The Fiber Society 2025 Fall Meeting and Technical Conference

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

October 22–24, 2025

Conference Co-Chairs

Prof. Kelvin Fu and Prof. Huantian Cao
University of Delaware

Venue

Trabant University Center
on the University of Delaware Campus
17 West Main Street

Final Program

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
Meifang Zhu, President, The Fiber Society

9:00 **Plenary Lecture:** Yoel Fink, Massachusetts Institute of Technology
Smart Fibers for Future Texiles
9:40 **Plenary Lecture:** Melik Demirel, Penn State University
Threading the Innovation Chain: Scaling and Manufacturing Deep Tech in the United States

10:20 **Break: Multipurpose Room**

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

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* • Jing Yang, The Hong Kong Polytechnic University, *Wearable Fluidic Fabric with Excellent Heat Transfer Performance for Sports Recovery* • Yifan Liu, Donghua University, *Fully Bio-friendly, Hybrid Chitosan Fibrous Membranes for Postoperative Anti-adhesion: Green Fabrication and Comprehensive Performance Evaluation*

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

3:40 ***Break (second floor hallway)***

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

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

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

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

10:30 ***Break (second floor hallway)***

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	*From Energy Storage to Ultrsound: Functional Nanofibers Driving Next-generation Technologies* Xiangwu Zhang, NC State University
11:30 Keynote	*The Physics of Liquid-core Fibers* Rudolf Hufenus, Empa	*Sensing Through the Fiber: Scalable Nanocompotites Driving Wearable Textiles for Human Movement and Health* Sagar Doshi, University of Delaware

12:00–1:00 ***Lunch (Trabant 217)***

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	*Salt-assisted Coating of MXene on Textiles* Bo Li, Villanova University	*Functionalization of Fibers with Environmentally Friendly Processes* Gang Sun, University of California-Davis

1:30	*Hierarchical Nanofibrous Substrate for Rapid Detection of Short-Chain PFAS in Water Using SERS* Lifeng Zhang, North Carolina A&T State University	*Manufacturing-aware Topology Optimization of Composite Materials with Continuous Fibers* Ling Liu, Temple University	*The Evolution of Textile and Polymer Chemistry and Remembrance of Those Who Went Before Us* Ian Hardin, University of Georgia
1:50	*Screening of Bio-based Furanoate Polyesters for Sustainable Fibers* Natalie Mamrol, Massachusetts Institute of Technology	*Advanced Carbon Fibers and Their Composites* Jiadeng Zhu, Brewer Science, Inc.	*Daylight-responsive Colorful Antibacterial Polylactic Acid Fibrous Membranes Enchanced by Bio-based Plasticizers* Yufa Sun, University of California-Davis
2:10	*Renerated Protein Fibers from Chicken Feathers with Appearance Similar to Silk and Properties Better than Wool* Yuanyi Shao, University of Nebraska-Lincoln	*Fully Thermoplastic Continuous Fiber 3D Printing* Sithiprumnea Dul, Empa	*Fiber-Biomaterial Interactions for Engineering 3D Cell Scaffolds* Vladimir Reukov, University of Georgia
2:30	*Simulating and Designing Flow Properties in Weft-Knitted Fabrics with Yarn Topology Graphs* Chen Sun, Drexel University	*The Development of a Multifilament Spinning Process for Recombinant Hagfish Imtermediate Filament Proteins* Ashley Morris, University of Kentucky	*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
2:50	***Break (second floor hallway)***		
	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	*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.)	*Core-Shell Fibers for 3D Printing of High-performance Composites* Kaiyue Deng, Unversity of Delaware
3:30	*Enabling Reliable Textile Sorting via Fiber Identification with NIR-SORT* Katarina Goodge, Georgetown University	*Mechanically Active Textiles for Low-carbon Architectural Concrete* Harnoor Singh, Thomas Jefferson University	*3D Fiber Tethering for Structural Composites* Md Habib Ullah Khan, University of Delaware
3:50	*AI-Enabled Waste Sorting: Fine-tuning ViT-based Models for Textle Fiber Recongition* Zahra Saki, NC State University	*Vision-guided Fiber Winding for Complex 3D Composites* Janeshwar Sharma, Univerity of Delaware	*Continuous Fiber Architected Lattices for High-performance Structural Applications* Nithin Parambill, University of Delaware
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

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

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

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

17. Adriana Gorea *Investigating PLA-based 3D Printed Structures on Knit Fabrics for Wearable Wrist Rehabilitation Devises*

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

19. Erha Andini *Chemical Recycling of Mixed Textile Waste*