

Advanced Textile Materials

Part 3

Edited by
Klaus F. Ollrich

Managing Director, Textile Research Center, TSC

Advanced Textile Materials

PART 3

Selected, peer reviewed papers from the
2011 International Conference on
Textile Engineering and Materials
(IOTEM 2011),
September 23-25, 2011, Tianjin, China

Edited by

Xiaoming Qian and Huawu Liu



TTP

Copyright © 2011 Trans Tech Publications Ltd, Switzerland

All rights reserved. No part of the contents of this publication may be reproduced or transmitted in any form or by any means without the written permission of the publisher.

Trans Tech Publications Ltd
Kreuzstrasse 10
CH-8635 Dürnten-Zürich
Switzerland
<http://www.ttp.net>

Volumes 332-334 of 3-vol.-set
Advanced Materials Research
ISSN 1022-6680

Full text available online at <http://www.scientific.net>

Distributed worldwide by

Trans Tech Publications Ltd
Kreuzstrasse 10
CH-8635 Dürnten-Zürich
Switzerland

Fax: +41 (44) 922 10 33
e-mail: sales@ttp.net

and in the Americas by

Trans Tech Publications Inc.
PO Box 699, May Street
Enfield, NH 03748
USA

Phone: +1 (603) 632-7377
Fax: +1 (603) 632-5611
e-mail: sales-usa@ttp.net

printed in Germany

Advanced Materials Research

ISSN: 1022-6680, ISSN/ISO: Adv. Mater. Res.

Editors:

Hu, X.Z., The University of Western Australia, School of Mechanical Engineering
Perth, Australia, xhu@mech.uwa.edu.au

Lau, A.K.T., Hong Kong Polytechnic University, Department of Mechanical Engineering
Hung Hom, Kowloon, Hong Kong, China P.R., mmktlau@polyu.edu.hk

Publishing Editor: **Wohlbiert, T.**, 105 Springdale Lane, Millersville, PA 17551, USA,
t.wohlbiert@ttp.net

Editorial Board:

Barton, J., University of Southampton, School of Engineering Sciences, UK

Cao, P., University of Waikato, Department of Materials and Process Engineering, New Zealand

Chandra, T., University of Wollongong, Faculty of Engineering, Australia

Chicinas, I., Technical University of Cluj-Napoca, Department of Materials Science and Technology, Romania

Engel, U., Friedrich-Alexander-University Erlangen-Nuremberg, Germany

Evans, S.L., Cardiff University, Cardiff School of Engineering, UK

Gao, H., Dalian University of Technology, Key Laboratory for Precision and Non-Traditional Machining Technology of Ministry of Education, China P.R.

Ibhadode, A.O.A., University of Benin, Department of Production Engineering, Nigeria

Kim, J.K., Hong Kong University of Science and Technology, Department of Mechanical Engineering, China P.R.

Leng, Jinsong, Harbin Institute of Technology, Smart Materials and Structures Laboratory, China P.R.

Palkowski, H., Clausthal University of Technology, Institute of Metallurgy, Germany

Pullin, R., Cardiff University, Cardiff School of Engineering, UK

Sand, W., University of Duisburg-Essen, Biofilm Centre, Germany

Schikorra, M., University of Dortmund, Institute of Forming Technology and Lightweight Construction (IUL), Germany

Zhang, D.L., University of Waikato, Department of Materials and Process Engineering, New Zealand

Zhang, T.Y., Hong Kong University of Science and Technology, Department of Mechanical Engineering, China P.R.

Aims and Scope

Advanced Materials Research specializes in the very rapid publication of international conference proceedings and stand-alone volumes on topics of current interest in All areas of materials research.

