



THE FIBER SOCIETY



*Advancing Scientific Knowledge
Pertaining to Fibers and Fibrous Materials*



2nd International Symposium on
**MATERIALS FROM
RENEWABLES**
November 8-10, 2017
UNIVERSITY OF GEORGIA, ATHENS

The Fiber Society

2017 Fall Meeting & Technical Conference

and

International Symposium on Materials
from Renewables (ISMR)

*Advanced, Smart, and Sustainable
Polymers, Fibers, and Textiles*

November 8 to 10, 2017

Conference Chair

Sergiy Minko

University of Georgia

Venue

University of Georgia
Athens, Georgia, USA

Conference Program

PROGRAM OVERVIEW

Tuesday November 7	Noon- 5:00 PM	Governing Council Meeting (Georgia Center, 2 nd Floor, Room C)		
	5:00- 6:30 PM	Early Registration (Pecan Tree Galleria)		
Morning Wednesday November 8	7:30- 9:00 AM	Registration (Pecan Tree Galleria) Breakfast (Mahler Hall)		
	8:30 AM	Opening Remarks (Masters Hall)		
	9:00 AM	Plenary Lecture: René Rossi, Empa, Switzerland <i>Smart Textiles for Continuous Health Monitoring</i> (Masters Hall)		
	9:35 AM	Plenary Lecture: Doug Hinchliffe, USDA-ARS-SRRC <i>USA Recent Advances in Chemical Modification & Processing of Cotton Fibers for Specific End-Use Applications</i> (Masters Hall)		
	10:10 AM	Coffee Break (Pecan Tree Galleria)		
	10:30 AM	Morning Sessions		
		Smart Fibers & Textiles (Masters Hall)	Biomedical Applications of Fibers (Room T/U)	Fundamentals of Fibers & Textiles, Testing & Characterization (Room W/V)
Wednesday November 8	Noon	Lunch (Mahler Hall)		
Afternoon Wednesday November 8	1:00 PM	Graduate Student Paper Competition (Masters Hall)		
	2:30 PM	Afternoon Sessions I		
		Smart Fibers & Textiles (Masters Hall)	Biomedical Applications of Fibers (Room T/U)	Fundamentals of Fibers & Textiles, Testing & Characterization (Room W/V)
	3:30 PM	Coffee Break (Pecan Tree Galleria)		
	4:00 PM	Afternoon Sessions II		
	Smart Fibers & Textiles (Masters Hall)	Fundamentals of Fibers & Textiles, Testing & Characterization (Room W/V)		

PROGRAM OVERVIEW

	6:00-7:30 PM	Poster Session (Lobby at Masters Hall) Reception (Pecan Tree Galleria)				
Morning Thursday November 9	7:30-9:00 AM	Registration (Pecan Tree Galleria) Breakfast (Mahler Hall)				
	9:00 AM	Plenary Lecture: Michael R. Buchmeiser German Institutes of Textile & Fiber Research (DITF), The University of Stuttgart <i>Advances in High-Performance Carbon, Ceramic, & Cellulosic Fibers</i> (Masters Hall)				
	9:35 AM	Plenary Lecture: Dean C. Webster, North Dakota State University <i>Highly Functional Bio-Based Resins for High-performance Thermosets</i> (Masters Hall)				
	10:10 AM	Coffee break (Pecan Tree Galleria)				
	10:30 AM	<i>Morning Session</i>				
		Nanocellulose (Room T/U)	Sustainable Polymer Materials (ISMR) (Masters Hall)	Functional Textiles & Fibers for Military Applications (Room W/V)	Natural Fibers: Advanced Cellulose Fibers & Textiles (Room Y/Z)	
November 9	Noon	Lunch (Mahler Hall)				
Afternoon Thursday November 9	1:00 PM	Plenary Lecture: Gregory C. Rutledge, Massachusetts Institute of Technology <i>Ultra-High-Performance Polymer Fibers</i> (Masters Hall)				
		<i>Afternoon Sessions I</i>				
	1:40 PM	Nanocellulose (Room Y)	Sustainable Polymer Materials (ISMR) (Masters Hall)	Functional Textiles & Fibers for Military Applications (Room W/V)	Bhuvnesh Goswami: A Life in Textiles (Room Z)	Nanofibers & Nanofibrous Materials (Room T/U)
	3:20 PM	Coffee Break (Pecan Tree Galleria)				
		<i>Afternoon Sessions II</i>				
3:50 PM	Natural Fibers: Advanced Cellulose Fibers & Textiles (Room Y)	Sustainable Polymer Materials (ISMR) (Masters Hall)	Bhuvnesh Goswami: A Life in Textiles (Room Z)	Nanofibers & Nanofibrous Materials (Room T/U)		
	5:30 PM	The Fiber Society Annual Business Meeting <i>Members-only</i>				

