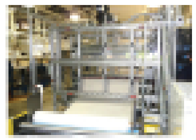
NC State Launches Development CenterUtilizing New Eco-Friendly Plasma Finishing Technology



University Education

> By Kathlyn Swantko, contributing columnist

Apparel manufacturers servicing the outdoor market are always being challenged to develop sustainable products that provide performance qualities. In many cases performance characteristics are being added to otherwise sustainable fabrics through finishing processes that use a large amount of water and create wastewater that requires treatment. As a result, fabric manufacturers are looking for new, cost effective ways to add the technical performance qualities, while maintaining sustainability in each step of the production process.

North Carolina State is addressing this challenge with the launch of a Development Center that features a new state-of-the-art atmospheric plasma system that uses an environmentally friendly process to apply water-repellent, stain-repellent and moisture management properties to apparel fabrics. The new system also has the potential to create performance garments that stay cleaner longer, are more comfortable to wear, and do not show perspiration. Yet, the cost is less than fabrics finished using the current conventional method.

The NC State pilot facility has been made possible through a partnership of APJeT Inc., (licensing agent for the technology), Morrison Textiles Machinery (builder of the equipment), and Air Products and Chemistry Inc. (provider of the helium gas and recycling for production). Students will be responsible to test the process, and study the plasma system's efficacy on a variety of textiles.

In Charge: Field support engineers Johnny Meaders, Jr. (left) and Owen Khoury (right), next to the APTeX plasma finishing machine at NC State. The APTeX machine is a full width, high power atmospheric plasma machine for treatment of textiles and nonwovens. It is the joint product of APJeT, Inc (Santa Fe) and Morrison Plasma Systems (Fort Lawn, SC).

According to John Emrich, president/CEO of APJeT, the proprietary plasma technology uses an environmentally-friendly "dry" ionized gas to impart a nanolayer coating to create the performance qualities. The system provides a double benefit to textile manufacturers by eliminating the use of water and the need for wastewater remediation.

Emrich, notes, "The system uses a green process to change the surface of various substrates. It's a real paradigm shift for the textile industry. It's all green, and not cost-prohibitive to adapt."

The potential for creating unique developments in performance fabrics is opening up exciting opportunities for the new technology. Emrich continues, "One of the new applications that APJet views as promising includes making silk soil repellent, which can't be done conventionally. In addition, the Development Center and APJeT are working with synthetics, wool, non-wovens for apparel applications, and industrial carpeting for the outdoor furnishings market."

Once trained on using the new equipment, NC State undergraduate and graduate students, particularly in the fields of textile chemistry and polymer science, will work with laboratory staff and APJeT personnel to use the system for testing and development, giving the students hands-on experience solving real-world problems.

For more information on APJeT's plasma technology, please contact John Emrich, john.emrich@apjet.com, (505)471-6399. For more information on NC State University's Development Center, please contact Emily Parker, emily_parker@ncsu.edu, (919)515-6529.

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