

# GIBSON INDEX NEWSLETTER

NOVEMBER 2011 – Issue No. 76

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

Back in 1945 the UK Government started 'The Industrial and Commercial Finance Corporation', as a result of the findings of the much earlier **Macmillan Committee's** report – in 1931 – which stated that there is 'no recognised and readily accessible channel, corresponding to the new issue market for larger firms, through which the small industrialist can raise long term funds'. The problem was known as the 'Macmillan gap'.

For four decades the ICFC proved a success. In 1987 it was renamed **Investors in Industry** and then **3i Ltd**, and became a private limited company, with commercial pressures forcing it to focus in large measure on mergers and acquisitions rather than loans.

Today, we find ourselves in a very similar position – the specialist, long term funding needs of tech-based SMEs are not being met. Today, 3i, now a PLC, handles £300m deals – not the ground level help to inventors worth just £30,000 as it did in the past.

As a result, the **ERA Foundation** in its 6<sup>th</sup> Report issued last month is calling on the Government to establish a '**Bank for Industry**', which it says could 'attract investors who are interested in steady growth from local assets rather than the more casino-like products currently on offer'.

The Foundation's report, whose board is led by **Sir Alan Rudge** and former **EPSRC** director of research and innovation **Dr David Clark**, continues: 'A Bank for Industry, focused upon the intelligent and expert provision of finance to the SME sector could, and should be a core component of the UK's industrial strategy.'

'Without a vibrant and growing SME sector the UK's manufacturing capabilities, including the larger companies will be condemned to a continued decline with massive problems for the nation's balance of trade. This is one of the key weaknesses of the UK's economy and it requires a major and substantial change for it to be corrected'.

[www.erafoundation.org/reports](http://www.erafoundation.org/reports)

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[www.gibson-index.com](http://www.gibson-index.com)

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. The Newsletter aims to highlight developments in at least 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 48,300 UK-based technology SMEs.

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## COMPANY OF THE MONTH

### **Nanoclave Technologies disinfects surgical equipment with UV light**

In 2011 their UVC cabinet, which uses patent-protected 360° full beam UVC decontamination technology to disinfect medical equipment in 90 seconds was successfully trialled at **University College London's NHS Foundation Trust**.

The nine-week trial assessed its ability to eradicate MRSA, VRE, Clostridium difficile and other nasties from 'difficult-to-clean' surfaces. In total, 204 tests were undertaken on 51 sites with five bacteria.

**Nanoclave Tech** said the cabinet achieved 'consistent 5 log reductions (99.999%) cuts in bacterial contamination'. Two 60-second UV cycles cut spore numbers to below detectable levels.

Their products utilise non-contact, short wavelength ultraviolet (UVC) light decontamination technology and are safe and portable. Through a ground-breaking 360 degree full beam disinfection process – nothing gets away. Infections and contaminations caused by bacteria and micro-organisms such as the **Hospital Acquired Infections** (HAIs) Methicillin-Resistant Staphylococcus Aureus (MRSA) and Clostridium Difficile (C. diff) among many others, are fully eradicated.

The Nanoclave cabinet is designed to disinfect all non-invasive medical equipment and electronic devices present in a healthcare environment, many of which require protection from extremes in temperature or from immersion in liquids – and which cannot be cleaned using traditional methods.

**Adam Fudakowski**, is the director of operations at NanoClave Technologies. He has a manufacturing engineering degree from the University of Cambridge and manufacturing experience in a number of industry sectors from electronics to aluminium extrusion. Prior to joining NanoClave, Adam worked at the **Boston Consulting Group**, advising global clients on business strategy in pharmaceuticals and retail.

The firm's technical consultant and inventor **John James** has a wealth of experience as an inventor and designer of high quality, user friendly products across multiple industries. Within the healthcare industry he has designed numerous applications for the sterilisation of medical products that contain delicate electronic components and which, as a result, cannot be cleaned using traditional methods.

His technical and design skills have been broadly utilised in industries such as the petrochemical industry, defence (MoD), the financial sector and transport. Additionally, John designed a ground-breaking telemedicine system in conjunction with **Sony** for use in hospitals in order to see and converse with patients over satellite.

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

## SME NEWS – ENGINEERING, ELECTRONICS, TELECOMS

### **Labelgraphics plans £5m expansion to create 20 more jobs at new factory**

The family-owned firm, a major employer in hard-pressed Clydebank, said the expansion comes on the back of £1.8m funding support from **Lloyds Banking Group** and a further £1.25m of Regional Selective Assistance funding from **Scottish Enterprise**.

Labelgraphics, which was founded 29 years ago at Clydebank's old **Singer** site by entrepreneur and chairman **Alex Mulvenny**, now 74 and semi-retired in Florida, specialises in the printing and production of self-adhesive labels for the drinks industry.

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The company, whose client base includes **Johnnie Walker, Chivas Regal, Ballantine's** and **Jacob's Creek**, is now run by the founder's sons – Alex, chief executive, 36, and Peter, operations manager, 38.

Labelgraphics had been leasing a site in **Clydebank Business Park** when the opportunity arose earlier this year to purchase a four-acre site within the park. The company's new 50,000 sq-ft factory is scheduled to begin operating by the end of March 2012.

**Peter Mulvenny** said: "We have already doubled the size of the company within the last four years. This most recent plan for expansion has unlocked the potential for further growth, and will boost our turnover to over £12m this year and we are now Scotland's largest independent label printer to the spirits and wine markets."

Labelgraphics – which currently employs about 100 staff – recently struck a major labelling deal with an Australian wine company. He added that, with lean management processes in its new factory, he expected to hit the £20m turnover mark in two years.

It also revealed plans to add a further 40,000 sq-ft extension to the new factory in 2014.

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

### **Touch Bionics wins £2.5 million investment to support international expansion**

The Livingston-based artificial limb maker is regarded as a world leader in prosthetic technologies and supporting services for people with upper limb deficiencies.

Around half of the fresh funding for the company – which has an annual turnover of some £10m and 80 staff split between Scotland and the US – has been provided by angel investor Archangels with match funding from the Scottish Venture Fund.

The company said today that the latest funding will enable it to significantly increase its sales infrastructure and support product development.

Chief executive Ian Stevens said: "Our new products, backed by a growing sales and support organisation, will ensure that we continue to provide the best prosthetic solutions to our customers and this investment provides us with the financial backing to support these objectives."

It comes less than a year after Clydesdale Bank provided a similar amount in loan facilities to the firm, Touch Bionics, which was spun out of NHS Scotland in 2003.

In September 2011 it launched the 'i-limb ultra hand', an upgraded version of its prosthetic hand, which gives patients the ability to vary the strength of their grip finger-by-finger, allowing them to pick up delicate objects but also apply more pressure to get a secure hold on heavier items. It has also developed a system which accurately captures the colour and appearance of limbs for silicone prostheses.

Touch Bionics appointed Stevens, who was previously chief executive of Scottish medical device company Mpathy Medical, as replacement for Stuart Mead in May.

Alongside Stevens' appointment, Jill McGregor joined the company as chief financial officer from retinal imaging company Optos.

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

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## **Auto engineering powerhouse Prodrive doubles size of composites manufacturing**

Banbury-based precision-manufacturing specialist Prodrive has doubled the size of its composites facility, moving from motorsport-sized manufacturing batches to runs of several thousand.

The expansion is driven by the company's recent contract wins with three highly-demanding manufacturers of premium sports cars. When added to established defence, marine and aerospace customers, Prodrive's composites business now has an order book worth more than £40m.

Prodrive's composites manager **Ian Handscombe** said. "Clearly we did need more space, but the key to making this a sustainable business geared-up for the growing industry-wide use of composites is to take this opportunity to work on improving our processes and finding new ways of helping our skilled people to work more efficiently."

The biggest investment has been in two additional high-spec autoclaves, together worth around £800,000. The larger unit accepts parts up to 2m diameter by 4.3m long; the other 1.5m by 2.3m long. As well as allowing substantial panels to be manufactured in one piece, they open up new possibilities that could further improve high-volume production efficiency: with 350°C and 200 psi now available, the use of thermoplastic composites becomes possible, with much faster cycle times and easier recycling.

Prodrive's recent expansion makes it one of the largest UK suppliers of high-quality carbon composite components. Growth has been driven by the automotive industry, but Handscombe sees opportunities in other industries too.

"Because we are linked to Prodrive's design and development teams, we can take a fresh look at how to take time and cost out of meeting our clients' technical goals," he says. "For example, we can use carbon to produce early stage prototype tooling that is cheaper than the traditional methods and which can be modified as the design evolves."