PROGRAM OVERVIEW

	5:30 PM	Buses to transfer to Botanical Garden (group I)			
	6:15 PM	Buses to transfer to Botanical Garden (group II)			
	6:15 PM	Reception (Botanical Garden)			
	7:30 PM	Dinner/award ceremony (Botanical Garden)			
	9:15 PM	Buses to Georgia Center			
Morning Friday November 10	7:30	Registration (Pecan Tree Galleria)			
	9:00 AM	Breakfast (Mahler Hall)			
	9:00-9:35 AM	Plenary Lecture: Yuris Dzenis, University of Nebraska-Lincoln, USA <i>Ultrastrong/Tough Continuous Bionanofibers</i> (Masters Hall)			
		<i>Morning Sessions I</i>			
	9:40 AM	Fiber-Reinforced Composites (Room T/U)	Natural Fibers: Advanced Cellulose Fibers & Textiles (Room Y/Z)	Advances in Braiding, Weaving, & Design (Room V/W)	Nanofibers & Nanofibrous Materials (Masters Hall)
	10:30 AM	Coffee break (Pecan Tree Galleria)			
		<i>Morning session II</i>			
11:00 AM	Fiber-Reinforced Composites (Room T/U)	Nanofibers & Nanofibrous Materials (Masters Hall)			
12:20 PM	Closing				

Wednesday, November 8

7:30-9:00AM: **Registration** (Pecan Tree Galleria)
Breakfast (Mahler Hall)

8:30-9:00AM: **Opening remarks** (Masters Hall)

- **Sergiy Minko**, Conference Chair, University of Georgia
- **David Lee**, Vice President of Research, University of Georgia
- **Laurence Schacher**, President, *The Fiber Society*
- **Linda Kirk Fox**, Dean of the College of Family & Consumer Sciences, University of Georgia

9:00-10:10AM: **Plenary Session** (Masters Hall)—Chair: **Jason Locklin**

- 9:00-9:35AM **René Rossi, Empa, Switzerland**: *Smart Textiles for Continuous Health Monitoring*
- 9:35-10:10AM **Doug Hinchliffe, USDA-ARS-SRRC**: *USA Recent Advances in Chemical Modification & Processing of Cotton Fibers for Specific End-Use Applications*

10:10-10:30AM: **Coffee Break** (Pecan Tree Galleria)

10:30AM-Noon: Morning Sessions

Biomedical Applications of Fibers (Room T/U)		
Chair: Alexander Sidorenko		
10:30 10:50 AM	Caroline Schauer Drexel University	<i>Antibacterial Properties of Electrospun Ti3C2Tx MXene-Chitosan Nanofibers</i>
10:50 11:10 AM	Suraj Sharma University of Georgia	<i>A Novel Approach for Preparation of Continuous Biodegradable Polyester Based Nano Sheath-Core Yarn for Biomedical Application</i>
11:10 11:30 AM	Patricia Annis University of Georgia	<i>Transfer of Particulates & Microorganisms from Carpet & Other Fabric Surfaces to Human Fingers & Human Skin-like Surfaces</i>
11:30 11:50 AM	Hui Cong North Carolina State University	<i>Comparison of Polydioxanone & Polyhydroxyalkanoate Barbed & Non-barbed Surgical Sutures: The Effect of Hydrolytic Degradation on Mechanical & Morphological Properties</i>

Smart Fibers & Textiles (Masters Hall)		
Chair: Rudolf Hufenus		
10:30 10:50 AM	<i>Invited</i> Dirk Hegemann Empa	<i>Functionalization of Fibers Based on Continuous Plasma Treatment</i>
10:50 11:10 AM	<i>Invited</i> Takeshi Kikutani Tokyo Institute of Technology	<i>Core Technologies for Creation of Smart Textiles</i>
11:10 11:30 AM	<i>Invited</i> Jinlian Hu, Hong Kong Polytechnic University	<i>Smart Natural Materials in Textiles</i>

