

3rd Textile Bioengineering and Informatics Symposium Proceedings (TBIS 2010)

Greener Textiles, Healthier Life

**Shanghai, China
28-30 May 2010**

Volume 1 of 2

Editors:

**Yi Li
Yi-Ping Qiu**

**Xiao-Nan Luo
Jia-Shen Li**

ISBN: 979-8-3313-0723-3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2010) by Textile Bioengineering and Informatics Society (TBIS)
All rights reserved.

Printed with permission by Curran Associates, Inc. (2024)

For permission requests, please contact Textile Bioengineering and Informatics Society (TBIS)
at the address below.

Textile Bioengineering and Informatics Society (TBIS)
Unit 503, 5/F. Silvercord
Tower 2, 30 Canton Roa
Tsim Sha Tsui
Hong Kong

Phone: (852) 66382781

tbis@tbisociety.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

PROCEEDINGS OF TBIS2010

TABLE OF CONTENT

Track 1 Textile System Bioengineering

1. Study of Classification and Coding Method of Vocational Smock's Components <i>Ling-Shan Wang, Xin Zhang, Bo-An Ying, Feng-Ying Liu.....</i>	1
2. Research on Design of Textile Product Based on Emotional Requirement of Home <i>Jing-Jing Zhang, Jing-Wei Liu, Si-Di Wang, Qing-Jin Wang.....</i>	9
3. Study on Influences of Different Neck Drop and Width on the Fashion Sense of Women's Collarless T-shirt <i>Shan-Shan Wang, Fang Qin, Xiao-Feng Jiang, Guo-Lian Liu.....</i>	16
4. Analyzing Fashion Colors Features for Better Understanding and Application of Fashion Colors <i>Li-Xia Chang, Wei-Dong Gao, Xiu-Ying Bi, Min Qiao, Jing Wang.....</i>	22
5. The Function of Colors in Clothing Display Design <i>Yi-Fei Qu, Xin Zhang.....</i>	28
6. The Structure of Fitted Pants in Different Abdominal Convex <i>Xin Lu, Hong Mu.....</i>	32
7. Study of Clothing and Fabric Design Based on Cultural Aesthetics <i>Si-Di Wang, Jing-Wei Liu, Jing-Jing Zhang.....</i>	38
8. Study on Influences of Collar Types in Different Clothing Fullness on Women's T-shirt Design Based on Visual Cognition <i>Fang Qin, Shan-Shan Wang, Xiao-Feng Jiang, Guo-Lian Liu.....</i>	44
9. Research on Fabrics Mechanical Properties and Lapel Collar Shape of Women's Suit <i>Jia-Yan Xu, Hong Cai.....</i>	50
10. Influencing Factors of Processing Technologies on Cotton Trousers Seam Shrinkage <i>Ye Tu, A-Ling Zhi, Xiu-Li Zhu.....</i>	54
11. Fuzzy Comprehensive Evaluation of Deconstructive Garments <i>Xiao-Li Yu, Dong-Sheng Chen, Yong-Mei Liu.....</i>	59
12. Design and Performance Testing of Through-thickness Angle Interlock of Fabric Keyboard Switch <i>Mei-Ling Zhang, Rui Wang, Jian-Qing Ye, Zhan-Gang Wang.....</i>	64

Track 2 Textile Bioengineering CAD Technology

13. A Male's Girth Linear Model Based on 2-dimensional Pictures Data <i>Guo-Qi Chen, Fei Tan, Guo-Lian Liu.....</i>	69
14. Study of Determining the Key Points at Shoulder and Neck for Pattern-Making Based on Point Cloud Body Data <i>Xiao-Hui Xu, Shan-Shan Wang, Jun-Qiang Su, Guo-Lian Liu.....</i>	74

15. Research on Calculation Method of Young Female Body Circumference Based On 3D Body Scanning Point and Cloud Diagrams <i>Hai-Yan Kong, Bing-Fei Gu, Guo-Lian Liu, Jun-Qiang Su</i>	80
16. Virtual Garment Demonstration Based on Layered Images <i>Yi-Jie Shen, Yuan Tian, Yue-Qi Zhong</i>	87
17. Determination of Human Side Seam Based on the Point-Cloud Data of 3D Body <i>Bing-Fei Gu, Guo-Lian Liu, Jun-Qiang Su</i>	91
18. Study on Waist Darts of 2D Pattern Based on 3D Scanned Body Data <i>Wei-Juan Yuan, Guo-Qi Chen, Jun-Qiang Su, Guo-Lian Liu</i>	98
19. Crepe Weaves Design Based on Matrix Transformation <i>Hui-Fen Yuan, Xu Wang</i>	102
20. 3D Basic Collar Mathematical Model <i>Li-Jun Jiang, Wen-Bin Zhang</i>	108
21. The System Design of the Apparel's Style Knowledge Database Oriented to Intelligent Manufacture <i>Jian-Ming Chen, Xiao-Mei Shang, Lin Tang, Fei Wang</i>	113
22. Curves Creation of Youth Women's Bodice Prototype Based on 3D Point Clouds Data <i>Jun-Qiang Su, Wei-Juan Yuan, Guo-Lian Liu</i>	118
23. The Study of Objective Evaluation of Women's Pants' Fit <i>Lin-Li Zhang, Wei-Yuan Zhang, Yue-Qi Zhong, Xiao-Li Hu</i>	122
24. Shirt Pattern Design Based on Artificial Neural Network <i>Ying-Lin Li, Ling-Xia Zhang, Su-Ying Chen, Lian-He Yang</i>	127
25. Development and Application of CAD System for Computerized Flat Knitting Machine <i>Li-Hui Cao, Ying-Lin Li</i>	132
26. Development and Application of Load Balancing Mathematical Model on Apparel Mass Customization Pipeline <i>Yi Zhu, Yi-Xuan Feng</i>	138
27. Computer Aided Design Technology on the Seam Allowance of Industrial Pattern <i>Tuo Wu, Luo-Yan Hu, Pan Zheng</i>	142

Track 3 Textile Bioengineering Market and Industry Informatics

28. A Functional Textile Knowledge Organization System Based on Internet Technology <i>Kun-Chao Huang, Ruo-Mei Wang, Zhong Wang</i>	147
29. Channel Service for the Digital Home Oriented Textile Consumption <i>Zi-Ling Su, Ruo-Mei Wang, Zhong Wang, Hao-Jian Xie</i>	154
30. Research on Marketing of Fashion Luxury Products in China <i>Xiao-Yu Liu, Yan Chen, Song-Xue Sha</i>	159
31. Impacts of Financial Crisis on Chinese Textiles Industry Indicated by China-Shengze Textile Price Index	

<i>Yun-Ying Liu, Jing-Fang Qian, Bin Qian</i>	167
32. Comparative Analysis of Clothing Consumption Behavior of Young Women in Hangzhou <i>A-Ling Zhi, Ya-Li Yang, Xiao-Yan Gu</i>	171
33. Evaluating Supplier that Making Leisure Clothing and Studying Classification of Management <i>Xiu-Li Zhu, Ya-Li Yang, Ling-Ling Hu</i>	177
34. Application of Virtual Apparel Enterprises Inventory Management using Fuzzy Set Theory <i>Xiu-Li Zhu, Li-Hua Guan, Zhen-Hua Zhou</i>	185
35. The Trends of Sales Model of Pregnant and Baby Products <i>Xiao-Man Rong, Jian-Fang Liang</i>	193
36. A Research on the Consumer's Values and the Trends of Garment Consumption <i>Ai-Tian Zhang, Zuo-Jun Ding</i>	199
37. Research on Luxury Product Market in China <i>Zhe Zheng, Ming-Lang Huang, Yan Chen</i>	208
38. Research on Material Management System of Small-and-medium-sized Garment Enterprises <i>Yi-Nong Yan</i>	214
39. Formation Reasons and Avoiding Strategies for Stocks in Chinese Textile and Apparel Enterprises <i>Lei Mao, Lin-Yu Wang</i>	222
40. Study of Apparel Brand Customization Service and Customer Relationship Management <i>Jun Ren</i>	228