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

## **Connexion2 to sell lone worker solutions in the USA and Canada**

The Sheffield-based manufacturer of the UK's most widely-used dedicated lone worker device, **Identicom**, are teaming up with **Florida-based G4S Justice Services**, an electronic monitoring services heavyweight, in order to facilitate a range of leading solutions to help lone workers dynamically assess and reduce risks faced as part of their job.

G4S Justice Services is being supplied with Identicom devices and are supplying lone worker solutions in conjunction with Alarm Receiving Centres, providing the first line of response to any alerts subsequently raised.

The Identicom device is designed to look like a normal identity card holder but it allows users to easily raise an alarm in the face of verbal abuse or attack, or if 'Man Down' through automatic incapacity detection.

**Chris Allcard**, sales director at Connexion2, said: "G4S in the US have the infrastructure, staff skills and experience we were looking for.. Their understanding of the needs of various types of lone workers has enabled them to create compelling solutions around our devices and technologies. We look forward to supporting them as they develop this market."

Contact: [www.connexion2.com](http://www.connexion2.com)

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## **SCOTTY Group Austria and HeliMedia Ltd join to market surveillance kit**

**HeliMedia**, located in Gloucestershire, are specialists in delivering ISR equipment and consultancy to help customers define operational requirements and deliver operational solutions. Together with **SCOTTY's** beyond line-of-sight transmission capabilities, customers will receive a complete solution which satisfies all of their demanding needs.

HeliMedia has a strong reputation for introducing and coordinating best of breed technologies and suppliers into the core intelligence, surveillance and communications solutions (ISC) market. They have some experience in air-to-ground terrestrial microwave technologies, but it needed a solution for long range (BLOS) video and joined with SCOTTY for their wide mission systems.

HeliMedia provides specialist ISC for customers in the military, public safety, security and utilities sectors. Its core focus is to define customer's requirements, design suitable systems – using high-performance, technically superior products – and deliver the entire solution with the back-up of a dedicated service team, offering customer support and training.

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

## **Street light monitoring unit helps Harvard Engineering to win Orange award**

Harvard Engineering has been shortlisted for the coveted Orange Innovation Award, in the 10th annual **National Business Awards**. The firm has been shortlisted because of its innovative **LeafNut** wireless street lighting monitoring and control solution, which has over 60 installations worldwide.

Harvard, which currently employs approximately 210 people in Normanton, also manufactures LED and HID lighting controls for commercial, retail, emergency and street lighting applications.

LeafNut has already brought many benefits to local authorities, both here in the UK and worldwide, as it not only minimises energy usage, but also delivers substantial financial savings to installers, operators and maintainers of the system. The control system has also apparently cut 'the estimated 830,000 tonnes of CO<sup>2</sup> produced in the UK every year by street lighting.

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

## **ADEY Professional Heating Solutions wins Gloucestershire's business award**

The Cheltenham company that invented the **MagnaClean** magnetic filter which protects and maintains central heating systems has won Gloucestershire's Business of the Year 2011.

ADEY's chief executive **Chris Adey** said the company began as a husband and wife start-up in a garden shed less than 10 years ago. This year, the company celebrated the installation of its one millionth MagnaClean professional filter in the UK. The milestone contributed to the business becoming Britain's fastest growing independent manufacturer in the '*Sunday Times*' Fast Track rankings in 2010.

During the past 12 months, ADEY has won the **Corgi Plumbing Manufacturer of the Year** along with the **Phoenix Gas Award** for Innovation.

MagnaClean filters not only protect and maintain central heating systems, they also reduce household heating bills by up to 6% a year through greater efficiency. Research has also shown that the filters reduce maintenance call-outs by more than a third and can reduce boiler carbon emissions by up to 225 kg of CO<sub>2</sub> a year for a typical three bedroom dwelling.

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

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## **Burnside Telecom launches GSM monitoring application for telecare market**

The firm, founded by telecoms veteran **David Robson**, is a recognised innovator in the market for cellular-based telecare solutions, and it has launched **MoniCare**, a new service application that is able to check, control and update Burnside GSM terminal equipment and provide a completely automated monitoring and support solution for the telecare service operator.

Unlike landline appliances, Burnside GSM terminals are able to provide a continuous and simultaneous voice and text service. Using the technique of sending and receiving text messages from GSM connected alarm equipment, it is now possible to check that the terminal and communication link is working properly without taking the alarm equipment out of service.

MoniCare will monitor, configure and update firmware on an estate of Burnside GSM Telecare terminals. It will automatically send a text message to the monitoring centre whenever an alarm call is made. This means there will always be an alternative path of communication if the mobile network voice channel is down.

Monicare can also send text messages by exception to report important events like mains failure, low backup battery, poor mobile signal and out of range equipment temperatures.

Burnside's MD **Colin Aitken** said "The availability of Burnside's new MoniCare service combined with the ability of our GSM telecare terminals to be checked without taking the equipment out of service provides a major contribution to telecare safety."

Burnside terminals are currently used for landline call-forwarding, telemetry and machine-to-machine (M2M) control for simple and cost-effective information access. Its products are used in 19 countries and customers include mobile network operators, public institutions, and companies from sole-traders to multinationals.

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

## **Wide format scanner Colortrac achieve record unit sales, revenue and profit**

The firm's marketing director **Peter de Winter-Brown** noted that "Clearly the worldwide economic downturn has had an impact on the performance of many markets over the past two years.

"However, our long term investments, both in competitive manufacturing at our factory at Suzhou, China and in our technology developments, are now providing us with greater capacity to react to our customers' requirements in product quality, performance, functionality and value."

Excluding business from OEM customers, world-wide unit sales of Colortrac brand **SmartLF** large format scanners increased by 41% over the previous year. Group revenues increased by 24% to \$14.18 million, with a increase in pre-tax profits of 20%.

Peter added "We have a rapidly increasing order book which, combined with planned new product introductions, should provide us with continuing profitable growth in our business, even in this difficult economic climate."

Founded in 1989 and based in **St Ives**, Cambridgeshire, Colortrac Ltd is the leading innovator in professional wide format scanners and image acquisition software solutions. As the first manufacturer to recognize the individual merits of CIS and CCD image sensor technology, its fifth generation of SmartLF scanners and software are uniquely positioned to meet the demand for both price and performance across the full spectrum of scanning applications.

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

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## Kingston Technology unveil high security USB Flash drive for US clients

The company, an independent world leader in memory products, said its new USB drive can be used to protect sensitive data with Federal Information Processing Standard (FIPS) 140-2 Level 3 validation and 100 percent encryption.

**Kingston's** sales managers say that, as security needs increase at financial service organisations and government agencies, they need the 'strongest data protection in mobile storage devices'.

The DT6000 meets data-at-rest regulations and is the most secure USB Flash drive available on the market. The Kingston DT6000 utilises patented **Secured by Spyrus** technology which supports 256-bit AES hardware-based encryption using XTS block cipher mode. XTS is the latest generation technology that provides much stronger protection than other block cipher modes such as CBC and ECB modes. The DT6000 also uses 'military-grade' elliptic curve cryptography (ECC), which is recommended by the US **National Security Agency** (NSA) as part of its Suite B set of cryptographic algorithms.

Organisations spend millions of dollars annually on network security to thwart hackers and other outsider threats. Frequent news stories show that security breaches associated with USB drives are more often the result of negligence and a lack of security policy, education and enforcement rather than malicious intent. In other words, having an unencrypted USB drive in one's pocket – is a potential data breach.

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

## Scientific imaging to be boosted by new Oxford University spinout

**Oxford Imaging Detectors**, which is developing high performance scientific imaging detectors capable of studying structures and processes at the atomic level, has been set up by the University's technology transfer company Isis Innovation.

Initially focused for use in electron microscopy, the detectors were developed by the research group lead by **Professor Angus Kirkland** at the University's **Department of Materials**. They provide significant advantages over current technology, exceeding the current state of the art in speed, contrast, efficiency and resolution.

Professor Kirkland explained: "These detectors coupled to state of the art imaging instruments are one of the most powerful tools in a scientist's toolkit. Materials scientists, chemists, biologists and physicists increasingly need to examine objects at the atomic level. The Oxford Imaging Detectors' products will support critical research in diverse areas spanning automotive catalysis, molecular medicine and new engineering nanomaterials."

**Dr Grigore Moldovan**, who joins Oxford Imaging Detectors as research director from Prof Kirkland's group, said: "These detectors combine the latest developments in particle sensing with novel semiconductor design and technology to provide the best imaging performance. Key features include single-electron detection, simultaneous imaging of multiple independent regions of interest, and radiation hardness."

Oxford Imaging Detectors CEO **Geoff Foote** said: "The market for new high performance detectors is growing as research into nano-scale technologies and materials becomes increasingly important. Oxford Imaging Detectors will provide state of the art sensors to enhance the capabilities of existing instruments, and extend the possibilities for future developments. We believe that this will have a profound impact on the emergence of new research areas, benefiting both existing and emerging industries."

