GIBSON INDEX NEWSLETTER

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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

Why does the **BBC** hate small British companies so much? The Corporation finds no difficulty in giving hour upon hour of peak coverage, all-free coverage to any Hollywood starlet peddling her latest film, book-signing and marriage break-up, but rarely does it cover the fortunes of small British tech companies.

And when the BBC does show film of a small company – usually part of a 'the economy in trouble' news package – the company is often unnamed and un-captioned, and absolutely no one wearing a company T-shirt can be shown, or URL or logo seen.

This happened to **Tim Francois**, of **OCRobotics**, a Queen's Award-winning SME, when the BBC broadcast in late September a short video about their snake-arm robot operating at the **Sellafield** nuclear power station.

OCRobotics was told there would be no mention of the company's name on the BBC's website – a site groaning with references to film actors and sports stars. This, the BBC journalist **Dave Harvey** explained, was due to 'advertising' rules.

Worse, the BBC is not alone among mainstream media in thinking that 'technology' starts and ends with gadgets and social media. It thinks 'tech' means **Apple**, or **Google**, when in fact very little R&D is often utilized or undertaken in these activities compared with 'hard' technology sectors such as engineering, processing and biotech.

The BBC's 'Click' programme routinely visits international trade fairs in Los Angeles and Las Vegas – and succeeds in interviewing *not one* British firm – time after time. All delivered with those annoying, utterly fake 'Essex'/Mockney accents.

Then again, when the BBC *did* try their hand at true engineering coverage – the poor subjects suffered disastrous setbacks, or extinction. Its series of documentaries on three 'icons' of British engineering – submarine **HMS Astute**, **R-R's Trent** engine and the **Harrier**. HMS Astute hit the rocks, a Trent suffered a near-catastrophic failure over Singapore – and the Harriers were scrapped.

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 wideranging 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

Compliant Phones wins significant contracts with Vodafone and Autonomy

The firm is an emerging international leader in call tracking technology, enabling large organizations to record mobile phone calls and data traffic in line with the **Financial Service Authority's** (FSA) impending mobile recording regulations.

Vodafone, the world's largest mobile telecommunications provider, have chosen to use Compliant Phones Cloud platform to provide secure mobile recording for their clients, some of the worlds' largest institutions and corporations.

Autonomy, the Cambridge-based enterprise software company and leader in knowledge management, chose to partner with Compliant Phones in July.

Compliant Phones sees strong demand for their products, often driven by legislative changes which can be disruptive. These create new markets and the company is planning for super-fast growth.

According to **Orange Business UK** eight out of 10 UK medium and large financial firms are unaware of the new FSA recording regulations. The FSA remains committed to its 14th November 2011 deadline on mobile recording, but several banks still think that they can be persuaded to delay the deadline.

Compliance Phones has a high-profile management team, including CEO **Curtis Nash**, and **Pim Dale**, ex-Dell general manager. **David Leftley** has a seat on the board via his investment in the firm as principal of **Vodafone Ventures**, alongside **Colin Watts** of **Oxford Capital Partners**.

Contact: www.compliantphones.com

SME NEWS - ENGINEERING, ELECTRONICS, TELECOMS

Gordon Murray Design unveils electric sports car design – the AR.1

In 1988, Murray's **McLaren MP4/4** became the most successful race car in history. Piloted by the extraordinarily talented driver pairing of **Prost** and **Senna**, the car had 16 starts for 15 wins – it was leading the remaining race when Ayrton Senna ran into a backmarker. In motor racing, there's no such thing as a perfect season, but **McLaren** went very close that year with its powerful **Honda** engines and Murray's ability to design cars which go around corners as fast or faster than all comers.

Murray created his own design consultancy just a few years ago, and the first announced project was the **City Car**, a project which demonstrates the same genius as his racing and supercars.

The AR.1 will use its much larger footprint, much wider tyres, and much better suspension to go around corners much, much faster, with far better feel and control. Coupled with the very predictable rheostat-like throttle-engine relationship of the AR.1's electric engine, you'll be able to feel your way to the limit of adhesion and stay there.

The reason Murray was commissioned to design and build the AR.1 was to demonstrate the wares of **Toray**, which produces a lot of the advanced materials used in the construction of modern cars.

Among the company's multitudinous advanced materials and technologies is a carbon fibre manufacturing process which enables a part, such as the AR.1's carbon fibre frame, to be manufactured in just 10 minutes. The same process can just as easily yield the shell of any type of car. The advantages of manufacturing a car this way are many. The shell is light and strong. Light enough to be 150 pounds

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lighter than a mini.

The power train in the vehicle comes directly from commercially available electric vehicle, but the unique electrical architecture, software and control units were developed at Gordon Murray Design.

All told, we don't know what the chances are of this car ever reaching production, but it would certainly be the ideal sports car of the modern era. **Gordon Murray** moved into road car design while at McLaren when he conceived the McLaren F1 supercar and convinced McLaren boss **Ron Dennis** to produce it. Released in 1991, it was the fastest (240 mph), finest and most expensive (roughly \$1m) supercar in the world and remained so for over a decade.

British sports cars ruled the world for most of this century. Post WWII, cars such as the Triumph Spitfire, MG Midget, and Austin Healey Sprite offered sports motoring to the masses, and the AR.1 may be a fine successor to these cars.

Contact: www.gordonmurraydesign.com

Simulator specialist Micro Nav Ltd wins contract to train airport drivers

Micro Nav Ltd, the specialist simulation and training company, secured a contract to supply their Airside Driver Training (ADT) simulator to **dnata Ltd**, which recently bought air services company **Aviance** at **Heathrow's** Terminal 3 and 4.

Martin Wise, sales director at Micro Nav said "The use of simulators to provide training and increase safety has a long heritage in aviation and with the introduction of the ADT we are extending this tradition into ground operations. Micro Nav is taking a lead in the important area of improving safety and operational efficiency using a competency-based training approach."

He's not joking: accidents involving delivery trucks, service trucks and tugs are far from rare – and very expensive. Some years ago a **British Airways** 747, being towed to the engineering sheds at Heathrow, slipped loose from its tug – and crashed straight into – another second BA 747, which was also luckily empty, badly damaging both.

dnata Ltd will deploy this technology for training over 400 aircraft tug and ground service drivers in airside procedures and radio skills. Dubai-based dnata is the fourth largest combined air services provider in the world.

Micro Nav's ADT simulator provides a safe, versatile and realistic environment in which airport drivers can be trained and evaluated. The simulator can be used by drivers to practice a wide variety of procedural tasks and develop their radiotelephony (RTF) skills. Personnel will be able to experience operating airside at night, in low visibility, in heavy traffic and during emergency scenarios without leaving the training facilities.

The adoption of the ADT by dnata Ltd reflects a growing trend towards the competency-based training and validation for all ground personnel. This trend is expected to be reflected in forthcoming regulatory requirements from the UK **CAA**, **EASA** and the **FAA** for airside driving and RTF proficiency certification.

David Edwards, ground services director at dnata, said "the simulator will ensure that our drivers retain safe and efficient driving standards at London Heathrow".

Contact: www.micronav.co.uk

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Bladon Jets wins second Technology Strategy Board Award

A consortium led by micro gas turbine company Bladon Jets has been awarded funding from the **Technology Strategy Board** to continue its development of an 'Ultra Lightweight Range Extender' (ULRE) for next generation electric vehicles.

The objective of the consortium, which includes luxury car maker **Jaguar Land Rover** and **Warwick University**, is to validate the use of a Micro Turbine Range Extender.

Development of new technologies will include ultra lightweight engine designs, advanced battery management systems and the next generation of electric motors are just three of the new low carbon vehicle technologies to be developed by leading British companies.

The Technology Strategy Board and BIS have jointly agreed to invest £10 million in grants to 16 collaborative R&D projects. Iain Gray, chief executive, said: "Through our low carbon vehicle Integrated Delivery Programme we aim to integrate the low carbon vehicle innovation chain in the UK from the science base through collaborative R&D to fleet-level demonstration. By investing in such cutting-edge development, we are driving forward low carbon vehicle innovation in a range of important areas for the UK.

The consortia developing the technologies will be led by Advanced Composites Group Ltd, Amberjac Projects Ltd, Ashwoods Automotive Ltd, Axon Automotive, Bladon Jets, Cobham CTS Ltd, Drive System Design Ltd, Econolyst Ltd, Jaguar Cars Ltd, Leyland Trucks, Magnomatics Ltd, Morgan Motor Company, Prodrive, Sevcon Ltd, T&L Process Technology Ltd and The Manufacturing Technology Centre.