Wednesday, November 8

Fundamentals of Fibers & Textiles, Testing & Characterization (Room W/V)		
Chair: Jintu Fan		
10:30- 10:50 AM	Invited Konstantin Kornev , Clemson University	<i>Wetting of Shaped Fibers</i>
10:50- 11:10 AM	Nelyan Perez Purdue University	<i>Non-destructive Technique for Body Armor Lifetime Predictions</i>
11:10- 11:30 AM	Calvin Wong , Hong Kong Polytechnic University	<i>Intelligent Defect Detection System for Textile Manufacture</i>

12:00 PM **Lunch** (Mahler Hall)

1:00 PM **Graduate Student Paper Competition** (Masters Hall)—Chair: **Suraj Sharma**

- **Darya Asheghali**, University of Georgia
Enhanced Alignment of the Neural Stem Cells on the Touch-Spun Nanofibrous Scaffolds for Nerve Regeneration
- **Caroline Loss**, Universidade da Beira Interior
Influence of Some Structural Parameters of Textiles on Their Dielectric Behaviour
- **Xi Wang**, Hong Kong Polytechnic University
Monitoring Elbow Flexions Using Circumferential Measurements Based on Novel Wearable Fabric Sensing Technology

Smart Fibers & Textiles (Masters Hall)		
Chair: Rudolf Hufenus		
2:30- 2:50 PM	Invited David Schmelzeisen RWTH Aachen University	<i>4D Textiles: Defined Shape-change through 3D Printed Hybrid Textiles</i>
2:50- 3:10 PM	Richard V. Gregory Old Dominion University	<i>Fiber-based All-organic Electroactive Polymers for Use in Fiber-based Electronics & Photonics</i>
3:10- 3:30 PM	Invited Inga Noll RWTH Aachen University	<i>Smart Fibers in Functional Textiles</i>

Biomedical Applications of Fibers (Room T/U)		
Chair: Caroline Schauer		
2:30- 2:50 PM	Invited Alexander Sidorenko University of the Sciences	<i>Films & Fibers from Chitosan-graft-PLA Molecular Brush as Highly Adhesive Scaffolds for Human Skin & Bone Cells</i>
2:50- 3:10 PM	Frederic Heim ENSISA Université de Haute-Alsace	<i>Trans-catheter cardiovascular surgery: how crimping can affect the durability of the implants</i>
3:10- 3:30 PM	Invited Robert Keynton University of Louisville	<i>Direct-write Sacrificial & Biopolymer Fibers</i>

Wednesday, November 8

Fundamentals of Fibers & Textiles, Testing & Characterization (Room W/V) Chair: Jintu Fan		
2:30- 2:50 PM	<i>Invited</i> Jing Shi & Donggang Yao Georgia Institute of Technology	<i>A Framework for Developing High-Strength Polymer Fibers from Substantial Chain Extensions</i>
2:50- 3:10 PM	Chengqi Zhang Clemson University	<i>Morphological Transitions of Droplets on Ribbons</i>
3:10- 3:30 PM	Maxime Coddeville ENSAIT, GEMTEX University of Lille Nord de France	<i>Development of a testing bench for textile electrodes</i>

3:30 PM **Coffee Break** (Pecan Tree Galleria)

Smart Fibers & Textiles (Masters Hall) Chair: Rudolf Hufenus		
4:00- 4:20 PM	<i>Invited</i> Yurong Yan South China University of Technology	<i>Liquid Core Fibers for Functional Textiles</i>
4:20- 4:40 PM	Ali Afzal National Textile University	<i>Development of Core-sheath Filament for Smart Textile Applications</i>
4:40- 5:00 PM	Anaëlle Talbourdet ENSAIT—GEMTEX	<i>Micro- & Macroscopic Piezoelectric Structure for Energy Harvesting based on PVDF Fibers</i>

Fundamentals of Fibers & Textiles, Testing & Characterization (Room W/V) Chair: Konstantin Kornev		
4:00- 4:20 PM	<i>Invited</i> Jintu Fan Cornell University Wuhan Institute of Technology	<i>Optimization of Fibrous Materials Based on Fractal Models of Permeability, Diffusivity & Thermal Conductivity</i>
4:20- 4:40 PM	Mohammad Zeeshan Baluchistan University	<i>Optimization of Ring Spinning Process Parameters of Cotton Yarn</i>
4:40- 5:00 PM	Runying Chen East Carolina University	<i>Identification of Natural Bast & Leaf Fibers Through DNA Extraction & Sequence Matching</i>

6:00-7:30PM **Poster Session** (Lobby at Masters Hall)

Reception (Pecan Tree Galleria)

Thursday, November 9

7:30-9:00 AM **Registration** (Pecan Tree Galleria)
Breakfast (Mahler Hall)