Contacts: [www.isis-innovation.com](http://www.isis-innovation.com) – Geoff Foote, CEO, Oxford Imaging Detectors – [geoff.foote@oxfordimagingdetectors.com](mailto:geoff.foote@oxfordimagingdetectors.com)

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## Monster oilfield development gets go-ahead from UK Government

The Government has granted **BP** and partners approval to proceed with the development of the **Clair Ridge** project, which is the second phase of development of the Clair field, itself first discovered back in 1977.

It is estimated that the oilfield could yield contracts worth '£5-7bn' over the life of the field for British SMEs involved in power engineering. Development of the Clair Ridge project entails installing two new bridge-linked platforms with the ability to produce an estimated 640 MMbbl of oil. The project is expected to come online in 2016 and extend Clair's overall performance to 2050.

The consortium also announced the successful appraisal of an extension to the Clair field, **South West Clair**, confirming the overall Clair field complex's status as the UK's largest hydrocarbon resources with more than *seven billion barrels* of oil and gas initially-in-place. The appraisal well is said to have encountered a significant new hydrocarbon column in an overlying reservoir horizon, which will support further development of the greater Clair field area in the future.

Clair is located 46 miles (75 kilometres) west of **Shetland**, in approximately 459 feet (140 metres) of water. BP operates the field, holding a 28.6 percent interest.

[www.clair-ridge.bp.com](http://www.clair-ridge.bp.com)

## SME NEWS – CHEMICALS, MATERIALS & ENVIRONMENT

### Energy firm Cuadrilla commissions Ground-Gas Solutions at fracking site

Following fears that fracking activities by US firm **Cuadrilla** were to blame for the two earthquakes at its controversial Lancashire site where 'fracking', Manchester-based **Ground-Gas Solutions** has been contracted to monitor soil in the area to check that gas is not escaping from the mining operations in to the environment.

GGs, which monitors dangerous underground gases, has developed the **GasClam** is the world's first in-borehole continuous ground-gas monitoring device that provides high quality data that allows an unprecedented insight into the ground-gas regime, the gas generation and migration process and the associated risks

**GasClam** is an in-borehole ground-gas monitor, providing unmanned data collection of ground-gas concentrations. It collects data of high temporal resolution, sampling at frequencies as high as three minute intervals. Gases measured include methane, CO<sub>2</sub>, oxygen, carbon monoxide, hydrogen sulphide, total VOCs.

Also measured are environmental parameters, atmospheric pressure, borehole pressure and temperature. These allow correlations to be drawn and ground-gas drivers to be identified.

GasClam seals into a standard 50mm borehole or larger, and it can be used on sites where there are explosive ground-gas concentrations. GGS owns the largest fleet of GasClams in the country. GGS staff is experienced in using the instrument in the field, as well as being competent in data download, analysis and interpretation

GGS posted modest revenues of £250,000 in the 12 months to June 1 and expects to double turnover this year, has also opened an office its first regional office in Newmarket.

Contact: [www.ground-gassolutions.co.uk](http://www.ground-gassolutions.co.uk)

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## Siemens boosts its stake in Marine Current Turbines to 45%

The German engineering giant has increased its stake in Bristol-based tidal energy developer **Marine Current Turbines** from under 10 percent to 45 percent. The attraction, according to **Michael Axmann**, chief financial officer for Siemens's solar and hydro division, is the predictability of marine power.

Solar and wind farm operators struggle to predict tomorrow's output, and bad forecasts can wreak havoc with power transmission planning and market prices. In contrast, the gravitational pull of the moon and sun that controls tidal cycles provides a sure means of anticipating the output from tidal generating stations. "Power output of the systems could be calculated for centuries in advance," says Axmann.

The result could be higher revenues. Axmann notes that tidal power is "not subject to volatility. This increases the value of the energy produced, and hence makes the business case more reliable for the investor and operator."

Axmann declined to say how much value would be added by that predictability. But he anticipates that by 2020, marine turbines will deliver power at a cost that's competitive with today's offshore wind farms—in spite of the greater challenge involved in engineering for subsea operation.

Marine Current Turbines CEO **Andrew Tyler** says a combination of cost reductions and government incentives will ensure the profitability of his firm's tidal power parks. He expects a return on investment for the company's first two offshore power parks: a proposed four-turbine array off of Scotland's Isle of Skye and a five-turbine array off the northwest coast of Wales.

Cost reductions will come in part from scaling up its dual-rotor units to two megawatts from the 1.2 megawatts generated by its demonstration turbine, which has been producing power in Northern Ireland's **Strangford Lough** since 2008. Future cost reductions, Tyler says, will come primarily from efficiency in equipment assembly and logistics, drawing on Siemens's expertise in these areas.

This dual-rotor tidal turbine has been feeding up to 1.2 megawatts of power to the Irish grid since 2008. Commercial versions will generate two megawatts.

Paris-based **Alstom Group**, which competes against Siemens in power equipment and high-speed trains, also expects to make a splash in tidal power next year. Alstom is building a one-megawatt demonstration turbine using technology licensed from Canada's **Clean Current Power Systems**. At a meeting in Bali last month, **Phillippe Gilson**, Alstom's ocean energy manager, affirmed that Alstom plans to install the 20-metre-tall, fully submersible turbine in Nova Scotia's Bay of Fundy in 2012.

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

## High Efficiency Heating UK identifies future river turbine locations using satellites

A study carried out using satellite technology to identify locations on Britain's rivers where micro hydro-power turbines may be viable will be showcased at a major exhibition next month.

Business development consultant **Martyn Cowsill**, of Saddleworth, conducted the research with funding from the **Technology Strategy Board**, for High Efficiency Heating UK, based in Ashton-under-Lyne, as the firm looks to step up its operations in the renewable energy sector.

The three-month feasibility study identified many suitable sites. **Andy Baxter**, MD of High Efficiency Heating UK, said: "We have had a lot of encouragement from the Technology Strategy Board. They see micro hydro-power as being the under-developed cousin of the renewable energy industry."

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

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## **Ilika plc secures two new contracts, one in the United States and the other in Asia**

**Ilika**, the advanced cleantech materials discovery company and **Southampton University** spinout, said it had won two key contracts, 'each with world leading electronics manufacturer'.

The US contract is the first electronics contract for the company in this territory. The contracts are to synthesise and optimise next generation electronic materials in return for stage payments. In aggregate, these contracts represent in excess of £0.3 million in revenue all of which will be recognised within the financial year ending 30 April 2012.

**Graeme Purdy**, chief executive of Ilika, said: "We continue to seek to expand our broad pipeline of commercial opportunities and are in the process of appointing a new business development director for Europe, who will be based in Germany. This should add further momentum to our growth whilst continuing to diversify the portfolio of materials that we are discovering for the energy and electronics industries."

Contact: Ilika plc – Graeme Purdy, chief executive – [graeme.purdy@ilika.com](mailto:graeme.purdy@ilika.com)

## **Hughes Safety Showers breaks through the £10m turnover barrier**

MD **Tony Hughes** said the safety equipment manufacturer now plans to crack the lucrative US market with its innovative product design. Stockport-based Hughes Safety Showers makes decontamination equipment and emergency safety showers for use in the petrochemical, manufacturing and nuclear sectors, as well as the armed forces and emergency services.

They are deployed in the event of nuclear incidents, chemical spills and terror attacks.

Its products are designed for use in extreme environments, from deserts to the Arctic, and were used by international search and rescue teams in the aftermath of the earthquake that struck **Christchurch** in New Zealand in February, and the tsunami that hit **Japan** in March.

Hughes sells in more than 130 countries and currently generates around 60 per cent of its revenues from exports.

Tony Hughes predicts this will increase to 75 per cent within two years. The firm's next big target is the US market, and it established an office in Houston, Texas a year ago to pursue that aim.

Mr Hughes said: "Outside of the USA we are the biggest in the world at what we do.

"The US is by far the biggest market in the world and we want to treble our revenues there from \$1m (£611,000) in our first year.

"We also plan to open a sales office in the Far East, probably Singapore, to build up our distribution network there, and we have been researching the market in Brazil." Sales grew 24 per cent to £10.8m in 2010, and are predicted to top £11.5m this year. The firm, founded in 1968, currently has more than 80 staff across operations in the UK, Canada, the US, the United Arab Emirates, Germany and France.

Product development is a key element of Hughes' progress, and it is especially excited about the potential of its latest offer, which is undergoing testing by the NHS.

Its **ultrasonic atomiser** uses compressed air to spray a fine mist of detergent and a tough protective polymer in a room, covering all surfaces with condensation which dries in 10 minutes and can stop bacteria for up to 30 years.

