

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

Please enjoy the January 2011 edition of the monthly Gibson Index Newsletter.

SMEs and Innovators in the New Year's Honours List:

Few heads of SMEs, or innovators, or innovation promoters in general, feature in the twice-yearly Honours List. But Knighthoods for UK manufacturing guru and Cambridge academic **Prof Michael Gregory** and for retiring VC of the University of Hertfordshire **Prof Robert Wilson**, are particularly welcome. Prof Wilson has hand-built a business-focused University like no other.

Among the SMEs, there are OBEs for the tough-minded **Dr Peter Fitzgerald**, head of **Radox Laboratories** in Northern Ireland, and the brilliant **Dr John Taylor**, former head of **Strix Ltd**, the Isle of Man company whose sensors prevent one billion kettles a day from boiling dry. There was a much-deserved OBE for **Mrs Robyn Jones**, chief executive of corporate caterers **CH & Co**, who employs thousands but who started her firm on her kitchen table 20 years ago. **Stephen Dalton** receives the same award for his role as MD of **Sony Pencoed** in Bridgend, Wales.

Little-known boffins are often forgotten, so it is good to see OBEs for asthma expert **Prof Stephen Holgate**, at **Southampton University**, and civil engineer **Prof Nicholas Tyler** at **UCL**.

These were followed by MBEs for **Prof Stuart Cameron**, chief engineer at **Doosan Babcock**, **Amanda Gray**, director at **Eccleshall Biomass Ltd**, **Robert Law**, MD at **Magmatic Ltd** and **Gillian Southern**, director at **Wessington Cryogenics Ltd**.

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 43,500 UK-based technology SMEs.

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If you wish to submit a story – please email it to: news@gibson-news.com.

COMPANY OF THE MONTH	4
SCM Pharma is second success by pioneering Fiona Cruickshank OBE	4
SME NEWS – ENGINEERING, ELECTRONICS, TELECOMS	4
Aerial surveying company Bluesky signs deal with academic community	4
Schenck agreed to buy Clyde Process Solutions in a deal for £35m	5
Wikileaks label MacTaggart Scott as ‘vital to US interests’	6
Exploration Logistics Group Ltd to receive investment from MML Capital Partners	6
Three exploration companies announce oil strikes in the central North Sea	7
Bodyscanner technology ‘may help aircraft land in poor visibility’ says Teratech	7
Hyperdrive Technologies to produce new ‘T1’ high performance car	8
Active Technologies ‘set to double its sales this year’ with new tooling division	8
Engineering firm IHC Engineering Business is poised to expand its workforce	9
Venture capitalists pump £2 million into Edinburgh University spinout NGenTec	9
2K Manufacturing sees big future market for its plywood replacement product	10
Cambridge VNC specialist RealVNC doubles headcount at Cambridge office	10
SME NEWS – CHEMICALS, MATERIALS & ENVIRONMENT	11
Surrey NanoSystems announces the first sales of its nanomaterial growth system	11
Imperial College spinout aims to build longer-lasting rechargeable batteries	11
Andrew Burrows honoured for intelligent valve, controlled by central server	12
Daresbury Laboratory unveils three new innovative startup companies	13
SME NEWS – IT, SOFTWARE, SERVICES & INTERNET	14
Software firm AppSense unveiled plans to recruit 200 staff globally this year	14
Atlantic Challenger project asks Demon Alert to provide anti-collision systems	14
Everywoman Ltd underlines No1 position as leading women’s business network	15
Two Cambridge graduates develop augmented reality application for smartphones	15
goHDR Ltd’s video technology to help camera crews following a football	15
Greedy Intelligence build on early investment deal with Yuehai Venture Capital	16
LINE Communications develop a 3-D training package for Ford Motor	17
Nearly 1m people download Qype app in different European countries since 2009	17
Moviestorm creates production software for ‘digitally animated movies’	18
LamasaTech develops software for interactive computing surfaces	18
Atlanta Technology named as finalist in the European IT Excellence Awards	19
‘Silicon Roundabout’ SME may be set for big things in 2011	19
SME NEWS – BIOTECH, PHARMA & MEDICAL SCIENCES	20
Fixed Phage Ltd to commercialise technology from University of Strathclyde	20
Oxford Chemistry Department spinout Crysalin wins £1.55m fundraising round	21
Norwegian-British imaging system being developed by Setred	21
Dental diagnostics company 3D Diagnostic Imaging begins trading on AIM	22

FUNDING & INVESTMENTS	22
Outsourcing company MITIE launches £10m fund to back new business start-ups	22
Government's Regional Growth Fund is discretionary £1.4bn fund for England	23
Intellectual Property Minister Baroness Wilcox unveils new competition	23
GENERAL NEWS	24
'Huge expansion' in Government's New Enterprise Allowance	24
Technology Strategy Board aid for small and micro businesses including Biotech	24
FOREIGN NEWS	25
'Beaming electricity without wires' – the achievement of Seattle firm LaserMotive	25
EU's ChipCheck project probes for fakes among counterfeit component imports	25
EuropaBio calls for applications for European Biotech SME Award, 2010	26
Japanese NGO lays claim to world's cheapest hydrogen production process	26
UNIVERSITY NEWS	27
UCL Advances announces further two firms from Student Hatchery	27
University of Leicester seeks partners for 'air fingerprinting' device	27
Glasgow University licenses its camera particle tracking technology to Elliot	28
Edinburgh University plans to build the 30m-diameter testing tank for renewables	28
New tie-up sealed between University of Nottingham and electronics firm e2v	29
'World of Work' VC to retire from Liverpool John Moores University	29
Lancaster's Professor Hans Gellersen develops onscreen 'object manipulator'	30
University – Short Stories:	30
LATE DATES FOR JANUARY 2011	35
AND FINALLY...	36
Has innovation hit a brick wall? Canadian academic thinks we have...	36

COMPANY OF THE MONTH

SCM Pharma is second success by pioneering Fiona Cruickshank OBE

The contract manufacturing organization company's exceptional international growth over the last 12 months has seen it maximise opportunities to exploit and develop new markets and its outstanding performance in international trade.

