

Fiber Society's Fall 2019 Technical Meeting and Conference

Revitalizing the Textile Industry
Through Innovative Research,
Education, and Entrepreneurship

Austin, Texas, USA
28-30 October 2019

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Monday, October 28

- 7:00 Registration, Thompson Conference Center Lobby
 7:30 Continental Breakfast (Third Floor, Room 3.110)
- 8:00 Welcoming Remarks and Announcements (Third Floor, Room 3.102) *Jonathan Chen, Conference Chair*
Paul M. Goldbart, Dean, College of Natural Sciences
René Rossi, President, The Fiber Society
- 8:15 **Plenary Lecture:** Vince Edwards, USDA Southern Regional Research Center
Exploring Cotton's Horizons in Wound Healing Science and Technology 3
- 9:00 **Plenary Lecture:** Linh Le, Bonbouton
Reversing Frugal Innovation: How I Embrace My Asian Background in Academia and Entrepreneurial Journey 4
- 9:45 **Break** (Third Floor, Room 3.110)

Morning Sessions

	Third Floor, Room 3.102	Second Floor, Room 2.110	Third Floor, Room 3.122
	Session: Nanofibers and Nanomaterials Modified Textiles <i>Chair: Jintu Fan</i>	Session: Fibers for Healthcare and Medical Applications <i>Chair: Minglin Ma</i>	Session: Fiber Manufacturing and Characterizations <i>Chair: Shih-Feng Chou</i>
10:00	<i>Developing Multiporous Nanofibrous Membrane Systems via Electrospinning for Enhanced Comfort</i> 9 Seojin Lee, Yonsei University	<i>Behavior of Polymeric Braided Vascular Stents Under Cyclic Loading</i> 33 Frederic Heim, ENSISA	<i>Preparation of Polylactide Fibers Consisting of Highly Oriented Stereocomplex Crystals</i> 45 Takeshi Kikutani, Tokyo Institute of Technology
10:25	<i>Soft Hierarchical BiOBr@TiO₂ Fibrous Membranes with Enhanced Visible Light Photocatalytic Activity for Water Purification</i> 10 Xuyan Lu, Donghua University	<i>Drug Stability of Electrospun Drug-eluting Poly(lactic acid) Fibers</i> 34 Sarju Poudel, University of Texas-Tyler	<i>Dissolution Studies of Electrospun Polyethylene Oxide Fibers</i> 46 Sameer Sapkota, University of Texas-Tyler
10:50	<i>Biomimetic and Superwetable Fibrous Skins for Highly Efficient Separation of Oil-in-Water Emulsions</i> 11 Feng Zhang, Donghua University (for Dingding Zong)	<i>Viability and Growth Behavior of Yeast Cells on Electrospun Nanofibrous Mat</i> 35 Lifeng Zhang, North Carolina Agricultural and Technical State University	<i>Thermoresponsive Fiber Spinning: Processing Parameters and Spinnability</i> 49 Rebecca Ruckdashel, University of Massachusetts-Lowell
11:15	<i>Assembling 1D Nanofibers to 3D Hierarchical Functional Materials</i> 12 You-Lo Hsieh, University of California-Davis	<i>Efficacy of Palmarosa Oil / Poly(vinyl alcohol) Nanofibrous Bandages Determined by Wear Trials for Atopic Dermatitis</i> 36 Kyung Lee, Yonsei University	<i>Physico-mechanical Properties of Electrospun Poly(vinyl alcohol) / Alginate Fibers</i> 50 Addison Faglie, University of Texas-Tyler
11:40	<i>Moisture-responsive Artificial Leaf Stomata in Fabrics</i> 13 Jintu Fan, Hong Kong Polytechnic University	<i>Fibers and Fibrous Materials for Type 1 Diabetes Cell Replacement Therapies</i> 37 Minglin Ma, Cornell University	<i>Improving the Tensile Properties of Wet Spun Silk Fibers Using Rapid Bayesian Algorithm</i> 53 Ya Yao, Deakin University
12:05	Lunch (Third Floor, Room 3.110)		

