# 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

**September 14, 15 and 16, 2017**

<table>
<thead>
<tr>
<th>14th September (Thursday)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00～10:00</td>
<td>Registration</td>
</tr>
<tr>
<td>10:00～10:10</td>
<td>Opening</td>
</tr>
<tr>
<td>10:10～10:35</td>
<td>Keynote Speech 1: Tsuyoshi Nishiwaki, ASICS Corporation, Japan</td>
</tr>
<tr>
<td>10:35～12:15</td>
<td>Session 1: Fiber Science and Engineering</td>
</tr>
<tr>
<td>12:15～13:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30～15:30</td>
<td>Poster presentation</td>
</tr>
<tr>
<td>15:30～15:55</td>
<td>Keynote Speech 2: Professor Jiri Militky, Technical University of Liberec, Czech Republic</td>
</tr>
<tr>
<td>15:55～17:35</td>
<td>Session 2: Nano Fibers and Smart Textiles</td>
</tr>
<tr>
<td>18:00～19:30</td>
<td>Welcome Party</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15th September (Friday)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30～</td>
<td>Registration</td>
</tr>
<tr>
<td>9:30～9:55</td>
<td>Keynote Speech 3: Professor Xiaoming Tao, The Hong Kong Polytechnic University, H.K.</td>
</tr>
<tr>
<td>9:55～10:45</td>
<td>Session 3: Apparel Science and Production Technology</td>
</tr>
<tr>
<td>10:45～11:00</td>
<td>Coffee break</td>
</tr>
<tr>
<td>11:00～12:15</td>
<td>Session 4: Fabric Handle and Sense Evaluation</td>
</tr>
<tr>
<td>12:15～13:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30～13:55</td>
<td>Keynote Speech 4: Professor B. K. Behera, Indian Institute of Technology Delhi, India</td>
</tr>
<tr>
<td>13:55～15:10</td>
<td>Session 5: Composite and Industrial Textiles</td>
</tr>
<tr>
<td>15:10～15:25</td>
<td>Coffee break</td>
</tr>
<tr>
<td>15:25～16:40</td>
<td>Session 5: Composite and Industrial Textiles</td>
</tr>
<tr>
<td>16:40～17:05</td>
<td>Session 6: Dyeing and Finishing</td>
</tr>
<tr>
<td>17:05～18:00</td>
<td>Short trip to Symposium Party Venue</td>
</tr>
<tr>
<td>18:00～20:00</td>
<td>Symposium Party</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16th September (Saturday)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30～</td>
<td>Registration</td>
</tr>
<tr>
<td>9:15～10:05</td>
<td>Session 7: Designs and Quality of Textiles</td>
</tr>
<tr>
<td>10:05～10:20</td>
<td>Coffee break</td>
</tr>
<tr>
<td>10:20～11:55</td>
<td>Session 8: Science and Technology of Textile Machinery</td>
</tr>
<tr>
<td>11:55～12:05</td>
<td>Closing Address</td>
</tr>
<tr>
<td>12:05～13:00</td>
<td>Lunch</td>
</tr>
</tbody>
</table>
14th September (Thursday)

9:00～10:00 Registration

10:00～10:10 Opening

10:10～10:35 Keynote speech 1

Textile impact on high performance sporting gear
Tsuyoshi Nishiwaki
ASICS Corporation, Japan

10:35～12:15 Session 1: Fiber Science and Engineering

1. Sound absorption and compression properties of perpendicular-laid nonwovens
   Taoyang, Xiaoman Xiong, Rajesh Mishra, Jan Novák, Jiří Militký
   1: Dept. of Material Engineering, Textile Faculty, Technical University of Liberec, Czech Republic
   2: Dept. of Vehicles and Engines, Faculty of Mechanical Engineering, Technical University of Liberec, Czech Republic

2. Line lighting systems based on the side emitting optical fibers
   Dana Křemenáková, Jiří Militký, Rajesh Mishra
   Technical University of Liberec, Czech Republic

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

4. Effect of fabric surface structure on the thermal-contact properties under different compression pressure
   Jiang Shaochen, Shen Hua, Sachiko Sukigara
   Kyoto Institute of Technology, Japan

12:15～13:30 Lunch

13:30～15:30 Poster presentation, Museum Tour

P-1 Levelness Study of Cotton Fabric Dyed in Different Solvents
   Yiu-lun Tang, Chi-wai Kan
   The Hong Kong Polytechnic University, H.K.

