

PROGRAM OF THE 45th TEXTILE RESEARCH SYMPOSIUM IN KYOTO

September 14, 15 and 16, Kyoto, Conference Room No.1
The 60th anniversary hall, Kyoto Institute of Technology

14th September (Thursday)	
9:00~10:00	<i>Registration</i>
10:00~10:10	<i>Opening</i>
10:10~10:35	<i>Keynote Speech 1: Dr. Tsuyoshi Nishiwaki, ASICS Corporation, Japan</i>
10:35~12:15	<i>Session 1 : Fiber Science and Engineering</i>
12:15~13:30	<i>Lunch</i>
13:30~15:30	<i>Poster presentation (1F K101 in East Building No. 3)</i>
	<i>Museum Tour (The 60th anniversary hall 2F)</i>
15:30~15:55	<i>Keynote Speech 2: Professor B. K. Behera, Indian Institute of Technology Delhi, India</i>
15:55~17:35	<i>Session 2 : Nano Fibers and Smart Textiles</i>
18:00~19:30	<i>Welcome Party (4F in Building No.13)</i>
15th September (Friday)	
8:30~	<i>Registration</i>
9:30~9:55	<i>Keynote Speech 3: Professor Xioming Tao, The Hong Kong Polytechnic University, H.K.</i>
9:55~10:45	<i>Session 3 : Apparel Science and Production Technology</i>
10:45~11:00	<i>Coffee break</i>
11:00~12:15	<i>Session 4 : Fabric Handle and Sense Evaluation</i>
12:15~13:30	<i>Lunch</i>
13:30~13:55	<i>Keynote Speech 4: Professor Jiri Militky, Technical University of Liberec, Czech Republic</i>
14:05~15:20	<i>Session 5 : Composite and Industrial Textile (2F K201 in East Building No. 3)</i>
	<i>Session 6 : Dyeing and Finishing (3F K301 in East Building No. 3)</i>
15:20~15:35	<i>Coffee break</i>
15:35~16:50	<i>Session 5 : Composite and</i>
16:50~17:15	<i>Industrial Textiles</i>
17:15~18:00	<i>Short trip to Symposium Party Venue</i>
18:00~20:00	<i>Symposium Party</i>
16th September (Saturday)	
8:30~	<i>Registration</i>
9:15~10:05	<i>Session 7 : Designs and Quality of Textiles</i>
10:05~10:20	<i>Coffee break</i>
10:20~11:55	<i>Session 8 : Science and Technology of Textile Machinery</i>
11:55~12:05	<i>Closing Address</i>
13:00~	<i>Excursion</i>

14th September (Thursday)9:00~10:00 **Registration**10:00~10:10 **Opening**10:10~10:35 **Keynote speech 1**

Chairperson: Prof. Toshiyasu Kinari (Kanazawa University)

Textile impact on high performance sporting gearTsuyoshi Nishiwaki
ASICS Corporation, Japan10:35~12:15 **Session 1 : Fiber Science and Engineering**

Chairperson: Dr. Yoshihiro Yamashita (Osaka Seikei College)

1. **Sound absorption and compression properties of perpendicular-laid nonwovens**Tao Yang, Xiaoman Xiong, Rajesh Mishra, Jan Novak, Jiri Militky
Technical University of Liberec, Czech Republic2. **Line lighting systems based on the side emitting optical fibers**Dana Kremenakova, Jiri Militky, Rajesh Mishra
Technical University of Liberec, Czech Republic

Chairperson: Prof. B.K. Behera (Indian Institute of Technology Delhi)

3. **Simultaneous fiber structure formation and dyeing of poly(ethylene terephthalate) fibers through cold-drawing in ethanol**Dong Woo Go, Rina Khanum, Wataru Takarada, Arun Aneja*, Takeshi Kikutani
Tokyo Institute of Technology, Japan
* East Carolina University, USA4. **Dependence of thermal-contact properties on compression of furs and fabrics**Jiang Shaochen, Shen Hua, Sachiko Sukigara
Kyoto Institute of Technology, Japan12:15~13:30 **Lunch**13:30~15:30 **Poster presentation, Museum Tour**

Obligation time is provided first half and latter half. First half of obligation is held in 13:30 - 14:30, and latter half of obligation is held in 14:30 - 15:30.