Volumes are available in full text at www.scientific.net

Trans Tech Publications

Trans Tech Publications Ltd

Kreuzstrasse 10
CH-8635 Zurich-Durnten
Switzerland
Fax: +41 (44) 922 10 33
E-mail: sales@ttp.net
Web: <http://www.ttp.net>

Trans Tech Publications Inc

PO Box 699, 234 May Street
Enfield, NH 03748, USA
Phone (603) 632-7377
Fax (603) 632-5611
E-mail usa-ttp@ttp.net
Web: <http://www.ttp.net>

Also published in these series:

- 278-278 (2011) Euro Superalloys 2010
- 277-277 (2011) Advanced Materials Research QIR 12
- 276-276 (2011) Nanoscaled Semiconductor-on-Insulator Materials, Sensors and Devices
 - 275-275 (2011) Structural Integrity and Failure
 - 274-274 (2011) Coupled Problems and Multi-Physics
- 271-273 (2011) Advanced Materials and Information Technology Processing
 - 268-270 (2011) Computational Materials Science
 - 267-267 (2011) Manufacturing Systems and Industry Application
- 266-266 (2011) China Postdoctoral Forum on Materials Science and Engineering
 - 264-265 (2011) Advances in Materials and Processing Technologies II
 - 261-263 (2011) Advances in Building Materials [online]
 - 255-260 (2011) Advances in Civil Engineering [online]
- 254-254 (2011) NEMS/MEMS Technology and Devices [online]
 - 250-253 (2011) Advanced Building Materials [online]
- 243-249 (2011) Advances in Civil Engineering and Architecture [online]
 - 239-242 (2011) Advanced Materials [online]
 - 236-238 (2011) Application of Chemical Engineering [online]
 - 233-235 (2011) Fundamental of Chemical Engineering [online]
- 230-232 (2011) Frontiers of Manufacturing Science and Measuring Technology [online]
- 228-229 (2011) Machinery, Materials Science and Engineering Applications [online]
- 227-227 (2011) Laser and Plasma Applications in Materials Science [online]
 - 225-226 (2011) Advanced Research on Automation, Communication, Architectonics and Materials [online]
- 224-224 (2011) Green Building Technologies and Materials [online]
 - 223-223 (2011) Modelling of Machining Operations [online]
 - 222-222 (2011) Global Research and Education [online]
- 221-221 (2011) Advanced Polymer Science and Engineering [online]
- 219-220 (2011) Advanced Research on Information Science, Automation and Material System [online]
- 217-218 (2011) High Performance Structures and Materials Engineering [online]
- 216-216 (2011) Optical, Electronic Materials and Applications [online]
- 215-215 (2011) Digital Design and Manufacturing Technology II
- 214 (2011) Advances in Key Engineering Materials
 - 213 (2011) Advanced Materials Research
 - 212 (2011) Mechatronics and Intelligent Materials
- 204-210 (2011) Advanced Research on Industry, Information System and Material Eng.
 - 201-203 (2011) Advanced Manufacturing Systems
 - 199-200 (2011) Advances in Mechanical Design
 - 197-198 (2011) New and Advanced Materials
 - 194-196 (2011) Advanced Engineering Materials
 - 189-193 (2011) Manufacturing Process Technology
 - 187 (2011) Sport Materials, Modelling and Simulation
- 186 (2011) New Trends and Applications of Computer-aided Material and Engineering

www.ttp.net

Advanced Textile Materials

PART 3

Edited by
Xiaoming Qian
Huawu Liu

Preface

The 2011 International Conference on Textile Engineering and Materials (ICTEM 2011) took place at Tianjin, China from September 23th to September 25th, 2011. ICTEM 2011 brings together an international audience interested in this area and related topics. The objectives of ICTEM 2011 are to foster research on the textile engineering and textile materials, to promote related international cooperation among scientists and engineers and to provide means for the public dissemination of the results from these efforts.

All papers included in this book are peer reviewed internationally before accepted for publication. This book covers the subject areas of natural fiber, chemical fiber, fiber manufacturing technology, principle of textile design, structure, properties and processes of textile materials, measurement technology and instrument, non-woven materials, structure, properties and processes of non-woven materials, coloration technology, finishing technology, pollution control and treatment of dyeing & finishing, materials and its applications, materials processing technologies and other related topics.