Afternoon Sessions

Third Floor, Room 3.102	
1:30– 2:45	<p>Student Paper Competition Chair: Frederic Heim</p> <ul style="list-style-type: none"> • Konrad Jakubowski, Empa, <i>Impact of the Polymer Host on Luminescent Dye Properties in Melt-spun Bicomponent Polymer Optical Fibers for Photovoltaic Cell Enhancement</i> N/A • Hey-sang Kim, North Carolina State University, <i>New Wicking Measurement to Mimic Human Sweating Phenomena with Continuous Microfluidic Flow</i> N/A • Smriti Rai, University of Georgia, <i>The Sustainable and Eco-friendly Dyeing/Coating of Cotton with Nanocellulose-Indigo Gel</i> N/A
2:45 Break (Third Floor, Room 3.110)	
Third Floor, Room 3.102	Second Floor, Room 2.110
Session: Nanofibers and Nano-materials Modified Textiles Chair: Ian Hardin	Session: Fibers for Healthcare and Medical Applications Chair: Minglin Ma
3:00 <i>Hierarchical, Cellular-structured, Ceramic Fibrous Aerogels with Temperature-Invariant Superelasticity for Thermal Insulation</i> 14 Xiaota Cheng, Donghua University	<i>Electrospun Blend Polycaprolactone / Chitosan Medical Fibers</i> 38 Shih-Feng Chou, University of Texas-Tyler
3:25 <i>Chemical Separation in a Binary Liquid Aerosol by Filtration Using Electrospun Fibrous Membranes</i> 15 Junli Hao, Massachusetts Institute of Technology	<i>Comfortable, Non-insecticidal Vector Protective Garment</i> 39 Emiel DenHartog, North Carolina State University (for Kun Luan)
3:50 <i>Glucaric Acids for the Anti-plasticization of Vinyl Polymers Processed by Gel to Fiber Spinning</i> 16 Ericka Ford, North Carolina State University	<i>New Approach for the Prediction of Compression Pressure Using Cut-strip Method</i> 40 Faisal Siddique, Technical University of Liberec
4:15 <i>Superhydrophobicity, UV Protection, and Oil / Water Separation Properties of TiO₂ Nanoparticles and Trimethoxy(octadecyl)silane</i> 17 Muhammad Zaman Khan, Technical University of Liberec	<i>New Forms of Electrospun Nanofiber Materials for Biomedical Applications</i> 41 Jingwei Xie, University of Nebraska Medical Center
4:40 <i>Open</i>	<i>Nanofiber Yarn-based Scaffolds for Tissue Regeneration</i> 42 Bin Duan, University of Nebraska Medical Center
5:15– 6:45 Reception (Third Floor, Room 3.122) Poster Session (Third Floor, Room 3.120)	

Tuesday, October 29

- 7:30 Registration, Thompson Conference Center Lobby
- 7:30 Continental Breakfast (Third Floor, Room 3.110)
- 8:00 **Plenary Lecture (Third Floor, Room 3.102):** Gena McKinley, City of Austin Circular Economy Program
Closing the Loop on Textiles with Austin's Circular Economy 5
- 8:45 **Break** (Third Floor, Room 3.110)

Morning Sessions

	Third Floor, Room 3.102	Third Floor, Room 3.122
	Session: Nanofibers and Nano-materials Modified Textiles Chair: Xiangwu Zhang	Session: Fiber-based Sensors and E-Textiles Chair: Chunhui Xiang
9:00	<i>Photo-driven Antimicrobial Nanofibrous Materials with Multifunctionality</i> 20 Yang Si, Donghua University	<i>Challenges in the Development of Textile-based Sensors for Long-term Body Monitoring of Sleep Apnea</i> 57 René Rossi, Empa
9:25	<i>Rechargeable Antibacterial Polysulfonamide-based N-Halamine Textiles for Bioprotective Applications</i> 21 Zishuo Yan, Donghua University	<i>Multimodal and Multifunctional Fiber-based Sensors for E-Textiles</i> 58 Ashish Kapoor, North Carolina State University
9:50	<i>Sustainable and Scalable Approach to Produce Silk Nanofibres</i> 22 Mohammad Gias Uddin, Deakin University	<i>Elaboration and Characterization of Conductive Tracks Realized by Inkjet Printing on Woven Fabrics</i> 59 Grégory Covarel, UHA-LPMT
10:15	Open	<i>Development of a Printed Pressure Sensor: Integration into a Seat Cover</i> 60 Mohamed Amine Ben Lagha, UHA-LPMT
10:40	Break (Third Floor, Room 3.110)	
10:55	<i>Superhydrophilic and Underwater Superoleophobic Multilayer Fibrous Membranes with Elaborated Superwettability for Effective Purification of Emulsified Oily Wastewater</i> 23 Feng Zhang, Donghua University	<i>Poly(pyrrole)-coated Poly(vinyl alcohol) Nanofiber Web and Polyester / Polypropylene Knit Fabric: Fabrication and Investigation of Electroconductivity</i> 61 Hyukjoo Yang, Yonsei University
11:20	<i>Highly Bactericidal and Flexible Cobalt-embedded Inorganic Fibrous Membranes for Public Health Protection</i> 24 Fan Wu, Donghua University	<i>Polypyrrole@TEMPO-oxidized Bacterial Cellulose / Reduced Graphene Oxide Macrofibers for Flexible All-Solid-State Supercapacitors</i> 62 Nan Sheng, Donghua University
11:45	<i>Nanofibrous Energy Storage Materials and Laser Ultrasound Transducers</i> 25 Xiangwu Zhang, North Carolina State University	Open
12:10	Lunch (Third Floor, Room 3.110)	