[www.hughes-safety-showers.co.uk](http://www.hughes-safety-showers.co.uk)

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## Junction 25 Ltd to export recycled waste to Denmark for domestic energy use

Junction 25, based in Bredbury, Greater Manchester, clinched a three year deal with the **Danish Government** to supply up 50,000 tons of baled commercial and industrial waste per year.

Up to 400 bales leave the re processing plant each day to be taken to Immingham docks and then shipped to Denmark for use in its Horsens combined heat and power plant as part of a government contract.

The non-hazardous waste, mainly comprising paper, timber and plastic is baled and wrapped after being re processed at Junction 25 which employs 80 local people and is part of a £15m investment by the **Asset and Land** environment group.

**Barry Kilroe**, MD said: "This is a valuable order, but it has taken some time to negotiate the contract to export to a Danish facility with a certificated R1 status ensuring both UK and **Danish Environmental** approval. There are only a handful of companies in the UK able to do this.

He added "We have a three year contract to provide up to 1,000 tons per week, but as more combined heat and power plants come on stream in the UK after 2014 we will switch our attention to the domestic market. Waste has to be regarded as a resource, not a problem, and the material which leaves our plant is now providing electricity for families in Denmark."

Junction 25 does not handle any domestic waste, and can re-use 100 per cent of all commercial material suitable for recycling. It also receives construction and demolition waste which is sorted and graded for re-use back in the building industry.

The waste received is processed and handled within 48 hours with minimal on site storage required and conforms to regular inspections from the Environment Agency.

Future plans for the site is to apply for planning permission to build a roof structure to completely enclose the site.

Contact: [www.junction24ltd.co.uk](http://www.junction24ltd.co.uk)

## New high-performance armour steel invented by Dstl and academics

Known as **Super Bainite**, the new armour steel has been developed to have outstanding ballistics properties and, in tests, it has performed better than 'normal' steel armour.

The Ministry of Defence has signed a licensing agreement with **Tata Steel** to manufacture the steel in the UK. The new material was invented and developed in the UK, with production earmarked to take place at **Port Talbot** in South Wales.

Under the agreement the steel will be turned into seven different items, including perforated armour plates that could be used on future front line armoured vehicles.

Minister for defence equipment, support and technology, **Peter Luff**, said: "This cutting-edge UK invention and the manufacturing agreement mean that the UK now has its own onshore supply of high-performance armour steel. Super Bainite has both military and civilian applications, providing Tata Steel with important export opportunities."

Super Bainite was invented by **Professor Peter Brown**, Defence Science and Technology Laboratory (Dstl), **Professor Harry Bhadeshia**, Tata Steel Professor of Metallurgy at Cambridge University, and **Dr Carlos Garcia-Mateo**, previously at Cambridge University and currently at the National Centre for Metallurgical Research in Madrid.

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Traditionally, steel is covered with water to get it to room temperature quickly before structural weaknesses can form. But, with Super Bainite, a whole variety of cooling methods, involving air or even molten salt, are used throughout production. Combining drilling and hole-punching during the cooling process results in an ultra-high-hardness perforated plate.

Professor Brown said: "The ballistic performance of perforated Super Bainite steel armour is at least twice that of conventional rolled homogenous steel armour. This is because the introduction of perforations creates a large number of edges which disrupt the path of incoming projectiles, significantly reducing their potency."

Dstl owns the patents relating to the chemical composition and processing of Super Bainite. The licence agreement was signed by **Ploughshare Innovations** and Tata Steel and allows Tata Steel to manufacture and process Super Bainite in the UK and in Europe and to export it globally.

**Dr Paul Davies** of Tata Steel hopes defence equipment manufacturers, especially armour systems specialists, will recognise the steel's potential for applique up-armouring applications.

Contact: [www.dstl.gov.uk](http://www.dstl.gov.uk) – [www.tatasteeleurope.com](http://www.tatasteeleurope.com) – [www.ploughshareinnovations.com](http://www.ploughshareinnovations.com)

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

### Egress win IT Industry 'Security Innovation of the Year' Award

**Tony Pepper**, CEO of Egress Software Technologies said the firm supplied data classification and customisable disclaimer notifications, making email encryption, media encryption, and large file transfer more secure.

Unlike 'conventional software' which protects data in transit, Egress Switch offers control and real-time auditing throughout the lifecycle of sensitive data, preventing unnecessary loss at the hands of third parties.

Operating in a market defined by compliance yet driven by convenience, Egress products and services provide customers around the world with a unified security platform when sharing personal or sensitive data.

Leveraging Government accredited SAAS infrastructure, and utilizing AES 256 bit FIPS 140-2 encryption, Switch protects confidential information sent by email, copied to USB removable media, burnt to CD/DVD, or uploaded to FTP/Cloud Servers.

Access privileges can then be modified or revoked in real-time, even after the information is sent or shared. This allows users to instantly 'pull information back' should there be evidence that data has been lost or mishandled.

Egress said its system provided 'next generation' levels of control, combined with integrated workflow features, mitigates the risk of unintentional data loss and enforces recipient responsibility when handling confidential information.

The award was given by the **BCS** and **Chartered Institute for IT**. "It tops a fantastic year that has seen world leading brands adopt our game changing technology," said Tony Pepper.

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

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## **SETsquared start-up wins major grant from the Technology Strategy Board**

**Thoughtified Ltd**, a company created by graduates of the Department of Computing, **University of Surrey**, said the grant will enable the Surrey Research Park-based company to work in the development of a participatory sensing system that will improve the management of NHS patient records in remote patient treatment.

The web and smartphone hybrid system will enable significant cost savings for the NHS, through improved utilisation of resources and reducing the inefficiencies that are typically incurred in the treatment of patients at home. The total finance raised for the project amounts to £94,000.

Thoughtified Ltd founders **Aaron Mason** and **Georgios Michalakidis** said: "It recognises how our proposed system will meet a defined need within the NHS for better maintenance of patient records, saving them time and money."

**SETsquared** is the enterprise collaboration between five universities: **Bath, Bristol, Exeter, Southampton** and **Surrey**. It supports new businesses – both university spinouts and from the wider community – through its business incubation and acceleration centres, as well as supporting student entrepreneurship. Over the last five years, it has supported around 650 companies and raised nearly £0.75bn in capital.

Earlier this year Thoughtified won the SETsquared **Best Graduate Start-Up Award** in recognition of **ManagePlaces**, a remote asset management solution that uses cloud technology and real-time spatial information to help people in their work.

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

## **J2 Aircraft Dynamics Ltd wins sizeable contract from Iraqi Government**

The aerospace design, analysis and modelling software solutions provider sealed a \$170,000 contract with the **Ministry of Science and Technology** in Iraq to provide them with an aircraft design lab in Iraq and associated training and education over a two-week course in the UK.

This contract follows on from other recent wins with **King Fahed University** in Saudi Arabia. The J2 Aircraft Dynamics company was launched commercially in Dec 2009. Since that time it has forged direct partnerships and sold its software into **Cassidian, Embraer** and **NAL** (India) and expects further significant business wins in the near future in the US.

**Paul Jenkins**, sales manager at J2 said: "The aircraft design and evaluation landscape is changing. The major players no longer have the time or resources to continue writing code to provide answers. Our Universal Tool kit software is uniquely positioned, being able to use the legacy code which designers trust but then opening up a powerful analytical and evaluation environment requiring no code to be written. This is proving to be a powerful capability which is winning us many global supporters."

Paul explained that their major clients are indicating that by using the **J2 Universal Tool Kit Software** they can take 30% out of their design cycles which is a significant gain in today's market. The original j2 product offering has already evolved through commercial client-led developments with j2 Classical, j2 Performance and the aircraft model to SIM package, j2 Pilot SDK, all being released and sold in the last 12 months.

Paul Jenkins said: "Around 90% of our sales are exports right now but we hope to develop more of a balanced sale profile as we win more business in Europe."

Contact: [www.j2aircraft.com](http://www.j2aircraft.com)

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## **Bristol-based Brightpearl receives £1m funding from Eden Ventures**

The Brightpearl software package is made up of a number of modules, covering e-commerce, inventory management, accounting, CRM, order processing, contact management and CRM and service desk.

Brightpearl is privately owned, and funded by **Eden Ventures** and **Notion Capital**.

Eden Ventures invests in technology companies in the telecommunications software, enterprise software, SaaS, digital media, e-commerce, internet, social media and mobile sectors.

**Chris Tanner**, the founder of Brightpearl, has already started and sold two businesses. He has a business owner's 'insight' into the needs of an SME business. Chris studied at the **University of Sheffield** and has a MSc in Electronic Engineering, starting his first company at the age of 21.

After becoming frustrated by a patchwork of traditional systems such as **Sage**, ACT and OS-Commerce, but lacking the budget for the options available, Chris developed a wide-ranging operational software package, in Brightpearl.