We would like to acknowledge the efforts of the organizers of ICTEM 2011, as well as the contributions of all the speakers and participants. Most importantly, we thank all referees for their constructive comments.

Prof. Xiaoming Qian
Tianjin Polytechnic University, China

Prof. Huawu Liu
Tianjin Polytechnic University, China

The 2011 International Conference on
Textile Engineering and Materials
(ICTEM 2011)

Organized by:

Tianjin Polytechnic University, China

Conference Organization

Chairman

Prof. Changfa Xiao, Tianjin Polytechnic University, China

Local Organizing Committee

Prof. Rui Wang, Tianjin Polytechnic University, China

Prof. Xiaoming Qian, Tianjin Polytechnic University, China

Prof. Huawu Liu, Tianjin Polytechnic University, China

Technical and Organizing Committee

Prof. Philippe Boisse, University of INSA-Lyon, France

Prof. Dominique Coupe, Snecma Propulsion Solide, France

Prof. Bowen Chen, Tianjin Polytechnic University, China

Prof. Li Chen, Tianjin Polytechnic University, China

Prof. Wenxing Chen, Zhejiang Sci-Tech University, China

Prof. Jianyong Chen, Zhejiang Sci-Tech University, China

Prof. Julie Chen, University of Massachusetts Lowell, USA

Prof. Brian Cox, Rockwell Scientific Co., USA

Prof. Tsu-Wei Chou, University of Delaware, USA

Prof. Li Chen, Tianjin Polytechnic University, China

Prof. Guoqiang Chen, Soochow University, China

Prof. Tilak Dias, Nottingham Trent University, UK

Prof. Qinguo Fan, University of Massachusetts, USA

Prof. Xuerong Fan, Jiangnan University, China

Prof. Tushar K. Ghosh, North Carolina State University, USA

Prof. Jack Gillespie, University of Delaware, USA

Prof. Weidong Gao, Jiangnan University, China

Prof. Frank Ko, University of British Columbia, Canada

Prof. Nandan Khokar, University of Borås; Biteam AB, Sweden

Prof. John W S Hearle, University of Manchester Institute of Sci. and Tech., UK

Prof. Hiroyuki Hamada, Kyoto Institute of Technology, Japan

Prof. Tae Jin Kang, Seoul National University, Korea

Prof. Jia-horng Lin, Feng Chia University, Taiwan

Prof. Jialu Li, Tianjin Polytechnic University, China

Prof. Andrew Long, University of Nottingham, UK

Prof. Alfred Loos, Michigan State University, USA

Prof. Huawu Liu, Tianjin Polytechnic University, China

Prof. Stepan Lomov, Katholieke University Leuven, Belgium

Prof. Asami Nakai, Kyoto Institute of Technology, Japan

Prof. Ning Pan, University of California, USA

Prof. Xiaoming Qian, Tianjin Polytechnic University, China

Prof. Yiping Qiu, Donghua University, China

Prof. Stephen J. Russell, University of Leeds, UK

Prof. Seeram Ramakrishna, National University of Singapore

Prof. Francois Robitaille, University of Ottawa, Canada

Prof. Darrell Reneker, University of Akron, USA

Prof. Xiaoming Tao, Hong Kong Polytechnic University, HK

Prof. Ignaas Verpoest, Katholieke University Leuven, Belgium

Prof. Rui Wang, Tianjin Polytechnic University, China

Prof. Xungai Wang, Deakin University, AU

Prof. Wenhao Xing, Chinese Culture University, Taiwan

Prof. Weilin Xu, Wuhan Textile University, China

Academician Prof. Mu Yao, Xi'an Polytechnic University

Prof. Xingchuan Yao, National Taipei University of Technology, Taiwan

Prof. Jianyong Yu, Donghua University

Prof. Zhiyun Wu, Inner Mongolia University of Technology, China

CHAPTER 10:

Finishing Technology

Table of Contents

Preface	v
Committees	vi

Part 1

Chapter 1: Natural Fiber

Natural and Artificial Weathering of <i>B.mori</i> Silk Fabric	
J.F. Ming, Y.X. Jiang and B.Q. Zuo	3
Research on Degumming and Bleaching <i>Apocynum venetum</i> in one-Bath Alkali-H ₂ O ₂	
X.H. Shan, J.X. Liu and W.W. Liu	11
Research about the Dyeing Process Design of the Natural Rhubarb Dye on Wool Fabric	
W. Li, L. Zhao and Q.W. Wang	17
Screening and Application of Alkalophilic Strains for Biological Scouring of Flax Rove	
Z.E. Dong, R.Y. Ding, L. Zheng, X.Q. Zhang and C.W. Yu	23
Study on the Dyeing Behavior of Wool Fiber Treated with Nano-SiO ₂ /Ag Antibacterial Agent	
M. Niu, Z.L. Wu, J.M. Dai, W.S. Hou, S. Shi and Y. Li	27
Research on FRP Composite Structures with Self-Healing Function - Effect of Filler on FRP Interlaminar Fracture Toughness	
C. Uchijo, Y. Kuroda, K. Kemmochi and L.M. Bao	31
Color Rabbit Hair Property and Market Foreground	
J. Tang and Y. Zhang	35
Reinforcement of Laminated Veneer Lumber with Ramie Fibre	
Z.Q. Wang, X.N. Lu and X.J. Huang	41
Study on Properties about Bamboo Yarns	
L. Tian, L. Tan and Q.B. Yang	45
Effects of Different Kinds of Embedding Media on the Image Definition of Animal Fibers using Differential Interference Contrast Light Microscopy	
B.H. Wang, X. Guo, Z.Y. Hu, L.P. Kong and B.G. Zhang	49
The Tensile and Moisture Properties of <i>Broussonetia Papyrifera</i> (BP) Fibers	
L.J. Qu, J.Q. Wang, X. Zhang, X.Q. Guo and C.Y. Li	56
The Green and Efficient Degumming Technology of <i>Broussonetia Papyrifera</i> Fiber	
H.L. Wang, B. Zhou and R.Y. Hao	60
The Study of Surface Treatment with TiO ₂ for PVC Coated Fabric	
L.Y. Chang, R.T. Huo and P. Yang	64
Comparative Study on Structure and Thermal Properties of Sisal Fiber and Lotus Petiole Fiber	
H.N. Wang and G.Y. Cao	68
Technique to Produce Segment-Color Yarn with Ring Frame	
J. Lian, B.J. Xu and C.P. Xie	72
Durable Antibacterial Finish on Cotton Fabrics with PAMAM/Ag+	
C.J. Zhang, H. Yang, Y. Liu and P. Zhu	77
Enhancement of Cotton Waxes Removal with <i>Thermobifida Fusca</i> Cutinase by Temperature Control Process	
H.J. Yan, G.C. Du and J. Chen	81
Research on the Distributions of Thick and Thin Defects in the Electronic Testing for Raw Silk	
Q. Hu, Q. Wang, J.M. Xu, J.T. Niu and L. Bai	87
Effect of Cellulose Enzyme Treatment on the Prickle of Ramie Knitting Fabric	
X.G. Gao and W.G. Sun	91

