

# Scientists develop drug detection technology

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(PhysOrg.com) -- University of Leicester researchers have combined crime research and space-age technology in ways that could lead to the quick detection of counterfeit pharmaceuticals in a black market currently worth an estimated \$40billion per year.

Professor George Fraser and Professor Martin Gill have combined their expertise of space physics and crime and security so that their Spectral ID project has been shortlisted for a Lord Stafford Award in the Innovation in Development category.

Borne out of collaboration between Perpetuity Research and Consultancy International (PRCI) - a spin out company of the University of Leicester- and the University's Space Research Centre, the project was initiated in 2005.

They identified the need for a system that could identify quickly a counterfeit drug product in the field. Existing solutions involve additional cost and detection can involve laboratory tests and other testing. The team at Spectral ID discovered a simple low cost solution that doesn't require special measures being taken by the manufacturer.

Professor Fraser, Director of the University's Space Research Centre, said: "Pharmaceutical manufacturers do not have a simple to use, speedy, non destructible method of detecting counterfeits and we have the potential to offer just that. Feedback results from the use of our device are obtained within seconds."

The use of counterfeit drugs can have serious implications for patients including loss of life. Manufacturers are also acutely aware of the negative impact a counterfeiter can have on its brand.

The technique relies on detecting the differences between the characteristics of light reflected from printed packaging. The unique light source incorporated within the system and the selection of the critical points on the packaging at which the tests are conducted provides a degree of randomness that is not known to the counterfeiter and restricts the ability to be replicated.

The technology has been developed from a spectrograph originally designed by the Space Research Centre for astronomical research and trials so far have resulted in a 100% success rate in identifying counterfeit products where the differences could not be detected by the untrained naked eye. Dr Nigel Bannister, of the University's Space Research Centre, was responsible for the Faulkes Telescope spectrometer, used to make the original tests on counterfeit goods.

Professor Gill, former Professor of Criminology at the University of Leicester and head of the University spin-out company PRCI, added: "The need to remove counterfeit drugs is greatest in the developing countries but there have been an increasing number of reports of them becoming available in the developed world. Other end users would include hospitals, pharmacies, ethical distributors, customs, police, security services and trading standards bodies.

"We have worked with two international companies who have provided us with counterfeit samples and a pharmaceutical association has agreed to work with us to further develop the product. We are receiving a very positive reaction to our approach, but we needn't stop at counterfeit drugs - the potential to redefine the business is truly enormous."

Lord Stafford, Patron of the Awards, concluded: "Counterfeit drugs are a major international problem and the need to be able to quickly detect and ultimately remove them from the supply chain, particularly in the developing world, will prevent catastrophic consequences."

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.

Provided by University of Leicester ([news](#) : [web](#))

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