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

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

### **Cambridge-based DiagNodus Ltd seeks early detection for colorectal cancer**

**DiagNodus'** innovative CRC screening technology – Screen2C – is a diagnostic solution for the early detection for colorectal cancer (CRC), and the firm recently signed an agreement with **Atlantic Accelerator** (AA) to speed the route to market.

AA's fast-track programme provides DiagNodus with the expertise, support and international networks to accelerate the development of and fundraising for Screen2C, as well as to provide a greater scope for clinical trials, business partnerships and regulatory compliance – the necessary next steps for the early-stage company.

Screen2C is a patent-pending method for colorectal cancer screening, developed by leading cancer research scientists. It addresses the need for a more sensitive, fully non-invasive, self-administered screening kit for individuals over the age of 50.

DiagNodus aims to replace the standard **Faecal Occult Blood** testing (FOBT) kits currently used for CRC screening worldwide with a more reliable simple self-administered, point-of care test.

The incidence of CRC is increasing in line with the ageing population. Early detection is key to successful treatment of the disease and related cost management. The current FOBT screening test does not detect non-bleeding tumours and has low sensitivity (approximately 14%). Screening colonoscopies, popular in the US, are expensive to perform, extremely invasive and can sometimes cause serious complications.

In developed countries CRC causes the second highest death rate of all cancers, largely due to late diagnosis. In 2010, 1.3 million new CRC cases were diagnosed worldwide mostly in the developed world. If CRC is detected at an early stage, over 90% of all CRC deaths are preventable.

Contact: DiagNodus – 01223 497 191.

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## **US firm with Cambridge links raises \$130m in November IPO at \$13 a share**

Clovis Oncology Inc has offices in San Francisco and Cambridge in the UK, and in June 2011 Clovis Oncology announced an agreement with Pfizer Inc for the development and commercialization of Pfizer's oral and IV Poly (ADP-ribose) polymerase (PARP) inhibitor, PF-01367338, currently in Phase 1/2 development for solid tumours. PF-01367338 is a novel, orally active, small molecule inhibitor of PARP and will be developed by Clovis as both a monotherapy and in combination with chemotherapeutic agents for the potential treatment of selected cancer patients.

In addition, Pfizer Venture Investments, the venture capital arm of Pfizer, will make a separate equity investment in Clovis Oncology.

Professor Hilary Calvert, Director of Cancer Drug Discovery and Development at University College London, and a pioneer in the field of human cancer therapy with PARP inhibitors, said "This drug is a very potent PARP inhibitor. It has already demonstrated very encouraging activity as an IV formulation and now we know that the oral formulation is also active. This potentially opens up many exciting opportunities for long-term treatment for cancer patients.

"We know that PARP inhibitors are active in germline BRCA-mutant (gBRCA) tumours, and that this activity extends beyond this group of tumours into broader patient populations in ovarian cancer and may do so in other cancers as well. I am delighted to work

Although the IPO launch price was 'at the low end' of the range that Clovis had priced them at, the firm managed to avoid the big discounts that other developers have had to offer to complete a maiden offering.

The cash will be used for Clovis's ambitious programs for experimental cancer drugs. CEO Patrick Mahaffy gathered together a team of veteran execs from Pharmion, which they sold for \$2.9 billion, and launched the biotech in 2009 with a big, \$146 million A round. That money has financed collaboration deals with Avila Therapeutics and Norway's Clavis Pharma, among others. The company is trading now under the CLVS symbol.

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

## **Medical device maker Sphere Medical raises £14m from IPO on to AIM**

The placing includes raising £12.8 million through an underwritten placing of over 15 million new ordinary shares to institutional and other investors at 92.5 pence per share. The company's market capitalisation upon admittance is £34.1 million.

**Sphere**, a manufacturer of patient monitoring systems, said the net proceeds of the placing will be used to fund continued development and regulatory approvals, manufacturing operations, general administrative expenses and marketing activities, as well as working capital requirements.

Chief executive **Stuart Hendry** said: "Sphere Medical's successful admission to Aim is an important further milestone in its corporate development. Our current range of in vitro diagnostic products and technologies has generated an enthusiastic response from new and existing investors."

The company's first tranche of placing shares is set to be admitted to the market on 17 November 2011, with a second tranche admitted the following day. **Peel Hunt** is acting as nominated adviser and broker to Sphere. The raising is slightly less than the £15 million the company said it had hoped to raise, say directors.

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

## **Arrayjet Ltd and Generation Scotland combine to assert its microarray technology**

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Generation Scotland (GS) and Arrayjet Ltd started a new collaboration to combine high quality research, human biobank material and health data with cutting edge inkjet microarray technology.

The initiative, supported by funding from **Scottish Enterprise** aims to develop new products and services to support biomarker identification and development. **Dr Iain McWilliam**, CEO of Arrayjet said “The field of biomarker discovery and research is a dynamic one, and is a key focus area for Arrayjet. Our technology allows us to rapidly produce high quality microarrays from a wide range of biobank sample types such as those available from Generation Scotland.”

**Professor Andrew Morris** from Generation Scotland said “This is an exciting project for Generation Scotland, allowing us to explore cutting edge technologies to facilitate research on GS samples and data and maximise the efficiency with which that research can be done.”

The main focus of Generation Scotland is on health and illness factors that are passed on in families. These inherited factors, or genes, influence our risk of being affected by a number of common causes of ill health, including cancer, diabetes, heart disease, mental illness, obesity and stroke. There is good evidence that genes also influence how we respond to different medicines. The basic idea behind Generation Scotland is that by comparing the inherited factors in affected people and healthy people, researchers will be able to work out which genes contribute to our chances of becoming unwell.

*Contact:* **Claire Jenkins**, commercial director, Arrayjet – 0131 440 5220 – [cjenkins@arrayjet.co.uk](mailto:cjenkins@arrayjet.co.uk)

### **Phagenesis Ltd leads research into dysphagia – the inability to swallow safely**

This pioneer in the treatment of acute and chronic dysphagia secured additional VC funding to accelerate commercialisation strategy. Phagenesis Ltd, a leader in the treatment of dysphagia, or an inability to swallow safely, announced that it had closed a €7 million funding round designed to accelerate the company’s development plans.

The investment is led by **Inventages**, one of the world’s largest life science funds specialised in treatment solutions for chronic diseases. Existing shareholders also participated in the round.

**Daniel Green**, CEO of Phagenesis, said “The company has successfully translated the research of our academic founder **Professor Shaheen Hamdy** into a medical device designed to alleviate the suffering of millions of patients around the world. We and Inventages share a vision of our technology and the way it can be deployed to benefit these patients, and we welcome them on board.”

The Phagenesis device delivers a precisely sequenced and calibrated electrical signal to the pharynx of the dysphagic patient. Peer-reviewed clinical trials have shown that this treatment is safe and effective in improving the patients’ safe swallowing ability.

**Gunnar Weikert**, founder of Inventages, said: ‘Phagenesis is addressing a critical unmet need in a very large market. Dysphagic patients are underserved by modern medicine and many face tube-feeding and a significant loss of quality of life for decades. Phagenesis is ideally-placed to meet this challenge.’

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

### **OBS Medical Ltd snaps up former chief executive of Biocompatibles plc**

**Crispin Simon**, who was, until its sale to **BTG plc** earlier this year, the dynamic chief executive of **Biocompatibles International plc**, has been appointed non-executive chairman of OBS Medical Ltd, the patient monitoring systems company.

OBS Medical Ltd also announced that **Visensia**, the first FDA-cleared patient health index device with

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alerts on the market and is continuing to develop innovative leading-edge products, had received 510k clearance from the FDA. This is the fourth 510k clearance for Visensia since the original introduction of Visensia, originally known as BioSign, in 2005.

Visensia calculates a patient status index based on a weighted average using a non-linear fusion of five vital signs namely heart rate, oxygen saturation, blood pressure, skin temperature, and respiration rate. The patient status index is a single measure of the patient's condition which provides early warning of patient deterioration.

**Jacques Feldmar**, CEO of OBS Medical, said Visensia Version 3 delivers key additional features and improvements that will continue to improve patient outcomes and hospital efficiency.

In addition, OBS Medical, together with **t+ Medical Ltd**, organised **Help4Mood**, a significant advance in supporting the recovery of people with major depression at home. The project has been funded by the EU's Seventh Framework Programme, has a budget of around 3m euros.

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

### **Geron in the US shuts down pioneering stem-cell program**

In what may in future be seen as a key moment in biotech research history, the highly regarded stem cell research firm **Geron** – which was involved in a world-leading study of whether embryonic stem cells could cure spinal-cord injury – has closed the programme.

The decision brings to a halt the world's largest and longest-running programme to develop medical treatments from embryonic stem cells, versatile cells able to form many other types of human tissue.

