



AATCC  
**ADVANCES** in  
 Multi-Functional Materials  
 SYMPOSIUM  
 & **NTC  
 Forum**

September 12-14, 2010



Hyatt Regency - Greenville, SC USA

**NTC FORUM**

The annual National Textile Center (NTC) Forum will be held in conjunction with AATCC's Advances in Multi-Functional Symposium. The symposium, chaired by Philip J. Brown with Clemson University will be held September 13-14, 2010 at the Hyatt Regency in Greenville, S.C.

The NTC Forum will include a poster session on the afternoon and evening of September 13, as well as opportunities to interact with NTC faculty and students on both days. The poster session will include all currently funded NTC projects (approximately 33) which will cover a variety of topics. Project participants will staff each poster, to provide opportunities for discussion and for development of technology transfer possibilities.

The NTC Student Paper Competition will be held from 5:00-7:00 p.m. on Sunday, September 12.

**PROGRAM LOCATION AND ACCOMMODATIONS**

Overnight accommodations are available at the Hyatt Regency Greenville, 220 N Main St., Greenville, SC 29601 USA, +1 864 235 1234 or +1 800 233 1234. Reservations should be made directly with the hotel and attendance at the AATCC symposium should be specified to receive the group rate of US\$99 single/double. A first night's room and tax deposit are due with each registration. Deposits may be made by check or charged to an accepted credit card. Reservations must be made by August 19, 2010 to ensure room availability.

**REGISTRATION INFORMATION**

Individuals registering on or before August 27 pay US\$749 (US\$499 for individual and corporate AATCC members) and will include luncheons, breaks and a copy of all available papers. After August 27 the registration fee increases to US\$549 for AATCC members and US\$799 for nonmembers. The registration fee for NTC poster presenters is US\$425. A student registration fee of US\$175 is available to AATCC student members and NTC student poster presenters. Refunds will be honored if cancellations are received on or before September 3, 2010. A US\$75 cancellation fee will be charged.

**HOW TO REGISTER**

Fax registration form to +1 919 549 8933  
 Mail the registration form to AATCC, PO Box 12215, Research Triangle Park, NC 27709 USA  
**Online registration at [www.aatcc.org](http://www.aatcc.org)**  
 Inquires may be directed to Kim Nicholson at +1 919 549 3535

**WHO should attend**



- Fabric and garment development personnel
- Fibers, dyes and chemicals suppliers
- Lab personnel
- Plant and manufacturing superintendents
- Product designers
- Product specifiers
- Production managers
- QC managers
- R&D managers
- Technical managers
- Textile and fiber chemists and technologists

**Special Discount**

A one-half price registration fee is available to attendees living within a 30 mile radius of the conference site. Attendees taking advantage of this option will not receive tickets to the luncheons or reception beverage tickets.

This option is available to members, nonmembers and poster presenters. This option is **NOT** available for students

## SUNDAY, SEPTEMBER 12, 2010

4:00 Registration

5:00 – 7:00 National Textile Center (NTC)  
Student Paper Competition

## MONDAY, SEPTEMBER 13, 2010

8:00 Welcome and Opening Remarks

Philip J. Brown, Clemson University,  
*Symposium Chair*

Fred L. Cook, Georgia Institute of Technology,  
*AATCC President*

### Session I: Medical

Moderator: Fred L. Cook, Georgia Institute of Technology

8:15 Fiber-based Scaffolds for Tissue Regeneration

Ken Webb, Clemson University

8:45 Nonwoven Poly( $\epsilon$ -caprolactone) Electrospun Conduits for Guided Regeneration of Vascular Elastic Matrix

Anand Ramamurthi, Cleveland Clinic

9:15 R&D Initiatives: Nuclear Radiation-Blocking, Anti-Chemical, Biological Protection Systems

Ronald F. DeMeo, Radiation Shield Technologies

9:45 Polymer-Magnetic Nanoparticle Complexes and Constructs: Platform for Imaging, Detection, and Therapy

Olin Thompson Mefford, Clemson University

10:15 Break

### Session II: Protection

Moderator: Francisco Martinez, Protect the Force

10:30 Nanofibrous Membranes for Enhanced Human Protection

Kay Obendorf, Cornell University

11:00 Improvised Explosive Devices Flash Fire/Protection- System Level Test

James Reuther, Energetic Systems & Security Technology Battelle, National Security Global Business

