

# GIBSON INDEX NEWSLETTER – NOVEMBER 2010

Your Monthly e-Newsletter on British Enterprise and Innovation

## Welcome to the UK's most comprehensive and best-read Newsletter on Small Technology Companies, Academic Enterprise and Latest Innovation

As the UK Government begins to realize that small technology firms will play a key role in reviving the economy, and that bloated property and finance sectors are not the answer – regular readers will celebrate the achievements of some of our favourite companies: new contracts for **Kilfrost**, the purchase of **Biocompatibles** by **BTG**, **Cambridge Pixel Ltd**, and **Professor Will Zimmerman's** fascinating innovation at the **University of Sheffield** ([click to jump to story](#)). Your comments and contributions are always welcome.

As the arguments rage over restrictions on visas for scientists, a closer look at Gibson Index's Top 30 University spinouts reveals that 16 were started by a foreign-born scientist or whose key technology was devised by a foreign-born CTO. It is not the front-rank scientists with a long track record of publications who fear any visa squeeze, it is those multi-faceted scientists who came to the UK with the imagination and experience to foresee a commercial opportunity as a result of their research here – and have the guts to start a company – who may feel the pinch.

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The Newsletter is compiled and edited by **Marcus Gibson**, former *Financial Times* technology correspondent, who has been covering enterprise and innovation for more than 20 years. He believes that UK technology SMEs form one of the most important 'Jewels in the Crown' of the British economy. He was first to spot and profile key fast-growth companies such as **ARC Cores Ltd**, back in 1999, or **Speedy Hire** and **Avanti Communications** – and more recent ones such as **Xyratex**, **Marine Current Turbines**, **Nanosight**, and **ITM Power**.

The Newsletter aims to highlight developments in between 60-100 companies each month. It is derived from the wide-ranging news-gathering operation that produces the **Gibson Index SME database**, which now contains profiles on more than 43,000 UK-based technology SMEs, including 800 University spinouts, and every firm to have won a DTI Smart Award, Grant for R&D, Queen's Award for Enterprise, KTP/TCS award and Technology Strategy Board grant.

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If you wish to submit a story – please email it to: [news@gibson-news.com](mailto:news@gibson-news.com).

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## COMPANY OF THE MONTH

### 'James Bond' surveillance recorders perfected by iOptec Ltd in Wales

The firm, which produces digital video recorders that feature HD digital video recording (HD-DVR) along with still-camera capabilities, is currently seeking £150,000 of early stage capital.

With a 120-degree field of view lens, they record either intermittently or non-stop in full 1920x1080 high-definition at 30 images per second. The recorders have a unique 'one-touch' recording system you will never miss that critical moment. iOPTEC has two main product lines; P-313 and P-401 'Cuckoo-Birdseye'. The P-313 is a body-worn evidence recorder with design features decided from the inputs of a number of UK police officers.

Tests under poor lighting conditions have produced clear images of faces and vehicle registration plates at 12 metres while full video streaming at 30 IPS, and at closer to 20 metres in snapshot mode. The P-401 system can be used for many HD surveillance applications and attaches to the inside of a vehicle windscreen, fitted behind the rear-view mirror. The management team has in-depth expertise in the high definition video (HD) acquisition and storage industry.

In particular, **Lee Tracey**, MD and chief engineer, has a lifetime in law enforcement and consequently the initial product range has been targeted towards this market, focusing on the UK police, military and local governments.

iOPTEC is now seeking £150,000 for completion of main-line design and development of first pre-production sample units of the company's prime product the P-313 law enforcement and military body-worn evidence recorder, and a marketing attack on overseas sales potential.

*Comment: It is time the company started making recorders for ordinary motorists for the verification of vehicle accidents.*

Contact: [www.ioptec.com](http://www.ioptec.com)

## SME NEWS – ENGINEERING, ELECTRONICS, TELECOMS

### Oxford Cryosystems bought out by management following a £500,000 loan

Oxford Cryosystems, which began business in a basement room at the **University of Oxford** in 1985, has grown to be a market leader in developing applications for low temperature devices used in x-ray crystallography.

Crystallography helps scientists determine the arrangement of atoms and the structure of a material, its chemical binds and purity and its applications include material engineering, biology, chemistry and physics.

MD **Richard Glazer** is leading the MBO from parent company **Bionostics Ltd**, which acquired the business originally in 2008. The bank says it should "ensure a stable future for the business and its staff and to allow the team to invest in new and existing products and services".

Customers of Oxford Cryosystems include universities, colleges, government-funded research facilities, hospitals and private research institutes worldwide.

The business originated from the work of **John Cosier** and **Professor Mike Glazer** at the University of Oxford where they were based in the Department of Physics at the **Clarendon Laboratory**.

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Its initial product was a nitrogen gas low temperature system for x-ray diffraction called the Cryostream Cooler. Sales of the product rose and in 1993, Cosier left his job at the university and moved the business to its current location at Blenheim Office Park, Long Hanborough.

The range of products now includes: Cryostream – a liquid nitrogen based open flow nitrogen cooler; Cobra – a nitrogen gas open-flow system using a mechanical cooler; DTC – a mechanical cooler targeted at the “desktop” chemical crystallography market; HeliX – a helium or nitrogen gas cooling system, safer than liquid; PheniX – a helium cryostat with fast cool down time and high temperature stability; and Crystallographica software – licensed to a leading x-ray diffraction manufacturer.

Contact: [www.oxfordcryosystems.co.uk](http://www.oxfordcryosystems.co.uk)

### **New contracts help anti-counterfeiting group OpSec Security to increase sales**

Revenues have reached almost £20m and push its adjusted operating profits through the £1m barrier during the first half of its year. The Washington-based business, which produces systems and technologies to guard against fraud, said revenues rose to £19.7m in the six months to the end of September and adjusted operating profits increased to £1.3m from £645,000.

But its pre-tax losses widened to £394,000 from £337,000. New business in the Banknote and High Security Document division helped to increase their revenues by 77% while additional Brand Protection contracts contributed to its 23% sales rise.

Chairman **David Mahony** said: “In addition, ID Solutions’ traditional bias towards a stronger second half would be reinforced by the successful conversion of a proportion of its significant sales pipeline.

“Further progress on operational performance is expected as we continue to implement a number of cost saving and efficiency measures throughout the group.

“We remain committed to accelerating growth and further improving operating performance by reinvesting in the group’s facilities and capabilities and will continue to consider small add on acquisitions which support our existing market sectors.”

Contact: [www.opsecsecurity.com](http://www.opsecsecurity.com)

### **Plessey Semicon to pursue ‘breakthrough Electric Potential Sensor technology’**

The company, together with the **University of Sussex**, has announced an important and disruptive technology – called the Electric Potential Sensor (EPS).

This is a new area of sensor technology that measures changes in an electric field in a similar way to a magnetometer detecting changes in a magnetic field. The sensor, which requires no physical or resistive contact to make measurements, will enable innovative new products to be made such as medical scanners that are simply held close to a patient’s chest to obtain a detailed ECG reading or devices that can ‘see’ through walls.

**Professor Robert Prance** of the University of Sussex, said “We created this technology initially as a non-invasive non-contact sensor for measurements in fundamental physics research. However, we quickly realised the many important applications for which this technology could be utilised.

The **Research Councils UK Basic Technology** programme allowed them to develop a generic Electric Potential Sensor and we have been able to demonstrate its application in a number of areas where the non-contact detection of electric fields can be used to deliver new innovative solutions and products. For example, these include medical diagnosis and imaging, security, and the human-machine interface.

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**Dr Keith Strickland**, Technology Director for Plessey Semiconductors, said, "The EPS technology created by Professor Prance's team at the University of Sussex is a significant innovation that will have a wide-ranging disruptive impact in the sensor market. In conjunction with the University of Sussex, Plessey will be developing an exciting range of EPS sensors utilising our in-house expertise in semiconductor process technology and design. In particular, our expertise with CMOS image sensors will enable us create very large chips with arrays of EPS sensors."

*Comment: One more example of how a single academic can change a market.*

Contact: [www.plesseysemiconductors.com](http://www.plesseysemiconductors.com)

### **Petapath software aims to maximize performance of existing chip systems**

Bristol-based Petapath is a supplier of heterogeneous computing solutions in the high-performance computing sector. Its expertise and technology dramatically increases computing performance with only a moderate increase in power dissipation.

Petapath's software technology can be applied to any application using high-performance computing, from banking and entertainment, to scientific and mathematical modelling. Petapath's technology is a cost-effective, energy-efficient way of increasing computer performance into the petaflop/s regime.

In October 2009 start-up Petapath worked with industry leaders **HP** and **SGI** to deliver two prototype petaflop/s high-performance computing systems as part of the pan-European Partnership for Advanced Computing in Europe (**PRACE**).

Funded by the EU's 7th Framework, PRACE brings together partners from 20 countries and involves 91% of Europe's high performance computing (HPC) power. The two prototype petaflop/s systems use Petapath's accelerator technology and are based at the Netherlands Computing Facility in Amsterdam and the **CINES** supercomputing centre in Montpellier, France.

At the **Netherlands Computing Facility** in Amsterdam, Petapath and HP delivered a power-efficient system, built on eight HP SL170 servers and next generation accelerator prototypes. The system achieves a peak performance of 10 teraflop/s double precision, which is equivalent to more than 60 conventional servers.

Contact: [www.petapath.com](http://www.petapath.com)

### **Defence technology firm Qinetiq sticks to its forecast for full-year profits**

In spite of ongoing fears over the impact of Government spending cuts the group, which has around 6,000 workers in the UK, is facing a major spending clampdown by one of its biggest clients, the **Ministry of Defence**.

It said its own self-help plan was helping to refocus the business and cut debt, but added that it was too early to assess the full impact of defence spending reviews in the US and the UK.

The group, which supplies technology such as **Talon** robots used for bomb disposal, posted pre-tax profits of £51.6m in the six months to September 3, up from £45.1m a year earlier after a six per cent rise in revenues.

Shares jumped 10 per cent after the better-than-expected update, despite costs relating to an ongoing redundancy and restructuring programme resulting in bottom-line losses of £37.6m.

Chief executive **Leo Quinn** said net debt fell to £327m from £452.3m a year ago in a yardstick of the company's rebuilding efforts. He added: "Our goal is to become more competitive and to use our deep

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relationships with customers to help them find solutions to the challenges they face.” While the early retirement of the **Harrier** fleet and cancellation of the **Nimrod MRA4** will have an impact on UK services revenues, Qinetiq said the Government’s plans to invest in cyber security were a positive for the group.

It added: “Reductions in MoD and agency personnel provide an opportunity for Qinetiq, as a trusted adviser, to demonstrate how more can be delivered by spending less.”

*Comment: Leo Quinn will have a tough time mid-term; time to focus on IT security?*

Contact: [www.qinetiq.com](http://www.qinetiq.com)

### **UK firm to launch world’s first automated vessel identification, tracking system**

**SRT Marine Technology** is the world’s leading supplier of marine automatic identification system (AIS) technology, products and solutions.

In recent weeks it has secured £2.5m via a share placing to accelerate the launch of two products – next generation boat identification system and a new man-overboard device.

At the same time a number of the large shareholders in the company, including chairman **Simon Rogers**, have agreed to sell stock to satisfy institutional demand.

Chief executive **Simon Tucker** said: “We are delighted to have secured this funding and welcome some new and significant names to our share register. The additional funding will enable us to capitalise further on the multiple opportunities we see developing in the global automated identification systems and vessel tracking markets. Specifically, the funds will enable us to accelerate our planned product developments and launch our new identifier and man over board products in 2011, instead of 2012 as originally planned and expand our sales activities across all markets.”

