

Dyes & Finishes

Color Catalyst

A team of scientists at the University of Leeds, led by Dr Richard Blackburn, as part of spin-out company DyeCat Ltd have developed a unique dyeing process that creates colored polymers inside textile fibers via a patented catalytic dyeing process.

The team has been working on this new development over the past few years but is now said to be close to a commercial release of the technology.

The new technique involves the use of simple colorless molecules, some derived from natural raw materials, which are then linked together by a clever catalyst, and the color develops



as the polymer chains grow. The catalysts used in this process are in very low amounts and are said to have minimal impact in terms of eco-profile and toxicity compared to the conventional antimony and tin-based catalysts used in synthetic fiber production.

The technology has so far proved successful on hair-derived textile fibers such as wool and can take place at cool temperatures, which also saves energy and associated costs. It's thought that it also has the potential to drastically reduce the dependence on petroleum as a starting point for dyestuff production. Work on cellulose will commence shortly.

In a separate development the same team is also chemically modifying natural dye molecules to produce natural/synthetic hybrids. Early indications show that these new dyestuffs can be environmentally benign but also have

performance benefits and improved yields compared to natural dyestuffs.

The team is working on modifying alizarin, a colorant derived from the root of the madder plant to create a molecule that produces bright, high fastness disperse dyes for polyester and PLA.

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Cleaner Living

Dupont has launched their Capstone range of repellent and soil release finishes for the textile industry. The products will be sold by Huntsman under the designation OLEOPHOBOL CP.

Based on short-chain chemistry, these products provide a step-change reduction in trace impurities below the limit of detection*, offering the same or better performance than their predecessors without compromising fluorine efficiency.

The initial product offering from Huntsman includes a stain release (OLEOPHOBOL CP-R) and a synthetic oil and water repellent (OLEOPHOBOL CP-S). The stain release is suitable for cotton, synthetics and blends and eases the removal of both water- and oil-based stains during laundering. The stain repellent is ideal for synthetic fibers and their blends and enables spills to be blotted up quickly with a dry, absorbent cloth.

OLEOPHOBOL CP will work in mills similar to traditional products and deliver high performance without an increase in product use rate. Fabrics remain breathable and comfortable during wear and exhibit excellent durability to laundering. The OLEOPHOBOL CP products offer improved sustainability while maintaining their performance.

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* Below the limit of detection for PFOA based on the published analytical method found in the *Journal of Chromatography A* (2006) 117-124.

Better Bags

NüHyde is a newly developed and patent-pending coating that increases abrasion resistance by over 450 percent compared to conventional polyurethane coatings. When fabric yarns are fused with NüHyde its high viscosity content creates a barrier on the surface without compromising the tear and tensile strength.

Abrasion is the enemy of bags during travel and over-all use. NüHyde is specially formulated for heavy-duty performance designs requiring high



abrasion resistance and strength. This fabric coating will redefine durability in outdoor sports and industrial manufacturing products.

The coating was tested by the independent testing laboratory SGS using a 1,000 gram Taber wheel and resulted in an increase from 1,200 cycles for a two-times polyurethane coating to 5,600 cycles for NüHyde. The test applies a calibrated weight to an abrasive disc as it turns on a fabric sample. The number of cycles, or complete rotations, gives an indication of how well the fabric will wear in real life.

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