11:30 Micro-Electronic Sensor Technology

12:00

1:00

Pyrohands and Pyrohead: Recent Advances in Full Scale Fire Testing Systems

Roger Barker, North Carolina State University

1:30 Novel Nanofibers for Chemical and Biological Protective Clothing

Marian McCord, North Carolina State University

2:00 U.S. Army Current and Future Ballistic Materials Needs

James Zheng, U.S. Army

2:30 Nonwovens for Hygiene and Oil Spill Applications

Seshadri Ramkumar, Texas Tech University

3:00 Topic & Speaker TBA

3:30 Break

4:00 – 5:30 NTC Poster Session, Tabletop Exhibits and Reception

5:30 – 7:00 NTC Poster Session Continues

Integrated into Clothing and Protective Equipment

Jeff Carbeck - MC 10

Lunch

Pyrohands and Pyrohead: Recent Advances in Full Scale Fire Testing Systems

Roger Barker, North Carolina State University

1:30 Novel Nanofibers for Chemical and Biological Protective Clothing

Marian McCord, North Carolina State University

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5:30 – 7:00 NTC Poster Session Continues

## TUESDAY, SEPTEMBER 14, 2010

### Session III: Nanotechnology

Moderator: Philip J. Brown, Clemson University

8:00 Polymer/Carbon Nanotube Composites: Opportunities and Challenges

Kishor Gupta, Georgia Institute of Technology

8:30 Surface Modification of Fibrous Materials

Bogdan Zdyrko, Clemson University

9:00 Flexible Textile Electrodes for Electroluminescence

Paul Calvert, University of Massachusetts, Dartmouth

9:30 Photonics of Wing Scales: Butterflies and Beetles

Mohan Srinivasarao, Georgia Institute of Technology

10:00 Break

10:15 Effects of Cellulose Nanocrystal Addition to Alginate Fiber Nanocomposites

Christopher Kitchens, Clemson University

10:45 Using Nanofibers to Create Innovative Multifunctional Textiles

Melinda Carnahan, SNS Nano Fiber Technology, LLC

11:15 Fascinating Carbon Nanotube Morphologies: Function Follow Shape

Apparao Rao, Clemson University

11:45 Self-powered Nanosystem: From Nanogenerators to Piezotronics

Yaguang Wei, Georgia Institute of Technology

12:15 Lunch

### Session IV: Performance Wear

Moderator: Seshadri Ramkumar, Texas Tech University

1:15 New Perspectives on Clothing for Health and Well-Being

Katherine Carroll, North Carolina State University

1:45 Evaluation of Piezoelectric Fibers for Energy Harvesting Fabrics

Francois Guillot, Georgia Institute of Technology

2:15 Electroactive Polymer for Textile and Other Applications

Tushar Ghosh, North Carolina State University

2:45 Closing Remarks

Philip J. Brown, Clemson University

**Note:** Program is subject to revision, additions, and change. Please refer to [http://www.aatcc.org/programs/workshops/MIG\\_Symp.cfm](http://www.aatcc.org/programs/workshops/MIG_Symp.cfm) for the latest updates.

## ADVANCES IN MULTI-FUNCTIONAL MATERIALS SYMPOSIUM & THE NTC FORUM

September 12-14, 2010  
REGISTRATION FORM

Name \_\_\_\_\_

Telephone \_\_\_\_\_

Fax \_\_\_\_\_

Company \_\_\_\_\_

Position \_\_\_\_\_

Mailing address \_\_\_\_\_

Street or Box \_\_\_\_\_

City \_\_\_\_\_

Email \_\_\_\_\_

State \_\_\_\_\_

Zip Code \_\_\_\_\_

### REGISTRATION FEES:

On or Before Aug. 27

After Aug. 27

AATCC Member US\$499\*

Nonmember US\$749\*

AATCC Member US\$549\*

Nonmember US\$799\*

NTC Poster Presenter US\$425\*

AATCC Student Member US\$175

### Payment to be made by:

Check

Card # \_\_\_\_\_

MasterCard

Exp. Date \_\_\_\_\_

VISA

Signature \_\_\_\_\_

AMEX

Authorization \_\_\_\_\_

TOTAL AMOUNT PAYING US\$ \_\_\_\_\_

\*A ½ price registration fee is available to attendees living within a 30 mile radius of the conference site. Attendees taking advantage of this option will not receive tickets to the luncheons or reception beverage tickets. This option is available to members, nonmembers and poster presenters. This option is NOT available for students.

The registration fee must accompany application. Make checks payable to AATCC. Return registration form to AATCC Technical Center, PO Box 12215, Research Triangle Park, NC 27709-2215 USA. Refunds will be made if cancellations are received on or before Sept. 3, 2010. A US\$75 cancellation fee will be charged.