9:00-10:10 AM **Plenary Session** (Masters Hall)—Chair: **Gajanan Bhat**

- 9:00-9:35 AM **Michael R. Buchmeiser**, German Institutes of Textile & Fiber Research (DITF) & the University of Stuttgart: *Advances in High-Performance Carbon, Ceramic, & Cellulosic Fibers*
- 9:35-10:10 AM **Dean C. Webster**, North Dakota State University, USA: *Highly Functional Bio-Based Resins for High-performance Thermosets*

10:10-10:30 AM **Coffee Break** (Pecan Tree Galleria)

Nanocellulose (Room T/U)		
Chairs: You-Lo Hsieh & Suraj Sharma		
10:30-10:50 AM	<i>Invited</i> Oded Shoseyov Hebrew University of Jerusalem	<i>Nature's Gift</i>
10:50-11:10 AM	<i>Invited</i> Heli Kangas VTT Technical Research Centre of Finland, Ltd	<i>Advances in the Cellulose Nanofibril (CNF) Technologies & Applications</i>
11:10-11:30 AM	Yunsang Kim University of Georgia	<i>Nanocellulose Hydrogels for Sustainable & Functional Coatings</i>

Sustainable Polymer Materials (ISMR) (Masters Hall)		
Chairs: Jason Locklin, Chad Ulven, & Sameer Rahatekar		
10:30-10:50 AM	<i>Keynote</i> Michael Kessler North Dakota State University	<i>Thermosetting Polymers & Composites from Agricultural Oils</i>
10:50-11:10 AM	<i>Invited</i> Elsa Reichmanis Georgia Institute of Technology	<i>Polymers for Flexible Electronics: A Path to Sustainable Systems</i>
11:10-11:30 AM	<i>Invited</i> Michael Mang Danimer Scientific	<i>Industrial Applications of Medium Chain Length Poly(hydroxy alkanoates): From Feedstock to Finished Article</i>
11:30-11:50 AM	Rudolf Hufenus Empa	<i>New Structural Model for Melt-spun P3HB Fibers</i>

Thursday, November 9

Functional Textiles & Fibers for Military Applications (Room W/V)		
Chair: Natalie Pomerantz		
10:30- 10:50 AM	<i>Invited</i> June Lum U.S. Army Natick Soldier Research Development & Engineering Center	<i>Preparation & Characterization of PHMB- based Multifunctional Microcapsules for Use on Nylon: Cotton Textile</i>
10:50- 11:10 AM	Prabhakar Gulgunje Georgia Institute of Technology	<i>Structural & Functional Fibers</i>
11:10- 11:30 AM	<i>Invited</i> Derek Dwyer Binghamton University- State University of New York	<i>Nanofibers with Enhanced Catalytic Activity Towards Chemical Agents & Simulants</i>
11:30- 11:50 AM	<i>Invited</i> Grant Glover University of South Alabama	<i>Attachment of Gold, Quantum Dots & MOFs to Fibers</i>

Natural Fibers: Advanced Cellulose Fibers & Textiles (Room Y/Z)		
Chairs: Gang Sun & Rebecca Van Amber		
10:30- 10:50 AM	<i>Invited</i> Yiqi Yang University of Nebraska, Lincoln	<i>Accelerated Hydrolysis of Cellulosics after Dyeing with Reactive Dyes</i>
10:50- 11:10 AM	Huang Li Donghua University	<i>3D-Printing Bacterial Cellulose Microfiber- Reinforced Silk-Gelatin Hydrogel Tissue Engineering Scaffold with Hierarchical Pores</i>
11:10- 11:30 AM	Sunghyun Nam USDA	<i>Statistical Behavior of the Tensile Property of Heated Cotton Fiber</i>

Noon **Lunch** (Mahler Hall)

1:00-1:35PM **Plenary Session** (Masters Hall)—Chair: **Sergiy Minko**

- 1:00-1:35 PM **Gregory C. Rutledge, Massachusetts Institute of Technology, USA**
Ultra-High-Performance Polymer Fibers

Nanocellulose (Room Y)		
Chairs: You-Lo Hsieh & Suraj Sharma		
1:40- 2:00 PM	<i>Invited</i> Thomas Elder USDA-Forest Service	<i>Nanocellulosic Materials & Applications</i>
2:00- 2:20 PM	Shikha Shrestha Purdue University	<i>Mechanical, Thermal, & Morphological Properties of Polyvinyl Alcohol Composite Fibers</i>
2:20- 2:40 PM	Raha Saremi University of Georgia	<i>Nanocellulose Adhesion in Fibers & Polymer Thin Films</i>