Contacts: <u>www.bladonjets.com</u> – <u>www.innovateuk.org</u>

Cambridge spinout Enecsys Ltd scoops £25m in further funding round

The company, which emerged from the Department of Engineering, is aiming to develop reliable, long-life solar micro inverter systems for homes and offices.

In what is the largest private equity raised by any European cleantech company so far in 2011, **Climate Change Capital Private Equity** led the funding round and joined existing investors.

The firm was founded in 2003 by the Department's **Professor Gehan Amaratunga** and his PhD students **Asim Mumtaz** and **Lesley Chisenga**, and **Jayanti Durai** from the nearby **Judge Business School**.

They won the Cambridge Business Plan Competition in 2003 as 'Cambridge Solar Electronics'. Early investment came from Cambridge Enterprise and grants from EEDA and Carbon Trust.

The company's micro solar inverters convert the DC power produced by solar photovoltaic (PV) modules into high quality AC power for supply to the electricity grid. Enecsys micro inverters are installed on the rail behind solar modules, either one inverter per solar module or one for every two modules.

The Enecsys micro inverter represents a breakthrough in inverter design for residential and commercial solar PV installations as its technology has, for the first time, eliminated components that limit inverter life.

Additionally the Enecsys micro inverter enables solar PV systems to harvest 5% - 20% more energy; it makes planning and installation of PV systems easier and safer due to the elimination of high voltage DC wiring, and it enhances system optimization by monitoring the performance of each solar module.

Contact: www.enecsys.com

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Neul Ltd replaces Plastic Logic as the darling of the Cambridge cluster

Following the ignominious demise of **Plastic Logic Ltd**, a new Cambridge-based startup **Neul Ltd** – already profiled in GiN – has unveiled a new radio protocol for providing local broadband and machine-to-machine services using the so-called 'white spaces' between TV transmissions.

Neul's chief executive **James Collier** has outlined the start-up's plans to use the 'white spaces' between TV broadcasts to transmit data. The Weightless protocol was launched alongside a system called **NeulNet**, which includes production base stations and terminals. At its launch event in London, Neul said it is setting up a standards body, under the auspices of the Cambridge wireless industry network, to ratify and develop Weightless as a standard.

NeulNet is capable of transmitting data at up to 16Mbps and has a range of up to 10km, although the data rate falls off considerably at the outer reaches, according to the company. The technology is mostly being targeted at the nascent smart-meter industry, as well as automotive telematics and home healthcare systems. NeulNet kit is already shipping for trial by telcos and companies developing smart-meter systems.

However, as the internet of things is still in its infancy – connected smart meters are only just starting to be rolled out – the company is also pitching the capabilities of NeulNet as ideal for local broadband schemes. It said its system has a range 'around three times that of 3G, is better at indoor penetration and would cost only £31m to deploy across 99% of the UK population'. By comparison, a mobile network would cost closer to \$800m, claimed Mr Collier.

The company reckons there is around 150MHz of white space available in the UK, whereas a cellular network typically has around 30MHz to use. In addition, NeulNet's power consumption is far lower than that of cellular technologies. Neul plans to release an embedded chipset in 2012 that comes in under \$5 (£3) and has a 15-year battery life.

White spaces are the pieces of spectrum that lie between 400MHz and 800MHz, the band used for television broadcasts. Because broadcasters need to avoid their transmissions interfering with one another, they leave a fair amount of spectral space in between those signals, and a burgeoning industry wants to use those white spaces for data transmissions.

Contact: www.neul.com

eoSemi gears up with new sales channels opening up worldwide

In October 2011 eoSemi, an electronic materials company in Rotherham, has appointed Intralink as strategic sales partner for the East Asian markets of Japan, China, Taiwan and Korea.

Last month, eoSemi appointed Silicon Valley company Red Shift Sales as the manufacturer's representative for North America. With a facility on the Advanced Manufacturing Park, eoSemi is developing a silicon solution that replaces quartz crystals as the way electronic devices keep time, allowing a move away from physically-vibrating devices and the associated high manufacturing cost, large size and susceptibility to shock.

eoSemi will bring a new timing device to market, based entirely on silicon circuitry, which has applications in industrial, medical and consumer microprocessor-based systems, and mobile handsets. The first products are expected to be launched next year.

Intralink creates and implements business development strategies for Japan, China, Taiwan and Korea to enable technology companies to gain entry to these markets and establish a permanent presence through a local subsidiary, acquisition or partnership.

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Greg Sutch, CEO of Intralink, said: "eoSemi's unique all-silicon technology has huge market potential as it overcomes the cost and size limitations of today's timing references.

"There are substantial growth opportunities in East Asia and we look forward to working closely with eoSemi's management team to build and execute a successful strategy to deliver this exciting new technology into the hands of customers."

Steve Cliffe, VP of sales and marketing at eoSemi, added: "Intralink has more than 20 years' experience in driving business development initiatives in the East Asian markets, and their expertise is strongly endorsed by the many companies they have helped to gain access and succeed in these markets."

In 2010, the company closed a £3m funding round led by Capital-E, to add to existing investors Enterprise Ventures (EV) via its RisingStars Growth Fund II and South Yorkshire Investment Fund.

Contact: www.eosemi.com

Nomad Digital to supply on-board Wi-Fi infotainment to Eurostar trains

The company is a specialist provider of connectivity solutions to the rail industry, the contracts to supply 'on-board Wi-Fi connectivity and state-of-the-art infotainment' for its existing fleet of high speed trains. This follows a procurement process in which Nomad emerged as the winner.

Alexander Eriksen, CEO at Nomad said: "This contract is very strategic to Nomad representing its entry into both the high speed rail and French markets."

Over the next three years, Eurostar is making a £700m investment in its fleet. This includes the complete overhaul and refurbishment of the existing fleet as well as the purchase of 10 new e320 train sets from Siemens. This programme of investment will ensure that Eurostar will be able to expand its operations and provide its passengers with the best possible travel experience and service in a competitive environment across its entire fleet.

When the Eurostar refurbished trains and the new e320 trains come into operation in 2013 and 2014 respectively, customers will have access to high speed broadband internet on board. Passengers will also be able to view and/or download pre-loaded entertainment/infotainment to their own devices via a **Secure Wireless LAN**. The quality of the Nomad technology is such that passengers will enjoy a high speed connection to the internet at all times throughout their journey, a seamless switchover at international borders and connectivity wherever the customer is seated and whenever it is required.

In addition to providing connectivity solutions and infotainment the contracts will also cover the provision of spares and maintenance (for 5 years) as well as monitoring and multilingual service support to customers.

Nick Mercer, Commercial Director at Eurostar, said: "Access to a high speed internet and quality infotainment is increasingly important to passengers and will ensure that whether they are travelling for business or leisure, they get the most out of their journey. In a world of on-rail competition providing the optimal digital experience will be key to our success."

Contact: www.uknomad.com

Another significant oil find boosts the North Sea engineering sector

In October 2011 Dana Petroleum (50%) announced it had made an important gas discovery on the Tolmount prospect in the UK Southern North Sea, some 40 miles east of the Yorkshire coast. The exploration well was drilled using the Ensco 92 drilling rig.

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Alongside E.ON (50% and operator), Dana Petroleum targeted the Permian Leman Sandstone formation and encountered a gas column in excess of 200 feet. Following drilling a well test was conducted during which the well flowed at a maximum stable rate of 50.2 million standard cubic feet of gas per day on an 80/64 diameter choke.

Dana's UK MD Paul Griffin said: "The results of the well and the subsequent test came in towards the higher end of our expectations. Further evaluation of the discovery will be required; however, this is encouraging for future prospectivity of the Licence."

Dana Petroleum has a large and expanding exploration portfolio with acreage in the four main hydrocarbon regions of the UK; the Southern Gas Basin, Central North Sea, Northern North Sea and the West of Shetlands.

Dana holds a total of 20 operated and 35 non-operated licences acquired through successful licensing rounds and acquisitions. Through careful portfolio management and rigorous technical review this has culminated over the past three years in Dana participating on average in six exploration and appraisal wells per year. This accounts for just less than 10% of the total annual exploration and appraisal wells drilled in the UK, making Dana a key player in the E&A drilling sector of the North Sea.

