

Small really is beautiful for Promethean

A Nottingham company is leaving US and Japanese scientists in its wake after successfully developing a new reactor that allows the highly controlled production of nanoparticles in water for the first time ever.

Promethan Particles, a spin-out founded on the innovative research work of Dr Ed Lester at the University of Nottingham, has capped a tremendous first year in business by successfully commercialising technology that will see it play a crucial role in the development of new products, such as transparent sunscreen and green power generation.

With a number of feasibility contracts already completed, the firm is celebrating another milestone after it discovered it was through to the last four of the prestigious Lord Stafford Awards and will now go head-to-head with the inventor of a fetal heart monitoring device, precast concrete specialists and a Leicester-based electronics expert.

Dr Ed Lester, who has been developing the 'innovation' for over a decade, explained:

"The core technology is a patent protected reactor, which uses hot pressurised water and simple metal salts to make inorganic nanoparticles.

"Using research and knowledge gained from the University, we learned how to control how these two fluids meet and interact to form particles – a process no one else in the world has yet mastered despite investing millions into finding the solution."

He continued: "What this means for the business is we can supply the world market – worth an estimated £3.1 trillion by Lux Research - with high quality, bespoke nanoparticles that can be used in a host of products to improve performance."

Located in BioCity in Nottingham, Promethan has already taken on three new people and a Chairman part time and plans to increase the workforce by 10 as it looks to make the most of the new technology.

Its ability to provide both feasibility studies and a commercial manufacturing option through its pilot plant has already seen it secure initial sales, with market demand set to see this rise to £1.5m by 2010

Sandy Gordon, Business Development Manager, picked up the story:

“Being a relatively new player in the market you always need to find your ‘unique selling point’ and we have found this in the reactor.

“Current products on the market containing nanoparticles include sunscreens which are transparent while still offering the same level of protection as traditional white high ‘spf’ formulations. We are able to produce new materials (new compositions, new sizes and shapes of particles) that cannot be manufactured by other technologies; this “tuning“ of the particle properties can improve their performance in all applications..

“In other fields like green energy generation the use of nanoparticles could make solar cells more efficient or allow hydrogen storage for fuel cars – a massive global subject.

She added: “Another innovation is that we can produce nanocomposites of hydroxyapatite, which has a range of healthcare applications, from orthopaedic implants to toothpaste that will prevent dental caries.”

Nottingham University has played a massive role in the development of Promethean having invested considerable time and money in developing the technology and subsequent commercialisation of the work.

It is the strength of this relationship that has seen it attract the attention of judges from the Lord Stafford Awards, a competition which aims to celebrate collaborative partnerships between industry and academia.

Paul Yeomans, Business Development Officer at University of Nottingham, was delighted to be involved in the competition.

“This is a long-term plan and we will continue to work with Promethean through Ed Lester’s role as Technical Director at the business. In return, the company provides us with insights into the current market for new materials and applications that can guide our research. This project has the potential to put the East Midlands on the international map.”

Sandy concluded: “Winning the Lord Stafford Award would recognise that we have the potential to grow into a world player in nanomaterials. It would raise our profile and increase

our credibility with customers, who wouldn't usually look to such a small company to source solutions."

Backed by the East Midlands Development Agency (EMDA), MAS East Midlands, the East Midlands Universities Association and Lincolnshire County Council, the Lord Stafford Awards are designed to celebrate and recognise innovative collaborations between business and universities.

The winners of the awards, which cover 'Innovation Achieved', 'Innovation in Development' and 'Innovation in Sustainability', will be announced at a high-profile finale on September 10th at the Epic Centre in Lincolnshire.

Other sponsors for the event include Ceramic Decals, CFE Ltd, Clever Cherry, Connect Midlands, Enterprise Europe Network and Swindell and Pearson.