P-2 Foaming of Cellulose Derivatives in Supercritical CO2
   Tatsuya Suzuki, Satoko Okubayashi
   Kyoto Institute of Technology, Japan

P-3 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

P-4 Influence of Electrolyte on the Self-organization of Liquid Silk
   Yutaka Kawahara, Ayumi Sato
   Gunma University, Japan

P-5 Study on the preparation microcapsule of AlP/ ZHS and the flame retardation of PVC membrane materials
P-6 On acoustic properties and internal structure of foam formed pulp fiber materials
Mizue Kakehi, Takuma Kiribayashi, Hideyuki Uematsu*, Syuichi Tanoue*
Industrial Technology Center of Fukui Prefecture, Japan
*:University of Fukui, Japan

P-7 Unique Multiple Melting Behavior of High-Speed Melt Spun Polylactide Fibers and its Kinetics Analysis
Natsumi Fukushi¹, Miku Yoshizawa¹, Shota Onosato², Motohiro Hanada², Midori Takasaki³,*
Wataru Takarada⁴, Yutaka Kawahara², Takeshi Kikutani⁴, Haruki Kobayashi¹, Katsufumi Tanaka³
¹Miyagi University of Education, Japan
²Gunma University
³,*Kyoto Institute of Technology, Japan
⁴Tokyo Institute of Technology, Japan

P-8 Flame retardant material for high visibility work clothes
Junji Hamada
Toray Industries, Inc., Japan

P-9 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, China

P-10 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

P-11 Twisting Form in Twisting Part of Disc Friction False-twisting Machine
Satoshi Tomohiro, Naoto Kaneda, Toshiyasu Kinari*
Institute of Technology, Fukui College, Japan
*:Kanazawa University, Japan

P-12 Basic Research on the Surging in False-twisting Machine
Koichi Hayashida, Naoto Kaneda, Toshiyasu Kinari*
Institute of Technology, Fukui College, Japan
*:Kanazawa University, Japan

P-13 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

P-14 Visual Surface Roughness of Legs with Pantyhose and Color Effect of Pantyhose Fabric
Lina Wakako, Toshiyasu Kinari
Kanazawa University, Japan

P-15 Study on Formation of Metallic Oxide Supported Functional Paper and Its Catalytic Activity
Sota Sawaki, Haruhiro Ino, Yoichi Kodera
Kyoto Institute of Technology, Japan

P-16 A Measure of Comfort: KES Texture Measurement Technology for Objective Evaluation
Sean Huang, Kei Kawauchi
Kato Tech Co., Ltd., Japan
P-17 **Relationship between Large Deflection Behavior and the Components of Woven Fabric**  
Ryo Hashizume, Toshiyasu Kinari, Rina Wakako  
Kanazawa University, Japan

P-18 **Analysis of Frictional Behavior by Whisker Type Tactile Sensor**  
— Influence of Material Properties on Friction of Spunbond Nonwoven —  
Thinzar Phyo Wyin****, Shinosuke Yoneda*, Toshiyasu Kinari*, Hiroshi Tachiya*,  
Lina Wakako*, Mari Inoue**  
*:Kanazawa University, Japan  
**:Kobe University, Japan  
***:Yangon Technological University, Myanmar

P-19 **Friction properties for fabrics by linear/rotational dragging with tactile sensor**  
Shinosuke Yoneda, Toshiyasu Kinari, Hiroshi Tachiya, Lina Wakako  
Kanazawa University, Japan

P-20 **Hoop Tension Evaluation of CFRP with Braided Structure by Hydraulic Experiment**  
Kento Kawai, Takuru Suehiro, Nanang Endriatno, Toshiyasu Kinari  
Kanazawa University, Japan

