



“If you can find a way of protecting fabrics from UV, then you solve a big problem for industry.”

Professor Xungai Wang

SUNSCREEN FOR FABRICS: STOPPING TEXTILES FROM FADING IN THE SUN

It's like a sunscreen for fabric, an innovative product that could help solve a longstanding problem for the textile industry: colour fading.

Deakin University material scientists are studying how tiny nanoparticles that absorb UV radiation can protect outdoor fabrics – such as flags, awnings and car upholstery – from sun bleaching.

Nano-sized particles of zinc oxide – already used in sunscreens – are applied as a coating onto fabrics. The particles are extremely small, about 65 nanometres – or 65 billionths of a metre.

The researchers, from Deakin's Centre for Material and Fibre Innovation, say one advantage of using nano-sized particles is it allows for a more transparent coating on the fabric so that the original colour of the textile is not affected.

In their study, conducted in partnership with nanoparticle producer Micronisers and fabric manufacturer Bruck Textiles, the scientists found the nano zinc oxide coating could significantly reduce colour fading.

Their work also provided a greater understanding of the complex interactions between nanoparticles and dye molecules that help to prevent fabric colour fading.

“If you can find a way of protecting fabrics from UV, then you solve a big problem for industry,” says co-project leader, Professor Xungai Wang.

While their current research is limited to outdoor fabrics, Xungai says the same nanoparticle-based UV protection could potentially be used on clothing for enhanced UV protection.

“It's like putting sunscreen on, but rather than putting the sunscreen on the skin for temporary protection, you are putting it on the fabrics you wear for lasting protection,” he says.

FURTHER INFORMATION:

Xungai Wang, Alfred Deakin Professor,
 Director, Centre for Material and Fibre Innovation
 E: xungai.wang@deakin.edu.au
www.deakin.edu.au/itri/cmfi/welcome.php

