

**PROGRAM OF
THE 49th TEXTILE RESEARCH SYMPOSIUM 2022**

October 8th and 9th and 10th, 2022, Kyoto Institute of Technology & online, Japan

Room-A: The 60th anniversary hall, Anniversary Hall, First floor

Room-B: The 60th anniversary hall, Main Seminar Room, 2nd floor

Day 1 (JST) : October. 8 (Saturday)	
10:00~	Registration
11:00~11:10	Opening
11:10~12:10	Plenary Lecture1: Smart Textile Integrated Microelectronic Intelligent Wearable Systems Xiaoming Tao(Hong Kong Polytechnic University, Hong Kong, China)
12:10~13:40	Lunch break
13:40~14:40	Session : Science and Technology of Textile Machinery
14:40~15:00	Break
15:00~16:00	Session : Science and Technology of Textile Machinery
16:00~16:20	Break
16:20~17:20	Poster Session(Onsite only)

Day 2 (JST) : October. 9 (Sunday)			
9:00~	Registration		
	Room-A		Room-B
9:40~11:00	Session : Fibers, Yarns, Textiles and Composites	10:00~11:20	Session : Apparel, Comfort and Smart textiles
11:00~11:20	Break	11:20~11:40	Break
11:20~12:20	Session : Fibers, Yarns, Textiles and Composites	11:40~12:00	Session : Apparel, Comfort and Smart textiles
12:20~13:50	Lunch break	12:00~13:50	Lunch break
13:50~14:50	Plenary Lecture2: Clothing interaction during high-speed movement over a surface Christopher Hurren(Deakin University, Australia)		
14:50~15:10	Break		
15:10~16:10	Session : Fibers, Yarns, Textiles and Composites	15:10~16:30	Session : Apparel, Comfort and Smart textiles
16:10~16:30	Break	16:30~16:50	Break
16:30~17:10	Session : Fibers, Yarns, Textiles and Composites	16:50~17:30	Session : Apparel, Comfort and Smart textiles

Day 3 (JST) : October.10 (Monday)			
9:00~	Registration		
Room-A		Room-B	
9:40~10:40	Session : Fibers, Yarns, Textiles and Composites	10:00~10:40	Session : Nanofibers, Nonwovens and Industrial textiles
10:40~11:00	Break		
11:00~11:40	Session : Fibers, Yarns, Textiles and Composites	11:00~12:00	Session : Nanofibers, Nonwovens and Industrial textiles
11:40~13:50	Lunch break		12:00~13:30
13:50~14:30	Session : Sustainable developments for textiles	13:30~14:30	Session : Nanofibers, Nonwovens and Industrial textiles
14:30~14:50	Break		
14:50~15:30	Session : Sustainable developments for textiles	14:50~15:30	Session : Dyeing and Finishing
15:30~15:50	Closing		

Day 1 (JST) : October. 8 (Saturday)

10:00~ Registration

Room-A

11:00~11:10 Opening

11:10~12:10 Plenary Lecture1

Chairperson: Sachiko Sukigara (Kyoto Institute of Technology)

Smart Textile Integrated Microelectronic Intelligent Wearable Systems

Xiaoming Tao

Hong Kong Polytechnic University, Hong Kong, China

12:10~13:40 Lunch break

13:40~16:00 Session : Science and Technology of Textiles Machinery

Chairperson: Annie Yu (Kyoto Institute of Technology), Shi Jian (Shinshu University)

1. Experimental and numerical investigation on the flatwise energy absorption behavior of 3D woven honeycomb composites with different cell configurations

Lekhani Tripathi, Sameer Kumar Behera, Bijoya Kumar Behera

Indian Institute of Technology Delhi, India

2. Low-velocity Impact behavior of 3D Woven Fabrics for Structural Composites: Role of Weave Structure & Yarn Maneuverability

Soumya Chowdhury, Bijoya Kumar Behera

Indian Institute of Technology Delhi, India

3. Bioinspired nanofiber membrane for fog harvesting and solar-driven seawater desalination

Yi Zhang, Jian Shi, Hideaki Morikawa, Chunhong Zhu

Shinshu University, Japan

14:40~15:00 Break

Chairperson: Zhu Chunhong (Shinshu University), Naoto Kaneda (National Institute of Technology Fukui College)