The number and alphabet following hyphen in the presentation number denotes obligation time, and whether award target poster. In the case of "1 or 2" indicate "first half or latter half of obligation", "a or b" indicate " poster judging object and poster not subject to review ", respectively.

Poster session 1: Fiber Science and Engineering**01P-1a Tensile properties of high-strength aramid fibers after fatigue**Suguru Yagi, Yuya Yomogizawa, Kaname Sugimura, Akihiro Suzuki, Katsufumi Tanaka, Midori Takasaki,
Haruki Kobayashi
Kyoto Institute of Technology, Japan**02P-2b Influence of electrolyte on the self-organization of liquid silk**Yutaka Kawahara, Ayumi Sato
Gunma University, Japan

03P-1a Structure development of various poly(lactic acid)s in high-speed melt spinning process

Nanjaporn Roungpaisan, Wataru Takarada, Takeshi Kikutani
Tokyo Institute of Technology, Japan

04P-2b Unique multiple melting behavior of high-speed melt spun polylactide fibers and its kinetics analysis

Natsumi Fukushi, Miku Yoshizawa, Shota Onosato*, Motohiro Hanada*, Midori Takasaki**,
Wataru Takarada***, Yutaka Kawahara*, Takeshi Kikutani***, Haruki Kobayashi**, Katsufumi Tanaka**
Miyagi University of Education, Japan
* Gunma University, Japan
** Kyoto Institute of Technology, Japan
*** Tokyo Institute of Technology, Japan

05P-1a Improvement in filtration performance of hydrophobic nanofiber fabric by ethanol treatment

Yuya Kishida, Yasuhito Mukai
Nagoya University, Japan

06P-2b Heat sensitive filament for 3D printers

Hiroki Murotani, Takatoshi Nakatani, Futoshi Yamada, Kenji Hasegawa, Kenji Kode
UNITIKA LTD., Japan

07P-1a Study on formation of metallic oxide supported functional paper and its catalytic activity

Sota Sawaki, Haruhiro Ino, Yoichi Kodera*
Kyoto Institute of Technology, Japan
* National Institute of Advanced Industrial Science & Technology(AIST), Japan

08P-2b Resources of ethical down

Junya Kuroyanagi, Narumi Suda, Ken Kuroda*, Toshikatsu Kawada**
UMOU SCIENCE LAB, Japan
* ECO LAND, Japan
** Kawada Feather Co., Ltd, Japan

09P-1a Adsorption characteristics of protein by cibacron blue-supported nanofiber fabric

Takuro Sumi, Yasuhito Mukai
Nagoya University, Japan

10P-2b Selective adsorption characteristics of gold ions by nylon nanofiber fabric

Yasuhito Mukai, Tomoaki Tanabe
Nagoya University, Japan

11P-1b Proposal of “L_∞PLUS” system for waste textile

Yoshinori Fujio, Keisuke Yamagata, Yasuaki Hara, Teruo Kimura*
Kurabo Industries LTD., Japan,
* Kyoto Institute of technology, Japan

Poster session 2: Industrial Engineering and Textile Machinery**12P-2a Relationship between large deflection behavior and the components of woven fabric**

Ryo Hashizume, Lina Wakako, Toshiyasu Kinari
Kanazawa University, Japan

13P-1b Acoustic properties and internal structure of foam containing pulp and foaming agent composed of acrylic polymer/liquid hydrocarbon

Mizue Kakehi, Takuma Kiribayashi*, Hideyuki Uematsu*, Shuichi Tanoue*
Industrial Technology Center of Fukui Prefecture, Japan
* University of Fukui, Japan

14P-2a Twisting form in the twisting part of disc friction false-twisting machine

Satoshi Tomohiro, Naoto Kaneda, Toshiyasu Kinari*
National Institute of Technology Fukui College, Japan
* Kanazawa University, Japan

15P-1b Flame retardant material for high visibility work clothes

Junji Hamada, Haruki Morikawa, Atsushi Kuwabara
Toray Industries, Inc., Japan

16P-2a Surging in false-twisting machine

Kouichi Hayashida, Naoto Kaneda, Toshiyasu Kinari*
National Institute of Technology Fukui College, Japan
* Kanazawa University, Japan

