

TECHNOLOGY STRATEGY BOARD

18 September 2008

NEW TECHNOLOGY WILL BRING HEALTHCARE CLOSER TO THE COMMUNITY

The Technology Strategy Board is to help fund £25 million of research and development into new technologies that will help to bring healthcare closer to the community.

The twenty-two innovative research and development projects aim to improve healthcare provision by bringing medical diagnosis, condition monitoring and care and analytical capabilities closer to patients.

The Technology Strategy Board will invest £10 million in the projects, with the balance provided by the British companies involved in the research.

Late last year the Technology Strategy Board challenged British companies and researchers working in medical science and device technology to develop innovations that could help to provide localised healthcare services, while improving patients' quality of life. Over one hundred proposals were received and the twenty two successful projects will see research and development in areas such as:

- miniature wireless handheld sensors which quickly detect the flu virus
- portable system for the diagnosis of infectious diseases in GP surgeries and other point-of-care settings
- point of care test for the rapid genetic diagnosis of haematological cancer
- novel photonics technology for use in assessment of dental disease.

Commenting on the decision to invest in these projects, the Technology Strategy Board's Chief Executive, Iain Gray, said: "Through this support, the Technology Strategy Board is helping to bring together the UK's world class expertise to research and develop innovative technologies in a key area for the UK."

"Bringing healthcare closer to the community, from hospitals to GPs' surgeries and sometimes even into the home, can be both cost effective and of enormous benefit to patients," he added. "Developing technologies to enable this to happen is a major challenge, but one which UK companies are clearly well able to meet. There are also global market opportunities for such technology which, through this research and development, UK companies will be well-placed to exploit."

The funding of these projects is the latest in a series of major investments in innovative research and development by the Technology Strategy Board. Since August, the Board has announced that it will invest over £70 million in 110 projects in cell therapy, material technologies for energy, high value manufacturing, low carbon energy technologies, advanced lighting & lasers, data protection & privacy, technologies for assisted living

and, now, healthcare technologies. Including contributions from the research councils and match funding from the private sector, this brings the total investment in new government-backed UK research and development to nearly £145 million.

Notes to Editors

1. The Technology Strategy Board is a business-led executive non-departmental public body, established by the government. Its role is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve the quality of life. It is sponsored by the Department for Innovation, Universities and Skills (DIUS). For more information please visit www.innovateuk.org.
2. The Technology Strategy Board's Collaborative Research and Development Programme is investing directly in new and emerging technologies and has been designed to help businesses work with each other or with academic partners to develop technologies that will underpin products and services of the future. Since 2004, the programme has supported about 700 projects across 40 technology areas with a combined business and government investment worth over £1 billion.
3. Details of projects currently available are:

Title: VIRASENS

Summary: VIRASENS aims to develop miniature, wireless handheld sensors which allow for the rapid detection of respiratory viruses, respiratory syncytial virus (RSV) and influenza virus (flu).

Partners: Orla Protein Technologies Ltd, Newcastle University, Health Protection Agency Newcastle Laboratory, Viratom Ltd, RTC North.

Title: Digital Implants in Orthopedic Medicine

Summary: The primary objective is to build a batch of telemetric nails for human experimental medicine, which are capable of monitoring biomechanical forces in real time during fracture healing. This will provide an innovative solution to the confirmed clinical need to improve the monitoring of fracture healing and offer a graduated scale of physical activity tailored to the patient.

Partners: Smith and Nephew UK Ltd, University College London.

Title: Intra-operative terahertz probe for breast cancer surgery

Summary: We intend to develop, test and trial a probe, based on terahertz imaging, to provide intra-operative real time diagnosis of involved margins in breast conserving surgery.

Partners: TeraView Ltd, King's College London.

Title: Point of Care Blood Cell Analysis

Summary: This project delivers new micro-technologies for Point of Care (PoC) blood cell analysis based on microfluidic cell by cell impedance spectroscopy. It will deliver technologies for low abundance cell counting, low power autonomous microfluidics and meaningful information delivery to patient and doctor.

Partners: Philips Electronics UK Ltd, University of Southampton.

Title: Raman-active Nanoparticle based bioassay for generic rapid, multiplexed diagnostic testing.

Summary: The project will utilise the unique optical properties of nanosized, Surface Enhanced Raman Scattering (SERS) particles attached to biomarker specific antibodies, to rapidly detect disease states for point-of-care (POC) applications in both the human and animal healthcare markets. The project aims to deliver a portable demonstrator using a novel hand held reader quantitatively detecting assay results from lateral flow based multiplexed assays.