While environment groups and Government ministers are fixated with the myths of 'Peak Oil', recent UK exploration highlights include the discovery of the Western Isles oil accumulations, the Platypus gas discovery in the Southern North Sea and the Tornado hydrocarbon discovery, which was discovered with Dana's first West of Shetland exploration well.

Contact: www.dana-petroleum.com

Power transistor firm Amantys Ltd ties up \$7m in additional funding

The new funding round has been led by Moonray Investors, part of Fidelity International, and ARM Holdings plc (ARM). Amantys Ltd, a start-up based on research from the University of Cambridge, secured \$7m to continue with the commercial development of its digital power platform.

Dr Patrick Palmer, Reader in Electrical Engineering at the Department of Engineering, developed technology that will simplify the design of medium voltage power electronic equipment using insulated gate bipolar transistors (IGBTs).

Dr Palmer and his former student co-inventors have been supported by Cambridge Enterprise Ltd, the University's commercialisation group. The company was founded in 2010 by a number of former ARM executives and Dr Palmer, who remains the company's chief scientist following the investment round.

Power conversion occurs everywhere in the modern world. It keeps the online world connected; it controls motors small and large, from trains and planes to the cars we ride in; to solar panels and UPS power supplies. However, as energy flows from power stations through power lines and transformers to consumers, energy is wasted. Amantys is developing innovative and disruptive power control products to address this wastage.

Amantys' technology allows power transistors to be configured more easily to construct systems to switch medium and high voltages. This allows the designer to continue to use existing design topologies to build medium voltage inverters with higher efficiency and without the need to move to more complicated systems. Products which use Amantys' technology will benefit from greater efficiency, improved reliability, ease of design and reduced cost.

Contact: www.amantys.com

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ANGLE plc shines brightly due to success of its games subsidiary - Geomerics

The firm's spectacular recent share price rise – from around 20p to more than 80p in recent weeks – has been attributed to the growing success of subsidiary Geomerics Ltd.

The latter launched its Enlighten technology in 2009, and the software enables games designers to use and control lighting within a game.

Geomerics partners with many of the leading companies in the games industry and is currently working with developers around the world on AAA titles for release in 2011 and 2012. The first titles incorporating Enlighten include the highly anticipated 'Battlefield 3' and 'Need for Speed: The Run'.

Angle plc, which focuses on the commercialisation of technology, and which owns 33% of portfolio company Geomerics, which specialises in computer games middleware, said sales will continue to grow at an encouraging rate.

Geomerics' Enlighten technology is now being employed in 18 titles worldwide and is currently in evaluation and under consideration for many more. Among these titles are two of the most hotly anticipated games of 2011, including *Battlefield 3*, considered a challenger to *Call of Duty's* market dominance. The game has been backed by a \$100m marketing campaign and has received high praise and multiple awards for the quality of its graphics, of which the lighting is driven by Geomerics' Enlighten engine.

Geomerics was awarded new grant funding to research applications of its technology on mobile devices. Geomerics will receive €470,000 over the next three years as part of a €2.8m EU-funded project researching the next generation of graphics technology for mobile platforms.

Dr Chris Doran, founder of Geomerics, said "At Geomerics we have tracked the rise in performance of mobile platforms very closely. It is clear that they are fast approaching console performance, and at the high end will overtake this in 2012. We will be taking our console technology to mobile platforms, and to contributing to joint R&D on the future direction of graphics technology for mobile devices."

Contact: www.geomerics.com

SME NEWS - CHEMICALS, MATERIALS & ENVIRONMENT

Alstom sees promise in AWS Ocean Energy Ltd – wave energy pioneer

Alstom, a multinational active in power generation, power transmission and rail infrastructure, invested in **AWS Ocean Energy Ltd**, makers of an early stage wave energy concept.

The French-headquartered giant acquired a 40% equity stake in AWS, enabling it to expand its operations and accelerate the development of its wave power technology.

Currently, AWS's lead product is the AWS-III, a 'multi-MW' offshore wave energy generator evolved from its earlier **Archimedes Waveswing** technology, first deployed and tested in **Portugal** in 2004. AWS's chief executive is **Simon Grey**.

A 1/9th scale prototype of the AWS-III was trialled in 2010 in Scotland's Loch Ness and the company plans to deploy and test a full size single cell of the AWS-III multi-cell prototype next year and aiming to deploy their first AWS-III in 2013/14 and a 10MW wave farm by 2016.

Contact: www.awsocean.com

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Offshore wind farms drive rapid growth at green consultancy APEM

Turnover at the Stockport-based **APEM** company rose 48% to £4.3m last year and looks set to repeat the feat with revenues of £6.1m in 2011.

The success has seen the company open two new offices in Edinburgh and Cardiff in the last 12 months and win an additional £100,000 of laboratory work from overseas, including Hawaii, Germany and The Gulf. This success is a result of long-term planning by the company, set up by biologist **Dr Keith Hendry**, which decided to target the aerial survey and environmental laboratory markets.

Dr Hendry said: "A lot of what we do is driven by long term trends and we could see biological analysis was moving from public to private and there was increased demand for off shore wind farms. We looked at the regulatory framework 10 to 12 years ago and decided on the areas where we wanted to be major players."

APEM's first major project was **Salford Quays** in 1987, where it removed thousands of infected fish from the eco system, helping make the waterfront a more attractive proposition for developers.

It was also instrumental in helping the **Mersey Bridge** at Runcorn achieve planning permission after conducting pollution and habitat tests. The main growth area, however, has been from aerial surveys, which it has performed to help in the positioning of off shore wind farms – ensuring they do not disrupt the flight paths of migratory birds.

The company, which employs 90 staff, is also developing further growth areas within the UK, where it now has five offices, and is looking to export its expertise.

Dr Hendry added: "We are also looking at international wind farm developments as we have now got a lot of experience and we are looking to export our skills."

Contact: www.apemltd.co.uk

Molecular Solar Ltd achieves 'significant breakthrough' with solar cells

The company, a spinout from the **University of Warwic**k, demonstrated a record voltage for organic photovoltaic cells, which means its low cost solar cells can now be devolved for commercial uses in a wide range of consumer electronics.

The company's most recent advance in the development of its organic photovoltaic (OPV) cell technology is the realisation of cells with open-circuit voltages in excess of 4 volts for the first time. Molecular Solar's research team believe this is a record for an OPV device.

Dr Ross Hatton, research director of Molecular Solar, said "We are now very close to having highly flexible organic photovoltaic cells that will be capable of delivering electrical energy at a voltage suitable for recharging lithium ion batteries that are widely used in portable consumer electronics. Remarkably, this high voltage is achieved using a cell with only 4 junctions (sub-cells)."

University of Warwick researcher **Professor Tim Jones**, who is CTO of Molecular Solar, added: "The advantage of Molecular Solar's high voltage cells is that a single cell can be used with no requirement to connect multiple cells in series for these applications, saving manufacturing cost."

Molecular Solar are currently finalising a $\pounds 5m$ investment round to complete the up-scaling of their OPV and MS-Flexifilm electrode technology.

Contact: Dr Ederyn Williams, chairman - 07531 667 222 - Ederyn@btinternet.com

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BAE Systems supports 'hydrokinetic' energy company in western Canada

Instream Energy Systems is an early-stage renewable energy company developing hydrokinetic power generation systems – low-cost power from moving water.

BAE Systems has agreed to assist the ongoing technical needs of Instream Energy Systems, based in **Vancouver**. Instream specialises in developing and installing the next generation of hydrokinetic power generation systems, which convert the kinetic energy in moving water into electricity.

The agreement is designed to support Instream's renewable energy technology's successful commercial development by granting the company ongoing access to the BAE Systems' **Advanced Technology Centre** (ATC). The ATC is one of the world's most advanced R&D facilities and specialises in fields such as micro and nano technology, biofutures and robotics. Its backing will allow Instream to further develop its hydrokinetic turbine technology by incorporating the latest materials and manufacturing techniques.

Patrick Earle, CEO of Instream, said "The successful commercialisation of hydrokinetics requires a lifetime of expertise in hydrodynamics and aeroplane wing design that a company like BAE Systems can give us. BAE Systems technological development and commercial fund raising support will accelerate the commercialization."

Last year Instream worked with BAE Systems on a demonstration project at **Duncan Dam**, British Columbia, and it gathered the necessary base data for the technology's development.