17P-1b Relation between the surface gloss and the weave on the polyester fabric

Miwa Iwashita, Atsuji Masuda, Tetsuhiko Murakami, Seiji Kawabata,
Shinya Seko*, Yoshiyuki Iemoto*, Hideyuki Uematsu*, Shuichi Tanoue*
Industrial Technology Center of Fukui Prefecture, Japan
* University of Fukui, Japan

18P-2b Flow of non-newtonian fluid through a microchannel with an abrupt contraction

Kazunori Yasuda, Takayuki Hirai, Akichika Kimura, Motosuke Sogo, Yukiharu Iwamoto
Ehime University, Japan

Poster session 3: Dyeing and Finishing

19P-1a Foaming of cellulose derivatives in supercritical CO₂

Tatsuya Suzuki, Satoko Okubayashi
Kyoto Institute of Technology, Japan

20P-2b Development of the wool non-chlorine machine washable method

Masukuni Mori
Mori Consultant, Japan

21P-1a Low temperature dyeing for natural fibre by using (+)-catechin

Kaito Okada, Takanori Matsubara*
Tokushima University, Japan
* College of Industrial Technology, Japan

22P-2b Deodorant mechanism for model malodorous substances by mordant-dyed cotton and wool fabrics

Toshiko Amemiya
Ochanomizu University, Japan

23P-1a Hair colouring by using tea extracts

Katsuki Watanabe, Chihiro Sakurai*, Takanori Matsubara**
Gifu University, Japan
* Simane University, Japan
** College of Industrial Technology, Japan

24P-2b Levelness study of cotton fabric dyed in different solvents

Chi-wai Kan, Yiu-lun Tang
The Hong Kong Polytechnic University, Hong Kong

**25P-1a Dyeing for natural fibre by utilising chemical reaction of anthocyanins part I
Dyeing methods - dyeability relations**

Asuka Sato, Hinata Inoue, Yoshihito Niimoto, Takanori Matsubara, Kaori Miura*, Kenichi Fujimori*
College of Industrial Technology, Japan
* Glico Nutrition Co., Ltd., Japan

26P-2b Modification of wool fiber surface using combined keratinase-protease treatment and the characterization

Chendi Tu, Sachiko Sukigara
Kyoto Institute of Technology, Japan

**27P-1a Dyeing for natural fibre by utilising chemical reaction of anthocyanins part II
Effects of dyeing conditions**

Yoshihito Niimoto, Hinata Inoue, Asuka Sato, Takanori Matsubara,
Kaori Miura*, Kenichi Fujimori*
College of Industrial Technology, Japan
* Glico Nutrition Co., Ltd., Japan

Poster session 4: High Functional Textile**28P-2a Preparation of carbonized PAN nanofiber fabric and its properties of solute adsorption**

Bijun Huang, Yasuhito Mukai, Kazuma Osawa, Toshihira Irisawa, Yasuhiro Tanabe
Nagoya University, Japan

29P-1b Development of silk based artificial blood vessel by electro-spinning method

Yoshihiro Yamashita, Yoshiyuki Tsukahara*, Masataka Sata**,
Ikue Suzuki***, Toshifumi Hiraoki***, Tetsuo Asakura***
Osaka Seikei College, Japan
* The University of Shiga Prefecture, Japan
** Tokushima University, Japan
*** Tokyo University of Agriculture and Technology, Japan

30P-2a Optimization of plasma processing conditions for improving on adhesion of glass fiber composite materials

Shota Naito, Jian Shi, Mamoru Mizuno, Masaya Sugimoto
Akita Prefectural University, Japan

31P-1b Study on the preparation microcapsule of AIP/ ZHS and the flame retardation of PVC membrane materials

Jian Han, Juanjuan Su, Bin Zhang
Zhejiang Sci-Tech University, China

32P-2a Hoop tension evaluation of CFRP with braided structure by hydraulic experiment

Kento Kawai, Takuru Suehiro, Nanang Endriatno, Toshiyasu Kinari
Kanazawa University, Japan

33P-1b Resinification technique of feather keratin

Yutaka Kawahara, Hiroaki Ohnishi
Gunma University, Japan

34P-2a Mechanical properties of needle punched chopped strand mat composite with open hole

Daiki Ichikawa, Ryo Marui*, Tohru Morii**, Akio Ohtani
Kyoto Institute of Technology, Japan
* Marui Textile Machinery Co., Ltd, Japan
** Shonan Institute of Technology, Japan