Fiona Cruickshank OBE and the operational team at SCM Pharma are bringing a whole new meaning to 'novel, difficult and dangerous'. Hot on the heels of winning the Exporters Award at CELS, Dianne Sharpe and her colleagues are pushing ahead in the USA and Fiona is beginning to move closer to the rewards that come from business vision and investment. Fiona is no stranger to building a growth business.

Her first, **The Specials Laboratory**, was sold in 2008, which was when SCM was demerged, but this time she's doing things differently. Fiona might be working on the business as founder and co-investor, but she's not working in it – that's Dianne's job- and since she started 12 months ago business has really started to motor.

Established as a clinical trials manufacturing facility for big pharmaceutical companies SCM moved into commercial manufacturing and then product testing a year ago in order to take the cost out of the process for their clients and to provide them with a complete trial to manufacture-and-test service.

The 50-strong team at SCM are aided in their endeavours by Potent Pete and Radioactive Ray – two cartoon characters charged with getting the message to the normally staid pharmaceutical community that SCM has the facilities, the equipment and the licenses to manufacture and test some of the most potent chemical compounds known to the industry.

Now that a US agent is in place the SCM team is hoping for great things from the American market too. Whilst international business is beginning to gain traction Dianne continues to follow Fiona's example at home and make sure that school and university students get to know more about the exciting pharmaceutical company on their doorstep, learn about careers in science and have access to work experience and internships.

SCM might be a high growth company but it is firmly rooted in the Northumberland community and sees its role as an educator as well as a commercial powerhouse. With over 20 years of experience in manufacturing and senior management positions, **Dianne Sharpe** joined SCM Pharma in 2010 and currently heads up the business overseeing its 50+ team.

Prior to this she was Managing Director at Bishop Auckland-based **Mechetronics**, the UK's leading manufacturer of solenoids, successfully leading the business in establishing overseas facilities in India and China and the eventual sale of the business to a large US corporate. In her current role, Dianne is responsible for delivering the company strategy and all day-to-day operations at SCM Pharma, including improving operational efficiency, driving business growth and identifying of new markets.

Contact: www.scm-pharma.com

SME NEWS – ENGINEERING, ELECTRONICS, TELECOMS

Aerial surveying company Bluesky signs deal with academic community

The agreement with not for profit organisation **Eduserv** covers Bluesky's archive of the most up to date aerial photography covering the whole of England, Wales and parts of Scotland, together with height data that is used for creating 3D computer maps. Under the agreement Eduserv will promote the **Bluesky** data

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

to universities and colleges across the UK and Ireland.

“Eduserv has worked closely with the academic community for more than twenty years identifying suitable resources and negotiating agreements that offer the best value and the right terms and conditions for everyone,” said **Nikki Green**, Business Development Manager at Eduserv. “Bluesky has invested heavily in research and development and is an early adopter of new technology and therefore can ensure the quality, accuracy and consistency of their geographic data is second to none. This makes the Bluesky data an essential addition to the product range we offer.”

“This agreement gives us simple, cost effective and trusted route into the academic market,” said **Rachel Tidmarsh**, MD of Bluesky International. “Geographic data, such as our aerial photography and height models, has a diverse range of applications within this community supporting classroom based learning and field work and providing valuable intelligence and resources for research in study areas such as environment, planning and architecture to name just a few.”

A not for profit organisation Eduserv develops and delivers technology that demonstrates cost savings in the public sector. The latest Eduserv Chest Agreement covers Bluesky’s national archive of full colour digital aerial photography and Digital Surface Models (DSM). The national coverage of aerial imagery at 25cm, selected areas of higher 12.5cm resolution and DSMs with a 2m grid spacing are already well used and respected by the academic community.

Contact: www.bluesky-world.com

Schenck agreed to buy Clyde Process Solutions in a deal for £35m

German industrial processing group Schenck, which has offered 82.5p per share for the Doncaster-based group, has already received the backing of shareholders collectively holding a 54.1 per cent stake in CPS for the deal.

CPS chairman **Jim McColl** said: “Our board is unanimously recommending this acquisition by Schenck Process because of the clear benefits we see for the company’s shareholders, customers and employees.”

CPS recently announced half-yearly pre-tax profits of £1.69m, operating profits of £2.75 and revealed the value of its order book had risen to £23.3m.

Dr Jochen Weyrauch, president and chief executive of Schenck Process Holding GmbH, said: “We have studied the proposed acquisition in great detail and believe its merits are compelling for both CPS and the Schenck Process Group. We share similar visions and business philosophies and with their market leading MAC Equipment and Clyde Materials Handling brands, our combined product offering strengthens our position to deliver energy saving and environment solutions to target markets within the building materials, chemical, food, metals and mineral industries.

“Furthermore, the geographic reach and product and systems offerings of the Schenck Process Group and CPS are highly complimentary and fundamental to the strategic rationale for the acquisition. In particular, given the Schenck Process Group’s penetration of emerging markets, especially China, India and South America, we expect to be able to leverage our position in order to significantly accelerate CPS’ growth in these increasingly important markets.”

Contact: www.clydeprocesssolutions.com

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

Wikileaks label MacTaggart Scott as 'vital to US interests'

Disclosures in otherwise tedious **Wikileaks** diplomatic cables have named the Loanhead, Midlothian company, which designs and supplies drive systems for US submarines, as 'Critical to the Ship Submersible Nuclear (SSN)'.

Mast-raising equipment designed and manufactured by MacTaggart Scott is being fitted to the Royal Navy's latest **Astute Class** submarines. The engineering company, which was founded in 1898, specialises in naval equipment and has since WW1 been involved in the development of systems for submarines. It also supplies aircraft-lifting systems and weapons and ammunition elevators for surface vessels including destroyers, aircraft carriers and helicopter support ships.

However, it is the company's work in the field of submarines that is of particular importance to the American authorities. Its work includes secondary propulsion systems that are used for driving and steering subs, communications cable towing equipment, drive systems and mast-raising gear.

They had their first order from the US for submarine equipment in 1983. The company also supplies systems used on submarines in the fleets of the **Royal Australian Navy, the South Korean Navy** and the **Royal Navy**.

The Scottish marine engineering company was listed in secret documents published in late 2010 by the Wikileaks website as one of hundreds of facilities around the world that are key for America's security.

The whistle blowing website has published a document which lists what are described as "critical infrastructure and key resources located abroad." The list is classified as secret and not for foreign (ie non-American) nationals, and not for internet distribution.

