The Fiber Society

New Frontiers in Fiber Science
International Spring Technical Meeting
May 23-25, 2001

College of Textiles
2401 Research Drive
North Carolina State University
Raleigh, NC 27695-8301

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Behnam Pourdeyhimi

Conference Co-Chair
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The Fiber Society
Room 3330
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North Carolina State University
2401 Research Drive
Raleigh, NC 27695-8301
http://www.fibersociety.org

Sponsored & Organized by:
Nonwovens Cooperative Research Center
Textile & Apparel Technology and Management
College of Textiles
North Carolina State University
INDA
**Wednesday May 23, 2001**  
Chair for the day: Phillip Gibson

8:00 AM  Registration  
8:30   Welcome  

**Behnam Pourdeyhimi**  
Charlie Moreland, Provost, NC State  
Ning Pan, President of The Fiber Society

**Session I.**  
Chair - Trevor Little  
8:45   Textile fibers and nonwoven webs; the keys for creating the next industrial revolution.  
W. John G. McCulloch  

9:15   Parametric study of electrostatic fiber formation.  
GC Rutledge, MY Shin, MM Hohman  
& M Brenner  

9:45   Electrospinning of Nanofibers from Polymer Solutions and Melt.  
AL Yarin  

10:15  Break  
10:30  Electrospinning.  
SB Warner, S Ogbolue, P Patra, A Buer,  
V Kalayci & Y Kim  

11:00  Spinning fine fibers from solutions and the melt using electrostatic fields.  
RAA Couillard, Z Chen & P Schwartz  

11:30  Functionalized nano- and mesotubes utilizing electrospun fibers.  
H Hou, M Bognitzki, J Zeng,  
H Wickel & A Greiner

**Session II.**  
Chair - John McCulloch  
1:30   Electrospinning and Nanofibers.  
DH Reneker  

2:00   Electrospinning of Nanostructured Composite Fibers.  
Dersch, M Steinhart, A Greiner  
& JH Wendorff  

2:30   Electrospinning of Biomaterials.  
G Bowlin, J Matthews, D Simpson,  
E Kenawy & G Wnek  

3:00   Break  
3:15   Nano-structured Electrospun Poly-D, L-lactide-co-glycolide Membranes for  
Antiadhesion Applications.  
D Fang, X Zong, W Chen, S Cruz,  
B Hsiao & B Chu  

3:45   The relationship of Berry number to the diameter of PLA fibers.  
F Ko, B Han, K Chandriani & A MacDiarmid  

5:30 – 7:30   Poster Session & Reception  
Coordinator: Martin King  

7:30 – 9:30   Dinner  
In Search of Excellence in Textile.  
Arun Pal Aneja, E. I. DuPont
Thursday May 24, 2001
Chair for the day: Chris Pastore

Session III.
Chair – William Oxenham
8:30 Mechanical characteristics of cellulose filaments oxidized in a system an nitrogen dioxide(iv) - carbon tetrachloride.
  N Yurkshtovich, A Chechovski, N Golub & R Kosterova
9:00 Effect of electrospinning material and conditions upon residual electrostatic charge of polymer nanofibers.
  PP Tsai & HL Schreuder-Gibson
9:30 Extrusion and analysis of nylon/montmorillonite nanocomposite filaments.
  MG McCord, SN Rodden & SM Hudson
10:00 Break
10:30 Cellulosic nanofiber membranes for liquid wetting/absorbency and chemical reactivity.
  Haiqing Liu & You-Lo Hsieh
11:00 PA-6 Clay Nanocomposite hybrids for yarn processing.
  S Bourbigot, E Devaux, JW Gilman & AE Achari

Session IV.
Chair – Abdelfettah Seyam
1:30 Surface coating of Poly(meta-phenylene isophthalamide) nanofibers by chemical vapor deposition -
  W Liu, DH Reneker & EA Evans
2:00 Surface modification of ultra-high-strength polyethylene fibers -
  S Nam & AN Netravali
2:30 Heat and fire resistance of high performance fibers and blends.
  S Bourbigot, X Flambard & M Ferreira
3:00 Break
3:15 Cut resistance of multi-layer knitted structures for protective clothing.
  X Flambard & J Polo
3:45 Modification of nylon fabrics with atmospheric pressure plasmas.
  LK Canup, M McCord, P Hauser, Y Qiu, J. Cuomo, O. Hankins & MA Bourham
4:15 Structure/Property Relationships for PTT fibers spun at high spinning speeds
  R Kotek, DW Jung & CB Smith
4:45 PET versus PEN: What Difference Can a Ring Make?
  AE Tonelli
Friday May 25, 2001
Chair for the day: Serge Bourbigot

Session V.
Chair – Stephen Michielsen

8:30 Transverse Compression of PPTA Fibers.  
J Singletary, H Davis, W Knoff  
& M K Ramasubramanian

9:00 Yarns of Basalt continuous fiber.  
AN Lisakovski, YL Tsybulya  
& AA Medvedyev

9:30 Properties and processing of plant fiber.  
C Yu

10:00 Break

10:30 Computer simulation of needled nonwoven mechanical behavior.  
B Maze, D Adolphe & Jy Drean

11:00 Polyblending for the production of dyeable polypropylene fibers.  
MR Badrossamay, SH Amirshahi,  
M Morshed, & SM Bidoki

11:30 Workskill Development in Introductory Textile Classes.  
B George, JD Pierce, E Armstrong-Carroll,  
M Dunn & CM Pastore

12:00 Laser Fusion of Textured Yarns to Impart Filament Cohesion.  
M. Acar, WL Dudeney,  
MR Jackson & W Malalasekera

12:30 Closing Remarks