

The Fiber Society Spring 2014 Technical Conference

Fibers for Progress

**Liberec, Czech Republic
21 – 23 May 2014**

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Wednesday, May 21

8:00 Registration and Continental Breakfast, F. X. Šalda Theatre

9:00 Welcoming Remarks, Business, and Announcements

David Lukáš, Conference Co-Chair

Janice R. Gerde, President, Fiber Society

Zdeňek Kůs, Rector, Technical University of Liberec

Jana Drašarová, Dean, Faculty of Textile Engineering, Technical University of Liberec

Morning Session – F. X. Šalda Theatre

9:30–10:10	Plenary Speaker: Dr. Oldřich Jirsák, Technical University of Liberec <i>Ten Years of Nanospider 1</i>
10:10	<i>Break</i>
10:30–11:10	Plenary Speaker: Dr. Caroline Schauer, Drexel University <i>Electrospinning Natural and Synthetic Polyelectrolytes for Biomedical Applications 3</i>
11:10–11:30	Move from F. X. Šalda Theatre to Regional Research Library
11:30–12:40	Lunch at Regional Research Library – Reading Room (1st floor) Poster Setup

Afternoon Session

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	Session: Nanofibrous Materials <i>Chair, Aleš Gardián, Elmarco</i>	Session: Spinning, Weaving, and Knitting <i>Chair, Bohuslav Neckář, Technical University of Liberec</i>
12:40	<i>Relative Humidity and Measurement 6</i> <i>Implications for Control of Electrospinning: Solvent and Polyelectrolyte Issues</i> <u>Michael Gevelber</u> and Yunshen Cai, Boston University	<i>Microchannel Wet-Spinning of Nanofibers 29</i> <u>Tsutomu Ono</u> , Moe Kitanaka, Kazuhisa Kishimoto, and Takaichi Watanabe, Okayama University
1:00	<i>Electrospinning of Biopolymers: Physical and Mechanical Characterization of Electrospun Nanowebs 8</i> <u>Laurence Schacher</u> ¹ , Sana Boudhiba ¹ , Bilal El-Maghnoouji ¹ , Nabyl Khenoussi ¹ , Slim Salhi ² , Dominique Adolphe ¹ , Amir Houshang Hekmati ¹ , and Christelle Delaite ¹ , ¹ Université de Haute-Alsace, ² Université de Sfax	<i>Improved Method for Bundle Test of Fiber Length 31</i> <u>Urs Meyer</u> , Texma AG
1:20	<i>DSC Study of Polyacrylonitrile Nano- and Microfibers 10</i> <u>Kolos Molnár</u> , Budapest University of Technology and Economics and MTA-BME Research Group for Composite Science and Technology	<i>Modeling of Warp and Weft Crimp in Jacquard Woven Fabric Structure 33</i> <u>Brigita Sirková</u> and Iva Mertová, Technical University of Liberec
1:40	<i>Nanofibrous Composite Materials for Healing of Varicose Ulcer 12</i> <u>Petr Mikeš</u> , Jiří Chvojka, Věra Jenčova, and David Lukáš, Technical University of Liberec	<i>Investigation on the Air and Water Vapor Permeability of Single Jersey Fabrics Made from Polyester/Cotton Blends 35</i> <u>Ebru Çoruh</u> , Gaziantep University
2:00	<i>Influence of Solution Properties on Morphology of Electrospun Nanofibers 14</i> <u>Deepika Gupta</u> , <u>Manjeet Jassal</u> , and Ashwini Agrawal, Indian Institute of Technology	<i>The Effects of Washing Treatments on the Abrasion Resistance of the Knitted Denim Fabrics 37</i> <u>Züleyha Değirmenci</u> , Gaziantep University
2:20	<i>Break and Poster Setup</i>	<i>Break and Poster Setup</i>

2:35	<i>Influence of Substrate Properties on the Electrospinning Process at Industrial Scale</i> 16 <u>Miroslav Malý</u> , Michal Bittner, and Aleš Gardián, Elmarco s.r.o.	<i>Nanofibrous Webs of Polymer/Clay Nanocomposite for Topical Drug Delivery</i> 39 <u>Mangala Joshi</u> , Kasturi Saha, B.S. Butola, Indian Institute of Technology
2:55	<i>Produced Nanofibers and Technological Possibilities of Laboratory Apparatus 4SPIN®</i> 18 <u>Marek Pokorný</u> , Jiří Rebíček, Jindřich Novák, Adela Kotzianova, Jan Klemes, Jana Ruzickova, and Vladimír Velebný, Contipro Biotech s.r.o.	open
3:15	<i>Barrier Fabric Containing Nanofiber Layer</i> 20 <u>Marcela Munzarová</u> , Nanovia Ltd.	open
3:35	Break and Poster Setup	Break and Poster Setup
	<i>Nanofibrous Materials cont'd</i>	Session: Smart Textiles Chair, Jiří Militký, Technical University of Liberec
3:50	<i>Conducting Polyacrylonitrile (PAN)/Polyaniline (PANI) Composite Nanofibers Produced by Electrospinning Method</i> 22 <u>Nuray Kizildag</u> ¹ , Nuray Ucar ¹ , Nesrin Demirsoy ¹ , Olcay Eren ¹ , İsmail Karacan ² , Esma Sezer ¹ , and Belkıs Ustamehmetoğlu ¹ , ¹ Istanbul Technical University, ² Erciyes University	<i>Smart Gels for Direct Writing Applications</i> 42 <u>Manjeet Jassal</u> , Kiran Yadav, and Ashwini Agrawal, Indian Institute of Technology
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4:30	<i>Environmentally Controlled Emulsion Electrospinning</i> 26 <u>Agathe Camerlo</u> ^{1,2} , C. Verbert-Nardin ² , R. M. Rossi ¹ , and A. -M. Bühlmann ¹ , ¹ Empa, ² University of Geneva	open
5:00–7:00 p.m. Poster Session and Reception Liberec Regional Research Library, 1st Floor An Overview Poster Presentation at the Conclusion of the Session		