Afternoon Sessions

	Third Floor, Room 3.102	Third Floor, Room 3.122
	Session: Nanofibers and Nano-materials Modified Textiles Chair: Gang Sun	Session: Fiber-based Sensors and E-Textiles Chair: Chunhui Xiang
1:10	<i>Biotin Functionalized Silver-doped Carbon Nanofibers for Selective Capture of E. coli in Microfluidic Systems</i> 26 Shoshana Smith, Cornell University	Open
1:35	<i>Low-resistance, Dual-purpose Air Filter Releasing Negative Ions and Effectively Capturing PM_{2.5}</i> 27 Xin Xu, Donghua University	<i>Coating of Citrus Cellulose Extracted from Citrus Peel Waste on Fabric for Technical Applications</i> 63 Ali Afzal, National Textile University

	Session: Nanofibers and Nano-materials Modified Textiles cont'd	Session: High-performance Textiles and Composites <i>Chair: Kun Fu</i>
2:00	<i>Tailor-made Polymorphs and Nanostructure Strategy to Construct Self-reinforced, Nonswelling, High-strength Bacterial Cellulose Hydrogels</i> 28 Minghao Zhang, Donghua University	<i>Interfacial Properties of Carbon Fiber and PEEK Fiber Composite</i> 67 David Seveno, KU Leuven
2:25	<i>Fabrication of Core-Shell Carbon Polymer Dots with Stable Fluorescence in Polymers and Applications as Sensors of Chromium (VI)</i> 29 Gang Sun, University of California-Davis	<i>Development of a Hybrid Yarn and Pultrusion Structure for the Improved Production and Quality of Thermoplastic Matrix Composites</i> 68 Jeanette Ortega, RWTH Aachen
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3:15 Break (Third Floor, Room 3.110)

	Session: Protective, Interior, and Industrial Textiles <i>Chair: Yang Si</i>	Session: High-performance Textiles and Composites cont'd
3:30	<i>Characterizing and Improving Thermal Protective Performance of Multilayered Garment in Critical Condition</i> 75 Rumeel Bhutta, Ulster University	<i>Protein Fiber Powder for 3D Printed Biodegradable Products</i> 70 Rangam Rajkhowa, Deakin University
3:55	<i>Application and Properties of Kulkote Temperature Regulating Phase Change on Different Textile Substrates: Nonwoven, Woven, and Knitted Fabrics</i> 78 Gurumurthy Ramaiah	<i>Comfort Testing and Evaluation for Clothing Made from Smart Fibers and Textiles</i> 71 Emiel DenHartog, North Carolina State University
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6:00–6:30 Reception, Dining Room, First Floor

6:30–8:30 Banquet, Dining Room, First Floor

Speaker Dr. Etienne Vouga, Computer Science Department, The University of Texas at Austin
Geometry-aware Simulation and Design of Surfaces and Shells N/A

Wednesday, October 30

8:00 Continental Breakfast (Third Floor, Room 3.110)

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9:25	<i>Particle Model to Simulate Knitted Jacquard Mesh Structure</i> 84 Xinxin Li, Donghua University
9:50	<i>An Optimized Yarn-level Geometric Model for FEA Simulation of Weft-knitted Fabrics</i> 85 David Breen, Drexel University

10:15 Break (Third Floor, Room 3.110)	
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10:55	<i>A Method for Determining the Material Combination of Fabric System for Protective Clothing in Cold Environment</i> 87 Yanyang Dai, Donghua University
11:20	<i>A Process-oriented Model for Representing the Yarn Topology of Weft-knitted Textiles</i> 88 Levi Kapllani, Drexel University
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Poster Session

Monday, October 28 **Time: 5:15 p.m. to 6:45 p.m.** **Third Floor, Room 3.120**
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