35P-1b Development of the molding method for polyurea

Yutaka Kawahara, Shunsuke Otoyama
Gunma University, Japan

36P-2b An estimation method of material damping properties for textile composites by mesh superposition method

Yoshifumi Suzuki, Kin'ya Matsumoto, Yasumasa Nakanishi
Mie University, Japan

Poster session 5: Fabric Handle and Comfort**37P-1b Influence of the brand name and the price on evaluating in “shittori” for baby’s underwear**

Yukari Suehiro, Sachiko Sukigara*
 Mukogawa Women's University, Japan
 * Kyoto Institute of Technology, Japan

38P-2a Durability and comfort of carseat

Funda Buyuk Mazari, Antonin Havelka, Adnan Mazari
 Technical university of Liberec, Czech Republic

39P-1b Visual surface roughness of legs with pantyhose and color effect of pantyhose fabric

Lina Wakako, Toshiyasu Kinari
 Kanazawa University, Japan

**40P-2a Survey on thermal condition and micro climate in bedding for assessment of sleeping comfort
 - Comparison between Hong Kong and Japan –**

Yuki Kobayashi, Takayuki Ueno, Naohide Nishiyama, Yoshitaka Niimi, Hiroyuki Kanai,
 Siyu Lin*, Xiao Liao*, Lei Yao*, Edwin Keh*
 Shinshu University, Japan

* Hong Kong Research Institute of Textiles and Apparel, Hong Kong

41P-1b A measure of comfort: KES texture measurement technology for objective evaluation

Sean Huang, Kei Kawauchi
 Kato Tech Co., Ltd., Japan

42P-2a Analysis of frictional behavior of spunbond nonwoven by whisker type tactile sensor

Thinzar Phyo Wyint****, Toshiyasu Kinari*, Hiroshi Tachiya*,
 Lina Wakako*, Mari Inoue**

* Kanazawa University, Japan

** Kobe University, Japan

*** Yangon Technological University, Myanmar

43P-1b Quality and preference of jackets: a comparison between students and non-students

Saori Kitaguchi, Mariko Kumazawa, Kou Sugahara, Takahiro Iida, Tetsuya Sato,
 Sachiko Sukigara

Kyoto Institute of Technology, Japan

44P-2a Friction properties for fabrics by linear/rotational dragging with tactile sensor

Shinnosuke Yoneda, Toshiyasu Kinari, Hiroshi Tachiya, Lina Wakako
 Kanazawa University, Japan

45P-1b A study of the interactions of softening agents and nanoparticles with respect to the handle of wool fabrics

Momoko Sugimura, Steve McNeil*, Larissa Zaitseva*
 Niigata University, Japan

* AgResearch Ltd, New Zealand

46P-2a Application of ring method for denim fabrics and its relations with mechanical and surface properties

Nazli Uren, Ayse Okur
 Dokuz Eylul University, Turkey

47P-1b Appearance and handle design of cotton crepe fabrics for women’s dresses

Hiroko Yokura, Sachiko Sukigara*
 Shiga University, Japan

* Kyoto Institute of Technology, Japan

48P-2b The price of the T-shirt which Japanese students assume

Ibuki Hosomi, Kouhei Kagotani, Pandya Shiddharth Pandya*, Yukie Tsuji
Kobe Gakuin University, Japan
* Kobe International University, Japan

49P-1b Research about the kimono which put on at a coming-of-age ceremony

Sae Taguchi, Kousuke Hamada, Ryouta Syouji, Siddharth Pandya*, Yukie Tsuji
Kobe Gakuin University, Japan
* Kobe International University, Japan

15:30~15:55 Keynote speech 2

Chairperson: Prof. Takeshi Kikutani (Tokyo Institute of Technology)

3D fabric and their applications

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

15:55~17:35 Session 2 : Nano Fibers and Smart Textiles

Chairperson: Prof. Teruo Kimura (Kyoto Institute of Technology)

5. Plasma mediated coating of fibers by conductive layers

Jiri Militky, Veronika Tunakova, Roman Pulicek, Josef Vecernik*
Technical University of Liberec, Czech Republic
*:Vecernik s.r.o., Alsovice, Czech Republic

