

The Fiber Society Spring Meeting and Technical Conference 2016

Textile Innovations – Opportunities and
Challenges

Mulhouse, France
25-27 May 2016

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Wednesday, May 25

- 7:30 Registration (ENSISA Werner Building – Main Hall – **B** on the map) and Breakfast (Workshop Lane)
- 8:30 Welcoming Remarks, Business, and Announcements – Amphitheatre Hadamard-FST (**A** on the map)
- Christine Gangloff-Ziegler, President of the University*
Laurent Bigue, Director of ENSISA
Marie-Ange Bueno, Director of Laboratory (LPMT)
Konstantin Kornev, President, The Fiber Society
Laurence Schacher, Conference Chair
- 8:45– **Speaker:** Michael Ellison, Clemson University, *The Fiber Society: In the Beginning, May 1941*
- 9:25
- 9:25 Move to Session Rooms (ENSISA Werner Building – **B** on the map)

Morning Session

	Amphi Richard Adrien Schutz (RAS)	Amphi 116
	Session: Fiber Formation, Structure, and Properties <i>Chair, Bhuvnesh Goswami</i>	Session: Yarn Processes, Structures, and Properties <i>Chair, Yordan Kyosev</i>
9:45	<i>Homogeneity of Finest Fiber Nonwovens</i> 3 Ingo Windschiegl, Institute of Textile Technology and Process Engineering	<i>Automatic Online Controlling Linear Density and Blend Ratio of Rotor Spun Yarn Spinning Process</i> 17 Rui-Hua Yang, Jiangnan University
10:10	<i>Structure and Properties of Cellulose Diacetate</i> 5 <i>Fibers by Melt Spinning with Imidazole Ionic Liquid as Plasticizing Agent</i> Na Liu, Donghua University	<i>High-temperature Polymer Yarns for Through Thickness Reinforcement of Carbon Fibre Laminates</i> 19 Cormac McGarrigle, Ulster University
10:35	<i>Effect of Stress and Temperature on the Molecular Orientation of Melt-spun Poly(3-hydroxybutyrate) Fibers</i> 7 Rudolf Hufenus, Empa	<i>open</i>
11:00– 11:20	Break	
	Session: Fiber Formation, Structure, and Properties <i>Chair, Janice R. Gerde</i>	Session: Dyeing, Finishing, and Wettability <i>Chair, Ian Hardin</i>
11:20	<i>Wettability of Carbon Fibers at the Microscale</i> 9 David Seveno, KU Leuven	<i>Influence of UV Protecting Finish and Color on Spectral and Thermophysiological Properties of Sports Textiles</i> 23 Bianca-Michaela Woelfling, Hohenstein Institute for Textile Innovation
11:45	<i>Hydrodynamics of Fiber Drawing from Polymer Solutions</i> 11 David Lukáš, Technical University of Liberec	<i>On the Relevance to Test the Robustness of the Textile Hydrophobic Properties</i> 25 Florence Biguenet, University of Haute-Alsace
12:10	<i>open</i>	<i>Wetting of Complex-shaped Fibers</i> 27 Konstantin Kornev, Clemson University
12:35	<i>Structural Development of Poly(ethylene terephthalate) Undrawn Filament Upon Cold Drawing Assisted with Infusion of Ethanol</i> 13 Takeshi Kikutani, Tokyo Institute of Technology	<i>Formation of Alcohol Repellent Medical Nonwoven Fabrics via Electrospraying</i> 28 Mehmet Dasdemir, University of Gaziantep
1:00– 2:45	Lunch—at the Campus Restaurant (C on the map)	

Afternoon Session

	Session: Apparel, Fashion, and Marketing <i>Chair, Maria José Abreu</i>	Textile Testing and Control <i>Chair, René Rossi</i>
2:45	<i>Textile Design with Integrated Smart Textile Applications</i> 33 Zuzana Hrubošová, Technical University of Liberec	<i>New Method for Evaluation of the Trauma and the Penetration Depth Through Multilayer Textiles</i> 41 Priscilla Reiners, Hochschule Niederrhein University of Applied Sciences
3:10	<i>ANN and Fuzzy Techniques for Modeling the Residual Bagging Height of Denim Fabrics as Function of Frictional Properties</i> 34 Boubaker Jaouachi, University of Monsatir	<i>Biochemical Remedy of Contaminated Forests and Fields of Fukushima Area of Japan Using Kassei-chip Method</i> 43 Masatomo Minagawa, Dream-Create-Laboratories
3:35	<i>Photonic Textile Design Practice: A Case Study</i> 36 Zi-qian Bai, Donghua University	<i>Wear of Carbon Nanotubes Grafted on Carbon Fiber</i> 45 Claire Guignier, University of Haute-Alsace
4:00	<i>open</i>	<i>Investigation of Flammability Behaviour of Woven/Glass Fabric Reinforced with Vinyl Ester Composites Used in Wind Turbines</i> 47 Tugba Ozturk, Gaziantep University

