The Fiber Society 2025 Fall Meeting and Technical Conference

Shaping the Future with Fibers: Innovation, Integration, and Impact

Newark, Delaware, USA
22 - 24 October 2025

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Tuesday, October 21
3:00 PM–5:00 PM Governing Council Meeting, Trabant University Center, Room 207

Wednesday, October 22

7:30 Registration, Multipurpose Room A/B
8:00 Breakfast, Multipurpose Room A/B

8:45 Welcoming Remarks and Announcements (Multipurpose Room A/B)
Kelvin Fu and Huantian Cao, Conference Chairs
Xiangwu Zhang, Vice-President, The Fiber Society

9:00 **Plenary Lecture:** Yoel Fink, Massachusetts Institute of Technology
Are Four Small Brains as Good as One Big One? A Computing Fabrics Perspective...2
9:40 **Plenary Lecture:** Melik Demirel, Penn State University
Innovation Chain: Technological Hurdles to Scaling Deep Tech in the United States...3

10:20 **Break: Multipurpose Room**

10:40 **Plenary Lecture:** Charlie Wang, University of Manchester *Shape-driven Intelligence for Modern Garment Fabrication ...4*

11:20–1:00 ***Lunch (Multipurpose Room)***

12:00–1:00 **Poster Session *(Multipurpose Room)***

Afternoon Sessions

	Trabant 218
1:00–2:30	**Student Paper Competition** **Chair: Jooyoun Kim** • Shuanglei Wei, Donghua University, *Multiscale Modeling of Polymer Dissolution for Fiber Formation Under High Temperature and Pressure...N/A* • Jing Yang, The Hong Kong Polytechnic University, *Wearable Fluidic Fabric with Excellent Heat Transfer Performance for Sports Recovery...N/A* • Yifan Liu, Donghua University, *Fully Bio-friendly, Hybrid Chitosan Fibrous Membranes for Postoperative Anti-adhesion: Green Fabrication and Comprehensive Performance Evaluation...N/A*

	Trabant 218	**Trabant 219**
	Session Chair: Xiangwu Zhang	**Session Chair: Gang Sun**
2:30 Keynote	*From Energy Storage to Ultrsound: Functional Nanofibers Driving Next-generation Technologies* Xiangwu Zhang, NC State University...9	*Responsive Textile and Membrane for Moisture and Temperature Regulation* Lihong Lao, Syracuse University...16
3:00	*What 3D Printing Cannot Achieve: Rethinking Fiber Composites Additive Manufacturing* Kelvin Fu, University of Delaware...10	*Catechol-modified Chitosan Fibrous Membrane with In-situ Synthesized Silver Nanoparticles for Scarless Wound Healing* Liping Zhu, Donghua University...17
3:20	*Development of High Mechanical Performance Fibers Through Melt Spinning and Drawing Processes* Takeshi Kikutani, Institute of Science Tokyo...11	*Next-generation Thermal Insulation: Innovating Textiles with Nanocellulose/Wool Composite Aerogels* Suraj Sharma, University of Georgia...18

3:40 ***Break (Room 217)***

	Session Chair: Xiaomeng Fang	Session Chair: Lihong Lao
4:00	*Textile-based Soft Robotics* Xiaomeng Fang, NC State University...12	*Anti-inflammatory Melt-spun Liquid-Core Fibers for Hernia Repair Meshes* Edith Perret, Empa...19
4:20	*Non-destructive and Cost-effective Fiber-to-Fiber Recycling of Textile Complex* Yiqi Yang, University of Nebraska-Lincoln...13	*In-situ Integration of Heterogeneous, Bilayer, Composite Electrolytes for Scalable, High-performance Lithium-Metal Batteries* Zezhao Li, NC State University...20
4:40	*Addressing Challenges in Textile Feedstock Identification Through Reference Materials, Measurements, and Data Sharing* Katarina Goodge, Georgetown Unversity (on behalf of Amanda Forster)...14	*Enabling Dense Cell Culture Development within Touch-spun Microfiber Scaffolds for Regenerative Medicine* Kristina Peranidze, University of Georgia...21
5:00	*Structure Property Relationships of Photonic Fibers and Textiles* Larissa Shepherd, Cornell University...15	*Hybrid Textiles for Optimized Medical Implants* Frederic Heim, ENSISA...22

