## PROGRAM OF
### THE 48th TEXTILE RESEARCH SYMPOSIUM 2021

December 8th and 9th, 2021, online, Japan

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<td>13:50~14:00</td>
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<td>14:00~15:00</td>
<td>Session 1: Nano Fibers</td>
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<tr>
<td>15:00~15:30</td>
<td>Session 2: Composite Material</td>
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<td>15:30~16:00</td>
<td>Break</td>
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<tr>
<td>16:00~17:00</td>
<td>Session 3: Fiber Science and Engineering</td>
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<td>17:00~18:00</td>
<td>Plenary Lecture: Prof. George Havenith, Loughborough University, U.K.</td>
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<td>18:00~18:30</td>
<td>Break</td>
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<td>18:30~19:30</td>
<td>Session 4: Smart Textile and IoT</td>
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<td>19:30~20:30</td>
<td>Session 5: Nonwoven and Industrial Textile</td>
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**Day 2 (JST) : December. 9 (Thu.)**

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<th>Time</th>
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<td>10:20~10:30</td>
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<tr>
<td>10:30~11:00</td>
<td>Memorial Session 1: Dr. Arun Pal Aneja, East Carolina University, USA</td>
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<td>11:00~12:00</td>
<td>Session 6: Apparel Science and Protective clothing</td>
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<td>12:00~13:30</td>
<td>break</td>
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<tr>
<td>13:30~14:30</td>
<td>Session 7: Textile Testing and Comfort on Textiles products</td>
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<td>14:30~15:30</td>
<td>Session 8: Simulation and Virtual Textile</td>
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<td>15:30~16:00</td>
<td>Break</td>
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<td>16:00~17:30</td>
<td>Session 9: Environment and Sustainability</td>
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<td>17:30~18:00</td>
<td>Memorial Session 2: Prof. Jiří Militký, Technical University of Liberec, Czech Republic</td>
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<td>18:00~18:30</td>
<td>Break</td>
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<tr>
<td>18:30~19:30</td>
<td>Session 10: Science and Technology of Textile Machinery</td>
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<td>19:30~20:00</td>
<td>Session 11: Dyeing and Finishing</td>
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Day 1 (JST) : December. 8 (Wed.)

13:50~14:00 Opening

14:00~15:00 Session 1: Nano Fibers
Chairman: Yasuhito Mukai (Nagoya University), Yoshihiro Yamashita (Fukui University)
14:00~14:30 1. Functional nanofibrous materials
   Bin Ding
   Donghua University, China
14:30~15:00 2. Nanofiber innovations, product development and their commercialization challenges
   Zeeshan Khatri
   Mehran University, Pakistan

15:00~15:30 Session 2: Composite Material
Chairman: Akio Ohtani (Kyoto Institute of Technology)
15:00~15:30 3. Multiscale Textile Modeling for Composite Manufacturing
   Louis Laberge Lebel
   Polytechnique Montréal, Canada
15:30~16:00 break

16:00~17:00 Session 3: Fiber Science and Engineering
Chairman: Takeshi Kikutani (Tokyo Institute of Technology), Hiroki Murase (Kyoritsu Women's University)
16:00~16:30 4. Key Structural Factor for High-toughness Property in Silks Revealed by Time-resolved Synchrotron
   X-ray Scattering Analysis
   Taiyo Yoshioka
   National Agriculture and Food Research Organization, Japan
16:30~17:00 5. The influence of processing conditions on the behavior during and performance after stretching of
   poly (ethylene furoate)
   Hendrikus A. Visser
   Avantium Renewable Polymers, Netherlands

17:00~18:00 Plenary Lecture
Chairman: Shuichi Tanoue (Fukui University)
   Physiological Responses of the human body and their interaction with perception and thermal comfort
   of clothing
   George Havenith
   Loughborough University, U.K.
18:00~18:30 break
18:30~19:30  **Session 4: Smart Textile and IoT**
Chairman: Naoki Saiwaki (Nara Women's University), Noriaki Kuwahara (Kyoto Institute of Technology)

18:30~19:00  6. Healthcare digital transformation using smart wearables
Ken Kiyono
Osaka University, Japan
19:00~19:30  7. E-textile materials and devices development for Smart Fashion
Mijung Lee
Kookmin University, Korea