The release of the information has been criticised for drawing attention to the facilities amid fears that they could become potential targets for terrorists.

The list details satellite sites, communications cable locations and companies that are involved in joint projects with American defence interests.

Contact: www.mactag.com

Exploration Logistics Group Ltd to receive investment from MML Capital Partners

The manufacturer of mine clearance, medical and safety equipment was gearing for growth after securing funds from a private equity group.

Exploration Logistics Group said **MML Capital Partners** had taken a minority interest in the group, positioning the company for a further period of development and expansion.

The Forest of Dean-based group has been a key partner in medical and safety services to commercial organisations, governments, institutions and major humanitarian initiatives worldwide for more than 25 years.

Through its divisions **Frontier Medical, Exlogs Safety, MineTech International, Exlogs Canine Services** and **Medekit**, the company provides specialist remote site medical support, a range of safety support services including field specialists, driver training and mountaineering support, landmine and ordnance remediation services and medical supplies and equipment.

As a specialist supplier to the oil and gas industry, the group has been instrumental in developing safety standards, improving operational efficiency and enhancing employee health and welfare.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

MML Capital Partners, a leading private equity firm and transatlantic investor, is backing the existing Exploration Logistics management team to continue its development of the Group's high quality health and safety service offering.

As well as working extensively with the oil, gas and mining industries, Frontier Medical, the group's remote site medical division, is currently supporting MOD operations in Afghanistan and MineTech International, the Group's specialist mine clearance division, is conducting widespread demining operations in Sudan and Chad on behalf of the United Nations.

This year Exploration Logistics Group was recognised for its success in maintaining significant growth in international sales as one of the UK's leading exporters of goods and services in **The Sunday Times International Track 100**.

Contact: www.exlogs.com

Three exploration companies announce oil strikes in the central North Sea

The absurdity of people who believe in 'peak oil' in the eco community was underlined by the recent announcement that **Premier Oil**, **Nautical Petroleum** and **EnCore Oil** said they found oil-bearing sandstone at one of their key exploration licences, **Varadero**.

The discovery is located to the west of the **Catcher Field** where the three partners made a significant oil discovery last year and which could be 'one of the largest finds made in the North Sea'. The well will now be plugged and the Galaxy II drilling rig moved to the nearby **Burgman** prospect in the field.

Subject to any weather or operational delays, the rig is expected to arrive soon. Last summer, **Premier Oil** upgraded reserves estimates for the Catcher and Catcher East fields to between 60 million and 100 million barrels of oil.

Shares in Premier have risen strongly in recent weeks amid speculation that **KNOG**, the state-owned Korean oil firm which bought **Dana Petroleum** in a £1.9 billion deal, could be lining up a bid. Premier owns a 35 per cent stake in the Catcher joint venture partnership, while Aim-listed EnCore and Nautical along with **Agora Oil & Gas** each hold 15 per cent.

German oil firm **Wintershall BAS** holds the remaining stake. Premier Oil shares closed up 3.5 per cent at 2,018p, Nautical shares were up about 8.5 per cent at 430p, while Encore rose 11.6 per cent at 149p.

Contact: www.premier-oil.com – www.nautical-petroleum.com – www.encoreoil.co.uk

Bodyscanner technology 'may help aircraft land in poor visibility' says Teratech

Technology used in controversial airport body scanners could help aircraft land in poor visibility or power high-bandwidth communication systems, says **Teratech Components**.

This recent spinout from the **Science and Technology Facilities Council** (STFC) received a £10,000 prize from **Research Councils UK** to exploit new commercial applications for the firm's terahertz radiation devices. Terahertz scanners detect a type of high-frequency electromagnetic radiation emitted by anything with temperatures higher than around 10 kelvin.

It can penetrate dry, non-metallic materials such as clothing or sand, but is absorbed by water and metal. This allows the scanners to create computer images of people's bodies that reveal items hidden under their clothing – an application that has attracted criticism since it started being used in airports in the UK and US earlier this year.

Teratech hopes to sell its version of the technology that emits and detects terahertz radiation to companies

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

wanting to use it for other purposes, Teratech's **Dr Byron Alderman** said. "Instead of trying to do those applications ourselves, we're leaving it to our customers," he said. "We're creating the fundamental detector technology that allows these other applications to be generated." Teratech was spun out from technology developed by the Millimetre Technology (MMT) group at **RAL Space**.

Teratech uses specially developed **Schottky** diodes that operate at room temperature rather than under cryogenic conditions like some competitors. "They're at a really difficult size to make – about a quarter of the width of a human hair," said Alderman. "You're between technologies: you're using a technology designed to make very small structures to make things that are a bit bigger."

Contact: www.stfc.ac.uk/RALSpace/default.aspx

Hyperdrive Technologies to produce new 'T1' high performance car

The co-founders of Hyperdrive Technologies, **Stephen Irish** and **Chris Wright**, first met whilst jointly working on the T1, a high performance sports car developed by **Caparo**.

Stephen was Senior Manager at Caparo, applying his skills in low carbon vehicle projects, including his time spent on the 'Limo Green' project in partnership with Jaguar Land Rover, Lotus and MIRA.

Stephen previously worked for **Jaguar Land Rover**, **NSK** (a tier one automotive supplier) and **Massey Ferguson**. Chris was an independent consultant to the Caparo T1 project and had previously worked as a Senior Engineer for **McLaren** before setting up his own business, **Carbonyte**.

Through this company, Chris had been commissioned to build a series of bespoke vehicles ranging from limousines to a stretched Ferrari and Smart car. It just seemed like a very feasible idea, but we needed funding and other business support to produce a prototype.

Despite this enormous amount of experience between the pair, the spark for their new 'hybrid catering vehicle' invention resulted from visiting a food and drinks van in a car park. Stephen explains: "

The aim would be to produce a new vehicle from Hyperdrive which would not only be lightweight, but also fuel efficient and capable of generating additional power for other uses, such as keeping the coffee machine warm. Other benefits would include reduced CO2 and as well as reduced operating costs of running such a vehicle, including lower fuel costs, congestion charge discounts, reduced taxation and free parking in some European cities.

The pair formed New Forest-based **Hyperdrive Technologies**, now a client of the Solent Innovation & Growth Team (IGT), and set about producing the first vehicle.