Track 4 Textile Materials Bioengineering

41. Emerging Models of Angiogenesis Patterns and Response Effect of Endothelial Cells <i>Lun Bai, Jan-Mei Xu, Hui-Feng Liu, Dong-Ping Wu, Min Xie, Guo-Ping Guan, Zheng-Yu Wu</i>	235
42. Structural Colored Fibers Based on the Photonic Crystal by the Colloidal Assembly <i>Ke-Qin Zhang</i>	243
43. Characterization of Silk Fibroin/Hyaluronic Acid Blend Film Cross-linked by 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide <i>Shu-Qin Yan, Qiang Zhang, Jian-Nan Wang, Ming-Zhong Li</i>	248
44. Porous Materials Based on <i>Bombyx mori</i> Silk Fibroin <i>Qiang Zhang, Shu-Qin Yan, Ming-Zhong Li</i>	254
45. Investigation of Electrospun Nylon 6 Nanofibrous Membrane as Filters <i>Gui-Bo Yin</i>	262
46. Poly(aryl ether ketone)s with Fluoro-substituted Benzen Side Chain <i>Juan Xie, Wei-Ya Peng, Guang Li, Jian-Ming Jiang</i>	267
47. Preparation of Cellulose Sulphate and Evaluation of its Properties <i>Xu Huang, Wei-Dong Zhang</i>	273
48. Study of Application & Properties of Synthesized Reactive Dyes Containing Sulphide - bis -	

ethylsulphone Residues <i>Xu Huang, Wei-Dong Zhang</i>	281
49. Rheological Behaviour of the Urea Denatured Soybean Protein <i>Jun-Fen Wu, Rui-Min Zhang, Yun Chen, Cui-Yu Yin</i>	288
50. Urea Denaturation and Structural Characterization of Soybean Proteins <i>Rui-Min Zhang, Jun-Fen Wu, Yun Chen, Cui-Yu Yin</i>	292
51. Influence of Polyethylene Glycol on Particles of Nano Zirconia <i>Qi Zhang, Jin-Mei Wang, Wei Wang</i>	296
52. The Application of Smart Materials in Textiles <i>Lan-Jun Zhou, Jun Xu, Li-Na Lu</i>	300
53. The Effect of Shearing Force on the Gel Formation and Structural Transitions of Regenerated Silk Fibroin <i>Yu Liu, Ying-Dong Cheng, Si-Yong Xiong, Peng-Ju Li, Yan-Qiong Wei, Ming-Zhong Li</i>	309
54. Conformation Transition of the <i>Bombyx mori</i> Silk Fibroin by Inducing Air <i>Peng-Ju Li, Ying-Dong Cheng, Yu Liu, Si-Yong Xiong, Ming-Zhong Li</i>	316
55. Effect of Polyalcohol on the Gelation Time and the Gel Structure of Silk Fibroin <i>Si-Yong Xiong, Ying-Dong Cheng, Yu Liu, Shu-Qin Yan, Qiang Zhang, Ming-Zhong Li</i>	322
56. Study on Properties of Modified Nano-TiO ₂ and its Application in Textile Products <i>Li-Ming Wang, Yong Shen, Hui-Fang Zhang, Jin-Cheng Wang, Ying Ding, Wei-Ting Qing</i>	329
57. Application of Golden Mean on Homogeneous Keratin Composite <i>Yang Liu, Wei-Dong Yu</i>	336
58. Poly(vinyl chloride) Asymmetric Hollow Fiber Membrane Prepared by Non-solvent Induced Phase Separation <i>Shuo Mei, Chang-Fa Xiao, Xiao-Yu Hu</i>	339
59. The Electrical Conductivity of the Electrostatic PU/MWNT Film according to Dispersion Condition <i>Jeong-Hyun Kim, Kyung-Soon Park, Seung-Jin Kim, Oh-Kyung Kwon</i>	344
60. Manufacturing and Characteristics Analysis of PU/MWNT Film for Electrostatic Dissipation <i>Jun-Hyeong Park, Kyung-Soon Park, Seung-Jin Kim, Oh-Kyung Kwon</i>	352
61. Study on Hole Filling of Porous PU/PEG Membrane and its Mechanical Properties <i>Gui-Zhen Ke, Ru-Ping Ruan, Jin-Xiu Wang, Wei-Dong Yu</i>	359
62. Characterization and Photocatalytic Performance of K+-Doped TiO ₂ Photocatalysts <i>Xiao-Hui Jing, Xin-Yu Ding, Zai-Sheng Cai</i>	364
63. Research on Swelling Behavior for HPC/PAN Films <i>Hui Li, Xiao-Yan Li, Xiao-Ning Yan</i>	372
64. Synthesis and Properties of Novel Poly(2-hydroxyethyl methacrylate-acrylamid)/Clay Superabsorbent Nanocomposites <i>An-Feng Zhu, Jun-Ming Dai, Juan Xie, Guang Li, Jian-Ming Jiang</i>	377
65. Synthesis and Characterization of Temperature/pH Double-Sensitive Hydroxypropylcellulose/	

Sodium Alginic Hydrogel <i>Hui Li, Xiao-Yan Li</i>	382
66. Effects of Oxygen Plasma Treatment on Microstructure and Tensile Deformation of Nano SiO ₂ Coating Vectran <i>Ying-Chen Zhang, Hong-Yan Wu, Yi-Ping Qiu</i>	387
67. The Influence of Atmospheric Pressure Plasma on Etching Polyamide 6 Films <i>Qiu-Yuan Xiong, Zhi-Qiang Gao</i>	391
68. Improving the Dispersibility of Pigment Red 122 in Water with Plasma Treatments <i>Shu-Hua Cao, Li Shen, Jin-Jin Dai</i>	397
69. Preparation of Four Functional Polysiloxane Materials with Different Organic Groups <i>Bo Chen, Ai-Qin Hou, Kong-Liang Xie, Si Chen</i>	402
70. Formation of Polymer Brushes on Cotton Fabric by SI-ATRP: the Effect of Initiator <i>Xu-Qing Liu, Yi Li, You-De Shen, Zi-Jian Zheng</i>	406