6. Mechanical properties of the flexible conductive yarn

Atsuji Masuda, Takahiro Tsuji, Akiko Uejima,
Tomoaki Harii*, Yoshihiro Iwasaki*, Eiji Tajima*, Takayoshi Koizumi*
Industrial Technology Center of Fukui Prefecture., Japan
* URASE CO., Ltd., Japan

Chairperson: Dr. Tetsusei Kurashiki (Osaka University)

7. Formation of superamphiphobic inorganic nanofiber mats using silane coupling agents with short perfluoroalkyl chain

Koji Nakane, Shuya Gao, Akiyoshi Ohgoshi*, Tadayuki Isaji*, Masaaki Ozawa*
University of Fukui, Japan
* Nissan Chemical Industries, Ltd., Japan

8. Molding and mechanical property of keratin based composite material using ionic liquid

Haruhiro Ino, Keisuke Komuro, Teruo Kimura, Yoichi Kodera*
Kyoto Institute of Technology, Japan
* National Institute of Advanced Industrial Science & Technology (AIST), Japan

18:00~19:30 **Welcome Party**

15th September (Friday)

8:30~ **Registration**

9:30~9:55 Keynote speech 3

Chairperson: Prof. Sachiko Sukigara (Kyoto Institute of Technology)

Textile-based wearable system for monitoring upper-arm muscle contraction during dynamic flexion
Xiaoming Tao
The Hong Kong Polytechnic University, H.K.

9:55~10:45 **Session 3 : Apparel Science and Production Technology***Chairperson: Prof. Xioming Tao (The Hong Kong Polytechnic University)***9. Thermophysiological and sewing properties of firefighter clothing**Adnan Mazari, Antonin Havelka, Funda Buyuk Mazari
Technical University of Liberec, Czech Republic**10. The compression properties of towel under various water contents**Yuriko Kibayashi, Hiroko Yokura*, Sachiko Sukigara
Kyoto Institute of Technology, Japan
* Shiga University, Japan**- Coffee Break 15 min -**11:00~12:15 **Session4 : Fabric Handle and Sense Evaluation***Chairperson: Prof. Jian Han (Zhejiang Sci-Tech University)***11. Effect of fiber length on hand and dimension changes of cotton knit fabrics by laundering**Nagisa Hirata, KyoungOk Kim, Masayuki Takatera, Kyosuke Kanda*, Masatoshi Kawakami*
Shinshu University, Japan
* Kondo Cotton Spinning Co., Ltd., Japan**12. Objective evaluation of the handle of towels**Mari Inoue, Kazuki Chiba, Hiromi Nakaya, Yusuke Hayashi
Kobe University, Japan**13. Nonlinearity evaluation of soft materials by ball indentation imitating palpation**Atsushi Sakuma, Asuka Nagai, Etsuko Takayama
Kyoto Institute of Technology, Japan12:15~13:30 **Lunch**13:30~13:55 **Keynote speech 4***Chairperson: Prof. Morihiro Yoneda (Nara Women's University)***Multilayered perpendicular nonwovens for advanced thermal and acoustic insulation**Jiri Militky, Rajesh Mishra, Mohanapriya Venkataraman, Tao Yang
Technical University of Liberec, Czech Republic14:05~15:20 **Session5 : Composite and Industrial Textiles***Chairperson: Prof. Mitsuo Matsudaira (Kato Tech Co., Ltd.)***14. Interesting different mechanical behaviours of 3D warp interlock fabrics for composite material**F. Boussu, D. Soulat, C. Huniade, S. Picard*
* ENSAIT, GEMTEX Université de Lille1, France**15. Activated carbon structures from fibrous wastes**Jiri Militky, Vijiy Valeti, Salman Naeem
Technical University of Liberec, Czech Republic**16. Introduction of new fire blocking textile “GULFENG®” composed of PPS and Ox-PAN**Masaru Harada, Hiroshi Tsuchikura, Atsushi Kuwabara
Toray Industries, Inc., Japan**- Coffee Break 15 min -**