Thursday, May 22

7:00 Continental Breakfast, Library

Morning Session

	Regional Research Library (Room 1)	Regional Research Library (Room 2)
	Session: Inorganic Fibers and Composites Chair, László Mészáros, Budapest University of Technology and Economics	Session: Properties and Applications Chair, Luboš Hes, Technical University of Liberec
8:00	<i>The Effects of Interlining Types on Sewing Needle Heating</i> 47 <u>Engin Akcagun</u> ² , Vedat Dal ¹ , Nuray Oz Ceviz ¹ , Zehra Yildiz ¹ , Abdurrahim Yilmaz ² , ¹ Marmara University, ² Mimar Sinan Fine Arts University	<i>Thermal-Stored Energy and Protective Clothing Performance Upon Various Hazards</i> 70 <u>Guowen Song</u> , Farzan Gholamreza, and Mark Ackerman, University of Alberta

8:20	<i>Preparation and Performance of Silk Fibroin Membrane Crosslinked by Tyrosinase</i> 49 <u>Tieling Xing</u> and Guoqiang Chen, Soochow	<i>Improving Through-Thickness Thermal Conductivity of Carbon Fiber Composites</i> 72 <u>Yong K. Kim</u> , Michael V. Salvucci, and John M. Rice, University of Massachusetts-Dartmouth
8:40	<i>Elastic Recovery at Basalt Fiber and Montmorillonite-Reinforced Polyamide 6</i> 51 <u>László Mészáros</u> , Budapest University of Technology and Economics	<i>Composition, Construction, and Properties of Protective Gloves with Aluminized Basalt Fabric Content</i> 74 <u>Iwona Frydrych</u> ^{1,2} , Rafal Hrynyk ¹ , and Agnieszka Stefko ¹ , ¹ Central Institute for Labor Protection, ² Lodz University of Technology
9:00	<i>Mechanical Performance of Woven/Glass Fabric Filled with Vinyl Ester Composites Used in Wind Turbines</i> 53 <u>Nazan Kalebek</u> , Gaziantep University	<i>Accelerated Degradation of Flax and Hemp Yarns for Biobased Geotextiles</i> 76 <u>Davina Michel</u> , S. Renouard, E. Lainé, and P. Ouagne, Université d'Orléans
9:20	<i>ZnO Rods Reinforced Polymeric Nanofibers</i> 55 <u>Ratyakshi Nain</u> , Manjeet Jassal, and Ashwini Agrawal, Indian Institute of Technology	<i>The Use of Nonwovens as Capillary Mineral Bags for Indoor Landscaping</i> 78 <u>İpek Yalçın</u> , Hande Sezgin, Omer Berk Berkalp, and Telem Gok Sadıkoğlu, Istanbul Technical University
9:40	Break	Break
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10:30	<i>Development of High-Performance, Fiber-Reinforced Polymer Composite with Toughened Matrix</i> 59 <u>Tamás Turcsán</u> and László Mészáros, Budapest University of Technology and Economic	<i>Wetting of Shaped Fibers and Nanofiber Yarns</i> 82 <u>Konstantin G. Kornev</u> ¹ , Mars M. Alimov ² , and Chen-Chih Tsai ¹ , ¹ Clemson University, ² Kazan Federal University
10:50	<i>Comparative Evaluation of Thermal Conductivity of Bark Cloth Epoxy Composites</i> 61 <u>Samson Rwawiire</u> ^{1,2} and Blanka Tomková ¹ , ¹ Technical University of Liberec, ² Busitema University	<i>Evaluation of Fibers Flex Fatigue</i> 83 <u>Jiří Militký</u> and Dana Křemenáková, Technical University of Liberec
11:10	open	<i>A Systematic Study of Biobased Composites for Application in Automotive Interiors</i> 85 <u>Sangeetha Ramaswamy</u> , Marcel Scholl, Yves-Simon Gloy, and Thomas Gries, RWTH Aachen University
11:30	open	<i>New Method to Characterize the Sound-Generated Fabric Friction</i> 87 <u>Dominique Adolphe</u> ¹ , Y. Khaldon ¹ , E. Dréan ¹ , L. Schacher ¹ , A. Moukadem ¹ , A. Dieterlen ¹ , V. Zimpfer ² , V. Pellerin ¹ , ¹ Université de Haute-Alsace, ² Institut Franco-Allemand de Recherche de Saint Louis
11:50	Lunch	

