

8th Textile Bioengineering and Informatics Symposium Proceedings (TBIS 2015)

Zadar, Croatia
14 - 17 June 2015

Editors:

Yi Li
Budimir Mijovic
Jia-Shen Li

ISBN: 978-1-5108-1325-0

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© (2015) by Textile Bioengineering and Informatics Society (TBIS)
All rights reserved.

Printed by Curran Associates, Inc. (2016)

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

Textile Bioengineering and Informatics Society (TBIS)
Hong Kong Polytechnic University
ST733
Hung Hom, Hong Kong

Phone: (852) 9771 6139, 2766 6479
Fax: (852) 2764 5489

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 TBIS 2015

TABLE OF CONTENT

Track 1 Textile Material Bioengineering

1	Preparation and Mechanical Characterization of Luffa Fibre Reinforced Low Density Polyethylene Composites <i>Levent Onal, Yekta Karaduman, Cagrialp Arslan</i>	1
2	Optimum Pyrolysis of Waste Acrylic Fibers for Preparation of Activated Carbon <i>Vijay Baheti, Salman Naeem, Jiri Militky, Rajesh Mishra, Blanka Tomkova</i>	7
3	Study on Comfort of Knitted Fabric Blended with PTT Fibers <i>Xiu-E Bai, Xiao-Yu Han, Dong-Yan Wu, Ling Chen, Wei Wang</i>	15
4	New Approach to Yarn Packages Classification <i>Pomp Norbert, Adámek Karel, Škop Petr</i>	22
5	Upgrade Recycling Design of Pre-consumer Clothing Textile Waste <i>Yin-Ping Li, Li Liu</i>	30
6	Development and Characterization of 3D Orthogonal Carbon Fibre Reinforced Composite <i>Tao Yang, Xiao-Man Xiong, Rajesh Mishra, Jiri Militky</i>	38

Track 2 Textile Biomechanical Engineering

7	Three-dimensional Motion Analysis of the Bending Exercise of the Knee Basis for the Development of a Support for the Older Adults <i>Tamaki Mitsuno, Natsuko Miyazawa</i>	49
8	The Influences of Pre-tensions on the Deformations of Woven Fabric Shells during Cyclic Axial Compression Buckling Processes <i>Yiyi Wang, Ningtao Mao</i>	57
9	Comparison of Elastic Knitted Fabrics on Wearer's Comfort Sensation <i>Li-Ya Zhou, Wei-Wei Zhang, Zhi Zhang</i>	72
10	Research Progress in Functionality and Comfort of Tight-fitting Sportswear <i>Ling Chen, Dong-Yan Wu, Xiao-Yu Han, Xiu-E Bai</i>	81
11	Breast Vibration in Three Dimensions during Running Gait Cycles <i>Tian-Tian Shen, Jie Zhou, Winne Yu</i>	87
12	The Finite Element Analysis on the Stress of Strapless Bra When Worn <i>Jing Qi, Shi-Chen Zhang, Xin Zhang, Bo-An Ying</i>	96
13	A Virtual Draping Method by Mapping Based on Warp Line <i>Shigeru Inui, Yuko Mesuda, Yosuke Horiba, Mariko Inui</i>	105
14	A Study on the Pressure Comfort of Moulded Cup Bra Wires on Female Breast <i>Bo-An Ying, Yan Lu, Xin Zhang</i>	112
15	Psychological Factors Affect Measured Data of Human Body <i>Zheng-Lin Hong, Peng-Wei Li, Xiao-Mei Shang</i>	122

Track 3 Clothing Bioengineering

16	Assessing Ultraviolet and Infrared Radiation Penetration through Clothing <i>Uwe Reischl, Jordan Ramage</i>	128
17	3D Foot Reconstruction from Image Sequence <i>Kun Hu, Yue-Qi Zhong</i>	133
18	Taking the Proportions of a Female Shape into Account When Designing Special Purpose Clothes and Underwear <i>Dubonosova Elena, Vozvyshaeva Ekaterina, Bogoduhova Elena</i>	138