SRT has carved itself a potentially lucrative niche with automatic identification systems (AIS) used in boats. The AIS is like an electronic name tag: it shows the name of the vessel and its location. The technology behind it brings together VHF radio, GPS and the software used in mobile telephony.

Contact: [www.srt-marine.com](http://www.srt-marine.com)

### **Surrey University and Torr Scientific join in new KTP project**

The **Technology Strategy Board** (TSB) has agreed to support a two-year Knowledge Transfer Partnership (KTP) between Surrey University and Torr Scientific, a manufacturer of X-ray and vacuum components used in XPS systems.

The funding will be used to employ a KTP associate to develop and optimise the use of a novel X-ray monochromator based on Torr Scientific’s diamond anode technology.

The KTP, which aims to help businesses improve their competitiveness and productivity through better use of the knowledge, technology and skills that reside within the UK knowledge base, is funded by the TSB, along with other government research and development agencies. The total value of the project is £136,000.

Contact: [www.torrscientific.co.uk](http://www.torrscientific.co.uk)

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## UK Coal appoints Jonson Cox, former head of Anglian Water, as new chairman

The company announced in July that **David Jones** and **Jon Lloyd** would step down as chairman and chief executive, ahead of the company being split into its coal assets and property operations.

The group is appointing an executive chairman, who would be accountable to the managing directors of the two businesses, rather than being led by a non-executive chairman and chief executive.

UK Coal has endured a disastrous few years, leading to the collapse of its share price from a high of 513 pence in 2007 to just 37 this week. However, the group said in October that third quarter coal production had risen by 22 percent. The shares rose 5 percent following the news of Mr Cox's appointment.

UK Coal's new executive chairman **Jonson Cox** led the **Anglian Water Group** recovery, including at its subsidiaries Anglian Water, Morrison and AWG Property, both as a public company and after its change of ownership in December 2006. Under his leadership, AWG experienced a three-fold increase in share price while a listed company from 2004 to 2006.

Heavily-indebted UK Coal suffered from production problems at its deep mines **Kellingley**, **Thoresby** and **Daw Mill**. Mr Cox, who led Anglian Water for six years, spent £37,600 buying 100,000 shares in UK Coal after his appointment was announced.

UK Coal cut its estimate for surface mines production to about 1.5 million tonnes, from 1.6 million previously, due to a delay in the opening of Huntington Lane. Debt at the end of September was about \$265 million, up from \$225 million at the end of September 2009. It expects its debt to be reduced by the end of the year helped by positive operating profit in the fourth quarter and proceeds from the sale of surplus agricultural land.

*Comment: Is this the start of the turnaround?*

Contact: [www.ukcoal.com](http://www.ukcoal.com)

## Russian company Marussia Motors buys a chunk of F1 team Virgin Racing

Marussia Motors is the manufacturer of the first Russian supercar and has been a partner of Virgin Racing since the F1 Team was launched in December 2009. From the 2011 season the team will be known as **Marussia Virgin Racing**. The team will compete in the FIA Formula One World Championship by that name including racing at the new venue in Sochi, Russia in 2014.

The team was formed when Rotherham's Manor Grand Prix in Dinnington teamed up with **Sir Richard Branson's** Virgin brand. LDC, a subsidiary of the **Lloyds Banking Group** added Manor to their investment portfolio in 2009.

**Graeme Lowdon**, chief executive of Virgin Racing said that the investment by Marussia Motors will enable the team to plan more ambitiously for the longer term. It has been announced that there will be no significant change to the team's organisational structure as it prepares for its second season in F1.

The team also reassured fans via Twitter that the team will remain based in Dinnington, Sheffield, in South Yorkshire. Carl Wormald, Director at LDC, said the partnership with Marussia was in line with the long term strategy to establish Virgin Racing as a competitive racing team and a successful commercial business.

Contact: [www.virginracing.com](http://www.virginracing.com) – [www.marussiamotors.ru/en](http://www.marussiamotors.ru/en)

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## **AES Engineering acquires Bedford-based competitor, Ceetak Engineering Group**

The transaction was completed in September after the shareholders of Ceetak Engineering accepted an offer from AES to purchase all of the shares in Ceetak and its subsidiary companies, including **Pump Support Systems Ltd**.

**Ian Wallace**, MD at Ceetak, will continue to head up the business which employs in the region of 35 staff members around the UK. He has also joined the Board of AESSEAL plc.

The Templeborough company is the world's fourth largest mechanical seal business. It specialises in the design and manufacture of mechanical seals, bearing protectors and environmental control systems for process equipment, maximising reliability and protecting the environment from leakage.

The new division will be rebranded **AESPUMP** and specialise in the total management and support of pumps and other rotating equipment installed on applications ranging from the chemical and pharmaceutical industries to food and waste management.

AES Engineering is one of the major specialists in the design and manufacture of mechanical seals and support systems. Its significant growth has enabled AES to become the only major international new entrant to the mechanical seals industry in the last 20 years.

Contact: [www.aesseal.co.uk](http://www.aesseal.co.uk)

## **Toby Churchill declares record results and opens its doors to visitors**

Maker of award-winning communication aids, Toby Churchill Ltd, based in Over, Cambridgeshire, now has sales of over £4m a year for the first time in the company's 37-year history.

Its text-to-speech aids offer a wide range of functions suitable for people of all ages and across a wide range of disabilities including those who have never developed speech or who have lost it as a result of illness or trauma.

The last year has also seen the production of its latest text-to-speech aid – the Lightwriter SL40 – in 13 languages. Chairman **David Collison** said: "We welcome our users, their families and speech & language therapists to our open day so that they could see at first hand our very unique company. Not only do we manufacture here, we also have our own research and development team which works to design communication aids that meet their needs."

The Lightwriter is now being used across Europe, the United States and Australia and is proving popular with users and therapists." Toby Churchill Ltd is the only UK company of its kind to have a dedicated development team producing devices designed specifically for people without speech.

The company has a five-year development plan to produce new products to bring communication to those who cannot speak. During its 37-year history, Toby Churchill Ltd has supplied Lightwriters to over 100,000 people across the world; people who would otherwise not be able to communicate. The company currently exports to 23 countries worldwide and employs 35 people at its Over headquarters.

Contact: [www.toby-churchill.com](http://www.toby-churchill.com)

## **Team Telecom Group gains Sir David Brown as Non-Executive Director**

Formerly chairman of **Motorola Ltd** from 1997 to 2008, Sir David brings a wealth of experience to the new role, which is designed to further strengthen TTG's position in the telecommunications market.

TTG comprises four complementary businesses; radio communications specialists **Team Simoco** based

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in Derby and **ComGroup** in Victoria, Australia, which form Simoco Group; **AirRadio** in West Drayton, Middlesex; and **Indigo Telecom Group** in Monmouthshire, Wales.

Simoco Group companies Team Simoco and ComGroup operate in the specialist Professional Mobile Radio (PMR) communications market, supplying mission critical systems and radio terminals for use by the emergency services, utilities companies, transportation and other sectors where cellular phone networks are inappropriate.

AirRadio provides communications systems at airports to clients including British Airways, Servisair and BMI. Indigo provides a range of engineering services covering installation, commissioning, 24x7 first line maintenance, network operations and project management to the major telecommunications equipment manufacturers and telecommunications network operators across the UK and mainland Europe.

Contact: [www.teamtelecomgroup.com](http://www.teamtelecomgroup.com)

### **Cosworth wins a contract to supply parts destined for the A350 and Boeing 787**

**Cosworth Group** has won an eight-year, multi-million pound partnership contract to produce components for the engine control system of the **Rolls-Royce** Trent 1000 and XWB engines for the **Boeing** 787 and **Airbus** A350.

The agreement, with Aero Engine Controls, a Rolls-Royce plc and **Goodrich Corporation** joint venture, will see Cosworth Group manufacture the main casing for the Trent 1000 FADEC system.

This complex component will be machined from a 100kg single solid piece of aluminium through a process which will take 22 hours and will produce a final item of just 7kg. This computer controlled process will ensure that the casing is supremely strong whilst lightweight.

The UK-headquartered business, which still enjoys consistent double-digit revenue growth, is drawing on processes perfected in Formula One to deliver similar services to a range of industry sectors. Cosworth Group sales director **Jog Lall** said being chosen by Aero Engine Controls was a proud moment for Cosworth.

He said "Aero Engine Controls is effectively making Cosworth an extension of their existing manufacturing facilities. Cosworth's aerospace sector is a growing part of the business, and this partnership deal is symbolic of the expansion we expect to continue."

Cosworth Group CEO **Tim Routsis** said the contract was living proof of the success the company's diversification strategy was able to deliver. "While the UK focuses on avoiding a double-dip recession, this contract further establishes Cosworth's position within the manufacturing sector," he said. "Cosworth's capability to deliver genuine precision is helping us continue to blaze the trail for the manufacturing sector."

Contact: [www.cosworth.com](http://www.cosworth.com)

### **Two entrepreneurs unveil plans to create a £60m-turnover engineering group**

**Entologi**, which has its headquarters in Congleton, Cheshire, has so far completed three takeovers and founders **Carl Krajewski**, 44, and **Neville Buckley**, 53, expect to complete a further two deals over the next four months.

Their latest acquisition is the trading arm of Irlam-based **Robotic Technology Systems**, which employs 102 staff and turns over £11m. Entologi has bought it for £600,000. RTS makes robots for the pharmaceutical and packaging sectors.

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Earlier this year, Entologi bought Mr Krajewski's distribution company **HMK** – which was founded by his mother Heather – and **GenTec**, a business owned by Mr Buckley. HMK employs 28 staff at its Congleton HQ and turns over £6.5m supplying drive motors and controls for machinery.

GenTec, which is based in High Wycombe, is a design and project management business serving sectors such as pharmaceuticals and food and drinks. It has revenues of £2m and nine staff.

RTS already uses technology, products and services from the other companies in the Entologi group.

**Gary Walsh**, MD of RTS, said the business has a strong order book and excellent growth prospects. "We now have the luxury of focusing on our core strengths without the distractions that inevitably accompany the management of a standalone public limited company," he added.

Mr Krajewski, who is Entologi's chief executive, said: "The engineering technology sector has been neglected for some time and we see an exciting opportunity to create a larger entity in this field operating in various markets."

Entologi expects to be making profits of around £6m on turnover of £60m. One takeover is due to be completed by the end of the year and a second by the spring, backed by venture capital, the duo added.

Contact: [www.entologi.com](http://www.entologi.com)

### **Castle Donington manufacturer Norton set a world land speed record**

Recently, its Norton 961 Commando Special Edition clocked an average top speed of 129.191mph at Bonneville Salt Flats, Utah. The bike claimed the record for the 1000cc Production Push-rod engine class at the annual BUB Motorcycle Speed Trials. The Norton eclipsed the previous record of 126.398mph – set last year by a **Buell** bike.

Veteran motorcycle racing journalist **Sir Alan Cathcart** rode the Norton. Sir Alan said that achieving the record on the Norton 961 Commando SE was special because the machine was no different to a road bike.

Sir Alan said: "It's nice to put Norton back in the record books for the first time in so many years. The fact that we did it on a stock bike exactly as delivered to any Norton customer makes it all the sweeter."

The Norton name was brought back to Britain from the US in October, 2008. **Stuart Garner**, a Derbyshire businessman, bought the 112-year-old firm from American **Ollie Curme**, who acquired the firm in 1992. He has since invested millions of pounds in the venture and taken on dozens of people at the Castle Donington factory in the past 18 months. This year, the bikes started rolling off the production line.

The firm, which employs just over 50 people, aims to treble its factory to 30,000 sq ft over the next few years and start exporting bikes. Mr Garner chose Donington Park for his factory in order to use the track to test his bikes. Norton may enter MotoGP in 2012, when 1000cc bikes will once again be eligible.