Track 5 Fiber Bioengineering Process

71. Study of Optical Properties of Dyed PET Compounded with a Dendritic Polymer Additive <i>Marziyeh Khatibzadeh, Mohsen Mohseni, Siamak Moradian</i>	410
72. Study on Modification of <i>Antheraea pernyi</i> Silk with Reactive Quaternary Ammonium Salt of Chitosan <i>Yan-Hua Lu, Zhi-Cai Yu, Zhao-Dan Yang</i>	415
73. Influence of Nano-TiO ₂ Photocatalyst on Physical and Chemical Properties of Cotton Fiber <i>Yong Shen, Li-Ming Wang, Hui-Fang Zhang, Jin-Cheng Wang, Ying Ding</i>	422
74. Test and Analysis of the Performances of Sea-Island Type Polyester/Polyamide Composite Fibers and its Fabrics <i>Li-Qin Lou, Rui-Zheng Huang</i>	429
75. Biological Treatment of Raw Flax with Fungus <i>Hong-Qin Yu, Shou-Hui Chen</i>	435
76. The Application of Surface Active Agent and Chelating Agent in Oxidation Degumming of Ramie <i>Guo-Liang Liu, Chong-Wen Yu</i>	440
77. Degumming of Mulberry Fiber using Microwave-Biological Enzyme-Accessorial Chemical Technique <i>Cai-Xin Qu, Lei Mao, Bin Zhou</i>	445
78. Study on Dyeing Property of Bamboo Fibres <i>Xiao-Hong Yuan, Dong-Sheng Chen, Ying-Jin Gan, Jian-Gang Wang</i>	451
79. The Surface Characterization of Chinese Luffa Fibers after Chemical Pre-treatment <i>Ying Wang, Jian Zhang, Xin-Yuan Shen</i>	457
80. Analysis and Comparison of Bamboo Pulp Fiber with Other Cellulose Fibers <i>Zhi-Hua Chen, Shun-Bin Ma, Ping Gu</i>	462

81. Study on Structure of Oxidized Raw Bamboo Fiber Treated with Sericin Protein <i>Yong-Mei Chu, Pei-Pei Zheng, Yu-Yue Chen</i>	467
82. Surface Characterization of Helium Plasma Treated Nano-SiO ₂ Sol-gel Coating UHMWPE Filaments by Contact Angle Experiments and ATR-FTIR <i>Ying-Chen Zhang, Jian-Xin He, Hong-Yan Wu, Yi-Ping Qiu</i>	472
83. Development of Corduroy Fabric with Superfine Polyester/Polyamide Compound Multi-segment Fiber <i>Tong-Tong Tang</i>	476
84. Dyeing of C.I. Dispersed Yellow 54 in Supercritical Carbon Dioxide <i>Da-Wei Gao, Quan Feng, Qu-Fu Wei</i>	483
85. Characterization of Polyaniline/Fe ₃ O ₄ -polyacrylonitrile Composite Nanofibers <i>Fang Chen, Xin Xia, Qu-Fu Wei, Feng-Lin Huang</i>	487
86. Study on Structure and Performance of Cotton Fiber Pretreated by Liquid Ammonia <i>Li-Qiong Liao, Yan-Ping Yu, Rui-Yin Zhang, Chun-Long Shen</i>	493
87. Salt Free Dyeing of Cationized Cotton <i>Li-Li Feng, Jian-Fei Zhang, Ya-Qin Zhao, Hong-Jie Zhang</i>	498
88. Study on Dyeing Polylactic Acid Fiber in Supercritical Carbon Dioxide <i>Xiao-Xing Shen, Wen-Fang Yang, Jia-Rong Niu</i>	503
89. The Research and Development of Thermo-regulated Fibres and Textiles <i>Xiao-Yan Su, Guang-Li Song</i>	509
90. Study on Ultrasonic Welded Technology of Polypropylene Fiber / Polypropylene Hermetic Strip <i>Liang-Chao Cong, Xiu-Ming Jiang, Jian-Cheng Yang, Lei Wang, Xiao-Qin Han, Lei Li, Yan Liu</i>	516
91. Application and Research of Intelligent Fiber <i>Bi-Ling Yang, Qin Tang, Sen Liu, Na Chen</i>	522

Track 6 Textile Biomedical Engineering

92. Electrospun Poly(lactide-co-glycolide)/Nanotube Composite Nanofibers for Drug Encapsulation and Sustained Release <i>Rui-Ling Qi, Jian-Yong Yu, Xiang-Yang Shi</i>	528
93. Electromagnetic Shielding Characterisation of Several Conductive Fabrics for Medical Applications <i>Renata Redondo Bonaldi, Elias Siores, Tahir Shah</i>	536
94. Biodegradability of Flax Noil Fibers Reinforced Poly (Lactic Acid) Composites <i>Rui Wang, Chun-Hong Wang, Zhao-Hui Jiang</i>	544
95. A Study on the Antimicrobial Effect of Germitol on Some Pathogenic Microbes Observed on Building Worker's Clothes <i>Ali Ashjaran, Reza Ghazi-saeidi, Abusaeid Rashidi, Ramin Khajavi, Morteza Sattari</i>	549
96. Quantum Cellular Automata as Bio-information Processing Tool--A Perspective <i>D. N. T. Kumar, Qu-Fu Wei, Dan Tao</i>	555

97. Advances on the Clinical Application of Stent Placement for Colorectal Cancers (CRCs) <i>Gang Li, Ping Lan, Yi Li, Hong Hu</i>	560
98. Haemostatic Effect of Neutral Wool Hydrolyzed Polypeptides <i>Dang-Xia Zhou, Yi Li, Jing Zhang</i>	576
99. Electric Resistances of 24 Jingluo Starting points in idiopathic infertile men <i>Dang-Xia Zhou, Yi Li, Hai-Xu Wang</i>	580

Track 7 Textile Bioengineering Process

100. Recent Innovations in Silk Biomaterials <i>Rangam Rajkhowa, Takuya Tsuzuki, Xun-Gai Wang</i>	583
101. Modification of Hemp/cotton Knitted Fabric and its Salt-free Dyeing <i>Rui-Chao Xu, Yun Liu</i>	594
102. Effect of Abnormal Degree of Fiber Cross-section on the Moisture-transfer and Dry-fast Properties of the Knitted Fabric <i>Rui-Chao Xu, Yi-Ping Zhang, Li-Na Chen</i>	600
103. Optimization of Processing Parameters in the Front Drafting Zone with Alien Surface Pressure Bar in INA-V Drafting System <i>Qing-Guo Feng, Jia-Zhi Ren, Guo-Xin Jia, Li-Bin Zhang</i>	607
104. Simulation of the Number of Fibres in the Profile of Strand in Roll Drafting Process <i>Guang-Song Yan, Yu-Heng Su</i>	613
105. Study on the Relation between Theoretical and Tested Unevenness of Staple Yarn <i>Jin-Zhong Zhu, Guang-Song Yan, Yu-Heng Su</i>	617
106. Investigation of Seam Pucker in Lightweight Silk Fabric Part I: the Relationship between Seam Appearance and Properties of the Lightweight Silk Fabric along the Diagonal Directions <i>Qiao-Ying Wu, Wen-Bin Zhang, Chun-Sheng Wu, Liu-Jing Zhu</i>	620
107. Structure-Property Interrelationship of Denim Yarn Produced Using Ring and Compact Spinning Technology <i>Ganesh Kakad, Avinash Kolhatkar, P.V. Kadole</i>	627
108. Theoretical Analysis and Prediction of Overfeed Sewing Shrinkage of Wool-type Fabrics <i>Tong-Hong Xu, Ping Gu</i>	635
109. The UV Protection of Polyester Fabrics Dyed with Benzotriazole UV-absorbers <i>Wei-Guo Chen, Jin-Jin Dai, Xiao-Fang Wang, Song Fang</i>	641
110. Ultraviolet Protection Finishes of Cotton Fabrics by Rare Earth Organic Light Conversion Agent of Eu ³⁺ Complex <i>Gui-Bo Yin, He-Chun Chen</i>	646
111. Photocatalytic Degradation of Synthesized Colorant Stains on Cotton Fabric Coated by Nano TiO ₂ <i>Mohammad Mirjalili, Loghman Karimi</i>	651
112. A Study on Effect of Mordant on Tenacity of Carpet Piles <i>Mehrdad Hajilari, Mohsen Hoseinkhani</i>	659

