16th Textile Bioengineering and Informatics Symposium Proceedings (TBIS 2023)

Poznan, Poland and Online 22 - 25 August 2023

Editors:

Yi Li Malgorzata Zimniewska Tim Jun Li

ISBN: 978-1-7138-7947-3

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© (2023) 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 TBIS 2023

TABLE OF CONTENT

Track 1 Textile Electronic Bioengineering and Wearable Technology

1	Autonomic Nerve Activity Index Representation Method based on Heartbeat Information obtained from Wearable Devices
	$C = 1 \cdot 1 A = 1$
2	Structural Design and Walking Pressure Comfort Analysis of Textile Framework of
_	Ankle Assistive Soft Exosuit
	Xing-Yu Liu, Ying-Lei Lin, Tao Xue, Long Wu, Yan Wang, Ting-Ting Zhang
3	Fabrication and Characterization of Pressure Sensors Based on Xanthan Gum and
J	Pullulan
1	Ya-Qi Zhang, Shi-Yao Liu, Yong-Zhen Tao
4	Factors Influencing the Accuracy and Precision of NFC based Temperature Monitoring
	Device, A Pilot Study
_	Tian-Yu Kou, Henry Yi Li
5	Advancement on Intelligent Underwear for Early Detection of Breast Cancer
_	Yuan-Yuan Liu, Jia-Chen Li, Xun Qiu, Ying-Xi Gao, Yan Gong
6	Temperature Variations of the Human Skin and Clothing During Exercise
7	Xiao-Xi Sun, Pei-Qing Jiang, Xi Wu, Wen-Bin Li
7	Interpreting the Application of Smart Wearable Interaction Language from the
	Perspective of Fashion Design
	Long-Hao Wang
8	Extending the Dynamic Range of Piezoresistive Textile Pressure Sensors for Impact
	Detection
	Aleksandrs Valisevskis, Ugis Briedis, Aleksandrs Okss
	Track 2 Textile Industry Digitization, Informatics and Informatics
9	Application of Text-to-Image Technology for Repouss éCraft
10	
	Hong-En Shao Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z
	Hong-En Shao Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z
11	Hong-En Shao Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest
11	Hong-En Shao Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai
	Hong-En Shao Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest Zhen-Zhen Huang, Zhong-Hua Xie Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry
11 12	Hong-En Shao Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest Zhen-Zhen Huang, Zhong-Hua Xie
	Hong-En Shao Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest Zhen-Zhen Huang, Zhong-Hua Xie Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry
	Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest Zhen-Zhen Huang, Zhong-Hua Xie Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model
12	Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest Zhen-Zhen Huang, Zhong-Hua Xie Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Analysis of Industrial Correlation Evolution of
12	Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest Zhen-Zhen Huang, Zhong-Hua Xie Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Jie Deng, Yi Zheng
12	Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest Zhen-Zhen Huang, Zhong-Hua Xie Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Jie Deng, Yi Zheng Measures to Optimize MVA Performance Evaluation Indicator of Sci-Tech Innovation Board Companies
12	Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest Zhen-Zhen Huang, Zhong-Hua Xie Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Jie Deng, Yi Zheng Measures to Optimize MVA Performance Evaluation Indicator of Sci-Tech
12 13	Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest Zhen-Zhen Huang, Zhong-Hua Xie Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Jie Deng, Yi Zheng Measures to Optimize MVA Performance Evaluation Indicator of Sci-Tech Innovation Board Companies Yue Ma, You-Gan Zhu A Review on Digital Simulation Strategies and Its Applications for Advanced
12 13	Research on The Consumption Behavior of Chinese Sports Brand Clothing in Generation Z Hong-Bo Yan, You-Fang Chen, Jing-Yi Dai Men's Shirt Intelligent Recommendation Method based on Random Forest Zhen-Zhen Huang, Zhong-Hua Xie Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Analysis of Industrial Correlation Evolution of Beijing Textile and Garment Industry based on an Input-output Model Jie Deng, Yi Zheng Measures to Optimize MVA Performance Evaluation Indicator of Sci-Tech Innovation Board Companies Yue Ma, You-Gan Zhu