Contact: [www.nortonmotorcycles.com](http://www.nortonmotorcycles.com)

### **Durham technology firm Kromek set to sell its explosives scanners**

The County Durham firm has spent years developing devices which use X-rays to reveal whether a bottle of liquid in a traveller's luggage is gin, mineral water or any one of a number of high explosives. It even checks barcodes to see whether the contents match the label.

The technology will not only help to prevent terrorists blowing up airlines but mean an end to passengers facing delays and having to ditch their drinks and shampoo before going through airport security gates.

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Kromek is one of few companies in the world working on the technology, the approval by the EU to sell its Bottle Scanner machine is an important step towards winning contracts worth millions of pounds.

Chief executive **Arnab Basu** said: "It's a significant milestone for Kromek as the approved listing is vindication that colour X-ray detection has been proven. The next generation of X-ray technology has arrived, with a market ready machine that can detect liquid threats. Kromek's revolutionary technology signals a new era in colour X-ray detection, and a market-changing development in aviation security. The company is introducing to the sector a truly pioneering form of detection, which has been likened to the advent of colour TV, from black and white, in terms of significance."

The ban on liquids in hand luggage was imposed in August 2006 after police uncovered a plot to smuggle explosives on to planes using drinks containers. According to EU plans, by April 2011 airports must have appropriate devices in place to scan liquids bought in transit. By April 2013, the ban on liquids on flights across Europe will be lifted.

The **Durham University** spin-out has tendered for contracts in the Middle East and Far East and is now preparing to tender for contracts in Europe which it hopes will boost its revenues, currently less than £1m, by the millions and Basu said is certain will mean it makes its first profit within two years.

The firm recently won a £2.4m contract with the US government for equipment which detects emissions from nuclear material.

Contact: [www.kromek.com](http://www.kromek.com)

#### **De-icer specialist Kilfrost sees its revenues jump to more than £60m a year ago**

It opened an office in Beijing in recent months, and the 76-year-old company looks to step up sales of products used to clear railways, airports and aeroplanes in a number of foreign markets, but especially China and North America.

Chief executive **Gary Lydiate** says that the growing reputation of its products across the Atlantic, aided by a sales drive, is expected to see it push American revenues from £15m to £30m in the next three years. "This is a huge market for us and we are aiming to strongly grow our market share here from 15% to 30%," he said, speaking from the firm's Miami office. China is just massive for us. They are building 120 airports in the next five years. We are the only foreign company in our field there and although there are two indigenous firms our products are known globally."

It is not only making its highly rated road de-icing products available to the public for the first time but is developing new products which Lydiate says will fuel strong further growth when they are launched next year.

Kilfrost has developed its innovative *TDIce* product range to help protect rolling stock from frost, snow and ice, and to ensure its effective operation and maintenance in even the harshest of conditions.

"If it is going to be a long, cold winter and that is good news for the workers at our factory in Haltwhistle back in Northumberland," added Lydiate.

*Comment: If only the UK economy had 1000 more of these tough-minded, go-getting types of companies.*

Contact: [www.kilfrost.com](http://www.kilfrost.com)

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## SMALL COMPANY NEWS – CHEMICALS, MATERIALS & ENVIRONMENT

### Manchester technology company Nanoco plc expects profits ‘within two years’

Chief executive **Michael Edelman** made his prediction on the day he was named the UK’s cleantech entrepreneur of the year – he took the accolade in the **Ernst & Young Entrepreneur of the Year** awards.

Nanoco, which yesterday announced results from its first full year as a listed company, develops and manufactures quantum dots – fluorescent nano-sized particles of semiconductor material which emit light and are used in products such as TVs, computers and mobile displays.

The firm said it has achieved key milestone payments in all its joint development agreements and is preparing for mass production of quantum dots at its Manchester facility and a new plant in Runcorn. It has also signed its first deal in the solar sector.

Nanoco has developed a method of producing quantum dots without using heavy metals, banned from products in Europe, and that improves display colours.

It has also sealed a deal with **Tokyo Electron**, which will see it developing a way of producing cheaper solar cells. Nanoco announced revenues of £2.94m in the year to July 31, up from £1.99m, while pre-tax losses were up from £780,000 to £1.37m as it ramped up spending, partly through recruitment to take its workforce to nearly 50.

Contact: [www.nanocotechnologies.com](http://www.nanocotechnologies.com)

### Oil Consultants Ltd win new bout of contracts across the globe

An oil contracting business expects to treble in size and move into new offices over the next three years after securing a raft of contracts in Africa and the Middle East.

Washington-based **Oil Consultants** works with oil exploration companies around the world to provide skilled technicians for their activities, with more than 150 self-employed experts on its books.

It also recently received a **Queen’s Award for Enterprise** for the huge increase in its export activities, which it said had directly led to an increase in business.

MD Mark Cooper said: “We are quite a small company and to receive an internationally respected award such as this is fantastic. It has really impressed our clients around the world, who have responded by giving us with extra contracts and our engineers and technicians extra work. We are aiming to treble the size of the business in all areas with the help of a number of new contracts overseas, which should also see us add additional office space as well as extra jobs at our North East nerve centre.”

Mr Cooper launched the business at his home in **Houghton-le-Spring** following a lengthy career as an offshore technician. It moved to the Washington site in 2008. He set up the business after being dogged by late payments and wanted to provide a more secure source of work for others in the industry. He said: “We ensure our technicians are paid properly and that they have cover such as life insurance.”

The firm, which was set up in 2003, has managed to amass a portfolio of 40 clients in 37 countries and has seen its turnover grow from £2.8m to £8.4m in the last three years.

By 2013 it expects its sales to be more than £25m and also plans to move into additional offices to compliment its current 1,500sq ft site on **Parsons Industrial Estate**.

The firm has managed grow with just 10 directly employed staff, but said that it was looking to bring on a

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further 10 over the next two years. It also plans to grow its pool of self-employed workers to 450.

Recent wins include a £1.5m contract to provide workers at an oil field in West Africa, including electricians and drilling engineers, as well as a similar contract at a site in southern **Iraq**. The company, which currently has workers in places including Dubai, Algeria and Libya, said it was also benefiting for the Norwegian Government's decision to increase oil exploration in the country.

Contact: [www.oil-consultants.net](http://www.oil-consultants.net)

### **Oxford Photovoltaics has won £100,000 to commercialise its technology**

A firm developing organic solar cells that can be printed onto glass to create power-generating windows topped the energy category of the **Technology Strategy Board** (TSB) Disruptive Solutions Competition with its solar glazing research, which harnesses the sun's energy in a similar way to photosynthesis.

Other projects have looked separately at solar panels that mimic plants and technology for turning glass into generators, but the **Oxford University** spinout has now combined the two ideas with a solid-state dye-sensitive cell.

Existing organic cells typically use a liquid dye that acts like chlorophyll, releasing electrons that are carried by a conductive, corrosive electrolyte solution to an external circuit. Oxford PV's version uses a solid metal oxide electrode soaked in the organic dye, which means the cells can be screen printed onto a substrate.

Chief scientific officer **Dr Henry Snaith** said "You don't have to worry about sealing and encapsulation, which is an issue for the electrolyte dye cell." Screen printing allows the cells to be easily sealed and protected against the environment, while using solid materials rather than corrosive liquid should increase the life of the technology.

"One of the issues with organic cells has been that they have very low life expectancy – two or three years – and to get into the building integrated sector we need expectancies of 20 years or more," said chief executive **Kevin Arthur**.

The process tints the glass depending on the dye colour, with green preferred for its high efficiency in producing electricity and because human eyes are more sensitive to green light than many other colours, although red and purple also work well.

Contact: [www.innovateuk.org](http://www.innovateuk.org)

### **Cambridge spinout Q-Flo Ltd signs agreement with a major manufacturer**

Its super-strong carbon nanotube fibre are purported to be 'three times tougher than that currently used to make body armour'.

Q-flo has signed a deal with **Plasan**, a major manufacturer of body armour based in Israel. The two companies have set up **TorTech**, a joint venture company, which has signed an agreement to commercialise Q-Flo's technology in the area of body armour and composite motor vehicle bodies, both rapidly growing sectors.

**Q-Flo** was spun-out from the Department of Materials Science and Metallurgy in 2004 by **Professor Alan Windle** and **Dr Martin Pick** to exploit the synthesis of carbon nanotubes in the form of so-called 'elastic smoke', in which the nanotubes are loosely entangled with each other. Carbon nanotubes consist of a special arrangement of carbon atoms. Normally, as in graphite, the atoms are arranged hexagonally and layered in sheets. In nanotubes however, the sheets are rolled up to form minute tubes, only a few atomic dimensions in diameter.

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Windle's team found a way to wind up the elastic smoke into continuous fibre, in which the nanotubes themselves are aligned along the fibre length. The fibre is five times thinner than a human hair and only just visible to the naked eye. The fibre could be used to make ropes, cables, fabric and composite materials as well as body armour.

**Cambridge Enterprise Limited**, the commercialisation group of the University of Cambridge, filed an initial patent application for the technology in July 2003.

Contact: [www.q-flo.com](http://www.q-flo.com)

### **Tewkesbury-based firm Solar Technology PV Energy 'to create up to 80 jobs'**

**Adrian Williams** set up Solar Technology International 15 years ago making solar components from the panels used by his new company to solar charging devices for mobile phones.

He previously worked as a mountain guide in Scotland and the Alps before moving into engineering and developing a passion for solar energy. Of the 80 new jobs around a quarter will be based in Gloucestershire and includes fitters, administrative, sales and promotional staff.

Adrian Williams said: "We are delighted to be investing in the future growth of the company and supporting the Gloucestershire economy. "Homeowners can currently take advantage of the generous feed-in tariffs incentive which will pay them for the electricity generated on their roof, " he said. "The trouble is the scheme may fall victim to cuts, so it's my advice to get on board now."

The tariff, introduced in April, guarantees home power generators 41.3 pence per kilowatt hour which can bring in tax free earnings of up to £1,000 a year. The company says it aims to carry out at least 25 installations by early next year before rolling out sales across neighbouring counties.

Meanwhile Andoversford based company **BCL Energy** announced it is expanding its portfolio of eco-friendly building products with the introduction of photovoltaic panels. BCL is primarily associated with cavity wall insulation.

"This really is an incredible opportunity for any homeowner that wants a reliable, 'green' and profitable source of energy," said **Rob Wynn**, director at BCL Energy. According to the **Met Office** Gloucestershire is No 22 in the UK's sunniest county league, with 1, 409 hours of sunshine a year.

Contact: [www.solarpve.co.uk](http://www.solarpve.co.uk)

### **City University London takes stake in start-up Totempower Energy Systems**

The company plans to enter the market in 2012 and is hoping to secure funding to develop its two wind turbine models – a 2,000kWh pa version for households and a 15,000kWh pa version for commercial use.

"Our goal is to really consumerise wind power," said company founder **Wolf Dietrich**. "We see a big opportunity for small wind to make a contribution to our energy generation as part of a larger solution." Totempower's technology is based on a patented system known as the Passive Air-jet Vortex Generator (PAVOG) developed by **Dr Simon Prince**, a senior lecturer in aeronautical engineering at City University.

"PAVOG is basically a series of small ducts that go through the turbine blade and improve the airflow on the topside," explained Dietrich. "The ducts delay the turbine stall so that it operates efficiently over a wider range of wind speeds." A domestic system is expected to be priced at £4,500, and under the current feed-in tariff will provide a financial benefit of £850 annually.

Dietrich estimates that there will be an average return on investment of around six years for individual households and three years for communities. Personally I would estimate that solar and wind on a small

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scale could have the potential of generating some 10 per cent of our complete energy demand,” said Dietrich. “What we have to do now is get the technology out there.”