Study on the Dyeing of Silk Fabrics with Natural Dyestuff Copits F.C. Dong, Q.Q. Liu and Y.T. Jia	96
Crosslinking Properties on Oxidized Cotton Cellulose and Chitosan with Low Molecular Weight Y.H. Xu and Y.J. Deng	100
The Enzymatic Action of Cellulase on Pigment-Dyed Cotton Fabrics L.Y. Hao, R. Wang, J.Q. Liu and R.Z. Liu	104
Special Animal Fibers in Chinese Ancient Textiles Q.L. Cao, L. Wang and W.Y. Li	108
Study on Java Kapok Fruit and Fiber Length H.Y. Wu, F.M. Wang and F. Tan	112
Research on Relationship between Fabric Breaking Strength and Antibacterial Property about Cactus Silver Nanoparticles Treated on Silk Fabric H.C. Miao, B.J. Xi, H. Lin and Y.Y. Chen	116
Hemp Fiber Reinforced Composites: Morphological and Mechanical Properties X.M. Guo and Y.P. Qiu	121
Dyeing Properties of Reactive Dyes on Hemp Fabrics S. Tan and J.M. Wang	126
Rinsing of Cotton Fabric by Ozonation after Reactive Dyeing Procedure D.H. Luo, F. Yang, Q.K. Zheng, S. Chen and H.Y. Li	130
Preparation and Characterization of Fe³⁺ / TiO₂ Thin Films Loaded Activated Carbon and Degradation of Methyl Orange X.D. Hu, H. Deng and L. Du	134
Probe into the Thinning Effect of Natural Bamboo Fibre L.Q. Lou	138
Trends of Rabbit Hair Industry in 2011 J. Tang and Y. Zhang	142
Solubility of Rhodamine B in Supercritical Carbon Dioxide Fluids with or without Cosolvent C. Zhao, J.B. Wang, I. Tabata and T. Hori	146
Research of the Relationship between Hemp Fiber Density and its Chemical Composition Y.C. Ji, J.X. Ju and Y.J. Liang	152
Research of Structure and Properties of Puffed Tussah Silk X. Huang and W.D. Zhang	156
Optimization of Simple Medium for Exopolysaccharide Production by Agaricus Brunnescens Y. Wang, L.T. Ban and Z. Li	160
A Study on the Antibacterial Property of the Extract from Apocynum Venetum Z. Li, Z.F. Dong, J.F. Zhang, J.X. Gong and F.J. Meng	164
Study on Adsorption and Desorption Performance of Reactive Dyes on Anionic Exchange Membrane T.L. Xing, H. Kai and G.Q. Chen	168
Effect of Concentrated Alkali Treatment on the Properties of Naturally Colored Brown Cotton L. Chen, Y.S. Liu, W.G. Sun and X.Y. Zhou	173
Cationic Modification Process's Depth Exploration of Cotton Fibers L.Y. Ren, Y.P. Yu, R.Y. Zhang and C.L. Shen	179
Influence of Degumming Methods on Mechanical Properties of Silk and CODcr of Wastewater X. Dong, T.L. Xing and G.Q. Chen	183
Synthesis and Properties of New Anionic Fluorescent Brighteners J.Z. Chen, M.S. Wan, C.B. Cao, D.L. Sun and S. Sun	188
Research on the Spinnability of the Renewable Cattail Fiber L.Y. Liu, Y.L. Han and X.R. Zhang	192