4:25– 4:45	Break	
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4:45– 7:00	<p><i>Laure Ledoux, Artist – Coctail de Vernisage</i></p> <p>In the frame of a Residency supported by Kunsthalle (Contemporary Art Gallery and Art Exhibition) and the University of Haute-Alsace, Laure Ledoux spent 2 months in ENSISA–Textile Department. The program was designed to stimulate collaborative problem-solving using an interdisciplinary approach. Together, the artist and scientists explored issues of visual representation and communication, and worked toward a better understanding of the complexities of artistic and scientific behaviors. Those interactions led to the influence of the artist point of view and initiated a series of photos that will be presented in the frame of this exposition. During her residency, Ledoux mainly worked on a technical pleated textile called Vertilap®, developed by a local textile manufacturer (N. Schlumberger) that she transformed, tortured, and assembled in order to develop shapes and clothes that have been the object of her thoughts and photographic works.</p>	
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Thursday, May 26

- 8:00 Registration (ENSISA Werner Building – Main Hall – **B** on the map) and Breakfast (Workshop Lane)
- 8:30– **Speaker:** Francisco Chinesta, Ecole Centrale de Nantes, *From Short to Long: Fiber Behaviors in Reinforced*
- 9:10 *Polymers and Composite Processing* (in Amphitheatre Richard Adrien Schutz-RAS)
- 9:10 Move to Session Rooms

Morning Session

	Amphi Richard Adrien Schutz (RAS)	Amphi 116
	Session: Nanofibers by Electrospinning or Other Methods <i>Chair, Xungai Wang</i>	Session: Fabric Processes, Structures, and Properties <i>Chair, Michael Ellison</i>
9:25	<i>open</i>	<i>Slash and Penetration-resistant Hybrid Fabrics of Superior Performance</i> 67 Donald Sturgeon, Multifibers LLC
9:50	<i>Titanium-Magnesium Oxide Hybrid Nanofibers</i> 51 Yakup Aykut, Uludağ University	<i>Development of Wicking Interfaces in Single Jersey Knitted Fabric for Better Moisture Management Properties</i> 69 Jawairia Umar, University of Agriculture

10:15	<i>Polyimide Nanofibers/Carbon Woven Fabrics Hybrid Hot Gas Filter 53</i> Qiuran Jiang, Donghua University	<i>Comfort Effects of Weft-knitted Structures on Rowing Shirts Using IR Thermography 71</i> Maria José Abreu, University of Minho
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10:40– 10:55	Break	
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	Session: Nanofibers by Electrospinning or Other Methods Chair, Caroline Schauer	Session: Fabric Processes, Structures, and Properties Chair, Marie-Ange Bueno
10:55	<i>Unconfined, Melt-edge Electrospinning for Scale-up</i> Russell Gorga, North Carolina State University 55	<i>Weft-backed Woven Structures for Enhanced Color Effect and Structure Integration of Colorful and Jacquard Fabrics 73</i> Tao Hua, Hong Kong Polytechnic University
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11:45	<i>Increasing Surface Available Biotin and Improving Water Stability of PLA/PLA-b-PEG Nanofibers</i> Larissa Shepherd, Cornell University 59	<i>Investigation of Dimension Stability of Knitted Fabrics Made of Single- and Double-ply Yarns 77</i> Ebru Çoruh, Gaziantep University
12:10	<i>Piezoelectric Properties of Natural Polymer Electrospun Fibers 61</i> Caroline Schauer, Drexel University	<i>The Effect of Yarn on the Air Permeability of Plain Knitted Fabrics Produced by Different Count, Raw Material, and Twist Ratios 79</i> Züleyha Değirmenci, University of Gaziantep
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1:00– 2:30	Lunch—at the Campus Restaurant	
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Afternoon Session

	Session: Polymers and Smart Applications Chair, Takeshi Kikutani	Session: Functional Fibers and Structures Chair, Kostya Kornev
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4:10– 4:35	Break	
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4:35– 6:00	Poster Session and Competition: Room 202 and Dedicated Corridors	
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6:00–7:00 Transportation to Gala Dinner at the Automotive Museum via Tram (LPMT PhD Students will Serve as Guides)
 7:00–11:00 Gala Dinner
 Speaker: Marc Renner, *1746–2016: Opportunities and Challenges for Textile Innovation in Mulhouse*

Friday, May 27

8:00 Breakfast (ENSISA Werner Building – Workshop Lane – **B** on the map)
 8:30– **Speaker:** Damien Durville, Ecole Centrale Paris-France, *Finite Element Simulation of Fibrous Materials* (in
 9:10 Amphitheatre Richard Adrien Schutz-RAS)
 9:10 Move to Session Rooms

	Amphi Richard Adrien Schutz (RAS)	Amphi 116
	Session: Fabric Processes, Structures, and Properties <i>Chair, Rudolf Hufenus</i>	Session: Fibers for Medical Applications <i>Chair, Sergiy Minko</i>
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10:40–10:55	Break	
	Session: Natural Fibers; Composite Processes, Properties, and Modeling <i>Chair, David Seveno</i>	Session: Fibers for Medical Applications <i>Chair, Frederic Heim</i>
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