John Rossall, director, Offset Programmes at BAE Systems said "Instream expects to remove much of the business risk associated with the next generation of hydrokinetics because of its relationship with BAE Systems."

BAE Systems is also currently partnering with leading Canadian companies, including **DEW Engineering**, **Soucy**, **Thales Canada** and others.

Contact: Kelly Golden, BAE Systems – kelly.golden@baesystems.com – www.instreamenergysystems.com – www.instreamenergysystems.com – <a href="mailto:kelly.golden.golde

Groundbreaking experiment by Oxford startup may fast-track fusion?

Founded in 2009, **Tokamak Solutions** aims to commercialise spherical 'tokamaks' as neutron sources and plasma research instruments. The nuclear fusion reaction produces an abundance of high-energy neutrons, and Tokamak Solutions has designed a super compact fusion neutron source to exploit this aspect of fusion and produce powerful neutron sources.

In October 2011 Tokamak Solutions worked with partners at **Oxford Instruments**, the **Czech Technical University** and Prague's **Institute of Plasma Physics** to use high temperature superconducting magnets on a tokamak for the first time.

In the experiment, two of the copper magnetic field coils on the Golem tokamak in Prague were replaced by high temperature superconductor in a simple cooling system known as a cryostat. Plasma pulses were then created in the normal way and the tokamak operated exactly as expected. A whole series of further experiments is now planned.

Jonathan Flint, chief executive of Oxford Instruments, said "Oxford Instruments has long established track record supplying tools and consultancy services to the fusion community and as the leading innovator in high performance magnets for scientific applications, so we were delighted to play our part in this successful collaboration."

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The Tokamak Solutions board is led by **Dr David Kingham**, formerly MD of **Oxford Innovation**, a leading operator of business and innovation centres, investment networks and advisory programmes for entrepreneurs. Other members include **Dr Mikhail Gryaznevich** (chief scientist) and **Alan Sykes** (technical director).

Contact: Dr David Kingham - david@tokamaksolutions.co.uk

SME NEWS - IT, SOFTWARE, SERVICES & INTERNET

We Predict's software product aims to save car makers millions in warranty costs

The Swansea company has developed a product which promises to save car manufacturers millions of pounds in warranty costs. Starting in 2009, **We Predict Ltd** developed a system, **Indico**, to enable manufacturers to better control their warranty costs. By taking high volume sales and warranty claim data and processing it with actuarial analysis techniques, Indico produces accurate warranty claim forecasts and identifies emerging product and service issues.

Car dealerships are being forced to take extreme measures to create revenues and making unnecessary warranty claims can be an easy option. With warranty costs topping \$50bn annually, We Predict said it has the potential to save the car industry millions of pounds.

MD **James Davies** said: "By using predictive actuarial data analysis which is commonplace in the insurance industry, we have created a solution that will not only allow a manufacturer to more effectively manage their warranty business, but also improve future product quality and help reduce costs in their post-sale value chain.

"Where current reporting methods use historical reporting to recover costs, our system uses predictive reporting to enable our clients to prevent costs.

"By reducing the time to detection by months, in some cases years, we can save a manufacturer millions – just recently we helped a major automotive manufacturer save \$440,000 in oil pan claims at a single dealership."

In mid-2011 We Predict appointed **Professor Tim Davis** as technical advisor. Davis most recently served as director of quality and automotive safety of **Jaguar Land Rover**, and had previously been quality director at **Ford Motor Company** in Germany and Detroit. He is now visiting Professor at **Warwick University.**

Contact: www.wepredict.co.uk

Flight comparison website Skyscanner.net ranked high in Tech Track 100

The company took 19th place in the *Sunday Times* **Microsoft Tech Track 100**, appearing for the second consecutive year. Skyscanner was the highest rated online travel business.

The list ranks Britain's private technology, telecoms and digital media companies by their average sales growth over the last three years. Skyscanner announced sales growth of 94% and currently generates downstream revenues of more than \$1 billion.

Chief executive **Gareth Williams** said: "Our position has undoubtedly been driven by our rapid growth in domestic and international markets, the successful acquisition of **Zoombu** and expansion via the launch of our newly opened Singapore office which all support our ambition of becoming number one worldwide."

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The Tech Track 100 also featured digital marketing agency **I Spy** in sixth place. The agency works with a number of leading travel brands including **Teletext Holidays** and **On The Beach**, for which it has achieved significant results advertising on Facebook.

Chris Whitelaw, I Spy marketing president, said: "Our growth over the last three years has undoubtedly been driven by the fantastic results our brilliant team have delivered for our clients and of course the development of our proprietary Facebook advertising management technology, Upcast. Growth in use of our Upcast technology continues at great pace and we look forward to becoming the number one social advertising tool worldwide".

Travolution is the UK's leading multi-media brand for the online travel industry, published by the TW Group. Covering the traditional travel market plus the new breed of online players, Travolution provides essential information, commentary, market intelligence and analysis for anyone in, or running an online travel business.

Launched in November 2005, Travolution began life as a bi-monthly magazine but evolved to include a wide range of services and products.

Contact: www.fasttrack.co.uk/fasttrack/leagues/tech100leaguetable.asp?sitelD=3&searchName=&yr =2011&sort=num&area1=99

Nottingham's Aware Monitoring Ltd wins the first of many awards?

As one of the UK's fastest-growing website performance monitoring companies, Aware Monitoring picked up the **Most Promising New Business** accolade at the recent Derbyshire and Nottinghamshire Chamber of Commerce Best Business Awards 2011.

The company, set up by Nottingham graduate **Nick Barker** and co-founder **Simon Oxley**, was recognised for its innovative service, providing businesses with real-time updates on the content load time, availability and optimisation of their website.

Aware Monitoring fought off competition from two other strong contenders, **A Star Media**, a film production company specialising in corporate videos for the web, and The **Elm Tree** at Elmton, a public house which focuses on fresh local food.

Nick said: "This is wonderful news for the company and we are delighted, especially since the category was sponsored and judged by **Experian**, a data-driven company that knows IT and the technology market. It's a ringing endorsement that they saw huge potential for our service."

Aware Monitoring is a tangible demonstration of its founders' solid credentials in enterprise. Nick was among the first cohort to study on Nottingham **University Business School's** MBA in Entrepreneurship, a programme which aims to provide students with a well-rounded education in management while promoting entrepreneurial creativity and skills development. He has since returned to his alma mater as guest lecturer on the University's entrepreneurship courses.

In the company's early days, Nick received support from Nottingham University Business School's **EnterpriseLab**, which aims to provide guidance on business development to students setting up their own ventures, as well as practical assistance in the form of seminars and networking opportunities, access to office space and meeting rooms and one-to-one surgeries with professional advisors.

Aware Monitoring was also a finalist in another category of the awards, Innovation through Technology, which went to **Uppercut Productions Ltd** for its specialist remote aerial video and photo service it provides using miniature, GPS-guided HeliCam drones.

Contact: www.awaremonitoring.com

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Computer games sector 'contributed £1bn to the UK economy in 2010, says survey

The report by **TIGA**, the trade association representing the UK games industry, surveyed 104 game development businesses to give a snapshot of the sector.

The North West has a particularly strong community of developers, including Macclesfield-based **Matmi**, Manchester-based **Playdemic** and Macclesfield games publisher **Chillingo**, creator of the popular **iPhone** and **Android** game *Angry Birds*.

Key findings included the fact that developers are increasingly also becoming publishers, with 47 per cent reporting that they now self-publish some of their own games.

On average, developers surveyed spent £2.4m to develop a game. More than a fifth of developers had worked on a game which has been cancelled before the project was complete, impacting their finances. And a third of those surveyed said they were being held back by subsidies handed to companies making games abroad.

Countries including Australia, Canada and France, as well as 17 states in the USA, all receive state support, meaning that UK developers are at a disadvantage in markets.

Nearly a fifth of companies said employees had left their business to work for games developers outside of the UK, and 74 per cent supported a tax break in the UK.

The typical studio will have around 80 per cent of staff qualified to degree level or above.

The UK, the USA, the EU, the rest of Europe and Canada are UK developers' main markets, with China fast catching up.

www.tiga.org

Benefex to receive £4.2m from the Business Growth Fund

The Southampton software firm is aiming to create 100 jobs after becoming the first company to win investment from a £2.5bn fund set up by the high street banks.