Market Structure, Conduct and Performance: Evidence from China's Sanitary Napkin Industry
Yi Zheng, Fei-Yang Liu, Lei Yao Costume structure and 3D restoration of the tomb mural of YanFei Yong-Mei Deng, Ping Xiang, Jia-Qi Lin
Construction of Digital Transformation Performance Evaluation Index System— Take Textile and Garment Enterprises as an Example Chang-Lan Zhou, Jie Chen
Modified Cross-Structure of Traditional Women's Hanfu with Virtual Technology Shu-Yu Liu, Jia-Qi Yan, Shi-Chao Zhang
Clothing Selection Model and Tactics Employed by AliExpress' Cross-border E-commerce Platform
Lei Yao, Kai Ying Du Research on Success Factors of Digital Transformation of Textile and Garment Enterprises Based on TOE Framework Chang-Lan Zhou, Jie Chen
Saddles as Cultural Symbols: Exploring the Significance of Power, Status, and Etiquette
Qing Dynasty
Cheng-Cheng Zhang, Kai Ma An Integrated Approach of Additive Manufacturing for Application in Wearable Digital Fashion
Ling-Ju Wu, Si-Yuan He, Hao Hua Fashion Brand Visual Design Strategy Based on Value Co-creation Zhe Li, Shi-Qi Li
Analysis of Folk Women's Clothing in the Central Plains during the 1840s to 1949s for Virtual Reconstruction
Shi-Chao Zhang, Jia-Qi Yan, Yun Luo, Shu-Guo Lu_ Structure-Conduct-Performance paradigm study on China's Baby Diaper Industry Meng Zhao, Kang-Li Wang, Yi-Lan Song, Lei Yao
Restoration and Protection of the Ming Dynasty Sihe Ruyi Dark Pattern Satin Skirt Chun-Xiao Luo, Da-Wei Liu, Yong-Jin Wang
Track 3 Textile Bioengineering and Sustainability
A Review On The Enhancement Strategy of Fashion Brand Value From the Perspective of Carbon Peak and Neutrality Goals
Zhe Li, Yu Chi Grey Relation Analysis and Evaluation of Sustainable Clothing Color Based on Kansei Engineering
Zhong-Jie Dong, Jian-Fang Liang, Ze-Jun Zhang, Shan-Sen Wei
Color Fastness of Indanthrene Blue Cloth in Modern Chinese Fashion Ru Zhang, Qi Liu, Miao Li, Shan-Shan He
Influencing Factors of Carbon Emission Transfer on China's Textile and Apparel Export Trade to EU Yin-Chen Gao, Hua-Rong Xiang, An Lu
Eco-Friendly Clothing Purchases: Unraveling Consumer Attention through Eye-Tracking Technology Qian Yang, Ming Li