The Influence of Dyeing & Finishing Process on Mechanical Properties of PU Filaments J.M. Wang and H.B. Zhang.....	196
Research on Design of Artistic Style of Automotive Interior Fabric S. Gao and L.P. Hu	200
Effect of Moisture Content on the Tensile Properties of Viscose Filaments L.F. Xu, J. Li, J.S. Wu and P.C. Zeng.....	205
Water Repellent Cellulose Nanofibers by Acetylation A. Shakeri and M. Joonobi.....	209
Microwave Effect in Sisal Fiber Degumming E.G. Wang, W.X. Chen and J.Y. Wu.....	213
 Chapter 2: Chemical Fiber	
4-Aminobenzoic Acid Functionalized PAN-Base Carbon Fibers in Mild Polyphosphoric Acid/Phosphorous Pentoxide Y. Tan, H. Zhang, H.H. Liu, L.C. Hou, Y.M. Jin and X.X. Zhang.....	219
Influence of Benzoic Acid End-Capping on Properties of Poly(<i>Ester-Imide-Ether</i>) Block Copolymer and its Fiber S. Chen, J.W. Lan, S.D. Wu and S.J. Lin.....	223
Preparation and Properties of Kaolin Modified Polyester Fibers R.X. Zhang, T.L. Xing and G.Q. Chen	227
Research on Structure and Properties of a Novel Type of Poly(<i>Ester-Imide</i>) S.J. Lin, J.W. Lan, S.D. Wu and S. Chen.....	231
Preparation of Polyacrylonitrile and Polystyrene Blend Fibers through Electrospinning W. Pan, Q. Zhang and Y. Chen.....	235
The Structures and Properties of PET (Polyethylene Terephthalate) /PTT (Polytrimethylene Terephthalate) Self-Crimp Filament at Different Temperatures H. Xiao, M.W. Shi, L.L. Liu and G.L. Dai	239
Far Infrared Emissivity Characteristics and Evaluation of Different Light Source Irradiate Polyester Knitted Fabric C.Y. Lin, J.G. Yan and W.H. Hsing.....	246
Simulation of Multifilament Superfine Denier Polyester Melt Spinning N.F. Li, C.W. Yi and C.S. Wang	250
The Control on Data Transmission of Multi-Bar Warp Knitted Machine W. Zheng, J.L. Zhou and J.M. Peng	256
Study of Flow Field in Compact Spinning with Pneumatic Groove S.R. Liu	260
Study on Antistatic Property of PAN /PANI Composite Fiber Y.Z. Wang and D.S. Xu	264
Rheological Behavior of Blend Spinning Solution of Sodium Alginate and Carbon Black L.W. Tan, Q. Ji, J.J. Zhang, F.J. Wang, F.Y. Quan and Y.Z. Xia.....	268
Non-Isothermal Crystallization Behaviors of Poly (Trimethylene Terephthalate Isophthalate-Co-Polyethylene Glycol) with Lower Melting Point Y.Y. Yao, L.C. Cui, H.S. Liu, Z.C. Huang and W.X. Chen	275
Research on the Acid Fastness of Polyphenylene Sulfide Fiber X.H. Wang, Y.F. Qin, J.X. Wan, S.B. Li, Y. Zhan and Y.L. Ma.....	281
Application of SoC Techniques in Electrical Control System for Weaving Machinery M.L. Wang, H. Zhu, Y.L. Jin and B.W. Zhang.....	286
Coconut Carbon Fiber Interwoven Fabric Development and Adsorption Study J.J. Wang and L.P. Shen.....	290

Surface Interface Treatment of Conveyer Belt	
J.H. Hu, C.C. Lai, W.H. Hsing and Y.K. Wang.....	295
Study on the Elastic Reversion of the Spun Silk and T-400 Interlaced Fabric	
L.P. Guan	299
Establishment and Application of the Platform for Reverse Solution and Parametric Design Platform of the Conjugate Cam Beating-up Mechanism	
J.N. Chen, Y. Wang, X. Zhao and W.H. Lin	303
Rheological Characteristic of Concentrated Cellulose Diacetate Solutions with 1-Butyl-3-Methylimidazolium Chloride as Solvent	
B.C. Wang, G.S. Jiang, X. Chen, D. Wu, Y.M. Zhang and H.P. Wang.....	309
Microstructure and Property Changes of Poly (<i>Ethylene Terephthalate</i>) Fiber with Moderate Tenacity during Heat Treatment under Constant-Length Conditions	
X. Wang, F. Tian, Y.M. Zhang and H.P. Wang.....	313
Characterization of Electrospun Poly(<i>Lactic Acid</i>)/polyaniline Blend Nanofibers	
H.Q. Zhang.....	317
Preparation and Properties of Nano-Silica/calcium Alginate Blend Fibers	
F.J. Wang, Q. Ji, J.J. Zhang, L.W. Tan, F.Y. Quan and Y.Z. Xia.....	321
Improving Elastic Recovery of Poly(<i>Ester-Ether</i>) Fiber at Lower Temperature with Poly(<i>Ester-Imide</i>)	
S.D. Wu, J.W. Lan, S.J. Lin and S. Chen.....	327
Study on Property of the Fiber Made from the Mixture of <i>Sarcandra Glabra</i> Extracts and Rayon Cellulose	
H.S. Yu, D.L. Chi, C.C. Chen and B.L. Liu.....	331
The Design of Textile Machinery Synchro-Control System Based on PROFIBUS Communication	
Q.B. Jiang.....	335
Preparation and Characterization of Melt-Spun Poly(<i>Acrylonitrile-Methylacrylate</i>) Hollow Fiber	
W.W. Peng, N. Han, X.F. Tang, H.H. Liu and X.X. Zhang	339
Research on Ink-Jet Printing Process of the Leather	
C.H. Li and J.M. Wang	343
Performance of Pearl-Fiber Blended Wrinkle-Free Fabric	
J.Z. Zhu, Q. Ma and J.Y. Zhang.....	347
Quality Management in Textile through Noble Methodology and Six Sigma	
S.E. Hosseini-pour, M.R. Ahmadzadeh and B. Zanjirchi.....	351
Chapter 3: Fiber Manufacturing Technology	
The Study of Constructing Quick Response Mode in Fashion Industry	
D. Mao, D.H. Zhu and Y.M. Cui	359
Preparation of Aligned Polysulfonamide Nanofibers by Magnetic Electrospinning	
L. Liu, J. Zhou, X. Huang and C.F. Xiao.....	363
Study on Thermal Properties of Tibetan Robe Ensemble in Different Wearing Ways	
X.F. Guo, Y.Y. Wang and M. Wang.....	367
Reform and Development of Distance Network Education Platform in P.E. Teaching	
W. Xia.....	371
Teaching Researches on the Network Curriculum of Fundamental Nursing Based on Implicit Theories	
Y.J. Ren, S.Y. Tang, C.Y. Li and G.Y. Guo	375
Study on Filtration Performance of Various Multi-Layered Fabrics	
C.Y. Zhu, W.W. Ying and H.F. Zhang	379
Analysis and Research on Visual Elements of Garment Hangtags	
J.Y. Zhao	383