The development of Totempower has been supported by the university’s technology transfer team, the **City Research and Enterprise Unit**, as well as the **London City Incubator**.

*Comment: Good to see a tech transfer revival happening at City University.*

Contact: [www.totempower.com](http://www.totempower.com)

### **Shares in oil explorer Bowleven leapt 35 per cent it hits two ‘significant’ prospects**

The firm hailed the finds as “transformational” and said the discoveries off **Cameroon** of mixed light oil and gas condensate at one level and oil in “high quality sands” lower down the exploration well boded well for the rest of the area, known as the Douala basin. Analysts said there was a 10 per cent chance the middle “deep Omicron” reservoir could hold up to 380 million barrels of oil.

**Kevin Hart**, chief executive of Bowleven, likened the find to having grasped a tiger by the tail. “The Douala basin has the potential to be a major hydrocarbon province,” he said. When you have a tiger by the tail, as we think we have, it is not so much what you find in this well – it is the knock on impact for the other prospects you have on the surrounding acreage.”

The targets of the Sapele-1 exploration well are a series of five vertically stacked reservoirs. Although the first target showed limited amounts of gas, the two deeper targets revealed “better than expected” amounts of oil and gas.

The firm will continue drilling the last two reservoirs, the deepest of which Hart described as the “star prize” Cretaceous target, which has proved a prolific source of hydrocarbons elsewhere in west Africa.

The firm said it had a cash balance of \$79.2 million (£48.4m) and no debt. It was also in the process of selling its stake in a licence offshore Gabon which it expects will raise a further \$35m.

Contact: [www.bowleven.com](http://www.bowleven.com)

### **Plastics-to-diesel fuel firm to set up new plant in London area**

**Cynar plc** is seeking to commercialise this technology in the UK and Ireland, including manufacturing, sub-licensing and operation.

Cynar has the first fully permitted operational plant situated in **Portlaoise**, Ireland. This unique technology converts mixed waste plastics into synthetic fuels which are cleaner, lower in sulphur and in the case of the diesel, a higher cetane than generic diesel fuel. The key elements of the technology involve pyrolysis and distillation.

Cynar plans to establish up to 30 plants across the UK and Ireland to recover synthetic fuel from a variety of used plastic sources. Cynar are both contracted to and actively discussing opportunities with a number of organisations who currently dispose of large volumes of plastic suitable to the process on a JV and partnership basis.

Cynar’s technology is a sustainable waste solution, diverting plastic waste from landfill, utilising the embodied energy content of plastics and producing a highly usable commodity. Cynar has developed the technology, having signed an exclusive agreement with Berkshire-based recycling and resource management company **SITA UK**.

The first of the plants will be commissioned by the end of 2011 in the greater London area, subject to

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planning permission.

With multimillion-pound investment from SITA UK, 10 UK plants will be built to deal with 60,000 tonnes of mixed plastic waste per year. Each plant is designed to convert approximately 6,000 tonnes of mixed waste plastic annually, specifically targeting mixed waste plastic diverted from landfill, and to produce in excess of 4m litres of end of life plastic into specification diesel fuel.

*Comment: If there is to be any boom in 'green jobs' they will come from waste resource SMEs such as this rather than from the PR-driven renewables industry.*

Contact: [www.cynarplc.com](http://www.cynarplc.com)

### **Kepler Energy to design, test and develop a horizontal axis water turbine**

The researchers received £50,000 in funding from the **Oxford University Challenge Seed** fund, managed by Isis, to build a 0.5 metre diameter prototype demonstrating the benefits of the design.

The rota is cylindrical and rolls around its axis, thereby catching the current. A full-scale device would measure up to 10 metres in diameter, and a series of turbines can be chained together across a tidal channel. UK waters are estimated to offer 10 per cent of the global extractable tidal resource. Tidal currents are sub-surface, so tidal turbines have minimum visual impact, unlike wind farms or estuary barrage schemes.

In October 2010 Kepler Energy was formed to develop a second-generation tidal turbine, which has the potential to harness tidal energy more efficiently and cheaply, using a device which is simpler, more robust and more scaleable than current designs.

The turbine is the result of research in the **Department of Engineering Science** at the **University of Oxford** by **Prof Guy Houlsby**, Professor of Civil Engineering at Oxford, **Dr Malcolm McCulloch**, head of the electrical power group, and **Prof Martin Oldfield**, Emeritus Professor of the thermofluids laboratory.

Contact: [www.kepler-energy.com](http://www.kepler-energy.com)

### **i2O Water Ltd wins the British Engineering Excellence Grand Prix**

**Andrew Burrows**, co-founder and CTO of i20, a chartered engineer and a member of the **Royal Institution of Naval Architects**, won the accolade for his design of the i20's Smart Water System, which can reduce water leakage by 20%.

He designed an intelligent valve, controlled by a central server which learns the behaviour of the network and constantly adjusts the pressure to the optimum. Some 50 systems were installed in Malaysia during July 2010 are each saving 250 tonnes of water per day. Other systems are currently in operation in Spain, Italy and the UK.

Judges described i20's intelligent, pressure-adjusting water valve as "A great example of creative problem solving". They were impressed by the way in which an intelligent and rigorous design was cutting water leakage without any need for digging up roads, describing it as "an elegant solution to an urgent worldwide problem arrived at by thorough process and methodology".

In the same competition the Start Up of the Year was **JAotech Ltd**. In just three years, JAotech has established itself as the market leader in the design and manufacture of a world-class, innovative range of patient bedside embedded Smart Terminals for the healthcare market. Its business success in a highly competitive market gave JAotech the edge over its competitors. Formed in 2006, the company's outstanding design for smart bedside terminals for hospitals will see it ship 30,000 worldwide this year, putting it firmly in the vanguard of the e-Health revolution. The judges said: "Engineering is about solving

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problems and making money out of the solutions and that's what JAOtech has done."

The Green Product of the Year was won by **Dunphy Combustion**. The T-Series from Dunphy Combustion is a range of ultra low NOx T-series burners that offers massive reduction in NOx emissions, electrical energy reductions, the elimination of flue gas re-circulation and duct work and a reduction in noise pollution.

This innovation impressed judges with its relatively low capital cost and significant environmental benefits. Reducing the electrical energy required to run the equipment by around 65%, cutting carbon emissions by 11% and NOx emissions by 80%,

Contact: [www.i2owater.com](http://www.i2owater.com) – [www.jaotech.com](http://www.jaotech.com) – [www.dunphy.co.uk](http://www.dunphy.co.uk)

## SME NEWS – IT, SOFTWARE, SERVICES & INTERNET

### Cambridge Pixel scoops major contract with the MoD

The firm develops primary radar, acquisition, processing and display solutions, and it will supply its SPx Track primary radar tracking software to **Cobham** as part of a critical upgrade to part of the UK Ministry of Defence's Air Traffic Services.

Cambridge Pixel's engineering team has decades of experience of developing complex radar processing and display systems for naval, air traffic control, vessel traffic, security and airborne radar applications.

Customers include **BAE Systems, Barco, Cobham, DRS, Frontier Electronic Systems, Navantia and Northrop Grumman**. Under the prime contract, Cobham will replace legacy systems with its RDSTrack product and provide ongoing support. Intended to be fully operational in March 2011, the new system will enable access to surveillance data from remote sites for the purpose of providing Air Traffic Control, Royal Navy Fighter Control and Range Safety Services.

Cambridge Pixel's SPx Track solution allows video data from the radar to be processed and potential targets to be identified. Target information is then provided to Cobham's RDSTrack data fusion and distribution system to form a complete situational awareness display.

**David Johnson**, MD of Cambridge Pixel, added: "The feature set of our tracking software has allowed us to provide enhancements to the Watchman radar processing to support detection of surface and air targets in complex clutter environments." **Tony Bushnell**, chief engineer at Cobham Aviation Services UK, said: "Based on past experience we were confident in Cambridge Pixel's ability to deliver an advanced product and to support us in our integration programme. Over the course of the programme they have delivered on our expectations."

SPx Track solution is a part of Cambridge Pixel's world-leading SPx suite of software libraries and applications that provide systems integrators with highly flexible, ready-to-run software products for radar visualisation, radar video distribution, plot extraction and target tracking.

*Comment: One firm that is helping to pick up the slack in innovation initiatives in the Cambridge cluster in recent years.*

Contact: [www.cambridgepixel.com](http://www.cambridgepixel.com)

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## Applied Image Recognition spies and identifies content in TV around the world

The firm operates as broadcast measurement experts – using unique technology to help them identify and track the content of TV shows across the world.

In October 2010 their Magellan image analysis software is currently used to track brand exposure and analyse footage at international sporting events. This month the company has formed a partnership with broadcast analysis experts at **ShowTracker**. The partnership has resulted in the formation of an automated, real-time content tracking system which is believed to be the most advanced in the industry.

**Chris Humpherson**, MD at ShowTracker, explained that the technology would provide the power, flexibility and speed to track and monitor the content of an array of broadcast material from cartoons to drama show. “This means that not only do we not have to pre-code or watermark any of the content we have been requested to track, but we also have a unique ability to identify and monitor elements from within a program or advert itself as well as localised versions of shows and formats.

The incredible power of AIR’s software allows us to marry our automated reporting system with the real time tracking of every requested incident within content across multiple channels. This tracking can report on every incident within any content whether it’s a brand, product or iconic images.”

**Ian Young**, CEO of AIR said: “Our world-leading software is now being used to identify the unique aspects contained within programmes – something that we think will prove to be of immense financial benefit to broadcasters.

“This might include being able verify that a certain episode of a show was broadcast at a certain date and time by identifying anything from a credit title to an episode number in real time. This has never previously been done before.”

The technology can also be used by television channels in a number of different ways including helping to identify video piracy.

AIR is the exclusive worldwide distributor of Magellan image analysis systems, developed by OmniPerception Ltd. This technology has been packaged to meet the needs of sports sponsorship research customers worldwide by Applied Image Recognition Ltd.

*Comment: British software expertise at its best.*

Contact: [www.air-ltd.com](http://www.air-ltd.com) – [www.showtracker.tv](http://www.showtracker.tv)

## NCC Group boost revenues in the first four months of its financial year by 33%

Manchester IT security firm NCC Group has continued to build sales, with revenue up 33 per cent on last year’s figures.

Fresh from buying US-based **iSEC Partners** in a deal worth up to £14.4m, Manchester IT security and assurance business The company said its escrow business has performed well, with an overall revenue growth of 9 per cent. Contract renewals are forecast to be £15.2m for the year to 31 May 2011, compared with £14.6m in the year ended 31 May 2010.

NCC’s assurance division has also reported a rise in revenues, up 51 per cent on last year. Its order book has grown by 14 per cent to £9m. In a statement to the Stock Exchange, the company said: “Overall, NCC Group is on course to show good revenue growth and profitability for the full year remains in line with the board’s expectations.”

The group’s net debt stands at £22.2m following the acquisition of iSEC Partners against its recently

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revised revolving credit facility of £35m and an additional £2m overdraft facility if required.

*Comment: Will this become the mid-sized giant of IT security firms in the not too distant future? Its take-over and acquisition track record has been highly effective thus far.*

Contact: [www.nccgroup.com](http://www.nccgroup.com)

### **Really Simple Systems aims to be ‘the largest UK vendor of Cloud CRM systems’**

Really Simple Systems Hosted CRM is aimed at small and medium sized organisations with between 5 and 200 people who want a hosted CRM sales, marketing and support system. The hosted model is particularly suitable for companies with multiple locations and sales people who work remotely or at home.

Really Simple Systems, winner of the Software Satisfaction Award in 2008 and 2010, is the largest UK provider of hosted CRM systems with offices in the UK, North America and Australia. Users include the **Royal Academy of Arts, the British Library, the Red Cross, NHS** and the **Department of Health**.