Thursday, November 9

Sustainable polymer Materials (ISMR) (Masters Hall) Chairs: Jason Locklin, Chad Ulven, & Sameer Rahatekar		
1:40- 2:00 PM	<i>Invited</i> Bharath Natarajan National Institute of Standards & Technology; Georgetown University	<i>Composite Design Lessons from Nature Use of Twisted Plywood, or Bouligand Structure in Self-Assembled Cellulose Nanocrystal Composites</i>
2:00- 2:20 PM	<i>Invited</i> Andriy Voronov North Dakota State University	<i>Emulsion Polymerization of Plant Oil- Derived Vinyl Monomers</i>
2:20- 2:40 PM	Sameer Rahatekar Cranfield University	<i>Manufacturing Regenerated Cellulose, Chitin & Cellulose Bio-composite Fibers for Engineering & Biomedical Applications</i>
2:40- 3:00 PM	Ngoc Nguyen Oak Ridge National Laboratory	<i>Rheological Properties & Intermolecular Interactions of Auto-hydrolyzed Lignocellulose in 1-ethyl-3-methylimidazolium Acetate Ionic Liquid</i>

Functional Textiles & Fibers for Military Applications (Room W/V) Chair: Natalie Pomerantz		
1:40-2:00 PM	<i>Invited</i> Elizabeth Welsh U.S. Army Natick Soldier Research, Development, & Engineering Center	<i>Photo-Responsive Metal Oxide Nanoparticle-based Fibers</i>
2:00-2:20 PM	<i>Invited</i> Molly Richards US Army Natick Soldier Research, Development, & Engineering Center	<i>Effect of Lamination & Aerosol Liners on Thermal Burden & Chemical Protection</i>

Bhuvnesh Goswami: A Life in Textiles (Room Z) Chairs: Artan Sinoimeri & Subhash Batra		
1:40- 2:00 PM	<i>Invited</i> Phil Brown Clemson University	
2:00- 2:20 PM	<i>Invited</i> Rajesh Anandjiwala CSIR Materials Science & Manufacturing	<i>Sound Insulation Applications of Natural Nonwovens</i>
2:20- 2:40 PM	<i>Invited</i> Smita-Bais Singh Ahlstrom-Munksjo Nonwovens LLC	<i>Unidirectional Fiber Reinforcement with Improved Resin Flow Properties</i>
2:40- 3:00 PM	<i>Invited</i> Martin King North Carolina State University	<i>Can Tissue Engineering Reverse the Aging Process?</i>

Thursday, November 9

Nanofibers & Nanofibrous Materials (Room T/U)		
Chairs: Yuris Dzenis & Gajanan Bhat		
1:40- 2:00 PM	<i>You-Lo Hsieh</i> University of California Davis	<i>Cellulose I & II Nanofibers & Functional Products</i>
2:00- 2:20 PM	<i>Leitao Cao</i> Donghua University	<i>Ultralight Nanofiber Aerogels for Efficient Sound Absorption</i>
2:20- 2:40 PM	<i>Yang Si</i> University of California, Davis	<i>Daylight-driven Rechargeable Nanofibrous Membranes with Robust Antibacterial & Antivirus Activity</i>
2:40- 3:00 PM	<i>Kiana LaBombard</i> Auburn University	<i>Carbon Nanotube & Nanoclay Reinforced Fibrous Materials to Improve Properties</i>

3:20 PM **Coffee Break** (Pecan Tree Galleria)

Sustainable Polymer Materials (ISMR) (Masters Hall)		
Chairs: Jason Locklin, Chad Ulven, & Sameer Rahatekar		
3:50- 4:10 PM	<i>Invited</i> <i>Caitlyn Clarkson</i> Purdue University	<i>Cellulose Nanofibril/Polyethylene Glycol/Polylactic Acid Composite Fibers by Melting Spinning</i>
4:10- 4:30 PM	<i>Invited</i> <i>Majid Sarmadi</i> University of Wisconsin- Madison	<i>Farmlands for Plastics, Textiles, Dyes or Food: Are Bio-Based Materials Really Sustainable?</i>
4:30- 4:50 PM	<i>Oksana Zholobko</i> North Dakota State University	<i>Enhancing Delivery & Immune Response of Peptide Vaccine by Polymer-Peptide Mixed Micellar Assemblies</i>
4:50- 5:10 PM	<i>Recep Karadag</i> Marmara University Faculty of Fine Arts	<i>Developed A Natural Dyeing Method for Obtaining Turkey Red Color</i>