The **Solent IGT** is part of South East Business Innovation and Growth, providing focused support which is designed to have a tangible and positive impact on companies in the South East of England which have the potential to innovate and grow significantly.

In May 2010, Hyperdrive was awarded a grant to help with research activities into low carbon technology for vehicles. This enabled the company to produce an initial proof of principal prototype and begin to build the very first stages of a new hybrid vehicle.

Contact: www.hyperdrivetechologies.co.uk

Active Technologies 'set to double its sales this year' with new tooling division

During 2010, Norfolk electronics firm **Hamlin Electronics** decided to outsource its tooling and environmental testing departments to Hethel, Norfolk-based Active in a five-year agreement between the two firms.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

The deal saw Active take on a suite of tooling machines from Hamlin, including spark eroding, manual milling and turning, surface grinding and CNC milling equipment.

The environmental test equipment also enables the firm to test products against vibration, temperature variations, humidity, shock and fatigue.

Active has also taken on several former Hamlin staff to programme the machines and for toolmaking, design and manufacture of electronic controls and to manage the tooling division.

The move is seen as a key step for the Hethel firm, which has grown significantly since its launch in 2005 by former **Group Lotus** employees.

While 80 per cent of the machines' capacity will be taken up by former Hamlin customers, Active has already begun securing work to fill the remaining 20 per cent, including from clients in the automotive, medical, aerospace and general manufacturing sectors.

Active is also purchasing two further machines, a five-axis CNC machine and a twin spindle lathe, at a cost of £200,000, to further increase tooling capacity and capability. MD **Paul Spinks** said the company was currently recruiting 10 to 15 extra staff on top of 40 already employed at the firm as a result of the upturn in work from the new machines.

Contact: www.active-technologies.co.uk

Engineering firm IHC Engineering Business is poised to expand its workforce

The company has completed the latest in a series of massive contracts. It has just completed one of its biggest projects – installing a 65m pipelay tower in a South Korean shipyard for **Saipem** – is currently working on another project that could possibly see equipment fitted on a pipelay vessel in the North East next year.

It has also secured a contract with engineering giant **McDermott International** as part of a joint partnership with oil sector equipment maker **SAS Gouda**.

Chairman **Dr Tony Trapp** is confident of winning at least one more large contract shortly which will not only boost the firm's revenues but push it to grow its workforce.

He said: "Everyone's definitely busy and we need a lot more good engineers to take on some great projects. There are some really good openings for skilled engineers who want to make a difference in the world. I'm sure we could take on another 20."

The company was founded in 1997 by Trapp, who sold it two years ago to Dutch firm **IHC Merwede** for £30m. The company currently employs about 180 staff in Northumberland, Tyneside and Teesside.

IHC EB, which is based in Riding Mill near Hexham, recently saw the pipelay tower it designed and built in the North East rise to a vertical position on the deck of the Saipem FDS2 in the **Samsung Heavy Industries** shipyard in South Korea.

Contact: www.engb.com

Venture capitalists pump £2 million into Edinburgh University spinout NGenTec

Amsterdam-based **SET Venture Partners** and **Scottish Enterprise's** co-investment fund have each injected £1m into NGenTec, which makes drive-shafts for wind turbines.

Derek Shepherd, founder and chairman of the company, said the money would be used to build a full-

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

scale prototype of the company's device, which removes the need for a gearbox.

He said taking the gearbox out of a wind turbine made the structure lighter and cheaper and meant there were fewer moving parts that needed to be maintained or replaced.

Shepherd was MD of the international arm of Glasgow-based temporary power supplier **Aggreko** and served on the board of the FTSE 100 company for 11 years.

NGenTec expects to take on about 20 staff over the next two years and hopes to have its first commercial products ready in about one year. Shepherd said: "I plan to use the Aggreko model of sourcing parts from around the world but assembling them here in Scotland. For the offshore wind farm sector, I imagine assembling them in one of the construction yards would be the best plan." The firm is expected to name its first chief executive soon.

NGenTec recently received a £800,000 grant from the UK government's environmental transformation fund. **The European Wind Energy Association** forecasts that by 2020 there will be 7GW of new wind turbine installations annually, which would represent a market worth about £7 billion a year.

Contact: www.ngentec.com

2K Manufacturing sees big future market for its plywood replacement product

The firm makes **EcoSheet**, which started full production after successful trials with many of the UK's leading construction companies. The first orders, amounting to more than 8,000, sheets have been placed.

EcoSheet, which is made entirely from waste plastic, has been successfully trialled by some of the UK's largest construction companies including **Bovis Lend Lease, Apollo Group, ISG Pearce, Morgan Sindall** and **Wates**. The trials have resulted in EcoSheet being specified as the product of choice in a number of National Framework Agreements with these construction companies.

The new factory, which is the first of a nationwide network, will be of major benefit to the construction industry, which currently landfills millions of sheets of plywood a year.

Omer Kutluoglu, MD of 2K Manufacturing, said: "EcoSheet will have a big positive impact on the construction industry and has been proven to outperform imported plywood, not just environmentally, but commercially and operationally too.

"It's the obvious solution for anyone looking to reduce construction waste to landfill and back sustainable product design."

Contact: www.ecosheet.com

Cambridge VNC specialist RealVNC doubles headcount at Cambridge office

In the past 12 months it has welcomed 35 new members of staff – and now it's seeking another healthy in-crop.

RealVNC's recruitment drive is attributed to the company's commitment to continuing innovation. Over the last year the company has announced a significant collaboration with **Intel** and launched a new product compatible with **Apple's** iPhone and iPad.

With a recent entry into the automotive industry, which is expected to flourish during 2011, RealVNC continues to create new markets.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

CEO **Dr Andy Harter** said: “Generating self-funded growth year-on-year for nearly 10 years is an outstanding achievement, especially with the recent difficult economics. Recruiting and retaining top-quality engineering and commercial staff is integral to our growth plans and we have outperformed our expectations in this area. We have some huge market-making opportunities which we are pursuing vigorously.”

Contact: www.realvnc.com

SME NEWS – CHEMICALS, MATERIALS & ENVIRONMENT

Surrey NanoSystems announces the first sales of its nanomaterial growth system

Three leading research organisations have chosen the firm’s **NanoGrowth-Catalyst** as a platform for their work on materials including carbon nanotubes, silicon nanowires, graphene and nanoparticles for semiconductor, optical device and other applications.

