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## **SCIENTISTS SCOOP TOP PRIZE FOR LIGHT-BASED DETECTION TECHNOLOGY**

CyMap, an innovative lens-free microscope developed by Cancer Research UK scientists and members of the Optical Biochips Consortium\*, has won first prize in the Medical and Healthcare category of The Engineer's Technology and Innovation Awards as well as the overall Grand Prix prize.

The awards recognise and honour innovation in the UK resulting from the collaboration between academia and industry.

The technology could be developed into a compact cell imaging system for use in research laboratories. It also has the potential for use in medical diagnostics systems to quantify and analyse medical samples in hospitals, doctors' surgeries and clinical laboratories.

Instead of using optical lenses, the CyMap technology employs light to illuminate 'objects' such as cells or pathogens in a sample which create light diffraction and interference patterns that can be recorded by a simple optical detector.

This enables scientists to count the number of cells in a sample, and also to monitor changes over time, such as their location, movement and division. Since the system contains no physical lenses, there is no requirement for focusing or other critical adjustments.

The CyMap technology is now available to be licensed through Cancer Research Technology (CRT) – Cancer Research UK's commercialisation and development arm. CRT is also working with The Technology Partnership Plc (TTP) to identify partners to develop it further.

Paul Galluzzo, consultant at The Technology Partnership Plc, said: "CyMap can transform existing systems by enabling imaging capability where it was previously too expensive, and open the door to the creation of exciting new stand-alone devices."

Research on the technology was led by Professor Borivoj Vojnovic at the Cancer Research UK/MRC Gray Institute for Radiation Oncology and Biology at the University of Oxford, in collaboration with a team lead by Professor Paul Smith at Cardiff University and scientists at Bangor University.

Professor Gillies McKenna, director of the Gray Institute, said: "The lens-free microscope is a technological breakthrough that is likely to have wide application in medical research and diagnostics. Whilst traditional lens-based microscopes have become ever more sophisticated in helping doctors and scientists to understand changes that occur in cells, sophisticated forms of the instruments tend to be complicated to use, bulky and expensive. This CyMap lens-free microscope is simple, robust and cheap."

The technology was developed in the research laboratory to monitor the growth and movement of cells, such as cancer cells, but it can also be used in the diagnostic setting, for example to count red and white blood cells when managing conditions such as anaemia, leukaemia or HIV. It is potentially applicable to other areas of health science such as stem cell research and tissue engineering as well.

Dr Phil L'Huillier, CRT's director of business management said: "This award recognises the innovation and potential in the technology behind this compact device. We believe it can be used to cast light on key biological processes, or to develop new hand-held diagnostic devices. Although primarily designed to monitor the characteristics of cancer cells, the device has strong potential in a wide range of other health science fields."

Ends

**For media enquiries please contact the Cancer Research Technology press office on 020 7061 8309 or, out-of-hours, the duty press officer on 07050 264 059.**

**Notes to Editors:**

\*This Consortium was backed by funding from Research Councils UK, which includes the Biotechnology and Biological Science Research Council (BBSRC), the Engineering Physical Sciences Research Council (EPSRC) and the Medical Research Council (MRC), with the aim of developing optical biochips for use in cell-based drug discovery, point-of-care diagnostic applications, and veterinary diagnostics. One of the outcomes of this funding was the CyMap technology.

The 2009 Engineer awards were held at The Royal Society on Friday 4<sup>th</sup> December. You can read more about the event here: <http://www.theengineerawards.co.uk/home.aspx>

CRT is currently working with The Technology Partnership Plc to find suitable development partners. You can read the announcement for this agreement here:

<http://www.cancertechnology.co.uk/pages/press/24November2008-CyMap.html>

**About Cancer Research Technology**

Cancer Research Technology Limited ([CRT](#)) is a specialist commercialisation and development company, which aims to develop new discoveries in cancer research for the benefit of cancer patients. CRT works closely with leading international cancer scientists and their institutes to protect intellectual property arising from their research and to establish links with commercial partners. CRT facilitates the discovery, development and marketing of new cancer therapeutics, vaccines, diagnostics and enabling technologies. CRT is wholly owned by Cancer Research UK, the largest independent funder of cancer research in the world.

**About Cancer Research UK**

- Cancer Research UK is the world's leading charity dedicated to beating cancer through research.
- The charity's groundbreaking work into the prevention, diagnosis and treatment of cancer has helped save millions of lives. This work is funded entirely by the public.
- Cancer Research UK has been at the heart of the progress that has already seen survival rates double in the last thirty years.
- Cancer Research UK supports research into all aspects of cancer through the work of more than 4,800 scientists, doctors and nurses.
- Together with its partners and supporters, Cancer Research UK's vision is to beat cancer.



For further information about Cancer Research UK's work or to find out how to support the charity, please call 020 7121 6699 or visit [www.cancerresearchuk.org](http://www.cancerresearchuk.org)

### **The Technology Partnership plc (TTP)**

TTP is Europe's leading independent technology and product development company and creates new business based on advances in technology. TTP specialises in medical devices, instrumentation, consumer and industrial products, digital printing, communications, cleantech and security systems. Established in 1987, TTP is headquartered in Melbourn (near Cambridge, UK). For more information visit [www.ttp.com](http://www.ttp.com), or contact [press@ttp.com](mailto:press@ttp.com)

### **About the Gray Institute for Radiation Oncology and Biology**

The Gray Institute for Radiation Oncology and Biology Gray Institute for Radiation Oncology and Biology has been created to be the world's largest and most comprehensive centre for research in radiation oncology and biology. Our focus is aspects of radiobiology that could yield new advances in radiation treatment of patients with cancer. The unit is collaboratively supported by Cancer Research UK (CRUK) and the Medical Research Council (MRC), and is directed by Professor Gillies McKenna, who is chair of radiation oncology and biology.

### **About Oxford University's Medical Sciences Division**

Oxford University's Medical Sciences Division is one of the largest biomedical research centres in Europe. It represents almost one-third of Oxford University's income and expenditure, and two-thirds of its external research income. Oxford's world-renowned global health programme is a leader in the fight against infectious diseases (such as malaria, HIV/AIDS, tuberculosis and avian flu) and other prevalent diseases (such as cancer, stroke, heart disease and diabetes). Key to its success is a long-standing network of dedicated Wellcome Trust-funded research units in Asia (Thailand, Laos and Vietnam) and Kenya, and work at the MRC Unit in The Gambia. Long-term studies of patients around the world are supported by basic science at Oxford and have led to many exciting developments, including potential vaccines for tuberculosis, malaria and HIV, which are in clinical trials.