silk Fabric H. Li, D.F. Zhao and R. Liu	302
Preparation of Jasmine Microcapsules and Aroma Finishing of Cotton Fabrics by UV-Curing N. Xu, D. Yu and W. Wang	306
Research of Wool-Like Modification of Polyester with Sodium Alginate L. Min, J.Y. Tian and M.Y. Liu	310
Research on the Application of G7 in the Gravure Printing Products L.H. Guo, M.Y. Zhang and X.H. Guo	314

Study on Polyester Fabric Anti-Static Treated by Polyaniline L.P. Guan	318
Effect of Preparation Parameters of Titania Sol on Textile UV-Resistance R. Wang, Y. Chen, J. Wang and Y. Yang	322
Shrinkage Properties of Wool Treated with Ionic Liquid and Chitosan Biopolymer H.F. Wang, H.N. Lv and X.L. Zhang	326
Anti-Bacterial Property of Tussah Silk Fabric by Nano-Titanium Dioxide and Chitosan Modification Y.H. Lu and Z.M. Liu	330
Study on the Dyeing of PET Fiber with Disperse Dyes in D5 Media S.Z. Li, J.Q. Liu, Y.Q. Li and L.M. Li	334
Research on Improving the Properties of Wool Fabric with Low-Temperature Plasma Y.L. Qiao, W.F. Yang, Q.F. Zhang and X.X. Shen	338
Preparation of Temperature-Sensitive PET Fabrics by Plasma-Induced Grafting Y.Q. Li, J.Q. Liu, C.J. Qian and T.T. Liu	342
Moderate Hydrolysis of Nylon 6 Fabric with Different Acids X.C. Wang, P.Y. Wang, L.F. Ren and T.T. Qiang	347
Dyeing Properties of Tussah Silk Fabric with Indigo Naturalis and Turmeric X. Hao and Y.H. Lu	352
Uniformity and Penetration of Surface Modification Effects of Atmospheric Pressure Plasma Jet into Textile Materials C.X. Wang, M. Du and Y.P. Qiu	356
The Practice of the Printing and Dyeing Wastewater Treated by the Process of the First Coagulation Sedimentation/Hydrolysis Acidification/Anoxic/Oxic System/Secondary Coagulation Sedimentation Z.W. Lei, G.Y. Yang and C.L. Xi	360
Dyeing Research of Aramid Fiber-Nomex Y.J. Tan and Y.E. Yu	364
The Treatment of Printing and Dyeing Wastewater by Using Coagulation and Fenton Reagent Oxidation Combined Process L.P. Wang, Y.C. Guo, Y.Z. Chen, E.D. Du and Y.J. Mao	368
Comparison of Dye Adsorption Behaviors of Sodium Polyacrylates Freely Dissolved in Water and Grafted onto Poly(<i>Ethylene Terephthalate</i>) Fiber X.L. Shi, H. Song, X.S. Zhu and Z.J. Pan	372
Dyeing Properties of Chitosan-Sulfamic Acid Solution Treated Wool with Silane Coupling Agent X.M. He and K.L. Xie	377
Wrinkle-Resistant Property of Cotton Fabric Treated by Chitosan and Epoxy-Silicon Micro-Emulsion H. Wang, C. Huang and N. Liu	382
Deepening Effect of Superfine Dyed Polyester by Escaping Electron-Beam Atmospheric Pressure Glow Discharge Plasma T.T. Liu, Y.Q. Li, J.Q. Liu and L.J. Meng	386
The Synthesis Characterization and Application of Amino-Modified Polymethylhydrosiloxane Softener X. Zhao and W.Y. Zhu	390
Anti-Hairfalling Finishing of Rabbit Hair Knitted Fabrics J. Liu, R.Y. Zhu and Y. Zhang	394
Effects of the Cotton Fabric Pretreatment on Application Properties of Digital Inkjet Printing with Reactive Dyes Q. Zhu, J.D. Cao, W. Wei, J.C. Zhong, J. Yao, Y. Ye and X.X. Yang	398
Preparation and Application of VE Microcapsules with Polyurethane Shell for Skin-Care Textiles G.P. Yao, J.H. Zheng and H.F. Chen	402
Preliminary Study on the Green Anti-Counterfeiting Printing Materials Y. Yang, X.H. Zhou, G. Zhao and X.P. Lu	407
Morphology and Properties of PET Fabric Finished by β-Cyclodextrin and Citric Acid Y.L. Wang, W.L. Xu, Y. Wang, Y.M. Wu and S. Cheng	412

Study on Reuse of Dyes from Wastewater M.Z. Li and J. An	416
The Manufacture and Dyeing of Cationic Dyes Dyeable Linen Fibers S.Z. Gao, Q. Liu and Q.J. Liu	420
Structure and Properties of Modifier for Heat Transfer Printing on Cotton Fabric Y. Mu, L. Wang, M.H. Wu and J.X. Lin	426