The **Business Growth Fund** (BGF) will finance expansion of **Benefex** with £4.2m. The firm sets up and administers staff reward schemes for companies, including global blue chip firms. The rewards range from gym membership and discounted retail benefits to raw diamonds to organic food.

The 80 staff at the Town Quay offices celebrated the investment, which 33-year-old chief executive **Matt Waller** hopes will fund his company's continued 50 per cent year-on-year growth. The BGF will take a minority stake in the firm, which is expected to report turnover of over £10m next year.

Mr Waller, an entrepreneur who started the business from his home aged 25, said: "We come from entrepreneurial, ambitious roots. We recognised that the business had reached the point where we needed external capital to take it to the next level and invest in key areas. Without it, we would continue to grow but not at the rate that we would like to. "He said the funding would allow the firm to invest in new technology and hire 100 new staff, the majority in Southampton.

Mr Waller said he plans to expand the business overseas after growing it to become one of largest online employee reward and benefits providers in the UK. Benefex already has 500 clients, including **AA**, **Coca Cola**, **Bank of America Merrill Lynch**, **De Beers**, **E.ON**, **Philips**, **MTV** and **Centrica**, and manages staff benefit schemes for over one million employees in more than 40 countries.

The BGF was set up by the big UK banks, such as Barclays and Lloyds Banking Group, as part of the

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'Project Merlin' agreement with the Government to show they are committed to helping SMEs through the economic recovery. It launched in May and is expected to make hundreds of investments of between £2m and £10m in fast-growing UK companies with turnovers between £10m and £100m.

Other SMEs awarded cash under the second round of Regional Growth Fund (RGF) was Lichfield-based manufacturer **Zytek** – awarded £1.35m from the investment. The clean vehicle technology specialist Zytek said it would use the cash boost to develop an **Electric Powertrain Technologies Centre**.

Based at the company's technical centre in Lichfield, the new facility will support an initial 44 jobs developing low carbon technologies for the automotive industry. A further £3.65m will be invested by Zytek, the company confirmed, which brings the total amount to £5m. Zytek's was one of 20 West Midlands bids to receive RGF funding in the second investment round. The government estimated that up to 3,900 direct jobs and 29,800 indirect jobs could be created with the 20 successful bids, bringing in £100m to the local economy.

Stoke-on-Trent-based **Steelite Ltd** secured funding which it said will create 200 jobs, The kitchenware supplier will use the funding to develop a new manufacturing facility producing bone china products in the UK.

A list of the successful Second Round bids, recently announced, is available on the Dept of Business website:

www.bis.gov.uk/policies/economic-development/regional-growth-fund/successful-2nd-round-bids – www.benefex.co.uk

SME NEWS - BIOTECH, PHARMA & MEDICAL SCIENCES

Oxtex Ltd to develop 'novel and intelligent hydrogel self-inflating tissue expanders'

This summer the firm won the **Best Emerging Medtech** category at this year's **OBN Annual Bioscience Awards**. It was shortlisted just six months after being set up. Oxtex is currently establishing clean-room manufacturing facilities to scale-up production, and is in the process of setting-up clinical trials.

Oxtex was established in early 2011 to develop novel and intelligent hydrogel self-inflating tissue expanders. They will be used in scar reconstruction, and for the treatment of congenital craniofacial conditions and limb deformities.

The devices will allow surgeons to accurately and predictably control the direction, the timing, and rate of in vivo expansion. This reduces the risk of soft tissue damage and associated complications, meaning that clinicians can treat more cases, at a lower cost, and with better results.

Dr Jon Rees, CEO of OBN, said, "It was clearly apparent to the judges that Oxtex has developed a very elegant solution that is scientifically advanced, yet also very straightforward to apply medically. And, when compared to many other devices that we see, the lead-time to market could be short. This makes Oxtex a very attractive package."

The recognition comes at the end of a busy period that has seen the company secure £500,000 of seed funding, and appoint its first chairman, **Dr Nicholas Edwards**.

Oxtex CEO **David Jackson** said "A lot of hard work has gone into getting the company to this stage, and it is great for it to be recognised with an award. We are confident that the next 12 months will see us move from something that is 'emerging', to something that is 'established', and the true potential of our products will be realised in the form of improved patient outcomes."

Contact: www.oxtex.com

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Plaxica wins £5m - from Imperial Innovations, Invesco Perpetual, and others

Plaxica is developing a new generation of polymers derived from sustainable resources. The firm's polymers are a range of polylactic acid (PLA)-based materials which have improved physical properties compared with first generation biopolymers, are recyclable and cost competitive with oil-based alternatives.

These second generation PLA polymers are aimed at the replacement of conventional oil-derived products like PET, polypropylene and polystyrene. Since the firm received Series A financing in 2010 **Philip Holbeche**, chairman of Plaxica, said it had made 'significant' progress, including the establishment of technical and commercial teams, expanding its IP portfolio and establishing a second UK site in **Wilton** on Teesside that is focused on process development, scale-up and demonstration.

It also appointed **Phil Goodier** as CEO. This additional funding will allow Plaxica to advance key aspects of its technology towards commercial implementation and licensing." In September 2010 Plaxica had raised a £3m in which institutional investors participated. The funds will be used to accelerate development and scale up of the company's next generation **PLA technology**.

Dr Ed Marshall, Head of Research & Development, is a lecturer in the department of Chemistry, Imperial College London, and a founding member of Plaxica. With more than 50 academic papers and patents to his name, he heads Plaxica's R&D activities. Active in polymer chemistry since his PhD at Durham University, a major focus of his research has been the development of new catalysts for the synthesis of polymers from green sources.

Prof Vernon Gibson FRS is chair of the Advisory Board. Vernon is Chief Chemist at **BP** where he provides leadership to the large community of chemists and chemical disciplines, and maintains connections with world class chemicals research through major academic and industrial partners. Previously Vernon was the **Sir Edward Frankland BP Professor of Inorganic Chemistry** at Imperial College London, responsible for the Catalysis and Materials research section. Whilst there, he was also a member of **BP's Technology Advisory Council**. Plaxica is developing next generation biopolymers that will be both cheaper to produce and have improved properties compared with first generation biopolymers. Its technology uses sustainable feedstocks to create a biopolymer known as polylactic acid (PLA), producing a form of PLA with superior properties to first generation variants.

Additionally, Plaxica's approach offers the potential for PLA to be cost comparable to certain petrochemical sourced polymers. This will result in a low-cost, environmentally-friendly biopolymer for use in applications as diverse as packaging, textiles, electronics and automobile parts.

Contact: www.plaxica.com

CellFacts Instruments wins overseas orders after receiving funding worth £230,000

The company, based at the **University of Warwick Science Park**, supplies precision analysis systems which provide real time detection and enumeration of microbial cells.

The company has won orders to supply its machines to clients including **Pfizer Nutrition** and **Innovative Biotech** of Singapore.

It received a £75,000 investment from Birmingham-based investor **Midven's Early Advantage Fund** to enable it to diversify into new markets. A further investment has been made by a small number of other investors, resulting in a total equity injection of at least £230,000.

Crawford Dow, chief executive of CellFacts Instruments, said: "There is the further likelihood that Pfizer will introduce this technology to other sites around the world. We see this as a significant milestone in the continued growth of the company."

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Duncan Kerr, investment director at Midven, added: "This is an exciting time for the company, and we're delighted to be helping them move to the next stage in partnership with others. This is an innovative company with high growth prospects and has some loyal customers and an impressive pipeline of prospective orders."

Contact: www.cellfacts.com

US giant Alere claims victory in hostile takeover battle for Axis-Shield

Axis-Shield, the Dundee-based medical diagnostic kit maker – but it also emerged that the company had not yet conducted due diligence on its Scottish prize.

Alere, which is based in Massachusetts and has made around 60 acquisitions over the past seven years. In October it raised its offer by 10p to 470p per share, valuing Axis-Shield at £235 million.

Axis-Shield, which has dual headquarters in **Dundee** and **Oslo**, appears to have become a victim of global economic circumstances. The flagging stock market not only encouraged Alere's original approach, but the mounting unease also served to turn a modestly sweetened offer into something palatable.

Ron Zwanziger, Alere's executive chairman, said: "Axis-Shield is a complementary fit with Alere, with Axis-Shield's product platform adding to our existing diverse product portfolio. We believe Alere's broad and existing capabilities should enable it to realise the potential of Axis-Shield's technologies globally. I look forward to welcoming Axis-Shield's employees to Alere and working with them to maximise the potential of the products that they have developed."