The Preparation of Core-Shell Type Acrylic-Polyurethane Composite Emulsions for Pigment Printing	
C.L. Xu, Y. Hu, J.Q. Liu, S.P. Wang, S.M. Qu and J.H. Xu	387
Oxidation Decoloration Kinetics of C.I. Direct Blue 108 in Activated Oxygen Bleach Systems	
Y. Zhu and R.C. Tang	391
Design and Production of Pearl Fiber Imitating Silk Shirt Fabric	
Q. Ma, J.Z. Zhu and W.L. Zou	395
DMD Pretreated H₂O₂ Bleaching Technology of Massion Pine Dissolving Pulp	
M. Du, X.P. Li and C.X. Ma	399
Application Research of Bionic Modeling on High Fashion	
Q. Zhao	403
Effect of Blended Ratio on Strength and Elongation Properties of Outlast /Viscose Blended Yarn	
Z.C. Yang and L.P. Shen	407
Study on Alginate Fiber Core-Spun Yarn by Friction Spinning	
J.K. Wang, X. Zhang and M.M. Xu	412
Study on Thermal Comfort Property of Moisture Absorption and Quick Drying Apparel	
H.Q. Dai	416
East End of "Silk Road"—"Shoso-in" of Japan	
H. Zhong, Y.M. Cui and D. Mao	420
Exploitation of Database Application System for Elements of Ethnic Apparel	
Y.F. Sun, H.F. Wu and Y. Yang	425
Structural Design and Forming of Paraboloid Fabric	
S. Qin and X.F. Guo	429
Dissolving and Rheological Behavior of Lignocellulose in the NaOH/Thiourea/Urea Solvent System	
Y. Zhang, F. Jiang and C.Y. Yin	433
Structure and Performance in the Compacting Process of Polyacrylonitrile Fiber	
Z.H. Zhang, R.J. Sun, M.Y. Chen and C.K. Liu	437
Outlets Brand Discount Marketing Conditions in China and Development Pattern Discussion	
S.Z. Hu, S.Q. Min and H.Y. Hu	441
Effect of Electrostatic Web-Cleaner on Card Sliver Quality	
J.P. Cao and P.Z. Sun	447
The Influence of Clothing Style on Consumers' Perceptive and Behavioral Reaction	
W. Gao and B. Meng	453
Design of Functional Daily Wear for Wheelchair Users	
D.W. Wu, Y.Y. Wang and J. Li	458
The Influence of Fashion Shop Perceived Quality on Customer Satisfaction	
W. Gao, Z.C. Wang and R. Li	462
Kinetic Analysis of Alkaline Extraction on Sweet-Bamboo Leaves	
P. Sae Be, J. Suesat and S. Chum Rum	467
The Application of Central Composite Design in Flash Spinning	
L. Xia, P. Xi and B.W. Cheng	471
Development and Evaluation of Cement Porter's Protective Clothing	
J. Li, M. Yu, Y.Y. Yang and Y. Pu	477
The Influence of Dye Concentration on Kubelka-Munk Fundamental Optical Parameters of Fabric	
H.Y. Yang, J.L. Zhou, Z.W. Que and X.D. Ma	481
Study on Polylactic Acid (PLA) Non-Woven Materials Were Treated by Low Temperature Plasma under Different Treatment Time	
N. Chen and Y.B. Li	485