4. Vortex Yarn Formation and their Twist Structure

Matsumoto Tatsumori

Murata Machinery Ltd., Japan

5. Numerical analysis of the accompanying air flow by the running yarn with high speed in a yarn guide

Shuichi Tanoue, Hiro Takeda, Hideyuki Uematsu, Ryo Jinno*

University of Fukui, Japan

*Yuasa Yarn Guide Engineering Co., Ltd., Japan

6. Windage Loss Reduction Mechanism in Take-up Winder for Synthetic Fiber

Ohshima Takanori, Hashimoto Kinzo*, Yasukawa Riku*, Toshiyasu Kinari

Kanazawa University, Japan

* TMT Machinery, Inc., Japan

16:00~16:20 Break

Room-B

16:20~17:20 Poster presentation (Onsite only)

P1. Morphology and mechanical properties of chitosan fibers by wet-spinning: Effect of adding FNFs

Shohei Fujita, Shinichi Yagi, Yuno Yasunaga, Xu Huaizhong, Yoko Okahisa

Kyoto Institute of Technology, Japan

P2. Effect of annealing on the structure and properties of nonwoven fabrics produced by Polypropylene / Poly(ethylene terephthalate) bicomponent melt-blowing using different diameter nozzle

Rina Tomita, Akihiro Makimura, Kosuke Sugawara, Toshifumi Ikaga, Ren Tomisawa, KyoungHou Kim, Yutaka Ohkoshi

Shinshu University, Japan

P3. Structure evaluation of the both sides needle-punched nonwoven fabric with using tracer fiber visualized by X-ray CT

Sakika Nakamura, Ryo Wakamatsu, Ren Tomisawa, KyoungHou Kim, Yutaka Ohkoshi

Shinshu University, Japan

P4. Treatment Technique of Providing Cotton Fabrics with Function to Capture and Detect Metal Haptens for Preventing Metal Allergy and Evaluation of Treated Fabric Characteristics

Hideyuki Shima, Hidekazu Yasunaga

Kyoto Institute of Technology, Japan

P5. Electrospinning Nanofiber Yarn for Strain Sensor Application

Anchang Xu, Yuwei Ma*, Limin Bao*

Jiangsu College of Engineering and Technology, China

*Shinshu University, Japan

P6. Effect of Epoxy Soybean Oil Modification of Polylactic Acid on the Properties of Straw Fiber/Polylactic acid Composites

Fangtao Ruan, Xueqin Lu*, Limin Bao*

Anhui Polytechnic University, China

*Shinshu University, Japan

P7. Relation between compressive strength and deformation of the void of carbon fibers by in-situ SAXS measurement using synchrotron radiation

Daisuke Kimura, Naoki Akimoto, Wataru Takarada, Masatoshi Shioya

Tokyo Institute of Technology, Japan

P8. Analysis of viewing color changes for the traditional Japanese Silk woven fabrics “Sha”

Yuka Sasabe, Saori Kitaguchi, Sachiko Sukigara

Kyoto Institute of Technology, Japan

P10. Relation between Dispersion Property of Polyurethane Mattress and Compression Property under Relaxing Impact Resilience

Kazutaka Taguchi, Fushun Suzuki, Fumitoshi Kobayashi, Hiroki Maru, Hiroyuki Kanai, Hiromasa Shinagawa*,

Shigetoshi Mimura*

Shinshu university, Japan

*Toyo Quality One Co., Japan

P11. Effects of Blending Ratios of Men’s Suit Fabrics on Thermal Dissipation

Shuga Tanizaki, Kai Matsubara, Hiroki Maru, Kaoru Wakatsuki, Hiroyuki Kanai, Tetsu Sasagawa*

Shinshu University, Japan

*AOKI Inc., Japan

P12. Suggestion for Division of Signal / Noise Component Detected by Wearable ECG Sensor