The move not only marks the end of a near five-month takeover tussle, but will see the loss of another listed company with Scottish headquarters – the second this year after Borders-based speciality pharmaceutical group **ProStrakan** lost its battle for independence to Japan's **Kyowa Hakko Kirin** in February.

Most recently, Axis-Shield agreed a deal to supply America's largest provider of walk-in clinics with one of its testing products. The agreement will see the firm's Afinion diabetes analyser used in 600 MinuteClinics in the US.

lan Gilham, Axis-Shield chief executive, said: "We are pleased to be partnering with the largest provider of walk-in medical clinics to bring the reliability of Afinion directly to patients." The firm is expected to have its shares de-listed from the London Stock Exchange on 20 November.

Contact: www.axis-shield.com

Cleveland Clinic announces annual Top 10 medical innovations list – take note!

The clinic, which has grown to dominate the former steel-making city of Cleveland, Ohio, holds an annual, now 8th Innovation Summit in which a much-awaited Top 10 medical innovations list is announced.

More than 60 physicians at the Cleveland Clinic nominated innovations they felt would change the face of medicine. Since then, they narrowed the field several times, focusing on drugs and devices that could show a significant potential for patient benefit or improved health care delivery, a high probability of success and good quality data to support its nomination. Nominees must have **Food and Drug Administration** approval, or a great chance of approval by early 2011.

The Top 10:

1. Molecular imaging biomarker for early detection of Alzheimer's Disease: A new brain imaging

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compound called AV-45 will soon make it possible to detect the very earliest stages of the brain damage caused by Alzheimers, and is expected to become the dominant way to diagnose the disease.

- 2. Targeted T-cell antibody for metastatic melanoma: A new anti-cancer drug, **ipilimumab**, allows the body s own immune system to more effectively fight cancer. It was given priority review by the FDA after it improved the survival rates of patients with previously treated advanced melanoma.
- 3. First cancer vaccine approved by the FDA: **Provenge** (Sipuleucel-T), the first cancer vaccine to show a survival benefit, is a prostate cancer treatment that works by stimulating the immune system. Its April approval means it will likely be available for use earlier in the treatment process.
- 4. Jupiter Study: **Statins** for healthy individuals: Through a large international study, researchers have found that cholesterol-lowering drugs called statins drastically cut the risk of heart disease and death for people with normal levels of cholesterol but elevated levels of inflammation.
- 5. **Hepatitis C** protease inhibiting drugs: Two drugs awaiting approval, boceprevir and telaprevir, were developed specifically to target the hepatitis C virus and have shown a vast improvement over the cure rates of existing treatments.
- 6. Telehealth monitoring for individuals with heart failure: An implantable, miniature, permanent monitor that can measure and communicate daily pulmonary artery pressure, as well as in-home devices that record and send real-time weight, blood pressure and heart rate data are allowing for closer monitoring of costly medical conditions, potentially reducing hospitalization.
- 7. Endoscopic weight-loss procedure: **Transoral Gastroplasty** (TOGA). An incision-less option for bariatric surgery, TOGA uses two flexible endoscopes to pass instruments through the mouth, reducing the size of the stomach to a small pouch.
- 8. Exhaled nitric oxide (NO) breath analysis for diagnosing **asthma**: A hand-held diagnostic testing device that allows precision and accuracy in diagnosing and managing asthma, the device measures levels of exhaled nitric oxide, a gas produced by cells in the lungs during inflammation.
- 9. Oral disease modifying treatment for multiple sclerosis: **Fingolimod**, approved this year by the FDA, is the first oral treatment available to MS patients, a major breakthrough in treatment that reduced attacks and brain lesions in clinical trials.
- 10. **Capsule endoscopy** for diagnosis of pediatric GI disorders: A safe and painless alternative to endoscopic imaging and X-rays, the pill-sized capsule takes hundreds of pictures and short video clips of the inside of the digestive tract and transmits them to a data recorder during transit.

Contact: www.clevelandclinic.org/innovations

FUNDING & INVESTMENTS

SMEs look forward to flurry of new banks emerge aiming at small business sector

In October 2011 a new bank targeting small business lending said it was 'on track to secure backing of between £80 million to £100m by the end of the year' to help fund its launch.

The forthcoming **British Enterprise Bank** (BEB) also claimed it was 'not concerned' by the creation four weeks ago of a rival in the SME lending market, **Shawbrook**, and existing newcomer **MetroBank**.

Shawbrook will be chaired by **Sir George Mathewson**, a doyen of the banking sector who is a former chief executive and chairman of **Royal Bank of Scotland**.

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However, **Justin Chittock**, the project manager of BEB, which plans to open more than 20 branches in business parks in the UK, said there was room for both his group and Shawbrook to challenge the incumbent banks in the SME sector.

"Of course, any new player that goes into the SME lending sector would be a competitor to us," Chittock said. "But we welcome the development. It shows the small business lending market place and demand is still there."

BEB plans to step up its canvassing of City investors for backing for the project between now and Christmas, Chittock said, and was hopeful of firm financial commitments by January.

He added that the project had also attracted "more than a handful" of top banking advisory figures to help flesh out the details to be presented to investors and the regulator, the Financial Services Authority, after funding commitments are in.

There has been unofficial talk of a launch of the bank by next summer although no firm date has been given by BEB. Chittock said he realised there had been some impatience over the time the bank was taking to get up and running "but we have always thought it is more important to do this right than to do it fast".

>> A little-known fact is that there are up to two dozen applications to start new banks sitting in the in-tray of the Bank of England at any one time. Insiders say the achingly-slow process in gaining licences may be due to the Bank – and the Government's – reluctance to see new vibrant rivals emerge to take business from the part-state-owned Lloyds TSB/HBOS and RBS/Natwest banks – in case the value of the Government's multi-billion-pound stakes – fall dramatically.

Contact: www.shawbrook.com

Intellectual Property Office offers £760,000 to support university tech transfer

IP minister Baroness Wilcox has launched the 'Fast Forward Competition' to encourage higher education institutions and public sector research establishments to work together with businesses and 'share research, innovation and IP'.

The aim of the venture is to invest in research and knowledge transfer projects that have the potential to create new companies or services which benefit both the UK economy and society. Applicants can bid for funding ranging from £10,000 to £100,000 for proposals that will improve the way in which their intellectual property and knowledge exchange is managed.

Baroness Wilcox said: "The development of IP at UK institutions is vital to help them provide the starting blocks for new businesses to grow. By investing in innovative ideas at an early stage we will be giving institutions the best possible chance to support the future economic growth of the UK. The Fast Forward competition recognises that education establishments are where ground breaking ideas can be developed and turned into success stories." The closing date for competition proposals to be received is 30 December 2011. Winners will be announced in early 2012.

Contact: www.ipo.gov.uk

Birmingham City Council starts £1m equity funding pot

A scheme designed to help fledgling technology businesses secure a share of a £1m finance scheme has been launched by Birmingham City Council. The fund, which will be managed by **Finance Birmingham**, was established alongside **Birmingham Science Park Aston** (BSPA).

Local start-up technology entrepreneurs will pitch their ideas to a panel of senior figures from the city.

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Each business can pitch for between £20,000 to £100,000.

Simon Jenner, head of incubation at Birmingham Science Park Aston, said: "We see a phenomenal number of really outstanding businesses coming through our e4f and Oxygen Accelerator schemes, demonstrating a massive amount of potential.

"Unfortunately, not all of these businesses go on to become profitable and we identified that a major reason for this is that while they may have outstanding and innovative ideas, they fail to secure seed funding."

The panel to which the entrepreneurs will pitch which will be led by Finance Birmingham and will feature representatives from Birmingham City Council and Birmingham Science Park Aston.

Contact: www.financebirmingham.com

Scotland faces '£850m business rates bombshell', according to academics

Hidden in the small print of the **Scottish Government's** spending plans, say economics experts at **Glasgow University**, are proposals to increase business rates by 2015 by around £850 million.

The rates hike identified by the university's **Centre for Public Policy for Regions** (CPPR) would bring the total Government take from business rates to around £2.67 billion by 2015, from the current figure of around £2.18bn – a rise of 22.6%.