The growth system’s multi-chamber design ensures the purest nanomaterial processing conditions by continuously maintaining the substrate under vacuum, from the deposition of catalysts to growth of materials.

NanoGrowth-Catalyst will be installed at the **École Polytechnique of Montreal**, and the **University of Surrey’s Advanced Technology Institute**.

One NanoGrowth-Catalyst system will be installed in Montreal, where it will support a wide range of research groups from the École Polytechnique and **The University of Montreal** studying topics including microelectronics, optoelectronics, and thin film physics.

This system will be populated with every major processing facility available including three processing chambers served by an automated handling system, and growth techniques including CVD, PECVD, nanoparticle deposition, sputtering, thermal annealing, and rapid thermal processing.

It will also incorporate a unique form of rapid thermal growth for nanomaterials developed to prevent the agglomeration of catalyst particles.

The Advanced Technology Institute (ATI) is a partner to Surrey NanoSystems and has already been using an earlier version of the NanoGrowth system for around four years to support its research into next-generation semiconductor and photonic device technologies.

“The top-down infrared heating technique provided by this tool allows us to localise energy delivery very accurately”, says **Professor Ravi Silva**, Head of the Nano-Electronics Centre at the Advanced Technology Institute. “The system provides unparalleled control of processing parameters, giving the required flexibility to support research into nanoelectronic materials – including carbon nanotubes, graphene and silicon nanowires – enabling us to overcome roadblocks to ongoing semiconductor development.”

Contact: www.surreynanosystems.com – **Ben Jensen**, CTO, Surrey NanoSystems – 01273 515 899 – b.jensen@surreynanosystems.com

Imperial College spinout aims to build longer-lasting rechargeable batteries

The silicon-anode technology devised by **Nexeon**, a spinout of **Imperial College London**, will be developed into full production for lithium-ion batteries at a new pilot plant in **Oxfordshire** – with the aim of keeping costs equal to those of conventional carbon anodes.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

The technology allows batteries to hold '10 times the charge of other models because silicon anodes can hold more lithium ions than carbon ones and could be used in electric vehicles or consumer electronics'.

But previous attempts to use silicon have suffered because the connections between atoms break down through repeated charging, leaving isolated regions of material.

Nexeon's design involves creating a structure of tiny interwoven strands of silicon, one fifth of a micron in diameter, which prevents the material degrading in the same way.

Prof Mino Green, inventor of the technology and Nexeon's chief scientific officer, said "If one connection is broken there are a million others so you don't get the cracking up."

To create the strands, tiny hemispheres of silver are deposited on particles of silicon and hydrofluoric acid is used to etch down through the remaining exposed silicon, leaving a structure resembling a hedgehog.

The strands are then broken off and used to create the anode while 99.8 per cent of the silver is recovered and recycled using nitric acid. The new pilot plant at Culham near Oxford, which opened earlier this year, can produce one million 18650-type battery cells annually. Nexeon had to design low-costs production facilities that could cope with pumping highly corrosive hydrofluoric acid around.

Engineering and operations director **Ian McDonald** said: 'We thought about costs from the beginning – we didn't want to try reducing costs at a later stage.' Expanding Nexeon's facilities could help the growth of battery production in the UK, said **CEO Scott Brown**. "We're in dialogue with several major battery manufacturers and EV manufacturers and some are already evaluating the material," he said.

"It means we won't be shipping battery parts from Asia for EVs. It might be a natural progression for manufacturing in the UK within three or four years' time."

Contact: www.nexeon.co.uk

Andrew Burrows honoured for intelligent valve, controlled by central server

He won the **Design Engineer of the Year** award in 2010. Despite being collected, filtered and chlorinated, then being distributed via high pressure mains, 25% of water is lost before it reaches the consumer.

Water leakage can be reduced by limiting pressure in the distribution system but, until recently, no effective technologies existed to do this. This learns the behaviour of the network and constantly adjusts the pressure to the optimum. The system also reduces leakage by reducing pressure to the optimum to satisfy demand.

Andrew Burrows jointly filed a patent for a valve whose innovative hydraulic feature enables it to be actuated 400 times per day for five years using only tiny amounts of energy.

Contributing to the industry, Andrew Burrows finds time to mentor other engineers through non executive directorships at other companies. Burrows, a chartered engineer, member of the **Royal Institution of Naval Architects** and an active member of the International Water Association, won the accolade for his design of **i2O Ltd's Smart Water System**, which can reduce water leakage by 20 per cent. In use, the i2O system continuously adjusts and controls the pressure of water going into a district metering area (DMA) so that under all demand levels, low to high, the average zone pressure is kept to the minimum that is required.

It does so by applying a range of algorithms that vary the output pressure of a pressure relief valve (PRV), so that the pressure at the critical point in any DMA is kept at a more stable level, irrespective of demand.

An advanced pilot valve designed by Burrows replaces a conventional unit, while the controller to the

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

pilot valve and a sensor located at the DMA's critical point communicate with i2O's server over a GSM network. Once data has been received, i2O's software transmits specific algorithms for each DMA back to the controller, which then continuously calculates the optimum output pressure, adjusting the pilot valve accordingly.

Fifty of the company's systems installed in **Malaysia** during July 2010 are each saving 250 tonnes of water per day. Other systems are currently in operation in **Spain, Italy** and the **UK**.

Judges described i2O's intelligent, pressure-adjusting water valve as a great example of creative problem solving. They were impressed by the way in which an intelligent and rigorous design was cutting water leakage without any need for digging up roads, describing it as 'an elegant solution to an urgent worldwide problem'.

Contact: www.i2owater.com

Daresbury Laboratory unveils three new innovative startup companies

The trio have been given access to the unique cutting-edge research facilities and expertise at the **Science and Technology Facilities Council's** (STFC) Daresbury Laboratory. The three – **PV Glaze**, **BiSN** and **Chris Underwood** – are all winners in a challenge run by STFC's Futures team, which seeks to exploit scientific research to find solutions to the government's challenges in energy, environment, healthcare and security.

- **BiSN** is a newly formed, highly technical service company serving the oil and gas industry. At I-TAC, BiSN will be carrying out a study on enhanced oil recovery, with a view to enabling better access to oil reserves which have previously been abandoned and facilitating the extraction of oil from them, resulting in more efficient use of resources.