34	Design Method of Growing Children's Wear based on the Sustainable Vision Hui Tao, Nan-Nan Zhao	273
35	Recycling of Waste Balloons and Potential Applications in Textiles Yu-Kun Xiao, Liang Zhao	282
	Tu-Kun Atto, Liting Zhuo	202
	Track 4 Textile Materials Bioengineering	
36	Network Pharmacologic Study of Active Constituents from Wild Chrysanthemum Against Novel Coronavirus Ying-Chen Zhang, Hong-Yan Wu, Da-Xun Yin, Zhen-Zhong Qiu, Xian-An Zhang,	289
37	Xiao-Ke Song, Jing-Wen Cheng, Run-Zhe Li, Ming-Zhu Ma, Ming Yang	20)
	between Adult and Infant Shu Jiang, Jun Li	299
38	Skin Deformation Mechanism of Female Upper Limbs in Alpine Skiing	
39	Jing-Wen Tu, Yi-Jia Yan, An-Hua Zhong Effect of Radiative Heat Source Temperature and Exposure Distance on Heat Transfer in Firefighting Rescues	309
40	Wen-Huan Zhang, Jun Li	316
41	Hong-Bin Cheng, Xiao-Shu Liu, Shi-Li Xiao Comparative Analysis of Medical Clothing-related Standards at Home and Abroad Shi-Yao Chu, Li-Min Shi, Jing-Jing Li	322 328
42	Weaving Design and Technological Development of Polyimide/wool Air-cushion Film Structured Thermal Fabrics	
12	Hao-Na Wang, Xiao-Jing Lv, Dan Tao	336
43	Advancements in Artificial Blood Vessels: A Review Feng Wang, Meng-Di Liang, Ze-Kun Liu, Gang Li	344
44		344
	Xiao-Feng Liu, Hai-Hui Ma, Zi-Han Zhai, Meng-Shan Hu, Lin Ma	352
45	Research on Controlling the Size Change of Denim Clothing	
	Sai-Nan Yuan	360
	Track 5 Textile Bioengineering Technologies	
46	Vertical Loom Weaving in Xinjiang	267
47		367
48	Yue-Xi Liang, Juan Zhang, Hai Liu, Zhao-Zhu Zheng Advances on Hollow Yarn Made from Water-soluble Vinylon: A Review	373
	Dan Wang, Hui-Jun Li Modification of Carbon Fiber Reinforced Epoxy Resin Matrix Composites: A	380
49	Review	
	Dan Wang, Shi Hu, Dana Kremenakova, Jiri Militky	388
50	The Exploration of the Combination of Kesi and Atlas Silk Technology Yang Xing, Yu Zhang	394
51	Relative Breast Displacement Coordinate Systems Study on Motion Trajectories	
	Ming-Wei Sang, Yong-Jin Wang, Zheng-Yi Wang2 Ming-Hai Cui	401
52	An Innovative Online Monitoring System in Knitting Industry	412
53	Sherien Elkateb, Ahmed M áwalli, Abdelrahman Shendy Extraction of Cellulose Nanofibrils (CNFs) from Pomelo Peel Via Hydrothermal	412
	Auxiliary Alkali Treatment Combined with Ball-milling Shuai Shao, Xiao-Yun Wang, Run-Tao Xia, Ju Huang, Zhi-Qin Peng	420