P-21 **Relation between the surface gloss and the weave on the polyester fabric**  
Miwa Iwashita, Atsuji Masuda, Tetsuhiko Murakami, Seiji Kawabata,  
Kota Kobayashi*, Shinya Seko*, Yoshiyuki Iemoto*, Hideyuki Uematsu*, Shuichi Tanoue*  
Industrial Technology Center of Fukui Prefecture, Japan  
*:University of Fukui, Japan

P-22 **Resinification Technique of Feather Keratin**  
Yutaka Kawahara, Hiroaki Ohnishi  
Gunma University, Japan

P-23 **Development of the Molding Technology of Polyurea**  
Yutaka Kawahara, Shunsuke Otoyama  
Gunma University, Japan

P-24 **Durability and comfort of car seat**  
Funda Buyuk Mazari, Antonin Havelka, Adnan Mazari  
Technical university of Liberec, Czech Republic

P-25 **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

P-26 **Heat sensitive filament for 3D printers**  
Hiroki Murotani, Takatoshi Nakatani, Futoshi Yamada, Kenji Hasegawa, Kenji Kode  
UNITIKA LTD., Japan

P-27 **Application of nanofibers made of silk fibroin to medical**  
Yoshihiro Yamashita, Yoshiyuki Tsukahara*, Masataka Sata**, Ikue Suzuki***,  
Toshifumi Hiraoki***, Tetsuo Asakura***  
Osaka Seikei Collage, Japan  
*:The University of Shiga Prefecture, Japan  
**:Tokushima University, Japan  
***:Tokyo University of Agriculture and Technology, Japan

P-28 **Application of ring method for denim fabrics and its relations with mechanical and surface properties**  
Nazli Uren, Ayse Okur  
Dokuz Eylul University, Turkey
P-29 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

P-30 Hair Colouring by Using Tea Extracts
Katsuki Watanabe, Chihiro Sakurai*, Takanori Matsubara**
Gihu University, Japan
*:Simane University, Japan
**:College of Industrial Technology, Japan

P-31 Low Temperature Dyeing for Natural Fibre by Using (+)-Catechin
Kaito Okada, Takanori Matsubara*
Tokushima University, Japan
*:College of Industrial Technology, Japan

P-32 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

P-33 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

P-34 Deodorant mechanism for model malodorous substances by mordant-dyed cotton and wool fabrics
Toshiko Amemiya
Ochanomizu University, Japan

P-35 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

P-36 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

P-37 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

P-38 Structure Development of Various Poly(lactic acid)s in High-Speed Melt Spinning Process
N. Roungpaisan, W. Takarada, T. Kikutani
Tokyo Institute of Technology, Japan

P-39 Appearance and Handle Design of Cotton Crepe Fabrics for Women’s Dresses
Hiroko Yokura, Sachiko Sukigara*
Shiga University, Japan
*:Kyoto Institute of Technology, Japan
P-40 Modification of Wool Fiber Surface Using Combined Keratinase-Protease Treatment and the Characterization
Chendi Tu, Sachiko Sukigara
Kyoto Institute of Technology, Japan

P-41 An estimation method of material damping properties for textile composites by mesh superposition method
Yoshifumi Suzuki, Kinya Matsumoto, Yasumasa Nakanishi
Mie University, Japan

P-42 Selective Adsorption Characteristics of Gold Ions by Nylon Nanofiber Fabric
Yasuhiro Mukai, Tomoaki Tanabe
Nagoya University, Japan

P-43 Preparation of Carbonized PAN Nanofiber Fabric and Its Properties of Solute Adsorption
Bijun Huang, Yasuhiro Mukai, Kazuma Osawa, Toshihira Irisawa, Yasuhiro Tanabe
Nagoya University, Japan

P-44 Improvement in Filtration Performance of Hydrophobic Nanofiber Fabric by Ethanol Treatment
Yuya Kishida, Yasuhiro Mukai
Nagoya University, Japan

P-45 Adsorption Characteristics of Protein by Cibacron Blue-Supported Nanofiber Fabric
Takuro Sumi, Yasuhiro Mukai
Nagoya University, Japan