Hiroki Morimoto, Hiroki Maru, Hiroyuki Kanai

Shinshu University, Japan

P13. Fabrication of photochromic nanofibres with enhanced lightfastness by in-mold dyeing

Utkarshsinh Solanki, Martina Viková, Pavel Holec, Jakub Erben

Technical University of Liberec, Czech Republic

P14. Relationship between Yarn Tension and Surging in False-twisting without Heater

Kaito Morikawa, Taiyo Nakagawa, Kouichi Hayashida, Naoto Kaneda

National Institute of Technology Fukui College, Japan

Day 2 (JST) : October. 9 (Sunday)

9:00~ Registration

Room-A

9:40~12:20 *Session : Fibers, Yarns, Textiles and Composites*

Chairperson: Takeshi Kikutani (Tokyo Institute of Technology)

7. Microstructure and mechanical behavior of novel E-glass continuous fibre reinforced aluminum metal composites fabricated by FSP method for automobile application

Sandeep Olhan, Vikas Khatkar, B.K. Behera
Indian Institute of Technology Delhi, India

8. Research on the Influencing Factors and Mechanism of the Puncture Resistance of Fibrous Materials

Chao Luo, Limin Bao, Jian Shi*
Shinshu University, Japan
*Akita Prefectural University, Japan

9. A novel spacer fabric to reinforce pressure relief for diabetic insole

Shu SongYin, Annie Yu
Kyoto Institute of Technology, Japan

10. Preparation of ultra-long cycle life and high-performance reversible aqueous Zn-ion batteries

Yingying Cai, Hideaki Morikawa, Chunhong Zhu
Shinshu university, Japan

11:00~11:20 Break

Chairperson: Tsuyoshi Nishiwaki (ASICS Corp.)

11. Engineering of Textile structural composite as Advanced Material

B K Behera
Indian Institute of Technology Delhi, India

12. Cooling fabric using spacer structure with water filled hollow filaments

Ulysse Le Coz, Annie Yu
Kyoto Institute of Technology, Japan

13. Characteristics of Composites made from Carbon/PP Hybrid Yarns using Electrostatic Spray Coating

Apurba Das, Vijay Goud, Alagirusamy Ramasamy, Dinesh Kalyanasundaram
Indian Institute of Technology Delhi, India

12:20~13:50 Lunch break

13:50~14:50 Plenary Lecture2

Chairperson: Atsushi Yokoyama (Kyoto Institute of Technology)

Clothing interaction during high-speed movement over a surface

Christopher Hurren

Deakin University, Australia

14:50~15:10 Break

15:10~17:10 Session : Fibers, Yarns, Textiles and Composites

Chairperson: Bijoya Kumar Behera (Indian Institute of Technology Delhi)

14. Effect of processing history on spinning behavior of polypropylene investigated by diameter and velocity measurement of spinning line

Wataru Takarada, Kazuma Kunimitsu, Mohammad A Barique, Takeshi Kikutani

Tokyo Institute of Technology, Japan

15. Structure and properties of polyvinyl butyral-metal alkoxide hybrid hollow fibers prepared by air-gap spinning

Anamul Hoque Bhuiyan, Koji Nakane,

University of Fukui, Japan

16. Numerical Modeling And Experimental Analysis of Light-weight Composite Structures

Rajesh Mishra, Vijay Chandan, Michal Petru*

Czech University of Life Sciences Prague, Czech Republic

* Technical University of Liberec, Czech Republic

16:10~16:30 Break

Chairperson: Hiroki Murase (Kyoritsu Women's University)

17. Primary Performance evaluation of 3D woven based structural composite Leaf Spring for Automotive Application

Vikas Khatkar, Sandeep Olhan, B.K. Behera, Vikas Narwal*

Indian Institute of Technology Delhi, India

* Haryana Roadways, Transport Department, India

18. Design and development of high-impact energy absorbent 3D woven honeycomb based composite liner for aircrew helmet

Omender, Dushyant Dubey, B.K. Behera

Indian Institute of Technology Delhi, India

Room-B

10:00~12:00 Session : Apparel, Comfort and Smart textiles

Chairperson: Kim Kyoungok (Shinshu University)

