



University Education

> By Kathryn Swantko, contributing columnist



Central Michigan University initiated a project in which it tested several shirts made from a variety of three-dimensional Polartec fabrics to look specifically at thermal comfort. "We were interested in whether an antimicrobial finish would affect the comfort of these garments," explains Dr. Maureen MacGillivray, professor at CMU. "We had AEGIS apply its Microbe Shield technology and its AMMS1 wicking technology to a set of shirts targeted for use by the military or the National Hockey League."

Nathan Smith of AEGIS describes how the antimicrobial and wicking technologies were incorporated into the Polartec 3-D fabrics. According to Smith, the new AMMS1 technology was created to fit perfectly with AEGIS Microbe Shield technology, so the two technologies can be applied simultaneously. Since the AMMS1 binds flawlessly with AEGIS Microbe Shield, the result is a very durable long-term finish.

Testing for the project utilized a unique combination of technologies, including a Human Solutions Body Scanner, a Flir thermal camera, and an environmental chamber. Garment evaluations were conducted by two apparel designers, a computer scientist, and an engineer.

The study utilized human subjects performing step tests inside the environmental chamber, which is set to specific temperature and humidity levels. The equipment measures heart rate and skin temperature, and the scanner allows for the examination of the microclimate in detail. MacGillivray says that "actual wear testing helps to separate fact from fiction and that is what we try to do at CMU."

The preliminary results shared by MacGillivray indicate the patterns contributed different thermal properties to the fabrics during wear in both cold and hot environments. The subjects did not perceive a measurable difference in the comfort of the shirts, with or without the antimicrobial finish. The complete results of the study's findings will be published in an upcoming article in the Textile Institute Journal.

MacGillivray notes, "The idea of 3D knitting is important in lending thermal comfort to the wearer, and it's an innovation that has a lot of promise." MacGillivray can be reached at macgills@cmich.edu. ♦

Kathryn Swantko created TheTechnicalCenter.com for industry networking and promotion of specialty textiles, and FabricLink.com for consumer education about everything fabric. kswantko@fabriclink.com

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