Bhuvnesh Goswami: A Life in Textiles (Room Z)		
Chairs: Artan Sinoimeri & Subhash Batra		
3:50- 4:10 PM	<i>Invited</i> <i>Vinoo Sharma</i> INVISTA SARL	<i>Fiber Science Approach in Materials Development: Airbag Fabrics</i>
	<i>Invited</i> <i>Yogi Goswami</i> University of South Florida	<i>New & Emerging Trends in Solar Energy</i>
4:30- 4:50 PM	<i>Invited</i> <i>Michael Ellison</i> Clemson University	<i>B.C. Goswami: Self-described Textile Man at Clemson</i>
4:50- 5:10 PM	<i>Invited</i> <i>Subhash Batra</i> North Carolina State University	<i>From the Beginning: Personal Reflections Since 1979</i>

Thursday, November 9

Nanofibers & Nanofibrous Materials (Room T/U) Chairs: Yuris Dzenis & Gajanan Bhat		
3:50- 4:10 PM	<i>Invited</i> Yaewon Park North Carolina State University	<i>Effect of Surface Chemistry of Nanofibers on Mineral Coating</i>
4:10- 4:30 PM	Yuyao Li Donghua University	<i>Moisture & Oily Molecules Stable Nanofibrous Electret Membranes for Effectively Capturing PM2.5</i>
4:30- 4:50 PM	Mohamed El-Aassar City of Scientific Research & Technological Applications	<i>Functionalized electrospun nanofibers embedded Nanoparticles for Wound Dressing</i>

Natural Fibers: Advanced Cellulose Fibers & Textiles (Room Y) Chairs: Gang Sun & Rebecca Van Amber		
3:50- 4:10 PM	<i>Invited</i> Gang Sun University of California, Davis	<i>Investigation on Crosslinking Cellulose with Polycarboxylic Acids & Wrinkle Free Cotton</i>
4:10- 4:30 PM	Kaijian Wu Donghua University	<i>Studies on the Properties & Phase Morphology of Cellulose/ Aromatic Polysulfonamide Alloy Fibers</i>
4:30- 4:50 PM	Chad Ulven North Dakota State University	<i>Influence of Strain Rate on Flax Fiber Properties</i>

5:30 PM **The Fiber Society Annual Business Meeting Members-only**

5:30 PM Buses to transfer to Botanical Garden (group I)

6:15 PM Buses to transfer to Botanical Garden (group II)

6:15 PM Reception (Botanical Garden)

7:30 PM Dinner/award ceremony (Botanical Garden)

9:15 PM Buses to Georgia Center

Friday, November 10

7:30-9:00 AM **Registration** (Pecan Tree Galleria)

Breakfast (Mahler Hall)

9:00-9:35 AM **Plenary Session** (Masters Hall), Chair: **Suraj Sharma**

- **Yuris Dzenis**, University of Nebraska-Lincoln, USA

Ultrastrong/Tough Continuous Bionanofibers

9:40 -10:40 AM Morning Sessions I

Nanofibers & Nanofibrous Materials (Masters Hall)		
Chairs: Yuris Dzenis & Rongguo Zhao		
9:40-10:00 AM	Taylor Stockdale University of Nebraska-Lincoln	<i>Incorporation of Electrospun Nanofibers into Composites Using Chemical Vapor Deposition</i>
10:00-10:20 AM	<i>Invited</i> Dominique Adolphe University of Haute-Alsace	<i>Development of Hierarchical Structures Based MOFs & Polymeric Nanofibers</i>
10:20-10:40 AM	<i>Invited</i> Chunhui Xiang Iowa State University	<i>Biodegradable Bacterial Cellulose Nanocomposites Reinforced with Electrospun Poly(lactic acid)/Lipids Nanofibers</i>

Natural Fibers: Protein Fibers & Textiles (Room Y/Z)		
Chairs: Gang Sun & Rebecca Van Amber		
9:40-10:00 AM	<i>Invited</i> George Fytas Max Planck Institute for Polymer Research	<i>Spider Silk Fiber: A Hypersonic Phononic Nature Metamaterial</i>
10:00-10:20 AM	<i>Invited</i> Rebecca Van Amber Deakin University	<i>Eri silk & silk blend protein fiber fabrics: Physical properties & consumer acceptability</i>
10:20-10:40 AM	<i>Invited</i> Jaime C. Grunlan Texas A&M University	<i>Smart & Friendly Flame Retardant Nanocoatings for Natural & Synthetic Fibers</i>