113. Influence of Laser Engraving on the Tensile Property of Denim Fabrics <i>C.W. Kan, C.W.M. Yuen, Jimmy K.C. Lam, C.W. Cheng, W.Y. Wong, O.N. Hung, C.H. Lau</i>	664
114. Study on Adhesion Shrinkage Rate between Woven Interlining and Fabric Based on Orthogonal Experiment <i>Hong Mu, Xin Lu</i>	669
115. Study of Compacting Length in Compact Spinning with Inspiratory Groove <i>Xi-Chang Zhang, Guang-Song Yan, Long-Di Cheng</i>	674
116. The Relativity between Several Materials and Sanitary Properties of Microfiber Synthetic Leather <i>Long-Fang Ren, Yuan-Yuan Luo, Tao-Tao Qiang, Xue-Chuan Wang</i>	680
117. Nep Detection in Carding Machine Using Optimized Filters <i>Jun-Yan Chen, Chong-Wen Yu</i>	685
118. An Integrated Approach to Dynamic Model of Spinning Balloon <i>Rong Yin, Hong-Bo Gu</i>	690
119. Optimization of Roving Twist Factor and Break Draft Ratio in Ring Spinning by Fuzzy Decision Making <i>Hong Cui, Chong-Wen Yu</i>	696
120. Research on Soft Finishing and Wearability of Cotton Fabrics <i>Xiang-Ji Wu, Ying-Qi Xu</i>	700
121. The Influence of Combing Preparation Process on Quality of the Products <i>Guo-Liang Liu, Jia-Zhi Ren</i>	705
122. Evaluation of Skincare Property for Cotton Fabric based on Chitosan/silk Finishing <i>Wen-Jing Liu, Yan-Ling Sui, Yong-Zhu Cui, De-Kun Song</i>	711
123. Extraction and Dyeing Ability of Dyestuff from Ginkgo by Biological Enzyme Method <i>Lei Zhang, Wen-Jing Liu, Yong-Zhu Cui, Ying-Fu Li</i>	718
124. Study on Molding Properties of Three-Dimensional Non-woven Liner Material Bra Cup <i>Xue-Feng Yin, Ting-Ting Liang, Ju-Fen Fu</i>	725
125. Study on Influencing Factors of Filtrating Properties of the Polypropylene Woven Filter Cloth <i>Hong-Jie Zhang, Zhi-Li Zhong, Li-Li Feng, Xiao-Ping Quan</i>	732
126. The Research of Traditional Handicraft in Xi Lan Ka Pu Brocade <i>Li Zhao, Dong-Sheng Chen</i>	738
127. An Environmentally Benign Fabrication Process of CNTs/PE Nanofibers from Immiscible Blends with Cellulose Acetate Butyrate <i>Hai-Lian Wang, Ru Xiao</i>	744
128. The Study on the Anti-static Electricity Flannel Fabric's Technique of Production <i>Li-Ping Wang, Jian-Yun Gao, Zhi-Guo Gao, Li-Li Wu, Chuan Ge</i>	750
129. Development of Coolmax/Cashmere/Modal/Colour Cotton Interwoven Fabric <i>Kui Mu, Chong-Qi Ma</i>	754
130. Research on Non-chlorine Shrink-Resistance Treatment for Wool	

<i>Pu Gao, Jian-Yong Liu, Jin-Bo Yao.....</i>	759
131. Study on the Online Printing Process of Spunlace <i>Jing-Yang Peng, Ya Liu.....</i>	765
132. Imitate Papermaking to Make Carbon Fiber Reinforced Resin Matrix Composites by Using of Waste Carbon Fiber <i>Zhi Li, Ya-Bin Li.....</i>	771
133. Reducing Yarn Hairiness with Movable Balloon Controller at Ring Spinning <i>Ju-Sheng Qiu, Zhi-Li Zhong, Huan Guo, Xun-Gai Wang.....</i>	776
134. Influence of Different Conditions of Initiators on the Grafting Ratio <i>Hui-Cai Shi, Zan-Min Wu, Zhan-Zhu Zhang, Su-Wan Zhang.....</i>	781
135. Spinning and Performance of PP/Basalt Filament Wrapped Yarns <i>Dang-Feng Zhao, Hua-Wu Liu, Zhi-Li Zhong, Xiao-Hui Fan.....</i>	786
136. Study on Three-Component Sirofil Composite Yarn Blended by Silver-plated Filament/Cotton <i>Su-Wan Zhang, Li Chen, Xiang-Hong Li, Hui-Cai Shi.....</i>	791
137. Measurement of Sliver Drafting Force on Drawing Frame <i>Zhi-Liang Zhang, Chong-Wen Yu.....</i>	796
138. Fabrication and Characterization of Ultrafine Captopril-loaded Polyacrylonitrile (PAN) Fibermats Using Electrospinning <i>Jian-Gang Xie, Cheng-Yao Wu, Jing Quan, Li-Min Zhu.....</i>	802
139. The Study on the Spinning Process of Kevlar Leftovers <i>Li-Wei Wu, Jin-Mei Wang, Jian-Zhong Liu.....</i>	808
140. Use of TiO ₂ as Co-catalyst for Improving Wrinkle-resistant Property of Cotton Fiber <i>Y.L. Lam, C.W. Kan, C.W.M. Yuen, C.H. Chui.....</i>	812
141. Using TiO ₂ as Co-catalyst for Treating Cotton Fiber with DMDHEU <i>Y.L. Lam, C.W. Kan, C.W.M. Yuen, C.H. Chui.....</i>	818
142. Using TiO ₂ as Co-catalyst for Treating Cotton Fiber with BTCA <i>Y.L. Lam, C.W. Kan, C.W.M. Yuen, C.H. Chui.....</i>	824
143. Wrinkle-resistant Properties of Cotton Fiber with the Use of Plasma, TiO ₂ and BTCA System <i>Y.L. Lam, C.W. Kan, C.W.M. Yuen, C.H. Chui.....</i>	830
144. Plasma Pretreatment for Digital Ink-jet Printing for Cotton Fabric <i>C.W. Kan, C.W.M. Yuen, W.Y.I. Tsoi.....</i>	835
145. Improving Anti-felting Property of Wool Fibre with Plasma-enhanced Polymer Film Deposition Process <i>C.W. Kan, C.W.M. Yuen.....</i>	840
146. Digitization Reformation of Control System of Sample Sizing Machine <i>Li-Jiang Yang, Yue-Cun Wang.....</i>	846