It recently launched ‘Free Edition’, a free version of the vendor’s flagship product that gives users the software and hosting for a two-user sales system free of charge, forever.

This change in strategy is part of the company’s plan to be the largest global CRM vendor in terms of users in the next three years.

**John Paterson**, CEO of Really Simple Systems, said “If you’ve ever been put off CRM systems because of the cost or complexity, then this is the system for you.” Existing customers with one or two users, who could currently be paying up to £70 a month, can downgrade to the Free Edition as soon as their existing subscriptions end. For those who are paying monthly by credit card, this change will be immediate.

Contact: [www.reallysimplesystems.com](http://www.reallysimplesystems.com)

### **Plymouth media group Twofour now boast an annual turnover of £40m**

Two months ago the firm bought The Rocket Science Group for an undisclosed sum, with a view to creating a new force in broadcast and corporate communications. The firm said the new operation is now the ‘biggest player’ in the combined broadcast and channel-based corporate communications arena.

The two businesses will continue to operate as stand-alone brands for the time being, while working closely together to exploit synergies and develop new market opportunities across the globe.

**Mark Hawkins**, MD of Twofour, said: “This move reflects the fast changing dynamics in the media industry where increased consolidation and complimentary revenue and profit streams are the key to future growth. Rocket Science brings to the group increased fire power in corporate communications at both a strategic and operational level.”

The Rocket Science Group is an innovator in the field of corporate communications. The group has also been incubating a next generation digital media agency business called **Rockit** which works across a range of channels to produce campaigns. Together the new Twofour Group will now offer businesses a complete set of media services; from strategic corporate communications through to video production, webcasting, digital design and technology, events and business TV and full digital media outsourcing.

Twofour was awarded the title of ‘The UK’s Best Independent Production Company 2010’ by Broadcast magazine, and a place in New Media Age’s top 25 UK digital agencies. Twofour’s 300 creative and technical staff work across offices in London and Plymouth as well as internationally.

Contact: [www.twofour.co.uk](http://www.twofour.co.uk)

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### **365 iT plc buys up service management specialist Fox IT Ltd**

With over 120 employees, 365 iT plc designs and delivers information and communications technology (ICT) services that help organisations enhance their IT effectiveness and ROI, enabling them to better meet their business objectives. Headquartered in Basingstoke, the company works closely with its clients from SME businesses through to corporate and public sector organisations.

**Peter MacLean**, 365 iT plc's chairman and chief executive, said: "This latest acquisition represents yet another significant step forward consolidating the group's position in the very competitive and rapidly developing IT services market."

**Paul Speers**, Fox IT's managing director, said: "This 5th acquisition in just four years demonstrates the strength of 365 iT and the group's ability to exhibit continued substantial growth at a time when many businesses are doing quite the opposite."

In September, 365 iT plc was ranked the 15th fastest growing technology company in the UK, according to the Tech Track league table. It now employs over 120 people.

Through its wholly owned subsidiaries (365 iTechnology Ltd, 5i Ltd, 7 Global Group Ltd and Fox IT Ltd) the group provides a range of IT services and solutions that addresses ten strategic areas of IT operations and management.

Contact: [www.365itechnology.com](http://www.365itechnology.com)

### **'Tesco law' firm inundated with 'hundreds of applications from law firms**

**QualitySolicitors**, a legal firm that intends to create a national network of law firms under the same name, says it has received 'hundreds of applications' from independent law firms across the country, bidding to operate under the legal brand's banner.

Chief executive **Craig Holt** believes it is among the first to take advantage of the legal services market as it prepares to be deregulated under the so-called 'Tesco law'.

The deregulations, which come into force in October 2011 will allow organisations including banks and supermarkets to offer legal advice. Established in January 2009 by Holt and fellow director **Saleem Arif**, QualitySolicitors hopes to take advantage of this new legal era. The deregulation was introduced by the Legal Services Act and has been dubbed "Tesco Law", though the supermarket said it has no interest in the legal sector.

So far, 55 firms have been selected from across the country to take on the brand name and logo.

Once selected, firms pay QualitySolicitors a fee, Holt explained. He said: "Firms pay a fee which is then used to market QualitySolicitors. For example, through our TV advert which is voiced by Amanda Holden and is showing on Monday during Coronation Street and News at Ten."

He added: "By providing a recognisable and trusted brand name, we will end the need for the time-consuming and often stressful, task of having to choose between lots of different local firms."

*Comment: If it helps make access to law cheaper – then it may work.*

[www.qualitysolicitors.com](http://www.qualitysolicitors.com)

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## **Aridhia Informatics joins up with the National Health Service in Tayside, Scotland**

In October 2010 links between **Kuwait** and Tayside's world renowned network of diabetes research and care have been strengthened with the signing of an agreement to develop new collaborations.

**The University of Dundee, NHS Tayside and Aridhia Informatics** signed an MoU with the **Dasman Diabetes Institute** and the **Ministry of Health** in Kuwait. The MoU will allow all partners to further explore opportunities to jointly develop education, clinical networks and informatics proposals linked to improving health care in Kuwait, with an initial focus on diabetes.

The signing of the MoU was attended by **HE Dr Hilal Al Sayer**, Minister of Health in Kuwait, as well as **Paul Gaskell**, Deputy Head of Mission, and Duncan Hoyland, Head of Trade & Investment, from the British Embassy in Kuwait. Diabetes is a significant problem in Kuwait, where it has been estimated that up to 1-in-4 of the adult population suffers from the disease. This equates to almost 700,000 Kuwaitis.

**Dr Kazem Behbehani**, former Assistant Director General of the World Health Organisation and now director of the Dasman Diabetes Institute in Kuwait, said, "The Dasman Diabetes Institute and the Kuwaiti Ministry of Health have led productive discussions with our Scottish partners throughout this year which has led us to signing this agreement. It will deliver real benefits to Kuwait and Scotland."

Work has already begun on a foundation phase for the partnership with a number of clinical workshops involving representatives of the Amiri Hospital and four Primary Healthcare Centres in Kuwait who are involved in a pilot project to build an informatics base using existing data. This will be used to establish, as a first step, a comprehensive register of diabetic patients.

Contact: [www.dundee.ac.uk](http://www.dundee.ac.uk) – [www.aridhia.com](http://www.aridhia.com)

## **SME wins crowd-modelling contract to help control London 2012 visitors**

**BCHF**, a City of London-based firm with clients throughout the UK and Europe, was awarded a contract through the **CompeteFor** online procurement portal to provide crowd modelling services to the London Organising Committee of the Olympic and Paralympic Games (LOCOG).

**Calum Nicholson**, Head of Transportation at BCHF, said the registration process was simple – "especially when compared to procurement websites I have used in the past." CompeteFor also allows bidders to track the contract, notifying them throughout the process of upcoming deadlines and any changes to the contract.

BCHF will provide crowd modelling services for London 2012's temporary venues across London, including ExCeL, Horse Guards Parade, Greenwich Park, Earls Court and Wimbledon. Their scope of works includes anticipating how spectators will access the venues and circulate within them, with a particular focus on temporary infrastructure, security and transport, and proposing solutions so that audiences experience the perfect balance between safety, comfort and atmosphere while at Games events.

*Comment: How will London's transport cope with this Olympics' 6m+ visitors?*

Contact: Calum Nicholson, BCHF – [cnicholson@bchf-uk.com](mailto:cnicholson@bchf-uk.com)

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## University spinout Inquisitive Systems Ltd wins £170,000 of funding

The cash will enable the firm to commercialise an anti-cybercrime software based on the same algorithms for DNA sequence analysis.

Inquisitive Systems, which spun out of **Edinburgh Napier University**, has attracted the funding from private investors as well as a **SMART:Scotland** award and Seed funding package, both from **Scottish Enterprise**.

**Dr Jamie Graves**, chief executive and co-founder of Inquisitive Systems, said the software, dubbed GuardInQ, differs to other anti-cybercrime technology because it continuously, rather than intermittently, monitors the activity of secure computer network systems.

“Up until now that has been really hard to do because that produces an awful lot of data and if you try to do it in the way our competitors do, it would be drinking from the fire hose,” he said.

Inquisitive Systems' biologically inspired software digitally mimics the DNA matching process used in the real world. The software tracks the sequence of events that follow a hacker's first access request into a secure network system and creates a 'digital fingerprint'.

Graves said the fingerprint can be traced back to the cybercriminal. Within seconds the hacker can be blocked from attaining further access to the system, he said, and the GuardInQ analysis program will determine whether private information has been compromised or malicious software has been uploaded.

The recent funding from SMART:Scotland, which provided £70,000, is being directed towards a research and development feasibility study with a test partner, a financial organisation based in Edinburgh. It is expected that Inquisitive Systems will be in a position to sell its products to market within the next six months.

Graves said the company will initially target cloud computing systems, which are notoriously difficult to secure. Eventually, he said, the company would like to expand into homeland security and government markets.

*Comment: Good to see real spinouts emerging from lesser-known Universities.*

Contact: [www.inquisitive-systems.com](http://www.inquisitive-systems.com)

## FXecosystem's web network unites FX professionals around the world

The company offers a solution to the foreign exchange (FX) market that increases the speed of trading and information between banks, hedge funds, brokers and vendors.

It has a growing number of direct links to the major players and has designed a market specific telecom hardware solution which now means trade data can reach financial institutions anywhere in the world in milliseconds.

In the system all trading counterparties are connected to each other regardless of their location in the world, using layer 1 Ultra Low Latency fibre optic cables.

FXecosystem offers this innovative and effective proprietary technology, the **FX Meet Me Room**, to solve the widespread market need for speed. By taking an existing, proven architecture in the telecom world and transplanting it into the foreign exchange trading world, it saves banks millions in fees.

The firm says that 'slippage' or missing a good price is a major and yet avoidable occurrence in trading. Their system helps to reduce the problem via an increase of the speed of execution. The system allows

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price takers to trade and liquidity providers to update prices faster and more efficiently than any current infrastructure. Currently, trading counterparties use an unpopular 20+ year-old legacy telecom system to trade and communicate with each other.

FXE is replacing that with a proven, point-to-point fibre optic cable solution globally, which brings considerable increases in both speed and stability.

In spite of the fiscal crisis, electronic foreign exchange experienced a boom in 2010, with overall e-forex trading volume surging to over \$4 trillion per day.

Contact: **Jon Vollemaere**, Managing Partner – Europe – [jon@fxecosystem.com](mailto:jon@fxecosystem.com)

### **TranslateMedia ranked fourth in this year's UK Deloitte Technology Fast 50**

The Technology Fast 50 is a ranking of the fastest growing technology companies in the UK based on percent growth in fiscal year revenue over five years.

The London-based firm was the only language services provider selected in the UK Deloitte Technology Fast 50 for 2010 – with a growth rate of 5409 percent over the period. **Patrick Eve**, CEO, said “Our production teams across the UK, Europe, Asia and the US have put in a massive effort over the last few years and have always been the first to guide our technology team in ways to streamline the translations process and improve client service, so this is really all credit to them.”

TranslateMedia develop a comprehensive suite of technology tools to best serve this broad range of clients and their differing needs and priorities.

Contact: Patrick Eve – 0845 33 111 27 – [www.translatemedia.com](http://www.translatemedia.com)

## **SME NEWS – BIOTECH, PHARMA & MEDICAL SCIENCES**

### **ReNeuron announces first patient treated in landmark stroke stem cell clinical trial**

In a ground-breaking UK clinical trial, the PISCES study (Pilot Investigation of Stem Cells in Stroke) is the world's first fully regulated clinical trial of a neural stem cell therapy for disabled stroke patients.

