



Nano helps Win Gold

AMERICAN SWIMMER MICHAEL PHELPS STUNNED THE WORLD AS HE RACKED UP EIGHT GOLD MEDALS AND BROKE SEVEN WORLD RECORDS IN JUST EIGHT DAYS AT THE BEIJING OLYMPICS. AND HE WASN'T THE ONLY ONE BREAKING RECORDS. ALMOST ALL OF THE 25 SWIMMING RECORD BREAKERS HAD ONE THING IN COMMON – SKIN-TIGHT SWIMWEAR THAT HELPED THEM GLIDE THROUGH THE WATER. ELAINE MULCAHY EXPLORES NANOTECH ADVANCES THAT ARE HELPING ATHLETES WIN GOLD.

Speedo launched its LZR Racer suit weeks before the Olympics and had already broken records before Phelps hit the pool in Beijing. It is the latest in almost a decade of design research which has seen the FASTSKIN FSII in 2004 and the FS PRO in 2007. Development of the new suit involved collaboration between Speedo's Aqualab, NASA and a number of international research institutes – the mission: to create a swimsuit that will glide through the water like sharkskin.

The LZR Racer (pronounced Laser Racer) is made from an ultra lightweight, low drag, water repellent, fast drying fabric called LZR PULSE that incorporates a nano-molecular plasma layer to repel water and enable the suit to move through the water with minimal friction.

Developed by Italian-based Mectex SpA, the PlasmaMec technology works by repelling water molecules over a wider surface area so that less water is absorbed by the material. The treatments are reported to reduce water absorption in the material to only two per cent of fabric weight, compared to 50 per cent absorption in the previous Fastskin fabrics.

Mectex claim their plasma nanotechnology is also eco-friendly as it doesn't use any chemicals or demand high energy in production, and has application across a wide range of textiles – not just for creating super-fast swim suits.

"This technology could be used in a range of clothing lines. For example, we are already looking at its use in sweat-free gym wear that repels sweat from the surface of the clothing so that it doesn't get wet, no matter how much you sweat," says Aurelio Fassi, a researcher at Mectex.

"Fabrics with PlasmaMec treatment may also be used for ski wear, outdoor wear, work wear, race wear, bike and motorbike wear and medical wear and many other hard sports in which athletes perspire a lot. Because the fabrics have been treated with PlasmaMec, water molecules stay on the surface and are not absorbed into the yarns like cotton, wool or linen. →