Fiber Innovation: The Magic of Spider Silk

For more than a decade, fiber scientists have been promising a miracle—a fabric stronger than steel and tougher than Kevlar—with many other tantalizing physical properties as well. However, so far, commercial production of spider silk fabric has stayed tantalizingly out of reach. How far have we come in our quest to reproduce the magic fiber made by humble spiders?

More info...

Attending AATCC’s International Conference
Your First Time

AATCC’s International Conference (IC) is broad in scope, and international in flavor. You’ll meet other people from around the world and from every corner of the textile, apparel, and materials industries. On the other hand, IC is small enough that you won’t be lost in the crowd! If you’ll be attending for the first time, here are some tips and resources to help you get the most out of your first AATCC IC!

More info...
Tabletop Exhibit Opportunities Available at 2015 International Conference

Don’t miss this opportunity to promote your company’s products and/or services by exhibiting at AATCC’s 2015 International Conference to be held March 24-26 in Savannah, GA. Exhibits will be open during our Welcoming Reception on March 24 and from 8:00-9:30 am and 4:15-6:00 pm on the 25th. In order to provide your company with more exposure, our Welcoming Reception will be held in the exhibit area on March 24 and a continental breakfast and reception will be held in the exhibit area on the 25th. Exhibit times will not conflict with other conference events.

Registration now open for Wet Processing of Textiles with Spandex Conference
Join us February 11-12, 2015 to learn more about best processing practices and real world challenges when processing spandex blends.

2015 Technical Manual

Student Chapter Awards
Reminder Student Chapter Awards are due Jan 31. Student Chapter Awards recognize an Outstanding Undergraduate Senior!

UPCOMING EVENTS

February 11-12, 2015
Wet Processing of Textiles with Spandex: Best Practices
Textile Technology Center
Belmont, NC
more info...

March 24-26, 2015
2015 International Conference
Hilton DeSoto, Savannah, GA
more info...

June 10-12, 2015
The 13th International Wool Research Conference & AATCC Sustainability Symposium
Zhejiang Sci-Tech University
Hangzhou, Zhejiang, China
more info...

**If you would like to register for an event please contact our Education Department**
Fiber Innovation: the Magic of Spider Silk

By Maria Thiry

For the last decade or more, the holy grail of biomimetics for the textile and materials industry has been to synthesize the magic that is spider silk. The silk that spiders produce has many tempting physical properties that could produce light fabric with the strength of steel, protection of Kevlar, and elasticity and recovery of spandex, and even conduct electricity—a wealth of properties that inspire ambition in many a materials scientist.

Alas, unlike the humble silkworm, spiders just don't want to be domesticated; they bite, fight, and eat each other. Too bad for all those would-be spider silk farmers! Spiders just don't do well in captivity.

Not to be deterred, researchers around the world have been trying to slip spider DNA into more amenable hosts: from goats, to plants, to bacteria, to our old friend, the silkworm.

Araknitek, a spin-off from Utah State University, has been raising transgenic goats that produce spider silk proteins in their milk. The spider silk fiber from this goat milk was once called “BioSteel” when the spider-goats were first bred by the now-defunct Nexia Biotechnologies. Araknitek is also trying to produce spider silk from genetically modified alfalfa.

Kraig Biocraft Laboratories has achieved recent success with commercially producing genetically engineered spider silk using transgenic silkworms. Called “Monster Silk,” the super-strong, fine silk is produced from silkworms far larger than their original silk worm cousins. The first fabrics made with Monster Silk were knitted at Warwick Mills.

The Korea Advanced Institute of Science and Technology (KAIST), as well as companies Spiber and AMSilk, have used genetically-modified bacteria to spin their spider silk proteins. As well as textiles, these silk proteins have additional applications, such as shampoo and cosmetics.

It seems the holy grail is in sight at last—these pioneering companies are either already commercially producing spider silk, or will be doing so soon. The applications for this engineered spider silk are...
numerous; from high-tech medical, aerospace, and automotive products, to protective garments, and industrial products. Maybe even one day we'll see spider silk dresses—outside a museum.
Coming to AATCC's International Conference for the First Time

Why Should You Attend?

"Networking" is something that seems to be going by the wayside in our modern e-mail, mobile app, and webinar-fueled lives. But it's an important part of why attending a small technical conference like AATCC's IC in person is useful to yourself and your career.

- IC is large enough in scope, and diverse enough in topic, to attract individuals from all over the world and from all sectors of the textile, apparel, and materials industries.
- At the same time, AATCC's International Conference is not a huge trade show—IC is small enough that you won't be lost in the crowd.
- During the roughly two-and-a-half days of IC, you'll have time and opportunity to actually talk to the speakers and your fellow attendees. Time to make connections that may influence the rest of your career!

What Are the Topics?

Like AATCC's Interest Groups, IC is organized along three tracks: Concept 2 Consumer™, Chemical Applications, and Materials.

- Speakers in each track will present simultaneously, in different breakout rooms.
However, you don’t have to commit to any one “track.” Throughout each day, you can move from one track to another, as the speakers interest you.

If the list of speakers and their topics still makes it hard to choose, once you register, you’ll have access to the Conference Proceedings just before the event so that you can narrow down your choices, and even come prepared with questions for the speaker.

How Do I Sign Up?

Registration is easy, and available online.

- There are discounts available for all AATCC Individual and Corporate members, as well as discounts for signing up before the conference.
- Students pay a deeply discounted rate, and AATCC Student Members can attend the educational tracks for free!
- Contact Kim Nicholson for details on discounts.

Where is the Conference?

The 2015 IC will be held in Savannah, GA, USA.

- The Conference hotel, the Hilton DeSoto, will hold a discounted room block for attendees.
- Savannah, GA is near I-95 for easy driving access, and has an International Airport for access by air.

I Want to Find Out More

For additional information about AATCC’s 2015 IC, contact Kim Nicholson, or visit the AATCC website. We will also have additional articles with more information about the Conference coming up in future newsletter issues, so keep an eye out!