Contact: **BiSN** Technologies Ltd, 30 Church Road, Lymm, Cheshire WA13 0QQ

- **PV Glaze** is developing a renewable energy technology using silicon based cells that can convert solar radiation into electricity. Normally opaque due to the nature of their materials, these transparent, high clarity solar modules, known as Building Integrated Photo-Voltaics, will enable such renewable energy technologies to be better incorporated into the construction of buildings, motor vehicles and agricultural greenhouses, resulting in less CO2 in the air and less reliance on imported fuels. **David Ruchat** at PV Glaze said: "I-TAC will not only provide us with access to the kind of facilities that are normally out of reach for small companies, but also access to the wider benefits offered by the campus such as networking with others in the solar energy industry, collaborating with contacts in the field and allowing us to overcome technological challenges."

Contact: www.pvglaze.com

- **Dr Chris Underwood** is working on a novel design for a **Vascular Access Graft**, a type of artificial blood vessel which is implanted in the arms of people who require lifesaving dialysis. Incorporating a new type of biomaterial, this product is intended to prevent some of the common complications currently associated with this procedure and the unique materials technology being used has the potential to lead to improved product designs for other cardiovascular applications as well, such as bypass grafting in the legs or around the heart.

Contact: www.stfc.ac.uk

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

Software firm AppSense unveiled plans to recruit 200 staff globally this year

New CEL **Darron Antill** joined AppSense last April as chief operating officer and became CEO on 1st January, replacing **Charles Sharland**, who stays on as chairman.

AppSense, which is based at Daresbury, near Warrington, saw revenues grow from £18m in 2009 to almost £29m last year with the help of increased sales in the US, which rose from 25 to 50 per cent of overall turnover.

Customers include **JPMorgan Chase, United Airlines, RBS** and the **Department of Work and Pensions**. Mr Antill is based in New York, but confirmed AppSense's commitment to maintaining its head office in Cheshire. He said: "AppSense has already seen quite considerable organic growth and, in order to become a global software vendor, we need to ensure our success in the US, which is why I am based there."

Of the 200 new jobs for 2011, at least 50 will be at Daresbury, primarily in technical roles. The company is also to new, larger headquarters next door to its current base.

AppSense currently has 285 staff worldwide, with 150 in Daresbury and 75 in the US at offices in California and New York. Its other offices are in cities including **London, Munich, Melbourne** and **Amsterdam**.

Mr Antill said: "We are generating cash and reinvesting, and we need new talent to fuel our continued expansion. I fully expect to double our development capacity in the next 18 months, and more than double our support capacity."

Mr Antill said that prime sectors for AppSense were finance, government and health, with new opportunities arising in health. Mr Antill said: "We have a number of new products which we will be releasing in the second half of this year."

Contact: www.appsense.com

Atlantic Challenger project asks Demon Alert to provide anti-collision systems

The project to build a fast transatlantic craft has invited electronics firm Demon Alert to provide an anti-collision/debris detection and alerting system using thermal cameras and the vessels onboard tracking systems for the **Atlantic Challenger** project.

Demon Alert specialises in consultancy, design, installation, project management and resells either direct or to specialised marine companies. They ensure that marine leisure time is maximised to the full and that both safety and asset are protected.

Its range of selected marine security products will provide you with reassurance that your super yacht, motor yacht, sailing yacht, powerboat, RIB, tender or even jet-ski will stand 'the utmost chance of staying in your hands; rather than in someone else's'.

They specialise in proven maritime security and detection systems covering **GPS Tracking**; Security Systems covering perimeter intrusion, using wired and wireless technologies communicating alerts via GSM and **Inmarsat** networks; monitoring systems covering shore power loss, battery power loss, water intrusion, temperature intrusion and smoke; and anti-piracy systems.

Contact: www.demonalert.com

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

Everywoman Ltd underlines No1 position as leading women's business network

Based at the company's headquarters in the heart of London, Everywoman Ltd created the UK's largest platform for professional women, providing a virtual network for the organisation's 35,000 members and a voice for countless SME owners.

The two founders, **Karen Gill** and **Maxine Benson** were appointed MBEs in the 2009 **New Year Honours**, in recognition of their service to women's enterprise.

In the nine years since it was established, Everywoman has grown to provide not just a network for women in business, but is now a nationwide resource providing training for both the public and private sector, business guides, research, mentoring, a national conference and multiple annual awards programmes for female entrepreneurs, women in retail and women in transport and logistics.

The latest development is the introduction of a business focused social networking site and an impressive line up of brand ambassadors that include **Sarah Anderson CBE, Laura Tenison MBE, Dawn Gibbins MBE, Joy Nichols MBE and Liz Jackson MBE.**

Contact: 17 Wootton Street, London SE1 8TG – 020 7981 2574.

Two Cambridge graduates develop augmented reality application for smartphones

Simon Taylor and **Connell Gauld**, along with Senior Lecturer **Dr Tom Drummond**, attempted to make augmented reality brings together real and virtual worlds.

There are already augmented reality technologies on the market in which users can hold their smartphone up to a particular point of interest and the phone's screen will give the user information on what they are looking at.

Most of these applications rely on the phone's GPS system combined with a compass reading in order to determine what the phone is 'seeing'. The technology developed by Taylor, Gauld and Drummond differs in that it processes the images from the phone camera directly, using the smartphone's processor in order to recognise real-world features. The software allows the phone to compute the position of a known target in an image relative to the phone's camera, which allows for accurate overlay of virtual information on the camera image of the real object.

The method is fast enough to work in real time on a smartphone, using live video from the phone's camera. The team has built a framework for describing the content to be displayed, along with interactivity, animation and sound. These are all delivered to their cross-platform augmented reality player application, called Popcode.

Users are alerted to the existence of additional content related to an object with the use of Popcodes – a combination of a logo and barcode. When the application views a Popcode, it fetches the content from the internet and then displays it to the user.

Cambridge Enterprise provided support to the inventors in resolving a complicated IP situation with a large corporation.

Contact: www.extra-reality.com

goHDR Ltd's video technology to help camera crews following a football

Researchers from **Warwick University** have formed goHDR to commercialise their work on a new video system which could also help surveillance camera operators and surgeons using video to conduct or record surgery.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

The University of Warwick researchers have developed the world's first complete High Dynamic Range (HDR) video system, which is much more effective in capturing light and dark than traditional technology.