Afternoon Session

	Regional Research Library (Room 1)	Regional Research Library (Room 2)
	Session: Special Polymers and Fibers <i>Chair, Mária Omastová, Slovak Academy of Sciences</i>	Session: Inorganic Fibers and Composites <i>Chair, László Mészáros, Budapest University of Technology and Economics</i>
1:00	<i>On the Way to High-Strength Poly(3-hydroxybutyrate) (PHB) Fibers 100</i> <u>Rudolf Hufenus</u> ¹ , Felix A. Reifler ¹ , and Urs J. Hänggi ² , ¹ Empa, ² Biomer	<i>Design of a Composite Reinforced with Shredded Cotton Fabric Wastes 63</i> Hande Sezgin, <u>İpek Yalçın</u> , Telem Gok Sadikoglu, and Omer Berk Berkalp, Istanbul Technical University
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1:40	<i>Preparation of Poly(Methyl Methacrylate-CO-2-Hydroxyethyl Methacrylate)/n-Eicosane 104</i> <i>Microcapsule as a Thermal Comfort Additive in Textiles</i> <u>Cemil Alkan</u> ¹ , Ruham Anayurt ¹ , and Sennur Aksoy ² , ¹ Gaziosmanpaşa University, ² Süleyman Demirel University	<i>Preparation of Polypropylene Single-Polymer-Composites with Long Fibers by Injection Molding 67</i> <u>Jian Wang</u> and Sui Wang, Beijing Institute of Technology
2:00	<i>Textiles Coated with Polypyrrole: Production, Properties, and Stability 106</i> <u>Mária Omastová</u> ¹ , Katarína Mosnáčková ¹ , Matej Mičušík ¹ , Pavol Fedorko ² , and Mohamed M. Chehimi ³ , Slovak Academy of Sciences, ² Slovak Technical University, ³ Université Paris Diderot	<i>open</i>

- 2:45** **Buses Depart for Tours: Elmarco or Technical University of Liberec (spaces limited: sign-up required); Tours Conclude at 4:30 p.m.**
- 5:00** **Buses Depart from Library for Cable Car Terminal for Trip to Hotel Ještěd for Banquet;**
- 6:30** **Banquet**
Poster Competition Awards
Guided Tour: Jiří Suchomel, Head of Department of Architecture, Faculty Art and Architecture, Technical University of Liberec, *Architecture of Ještěd*
- 10:00** **Return to Library on Cable Car and Buses**

Ještěd, at 1,012 meters above sea level, is a symbol of the Liberec Region and dominates the northern Bohemia. Architect Karel Hubáček was awarded the prestigious Perret Prize for his design of the Ještěd transmission tower. Thanks to its unique design, the tower has become a national cultural monument and building of the century.

Friday, May 23

7:00 Continental Breakfast, Library

	Regional Research Library (Room 1)	Regional Research Library (Room 2)
	Session: Special Polymers and Fibers <i>Chair, David Lukáš, Technical University of Liberec</i>	Session: Nonwovens <i>Chair, Ondřej Novák, Technical University of Liberec</i>
8:00	<i>Shape Memory Fibers Responsive to Moisture</i> 108 <u>Bin Fei</u> , Xinkun Lu, Ching Ying Chan, Ka I. Lee, and Pui Fai Ng, Hong Kong Polytechnic University	<i>The Seam Strength of Ultrasonically Welded Polyester</i> 119 <u>Emel Çinçik</u> and Aynur İnan, University of Erciyes
8:20	<i>Unique Polyamide Fibers by hIB Process</i> 110 <u>Richard Kotek</u> and Mesbah Najafi, North Carolina State University	<i>Thermal Analysis of Aerogel-Treated Nonwoven Fabrics</i> 121 <u>Mohanapriya Venkataraman</u> , Rajesh Mishra, Darina Jasikova, Jiří Militký, Arumugam Veerakumar, and Lubos Hes, Technical University of Liberec
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9:40	Break	Break
	Session: Fibrous Biomaterials <i>Chair, Věra Jenčová and Petr Mikeš, Technical University of Liberec</i>	Session: Properties and Applications <i>Chair, Konstantin Kornev, Clemson University</i>
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10:50	<i>A New Solution-Based Method to Synthesize Branched Poly(L-lactide)</i> 134 <u>Mohamed Eldessouki</u> ^{1,2} , Gisela Buschle-Diller ³ , and Yasser Gowayed ³ , ¹ Technical University of Liberec, ² Mansoura University, ³ Auburn University	<i>Relationship Between Compressive Properties and Bending Recovery in Melt-Spun Filaments</i> 93 <u>Andres Leal</u> , Gaurav Mohanty, Felix Reifler, Johann Michler, and Rudolf Hufenus, Empa
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