Fiber-Reinforced Composites (Room T/U)		
Chair: Srikanth Pilla		
9:40-10:00 AM	Kasthuri Venkatesh Technical University of Liberec	<i>Study of Compression Behavior of Fiber-reinforced Sandwich Composite</i>
10:00-10:20 AM	Aditya Yerra Clemson University	<i>Design Optimization of a Carbon Fiber Reinforced Thermoplastic Composite Vehicle Door Assembly for Weight Reduction</i>
10:20-10:40 AM	Pardhvi Shah Clemson University	<i>Factory Layout Design & Cost Modeling of a Carbon Fiber Reinforced Thermoplastic Composite Vehicle Door Assembly</i>

Friday, November 10

Advances in Braiding, Weaving, & Design, Room V/W		
Chair: Yordan Kyosev		
9:40- 10:00 AM	<i>Katalin Küster</i> Hochschule Niederrhein, University of Applied Sciences	Investigation of the Bending & Tensile Properties of Braided Bi- & Triaxial & Unidirectional Thermoplastic Composites
10:00- 10:20 AM	<i>Invited</i> <i>Yordan Kyosev</i> Hochschule Niederrhein, University of Applied Sciences	Process Emulation Based Modelling of Complex Braided & Woven Structures
10:20- 10:40 AM	<i>Miguel Carvalho</i> University of Minho	Preliminary Results of an Anthropometric Data Collection of Portuguese Children with Overweight & Obesity

10:30 AM **Coffee Break** (Pecan Tree Galleria)

Nanofibers& Nanofibrous Materials, Masters Hall		
Chair: Yuris Dzenis & Rongguo Zhao		
11:00- 11:20 AM	<i>Invited</i> <i>Gajanan Bhat</i> University of Georgia	<i>Structure & Properties of Inorganic Fullerene Reinforced Elastomeric Nonwoven-based Composites</i>
11:20- 11:40 AM	<i>Hande Gul Atasagun</i> Dokuz Eylül University	<i>A multi-criteria decision making approach for assessing thermophysiological comfort properties of underwear fabrics</i>
11:40- 12:00PM	<i>Viraj Shah</i> The Dow Chemical Company	<i>Dow Solutions for Soft, Efficient Nonwovens Produced with ASPUN™ MB Meltblown Fiber Resins</i>
12:00- 12:20 PM	<i>Numan Hoda</i> Akdeniz University	<i>Effect of Process Parameters on Fiber Diameters of Polypropylene Microfibers Produced by Melt Blowing</i>

Fiber-Reinforced Composites, Room T/U		
Chair: Srikanth Pilla		
11:00- 11:20 AM	<i>Sai Aditya Pradeep</i> Clemson University	<i>Advancements in the Prediction of Mechanical Behavior of Supercritical Foamed Short Fiber Thermoplastic Composites</i>
11:20- 11:40 AM	<i>Anmol Kothari</i> Clemson University	<i>Interfacial Mechanical Interlocking of Reinforced Thermoplastic Composites</i>
11:40AM- 12:00 PM	<i>Ting Zheng</i> Clemson University	<i>Microcellular Foaming of Polypropylene-Cellulose Nanocrystal Composites</i>

12:20PM **Conference Closing**

Poster Session

Wednesday, November 7 • 6 to 7:30 PM • Lobby at Masters Hall

Yassine Ait-El-Aoud

The Influence of Nanocomposite Materials on the Scattering Properties of Polyethylene

Darya Asheghali

Infrared Applications of the Braided Touch-spun Nano- and Microfibers

Hande Gül Atasagun *Structural and Mechanical Properties of Commercially Available Flushable Nonwovens*

Homeira Azari

Structure and Properties of Polypropylene Graphene Composite Filaments

Apurba Banerjee

Polyhydroxyalkanoate-based Nanofibrous Structures and Their Application in the Biomedical Field

Victoria Caldwell

Sustainability in Carpet Industry: Challenges and Recent Developments

Zoriana Demchuk

Plant Oil-based Acrylic Monomers for Free Radical Polymerization and Their Feasibility for Latex Synthesis

Lyye Dou

Soft Electrospun SiO₂ Nanofibrous Membranes with Enhanced Tensile Strength for Thermal Insulation