However, the CPPR has calculated the total cost to business over the three-year period would be £849m as it would cost £92m in the first year, then £264m and finally a further £493m by 2014-15.

John McLaren, of the CPPR, said the increase in non-domestic rates would arise because of the Government's plans for annual rises of 4.2%, 7.6% and 9.4% in cash terms. Tory finance spokesman **Gavin Brown** claimed the Government was "either planning to choke the recovery by treating business like a cash cow, or is extravagant in its use of projections".

Colin Borland, of the **Federation of Small Businesses**, said: "There is no business property revaluation due until 2015, so is the balance of this projected increase attributed to the expected rise in the poundage rate or is it predicated on an anticipated increase in economic activity?" Will England and Wales be next?

Contact: www.cppr.ac.uk

GENERAL NEWS

London Technology Network closes - somewhat abruptly?

In a closing statement the LTN, a community interest company comprising three academic partners (**UCL, KCL** and **Imperial College**), said it had failed to win backing from two of its partners to continue operations.

Peter Reid, head of LTN, issued a statement saying it was told by the two members that: 'although we recognise the outstanding work that LTN has carried out and the value of the activities described in the ERDF application, we regret that it is not possible for two of the partners to sustain the original level of activity envisaged when the bid was originally made'.

While doubts remain over the effectiveness of London's organizational links with British SMEs, given a general lack of experience of many LTN's staff, some of whom were 'non-British, the LTN started a

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network of research scientists, mainly in IT and biotech.

Its statement claimed: 'In the 6 years to June 2010 LTN generated 8,200 negotiations between companies and research scientists, leading to 1,750 collaborative projects and £75 million in aggregate value for the Universities.'

Some of the problems may lie with the institutional environment of **London Business School**, whose attempts at tech transfer in the past have been highly disappointing. Most students are seen as 'fodder' for banks and consulting firms rather than being trained to start or run small innovative companies, except for a handful in social media and web-based technologies.

www.ltnetwork.org/assets/Uploads/LTN-Statement-on-closure.pdf

'Across the Mersey' - Dept of Transport agrees new £470m bridge

Former Transport Secretary **Philip Hammond** (now defence secretary) has agreed £470m of funding for a new bridge across the River Mersey between Runcorn and Widnes.

The new dual three-lane bridge and associated link roads will form a major new transport route improving links between the Liverpool City region, north Cheshire and the wider North West to the rest of the country. It will also ease the significant congestion currently experienced by users of the **Silver Jubilee Bridge**, reducing journey times by up to 10 minutes at peak times.

Construction of the new bridge – known as the **Mersey Gateway Bridge** – is expected to begin in 2013 and is due to be open for traffic in 2016. The construction cost (including land) is around £600m which the Department for Transport will support with a mixture of capital grant and continued revenue funding for PFI payments.

Contact: www.dft.gov.uk

UNIVERSITY NEWS

Claire Arbon is the new Knowledge Transfer Partnership manager at UCL

Her role is to support businesses and academic staff in accessing KTP funding and in the successful management of KTP projects.

Claire has extensive experience in business engagement and enterprise activity, previously at Kingston University as a Knowledge Transfer Manager and at Teesside University as an Account Manager. Prior to her involvement in enterprise, Claire was a Primary School Teacher and has worked in the private sector for facilities management and engineering companies.

A Knowledge Transfer Partnership serves to meet a core strategic need and to identify innovative solutions to help businesses grow by providing them with access to university expertise, talented graduates and government funding over a 12 to 36 month period. A typical KTP delivers significant benefits to business, including increased profitability and embedded new knowledge and skills to improve quality and operations, increase sales and enter into new markets.

Previous SMEs introduced to KTPs by UCL in the past have included Primal Pictures Ltd, Sonatest plc, Photek Ltd, and in the past Searchspace Ltd, and perhaps best of all, Zeeko Ltd.

Contact: www.ucl.ac.uk/ktp

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Best Knowledge Transfer Partnership project goes to Cherry Pipes Ltd

The Dungannon-based Cherry Pipes Ltd and **Queen's University Belfast** (QUB) have won an award for UK Best Knowledge Transfer Partnership (KTP) of 2011.

At the **Innovate 2011 Conference** in London the Cherry/QUB project was judged on impact (on both the individual company and the business sector as a whole), the level of innovation, the degree of academic challenge and the benefit demonstrated.

As a result of its partnership with QUB's **Polymer Processing Research Centre**, the Cherry Polymer Group claims status as one of the top 10 plastics recyclers in the UK. Their collaboration enabled the company to develop a new approach to pipe extrusion, with improvements in product quality yielding British Board of Agrément (BBA) and **British Standards Institution** (BSI) certification.

Waste from Cherry's manufacturing process was reduced from 10% to 5%, and an in-house design facility was established. The new R&D focus has led to Cherry Polymers becoming the lead partner in a **European Commission** 7th Framework (FP7) research programme.

The project with Cherry Pipes was carried out by KTP Associates **Paul Beaney** and **Justyna Grabowska** from September 2006 to January 2010 under the supervision of **Gerry McNally** and **Alan Clarke** of QUB's School of Mechanical and Aerospace Engineering.

Contact: www.cherrypipes.com

Leeds University pioneers new crop of high-performance bio-minerals

The key feature of bio-minerals is that they are composites, made from an inorganic mineral such as calcium carbonate, with a small amount (often only 0.1 per cent by weight) of organic material, usually a protein.

Inspiration for the materials comes from biological minerals of the sort found in seashells, which can rival ceramics in terms of hardness and mechanical properties but are created in aqueous environments at ambient temperatures.

Prof Fiona Meldrum of Leeds University said "If you hit a **biogenic calcite crystal** with a hammer it fractures with extreme difficulty. You still have a perfect single crystal but inside this crystal you find these proteins. Quite how they are included in the structure isn't well understood but it makes an enormous difference to the properties."

The group set about creating similar minerals in the lab, but rather than using proteins it designed polymer nanoparticles that are incorporated into the architecture of the crystal as it grows.

The team has a raft of techniques at its disposal to characterise the minerals it produces, including high-resolution X-ray diffraction, infrared spectroscopy, transmission electron microscopy (TEM) and atomic force microscopy – the latter allowing it to actually watch as the organics get incorporated into the crystal.

This wealth of data is then related to mechanical tests using a 'nano-indenter' – a small chisel-like tool that can probe a material and record its response to a force.

Crucially, this allows a far greater level of design and control than is possible in the high-temperature and pressure environments used to manufacture current high-performance ceramics. Meldrum and her team will continue to hone their minerals and will then focus on transferring techniques to industry.

Contact: www.chem.leeds.ac.uk/People/Meldrum

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Particle professors at Bradford come up with new innovations

Research into particle science is one of **Bradford University's** world-leading competences. Formerly known as **Bradford Particle Design Ltd**, **Nektar UK** was sold in January 2001 and became a subsidiary of US-based Nektar Inc, a Nasdaq-listed company. It designs advanced drug delivery technologies that help pharma companies realise the potential of their molecules – by solving complex development problems and produce breakthrough therapeutics.

This autumn, researchers at Bradford's University **Centre for Pharmaceutical Engineering Science** have created a new method of creating co-crystals, using a technique based on twin screw extrusion, a process that is well established in the plastics industry.

In a three-year project funded by EPSRC they are now seeking to understand the science behind the process. According to Bradford University, co-crystallisation provides an alternative to traditional methods of creating targeted soluble drug compounds and has potential to assist industry in creating new drugs with increased stability, speed and more efficiency. By creating co-crystals that include the active ingredient and other accepted materials, such as a vitamin or sugar, the solubility of the active ingredient is improved.

Anant Paradkar, Professor of Pharmaceutical Engineering Science, said: 'The technique we've been using lends itself well to industrial-scale manufacturing as it's scalable, continuous and solvent-free. Better understanding of how the crystals are forming will help us to optimise the process.'

Contact: www.pharmaceutical-engineering.brad.ac.uk

Sheffield Centre for Robotics, known as SCentRo, opens its doors

The Sheffield Centre for Robotics, known as SCentRo, was launched to bring together experts from **University of Sheffield and Sheffield Hallam University**.

It will develop machines that could perform dangerous tasks or help people around the home. The launch of SCentRo coincides with the 'Towards Automatic Robotics Systems' conference organised by the two universities which will feature an exhibition of machines including a robotic arm that could be used in catering, and 'Guardians', robots that help firefighters tackle blazes safely.