Chapter 3: Textile Machinery and Equipment

The Application of Motion Control Technology to Textile Production M. Han, C.Y. Miao and J.M. Chang	433
Affect of Application of Hairiness Reduction Equipment on Winding Quality J.P. Lin and H.J. Cui	437
Optimal Geometry Design of the Coat-Hanger Die Used for Melt Blown Nonwoven Processing W.L. Han and X.H. Wang	444
Prediction of Yarn Quality Based on BP Neural Network J. Yuan, Y.L. Li and S.Y. Chen	449
The Impact of Weft Quality on Air-Jet Loom Weaving Efficiency H.J. Cui, J.P. Lin and L.J. Li	454
Comparative Study on Vibratory Stress Relief (VSR) and Thermal Stress Relief (TSR) of Cylinder Wallboard X.W. Dong, X.P. Zhao, S.Q. Yu, X.W. Zhou, D. Ren and Y.F. Zhai	460
Study on New Drafting Form of Comber X.R. Li, X.M. Jiang and J.C. Yang	465
Research on Mechanism of Magnetic Suspended Knitting Needles X.G. Wu, W.B. Zhu, C. Zhang and C.J. Zhang	472
Circular Nets Printing Machine Synchronicity System Based on Intelligent PI Controller X.D. Gao, G. Wang and Z.M. Nie	476
Fabric Defects Detection Using Multi-Scale Wavelet and Locating J.F. Jing, H. Li and P.F. Li	481
Curve Matching Algorithm Applied to Fabric Automatic Register Detection J.F. Jing, G.Y. Li and P.F. Li	485
The Research of Two-for-One Twisting Spinning Frame X.Q. Ren, W.Y. Li and X.F. Shen	489
Reducing Yarn Hairiness in a Modified Ring Spinning Yarn Path by Various Offsets X.Z. Su, W.D. Gao, T.T. Wu, X.J. Liu and Y. Zhang	493
Quasistatic Model for the Symmetrical Ring Spinning Triangle X.J. Liu, X.Z. Su and T.T. Wu	498
Effect of Siro-Spun Processing Parameters on Properties of 55/45 Flax/Cotton Blended Yarn S.Q. Liu, J.M. Dai, H.S. Jia, X.G. Liu and B.S. Xu	502
Research on the Manufacture of Tapered Artificial Vascular X.Q. Dong, Y.L. Li, X. Ding and L. Wang	512
Test Reliability of Impurity Parameters of Uster AFIS P.Z. Sun and J.P. Cao	516
Heart Move with Color - Color Psychology and Textile Color Aesthetic X. Yi	528
Effects of Enzyme and Softener Treatment on Properties of Ramie Fabrics L.H. Bai and H.Q. Yu	532
The Study on 3D Weaving Method for Tubular Fabric Z.H. Sun, S.H. Zhou, F.F. Tang, C. Liu, D. Ran, J.R. Yuan and Z.Y. Li	536