Research on Mechanical Properties of Several New Regenerated Cellulose Fibers R. Zhou and M.X. Yang.....	489
A Model Construction about Predicting the Rate of Dimensional Change after Wash of Fabric Composites J. Wang, J.Y. Song and A.Q. Tang.....	496
The Optimization of Regeneration Feather Protein /PVA Composite Fiber's Production Technology Using Gray Clustering Analysis B. Zhou and H.L. Wang.....	500
The Application of Acid Cellulase in Manufacturing High Count Linen Yarns D.F. Shang, S.Z. Gao and Q.J. Liu.....	505
Study on Color Field of Overall Display Design for Home Textile X.D. Wang, Z.M. Jin and D. Zhou.....	510
Research on Automation-Computerized Pattern-Grading Technology in Garment CAD System Y. Xiu and Z.K. Wan.....	514
The on-Line Detection of Drafting Force of Back Zone on Cotton Spinning Frame J.Z. Ren, Q.G. Feng, G.X. Jia and Y.F. Zhang.....	520
Discussion on Production of Flat Cross-Section Industry Polyester Filament L.A. Wang, Y.W. Wang, Z.X. Deng, X.L. Xia, W.T. Liu, S.Q. Han and C.S. Zhu.....	526
A Probe to the Evolution of Undergarments and Its Cause S.C. Chen.....	530
Classify Application and Development Trend of Children Clothing Material Modeling and Style Y.M. Cui, H. Zhong and D.H. Zhu.....	534
Hanging Textiles' Influence on the Beauty of Indoor Space Decoration X.D. Liu, X.Q. Feng and D. Yang.....	539
Effect of New Type Gill pin Taker-in on Polyester Yarn Hairiness M.G. Zhang, X.Z. Yu and P.Z. Sun.....	545
The Processing of Porous Superfine-Denier Nylon 6 Draw Texturing Yarn C.W. Hao, Q.F. Ma, Z. Wang, G.Q. Lai and J.X. Jiang.....	549
Study on the Co-Extrusion Process Morphology and Performance of Skin-Core Bicomponent Fiber X.H. Gan, N.N. Liu, X.J. Ma, Q. Liu and C.C. Yang.....	553
Influence of Spinning Speed at Self-Twist Spinning System on Yarn Quality H. Cui and C.W. Yu.....	560
Oxidation of Copper Zinc Oxide Catalysts by Carbon Monoxide L.T. Wang.....	564
Dyeing Adsorption Isotherm and Equilibrium Modeling Characteristics of Enzymatic and Caustic Pre-Treated Lyocell Fibers Y.J. Pan, C.T. Hsieh and C.K. Yen.....	568
Experimental Studies of Infrared Characteristics in the Deformation and Fracture of Engineering Solid Materials Subjected to External Loading Y.J. Zhang and N.J. Ma.....	572
Synthesis and Characterization of Novel Sulfonated Poly(Arylene Ether Sulfone) Containing Fluorine Group H.F. Cai, X.P. Duan, J. Xie and G. Li.....	581