Thursday, October 23

8:00 Breakfast, Multipurpose Room A/B

9:00 **Plenary Lecture:** Jun Chen, University of California-Los Angeles
Smart Textiles for Personalized Healthcare...5

9:30 **Plenary Lecture:** Srinkanth Pilla, University of Delaware
Threads of Innovation: Fiber Architecture Fueling Performance-focused Lightweight Automative Design...6

10:00 **Plenary Lecture:** Dionisios Vlachos, University of Delaware
Chemical Recycling of Mixed Textile Waste...7

10:30 ***Break (Room 219)***

Morning Sessions

	Trabant 213	Trabant 218
	Session Chair: Bo Li	**Session Chair: Jintu Fan**
11:00 Keynote	*Designing Highly Efficient Nanofibrous Filtration Materials* Tamer Uyar, Cornell University...24	*Design and Manufacturing of Fibers and Textiles for Functional Applications* Wan Shou, University of Arkansas...26
11:30 Keynote	*The Physics of Liquid-core Fibers* Rudolf Hufenus, Empa...25	*Sensing Through the Fiber: Scalable Nanocompotites Driving Wearable Textiles for Human Movement and Health* Sagar Doshi, University of Delaware...27

12:00–1:00 ***Lunch Room 219)***

Afternoon Sessions

	Trabant 213	Trabant 218	Trabant 217
	Session Chair: Xiaomeng Feng	**Session Chair: Wan Shou**	**Session Chair: Tamer Uyar**
1:00 Keynote	*Fiber Materials Innovation for Active Health and Sustainability* Jintu Fan, Hong Kong Polytechnic University...29	*Salt-assisted Coating of MXene on Textiles* Bo Li, Villanova University...37	*Sustainable Temperature Controls: A Critical Step for Ensuring Food Safely and Quality* Gang Sun, University of California-Davis...45

1:30	*Hierarchical Nanofibrous Substrate for Rapid Detection of Short-Chain PFAS in Water Using SERS* Lifeng Zhang, North Carolina A&T State University...30	*Manufacturing-aware Topology Optimization of Composite Materials with Continuous Fibers* Ling Liu, Temple University...38	*The Evolution of Textile and Polymer Chemistry and Remembrance of Those Who Went Before Us* Ian Hardin, University of Georgia...46
1:50	*Screening of Bio-based Furanoate Polyesters for Sustainable Fibers* Natalie Mamrol, Massachusetts Institute of Technology...31	*Advanced Carbon Fibers and Their Composites* Jiadeng Zhu, Brewer Science, Inc....39	*Daylight-responsive Colorful Antibacterial Polylactic Acid Fibrous Membranes Enchanced by Bio-based Plasticizers* Yufa Sun, University of California-Davis...47
2:10	*Renerated Protein Fibers from Chicken Feathers with Appearance Similar to Silk and Properties Better than Wool* Yuanyi Shao, University of Nebraska-Lincoln...32	*Fully Thermoplastic Continuous Fiber 3D Printing* Sithiprumnea Dul, Empa...40	*Fiber-Biomaterial Interactions for Engineering 3D Cell Scaffolds* Vladimir Reukov, University of Georgia...48
2:30	*Simulating and Designing Flow Properties in Weft-Knitted Fabrics with Yarn Topology Graphs* Chen Sun, Drexel University...33	*The Development of a Multifilament Spinning Process for Recombinant Hagfish Imtermediate Filament Proteins* Ashley Morris, University of Kentucky...41	*Mininally-processed Industrial Hemp Fiber as Novel Substrate for Mycelium-based Composites: Physical and Mechanical Properties and Scaling-up Opportunities* Radika Bhaskar, Thomas Jefferson University...*49*
2:50	***Break (Room 219)***		
	Session Chair: Wan Shou	**Session Chair: Liping Zhu**	**Session Chair: Jiadeng Zhu**
3:10	*Biomass Origin vs Solubility in the Valorization of Hemp and Corn Stover Lignin into Electrospun Nanofiber Mats* Dorota Szlek, Cornell University...34	*Layer-by-Layer Flexible Carbon Fiber-Bacterial Nanocellulos Hybrid Composite with Hydrophobic and Thermally Stable Properties for Low-voltage Application* Lifeng Zhang, North Carolina A&T State University (on behalf of Maurelio Cabo, Jr.)...42	*Core-Shell Fibers for 3D Printing of High-performance Composites* Kaiyue Deng, Unversity of Delaware...50
3:30	*Enabling Reliable Textile Sorting via Fiber Identification with NIR-SORT* Katarina Goodge, Georgetown University...35	*Mechanically Active Textiles for Low-carbon Architectural Concrete* Harnoor Singh, Thomas Jefferson University...43	*3D Fiber Tethering for Structural Composites* Md Habib Ullah Khan, University of Delaware...51
3:50	*AI-Enabled Waste Sorting: Fine-tuning ViT-based Models for Textle Fiber Recongition* Zahra Saki, NC State University...36	*Vision-guided Fiber Winding for Complex 3D Composites* Janeshwar Sharma, Univerity of Delaware...44	*Continuous Fiber Architected Lattices for High-performance Structural Applications* Nithin Parambill, University of Delaware...52
4:20	**Fiber Society Annual Business Meeting: *Open to Fiber Society Members Only*** **Room 213**		