19	Analysis of Woven Fabrics for Men's Suit <i>Darko Ujević, Stana Kovačević, Jacqueline Domjanić</i>	148
20	Elderly Clothing Design Based on Garments Ergonomics <i>Ying-Chun Liang, Hong Dai</i>	153
21	Clothing Technology Research Based on the Self-confidence Style <i>Yi-Ping Zhang, Jing-Wei Liu, Qiao-Juan Jiang</i>	161
22	Requirements for State Administrative Institution Employees' Functional Clothing and their Systemization <i>Inese Šroma, Iveta Ābele, Inese Ziemele, Ausma Viļumsone</i>	168
23	Analysis on Structure and Properties of Silk Fabrics in Mongolian Robes <i>Xiao-Yan Ma, Xiao-Fang Guo, Xiu-Rong Fu</i>	178
24	A Feature-based Parametric Pattern-Making Model <i>Yi Xiu, Zheng-Dong Liu, Hai-Bo Zhang</i>	182
25	The Promotion of Apparel Brands Based on E-commerce <i>Xian-Yao Jin, Jun Ren, Yan-Bo Ji</i>	190
26	A Comparison of 2 Bra Types and Their Respective Prototype Patterns <i>Li-Zhen Wang, Chi Liu, Pei-Pei Jia</i>	196
27	Research on Clothing Pattern Design Based on Drafting Sentence for Structuring Extraction <i>Wen-Can Zhou, Xin Zhang, Bo-An Ying</i>	206
28	Research on types of Lower Body in Middle Aged Females from Shanxi Province <i>Qiu-Rui Ye, Hong Xiao, Pei-Pei Jia</i>	214
29	Research on Method of Knowledge Mining for Bra Products <i>Xin Zhang, Yi-Lin Chen, Bo-An Ying</i>	224
30	An Overview of Lead Aprons for Radiation Protection: Are They Doing Their Best? <i>Huda Ahmed Maghrabi, Pradip Deb, Arun Vijayan, Li-Jing Wang</i>	232
31	Research on Bra Back-Wing Pattern Design of Different Fabric Elastic Properties <i>Xin Zhang, Yue-Xing Chen, Bo-An Ying</i>	241
32	The Impact of Pleat Shape on Clothing Modeling and Style <i>Si-Jia Peng, Xiao-Wen Jiang</i>	250
33	Moulded Bra Cup Classification Based on Cross Section Curve Curvature Similarity <i>Bo-An Ying, Chao Xing, Xin Zhang</i>	258
34	Implementation of Original Anthropometric Instruments and Contribution to the Croatian Technical Report <i>Darko Ujević, Tonči Lazibat, Ksenija Doležal</i>	267
35	Research on the Methods of the Men's Suit Armhole-Curve Generating in Intelligent CAD System <i>Lin Ma, Bo-An Ying, Xin Zhang</i>	276
36	Research on the Design of Men's Suit Pattern for Oriel Belly Body <i>Xiao-Jie Huang, Jie Zhou</i>	287
37	Underwear Structural Design based on Body Measurement <i>Mei-Lin Rong, Jie Zhou</i>	294
38	Option and Further Development of Raw Clothing Materials in Children's Garment Design <i>Wen-Xia Shan</i>	303
39	Analysis of High-performance Golf Wear Based on Golf Movement <i>Ya-Jie Yan, Li Liu</i>	308

Track 4 Textile Supply Chain Informatics

40	The Influence of the Packing Density Coefficient of Knitted Fabrics on Thermal Comfort <i>Věra Lukášová, Jana Špánková</i>	316
41	Clothing Air Layer, Clothing Area Factor and Total Thermal Insulation of Chinese Male Minority Ethnic Costumes	