Partners: National Physical Laboratory, Mologic Ltd, ReactivLab Ltd.

Title: Electrochemical sensor for MEtal Toxicity ALert (METAL)

Summary: This project aims to develop a new rapid, point-of-care diagnostic system for the measurement of metal ions after joint replacement. This will inform clinical decision making around the need for intervention in case of high levels of metal wear.

Partners: DePuy International Ltd, University of the West of England, Gwent Electronic Materials Ltd

Title: Diagnosis and treatment of haematological cancers with a single, point of care microarray test (Haemarray).

Summary: This two year project will deliver a prototype point of care test for rapid genetic diagnosis of haematological cancer. The test, the first of its kind, will eliminate the current need for specialist NHS centers to perform complex testing with multiple technologies, while increasing the power of diagnosis, reducing cost to the UK, and simplifying routine use.

Partners: BlueGnome Ltd, LGC Limited.

Title: PRADA (Portable Rapid Automated DNA Analysis)

Summary: The objective is the design and development of a portable, rapid, automated, gold-standard system for the diagnosis of infectious diseases in GP surgeries and other decentralised point-of-care settings.

Partners: Enigma Diagnostics Limited, University of Nottingham, Nottingham Trent University.

Title: Magnetic Resonance Guided Therapy of Cardiac Arrhythmia (MaRGiTA)

Summary: This project will develop novel devices and imaging technology for minimal-invasive treatment of cardiac arrhythmias, a major healthcare problem affecting 5.3% of the UK population.

Partners: Philips Healthcare, King's College London.

Title: Smart Distress Monitor (SDM)

Summary: The objectives of this project are (a) to develop a reliable inactivity/fall sensor, based on the existing Irisys infrared technology, which will enable an affordable and accessible automatic monitoring and alert system to detect and locate vulnerable people when in need of assistance, and (b) to develop an intelligent home hub, which will interpret inputs from a range of sensors (inactivity, environmental etc.) and communicate an informative alert to a carer for appropriate action.

Partners: Infrared Integrated Systems Ltd, Manchester Metropolitan University.

Title: Development of novel photonics based medical device for assessment of dental disease

Summary: This project will further develop a novel photonics technology for use in assessment of dental disease. This technology specifically captures a biomarker of dental decay and can determine disease activity status.

Partners: LUX Innovate Limited, University of Dundee.

Title: Portable Direct Immunoassay Diagnosis Devices for Animals and Humans (PDIDDAH)

Summary: Stratophase and its consortium partners will develop a direct immunoassay system for detection of foot and mouth disease which will have higher sensitivity than the antibody based lateral flow tests used at present. This will allow earlier detection of infection and avoid the need for time consuming polymerase chain reaction (PCR) lab tests.

Partners: Stratophase Ltd, University of Cambridge, Bristol Industrial and Research Associates Limited, Chelsea Technologies Group.

Title: Development of point-of-care sensors to improve drug delivery

Summary: The project aims to develop novel disposable sensors for the real-time monitoring of clinically important therapeutic drugs, in particular antibiotics, which currently cannot be measured at the Point-of-Care. Providing clinical information, such as drug concentrations, in real time for intensive care patients has the potential to save lives and significantly reduce the cost of care.

Partners: Sphere Medical Limited, Cranfield University.

Title: SentiMag: The safe and convenient alternative for cancer surgery

Summary: The partners will further develop SentiMag - a surgical probe for cancer treatment – making it a truly portable integrated-circuit based instrument, easy to use and ready for clinical trials in both Europe and the United States.

Partners: Endomagnetics Ltd, Integrated Technologies Ltd.

Title: Novel Tunable Laser Spectroscopy Instrumentation for Breath Analysis (TULSA)

Summary: The project aims to realise new minimally invasive medical instrumentation using advanced laser technology for initial diagnosis and subsequent monitoring of treatments within the field of psychiatric care.

Partners: M-Squared Lasers Ltd, University of St Andrews, Aros Developments Ltd.

Title: Microsystems based self-regulating diagnostics

Summary: This project will develop core enabling technologies for delivering a new transdermal patch system capable of automatic patient diagnosis and responsive drug delivery. The patch system will be able to extract micro-litres of interstitial fluid from the skin via its pores for non-invasive diagnosis and use that information for controlled self-regulating drug release.

Partners: Nemauro Pharma Ltd, University of Nottingham, Datalink Electronics Ltd

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