ReNeuron plc is the first company to have received regulatory approval for any stem cell-based clinical trial in the UK. Stroke is the third largest cause of death and the single largest cause of adult disability in the developed world.

The first patient in the PISCES trial was treated at the **Institute of Neurological Sciences, Southern General Hospital**, in Glasgow and was safely discharged two days after the straightforward neuro-surgical procedure used to administer the ReN001 cells.

In this Phase I trial, ReNeuron's ReN001 stem cell therapy is being administered to stroke patients who have been left disabled by an ischaemic stroke, the most common form of the condition.

The Principal Investigator for the trial is **Professor Keith Muir**, SINAPSE Professor of Clinical Imaging, Division of Clinical Neurosciences at the University of Glasgow. At Glasgow Southern General, Professor Muir leads one of Europe's most innovative and well-recognised stroke treatment centres.

Assuming a satisfactory independent Data Safety Monitoring Board review of the first patient's progress in December, the remainder of the first dose cohort in the trial will be treated shortly thereafter.

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Dr Keith Muir said: "In this trial, we are seeking to establish the safety and feasibility of stem cell implantation, which will require careful follow-up of the patients who take part. We hope that in future it will lead on to larger studies to determine the effects of stem cells on the disabilities that result from stroke."

*Comment: Early outcomes from stem cell therapies have proved extraordinarily effective so fingers crossed for ReNeuron and the ultra-smart Southern General Hospital.*

Contact: Dr John Sinden, Chief Scientific Officer – ReNeuron: 01483 302 560.

### **Michelson Diagnostics gains £1.7 million from Octopus Investments**

The firm, medical equipment and scanner specialists whose unique laser scanning technology can image skin and other surface tissue at a much higher resolution than ever before, was founded by CEO **Jon Holmes** with four colleagues in 2006.

The company's first product based on its patented multi-beam optical coherence tomography (OCT) technology, the **VivoSight** scanner, may revolutionise the market for the non-invasive diagnosis and treatment of non-melanoma skin cancer (NMSC). The VivoSight scanner has already won **CE & Food and Drug Administration** (FDA) regulatory clearance for clinical use in Europe and the USA, and is now being trialled by leading skin cancer specialists at their clinics.

VivoSight will enable clinicians to see 'under the skin surface in real time, to help them decide whether to treat a lesion, what treatment to use, and to show them how far a tumour has spread', so that surgery is required only once and conserves healthy tissue. This is expected to make non-melanoma skin cancer treatment more efficient and cost-effective, and to be better for the patient by reducing unnecessary surgery.

At a time where non-melanoma skin cancer is said to be reaching epidemic proportions, an estimated 3.5 million new cases p.a. in the US, accounting for 4.5% of all **Medicare** cancer costs, and costing the NHS around £100 million p.a. in the UK, this breakthrough laser scanning technology could make a real difference.

*Comment: More non-invasive tests for melanoma can't come soon enough.*

Contact: Michelson Diagnostics Ltd – [enquiries@md-ltd.co.uk](mailto:enquiries@md-ltd.co.uk) – [www.octopusinvestments.com](http://www.octopusinvestments.com)

### **Royal Society Enterprise Fund backs Cambridge spinout Sphere Fluidics**

**University of Cambridge** spinout Sphere Fluidics is commercialising picolitre droplet technology from Cambridge University that can perform thousands of simultaneous reactions contained within aqueous droplets, fractions of a millimetre in size.

This platform enables diverse applications including: miniaturised profiling of drug candidates, the generation of new biocatalysts and the identification of novel algal strains. Sphere has already won a commercial partnership, received two waves of investment and believes its technology has the potential to revolutionise consumer health, the environment and our future energy sources.

Sphere Fluidics picodroplet technology enables researchers to carry out large numbers of simultaneous reactions contained within small aqueous droplets a fraction of a millimetre in size. When the droplets are merged with others containing, for example, a specific chemical reagent, they effectively act as miniature reaction chambers that can be exposed to a unique set of experimental conditions. The picodroplet platform was developed by **Professors Chris Abell** and **Wilhelm Huck** of the Department of Chemistry.

The Enterprise Fund has previously invested in companies including **Base4Innovation**, which is working on ultra-fast gene sequencing technology; 'green' air filtration company, **Nano-Porous Solutions Ltd**, and

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**Novacem**, developing carbon negative cement.

*Comment: This, in our view, is the first really good investment by the RSEF, though we are happy to be proved wrong by Nano-Porous Solutions.*

Contact: [www.spherefluidics.eu](http://www.spherefluidics.eu)

### **Euprotec Ltd to accelerates anti-infective drug discovery and development**

Based in **UMIC's** bioincubator facilities at Grafton Street, Manchester, the company has collected and continues to develop an extensive library of clinical isolates known as **StrainBank**.

This collection is a unique resource and represents a valuable tool to organisations involved in antibacterial drug discovery and development. This is achieved through the provision of a comprehensive range of highly specialised services to the pharmaceutical, biotechnology and consumer healthcare sectors.

Compound screening and susceptibility testing against clinical isolates, and the provision of more specialised assays and models to aid the characterisation of new antimicrobial agents are just some of the services provided by Euprotec that can help rapidly identify and progress candidate anti-infective compounds.

But one size doesn't fit all, and Euprotec develops bespoke assays and models essential for client drug development processes that are not available elsewhere. The company's StrainBank resource brings together a very large collection of clinical isolates and highly characterised type strains. Partners can access the collection in order to screen their developmental agents against a broad range of bacteria associated with hospital and community infections in addition to those organisms which are highly resistant to current marketed antibacterial agents.

Euprotec attended SMI's 11<sup>th</sup> Annual Conference on Superbugs & Superdrugs in London in October 2010. **Dr Peter Warn** said: "In 2004, 42% of all pharmaceutical drug development expenditures were committed to outsourcing, and this trend is continuing. Because the development of new compounds by pharmaceutical and biotechnology companies involves a large proportion of research outsourced to CROs, Euprotec's expertise in anti-infective drug discovery and development makes us ideally positioned to provide specialist services, particularly for those organisations developing new products for the prevention and treatment of serious bacterial infections."

Contact: Dr Peter Warn – [info@euprotec.com](mailto:info@euprotec.com)

### **Liverpool's Redx Pharma Ltd launched with a £1.9m investment package**

Redx Pharma will develop therapeutic remedies based on existing classes of drugs, structurally modifying them to create new proprietary medicines. Benefits for patients will include fewer side effects, greater efficacy and ease of use for people.

Redx Pharma is focused on the early stage development of drugs. Its Redox Switch platform technology allows rapid assessment of new drug candidates, which can go forward to development programmes with lower risk and greater speed to clinical trials.

By entering into licensing agreements for promising compounds, Redx Pharma aims to achieve multi-million pound revenues from mid-sized and large pharmaceutical partners.

Redx Pharma has a broad-based pipeline of new compounds in multiple therapeutic areas. The company is progressing programs in the areas of cardiovascular medicine, influenza, antibiotics and neuropathic pain.

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The Redox Switch approach can be applied to around 20 per cent of the world's existing medicines. As part of the investment, Redx Pharma has acquired the assets of **Bradford Pharma Ltd** and will take over its operation which has been based at **Merseybio**, the incubator unit owned by the **University of Liverpool**, since 2007. Support has been provided by the NWDA's Northwest Interim Venture Capital Fund, which is managed by YFM Private Equity, and includes backing from the ERDF.

The Redx Pharma management team is led by **Dr Neil Murray**, chief executive, who has over 20 years experience in the commercialisation of platform technologies and overall drug development strategy, planning and management.

A number of private investors have also taken a stake, including the venture capitalist **Jon Moulton** and several investors from the North West, Yorkshire and London.

Contact: [www.redxpharma.com](http://www.redxpharma.com)

### **Surprise move sees BTG acquire Biocompatibles for reported £177m deal**

Investors in biotech were astonished to see that **BTG plc**, a firm that normally takes young technologies and makes mature businesses out of them, will pay such a hefty sum for cancer bead pioneer **Biocompatibles plc**.

The latter – a rare British biotech firm that makes profits, and one of Gibson Index's long-running SME Stars – is highly prized. BTG hopes that they will be able to add a cancer therapy to its own suite of anti-poison drugs.

Shareholders in Biocompatibles will receive 1.6733 new BTG shares and 10 pence in cash for each Biocompatibles share they own. Biocompatibles shareholders can also elect to forego the 10 pence cash payment in return for a chance to receive 56 Euro cents in the event that a diabetes drug programme that Biocompatibles had earlier partnered with **AstraZeneca** progresses further in trials.

Last year, Biocompatibles reaped £27m in revenues with pre-tax losses of £7.2m. Almost 70 per cent of Biocompatibles revenue is currently made from sales of cancer care products, the most important of which are drug coated beads used to treat liver cancer. The beads can be inserted into blood vessels to block the flow of blood to the tumour.

The acquisition of Biocompatibles by BTG mirrors its acquisition at the end of 2008 of drug group **Protherics**. At the time of the acquisition, Protherics had licensed its snake bite remedies for marketing by an external partner. However, that deal was coming to an end and BTG saw an opportunity to market the drugs itself. Last month, BTG began marketing these snake-bite products itself by means of a small hospital-focused salesforce.

Contact: [www.btgplc.com](http://www.btgplc.com)

### **Bio-Alternative Medical Devices to develop new hand held devices range**

The firm aims to commercialise three core technologies integral to its planned range of hand held, Point of Care (POC), medical diagnostic devices.

The three are: DSR – a Digital Strip Reader able to read existing lateral flow test strips;

COAG – a Prothrombin Time (PT) blood coagulation monitor; and MPR – a novel Magnetic Particle Reader multiple application diagnostic technology incorporating microfluidics.

Bio-AMD is targeting these technologies at the fast growing global POC market which independent research indicates is expected to reach a total market size of \$5.5bn in sales by the end of 2010 and to

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grow significantly beyond that date.

Bio-AMD believe that of these three technologies DSR offers early opportunity with the shortest estimated time to market and expect DSR to be applied to read existing test strips initially in the established pregnancy detection market, where there is a shift toward digital devices. In addition, Bio-AMD is working on developing strategic relationships in the cholesterol, cardiovascular and infectious disease markets where there are clear commercial and medical advantages to quick, accurate and affordable diagnosis results, near patient and without the need for laboratory intervention.

Contact: [www.bioamd.com](http://www.bioamd.com)

## UNIVERSITY NEWS

### North East Universities' Blueprint Business Planning Competition: winners

The awards celebrate the 'sharpest business ideas' from the region's graduates, undergraduates staff and Alumni at all five North East universities – **Universities of Durham, Newcastle, Northumbria, Sunderland and Teesside**. Each hold their own business planning competitions throughout the year, and the winners of these competitions go forward to compete in the regional Blueprint competition. Entrants to both the local and regional competitions receive expert business advice to help them turn their bright business ideas into well researched, practical business plans.