Track 8 Clothing Bioengineering Design

147. Design and Research on Improving Abrasion Resistance of Pile-faced Knitwear

<i>Li-Min Shi, Rui-Ping Guo, Xiao Li, Yu-Xiao Zhao, Xin Wen</i>	851
148. Analysis on the Collar Modeling Design of Young Women Garments <i>Xian-Yan Liu, Jian-Ping Shi</i>	858
149. Crossover Design ---The Reuse and Redesign of Waste Jeans from the Perspective of Art <i>Hui Tao, Dong-Sheng Chen</i>	864
150. Application of Knowledge Management Technology in Bra Cup Design <i>Xue-Ying Song, Bo-An Ying, Xin Zhang, Yue Wang</i>	868
151. Analysis on the View of Science on Apparel Design <i>Wei-Yi Feng, Jin Chen, Bo-An Ying</i>	875
152. Research on Suit Construction for Limb Disabled Using with Axillary Crutches <i>Yu-Xiao Zhao, Chong-Hui Zhang, Zhe Yang</i>	879
153. Study on Men's Jacket Underarm Functional Design for the Limbs Disabled <i>Jia Wu, Li-Min Shi, Yu-Xiao Zhao, Qi Wang, Yong-Kai Zhou</i>	885
154. Dimensional Tolerances Related to Feet and Their Use in Computer-aided Shoe Last Design <i>Li-Wen Yan, Lu-Xing Fang, Ravindra S. Goonetilleke</i>	891
155. Evaluation on Breast Shaping Capability for Different Brassiere Strap Styles <i>Xiao-Kun Yu, Wen-Bin Zhang, Yin Zhang</i>	896
156. Study on Aesthetics of Colour Matching between Skin and Clothing <i>Xiao-Feng Jiang, Jia-Ni Zhu, Shan-Shan Wang, Guo-Lian Liu</i>	901
157. Research Process of the Garment Ease <i>Lin-Lin Zhao, Chi Liu, Lan-Jun Zhou</i>	906
158. Research on Fashion Design of Cheongsam <i>Hai-Xia Zhang, Xiao-Wen Jiang, Li-Mei Wang</i>	912
159. Research on the Design of Maternity Dress <i>Li-Mei Wang, Xiao-Wen Jiang, Hai-Xia Zhang</i>	918
160. The Improved Design of Bra Shoulder Strap <i>Chi Liu, Lin-Lin Zhao</i>	924
161. Exploring an Innovative Idea of Garment Construction Design to Minimize the Waste of Fabric <i>Xuan Wang, Nan Zhang</i>	928
162. Research on the Crotch Depth of Uniform Pants of Junior Middle School Girls <i>Rui Zhang, Hong Dai, Hua Shi, Sha Li</i>	936
163. The Survey on Young Chinese Males in Zhejiang for Apparel Design and Manufacture <i>Qi-Ming Wang, Wei-Yuan Zhang, Wen-Bin Zhang</i>	940
164. Evaluation of Visual Impression on Men's Stripe Shirts with Different Width and Color Combination <i>Yuan Xue, Yan-Bo Ji, Haruki Imaoka</i>	947
165. Optimized Structure Design of Electromagnetic Shielding Clothes and its Performance Testing <i>Yan Li, Wen-Bin Zhang</i>	955

166. The Modification of Suit Paper Patterns for Clients with Big Belly <i>Kun-Yue Teng, Rui Wang, Yong Peng</i>	960
167. Research on Women's Working Clothing Style in Su-Min Region of China <i>Yan-Gui Xu, Si-Si Qian</i>	964
168. Discuss Bionic Design of Modern Fashion <i>Fu-Jun Fan, Ming-Tao Xie</i>	968

Track 9 Evaluation of Biofunctional Performance

169. Multifunctional Dermal Electrospun Scaffold <i>Mijovic B., Agic A.</i>	973
170. Air Permeability and Acoustic Absorbing Behavior of Nonwovens <i>Shu Yang, Wei-Dong Yu</i>	979
171. Image Processing Techniques and Application of Water Transportation through the Fabrics <i>Xiao-Yun Jiang, Xiao-Hong Zhou, Ming Weng, Jing-Jing Zheng, Yao-Xing Jiang</i>	984
172. Properties of Bamboo Fiber for Textiles <i>Long-Jiao Li, Yue-Ping Wang, Ge Wang, Hai-Tao Cheng, Xiao-Jun Han</i>	990
173. Research on Fabric Properties of Polyester Monofilament Core-spun Yarn <i>Jing Ye</i>	997
174. Cellular Uptake Study of Silica Nanoparticles in Human Foreskin Fibroblast Cells <i>Yu Zhang, Xuan Liu, Ai-Zheng Chen, Dong Chen, Mo Yang, Yi Li</i>	1001
175. Water Vapor Transfer Property through Fiber Assemblies with Compression <i>Wen-Fang Song, Juan He, Qian Liu, Wei-Dong Yu</i>	1007
176. Performance Analysis and Function Simulation of Protective Clothing for Electromagnetic Radiation <i>Li-Li Zhang, Yan Chen</i>	1012
177. Study on the Wearability of PTT Knitted Fabrics <i>Qiu-Ling Cao, Wen-Lin Zou, Lin Wang</i>	1018
178. Analysis of the Thermal Degradation Process of Aramid Fibers <i>Hong-Ting Zhang</i>	1022
179. Tribological Measurement between Human Skin and Knitted Fabric <i>Xu Wang, Fu-Mei Wang</i>	1027
180. A Research on the Evaluating System of the Non-laminating Fabric of the Lounge Coat' Materials <i>Ying-Ying Gu, Xiao-Mei Shang, Zhi-Juan Pan</i>	1033
181. The Shielding Efficiency Differences Caused by Exposure Area of Anti-electromagnetic Radiation Garments <i>Guang-Wei Fu, Quan Zhan, Rui Wang, Jin-Chun Yang</i>	1038
182. Study on Wet Friction Properties of Fabrics <i>Ya-Fang Liu, Xu-Hong Yang</i>	1044

183. Research on Determining Techniques for Cotton and Bast Fibers Based on Wavelet Transform <i>Ya-Ning Zong</i>	1051
184. Flame-resistant Modification of Viscose Fibers by Blending with P-N-Si Compound <i>Rui-Wen Zhang, Wei Zhang, Yan Wang</i>	1056
185. Discussion on the Qualitative Identification Methods of Naturally-colored Cotton <i>Chen-Yang Li, Yi Zhang</i>	1061
186. Color Analysis on Natural Polyphenolic Dyed Cotton Cellulose Fibers <i>Feng-Yan Li, Qiao-Fen Yang, Cai-Hong Hong, Zhi-Li Zhong</i>	1067
187. Evaluation of Keratin Fibre Damages under Different Straightening Conditions <i>C.W.M. Yuen, C.W. Kan, S.Y. Cheng, P.Y. Lau</i>	1073
188. Influence of Structure Variables on Woven Fabric Made of PTT/PET Elastic Yarn <i>Jin Luo, Guang-Biao Xu, Kang Wang, Fu-Mei Wang</i>	1080