19. Hand Evaluation Systems for Specialty Textiles

Meenakshi Ahirwar, Sunny Pannu*, B.K. Behera

Indian Institute of Technology Delhi, India

* Maharshi Dayanand University, India

20. Analysis of distinguishability for fabric tactile feature related to the visuo-haptic cross modal information transfer

Chiari Isami, Sachiko Sukigara*

Osaka Metropolitan University College of Technology, Japan

* Kyoto Institute of Technology, Japan

Chairperson: Ken Kiyono (Osaka University)

21. Hand Evaluation and Laundry Durability of Mosquito(Kaya) Net Double Fabrics

Mari Inoue, Chika Hayashida*

Kobe University, Japan

*BAN INOUE, Japan

22. Hand Evaluation of Towels by Using Physical Properties and EEG Analysis

Takafumi Hata, Mari Inoue

Kobe University, Japan

11:20~11:40 Break

Chairperson: Noriaki Kuwahara (Kyoto Institute of Technology)

23. Engineering Design of 2D Woven Auxetic Meta-Materials

Shivangi Shukla, B K Behera

Indian Institute of Technology Delhi, India

12:00~13:50 Lunch break

15:10~17:30 Session : Apparel, Comfort and Smart textiles

Chairperson: Atsushi Yokoyama (Kyoto Institute of Technology)

24. Using 3D scanning to study knee shape deformation under motion

Pierre Ringenbach, Yijia Zhang, Annie Yu

Kyoto Institute of Technology, Japan

25. Effect of Textile Texture on Evaluation of 3D apparel Simulation Images

Hana Ishida, KyoungOk Kim, Masayuki Takatera

Shinshu University, Japan

Chairperson: Kaoru Wakatsuki (Shinshu University)

26. Design method of zero waste shirts using ready-made shirt patterns

Tomoyuki Furuno, KyoungOk Kim, Masayuki Takatera
Shinshu University, Japan

27. Surface Properties of the Combination of Cashmere and Other Animal Fibers on Bi-layer Fabric

Khosbayar Byambajargal, Davaajav Narantogtokh*, Yu Annie, Sachiko Sukigara
Kyoto Institute of Technology, Japan
*Mongolian University of Science and Technology, Mongolia

16:30~16:50 Break

Chairperson: Hiroki Maru (Shinshu University)

28. Research on the relationship between the electrical resistance of fabric sensor and the bending angle of finger

Jia Hao, Yu Annie
Kyoto Institute of Technology, Japan

Chairperson: Masayuki Takatera (Shinshu University)

29. Development of shape memory filament for smart actuation of fabric

Jayashree Mohanty, Bipin Kumar, Bijay P Tripathi, R Alagirusamy
Indian Institute of Technology Delhi, India

Day 3 (JST) : October. 10 (Monday)

9:00~ Registration

Room-A

9:40~11:40 *Session : Fibers, Yarns, Textiles and Composites*

Chairperson: Wataru Takarada (Tokyo Institute of Technology)

30. Thermal conductivity of polyurethane sheets containing beryllium oxide nanofibers

Md. Shakhawat Hossain, Koji Nakane
University of Fukui, Japan

31. Exploratory studies to develop ductile textile structural composite material for seismic resistance applications

Shikha Yadav, Zunjarrao Kamble, Bijoya Kumar Behera
Indian Institute of Technology Delhi, India

32. Mechanical properties of toughened windmill palm fiber with different chemical compositions

Changjie Chen, Gouhe Wang*, Limin Bao**, Xinhou Wang
Donghua University, China,
*Soochow university, China
** Shinshu university, Japan

10:40~11:00 Break

Chairperson: Koji Nakane (University of Fukui)

33. Development of high-strength green composites based on ramie sliver and cellulose acetate resin

Ye Sun, Limin Bao, Chao Luo, Anchang Xu, Changjie Chen, Jian Shi
Shinshu University, Japan