#### Durham University Finalists:

Dr Karl Coleman – **Durham Graphene Science Ltd** is a North East research and development company that specialises in the manufacture of graphene, a carbon nanomaterial that is a single layer of graphite, for incorporation into composite products. The use of graphene as filler in composite materials results in greatly enhanced mechanical strength, improved thermal management and increased conductivity of composite products. (Knowledge Transfer Awards) – [www.durhamgraphene.com](http://www.durhamgraphene.com)

Dr Vincent Reid & Anna Groendahl's **iEEG** aims to develop a low cost, portable and easy-to-use system for examining brain function in infants. Current systems are expensive and designed for use with adults and then adapted for work with infants. The possibility of a portable system allows for fieldwork whereas currently infants must travel to the laboratory. iEEG therefore plans to be a North East based R&D company that will create a unique combination of hardware and software for this emerging market. (Knowledge Transfer Awards)

#### Newcastle University Finalists:

**Royenface** – Sudipta Roy & David Nugent's technology is a chemical engineering process that allows the metals to be deposited and etched in a well-defined pattern. It offers lower cost, higher speed and less waste over existing technology. Its technology is applicable to many parts of the semiconductor industry, electronics and medical devices industries. (Knowledge Transfer Awards)

**Limbs Alive** – Janet Eyre, Janice Pearse and Bob Marris, address the challenges of developing effective rehabilitation programmes to aid bimanual dexterity for children with hemiplegic cerebral palsy and also adults with hemiplegia after stroke, with a home based patient delivered therapy service using video games that record performance and behavioural measurements with communication links for voice, video and data, enabling therapists to receive real-time performance feedback. (Knowledge Transfer Awards)

**Chabrew** from Adam Soliman – is a new specialist tea brand based in the UK. Charbrew teas have all been developed with the objective of having a distinct taste, strong aroma and most importantly superior quality. After 8 months in the market place Charbrew's go to market strategy has lead to final stage talks with several major supermarkets. As well as this Charbrew has successfully been launched

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nationwide with Lakeland (voted Britain's number one shop) as well a planned October launch with Booths supermarket chain. (Business Awards)

#### **Northumbria University Finalist:**

**Gospelware Ltd** is Ryan Davies & Michael Dunn's independent application and game developer based in Gateshead. The business initially focuses on the growing Google Android platform. The company creates a mixture of its own IP and services the digital sector by creating applications for marketing, advertising, web and creative agencies. (Business Awards & Creativity & Design Awards)

#### **Teesside University Finalists:**

**Spartan Nano** – Dr Andrew Dean and Sylvia Dean Ice formation leading to road and pavement damage is known to have a high cost to councils, governments and residents of many countries. It can also lead to injuries and create even greater challenges for hospitals. With this in mind, Spartan Nano has been developing an entirely new solution to this problem – novel material that can be incorporated directly into roads and pavements to stop them freezing – thus reducing financial and health injuries. It will also reduce carbon emissions associated with road repair. (Business Awards)

**PSAEON** (Practice Skills Assessed and Experienced Online) is a company based on the partnership, established 2 years ago between Wade Tovey, from Teesside University's School of Health & Social Care, and Sam Harrison and Dominic Lusardi of Animmersion UK Ltd. Online training tools were developed initially for first year nursing students, allowing them to practice procedures, leading to improved pass rates on the practical tests required. Students are pleased with the tools and staff report time and resource savings. [www.psaeon.com](http://www.psaeon.com) (Knowledge Transfer Awards)

**Anthronomics** – Dr Tim Thompson's aim is to provide novel and innovative digital solutions to anthropological problems. The technology associated with the recording and teaching of osteological material vital for a wide range of disciplines (such as the forensic, archaeological and biological sciences) has changed little in decades. We therefore aim to provide a portfolio of software and related products to facilitate more efficient, integrated and exciting work, in the UK and globally. (Knowledge Transfer Awards)

Contact: [www.blueprintcompetition.co.uk](http://www.blueprintcompetition.co.uk)

#### **Sheffield University professor invention speeds up the production of biofuels**

**Professor Will Zimmerman** got his inspiration for the award winning innovation, which boosts the growth of algae that turn sunlight and carbon dioxide into fuel, from the way children blow bubbles.

His system, which has already won the **AXA Insurance Cleantech Open UK** ideas competition, is cheaper and uses significantly less energy than existing technology – saving up to 80 per cent in some cases.

Professor Zimmerman said: "With it we can enhance the effectiveness of not just biofuel production but anaerobic digestors, treating sewage and cooling computers – all of which have huge benefits in terms of sustainability. I'm excited that other people are now getting excited too."

What is promising about Professor Zimmerman's mixing technology is the possibility that it will revolutionise not one, but many markets. It is a powerful concept and has the potential for huge impact in many applications. The manufacture of biofuels currently requires large amounts of power. When the process uses too much energy, it becomes uneconomic. The new bioreactor consumes less energy than conventional designs and could prove to be vital for the production of alternative fuels.

At the heart of the so-called air-lift loop bioreactor is a patented system that Zimmerman has developed to create micron-sized bubbles of gas that are much smaller than the conventional 1-3mm bubbles produced

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by existing steady flow-through systems. The micro-bubbles are created through a process called fluidic oscillation – a technique that allows the bubbles to become smaller when the apertures from which they emerge are made smaller. Using this approach, the researchers have created 20 micron-sized bubbles from a diffuser with 20 micron-sized pores and adapted the air-lift loop bioreactor with the micro-porous diffuser/fluidic oscillator system.

Aside from biofuel production, Zimmerman said that there are many applications where the deployment of such micro-bubble generation systems could be particularly useful, such as transferring materials to and from a gas, suspending particles or droplets and separating particles or droplets by flotation.

About one third of processing in biochemical production and that the energy-efficient production of micro-bubbles could dramatically reduce the energy use for all of these processes. **Yorkshire Water**, for instance, is using the parts of the bioreactor that produce micro-bubbles to treat wastewater. So far, pilot trials have shown that the technology can reduce the energy consumption of wastewater aeration systems by at least 20 per cent, and possibly as much as 80 per cent, over conventional systems.

**Prof Martin Tillotson** from Yorkshire Water said: ‘Many of our processes use forced air in order to treat water and wastewater streams and, given the huge volumes, it is very costly in electricity and carbon terms. This technology offers the potential to produce a step-change in energy performance.’

Prof Zimmerman also won the **Royal Academy of Engineering’s** Brian Mercer Award for Innovation provides funding of up to £250,000 for researchers to develop and already proven concept of prototype into a near-market product which can be commercially exploited.

Contact: [www.shef.ac.uk/cpe/pfg](http://www.shef.ac.uk/cpe/pfg) – Professor Will Zimmerman, biochemical dynamical systems – 0114 222 7517.

### **University of Strathclyde pioneer lighting system to kill hospital superbugs**

The technology decontaminates the air and exposed surfaces by bathing them in a narrow spectrum of visible-light wavelengths, known as HINS-light. Clinical trials at **Glasgow Royal Infirmary** have shown that the HINS-light Environmental Decontamination System provides significantly greater reductions of bacterial pathogens in the hospital environment than can be achieved by cleaning and disinfection alone, providing a huge step forward in hospitals’ ability to prevent the spread of infection.

This novel decontamination technology was discovered and developed by a multidisciplinary team of experts, **Professor Scott MacGregor** (Electrical Engineer), **Professor John Anderson** and **Dr Michelle Maclean** (Microbiologists) and **Professor Gerry Woolsey** (Optical Physicist). Professor Anderson said: “The technology kills pathogens but is harmless to patients and staff, which means for the first time, hospitals can continuously disinfect wards and isolation rooms.

“The system works by using a narrow spectrum of visible-light wavelengths to excite molecules contained within bacteria. This in turn produces highly reactive chemical species that are lethal to bacteria such as meticillin-resistant *Staphylococcus aureus*, or MRSA, and *Clostridium difficile*, known as C.diff.”

The technology was developed in the University of Strathclyde’s pioneering **Robertson Trust Laboratory for Electronic Sterilisation Technologies (ROLEST)**, which is dedicated to controlling infection in today’s healthcare environments.

The research has been supported by the University of Strathclyde, The Robertson Trust and the **Scottish Enterprise Proof of Concept Programme**, which supports the pre-commercialisation of leading-edge technologies emerging from Scotland.

Contact: [www.strath.ac.uk/officers/bio/deng](http://www.strath.ac.uk/officers/bio/deng)

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## University of Bedfordshire offers wide range of key foreign languages

The University is offering courses in Spanish, Mandarin Chinese, French, German, Italian, Polish and Russian to help professionals compete in international markets.

Their Beginners' Business Language and Culture courses aim to give local businesses and professionals the skills and knowledge needed to compete in an increasingly multi-cultural market. The language will be professionally focused and the culture training will help you to avoid any accidental faux-pas when meeting with business partners or travelling to foreign countries.

Next, the University's **Mediatrain Project** is also offering media production facilities to local companies. In conjunction with **Social Stampede**, a local production company with a track record in broadcasting, Mediatrain also provides companies in other sectors with a low-cost professional film production service. The production teams consist of media graduates who work closely with professional directors to produce informative and educational films for clients.

Mediatrain also offers a subsidised internship scheme which places recent media graduates in companies for up to three months. This Government supported scheme enables companies, especially SMEs, to develop new projects and fill gaps in their workforce.

**Mediatrain** contact: [Jim.Hornsby@beds.ac.uk](mailto:Jim.Hornsby@beds.ac.uk)

Languages: [www.beds.ac.uk/knowledgehub/events/news/september2010#languages](http://www.beds.ac.uk/knowledgehub/events/news/september2010#languages)

## Leicester University: 'How the body fights bacteria paves way for better vaccines'

A new breakthrough in the fight against pneumonia, meningitis and septicaemia has been announced by scientists in Leicester and Dublin. **Dr Aras Kadioglu**, Reader in Respiratory Infection in the Department of Infection, Immunity & Inflammation at the University of Leicester said: "This is a major breakthrough in our understanding of the immune response to *Streptococcus pneumoniae*; a human pathogen of global significance, responsible for over one million infant deaths annually and the major cause of illness and death in the elderly from infections of the respiratory tract."

In order to develop improved pneumococcal vaccines for both the very young and the elderly, it is essential to understand how this bacterium interacts with the host immune system. The discoveries described in our paper represent a huge stride towards this objective.

The unique collaboration, between scientists at the University of Leicester and **Trinity College Dublin**, may lead to a dramatic shift in understanding of how the body's immune system responds to infection caused by *Streptococcus pneumoniae* and pave the way for more effective vaccines.

The two teams say they have shown for the first time that the bacterial toxin pneumolysin triggers an immune response by activating a recently discovered group of proteins, called the NLRP3 inflammasome. Once activated, the inflammasome provides protection against infection caused by this pathogen.

Contact: [www.le.ac.uk/departments/iii/people/dr-aras-kadioglu](http://www.le.ac.uk/departments/iii/people/dr-aras-kadioglu)

## Manchester + SME search for ways of unblocking undersea gas pipes

In October 2010 researchers who pioneered the use of sound waves to detect blockages in undersea gas pipes have won funding to develop a commercial product.

The **Acoustek system**, developed by Manchester University, has already been used by Yorkshire-based **Pipeline Engineering** to survey pipes in the UK and US using off-the-shelf technology.

Now the inventors of the technique plan to design new technology to give them better control over the

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process and to enable it to scan liquids as well as gases. The system creates sound waves by sending out a high-pressure pulse of gas that is reflected by pipe blockages up to 10km away.

These can cost gas companies hundred of millions of dollars a day and are created when the gas, under high pressure and low temperature, forms solid hydrate deposits hundreds of metres long.

By comparing the reflected waves to a map of the pipe network, engineers can rule out reflections caused by bends and junctions, and pinpoint where the pipes are blocked. Remote-controlled vehicles can then remove and clean the blocked sections of pipe.

“We’re trying to develop a new system where we can put in a pulse of a specific frequency that we could vary,” said Acoustek’s inventor **Prof Barry Lennox**.

“If pumps and compressors are operating at a certain frequency then we can put our own pulse in at a different frequency so there’s less interaction with the different parts.”

The new technology, which will also help detect pressure waves in liquids as well as gases, will use a dedicated pressure transducer rather than a regular microphone to detect the reflected waves.

The **EPSRC** has provided around £100,000 to develop the new equipment, which is due to be completed by the middle of next year. This follows around £600,000 of investment from the EPSRC, Pipeline Engineering and **BP**, which has used the system to scan blocked pipes in the North Sea.