Professor Alan Chalmers of the WMG's Visualisation Research group at the university said: "We have put together unique compression software with a high performance HDR camera and HDR displays that will revolutionise the use of HDR in a range of applications.

"The impact will be enormous, for example, the ability to clearly see the football when it is kicked from the shadow of the stadium into sunshine, or surveillance cameras which can detect detail even in extreme lighting conditions."

"We have also recently successfully trialled its use to assist and document surgery together with the thoracic surgery team and the multimedia group at **Heartlands Hospital**.

"HDR is able to accurately capture for the first time the wide range of lighting present in an operation from the dark body cavities through to the bright highlights on the shiny medical instruments."

goHDR was Highly Commended in the **Technology Strategy Board's Special Award for High Growth Potential** 2009 category – a contest that should have won. The judges were impressed by the company's High Dynamic Range (HDR) video compression technology. HDR techniques are currently used in medical and creative industries where there is a requirement to visualise high quality imagery, in different lighting situations. goHDR has the potential to provide one of the enabling technologies for the widespread adoption of HDR video for the home entertainment market.

If goHDR's solutions become the de facto standard for HDR encoding, this could mean global adoption; with the HDR display market estimated to be 270 million units by 2015.

Contact: <https://digital.warwick.ac.uk>

Greedy Intelligence build on early investment deal with Yuehai Venture Capital

Lin Sun and **Yichi Zhang**, two Chinese PhD students from the **University of Cambridge's** Computer Laboratory, aimed to address the shortcomings in the language software market by developing a product which addresses the specific types of errors made by non-native speakers.

The two formed a company, **Greedy Intelligence**, and a product, named Gamma, a proof-reading and grammar-tutoring solution that specifically targets learners. Gamma is the first software to incorporate grammar-checking technology into an adaptive learning environment that, in turn, creates a revolutionary platform for English language education.

The two approached the **Cambridge Enterprise Seed Funds** team for funding. The latter was impressed by the high standard of Greedy Intelligence's proposal and its clever solution as it enables most of the grammar checking to be done by a computer without human intervention.

With a PathFinder award from Cambridge Enterprise Seed Funds and a **Proof of Market** grant from **EEDA**. Greedy Intelligence is aiming to identify potential partners and customers in both the UK and China, to evaluate alternative pricing strategies and estimate early stage revenues, and to obtain a ready-to-use web interface for prototype demonstration and future use in products.

Today, there are over four times as many people learning English than there are native speakers. Close to 40% of those learners are using some form of software to increase their understanding of the English language. The problem with many of the language software products currently on the market, however, is that they fail to recognise the fact that those learning English make different grammatical errors from native speakers.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

Contact: www.greedyint.com

LINE Communications develop a 3-D training package for Ford Motor

It has teamed up with automotive giant Ford to develop the 3-D package for sales staff's **iPhones** and **iPods** used in the showroom. The application is designed to help sales staff explain some of the features on Ford's new people carrier, the C-MAX and its bigger brother, the Grand C-MAX.

It contains a series of high-quality 3D movies and a wealth of technical and sales data, so that sales people don't have to leave the showroom floor or keep the customer waiting while they retrieve information.

Steve Ash, LINE's Sheffield-based sales and marketing director, said: "LINE has an enviable track record in designing mobile technologies into strategic blended learning solutions for our clients. This latest application is an exciting development in our work with Ford as it blends material designed for training into a tool that sales people can use on the job to help improve customer understanding."

Ford's **Gill Palmer** said: "On the one hand we are keen to see whether applications on mobile phones and other devices can be used as training tools; it's important that we use channels that are convenient to ensure sales people take advantage of the training on offer.

"We also thought this was a great opportunity to develop an application which could be used as a sales aid on the showroom floor. Many of our new technologies are quite complex and video clips make them easier to demonstrate."

French and German versions of the iPhone and iPod app are already being tested and Ford is planning to release LINE's app in all European languages and markets in the near future.

Contact: www.line.co.uk

Nearly 1m people download Qype app in different European countries since 2009

Launched in March 2006, Qype's communication platform is Europe's largest site for user-generated reviews and recommendations of places, events and experiences.

Qype covers more than 158,000 European towns and cities and has 17 million unique visitors per month. Its mobile application **Qype Mobile** was first launched for the **iPhone** in January 2009, followed by versions for **Android** and most recently **Blackberry**, allowing users to access and write Qype reviews on the go and find out the best things that are going on around them.

The new agreement signifies that a co-branded version of the Qype product will be pre-loaded on supported **Vodafone** devices, including Blackberry and Android. This is a significant deal covering Vodafone's core European markets including the **UK, Germany, Italy, Spain, Portugal, Netherlands and Ireland**.

Since 2009, almost a million people have downloaded the Qype app in different European countries. Its benefits include the support of multiple languages to allow users to tap into local knowledge when abroad, and an intuitive five star rating system showcasing the best places nearby in just one click.

Ian Brotherston, CEO of Qype, says: "Qype offers reviews of 600,000 businesses in Europe and has 17 million unique visitors per month, with 1 million Qype users on mobile devices. We want to encourage our customers, whether users or businesses, to engage with the site on a regular basis and keep it growing. The future is in mobile, and we are dedicated to continuously improving the mobile experience for our customers – building on and offering new features to users.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

“A core part of Qype’s offering is its location-based services, as users can benefit from indispensable advice and insider knowledge on a local business or service, making the reviews accurate and compelling.”

Peter Barry, Head of Venture Group, **Vodafone Ventures**, said: “Qype has emerged as the leading local reviews site on the web in Europe. In the recent past we have seen Qype rapidly scale its presence both on the mobile and beyond Europe. We are delighted to back a key player in the location-based services and user reviews arena and we are looking forward to helping Qype accelerate its mobile business further and ultimately adding value to our customer.”

Contact: www.qype.co.uk

Moviestorm creates production software for ‘digitally animated movies’

Founded in 2003 by Cambridge entrepreneurs **Matt Kelland** and **Dave Lloyd**, Moviestorm provides an easy-to-use software platform enabling anyone to write, produce, direct and edit their own digitally animated movies.

