

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

Conference Chair

Behnam Pourdeyhimi

Conference Co-Chair

Phillip Gibson

President

Ning Pan

Vice-President

Gail Eaton

Secretary-Treasurer

Bhuvanesh Goswami/Subhash Batra

The Fiber Society

Room 3330

College of Textiles

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