34. Transformation of tolerance limits for cotton colour grading into the new CIECAM16 colorimetric system

Michal Vik, Martina Viková
Technical University of Liberec, Czech Republic

11:40~13:50 Lunch break

13:50~15:30 *Session : Sustainable developments for textiles*

Chairperson: Teruo Kimura (Kyoto Institute of Technology)

36. Textile waste reinforced composite geocell as an alternative to conventional HDPE geocells : Numerical modeling and experimental validation using plate load test

Amit Pandey, B.K. Behera
Indian Institute of Technology Delhi, India

37. Sewing thread: The sustainable replacement of plastic waste

Prashant kumar, Dr.A.K.Choudhary
Dr.B.R.Ambedkar National Institute of Technology, India

14:30~14:50 Break

Chairperson: Motoko Uchimaru (colourloop Co., Ltd.)

38. The Road of Design in Technology-dominated World: Aesthetics in Design Science Research

Li Li

The Hong Kong Polytechnic University, Hong Kong

39. Digital Integration: Charting a Sustainable Future for the Textile Industry

Satyadev Rosunee, Roshan Unmar

University of Mauritius, Mauritius

15:30~ Closing

Room-B

10:00~14:30 *Session : Nanofibers, Nonwovens and Industrial textiles*

Chairperson: Mukai Yasuhito (Nagoya University)

40. Preparation of 3D nanofibrous material of natural polymers and its mechanical properties

Ngoc Phan Tran, Yoko Okahisa, Satoko Okubayashi

Kyoto Institute of Technology, Japan

Chairperson: Yamashita Yoshihiro (University of Fukui)

42. Continuous coalescence and separation of oil-in-water emulsion via polyacrylonitrile nanofibrous membranes

Yue Yunpeng, Hara Motoki, Mukai Yasuhito

Nagoya University, Japan

10:40~11:00 Break

43. Preparation and Characterization of Biodegradable Electrospinning PHBV/PBAT/TiO₂ Antibacterial Nanofiber Membranes

Zhenzhen Lei, Sihan Liu, Jixian Gong, Jun Xu

Tiangong University, China

Chairperson: Ono Tsutomu (Okayama University)

44. Nanofiber filter for prevention of coronavirus infection

Yamashita Yoshihiro, Hashizume Yuya, Fujita Satoshi, Uematsu Hidenori, Tanoue Shuichi

University of Fukui, Japan

45. In-situ synthesis of silica-aerogel embedded nonwoven blanket by ambient pressure drying for efficient thermal insulation in aerospace applications

Jaya Sharma, Javed Sheikh, B.K Behera

Indian Institute of Technology Delhi, India

12:00~13:30 Lunch break

Chairperson: Kim Kyoung Hou (Shinshu University)

46. Influence of structural parameter on the protective performance of a multilayer composite suit of fire protective clothing

Rochak Rathour, Sudhansu Maurya, Apurba Das, Ramasamy Alagirusamy
Indian Institute of Technology Delhi, India

47. Effect of physical parameters on the durability of thermal protective clothing

Rochak Rathour, Apurba Das, Ramasamy Alagirusamy
Indian Institute of Technology Delhi, India

48. Nanofibers: how a lab research brings transformation into people's lives

Zeeshan Khatri
Mehran University of Engineering and Technology, Pakistan

14:30~14:50 Break

14:50~15:30 Session : Dyeing and Finishing

Chairperson: Hidekazu Yasunaga (Kyoto Institute of Technology) , Kazumasa Hirogaki (University of Fukui)

49. Stone Apple Shell Extract treated antimicrobial cum antioxidant textiles: a 'Waste to best' approach

Sourav Banerjee, Sukumar Roy, S. Wazed Ali, Satya Narayan Naik, Mangala Joshi, Subbiyan Rajendran*
Indian Institute of Technology Delhi, India
* University of Bolton, United Kingdom

50. Improved Dye Fixation on Cotton Fabric Dyed in Supercritical Carbon Dioxide Using Laccase Acid

Christiana Agbo, Satoko Okubayashi
Kyoto Institute of Technology, Japan

15:30~ Closing