Huipu Gao

PVDF Nanofibers with High Piezoelectric Performance via Touch Spinning Process

Alexey Gruzd

Aligned Webs of Silica Nanofibers with Controlled Density

Numan Hoda

Effect of Process Parameters on Fiber Diameters of Polypropylene Microfibers Produced by Melt Blowing in a Biax Line

Yihan Huang

The Comparison of Polyvinylidene Fluoride (PVDF) and Polypropylene (PP) Barbed Sutures in Patellar Tendon

Elizabeth Hughes

New Polymer Resin from Camelina Oil for Packaging Application

Md Anwar Jahid

Water Vapor Permeability and Mechanical Properties of Fabric Coated with Stimuli-responsive Shape Memory Polyurethane

Dong Jin Jeon

Study on the Feasibility of Textile Electrodes for Respiration Sensing Garments

Deep Kalita

Study of the Air Drying and Epoxy-Amine-cured Coatings Derived from Renewable-based Poly(vinyl ether)s

Martin King

Application of Fibrous Collagen and Tropoelastin in Vascular Tissue Engineering

Eric Krall

Development and Polymerization of Methacrylate Functionalized Kraft Legnin Resin

Hui Liu

Ultrathin Mesh-like Polyacrylonitrile Nanonet Membranes with High-efficiency Air Filtration

Jianwei Lu

Chemical Crosslinked Thermoplastic Polymer Nanofiber Aerogels with Superelasticity and Superoleophilicity for Removal Oils and Organic Solvents

Meng Niu

Feasibility and Methodology in the Research of Fashion Design in China During the Ming Dynasty via Water and Land Paintings

Poster Session

Wednesday, November 7 • 6 to 7:30 PM • Lobby at Masters Hall

Inga Noll

Blends of Biosynthetic and Natural Fibers for Eco-efficient Yarns and Carpets

Smriti Rai

Natural Indigo-based Nanocellulose Gel Dyeing of Cotton Textiles

Molly Richards

Antimicrobial Textiles to Reduce the Need for Laundering of Chemical/Biological Garments

Olena Shafranska

Polystyrene-grafted Soybean Oil as a Processing Oil for SBR Rubber Compounds

Peter Stenhouse

Metal Oxide Nanoparticle-Polymer Interactions

Kateřina Strnadova

Aligned Drawn Fibers Improve the Axon Infiltration into Spinal Cord Bridges

Ning Tang

Nanofibrous Composite Membrane with Ultrafine Nanonet Structure for High-flux and Low-pressure Microfiltration

Fei Wang

Superelastic and Superhydrophobic Nanofibrous Aerogels for Oil/Water Separation

Xi Wang

Effect of Shortening Velocity is Constant in the Circumferential Strain-Torque Biomechanical Model: Another Evidence

Shuangyan Wu

Transfer of Paint Dust from Different Carpets

Wei Xia

Preparation and Thermal Management of Fatty Acid Ester @Silica/Polyamide 6 Energy Storage Thermostat Material

Chunhui Xiang

Developing Sustainable and Smart Solar Power-controlled Apparel

Shan Yan

Harvesting Irregular Mechanical Energy by Triboelectric Nanogenerator Based on Cost-effective Thermoplastic Polymer Nanofiber

Atieh Yousefi

A Comparative Study on the In Vitro Hemodynamics of Polyester Heart Valves

Arvin Yu

Catalyzed Non-isocyanate Polyurethane (NIPU) Coatings from Bio-based Cyclic Carbonates

Xi Yu

Fabrication of Environmental Waterproof and Breathable Macroporous Membranes via Electrospinning Using Green Solvent

Andrey Zakharchenko

Selective Degradation of Fibrillated Nanocellulose Materials

DaXian Zha

Chitosan-treated Antibacterial 3D Knitted Spacer Fabric as a Wound Dressing

Fan Zhang

The Influence of Polyester Melt in Spinneret Hole with Shear Flow on Spinning Dynamics

Meng Zhang

Soft TiO₂ Nanofibrous Membrane for Efficient Water Purification

Runqian Zhang

In Vitro Accelerated Fatigue Performance of Stent Grafts Deployed in a Patient's Aortic Aneurysm Using a Chimney Approach

Oksana Zholobko

Polymeric Cellulosomes for Cellulose Bioconversion

Jialiang Zhou

Preparation and Antibacterial Activity of PET / Cu₂O Nano Composite Fiber

Zakariya Zubair

Effect of Gauge Length and Test Speed on Fiber Strength Utilization in Staple Spun Yarns

We Gratefully Acknowledge Our Sponsors

Johnson & Johnson

brrr^o

PROVEN TO KEEP YOU COOLER