	<i>Wen Shi, Ye-Hu Lu, Fa-Ming Wang</i>	325
42	The Application of RFID Technology on the Operation Process of Garment Enterprises <i>Long Wu</i>	333
43	Research on Technology Driving Factors of Fabric Reconstruction <i>Xiu-Qin Hu, Xing-Yuan Duan, Ying Zhang</i>	343
44	Analysis of the Effect of Fabric Density on the Steady-state Heat Transfer Performance of Wool-polyester Blend Fabric Containing Conductive Fiber <i>Yao-Xue Wang, Yu-Chai Sun</i>	350
45	Study of Commodity Combinations Based on Clothing Display <i>Jia-Wei Tang, Zhao-Hui Gu</i>	355
46	Young Consumers' Perceptions and Buying Behaviour of Western-branded Sportswear: A Shanghai Study <i>Jing-Xi Qian, Xin-Yan Shao</i>	361
47	The Study of CRM-based Apparel Brand Maintenance <i>Fu-Kun Huang, Jian-Fang Liang</i>	372
48	Analysis of Wechat Public Number Page Setting Based on Receiver Cognition <i>Jin-Jing Liu, Jian-Fang Liang</i>	379
49	Research on the Characteristics and Development of Traditional Folk Handwoven Fabric from Guanzhong <i>Zhen-Zhen Cheng, Duo Chen</i>	385
50	Evaluation on Fabric Performance of Heat and Retardant Workwears <i>Xiu-E Bai, Dong-Yan Wu, Xiao-Yu Han, Ling Chen</i>	391
51	Field Study of Station Uniform on Sensory Comfort and Usability for Firefighters <i>Chun-Man Cheng, Yi Li, Yue-Ping Guo, Jiao Jiao, Shu Sun, Xiao Han, Si-Hui Huang</i> ...	397
52	Analysis of Temperature Gradient between Layers of Clothing System Containing PCMs <i>Yan He, Yu-Chai Sun, Qi-Sheng Wang</i>	408
53	The Application of Wi-Fi Technology in Apparel Marketing <i>Ying Qu, Jun Ren</i>	414
54	The Influence of Wind Speed on Warmth Retention of Knitted Fabric <i>Ye Yan, Yu-Chai Sun, Xing-Long Li</i>	421
55	Smart Heating Sleeping Bags Improved Human Local Thermal Comfort at the Feet <i>Cheng-Jiao Zhang, Dan-Dan Lai, Wen-Fang Song, Fa-Ming Wang</i>	427

Track 5 Textile Sensory Bioengineering

56	Evaluation of Comfort Property Parameters of Lightweight Knitted Fabrics <i>Zenun Skenderi</i>	434
57	Performance of Textile Images Rendered by a Textile Simulator <i>KyoungOk Kim, Takanari Koyama, Chinami Fujii, Takatera Masayuki</i>	445
58	Impact of Exposure Duration of Clothing Color on Aesthetic Evaluation <i>Hui-Qun Bai, Xiao-Feng Jiang</i>	455
59	Comparative Analysis on the Artistic Thinking Mode of Paper-Cut Works between Ku Shulan and Henri Emile Benoit Matisse <i>Kailun Yang, Wei Tian</i>	460
60	The Analysis on the Design Ideas of Home Textile Products <i>Bing-Bing Li, Ting-Ting Wang, Jian-Ping Shi</i>	467
61	A Study on the Cliff Statues Clothing in Beinaagou <i>Dai-Yun Yu, Dong Ma</i>	472
62	The Analysis of Golden Ratio Based on Hermes Scarves Design <i>Bing-Bing Li, Wen-Bo Liu, Jian-Ping Shi</i>	479
63	Research on the Application of Knitting in the Design of Bolsters <i>Dan-Dan Zhang, Li-Li Mao</i>	485
64	Method of Human Body Contour Extraction Based on HSV Color Model	