Track 10 Modeling and Simulation in Textile Bioengineering

189. Numerical Stability of Integration Methods for Cloth Simulation <i>Hong-Yan Liu, Yue-Qi Zhong, Shan-Yuan Wang</i>	1085
190. Finite-element Modeling of the Impact on Mechanical Protective Clothing <i>Song-Xue Sha, Yan Chen, Xiao-Yu Liu</i>	1090
191. Forecasting Model and Analysis of Chinese Mulberry Silk Production Based on ARMA Model <i>Bing-Di Liu, Cen Feng, Li Fang, Bo Nie</i>	1096
192. The ARCH Effect Analysis of Silk Price Index Based on Time-Series Study <i>Cen Feng, Bo Nie, Li Fang, Bing-Di Liu</i>	1101
193. Real-time Virtual Cloth Wrinkle Simulation Using Energy Minimization <i>Yu-Cai Ma, Hai-Ru Long</i>	1107
194. Sketch-Based Drape and Wrinkles for Virtual Skirt <i>Juan-Fen Jiang, Yue-Qi Zhong, Shan-Yuan Wang, Duan Li</i>	1113
195. Dynamic Creep Performance of Fabric Reinforced Flexible Composites during Low Cycle Fatigue <i>Ze-Xing Wang, Jin-Hua Jiang, Nan-Liang Chen</i>	1118
196. The FEM-prediction on Tensile Performance of Woven Membrane Materials Under Uni- and Bi-axial Loads <i>Shou-Hui Chen, Hong-Qin Yu, Zheng Guo, Raul Fangueiro, Da-Peng Qi</i>	1123
197. Mathematical Model of Electric Field Distribution at the Critical State in Bubble Electrospinning <i>Liang Dong, Yong Liu, Rui Wang, Wei-Min Kang, Bo-Wen Cheng</i>	1129
198. Simulation and Characterizing Water Flows Inside Slot Type Manifold in the Hydroentangling Process <i>Xiang-Qin Wang, Xiang-Yu Jin, Qin-Fei Ke</i>	1133
199. A Model of Heat and Moisture Transfer through Parallel Pore Textiles	

<i>Ding-Hua Xu, Jian-Xin Cheng, Xiao-Hong Zhou.....</i>	1139
200. Researching Predictive Model of Cotton Yarn Dynamic Strength Based on Origin Software <i>Xiao-Qing Wang, Yi Zhang.....</i>	1145
201. A Pedagogical Study of an E-learning Case Computer Simulation for Enhancing Students' Learning Outcomes in Clothing Functional Design <i>Ming-Liang Cao, Yi Li, Josephine Csete.....</i>	1150

Track 11 Textile Biomechanical Bioengineering

202. Effect of External Pressure on Skin Blood Flow at Lower Limb in Different Postures <i>Ye-Hu Lu, Xiao-Qun Dai.....</i>	1159
203. Analysis of Structure and Stiffness of Fabric by Three-point Bend in Principle <i>Zhao-Qun Du, Wei-Dong Yu, Hui Mao, Hua Shen, Xu-Chun Zhou, Gang Zhang.....</i>	1154
204. Research on Collar Prototype of Knitted Garment Based on Extension Test <i>Can-Yi Huang, Xin Zhang, Zhong-Hui Ouyang.....</i>	1170
205. Precracked Tearing Properties of PVC Coated Bi-axial Warp Knitted Fabric <i>Yi-Xi Luo.....</i>	1176
206. The Biaxial Tensile Elastic Properties of Plain Knitted Fabrics <i>Yi-Ping Zhang, Hai-Ru Long.....</i>	1181
207. Use Poly (trimethylenterephthalate) (PTT) Filaments to Increase the Compliance of Tubular Vascular Prostheses <i>Ying Chen, Xin Ding, Martin W. King, Yu-Ling Li, Jie Gao, Xue-Qian Zhao.....</i>	1185
208. Analysis of Ballistic Impact on Basalt Fabric <i>Xin-E Li, Xiao-Gang Chen, Dan-Mei Sun.....</i>	1192
209. Effect of Contact Pressure on Human Skin Blood Flow <i>Xiang-Ling Meng, Wei-Yuan Zhang, Yu-Mei Cui.....</i>	1196
210. A Virtual Integration System Framework for Clothing Biomechanical Engineering Design <i>Ruo-Mei Wang, Yi Li, Xiao-Nan Luo.....</i>	1201

Track 12 Textile Thermal Bioengineering

211. Benchmarking Functionality of Historical Cold Weather Clothing: Robert F. Scott, Roald Amundsen, George Mallory <i>George Havenith.....</i>	1204
212. Development and Validation of an Empirical Equation to Predict Sweating Skin Surface Temperature for Thermal Manikins <i>Fa-Ming Wang, Kalev Kuklane, Chuan-Si Gao, Ingvar Holmér, George Havenith.....</i>	1213
213. Effects of Zeta Potential and Fiber Diameter on the Coupled Heat and Liquid Moisture Transfer in Porous Polymer Materials <i>Qing-Yong Zhu, Jing Yang, Ming-Hui Xie.....</i>	1219
214. Study on the Moisture Transfer Principles of Waterproof Breathable Fabric by Different Treatments Using the MMT	

<i>Hai-Yan Wu, Yun Zhang, Hong Xie.....</i>	1225
215. Comparison of Thermal Insulations between Tibetan Robe and Western Garments Using Thermal Manikin <i>Xiao-Fang Guo, Jun Li, Chen-Lin Zhu, Kai-Lai Xu.....</i>	1232
216. Evaluation of Thermal-Moisture Comfort Properties of Kapok Blended Fabrics <i>Jie Liu, Fu-Mei Wang.....</i>	1237
217. Effect of Ventilation Designs on Sports T-shirts' Microenvironment <i>Ling-Hao Kong, Xiao-Qun Dai, Ying-Ying Wan, Jing Ying, Ye-Hu Lu.....</i>	1244
218. Analysis and Prediction of Dynamic Heat and Moisture Comfort Properties of Fabric in Different Wind Speed Conditions <i>Kai Yang, Ming-Li Jiao, Qian Chen, Wei-Yuan Zhang.....</i>	1249
219. Study on a Novel Soft Simulated Skin Applied in Experimental Thermal Manikin <i>Kai Yang, Ming-Li Jiao, Luo-Yan Hu, Wei-Yuan Zhang.....</i>	1254
220. Thermal Protective Performance of Wetted Multilayer Fabrics at Low Level Radiation Source <i>Zhi-Ying Cui, Jing-Jing Zhang.....</i>	1259
221. Study on Evaluation Index of Fabric Heat-moisture Comfort Performance with Grey Theory <i>Xiao-Ning Jing, Ya-Bin Li.....</i>	1264
222. Testing and Research on Composite Phase Change Textile Materials <i>Sen Liu, Qin Tang, Bi-Ling Yang, Shu-Bin Chen.....</i>	1271
223. The Thermal Performance Testing Methods and Indices of Phase-Changing Temperature-Regulating Textiles <i>Hai-Xia Zhang, Rui-Chao Xu, Hui-Xian Mao, Ya-Li Zhai.....</i>	1277
224. Effects of an E-learning Case Computer Simulation on Student's Learning of Clothing Functional Design and Students Feedback <i>Ming-Liang Cao, Yi Li, Josephine Csete.....</i>	1284
225. Structural Data Design and Computation Scheme for Multi-style Garment Thermal Functional Behaviors Simulation <i>Yi Teng, Ruo-Mei Wang, Yi Li.....</i>	1295

Track 13 Clothing Sensory Bioengineering

226. Study of the Relationship between Jacket- Business Wear Fitness and Fabric Drape <i>Fang-Fang Cui, Xin Zhang, Ling-Shan Wang.....</i>	1299
227. Effects of Clothing Opening Rates on Thermal Insulation under Varying Wind Conditions <i>Xiang-Hui Zhang, Jun Li, Xin Liu.....</i>	1307
228. Influence of Gender on the Friction Properties between Fabric and Skin <i>Xu Wang, Fu-Mei Wang.....</i>	1312
229. Relationship between Garment Fit and Thermal Comfort <i>Zhao-Hua Zhang, Jun Li.....</i>	1317
230. Evaluation of Wearing Comfort Based on Sleeping Status	