Geron's project was one of the most aggressive, controversial, and far-reaching research efforts ever undertaken by a biotechnology company. It began more than 13 years ago, when Geron financed the initial discovery of human embryonic stem cells by university researchers in **Wisconsin**.

Those efforts, which cost at least \$250m, culminated last year in a first-of-a-kind clinical study to see if lab-grown nerve cells could return movement or sensation to people with spinal-cord injury. That study was the first using embryonic stem cells ever approved by the **US Food and Drug Administration**.

Geron plans to focus on cancer drugs, said its new CEO **John Scarlett**, who joined in September. He blamed the decision on an "environment of capital scarcity and uncertain economic conditions."

In recent months, Geron had seen the departure of key leaders, including the director of the stem-cell study, neuroscientist **Ed Wirth**, and its former CEO, **Tom Okarma**.

**Wise Young**, an expert on spinal-cord injury at **Rutgers University**, said "The writing was on the wall, but I am disappointed, because this could mean other companies will be a little more reluctant to follow their footsteps" Young estimated that there are still dozens of companies, mostly startups, working on potential stem-cell treatments.

**Robert Lanza** is chief medical officer of **Advanced Cell Technology**, based in Marlborough, Massachusetts. ACT is carrying out the only other FDA-approved trials using embryonic stem cells, which aim to treat macular degeneration, an eye disease that causes blindness. He said "A lot of experts in the field were surprised that they selected spinal-cord injury as their first application. There were not very good end points, and we knew it was going to be very difficult to show a biological effect." In ending its stem-cell research, Geron will lay off 66 people, or 38 percent of its workforce.

Contact: [www.advancedcell.com](http://www.advancedcell.com) – [www.geron.com](http://www.geron.com)

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## HEADLINE NEWS

### UK Government launches business growth package for SMEs

A wide range of low-level measures have been announced by the **Department for Business** in a recent announcement. Among the measures is the **HSBC Business Thinking programme**, launched for 2011-12, including financial support for appropriate businesses; supported overseas trade mission; and mentoring;

- **Barclays Bank** business banking managers will work with UKTI and **ECGD** on how they can support their clients. Barclays has an extensive commercial banking network in sub-Saharan Africa. UKTI will work with them to develop business clubs in the UK, and they will use their branch network to develop business clubs in the African countries where they have a presence;
- **Lloyds** to launch a pilot programme developing a network of export mentors, in partnership with the Manufacturing Technology Association;
- A new **UKTI** prize for the best export idea. This prize will run regionally and nationally;
- Promoting British business to the many journalists and international business people passing through London during the **Olympic Games** by establishing the new **British Business Embassy**, based at Lancaster House. It is estimated this will achieve £700m in export sales as a result of games-time activity;
- **The Law Society** will work with its members to produce guides to international business aimed at SME firms new to exporting, explaining key legal issues such as employment law, international contract law, and tax;
- BIS and **Intuit** will deliver a new financial skills programme to give SMEs the advice and guidance they need to access and manage finance.
- **RBS** is supporting the next wave of **Asia Task Force** activity. The Asia Task Force is chaired by the Business Secretary, and **Lord Powell**. Its aim is to bring together experts from industry, education and government to focus on boosting British exports to, and investment in, Asian countries.

Contact: [www.bis.gov.uk](http://www.bis.gov.uk)

### Finalists in 2011 Manchester Evening News Business of the Year Awards announced

With the winners to be decided on 17<sup>th</sup> November – key finalist companies include:

**DRL**, an online white goods retailer based in Bolton, car care products company Tetrosyl, which has its headquarters in Bury, print services business **M2**, which is based in Old Trafford and has offices in London and Glasgow; retailer **Entertainment Magpie**, which is based in Macclesfield and sells used CDs, DVDs and computer games via the web and a chain of clearance stores; medical reports provider **Premex Services**, which has its headquarters in Bolton and was acquired for £65.9m by Atlanta-based **ExamWorks** in May; and **Accrol Papers**, based in Blackburn, is a tissue paper manufacturer supplying the discount retail and catering industry.

In the £10m-£25m turnover section – data centre specialist **Sudlows**, based in Manchester, won the under £10m turnover category awards last year; **WEMS International**, formerly **Adam International**, which specialises in wireless systems that can be used to remotely monitor services including heating, electricity, gas, water and security.

In the under £10m turnover section: creative communications agency **Fresh Group**, which is based at Cheadle Royal and won the young business of the year category in 2005; **APEM**, which was spun out of **Manchester University** and is based in Stockport, is an environmental consultancy working with major developers in the construction and energy industries; and **In Call Solutions**, based in Worsley, a telecoms service provider supplying over 100,000 business customers.

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Young Business of the Year will be chosen from **Strategic North**, based in Bowdon, a strategic marketing agency working with some of world's leading pharmaceutical companies; **Apadmi**, of Trafford Park, offers smartphone application design, build and analysis; **Hangar Seven**, based in Macclesfield, which provides photography, design and artwork for catalogues and brochures as well as video and advertising production.

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

### **Inaugural 'Made in Wales Awards' unveils a few little-known SMEs in the Valleys**

The Medical and Life Sciences Award was awarded to **Flexicare Medical**, based in Mountain Ash. It devised a set of non-matching connections for hospital treatment tubes to prevent accidents. One judge said: "This is an area where a Welsh company can influence medical treatment worldwide in very many different treatment areas."

The Green Manufacturer Award was **Cambrian Printers**, based in Aberystwyth. Cambrian Printers was praised by the judges for making far reaching changes, being outward looking and having the statistics to back up its claims. The judges noted that, while these may not commonly be seen as green industries, they are often where the biggest savings in waste and energy can be made.

The Manufacturing Innovation Award went to **Royal Mint**, based in Llantrisant. It impressed judges with new processes for metal plating and associated waste. The processes are now all contained on the site, much less is now wasted and the Mint saves £250,000 a year.

The Creative Design Award went to **Recycle Direct**, based in Bridgend. The firm designed a range of baling and compacting equipment which can increase in capacity in line with the user's needs.

Finally, the Technology Award went to **SPTS**, which makes equipment for the semiconductor industry, impressed judges with the international reach of its product range and the way it has adapted to changing markets over the past three years.

Contacts: [www.flexicare.com](http://www.flexicare.com) – [www.cambrian-printers.co.uk](http://www.cambrian-printers.co.uk) – [www.spts.com](http://www.spts.com)

### **SPECIAL REPORT: SETsquared Showcase SMEs, October 2011**

On 12 October 2011 the five University enterprise network **SETsquared** – of Bath, Bristol, Southampton, Surrey, and new boy Exeter – held their annual company showcase event in central London – with 18 companies at its exhibition.

Starting in the early morning the event is a favourite among the investment community, not least because it offers excellent hot sausage rolls and excellent coffee, courtesy of the caterers at the venue, the **Institution of Civil Engineers**, just off Westminster Square.

While the exhibition offered a number of attractive investment opportunities, including many new ones in the trendy spheres such as mobile, digital and cloud telecoms – such as **Calvium Ltd**, **dpcloud Ltd**, and **Imobigo Ltd**.

*– but three particular companies did attract our attention...*

- **Attomarker Ltd** was presented by **Prof Andrew Shaw** of **Exeter University** and his colleague **Dr Mark Fisher**, the company's CEO.

Attomarker is aiming to create a system that accurately monitors vital signs in post-operative patients, thus enabling clinicians to more accurately assess when patients can be safely sent home.

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Over the next two years Attomarker is 'seeking to fund the development of its diagnostic algorithms, employing a discrete number off the biochemical pathway intermediates in a second stage trial' – projects that are expected to cost £1m.

Overall, the firm is hoping to construct a robust reader that can detect multiple biomolecules, in whole blood, without the need for additional special reagents, and it has some links already with existing clinical analyser suppliers.

Best of all, the team is experienced and mature. Prof Andrew Shaw was the brains behind **Exomedica**, a medical technology firm that was later sold to a US firm a few years ago.

Contact: Dr Mark Fisher – [mark.fisher@attomarker.co.uk](mailto:mark.fisher@attomarker.co.uk)

- Not new to the showcase is **TISICS Ltd**, a company started back in 2005 from a management buyout of **QinetiQ plc's** titanium composites business, which the privatized group never managed to exploit properly (shades of **QinetiQ Nanomaterials**, perhaps?).

TISICS is the only firm outside of America which has specialist, ultra high strength ceramic reinforcement and patented composites technology – and it has been successful in manufacturing large aerospace components that are 40-70% lighter than those of competitors if made of conventional metals in systems such as engines, brakes and landing gear. Customers include **Rolls-Royce** and **Messier-Dowty**.