19:30~20:30  **Session 5: Nonwoven and Industrial Textile**
Chairman: Kim KyoungHou (Shinshu University)
19:30~20:00  8. Characterisation of Fabric Tactile Properties of Nonwoven Topsheets
Ningtao Mao
University of Leeds, U.K.
20:00~20:30  9. Multifunctional behavior of 3D textile materials
Rajesh Kumar Mishra
Czech University of Life Sciences Prague, Czech Republic

20:30  Closing

Day 2 (JST) : December 9 (Thu.)
10:20~10:30  Opening

10:30~11:00  **Memorial Session 1**
Chairman: Takeshi Kikutani (Tokyo Institute of Technology)
From Textile Terrific to Textile Terrible and Back
Arun Pal Aneja
East Carolina University, USA

11:00~12:00  **Session 6: Apparel Science and Protective clothing**
Chairman: Hiroki Maru (Japan Women's University), Hajime Tsuji (Kaken Test Center)
11:00~11:30  10. Smart Wearable Interface for Human Health and Safety
Huiju Park
Cornell University, USA
11:30~12:00  11. Improvement of Protective Clothing Design in Japanese Emergency Medical Services by Interdisciplinary Approach
Kaoru Wakatsuki
Shinshu University, Japan

12:00~13:30  break
13:30~14:30  **Session 7: Textile Testing and Comfort on Textiles products**
Chairman: Sachiko Sukigara (Kyoto Institute of Technology), Hiroyuki Kanai (Shinshu University)

13:30~14:00  1 2.  Sweat Simulator for Simultaneous Real-time Measurement of Sweat accumulation, Dripping and Evaporation Rate
Jintu Fan
The Hong Kong Polytechnic University, Hong Kong

14:00~14:30  1 3.  The heat and flow transfer through porous fibrous material
Hua Shen
Donghua University, China

14:30~15:30  **Session 8: Simulation and Virtual Textile**
Chairman: Hidefumi Wakamatsu (Osaka University), Yosuke Horiba (Shinshu University)

14:30~15:00  1 4.  Overview of Virtual Textile and Clothing Simulation
Shigeru Inui
Shinshu University, Japan

15:00~15:30  1 5.  Fluid dynamic simulation of face masks for evaluating droplet collection performance against COVID-19
Keiji Onishi
RIKEN Center for Computational Science, Japan

15:30~16:00  break

16:00~17:30  **Session 9: Environment and Sustainability**
Chairman: Shunji Takeuchi (Kyoto Institute of Technology), Teruo Kimura (Kyoto Institute of Technology), Motoko Uchimaru (Colorloop Co., Ltd.)

16:00~16:30  1 6.  Global Manufacturing Trend: Light weighting through 3D weaving and 3D printing towards sustainability
Bijoya Kumar Behera
Indian Institute of Technology Delhi, India

16:30~17:00  1 7.  Make/Shift - design research methods for sustainability in Textiles
Michelle Baggerman
ArtEZ University of the Arts, Netherlands

17:00~17:30  1 8.  Bio-inspired Textiles
Satyadev Rosunee
University of Mauritius, Republic of Mauritius
17:30~18:00  Memorial Session 2
Chairman: Sachiko Sukigara(Kyoto Institute of Technology)

Hand and Complex Quality of Fabrics, Kawabata Approach and Beyond
Jiří Militký
Technical University of Liberec, Czech Republic

18:00~18:30  break

18:30~19:30  Session 10: Science and Technology of Textile Machinery
Chairman: Annie Yu (Kyoto Institute of Technology), Zhu Chunhong (Shinshu University)

18:30~19:00  19.  Active training bodysuit for patients with spinal deformity: how to apply passive force and active posture training in functional garment design?
Yip Joanne
The Hong Kong Polytechnic University, Hong Kong

19:00~19:30  20.  Fibre Surface Molecular Engineering for Smart Textiles and Wearable Devices
Xuqing Liu
The University of Manchester, U.K.

19:30~20:00  Session 11: Dyeing and Finishing
Chairman: Satoko Okubayashi(Kyoto Institute of Technology), Hidekazu Yasunaga(Kyoto Institute of Technology)

19:30~20:00  21.  Resource effective processes for functional and smart textiles
Vincent Nierstrasz
University of Borås, Swedish

20:00~20:30  22.  Evaluation of Whiteness: An Important part of Color Quality Control
Michal Vik
Technical University of Liberec, Czech Republic

20:30  Closing