5:30 Reception: Café Gelato, 90 E. Main Street—short walk from venue to restaurant

6:30 Banquet at Café Gelato
Speaker: Huantian Cao, University of Delaware
Textiles in Delaware

Friday, October 24

7:45	Shuttle leaves from Trabant University Center for WL Gore Tour
8:00–10:00	WL Gore Tour
10:00	Return to Trabant University Center
10:30–11:30	Tour: Center for Composite Materials (CCM)

CONFERENCE CLOSES

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Poster Session

Wednesday, October 22, 12:00–1:00, Multipurpose Room Session Chair: Larissa Shepherd

Presenter	**Title**
1. Jooyoun Kim	*ZIF-8-based Wound Dressing for pH-responsive Delivery of Active Agents...54*
2. Shohag Das	*Evaluation of Hemp Fiber as a Sustainable Biomaterial...55*
3. Sujin Jeong	*Cu/Zn-Imidazolates-Integrated Antibacterial Textiles...56*
4. Yewon Choi	*PET/Cotton Blends to Cu-BDC Functionalized Cotton Fabric...57*
5. Tamer Uyar	*Fast-dissolving Delivery of Bioactives: Carvone/Cyclodextrin Inclusion Complex Nanofibers for Enhanced Solubility and Stability...58*
6. Radha Patel	*Gravimetric Solvent Dissolution Analysis for High Specificity Fiber Identification...59*
7. Natalie Mamrol	*The Impact of Additives and Dyes on the Biodegradability of Textile Materials...60*
8. Hiral Jani	*Development of Sustainable Thermoplastic Composites Using Flax-PA11 Commingled Yarns and Tailored Fiber...61*
9. Alishahi Mohsen	*Fabrication of Electrospun Collagen Nanofibers for Meniscus and Cartilage Regeneration...62*
10. Kristina Peranidze	*Development of Multifunctional Finishes on Medical Textiles for Durable Antimicrobial and Flame-retardant Performance...63*
11. Md Habib Khan	*Topology Optimizatin and Addivite Manufacturing of Continuous Carbon Fiber Thermoset Composite...64*
12. Ye Ra Yoo	*Influence of Inoculum Morphology on the Properties of SCOBY-based Films...65*
13. Yeon Ju Choi	*Design of Functional Compression Stockings for Flexible Flatfoot: Improvement of Lower Limb Hemodynamics...66*

14. Kelly Cobb *ReSpool: Waste-led Design and Regional Models for Circular Textile Systems...67*

15. D. López-Gydosh *Digital Twins: Virtual Patterning and Material Simulation of 1920s Dresses for Historic Textile Preservation...68*

16. Adriana Gorea *Investigating PLA-based 3D Printed Structures on Knit Fabrics for Wearable Wrist Rehabilitation Devices...69*

17. Ashley Morris *Spinning Multifilament PEDOT:PSS Fibers for the Next Generation of Smart Materials...70*

18. Erha Andini *Chemical Recycling of Mixed Textile Waste...71*