<i>Li-Na Lu, Zhao-Hui Gu, Lan-Jun Zhou.....</i>	1322
231. Study on the Soft Decoration Design in Interior Space Design from the Home Textiles' Touch Impression <i>Xiao-Dong Liu, Xin-Qun Feng, Xiao-Fei Zhang.....</i>	1329
232. Evaluation and Prediction of Wet Comfort Performance of Knitted Fabric Underwear Using Artificial Neural Network <i>Lin-Yu Wang, Lei Mao.....</i>	1335
233. Prediction of Thermal Sensation in Dynamic Environment with TSENS Index <i>Hua Liu, Wei-Yuan Zhang, Xiao-Li Hu, Zhi-Ying Cui.....</i>	1342
234. A Brief Introduction to Clothing Comfort <i>Yao Yu, Xiao-Ming Qian.....</i>	1347

Track 14 Textile Bioengineering for Sports

235. Interpretation on Cycling Wears and their Design Characteristics <i>Li-Xia Chang.....</i>	1352
236. Key Factors in Outdoor Sportswear Design <i>Zhao-Hui Gu, Yong-Mei Deng.....</i>	1357
237. Study on Chinese College Students' Consumption Behavior on Leisure Sportswear <i>Jian-Fang Liang, Xiao-Sheng Li, Jian-Ming Liang.....</i>	1362
238. Research on Sole-Slope of Sports Shoes Based on Plantar Pressure Measurement <i>Li-Na Cui, Xin Zhang, Can-Yi Huang.....</i>	1368
239. Structure Design of the Tubular Nonwoven Composite Material Applied on Pipeline Rehabilitation <i>Shu-Jie Zhang, Rui Wang, Chong-Qi Ma.....</i>	1373
240. Study on Fashion Trend of Women Sportswear <i>Chang-Chun Sun, Zhao-Hui Gu.....</i>	1378
241. Color Relevance Analysis between Sportswear and Sport-style Casual-wear <i>Heng Zhong, Yu-Mei Cui, Jing-Jie Luo.....</i>	1383
242. Measurements of the Friction Coefficient of Insole Fabric <i>Xing-Fang Lu.....</i>	1390
243. Study of the Functionality and Fashionable Factors in Sportswear Design <i>Yu-Mei Cui, Dan Mao, Can-Ming Liu.....</i>	1395
244. A Discussion on the Esthetics of Women's Athletic Sportswear-Judging through the Comparison of Two Kinds of Women's Volleyball Uniforms <i>Yu Liu, Zu-Fang Zhang, Fen-Fen Yu, Ye-Ling Wang.....</i>	1400
245. Study on Feature and Design of Outdoor Sports Socks <i>Jing-Yu Chen.....</i>	1405
246. The Study and Development of New Functional Sportswear Fabric <i>Jia-Yan Rong, Dong-Ping Li, Yi-Xuan Feng, Chun-Yan Huo.....</i>	1411

247. Thermal Biologic Analysis of the Human Body during Cycling Sports <i>Jie Luo, Yue-Ping Guo, Joe Au, Ai-Hua Mao, Xing Zhang, Lei Yao, Yi Li</i>	1415
248. Effects of Water Ingestion on Core Temperature Measurement by Gastrointestinal Pill during Wear Trial in Hot Conditions <i>Jiao Jiao, Lei Yao, Ya-Jun Chen, Ka-Wai Lau, Yi Li, Stephen Heung-Sang Wong, Sau-Fan Ng</i>	1421
249. Contact Pressure of Tubular Fabrics for Compression Sportswear <i>Ying-Lei Lin, Lei Yao, Ka-Fai Choi, Ameersing Luximon, Yi Li</i>	1425
250. Development of High Performance Running Wear <i>Lei Yao, Shu Sun, Yong-Jin Wang, Xu-Yong Cao, Jun-Yan Hu, Yi Li</i>	1430

Track 15 Clothing Anthropological Engineering

251. A Study on Characteristic Parameters of Chinese Underwear Mannequin and Garment Mannequin <i>Feng-Ying Liu, Xin Zhang, Bo-An Ying, Ling-Shan Wang</i>	1435
252. Optimization of an Image Capturing Installation for A 3D Close-Range Photogrammetric System <i>Yong-Mei Deng, Zhao-Hui Gu, Xin Zhang, Bo-An Ying</i>	1441
253. The Technology Design of the Production of Judogi - Anthropometric Data Conversion Based on Judogi Design <i>Xiao-Mei Shang, Yang Yu</i>	1446
254. Analysis on the Custom-made Process of the Female's Fit Pants Based on 3D Body Scanning <i>Yan-Bo Ji, Yuan Xue, Rui Zhang</i>	1452
255. Studies on Designing of Mannequins Using Structural and Functional Bionics <i>Yue Wang, Bo-An Ying, Xin Zhang, Xue-Ying Song</i>	1457
256. Study on Body Measurement and Analysis of People with Limb Disabilities <i>Yu-Xiao Zhao, Mei-Hua Liu, Chong-Hui Zhang, Ping Hu, Fan Wang</i>	1462
257. Study on the Type and Size of Waist Cincher of Women in Western China <i>Li-Ning Qi, Chi Liu, Feng Wei</i>	1469
258. Indexes Reduction Research on Body Shape Feature of Females in North China <i>Yun-Juan Liu, Dong-Sheng Chen, Yin-Jin Gan, Xiao-Hong Yuan</i>	1474
259. Study on the Precision of 3-Dimensional Body Scanner (Part I) - Organization and Implementation of Body Measurement <i>Jing Qi, Xin Zhang, Li-Xia Chang</i>	1478
260. The Analysis and Research on the Function of Data Oriented to the Standard of Clothing Size - the Analysis and Research on the Function of Automatical Measurement <i>Xiao-Mei Shang, Zhong-Yi Wang</i>	1486
261. A Study on Mathematic Model to Describe the Distribution of Curvature Radius on Lower Leg Cross-section at the Top Part of Men's Socks <i>Qiang Wang, Dong-Sheng Chen, Rui Dan, Qu-Fu Wei</i>	1492

262. Study on Skintight-clothing Size System for 30-45 Years Old Women Based on Human Body Measurements <i>Hong Xiao, Feng-Feng Li, Yan Yuan, Bin Chen, Yi-Fei Qu</i>	1497
263. The Study on Breast Shape by Age Group Based on 3D Anthropometric Survey <i>Xiao-Li Hu, Wei-Yuan Zhang, Lin-Li Zhang, Hua Liu, Wen-Bin Zhang</i>	1502
264. A Case Study of Body Scanning and Structure of Bra <i>Jun-Fang Sun, Xiao-Peng Chen, Yun Luo</i>	1508
265. Body Scan Data Repair Based on Software Integration <i>Cheng-Ying Gao, Yong-Qing Ye, Ning Liu</i>	1512

