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AATCC NEWS



Association of Textile, Apparel & Materials Professionals



October 20, 2015



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Innovations in Textiles Call for Innovative Testing Solutions

Innovations in textiles are pushing the bounds of what is possible, and testing solutions need to keep pace with this rapidly changing industry. What happens when you sweat in your e-textile?

[More info...](#)

AATCC Journal of Research Now Indexed by Science Citation Index Extended (SCIE)!

AATCC Journal of Research has been accepted for indexing in Science Citation Index Extended (SCIE) and will be available in the Web of Science Core Collection.

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Introduction to Textile Testing Workshop in Dec
 If you are responsible for product evaluation, specifications, and quality control for apparel and textile materials, this workshop is a must!

[More info...](#)



Textile Trivia

Test your wits against other AATCC members in our Textile Trivia game. Answer correctly by Oct 31 to be entered for a drawing for an Amazon Gift Card.

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JOIN AATCC in October!

Join AATCC in October and be entered in weekly prize drawings. New members will be included in each week's drawings after signup. See prizes and more info [here](#).

More info...



UPCOMING EVENTS

[For complete list and updates, visit the AATCC Events page](#)

October 21-22, 2015

Color Management Workshop
AATCC Technical Center, Research
Triangle Park, NC
[more info..](#)

November 3-5, 2015

AATCC Fall Committee Meetings
Research Triangle Park, NC
[more info..](#)

November 12-19, 2015

AATCC at ITMA
Fiera Milano Rho
Milan, Italy
Hall 7 Booth H102
[more info...](#)

December 9-10, 2015

Introduction to Textile Testing Workshop
AATCC Technical Center, Research
Triangle Park, NC
[more info..](#)

April 19-21, 2016

2016 AATCC International Conference
Williamsburg Lodge, Williamsburg, VA
[Call for Papers](#)

**If you would like to register for an event please contact our [Education Department](#).

June 12-14, 2015

Southern Textile Research Conference
Hilton Myrtle Beach Resort
[Mark your Calendar!](#)

Student Events

Dec 18, 2015

Student Paper Competition
Entry Forms Due!
[More info...](#)

April 8, 2016

C2C Student Design Competition Entries
Due
[more info...](#)

April 20, 2016

C2C Student Merchandising Competiton
Entries Due
[more info...](#)

Local Section Events

October 22, 2015

Northwest Section Meeting
Portland, OR
[more info...](#)

October 29, 2015

New England Fall Meeting
Plainville, MA
[more info..](#)

November 6, 2015

Delaware Valley Section Meeting
Processing Lycra and Blends
Grantville, PA
[more info...](#)

December 12, 2015

Delaware Valley Section
Holiday Buffet and Show
Hershey Lodge, PA
[more info...](#)

Open Enrollment

Textile Fundamentals Web-Based Training
[more info...](#)

Online AATCC Test Method Training

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AATCC Recorded Webinars

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Getting White Right

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Proficiency Testing Registration

November 4, 2015

Colorfastness
[more info...](#)



Association of Textile, Apparel & Materials Professionals



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AATCC News



Innovations in Textiles Call for Innovative Testing Solutions

By Sami Perkins, Feature Writer, and Saji George, Quality Assurance Manager, Pickering Laboratories Inc.





Not so long ago, the main concern with testing fabrics was still colorfastness—did the fabric dyes stay stable after exposure to sweat and multiple washings? Did fabrics fade when exposed to sunlight? Colorfastness is very effectively tested by using the standard AATCC artificial perspiration solution, and it is still an important part of any fabric testing protocol. Now, however, innovations in fabric like [silver nanoparticles to control odors caused by bacteria](#), and fabric that [contains integrated sensors to track movement](#), demand more rigorous testing. Fabric is no longer just fiber with color, it can give you a [3D image of how you move](#), or measure your [breathing and heart rate](#).



[Heddoko](#) is beta testing a smart suit that can track movements and provide 3D data which can then be used for coaching and improving workouts. [Hexoskin](#)'s Biometric shirt brings a new meaning to the term "wearable device." It tracks heart rate, workout intensity, and breathing. Both of these smart clothing items use Bluetooth to pair with apps so that users can gather data on their movement and activity over time. These smart fabric devices blur the lines between wearable tech and textiles. They also present unique challenges for testing. How will the sensors and batteries in the clothing hold up to the copious amounts of sweat (up to 2-4 liters per hour) the wearers will be producing while tracking all that activity? What kinds of substances could leach out of the clothing and onto the wearer's skin?

In order to test these fabrics successfully, testers need to consider not just colorfastness, but also corrosion and release of metals. Nickel release from wearable devices is known to [cause allergies](#) in users, for example.



First, for the silver-infused clothing that ["stops stink"](#), there are other concerns. The silver, which is not harmful to humans, is [harmful when it enters the waterways](#). The amount of silver released by fabric varies widely, but for some brands, up to half of the silver in the fabric is lost during its useful life. As people wear this clothing, and sweat on it, the silver can leach into the sweat, be showered off and enter waterways. This silver can be deadly to many fresh and salt water organisms at their young stages and can bioaccumulate over time. The danger to ecosystems emphasizes the need for careful and thorough testing of these fabrics under the most realistic conditions possible.

Second, for effective testing, testers need to replicate human sweat and "worst-case scenario" situations as closely as possible, and they need testing solutions that are flexible and customized to the possible weaknesses of the fabrics they are testing. Formulations are available that closely mimic human [Eccrine sweat](#). Other formulations specifically test for corrosion and nickel release. For leather, or other fabrics where culture growth is a concern, there are sweat solutions that are not stabilized and are shipped in frozen form.



Another substance that can be useful for textile testing is artificial [Sebum](#). Sebum is an oily secretion produced by sebaceous glands, which are tiny ducts adjacent to hair follicles. Sebum is secreted into the follicle, from which it spreads over the hair and skin. Testing with Sebum in addition to Eccrine sweat more closely reproduces the worst-case, real-world conditions that fabrics will come into contact with from human skin. Since it is an oily substance, Sebum also helps to test the stain-resistance of fabrics.

Innovations in textiles are pushing the bounds of what is possible, and testing solutions need to keep pace with

this rapidly changing industry. Using just one type of solution is no longer effective.

AATCC will be holding a Wearables exploratory meeting to consider the creation of a committee to address technology and test methods for electronic textiles at our Fall Committee meetings on Tuesday, November 3, 3:15 PM. Please contact AATCC Technical Director [Diana Wyman](#) with any additional questions.

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