For the future, the company believes it has spotted a new important market in pressure vessels and new fasteners for space and subsea oil and gas operations. It is therefore seeking £2m to develop these pressure vessels and pioneer low volume production.

TISICS has been working hard with **Surrey Satellite** (SSTL) for thin-walled lightweight pressure vessels, and is in talks with the **European Space Agency**.

Contact: **Stephen Kyle-Henney** – 01252 516 678 – [skylenehenney@tisics.co.uk](mailto:skylenehenney@tisics.co.uk)

- **Alloy Solutions**, presented by **Foli Ekue** and **Kaivi Ekue**, was the second firm to catch our eye. The firm impressed us with its tough minded management and determination. The founders have spotted a gap in the retail loyalty market, with an emphasis on local shops and stores. Currently, **Tesco** and **Sainsbury's** run highly successful storecard benefits schemes, but the Alloy Solutions says that '90,000 stores' in the UK have 'little or no loyalty programmes in place'. In addition they allude to the 27,000 independent restaurants, 49,000 pubs and 2600 health clubs which also have no loyalty scheme.

Alloy have devised a '**Local Hero Network**' which provides SME retailers with the technology and tools to create and manage their own customer reward programmes and gift cards.

For a low fixed monthly fee, Mr Ekue said their solution was already doing business – 'with 30 outlets and 75,000 cards issued, of which 65% had been used by the cardholder in the past three months'. Alloy Solutions is now seeking £120,000 to develop the existing platform and build a sales force for the company.

Contact: [foli.ekue@alloy-solutions.com](mailto:foli.ekue@alloy-solutions.com) – 07503 555 364.

Our selection of the second league SMEs would include **Azurtane**, led by **Don Gregory**, which offers a fuel consumption and 'emissions regulations' to the shipowner community. The snag we foresee is that the international shipowner community is notoriously stingy, and finds it very easy to avoid any form of regulation.

Secondly, **Sofant Technologies** – something of an interloper being a spinout from the **University of Edinburgh** – also presented, founded by CEO **Rick Hillum**, with an excellent engineering team behind it.

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However, its smart antenna technology may be clever but the fate and fortunes of earlier British antenna companies (**Sarantel plc, Antenova plc, University of Kent's** research work with **Harada, of Japan**) have not been 'promising' from a commercial point of view.

Contacts: [www.azurtane.com](http://www.azurtane.com) – [www.sofant.com](http://www.sofant.com)

## UNIVERSITY NEWS

### Dundee scientist awarded £80,000 Rank Prize for research into human nutrition

**Professor John Cummings**, Emeritus Professor of Experimental Gastroenterology at the **University of Dundee**, will receive £80,000 after winning the top prize in nutrition research.

The Rank Prize was established in 1972 following a bequest from the late industrialist and film producer **Lord Rank**. It was his wish to promote the sciences of nutrition and optoelectronics. These two areas were of special interest to Lord Rank because of his family's milling and baking business, and the Rank film organisation. Two prizes are awarded annually – one for nutrition and one for optoelectronics – and are only given to those considered to be eminent leaders in their respective fields.

Whilst researching the role of dietary fibre, Professor Cummings and his team showed that the large bowel, or hind-gut, was indeed vital to human digestion. They identified that fermentation in the colon contributes to energy metabolism and protection against large bowel cancer.

In recognition of his pioneering research, Professor Cummings was appointed OBE in 2008. He also received the **British Nutrition Foundation** annual award for 2008 for making an outstanding contribution to nutrition.

Although the large bowel was known to play a major role in regulating the digestive health of animals such as horses and elephants, it was not conventionally regarded as being of major significance for human health.

He will add the Rank Prize to that collection when he is formally presented with the award on Monday, 6th February 2012 during a ceremony at the **Royal College of Physicians**, London. **The Rank Prize Funds** is a charitable organisation which seeks to recognise excellence in specific fields of research and reward innovators for their dedication and outstanding contribution.

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

### Infatics Ltd wins Edinburgh University's Principal Enterprise Award

Jonathan Millin from the department of Computer Science won a Principal's Enterprise Award, with his company, Infatics Ltd, which aims to revolutionise the outdoor advertising industry, allowing businesses to analyse and record who interacts with their advertising, and so revealing how effective their marketing strategy is.

Worth £1,000, the awards are given to those in order to further develop their business plan in areas including research and development, marketing and website development.

Jonathan and all the other four winners of the award will develop and re-enter their business plans in 2012, and again be in the running to win one of the top three prizes.

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

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## **Bristol University spies great potential with its 'ice-pigging' research**

**Professor Joe Quarini**, of the **Department of Mechanical Engineering** at the **University of Bristol**, invented ice pigging, which overcomes many of the drawbacks of conventional cleaning by pushing a plug of icy slurry under pressure through pipes to remove debris.

Conventional pigging uses solid plugs, but these can get stuck and sometimes can't be used at all if the pipework is too complex. In contrast, ice pigs can never cause a blockage. Even if a problem did crop up, the ice would ultimately melt and drain through the system. The flow properties of ice pigs mean they can also find their way around t-junctions, u-bends and other awkward arrangements that might otherwise prevent pigging from being used.

Following great success with trials in the water industry in 2010, Bristol's engineers are now in the process of setting up a series of pilot schemes in different food production facilities – not to mention revolutionising cleaning operations in food and drink, water, nuclear power and other process industries. The potential for food applications is enormous, says Professor Quarini.

“Conventional cleaning-in-place (CIP) circulates water and caustic for tens of minutes and the production plant is out of action for the whole time. It also generates vast quantities of contaminated waste water that needs treating. But at home you wouldn't try to wash a heavily contaminated bowl out by just rinsing it,” he says. “You'd scrape it out first, and that's what the ice does. Ice pigging could have a huge impact on reducing both the cleaning time and the amount of contaminated water generated.”

Ice pigging is also expected to deliver more effective transitions between production runs, because the slurry can be used to separate different products during the switch from one to another. For instance, preventing one batch of yoghurt from mixing with another of a different flavour will reduce waste substantially. And because almost all of the material pushed out ahead of the pig remains undiluted by the ice, product yields will increase.

“It may take time, but I expect ice pigging to become the standard way of cleaning pipes in a range of industries,” says Professor Quarini. “These pigs will fly!”

The Swiss-Swedish engineering multinational **ABB** is supporting the development of ice-pigging. ABB supplied all the flow, pressure, conductivity and suspended solids instrumentation, as well as PLCs, drives and low-voltage electrical products to help turn the research project into a practical working system.

**Les Slocombe**, Pressure and Temperature Products Manager for **ABB Measurement Products**, said “It's great to be able to support a British invention that promises to deliver big cost savings and environmental benefits across the process industries.”

*Contacts:* Professor Joe Quarini – 0117 331 5948 – [joe.quarini@bristol.ac.uk](mailto:joe.quarini@bristol.ac.uk); Les Slocombe – [les.slocombe@gb.abb.com](mailto:les.slocombe@gb.abb.com) – 07702 743 146.

## **Tooth stimulation fluid may soon help patients avoid the dentist's drill**

New technology developed by researchers at the **University of Leeds** that is based on knowledge of how the tooth forms in the first place could soon be providing a pain-free way of tackling the first signs of tooth decay.

It uses a peptide-based fluid that is literally painted onto the damaged tooth's surface to stimulate the tooth to regenerate itself. The fluid developed by researchers in the University of Leeds' **School of Chemistry** contains a peptide known as P 11-4 that will assemble into fibres under certain conditions. When applied to a tooth, the fluid seeps into the micro-pores that form when the acid produced by bacteria in plaque dissolves the mineral in the teeth.

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Unlike another drill-free cavity solution called the DMG cavity infiltration system that uses a gel to open up the pores of a cavity so it can be filled with a resin, once inside the micro-pores the peptide-based fluid spontaneously forms a gel that provides a “scaffold” that attracts calcium and regenerates the tooth’s mineral from within to provide natural and pain-free repair of the damaged tooth.

“We are essentially helping acid-damaged teeth to regenerate themselves. It is a totally natural non-surgical repair process and is entirely pain-free too,” said **Professor Jennifer Kirkham**, from the **University of Leeds Dental Institute**, who has led development of the new technique.

The researchers recently took the technique out of the laboratory and tested it on a small group of adults whose teeth showed the first signs of decay. The researchers claim the results from this small trial have shown that P 11-4 can indeed reverse damage and successfully regenerate the tooth tissue.

“The results of our tests so far are extremely promising,” said **Professor Paul Brunton**, who is overseeing the patient testing at the **University of Leeds Dental Institute**. “If these results can be repeated on a larger patient group, then I have no doubt whatsoever that in two to three years time this technique will be available for dentists to use in their daily practice.”

The Leeds study is being funded by Switzerland-based start-up **Credentis AG**, which has licensed the technology and plans to introduce P 11-4 to dentists worldwide.