*Comment: This is the best sort of industrial-academic collaboration: a brain, a small firm and a very large one all ‘co-habiting’ on one essential unmet need – with core funding from the bright people at the EPSRC. Should be easy to protect IP-wise.*

Contact: [www.manchester.ac.uk/research/Barry.lennox](http://www.manchester.ac.uk/research/Barry.lennox)

### **Birmingham City University gets more graduates into Cisco than rivals**

**Cisco Systems**, one of the world’s largest technology companies, has chosen to employ more graduates from Birmingham City University than any other university in the UK.

This year, the American multinational had just 23 places on its highly competitive graduate training programme, which receives thousands of applications each year. Six of these places were given to graduates from Birmingham City University which boasts Europe’s leading Cisco network academy programme.

Of the six graduates, four were hired as associate network consulting engineers, who are currently training in Belgium, and two have been hired as associate systems engineers and are being trained here in the UK.

Following training, which lasts between four to 11 months, the graduates will be guaranteed jobs with Cisco Systems which employs more than 65,000 staff and has an annual revenue of \$40bn.

The graduates undergo an intensive training programme which consists of classroom, on the job experience and shadowing, as well as hands-on technical simulations in computer lab environments.

Contact: [www.tic.ac.uk/cisco](http://www.tic.ac.uk/cisco)

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## Funding at University of Nottingham has reached £150m for the first time

The international reputation of the University's research in energy, drug discovery, global food security, aerospace, advanced manufacturing, biomedical imaging and many other areas has helped to push research funding at Nottingham to unprecedented levels.

The total of more than £150 million received for the academic year 2009/10 represents an increase of 7.2 per cent on the previous year's figure — a resounding endorsement of the University's reputation as a centre of research excellence.

There were significant increases in 2009-10 in the number of awards won from research councils, the European Union and from charities. There was also an increase in the value of awards received from the UK government.

Over the course of the year, there were a total of 720 new funding awards. It won £6.5m from the **European Regional Development Fund (ERDF)**, for an energy research centre. £3.6m from the ERDF to help establish the **Institute for Aerospace Technology**, and it will be a key partner in an £8.3m **Centre for Innovative Manufacturing**, which will develop products and systems that allow doctors to administer new regenerative treatments for chronic disease and age-related health problems – funded by the **EPSRC**.

Recently, scientists at Nottingham made a major breakthrough that could help shape the future of nanotechnology, by demonstrating for the first time that 3-D molecular structures can be built on a surface.

The discovery could prove a significant step forward towards the development of new nano-devices such as cutting-edge optical and electronic technologies and even molecular computers. A team of chemists and physicists at Nottingham led by Professor Neil Champness have shown that by introducing a 'guest' molecule they can build molecules upwards from a surface rather than just 2-D formations previously achieved.

*Comment: A tribute to the lasting legacy of ex-VC Sir Colin Campbell?*

Contact: [www.nottingham.ac.uk/research/research.aspx](http://www.nottingham.ac.uk/research/research.aspx) – [neil.champness@nottingham.ac.uk](mailto:neil.champness@nottingham.ac.uk)

## Birmingham University teams with specialist medical firm to launch joint venture

It is working with Oxford-based firm **Abingdon Health** to create **Bioscience Ventures**, which will focus on developing new diagnostic tools for conditions where there are currently unmet needs in the market, such as various forms of cancer and genetic diseases.

The new joint venture will be led by executive chairman **Dr Chris Hand**, a former chief executive of medical diagnostics company **Cozart**, which he sold for £65 million before forming Abingdon Health. Dr Hand said: "We believe that combining our proven product development and commercialisation expertise with the world-class intellectual property from the University of Birmingham will allow us to bring important new diagnostic products to market.

"There is a clear opportunity to create a new range of diagnostic products from the university's deep knowledge in this important and growing market."

**Professor Lawrence Young**, pro-vice-chancellor and head of college of medical and dental sciences at the University of Birmingham, will become a board director of Biosciences Ventures. Professor Young, whose own research interests focus on developing gene and immuno-therapy treatments for cancer, said: "The University of Birmingham has been exploring effective ways in which we can unlock the potential of our intellectual property and enhance knowledge transfer activities."

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*Comment: University of Birmingham waking up to its potential after a period of unpleasant turmoil in its tech transfer affairs – the start of a new era, we hope.*

Contact: [www.mgmtgroup.bham.ac.uk](http://www.mgmtgroup.bham.ac.uk)

### **City University London starts KTP with sensor firm Sencon**

**Sencon** has entered into a £200,000 Knowledge Transfer Partnership with City University London to develop a new measurement tool for improving the quality control of canned food, drink and aerosol products.

The sensor and control systems developer is collaborating with the university to build low-cost optical sensing systems capable of measuring the absolute thickness of coatings on cans. This will enable manufacturers to more accurately check that cans are the correct colour and provide sufficient defence against contamination.

Manufacturers currently calibrate a film's thickness using capacitive sensors. This technology relies on electrodes and electronics to detect changes in the amount of stored electric charge – or capacitance – when the sensor is placed near a film.

**Prof Panos Liatsis**, head of City University's information engineering and medical imaging group, said the problem with this technique is it can only be used to calibrate a 'relative measurement of thickness'. Liatsis said the technology has already been proven in the laboratory, but still remains a challenge to bring onto the production line.

'These sorts of instruments are not used on line because they're very susceptible to vibration,' he added.

City and Sencon researchers will develop new software tools, advanced algorithms and signal acquisition technology that will enable the systems to be deployed in bustling manufacturing environments.

Contact: [www.sencom.com](http://www.sencom.com)

### **Edinburgh University signs deal with drug development company TPP**

**TPP Global Development** will help the university to commercialise its research into cancer, immunology and nervous system disorders. TPP will help to develop intellectual property created at the university into medicines. In May this year the company raised almost £10 million, including support from Scottish government grants and venture capital funding.

TPP Global Development, founded by former Morgan Stanley fund manager **Peter Trill** and Oxford University scientist **Dr Tom Brown**, has chosen Edinburgh's BioQuarter as its base.

TPP's management team has significant experience of evaluating and monitoring drug development programmes from the initial discovery stage, through to the clinical phases and the final approval and marketing steps. Management's varied background in developmental and clinical research, as well as healthcare investment, affords TPP a unique perspective on the drug development process.

TPP aims to form genuine partnerships with academic researchers throughout the UK, Europe, US and Asia in order to facilitate the successful translation of the most novel and exciting ideas into safe and effective drugs.

Contact: [www.tpp-global-development.com](http://www.tpp-global-development.com)

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## LATE DATES FOR NOVEMBER 2010

### **23 November 2010 – The VCT and EIS Investor Forum**

The King's Fund, 11-13 Cavendish Square, London. 8.45am – 6pm.

Balance the risks of your angel portfolio by investing in VCT & EIS funds, and view examples of funds that are already providing at least 5% tax free dividend yields plus income and capital gains tax breaks.

Speakers: Luke Johnson, who recently invested in Beer & Partners; MMC Ventures, Oxford Capital Partners, YFM Private Equity & Albion Ventures.

Contact: 01275 333 443 – [www.thevctandeisinvestorforum.com](http://www.thevctandeisinvestorforum.com)

### **24-25 November 2010 – Future City Forum and WaterfrontExpo**

The Mermaid Theatre, London.

The event is focused on the physical, economic and social regeneration and development of the urban environment and waterfronts in the context of financial constraints, ageing infrastructure, and population growth. The event will be opened by Rt Hon Norman Baker MP, Parliamentary Under Secretary of State (Regional and Local Transport), and is supported by the London Development Agency, The London Thames Gateway Development Corporation, Gateway to London, and the Thames Gateway Institute for Sustainability. UK and continental European cities involved include Dundee, Edinburgh, Ghent, Glasgow, Hamburg, London, Manchester, Peterborough, Stockholm, and San Sebastian.

Contact: [www.futurecityforum.com](http://www.futurecityforum.com)

### **25 November 2010 – Thames Gateway Forum**

The East Wintergarden, Canary Wharf, London.

This is a one-day conference and networking event focused on inward investment, attracting a new investor audience in addition to the most influential decision makers the gateway has to offer. This year TGF has a special focus on East London and the Thames Gateway, the area with the best economic performance of the UK in the recession and with all the potential of the 2012 Olympic Games to come.

Contact: [www.thamesgatewayforum.com](http://www.thamesgatewayforum.com)

### **25 November 2010 – Cambridge Entrepreneurs event, 'From Dusty Displays to Interactive Excitement'**

Ramsey Moon Conference Centre, Granta Park, Great Abington, Cambridge, CB21 6AL. 6pm.

Wysing Arts Centre manager will describe how technologies and approaches are being used at the Centre. Alan Payne is the CEO of Deep Visuals Limited, a Cambridge based start-up company, developing novel interaction methods for engaging users with images and data. Heather Lane is Librarian and Keeper of Collections at the Scott Polar Research Institute in Cambridge.

Contact: [www.cetc.info](http://www.cetc.info)

### **25 November 2010 – JETRO 2010 East Midlands Technology Showcase**

Holywell Park, Loughborough, Leicestershire.

Aimed at businesses operating in low carbon, energy and sustainable power this event will provide opportunities to do business with Japanese companies. The benefits of attending will include valuable information and networking opportunities with likeminded innovative companies and support organisations

Contact: [www.englandseastmidlands.com](http://www.englandseastmidlands.com)

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## 29 November 2010 – Energy Institute (EI) conference

London

Charles Hendry MP, Minister of State for Energy and Climate Change, will give the keynote address. The event: 'Countdown to 2020. 2010: A Decade for a British Renewable Energy Revolution', is organised by the EI, with reNews and Deloitte. The UK has signed up to a legally-binding European treaty requiring it to supply 15% of all primary energy from renewable sources by 2020. This is a huge task and the bulk of the burden will fall to the power generation sector, but heat and transport fuels will also have to make a quantum leap in capacities.

Contact: Gemma Wilkinson, Organiser, 020 7467 7174, [gwilkinson@energyinst.org](mailto:gwilkinson@energyinst.org)

## 30 November 2010 – Business Cloud Summit

Hammersmith Novotel, London

Cloud Computing thought leaders tell public and private organizations why they need to use this form of computing. Speakers include Greg Gianforte, CEO, RightNow Technologies, Mark Ferrar, National Technology Officer at Microsoft, Mark Leonard, CIO at Colt Telecom, and Adrian Steel, head of infrastructure management, Royal Mail.

Contact: [www.businesscloud9.com/summit](http://www.businesscloud9.com/summit)

## AND FINALLY...

**Paul Graham's Y Combinator** has stormed Silicon Valley and pioneered a better way to build a company – *and the UK could do well to replicate its success.*

Y Combinator – a computer term for a program that runs other programs – has fired up 200 companies since 2005. YC's **three-month boot camp** for startups, run twice a year in Mountain View, Calif., attracts 1,000 applicants for roughly 40 spots. Graduates are expected to emerge with a working product, customers and revenue. They also get a crack at pitching their ideas to investors on **Demo Day**, an event that lures venture capital's Sand Hill Road crowd and every prominent angel investor in the Valley.

YC puts up \$11,000, plus \$3,000 per founder, for each company in return for a piece of pure equity of around 5%. That equity could be worth real money should the companies take off. A high price for founders, perhaps, until you see scores of venture capitalists and angel investors jousting to pay handsome premiums for companies bearing the YC stamp. Of the 36 startups in YC's recent class, ended in August, 30 have raised fresh capital, many of them over \$1 million. "We didn't mean to invent this new model," says Graham, who at 45 has sandy hair and a youthful earnestness. "It all happened by accident."

Contact: [www.ycombinator.com](http://www.ycombinator.com)

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