

Markets open up for brand protection DNA markers

New York-based Applied DNA Sciences is at the execution stage for DNA marker applications in a number of markets, which are likely to be implemented in 2006.

Applied DNA, which delivered on its first EU contract in the first quarter of 2006, is working with US and EU companies for security applications in the artwork and luxury goods sectors, as well as in homeland defence for the US government.

'The artwork market is diverse and is relevant to anyone involved with art, including collectors, museums, galleries, insurance firms and artists,' says Jim Hayward, CEO, who reveals that an application for using the markers in pharmaceutical drugs has been developed.

The nano-engineered markers, already commercialised in Asia, use DNA to provide brand protection through two levels of security – both of which can be implemented in one system.

'We've developed a portfolio of plant-chimeric DNA, consisting of a unique plant-based genome that is not found in nature,' says Hayward. 'This DNA allows us to encrypt a singular genome to identify single products. The library we have is adequate to mark

billions of individual items with a unique code.'

The first level of protection is a proprietary colour changing system that can be instantly identified, by the naked eye, with a unique authentication pen. The second, and higher, level is absolute forensic identification of DNA. This is carried out by amplifying the DNA signal through polymerase chain reaction, and then identifying the amplified DNA either by sequence or length polymorphism analysis.

'Our technology – which has been validated by a large external laboratory – is flexible,' says Hayward. 'It can be put in ink, print, thread, glue, adhesives, surface coatings, or various levels of packaging structure.'

The Chinese government has approved the DNA markers as an official anti-counterfeiting product. The first EU application was marking a biomatrix manufactured by a company in Germany, used in both the personal care and medical device industries.

[Click here for more about Applied DNA Sciences](#)

New markets open up for Australian nanoparticle producer

The Very Small Particle Company (VSPC), based in Australia, is moving into

the mono-dispersed nanoparticle market following difficulty in commercialising its agglomerated nanopowders for automotive applications.

The company started work with mono-dispersed metal oxide nanoparticles in 2006, and is working with more than 10 companies, some from the US and Asia, in developing its complex compositions for use with plastics.

The material could be seen first in either coatings or additives for plastics, improving properties such as UV protection, barrier and scratch resistance, with pigments a possible future application.

'The companies showing an interest are a mix of chemical and consumer products companies,' says Jose Alarco, director and scientist at VSPC. 'Hopefully we'll see something before

the end of 2007.'

Until recently VSPC was developing agglomerated nanopowders for an automotive application – replacing platinum in catalytic converters.

'We did a lot of R&D in this area,' says Alarco, 'but the vehicle market is hard to penetrate, as there are three or four major players. It wasn't as easy as we thought – it wasn't just getting a better product.' VSPC is still looking for a commercial partner in this area.

Funded primarily by private investors, the company plans to use a licensing business model before producing a final product on its own.

VSPC can produce 60 tonnes of nanoparticles per year at its pilot plant – enough, Alarco believes, to supply a commercial partner if one can be found.

[Click here for more about The Very Small Particle Company](#)

Complex metal oxides produced in the VSPC Australian plant



Source: VSPC