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

### **UK Government offers £50m for Manchester’s graphene research**

The difficult task of commercializing the IP held in graphene, ‘the world’s thinnest, strongest and most conductive material’ on which the promise of future touchscreen mobile phones, lighter aircraft wings, superfast internet connections and transistors is based, may have been made slightly easier with the announcement that the Government will put £50m into the creation of a ‘Graphene Global Research and Technology Hub’.

**Professor Andre Geim** and **Professor Kostya Novoselov**, who discovered graphene at the **University of Manchester** in 2004 and awarded the 2010 Nobel Prize in Physics.

Graphene, a novel two-dimensional material which can be seen as a monolayer of carbon atoms arranged in a hexagonal lattice, is one of the world’s most versatile materials. Its potential applications include.

The development of the hub will capitalise on the UK’s international leadership in the field. It will act as a catalyst to spawn new businesses, attract global companies and translate the value of scientific discovery into wealth and job creation for the UK.

The centre would help develop the technology to allow manufacture on a scale that would open up the promising commercial opportunities, incorporating a large doctoral training centre and advanced research equipment.

A full business case is apparently being developed by the **EPSRC** in partnership with the **Technology Strategy Board** – but, in our view, the opinions and forecasts of leading materials and electronics SMEs should perhaps have been consulted first?

Contacts: [www.manchester.ac.uk/research/Andre.k.geim](http://www.manchester.ac.uk/research/Andre.k.geim) – [www.manchester.ac.uk/aboutus/facts/who/umip](http://www.manchester.ac.uk/aboutus/facts/who/umip)

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## University of Greenwich research makes glass filter ground water pollution

**Dr Nichola Coleman**, a senior lecturer in the university's **School of Science**, and her team, combined ground coloured glass, lime and caustic soda, and heated the mixture to 100°C in a sealed stainless steel container.

This transformed the ingredients into tobermorite, a mineral that is effective at removing heavy metals from ground- or waste-water streams. Dr Coleman is hoping to incorporate the tobermorite into filtration devices, which could be used to prevent water-borne pollutants from spreading from contaminated areas.

She said "The novelty of the research is that the glass can be recycled into something useful. Nobody has previously thought to use waste glass in this way."

At present, much of the coloured glass left out for recycling can't be easily re-used. Dr Coleman remarked: "This is because even though there's a fairly constant demand for recycled clear glass, glass in colours such as green, brown and blue isn't all that sought-after, so many recycling centres don't bother processing it. As a result, waste coloured glass is now being stock-piled in some locations, waiting for a use."

Contact: [www.gre.ac.uk/schools/science/staff/coleman](http://www.gre.ac.uk/schools/science/staff/coleman)

## Aston University opens new research centre specialising in brain development

**Aston Brain Centre** specialises in areas including epilepsy, dyslexia, autism, ADHD, sleeping disorders and metabolic disease. The £5m purpose-built site features a brain scanner specifically for children, which is one of three in the world.

The ABC will also provide a referral service for the **National Health Service** (NHS), providing diagnostic services unavailable within the NHS.

**Professor Julia King**, vice chancellor of Aston University, said: "The centre is one of the most advanced brain imaging research facilities in the world and it will both enable the delivery of world-class research, and the translation of that research into unparalleled patient-care for the people of Birmingham and beyond."

The ABC is supported by **Higher Education Funding Council for England** (HEFCE), the **Wellcome Trust**, **Aston University**, **Dr Hadwen Trust for Humane Research** and the **Lord Dowding Fund for Humane Research**.

Contact: [www.aston.ac.uk/lhs/research/centres-facilities/brain-centre](http://www.aston.ac.uk/lhs/research/centres-facilities/brain-centre)

## LATE DATES FOR NOVEMBER 2011

### 23 November 2011 – University of Greenwich Lecture: 'The Global Economic Outlook: Double-Dip or Sustained Recovery?', with economist Ian Hardwood

Main Greenwich Campus, in King William 002, University of Greenwich, south east London.

Ian Harwood has worked as a global macro economist in the City of London since the late-1970s and is a Visiting Professor at University of Greenwich. He was Chief Economist of SG Warburg (1986-1994), Dresdner Kleinwort (1994-2008) and the Evolution Group (2009-2011) and is currently Global Economist at Redburn Partners.

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Ian has long been rated highly by institutional investors world-wide. He was voted Number One in Global Economics in the annual Extel buy-side poll for eleven successive years from 1997 through to 2007 and Number One in European Economics in the 2008 Institutional Investor poll.

Contact: [www.gre.ac.uk/business-events](http://www.gre.ac.uk/business-events)

### **24 November 2011 – Royal Academy of Engineering Lecture – ‘New Frontier: Engineers and the Global Energy Challenge’**

Royal Society of Medicine, 1 Wimpole Street, London W1G.

Speakers include **Malcolm Brinded CBE**, director, Upstream International Royal Dutch Shell plc, and Hilary Mercer, Vice President LNG/Integration, Arrow Energy PTY Ltd. 6.00pm for 6.30pm.

Contact: [www.raeng.org.uk](http://www.raeng.org.uk)

### **30 November 2011 – The Regent’s Lecture**

Tuke Hall, Regent’s College, Regents Park, London. Nearest tube is Baker St.

‘Business at the Crossroads: UK Issues in a European and Global Economy’, 2011 Regent Lecture and Reception with **John Cridland**, Director-General of the Confederation of British Industry. He will be joined on the panel by key players and analysts in the industry, looking at the challenges ahead for UK Business: **Sir John Gieve**, former Deputy Governor for Financial Stability of the Bank of England 2006-2009; **Bev Hurley**, Chief Executive of innovation agency YTKO; **John Taylor**, CEO of ACAS; chaired by **Professor John Drew**, Director of the Institute of Contemporary European Studies, Regent’s College London.

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

## **AND FINALLY...**

>> The UK is to sell all of its 74 decommissioned Harrier jump jets, along with engines and spare parts, to the **US Navy and Marine Corps** – a move expected to help the Marines operate Harriers into the mid-2020s and provide extra planes to replace aging two-seat F-18D Hornet strike fighters.

The **Disposal Services Agency** is in talks with the US Navy for the sale of the Harriers, which were retired from the RAF and Royal Navy late last year in one of the most controversial moves of the defence reductions, which also cut the aircraft carriers that operated the jets, other warships, maritime patrol planes and personnel.

Most retired Harriers are stored at the RAF base at **Cottesmore, Rutland**. They have been undergoing minimum fleet maintenance, including anti-deterioration measures, in order to keep them airworthy.

The purchase will give the US Marines a relatively economical way to get their hands on key components to keep the Harrier fleet running. While it is unusual for the US to buy used foreign military aircraft for operation, integration of the British planes into Marine Corps squadrons shouldn’t be a major problem, **Lon Nordeen**, author of several books on the Harrier. “I don’t think it will be costly to rip out the Brit systems, and replace them with Marine gear,” he said.

British GR 9s, although upgraded with improved avionics and weapons, are powered by the **Rolls-Royce** Mark 105 Pegasus engine. GR 9As have the more powerful Mark 107, similar to the Rolls-Royce F402-RR-408s that power Marine AV-8Bs.

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Nordeen said the Harrier IIs, built between 1980 and 1995, “are still quite serviceable,” he said. “We’re taking advantage of all the money the Brits have spent on them. It’s like we’re buying a car with maybe 15,000 miles on it.”

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

#### >> **Removal of old oil platforms ‘worth £40bn’**

Decommissioning ageing infrastructure in the North Sea will create an industry worth as much as £40 billion over the next 30 years, according to a new estimate. But experts are warning work could be lost to foreign firms unless the energy sector and government agree a co-ordinated strategy.

**Derek Busby**, regional director at **Royal Bank of Scotland** in Aberdeen, believes the opportunities presented by the North Sea decommissioning process may be far greater than previously calculated and in the past valuations have placed the industry’s potential at between £24bn and £30bn.

As many as 470 installations, 10,000 km of pipelines, 15 onshore terminals and around 5,000 wells will eventually need to be deconstructed off the coast of Aberdeen as the oil and gas sector nears the end of its lifetime. But Busby says the UK industry needs to “drastically increase its capacity” if British firms are to win a large slice of the work.

**Decom North Sea**, a trade organisation set up specifically to tackle the challenges around decommissioning, thinks the serious challenge confronting firms wanting to profit from the decommissioning process is shortage of skills.

**Brian Nixon**, chief executive of Decom North Sea, said: “It does deter and prevent investment in new technologies, equipment, training and the upgrading of skills.”

However, the pattern in the past was that the big oil companies which built the giant oil rigs then sold them to much smaller players, who eked out the last reserves. But then the small players folded – and the taxpayer was left with the clean up bill and the structures left to rot.

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

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