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## Particle physics know-how could save lives

The discovery of life-saving new drugs could be accelerated following a project between the University of Sheffield and LabLogic Systems.

Experts at the University's Department of Physics and Astronomy have teamed-up with the Broomhill-based company for a two-year research partnership to develop a new generation of LabLogic System's BetaRAM detector, which tracks the movement of potential new pharmaceuticals through the body.

BetaRAM has been the market-leading instrument for this purpose since it was introduced 20 years ago. It uses devices called photo-multiplier tubes, which detect minute amounts of light emitted by radio-active isotopes attached to compounds in a candidate drug that researchers are studying. By detecting this light, experts are able to see the progress of a compound through an organism, or its concentration in a particular organ – which can help them ascertain whether the drug has succeeded in its intended action.

The University of Sheffield also uses photo-multiplier technology, but of a much more sophisticated kind in its research in fields such as particle physics, so the aim is to find out whether this expertise can be applied to make the BetaRAM detector more sensitive and efficient. This would in turn allow potential drugs to be investigated with greater accuracy and speed, bringing successful formulations to the patient sooner.

Tom Deakin, a post-doctoral research assistant at the University is working on the project under Dr Lee Thompson. Dr Thompson, a reader in particle physics and particle astrophysics, specialises in studying neutrinos, elusive particles which are one of the fundamental building blocks of matter. This research is carried out on the T2K experiment in Japan.

The partnership between the two organisations has been made possible by the Knowledge Transfer Programme, a national project funded by the Technology Strategy Board, which will see around £6million invested in improving the transfer of the University's engineering and physical sciences research into business and industry.



Left to right: Dr Lee Thompson, Dr Tom Deakin, Andrew Williams

Dr Lee Thompson from the Department of Physics and Astronomy at the University of Sheffield, said: "It was fascinating to discover a company so close to the University using similar technology to ourselves. The Knowledge Transfer Programme will enable us to apply our expertise in the Particle Physics group to a completely new application. The prospect of developing improved instrumentation that will have a positive effect on the pharmaceutical industry is both exciting and challenging."

LabLogic managing director Richard Brown said: "The University knows the latest in photo-multiplier technology and LabLogic has 20 years experience of how it is applied in drug research. That makes a good basis for our collaboration. The fact that we are both here in Sheffield is a happy coincidence that can only help us."

Notes for Editors: To find out more about LabLogic Systems, visit the link below.

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