15:35~17:15 **Session5: Composite and Industrial Textiles***Chairperson: Dr. Tsuyoshi Nishiwaki (ASICS Corporation)***17. Optimization of formulations with basalt fiber**Promoda Kumar Behera, Vijay Baheti, Jiri Militky, Holmer Savastano Junior
Technical University of Liberec, Czech Republic**18. Laser engraving based application of silica aerogel into nonwovens for thermal insulation**Xiaoman Xiong, Rajesh Mishra, Jiri Militky, Hiroyuki Kanai*
Technical University of Liberec, Czech Republic
* Shinshu University, Japan*Chairperson: Prof. Francois Boussu (ENSAIT, GEMTEX Université de Lille1)***19. Fatigue damage analysis under tension loading for textile composites**Kazutaka Mukoyama, Koushu Hanaki, Tetsusei Kurashiki
Osaka University, Japan**20. Study on the damage propagation under three point bending for a short glass fiber reinforced composites by an injection mold**Li Xingshengsheng, T.Kurashiki, M.Zako, K.Kobayashi*, T.Yamamoto*, G. Yamada*, T.Sakakibara*
Osaka University, Japan
* ITOCHU Techno-Solutions Corp, Japan14:05~15:20 **Session6 : Dyeing and Finishing***Chairperson: Dr. Chi-wai Kan (The Hong Kong Polytechnic University)***21. Casein treated flame retardant cotton textiles**Sajid Faheem, Vijay Baheti, Maros Tunak, Jakub Wiener, Jiri Militky
Technical University of Liberec, Czech Republic**22. Soil resistant finishing technology “TECHNOCLEAN®”**Shota Takeshita, Atsushi Kuwabara, Keiji Takeda
Toray Industries, Inc., Japan**23. Dyeability in hair dyeing using dyestuffs prepared from biobased materials**Hidekazu Yasunaga, Akiko Takahashi, Kazue Ito, Masahisa Ueda, Saina Taniguchi,
Asami Yano, Chinami Seki, Hiroshi Osaki, Tomoyasu Kida*, Takanori Matsubara*
Kyoto Institute of Technology, Japan
* College of Industrial Technology, Japan**- Coffee Break 15 min -**15:35~16:50 **Session6 : Dyeing and Finishing***Chairperson: Dr. Hidekazu Yasunaga (Kyoto Institute of Technology)***24. Present situation of supercritical fluid dyeing and finishing**Teruo Hori, Isao Tabata, Kazumasa Hirogaki
University of Fukui, Japan**25. Synthesis of nano-porous flexible para-aramid aerogel fiber**Kazumasa Hirogaki, Arata Uchimura, Yumiko Suzuki, Lei Du, Isao Tabata, Teruo Hori
University of Fukui, Japan**26. Improvement in dyeability of UHMPWE fiber using supercritical CO₂**Jaehyuk Ma, Satoko Okubayashi
Kyoto Institute of Technology, Japan18:00~20:00 **Symposium Party**

16th September (Saturday)

8:30~ **Registration**

9:15~10:05 **Session 7 : Designs and Quality of Textiles**

Chairperson: Dr. Rajes Mishra (Technical University of Liberec)

27. Numerical analysis for deformation behavior of textile under bi-axial tensile loading

Yuki Kitahara, Atsushi Yokoyama
Kyoto Institute of Technology, Japan

28. Measurement of effective thermal conductivity of synthetic and regenerated fiber assemblies in low fiber volume fraction

Morihiro Yoneda, Ai Ogawa, Michiyo Tada
Nara Women's University, Japan

- Coffee Break 15 min -

10:20~11:55 **Session 8 : Science and Technology of Textile Machinery**

Chairperson: Prof. Atsushi Yokoyama (Kyoto Institute of Technology)

29. Research into the causes of center marks in spandex plated fabric

Shunji Takeuchi, Kazuki Nishioka, Hideyuki Uematsu, Shuichi Tanoue
University of Fukui, Japan

30. An experimental study of the roller drafting parameters

Tatsumori Matsumoto
Murata Machinery, Ltd., Japan

Chairperson: Prof. Jiri Militky (Technical University of Liberec)

31. Vortex spinning - technology, applications and market

Akitsugu Mori
Murata Machinery Japan

32. Bio innovative design and manufacture of CFRP preform by braiding technology

Toshiyasu Kinari, Nanang Endriatno, Kento Kawai, Takuru Suehiro, Jiro Sakamoto, Satoshi Kitayama
Kanazawa University, Japan

11:55~12:05 **Closing Address**

12:05~ **Excursion**