Track 16 Textile Ecological Engineering

266. Synthesis of a Monoazo Disperse Dye Containing Ester Group and Its Application on Polyester Fabrics as a Green Dye <i>K. Gharanjig, A. Khosravi, M. Arami</i>	1517
267. Removal of a Reactive Dye from Aqueous Solution Using Nano-Chitosan Emulsion <i>H Momenzadeh, A khosravi, AR Tehrani-Bagha, K Gharanjig</i>	1522
268. Analysis of Potential Mechanical Hazards of Children's Clothing Based on Fault Tree Method <i>Yuan Zhou, Xue-Mei Ding, Xiong-Ying Wu, Li-Hong Chen</i>	1528
269. Comparison of Mechanical Safety Requirements and Test Methods of Children's Garments in Chinese and Euramerican Standards <i>Li-Hong Chen, Xue-Mei Ding, Xiong-Ying Wu</i>	1535
270. Comparison of Technical Regulations and Standards for Home Textiles <i>Xiu-Yue Yang, He-Sheng Weng, Ya-Li Zhang, Xue-Mei Ding, Xiong-Ying Wu</i>	1540
271. Investigation on Reverse Logistics of Recycling Waste Textiles <i>Lai-Li Wang, Xue-Mei Ding, Xiong-Ying Wu</i>	1546
272. Research of Early Warning Method for Ecological Underwear Test <i>Feng Wei, Xiao-Wen Jiang, Li-Ning Qi</i>	1550
273. Assessing Toxicity of Silk Dyed with Calotropis Procera (Ait) Ait. f. and Lantana Camara Linn <i>Anjali S Deshmukh, M.P. Gaikwad, M.R. Gaikwad</i>	1557
274. Study on Forming Technology and Mechanical Properties of Fibrous Composites Made from Waste of Polyester, Cotton and Flax <i>Li-Hua Lv, Yu-Ping Zhao, Chun-Yan Wei, Ju-Lei Shen</i>	1561
275. General Review of Basalt Fibres and Fabrics <i>Xin-E Li, Xiao-Gang Chen</i>	1565
276. Original Ecological Features of Tibetan Costume and Ornaments Materials <i>Xiu-Qin Hu, Yan Chen</i>	1572
277. Extraction of Natural Dyestuff from Purple Sweet Potato and Research on the Dyeing Properties of Silk Fabric <i>Hong Li, Jian-Rong Sun</i>	1577

278. Photodegradation of Reactive Red X-BR using UV/H ₂ O ₂ <i>Chun-Hui Li, Li-Shun Feng, Cun-Lan Zhang, Dun-Qing Wang, Hong-Shuai Tan</i>	1583
279. Development Strategies and Evaluation System of Garment Industry Clusters Based on Life-Cycle <i>Hui-Juan Xu, Yi-Xiong Yang, Ying Zhang</i>	1590
280. The Study on Creative Reuse of Recycled-clothing <i>Yan Yuan, Hong Xiao, Bo-An Ying, Bing-Bing Liu</i>	1597
281. An Exploratory Comparative Life Cycle Assessment Study of Grocery Bags - Plastic, Paper, Non-woven and Woven Shopping Bags <i>Subramanian Senthilkannan Muthu, Yi Li, Jun-Yan Hu, Pik-Yin Mok, Xiao Liao</i>	1603
282. Computational Model of Nonlinear Elastic Tubular Fabric Using Finite Element Method <i>Ying-Lei Lin, Ka-Fai Choi, Ameersing Luximon, Lei Yao, Yi Li</i>	1610
283. Green Polymers and Textiles: Materials, Marketing and Credibility, the US Perspective <i>Ian R. Hardin</i>	1616
284. Environmental Contamination: A Comparison of Using Different Methods for Removing Gloves in 2 Different Distances <i>Joanna YF Lai, Yue-Ping Gu, Peggy PL Or, Yi Li</i>	1621

Track 17 Textile Industry Technology Roadmap (Special Issue)

285. Technology Roadmap for Japanese Textile Industry <i>Kanji Kajiwara</i>	1629
286. Development of Technology Roadmap for Guangdong Textile and Clothing Industry <i>Yi Li, Xiao-Yun Xiong, Lu Zeng, Mai-Wang Li, Zhi-Qiao Liu, Lei Yao, Ruo-Mei Wang, Jun-Yan Hu, Jia-Shen Li, Ru Lv, Hao-Ran Dong, Xiao Liao, Jian-Jun Wang, Sen Liu, Hong-Xi Liu, Wei-Bing Xiang, Xiao-Xia Yang, Fu-Ping Xue</i>	1634
287. Current Status of Textile and Clothing Industry in China and Guangdong <i>Zhi-Qiao Liu, Yi Li, Lu Zeng, Jian-Jun Wang, Xiao-Xia Yang, Xin-Xing Wu, Mai-Wang Li, Xiao Liao, Qian-Wei Chen, Li Yang, Karpagam Subramanian</i>	1646
288. Market Demand Analysis for Guangdong Textile and Clothing Industry <i>Mai-Wang Li, Yi Li, Lu Zeng, Fu-Ping Xue, Cong-Liang Zou, Zhi-Qiao Liu, Qian-Wei Chen, Li Yang, Xiao Liao, Karpagam Subramanian</i>	1654
289. Research Needs for Guangdong Textile and Clothing Industry <i>Xiao-Yun Xiong, Yi Li, Lu Zeng, Zhi-Qiao Liu, Sen Liu, Hong-Xi Liu, Wei-Bing Xiang, Jian-Jun Wang, Mai-Wang Li, Xiao Liao, Karpagam Subramanian</i>	1661
290. Information Technology Roadmap for Textile and Clothing Industry <i>Ruo-Mei Wang, Yi Li, Lu Zeng, Fu-Ping Xue, Subramanian-Senthilkannan Muthu, Xiao Liao</i>	1675
291. Product Design Innovation Technology Roadmap for Guangdong Textile and Clothing Industry <i>Lei Yao, Yi Li, Lu Zeng, Jie-Yu Xiang, Subramanian-Senthilkannan Muthu</i>	1680
292. Medical Textiles Technology Roadmap for Guangdong Textile and Clothing Industry <i>Jun-Yan Hu, Yi Li, Lu Zeng, Subramanian-Senthilkannan Muthu</i>	1687

293. Functional Materials Technology Roadmap for Guangdong Textile and Clothing Industry <i>Jia-Shen Li, Yi Li, Lu Zeng, Jun-Yan Hu, Subramanian-Senthilkannan Muthu.....</i>	1696
294. Dyeing and Finishing Technology Roadmap for Guangdong Textile and Clothing Industry <i>Ru Lv, Yi Li, Lu Zeng, Hong-Xi Liu, Subramanian-Senthilkannan Muthu.....</i>	1703
295. Energy Saving and Waste Reduction Technology Roadmap for Guangdong Textile and Clothing Industry <i>Hao-Ran Dong, Yi Li, Lu Zeng, Hong-Xi Liu, Zhi-Min Wu, Subramanian-Senthilkannan Muthu, Xiao Liao.....</i>	1710
296. Textile Manufacturing Equipment Technology Roadmap for Guangdong Textile and Clothing Industry <i>Wei-Bing Xiang, Kun Yang, Jie Liao.....</i>	1718
297. Testing Standard Technology Roadmap for Guangdong Textile and Clothing Industry <i>Jun-Yan Hu, Yi Li, Lu Zeng, Subramanian-Senthilkannan Muthu.....</i>	1723
298. Infrastructure Development Roadmap for Guangdong Textile and Clothing Industry <i>Lei Yao, Yi Li, Xiao-Yun Xiong, Lu Zeng, Zhi-Qiao Liu.....</i>	1730

Author Index