Chapter 4: Apparel Design and Merchandising

The Researchment of Knitted Antifouling Fabrics and the Splicing Design on Leather Garment	
H.T. Deng	543
Research on Children's Functional Clothing of Keeping Safety in the Car	
L. Shen, X.H. Jiang and Y.Y. Chen	547
The Functional Requirements Analysis of A/W High Altitude Cleaning Overall Materials	
W.W. Huang and B. Guo	551
Study on Improvement of Manufacturing Cycle Effectiveness of Apparel Vendor - Case Study of Order Scheduling and Batch Feeding manegement and Control	
C. Yang, Y.X. Yang and W.N. Qi	555
Application of Pattern Recognition System in the Automatic Generation Pattern Technology	
L. Qiu and X.D. Chen	561
Research on Bra Constitute and Performance Evaluation	
H. Shi, J.P. Wang, Z.Y. Wu and X.N. Chen	566
Research on Consumer Motivation for Luxury Products in China	
Z. Zheng	570
Comparative Analyses between Consumers' Actual and Targeted Transaction of Menswear Based on Taobao E-Business	
X.Q. Wang, M.H. Chen and A.D. Zhang	574
Women's Suit Pattern Parameterized Intelligent Design	
Y.Z. Wang, J.P. Wang, S. Sun and Y.M. Li	578
The Application of Chinese Element in Fashion Design	
G.H. Li, R. Shi and G.L. Liu	582
Study on the Innovative Design of Fur Clothing	
T. Xu, M. Fang and G.D. Li	586
Application of Typology Method in Chinese-Style Clothing Pattern Design	
S.G. Wu	590
Regression Analysis on Influences of Hem Parameters on Flare Sagging of Semi-Circular Skirt	
H. Ni	594
The Analysis of Structural Mathematical Model of Suitable Female Jacket Design Based on Waist and Hip	
P. Zou and S.G. Wu	599
Redesigning the Apparel Product Development Process Based on the No-Interval Coherently Phased Product Development Model	
C.S. Wu and Q.Y. Wu	603
An Analysis of Marketing Function of Fashion Show	
Y. Xu and M. Zhang	607
Mathematical Model of Attaching Sleeve Based on the Change of Underarm Point	
Y.M. Liu, L. Zhang and G.H. Feng	611
Research on Clothing Styles Classification Model Based on the MDS and K-Means Method	
H.J. Xu, F.Y. Zou, J. Wei and Y. Zhang	616
Research on the Development Situation of Transmutability Clothing	
H.E. Liang and L.M. Jin	620
BWH Reshaped Made Use of Reshape Underwear Based on the Model of Female Physical Beauty	
W. Jiang, X.M. Qian and L.L. Zhai	624
Aerobics Clothing Consumption Behavior of College Students in Hangzhou	
Y.X. Yan, W.J. He, L.J. Lou, J.W. Tao and M.B. Lin	628
Research on Dynamic Clothing Show of Virtual Character during the Online Shopping	
Z.Y. Wu and Y. Zhang	632
Simulation of Efficiency of Liquid Cooling Garments	
M.W. Tian, S.K. Zhu and N. Pan	636
Evolution Law of the Traditional Baina Textile and its Application Style in the Clothing	
H.E. Liang and L. Xing	640

Research on the Influence of the Fabric Organization to Wind-Resistant Property of Sportswear	
Y.X. Yan, X. Yi, J.W. Tao, M.B. Lin and R.Q. Li	646
Establishment and Application of Evaluation Model for College Students' Perceived Quality of Clothing	
Z. Li	650
Relationship between Special Body Variable and Figure of Women's Trousers Pattern	
X. Lu	654
Study on the Fashionable and Preferable Emotion of Men's T-Shirt between Males and Females	
X.X. Zhang, S.S. Wang and G.L. Liu	658
Research on the Relationship between Special Dart and Fabric of Women's Wear	
L. Wang	662
Zen View of Nature in the Performance of Modern Fashion Design	
N. Qiao, L.J. Liu and Y.Y. Lv	666
The Application of Geometric Form in Clothing Design	
C.M. Lin, C.H. Lin, P.C. Hsiao and Y.C. Yang	670
The Drapability Effects Test Method of Lining and Shell Fabric	
F. Yu	675
Design and Development of Chinese Primary and Secondary New Type School Uniform	
M. Yu and X. He	679

Chapter 5: New Trends in Textile Industry

Predictive Modeling and Empirical Analyses of Regional Silk Fabrics Price Index Based on BP Neural Network	
H. Liu, B.D. Liu and X. Yang	685
Influence of Color and Style on Clothing Identification	
X.F. Jiang, X.X. Zhang and G.L. Liu	689
Rising Labor Cost and the Comparative Advantage of Chinese Textile Industry Analysis	
J. Wang	694
The Molding Technology of Manufacturing Waste Blend Fiber Composites by Mixed Hotpressing	
L.H. Lv, G.J. Wan and Y.L. Yu	699
Study on Water-Based Highly Reflectivity Insulation Coating	
Y.F. Luo, Z.Q. Du and W. Yu	703
The Influence on Hydrophilic after the Surface Treatment of the Singed Gray Fabric by the Low Temperature Plasma	
P. Li, S.J. Zhang and S.G. Wang	708
Comparison of Plasma-Aided Desizing with Conventional Desizing of Polyacrylate on PET Fabrics	
X.M. Li and Y.P. Qiu	713
Influence of Atmospheric Pressure Plasma Pre-Treatment on Sodium Bicarbonate Desizing of Polyacrylate on PET Fabrics	
X.M. Li and Y.P. Qiu	718
An Analysis of Shaoxing Textile Industry's International Competitiveness: The Perspective of the Export Evaluation Indexes	
A.Q. Jiang and R. Zhang	722
Strategies for Textiles and Apparel Enterprises in Jilin Province "Going Global"	
Y. Liu and F.Y. Wang	726
Design Driven Innovation for Textile Industry	
A. Lottersberger	730
The Analysis of Fashion Buyers' Development in Clothing Industry of China	
L.J. Liu, N. Qiao, X.P. Li and M. Feng	735
The Apparel Industry as an Example of Industry Development Trend of China – Segmentation Module within the Industry, Strengthening of Cooperation between Industry	
A.Y. Yun, M. Fang and D.M. Wang	740