P-46 Resources of Ethical Down
Junya Kuroyanagi, Narumi Suda, Ken Kuroda*, Toshikatsu Kawada**
UMOU SCIENCE LAB, Japan
*:ECO LAND, Japan
**:Kawada Feather Co., Ltd., Japan

P-47 Mechanical Properties of Needle Punched Chopped Strand Mat Composite with Open Hol
Daiki Ichikawa, Ryo Marui, Tohru Morii, Akio Ohtani
Kyoto Institute of Technology, Japan

P-48 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

15:30～15:55 Keynote speech 2
Multilayered Perpendicular Nonwovens for Advanced Thermal and Acoustic Insulation
Jiri Militky, Rajesh Mishra, Mohanapriya Venkataraman, Tao Yang
Technical University of Liberec, Czech Republic

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

5. Plasma mediated coating of fibers by conductive layers
Jiri Militky, Veronika Tunakova, Roman Pulicek, Josef Vecernik*
Technical University of Liberec, Czech Republic
*:Večerník s.r.o., Alšovice, Czech Republic

6. Mechanical properties of the Flexible conductive yarn
Atsuji Mudas, Takahiro Tsugi, Akiko Uejima, Tomoaki Harri*, Yoshihiro Iwasaki*, Eiji Tajima*, Takayoshi Koizumi*
Industrial Technology Center of Fukui Prefecture., Japan
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
*:URASE CO., 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

18:00〜19:30 Welcome Party

15th September (Friday)

8:30〜 Registration
9:30〜9:55 Keynote speech 3
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

9. Thermophysiological and sewing properties of firefighter clothing
Adnan Mazari, Antonin Havelka, Funda BuyukMazari
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 Session 4: Fabric Handle and Sense Evaluation

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, Japan

12:15〜13:30 Lunch
Keynote speech 4

3D Fabric and their Applications
B. K. Behera
Indian Institute of Technology Delhi, India

Session 5: Composite and Industrial Textiles

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 Lille 1, 59110, Roubaix, France

15. Activated Carbon Structures from Fibrous Wastes
Jiří Militký, Vijiy Vageti, Salman Naeem
Technical University of Liberec, Czech Republic

16. Introduction of New Fire Blocking Textile “GULFENG?” Composed of PPS and Ox-PAN
Masaru Harada
Toray Industries, Inc., Japan

- Coffee Break 15 min –

15:25~17:05 Session 5: Composite and Industrial Textiles

17. Optimization of formulations with basalt fiber
Promoda Kumar Behera, Vijay Baheti, Jiří Militky, Holmer Savastano Junior
Technical University of Liberec, Czech Republic

18. Thermo-physiological properties of silica aerogel-encapsulated composites
Xiaoman Xiong, Tao Yang, Rajesh Mishra
Technical University of Liberec, Czech Republic

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
Xingsheng Li, T. Kurashiki, M. Zako, K. Kobayashi, T. Yamamoto, T. Sakakibara
Osaka University, Japan

Session 6: Dyeing and Finishing

13:55~15:10

21. CASEIN TREATED FLAME RETARDANT COTTON TEXTILES
Sajid Faheem, Vijay Baheti, Maros Tunak, Jakub Wiener, Jiří Militky
Technical University of Liberec, Czech Republic

22. Soil resistant finishing technology “TECHNOCLEAN?”
Shota Takeshita
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

- Coffee Break 15 min –
15:25～16:40  **Session6 : Dyeing and Finishing**

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 UHMWPE fiber using Supercritical CO2**
   Jaehyuk Ma, Satoko Okabayashi
   Kyoto Institute of Technology, Japan

18:00～20:00  **Symposium Party**

16th September (Saturday)

8:30～  **Registration**

9:15～10:05  **Session7 : Designs and Quality of Textiles**

27. **Numerical Model of Textile for Large Deformation Behavior on Seat of Chair**
   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**

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 for optimal roller drafting parameters**
   Tatsumori Matsumoto
   Murata Machinery,Ltd., Japan

31. **Vortex spinning - technology, applications and market**
   Akitsugu Mori
   Murata Machinery,Ltd., 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**

12:05～13:00  **Lunch**

13:00～  **Excursion**