

5th August 2010

Latest News from the Lord Stafford Awards

New laser imaging system to give explosive results

A major step forward in the ability to detect explosives on people and items of luggage is set to help a Leicestershire-based engineering company compete for one of the region's most prestigious innovation awards.

The Explosive Residue Detection (ERD) system, pioneered by Laser Optical Engineering, represents an entirely new approach to ensuring the safety of airport facilities and military personnel on operation, leading to the company being shortlisted in the 'Innovation in Development' category at this year's Lord Stafford Awards.

Until now the major flaw with sniffer technologies used to find explosives has been the inability to pinpoint the whereabouts of the material once they have detected its presence, something overcome by the ERD system thanks to its fluorescent imaging capabilities, a breakthrough which has impressed the judges.

The system runs remotely, scans a given area (such as an airport security gate) and builds up accurate images showing any traces of explosive residue on a person or item within the vicinity.

Developing this breakthrough has required the company to be at the cutting edge of laser based imaging technology and offers them the opportunity to expand the system to meet the diverse protection needs across infrastructure both in Britain and abroad.



(l-r) Prof John Tyrer (Laser Optical Engineering) shows Lord Stafford how the ERD system works

Prof. John Tyrer, Managing Director, is delighted with progress to date:

“We are thrilled to have been nominated for the Innovation in Development award as we consider innovation to be at our core.

“There is currently a threat to the mass transport infrastructure: aircraft, rail, shipping and road. The technology we have developed in conjunction with Loughborough University

provides a significant counter terrorism solution, which will improve public perception of transport security in the UK and worldwide.

“This should benefit local, national and international tourism and provide increased levels of safety for our military personnel.”

He continued: “Our collaboration with the University has been a fundamental part of the project which has relied heavily on the photo-chemistry knowledge of the Department of Chemistry and the pulsed laser imaging technique developed within the Mechanical Engineering Department. This additional expertise, combined with our own background within laser imaging, has led to the development of ERD.”

Discussions have been held with a major UK airport about a potential trial to show the effectiveness of the system in a real world application – a major boost for the company according to Prof Tyrer,

“The chance to show the system actually working in a real environment would be a massive step forward. It would show definitively that ERD is a huge advancement on current technology and would attract multi-million pound orders from airports and rail links the world over.”

Emerging as a spin-out from Loughborough University in 1996, Laser Optical Engineering has enjoyed continued growth over its 14 year life and now employs a dedicated team of 10 engineers and support staff at its base near the grounds of the University.

The company specialises in the complex area of Shearography, an optical strain technique which allows non-damaging testing of large structures to be undertaken to ascertain their operational strength and identify areas of possible weakness through the use of its Strain Mapper and Vacuum Hood defect detection systems.



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The management team is considering plans to set up a daughter company that will take on the future responsibilities surrounding ERD. This potentially could create 50 jobs,

responsible for conducting further research in conjunction with the University and co-ordinating the manufacturing process.

Awards Patron Lord Stafford said: "The Awards provide an opportunity to showcase how the region has forged ahead in terms of innovation and collaboration, linking businesses with our world-class universities to encourage knowledge transfer and deliver innovative products, processes and services.

"This partnership between Laser Optical and Loughborough University is a perfect example and this project thoroughly deserves it's nomination in this year's awards."

The winners of the awards, which cover 'Innovation Achieved', 'Innovation in Development' and 'Innovation for Sustainability', will be announced at a high-profile finale on September 9th at Athena in Leicester.

Sponsors for the event include the East Midlands Development Agency, the East Midlands Universities Association, CFE, Connect Midlands, epm: technology ltd, Swindell and Pearson, Leicester and Leicestershire Leadership Group to the list of sponsors and the Enterprise Europe Network.

For further information, visit www.thelordstaffordawards.co.uk