	<i>Min Yang, Pan-Pan Guo, Guo-Lian Liu, Hong-Qin Dai</i>	494
65	Structure Design and Modeling Evaluation for Bra Cups based on the Effect of Shaping <i>Pei-Pei Jia, Chi Liu, Qiu-Rui Ye, Li-Zhen Wang</i>	501
66	Comparison of the Female Underwear Culture between China and the Western World in the Early 20th Century-Dudou and Corsets <i>Teng Zhang, Ming Zhao</i>	510
67	The Aesthetic Evaluation of Fashion Pattern and Somatotype <i>Mawei Zhou, Xiaofeng Jiang</i>	517
68	Evaluating Clothing Appearance Design using Eye Tracking Data: a Comparison of Professional Designers and Laymen <i>Ying Zhang, Hui-Juan Xu</i>	523
69	Color Catalog Clothing Brand Design Reflects the Brand Culture of Design Methods <i>Jia-Xiu Liu, Zhao Ly</i>	529
70	Evaluation of Handfeel and Glossiness in Guangdong Silk <i>Hao Zhang, Cheng-Cheng Song, Yan-Nan You, Jing Guo</i>	534
71	The Study of Sports Bra Color Based on Kansei Engineering <i>Chuan-Yu Zhou, Jie Zhou, Yong-Mei Deng</i>	541
72	Parameterized Aesthetic Appreciation of Song Brocade Weavy Pattern <i>Hao Zhang, Wan-Lu Liu, Wen Wu</i>	550

Track 6 Textile Science and Engineering

73	Continual Measurement of Roving Adhesion Force <i>František Founě, Václav Čejka, Petr Škop, Pavel Šidlof, Pavel Klouček, Petr Haška,</i> <i>Christian Griesshammer, Luděk Malina, Jürgen Kübler</i>	558
74	Measurement of Real Sliver Mass Using Resistance Force Sensor <i>Kloucek Pavel</i>	565
75	Studies on Reduction Efficiency of Vat Dye by Indirect Electrochemical Method <i>Zeng-Lu Fan, Xin-Bin Cai, Qing Li, Yao-Yao He</i>	573
76	Model and Simulation of Textile Web Moving Through the Feeding Zone of the Card Machine <i>Václav Čejka</i>	581
77	The Application of Automatic Clipping in 2D Non-contact Measuring System <i>Pan-Pan Guo, Guo-Lian Liu, Hong-Qin Dai</i>	589
78	Research on the Skills for the Hand-made Non-woven Fabric in Home Decorations <i>Jia-Bin Qin, Zhao-Hua Liang</i>	596
79	Analysis of Mechanical Properties of Twisted Yarns Based on Continual Elongation Measurement <i>Martina Pokorná, Václav Čejka</i>	604
80	Process Acceleration of Product Conceptual Design through 3D Rapid Prototyping Technology <i>Xia Han</i>	611
81	Effect of Weaving Friction on the Hairiness and Mechanical Properties of Cotton Warp <i>Xiao-Man Xiong, Tao Yang, Rajesh Mishra, Jiří Militký</i>	616
82	Effect of Special Finishing Process on performance of Dong Cotton Fabric <i>Hao Zhang, Lan-Lan Tian, Hai-Jing Liu, Ying Wang</i>	622
83	Analyser WAVEON AD Intended for Measurement Mainly in Textile Industry <i>Pavel Kloucek, Vaclav Cejka, Jan Brandt</i>	628

Track 7 Textile Biomedical Engineering

84	Study of the Correlation between the Physiological Responses of the Human Body and the Subjective Assessments of Thermal Comfort
----	---

	<i>Jelka Geršak</i>	635
85	Structural Model of a Tubular Stent for the Treatment of Intestinal Cancer	
	<i>Gang Li, Wu-Hao Zha, Zhi-Fen Han, Lei Liu, Yu-Feng Chen, Ping Lan, Yi Li</i>	642
86	Postoperative Ladies Underwear with a Microbial Barrier	
	<i>Rogina-Car Beti, Bogović Slavica, Katović Drago</i>	648
87	Design and Research of Supporting Bellyband for Pregnant Women	
	<i>Qian Zhao, Wei Tian</i>	655
88	Research and Design of Maternity Dress based on Garment Ergonomics	
	<i>Qiao-Juan Jiang, Hong Dai, Yi-Ping Zhang</i>	662