

# Science Fiction Textiles for a Consumer-Driven Future

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Textiles and dyes are no longer about giant cotton mills and vast vats of colour. In the 21st century, it's practically science fiction – digital processes, nano-coatings, virtual dressing rooms and saving the world.

That is certainly what it felt like at the Clariant 18th International Symposium, presented by the Society of Dyers and Colourists of Australia and New Zealand (SDCANZ) on 18 October 2007.

The messages on future trends and technologies in the textile business all headed in the same direction: the industry needs to work cleaner, smarter and faster to meet the demands of the modern world.

Dr. Mike Fralix, of U.S. company [ITCI](#), said that emerging 'hot technologies' in the textiles industry are responding to three key shifts in consumer behaviour. "Customers have higher service expectations than ever, they want more choices, and nobody wants to wait longer than three days for products ordered by catalogue or online."

There are also the industry's own needs – to reduce costs, comply with environmental regulations and reduce the time between the designer's idea and getting that design onto the racks.

The digital age is making a huge impact on textiles in terms of providing consistency of quality and speed of response in everything from colour management to low-cost sample production.

Sharon Rae, of Fashion Forecast Services, discussed the new SMART colour system from Pantone. The system provides six digit formulas for 1,925 colours and the technology to verify the closest colour match. SMART provides a standardised colour evaluation process which can be duplicated and checked, resulting in fewer errors, more control and less variation in the final result. That all adds up to less time and money wasted.

With so many people now part of the whole design-to-production workflow, SMART is utilising digital information to make data sharing easier, which in turn speeds up the process.

Speeding up the process is a topic close to many hearts in the industry. Country Road's General Manager of Sourcing, Elizabeth Park, spoke of the pressure to reduce the time it takes for an idea to hit the store shelves.

Ms. Park pointed out that Spanish label, Zara, has been able to achieve a four-week turnaround in this area, but only by taking control of the whole supply chain from fabrics to distribution. This is not a feasible model for most retailers. Country Road has managed to reduce its "mind-to-market" turnaround from 13 months to under six months. The key, said Ms. Park, is to have technology that will reduce development times.

David Atkinson of XYZ Technology reinforced the need to use technology to ensure consistency in colour management to save both time and money. "Software can allow users to see colour effects on different fabrics and textures, so people can make better decisions earlier in the process, and save on creating samples that don't work."

One company already applying technology to save both time and money is Longina Phillips Design in Sydney. The company uses digital printing technology with reactive dyes to create unusual textiles. The technique can be used on a variety of materials, including leather.

The nature of the technology means that the company can produce as little as a metre of fabric, enabling emerging designers and students to create samples on a budget. Sylvia Balog, representing Longina Phillips Design, said: "Young designers are more familiar with the technology and are willing to experiment, particularly as it is cost effective. They don't have to waste time and money on making sample runs that don't sell."

Several speakers discussed the environmental impact of traditional dyeing methods, which use huge amounts of clean water, and the development of new, cost-effective technologies which are both environmentally and financially effective.

Arthur Wellham, International Technical Consultant, is adamant that more can be done if the process is better planned. Mr. Wellham pointed out that the industry uses vast amounts of drinking-quality water – and that access to clean water is an issue of survival for poor people in many developing countries.

“New processes and innovative machine design can reduce use from 125 litres per kilo of cotton processed to 40 litres. Up to two trillion litres could be saved each year. Small changes in processing could lift living standards for millions.”

There are business imperatives too. If industry ignores issues like environmental regulations and the cost of processing, then companies risk legal action, loss of business and bankruptcy.

Sigma Technologies International may have a radical solution. Dr. Angelo Yializis unveiled a dry-dyeing technology that does not use water in a process that applies ultra-thin textile coatings. Nano-coating does not use solvent or produce effluent and is low in energy consumption. It even needs less space than traditional dyeing, with dry-dye units only a few metres in length.

Keith Parton, Clariant’s Hong Kong Textiles Marketing Manager, also spoke about the need to meet environmental and OH&S standards, and the increasing consumer expectations for eco-friendly and ethically produced products.

Developments like wrinkle free, anti-microbial, moisture management, and odour absorption finishes can assist with this. Finishes which make a garment more resistant to dirt and bacteria means each piece can be washed less often, thereby saving water over the whole life of the garment.

Abigail Petit, of Gossypium in the UK, has strong credentials in the realm of eco-friendly textiles. Her pre-recorded discussion with Woolmark’s Malcolm Campbell explored ways in which different elements of the industry need to interact for better results.

“It’s a fragmented industry – farming, chemicals, design, retailing,” said Ms Petit, “The textile industry has got to stop being passive. Talk to others about your skills, talk to others in the process and see where skills cross over to improve processes. Look for new ways to work.”

Although associated mainly with the use of natural fibres in the production of Fair Trade textiles, Ms Petit said it was important not to label different fibres as ‘good’ or ‘bad’, but to appreciate the qualities and benefits of each one. “The industry needs to be more collaborative and not get into ‘fibre wars’. We’ve got to champion diversity.”

In the end, this technology is about creating products and retail environments that consumers can’t resist. Dr. Fralix talked about designing and testing within virtual space (“After all, Boeing doesn’t make ‘sample’ planes”), and the creation of virtual body-doubles that could be carried on devices like mobile phones, allowing customers to download and ‘try on’ garment images.

“You don’t need to invent it,” Dr. Fralix said, “Just adopt and adapt! Look to other industries for cool ideas and see how they apply to textiles and customer service.”

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