54	Influence of Different Ginning Methods on the Quality of Xinjiang Medium Cotton Mamat Gvlmihra, Li-Jie Zhang	428
55	A Review on the Materials and Fabrication Techniques of Metal Textile Jewelry	
	Hong-Xu Guo	436
	Track 6 Textile Product Bioengineering Design	
56	Integration of Chinese Embroidery in Cultural and Creative Product Design with QFD-TRIZ Method Si-Teng Wei	448
57	Influence of Lower Body Types on Half Skirt Pattern Design based on CLO 3D Yu-Han Lu, Ming-Hai Cui	456
58	Breast Feature Size Based on Personalized Bra Sample Design	
	Juan-Juan Gou, Long Wu, Bo-An Ying, Jing Qi, Yue Wang	463
59	Characteristics of Empress Di Yi in the Ming Dynasty	
	Ya-Ting Ren, Jian Li	471
60	A Review of Functional Design Elements for Snowboard Suits	
	Qing Chen, Wen-Xi Zhang, Chao Sun, Bai-Lu Fu, Rong Zheng, Jin-Tu Fan	479
61	The Application of Ju County's Door Paper Cuttings to Dress Design Zhao-Qing Li, Ji-Mei Wang Zhao-Qing Li, Ji-Mei Wang	486
	Explore the Cultural Connotation and Design Expression of Romantic Style Dresses Min Ci, Mei-Zhen Chen, Bao-Fan Zhang Design Expression of Romantic Style Dresses	493
63	Barrier-free Sun-protective Jacket Design for Wheelchair Users	501
	Hui Zhu, Xiu-Hua Ni, Xin-Yi Lei, Jia-Qi Chen, Chang-Kun Zhang, Jing Guo, Le Zhang	501
64	Standard Operating Procedures for Fashion Product Design	
	Chia-Cheng Chou, Guo-Xiang Yuan	509
65	The Application of Fabric Weaving in Denim Clothing Redesign	
	Jia-Ying Zhao, Guo-Xiang Yuan	517
66	Craftsmanship and Innovative Design of Felt Making in the Xinjiang Region Zhi-Qiang Sun	525
67	Application of Ruichang Paper-cutting Art in Athleisure Wear Design from the Perspective of Higher Education	
		532
68	Zhao-Qing Li, Yue-Yao Qiu Research on Practical Techniques in the Beauty of Women's Wear Design Based on	332
	the Design Principles	540
60	Bo-Er Xie Study on the Craftmanship of Hong Kong Men's Cheongsam	340
	Hoi Ting Lucy Qi	549
70	Research on the Design of Running Shoes Based on Multi-sensory Experience	
	Mi Zhang, Xin-Yan Lu, Guang-Min Mu, Ying Zhao, Dong-Min Qiu	562
71	Research on the Application of Abstract Painting Art in Fashion Design Juan-Feng Jin	570
	Track 7 Clothing Bioengineering Technology	
72	Style Design and Development of Knitted Garments for Pet Dog Based on Kansei	
	Image and Analytical Hierarchy Process	
_	Ze-Jun Zhang, Jian-Fang Liang, Zhong-Jie Dong	578
73	Classification and Identification Model of Young Women's Upper Body Shape	
	Based on Human Surface Curve Features	
	Rou-Xi Pan, Yu Chen, Rui-Ling Guo	587
74	Comfort of Tight Sportswear based on Intelligent Model	
	Peng-Peng Cheng, Jian-Ping Wang, Dao-Ling Chen	600

<i>75</i>	Measurement Method of Bust Size based on Two-dimensional Image	
	Lu-Sha Zhang, Zheng-Dong Liu, Xiao-Yi Wang, Qing-Fu Li	606
76		
	Jian Li, Chu Shi, Jun Li	614
77	Automatic Stand Collar Pattern Generation System Based on Personalized	
	Customization	
	Jing-Jing Zhou, Qing Xu, Zheng-Dong Liu, Xiao-Yi Wang, Qing-Fu Li	622
78	Digital Preservation and Visualization of Qiang Women's Long Dress with Style 3D	
	Virtual Fitting Technology	
	Chuan-Yu Zhou, Li-Ying Zhou	630
79		
	Distance	
	Xiao-Hang Lin, Si Tao, Xin Liu, Qian Jing, Meng-Dan Liu, Jia-Qi Guo, Zan-Yang	641
	Lian, Jian Li	
80	Simulation Evaluation Single-Piece Assembly Line Jeans Based Simfactory	
	Ming-Ming Yang, Long Wu, Bo-An Ying, Jing Qi, Yue Wang	649
81	Optimization of Pattern and Shoulder Pressure Comfort of Suits for Young Woman	
	Ruo-Dan Pang, Ming-Hai Cui	657
82	Research on the Art of Narrative and Heritage Development of Manchu Paper-cutting	
	0	667
83	Local Style Transfer of Batik Pattern Based on Edge Enhancement	
	0 0/ 0	675
84	Morphological Subdivision and Regression Modelling of Anterior Abdominal	
	Convexity in Middle-aged and Elderly Women	
	, 0 ,	683
85		
	Jing-Rui Li, Long Wu, Bo-An Ying, Jing Qi, Yue Wang	692
86	3D Printed Flexible Materials with Novel Cellular Structures for Protective Clothing	
	Saadullah Channa, Dan-Mei Sun, George Stylios	699

Acknowledgement to Reviewers