Professor Tony Prescott, who will direct the centre, said the sector's growth areas were likely to be in service robotics, focusing on machines helping people at home or in places such as hospitals, and field robotics, performing tasks in areas such as agriculture – areas where the market is growing strongly and where there are more opportunities.

Contact: www.scentro.ac.uk

Institute of Food Research launches a new bio-refinery in Norwich

Scientists will explore new ways to make use of residual plant material from food processing and agriculture at a Biorefinery Centre which opened at the UK's Institute of Food Research – at its headquarters on the **Norwich Research Park**.

In collaboration with **Lotus Engineering** and other partners, they are addressing the challenge of producing fuel with a lower carbon footprint. The biofuel could also combine a performance advantage.

Professor Keith Waldron said: "Once the food part of a crop has been exploited, there is a mass of plant material left behind that is often discarded as waste." At the heart of the centre is a steam explosion pilot plant, to be used to blow apart plant cell walls to extract useful natural products.

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Researchers will use the pilot plant to extract sugars that are normally locked into the cell walls of straw and woody plants by lignin, the substance that gives these plants their strength. Once freed, these sugars can be treated with enzymes and fermented with yeast to produce bio-alcohol.

The aim of the research is to turn residual, inedible biomass into more useful material for fibre processing, natural fibre development, releasing phenolics – such as the antioxidant ferulic acid – and for transport fuel.

In a second move, **IFR Extra Ltd** was established as a wholly-owned subsidiary of the Institute of Food Research. The new company will seek to offer the institute's high quality strategic and applied research in food, diet and health to companies in the food industry.

Contact: www.ifr-extra.com/Biorefinery.aspx

Southampton's scientists develop new technology to detect deep sea gas leaks

A new ultra-sensitive technology which can monitor leaks from underwater gas pipelines has been developed by scientists at the **University of Southampton**.

The research has shown that potentially environmentally and financially disastrous gas leaks from pipelines, and methane naturally leaking from the seabed, could in future be detected using changes in acoustic signals.

Using a simple set of underwater microphones to monitor these changes would provide a cost effective, unique detection system which would be one hundred times more sensitive than current monitors used by the oil and gas industry for remote detection with long deep sea pipelines.

Professor Tim Leighton of the University's **Institute of Sound and Vibration Research** who led the research, said "This new technology could save gas extraction and distribution companies millions in lost revenue. Severe leaks can also be dangerous to nearby oil rigs, shipping and for shore-based gas distribution facilities.

"The technology would allow us remotely to monitor and potentially reduce the release into the atmosphere of gases from the seabed. This applies both to gas extracted by the petrochemical industries and to the methane which is naturally released from the seabed."

Contact: www.isvr.soton.ac.uk

Aeroflex Ltd endows €1 million laboratory at Lancaster University

New wireless broadband laboratory equipped by leading multinational test equipment manufacturer Aeroflex places Lancaster among academic leaders in 4G technology development.

Aeroflex Ltd, a subsidiary of US firm **Aeroflex Holding Corp**, opened the Aeroflex Wireless Broadband Laboratory in the University's **School of Computing and Communications** at InfoLab21, Lancaster's centre for research in ICT.

The new laboratory is equipped with just over €1 million worth of test equipment donated by Aeroflex, a company with a large R&D and manufacturing facility in Stevenage, Herts. The Aeroflex laboratory will enable Lancaster University to play a leading role in the development of the next generation of wireless broadband networks and user equipment, such as smartphones, tablet PCs and future mobile devices. The 4th Generation (4G) cellular networks that are being developed will offer the user dramatically higher download speeds than those currently available from either residential wired or 3G wireless broadband

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services.

Professor Garik Markarian, who leads leading the research in the School of Computing and Communications at InfoLab21, welcomed **Dr Hayk Manukyan**, technical product manager and head of collaborations with universities at Aeroflex.

Contact: www.aeroflex.com

Two Bedfordshire professors devise 'better PC' – directed at SMEs

The **University of Bedfordshire's Research Directorate** has developed computer technology which could significantly benefit SMEs by taking full advantage of the power of a GPU – graphics processing unit – which thanks to recent progress can turn a normal PC into a 'desktop supercomputer'.

Professors Gordon Clapworthy and **Feng Dong**, from the University of Bedfordshire's Department of Computer Science and Technology, have been working with the medical industry to showcase the benefits of GPU technology. In a cancer research project the computation time for modelling the development of tumours was reduced from 20 minutes on a CPU-based system, to just 8 seconds via a GPU costing around £400.

Ultimately, any company marketing a computationally intensive application should find that they will derive benefits from the results of **GPSME**. Professors Clapworthy and Dong are on the lookout for local SMEs who have similar problems as there may possibly be other similar opportunities in the near future.

For more information on how the **Research Directorate** could benefit SMEs, contact **Dr Jen Clemitson** on 01582 743 781 or e-mail jen.clemitson@beds.ac.uk

Research at University of Greenwich turns coloured glass into pollution filter

Dr Nichola Coleman, a research scientist at the University of Greenwich said her research could utilize glass as a material for applications in filtering pollutants out of ground water.

The background lies in glass recycling – as most coloured glass won't be recycled. This is because glass in colours such as green, brown and blue isn't 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.

Dr Coleman, a senior lecturer in **materials chemistry**, found that by combining ground coloured glass, lime and caustic soda, and then heated the mixture to 100°C (212°F) 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. She is hoping to incorporate the tobermorite into filtration devices, that could be used to prevent water-borne pollutants from spreading from contaminated areas.

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

Contact: www.gre.ac.uk

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AND FINALLY...

>> Given the chaos of last winter and the recent publicity surrounding this coming winter's 'mini ice age'; **British Weather Services** have launched 'Weather Alert' an emailed early warning service designed to inform businesses and institutions of perilous weather.

'Weather Alert' monitors the weather through a 1-10 day forward-looking window, pinpointing potential impacting weather well in advance. Senior Risk Meteorologist **Jim Dale** said "We believe preparedness is half the battle".

Contact: BWS: 01494 715 115 www.britishweatherservices.co.uk/index.asp

>> Russian Government pressure on British companies attempting to operate in Russia continues. Vladimir Putin is known to hate the popularity of British political, cultural and economic institutions in his country.

In September 2011 oil giant **BP** called an armed raid on its Moscow office by Russian police and bailiffs 'illegal' as the premises remained out of bounds to the company's employees for days on end. BP's Russian spokesman Vladimir Buyanov said the firm's office in a Moscow skyscraper was packed with police carrying assault rifles – if as BP staff would put up a fight – and the company was co-operating with the 'bailiffs'.

>> In 2004 I journeyed to Bozeman, Montana (where's that??), to co-author a book, 'Bootstrapping Your Business', with CRM software pioneer **Greg Gianforte**, founder and CEO of **RightNow Technologies**, which he had started in his back bedroom.

Last Monday he sold his company, which employs 80 people at its Maidenhead, Berks, operation – to **Oracle Corp** – for a cool \$1.5bn. Congratulations on a magnificent business achievement.

RightNow's software helps companies handle customer interactions across a multitude of channels, including call and contact centres, the Web and social networks.

Its products are used by nearly 2,000 organizations across the globe, the company says.

Founded in 1997, RightNow went public in 2004. The company boasted a market cap of \$1.2 billion at market close last week. www.rightnow.com – OK, here's a book link: www.amazon.co.uk/Bootstrapping-Your-Business-Successful-Company/dp/1593373872

>> Finally, it is great to be able to recommend a really fun, well run business – that is also profitable. **Jessica Rose** is the 23-year-old founder/director of the **London Jewellery School**, now the largest independent jewellery-training provider in the UK.

The Jewellery School runs hundreds of jewellery-making classes throughout the year, which includes everything from beading and wire-work. Jessica decided to take the leap and leave her job at 20 to set up making and selling jewellery full-time without a degree. The business that started as a community hall in Dulwich, South London only ran one class every month and now runs over 50 classes every month throughout the year. In January 2010, the business changed location moving to London's famous jewellery quarter, Hatton Garden. With over 100 classes to choose from, more than 20 jewellery tutors and two fully-equipped jewellery studios the company is becoming increasingly popular among companies seeking a 'fun day out' for employees.

Natasha Sutila, General Manager – <u>natasha@londonjewelleryschool.co.uk</u> – is equally talented and may also be a 'face of the future'.

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