Aspiring movie-makers, from total novices to students and professionals can create animated movies. They began researching emerging forms of media, and in particular, innovative ways in which game technology could be applied to non-game environments and media.

In summer 2004, they launched their debut film, *No Licence*, which received critical acclaim, and has been regularly shown at film festivals, game conferences, art installations and on television worldwide ever since. Building on this experience, Matt and Dave developed and co-founded Moviestorm to open up the web to enable animated movie-making for everyone.

The Moviestorm software is available to download as a free one week trial and then can be acquired outright or users can sign on to a subscription bundle for £7 per month.

Moviestorm – the downloadable software that lets anyone to write, produce, direct and edit their own digitally animated movies on their PC or Mac. Get going quickly with template movies and pre-built sets and characters, or choose from thousands of movie assets perfectly designed to bring all types of production to life.

This virtual movie-making studio is now available with a range of **Theme bundles** ranging from Action Movies to Factual TV, Kids Shows to Music Videos and more.

In autumn 2005, Moviestorm received investment from a consortium of private and institutional investors in order to found Moviestorm Ltd.

Contact: www.moviestorm.co.uk

LamasaTech develops software for interactive computing surfaces

The North East software firm is having to consider moving to new offices after almost trebling its workforce in less than a year. Based in Sunderland LamasaTech opened for business in October 2009 and has already had to take on new staff to meet demand for its services.

LamasaTech develops software for interactive computing surfaces which can be used for everything from interactive restaurant menus – filtering diner’s likes, dislikes and allergies before letting them play games while waiting for their food to arrive – to a new way of conferencing using multitouch surfaces to interact with people in meetings on a global scale. Their interactive computer screens are also being used by **Sunderland University** as information points for new students.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

The company is currently based in St Peter's Gate, Sunderland, but is investigating larger premises after recruiting five new members of staff and looking to bring in more new faces in the near future.

MD **Mahmoud Elsaid** said: "It's been a great 12 months for Lamasatech. We knew we had a unique product and a great team, but we never imagined we'd be expanding like this so soon. We're currently developing a multi-touch wall for businesses to collaborate with each other using the latest facilitation tools. We've also been approached by an Italian company to design an application for use on a submarine. The opportunities are endless".

Lamasatech have been helped in their rapid expansion by Sunderland Software City, the regional initiative supporting the growth of the software industry across the North East.

They are one of the first companies to emerge from the University of Sunderland's **Software City Hatchery**, which launched last September and works with high-calibre graduates and postgraduates, developing their ideas and utilising their skills to set up their own software ventures, raising the North East's profile as a world-leading centre for science and computing.

Contact: www.lamastech.com

Atlanta Technology named as finalist in the European IT Excellence Awards

Atlanta Technology has reached the final of the Data & Information Management category based on an entry that highlights work undertaken with client **Sacker & Partners**.

Atlanta Technology Ltd has advised, supplied and supported advanced technology solutions aimed at enabling growth and adding value to businesses customers since 1996. Its dynamic team concentrates on simplifying technology from the business customer's perspective. Atlanta supports Sackers, a pensions advisory law firm, with its entire IT infrastructure and, due to the nature of its business, the continuity of its services is of utmost importance. Therefore a major emphasis of Atlanta's services are focused on delivering complete business continuity, advanced data storage and ongoing information security to the firm.

Simon Kelson, MD of Atlanta Technology said: "We entered this particular category as it aims to recognise excellence in solutions that have helped companies control their information, from data management through to disaster recovery. Reaching the finals of the this pan-European awards event, where there were entries from 32 different countries, is a great achievement for Atlanta Technology."

John Chapman, Editorial Director of **IT Europa**, organisers of the European IT Excellence Awards 2011 said "Entries this year were up by 30% and the quality of submissions was exceptional." The winners will be announced at an awards gala dinner on 10th February 2011 at the London Marriott, Grosvenor Square.

Contact: www.atlantatechnology.co.uk – 020 7692 7000
Award's finalists list – www.iteawards.com/winners-finalists

'Silicon Roundabout' SME may be set for big things in 2011

In 2010 one share many investors would like to find in their Christmas stocking is **SocialGO**, a £4.26 million concern operating at the heart of the online business hub around Old Street, London.

In the so-called known as the **Silicon Roundabout**, the company, bossed by executive chairman **Dominic Wheatley**, one-time chief executive of video games star **Eidos**, is wholly focused on SocialGO, its software that allows groups to create their own online social networks.

The SocialGo software-as-a-service platform enables hobbyists, small to medium-sized companies and even large corporate clients to create their own mini-**Facebook**, in Wheatley's words. SocialGo is on a

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

growth tear, with sales having surged 480 per cent to £418,000 in the six months to September, during which losses of £71,000 were converted into gross profits of £183,000.

SocialGO, which is moving towards break-even, is not reliant on a cyclical advertising model, while the forthcoming launch of an even more simple-to-use SocialGO version 2 should help sell it to the mass market.

While Wheatley is the City face of the operation, investors are also betting on the formidable abilities of youthful CEO and social networking expert **Alex Halliday**, architect of SocialGO and co-manager of the group's Shoreditch team.

With the concept of social networking becoming ever more pervasive, SocialGO has just raised its game by appointing **Canaccord Genuity** as broker and nomad.

Contact: www.socialgo.com

SME NEWS – BIOTECH, PHARMA & MEDICAL SCIENCES

Fixed Phage Ltd to commercialise technology from University of Strathclyde

The firm's technology will tackle bacterial infection and contamination, including superbugs such as MRSA. Fixed Phage has been established to develop products based on its patented technology for treatment and prevention of infection and bacterial contamination in medicine, food safety, environmental sanitation and many other areas.

In November 2010, Fixed Phage Ltd was the winner of the **Nexus Life Science Innovation Award** at the 2010 Nexus Annual Life Science Awards (West).

Initially, the new company will be based at, and contactable at, the University of Strathclyde. Initially the company will focus on wound care applications, and having already proven the technology's effectiveness in a prototype wound closure product, this will be extended to wound dressings able to combat those bacteria causing wound infections, such as MRSA.

The technology enables the powerful anti-bacterial properties of bacteriophages- naturally occurring viruses which are non-toxic to humans, animals and plants but which can destroy bacteria- to be incorporated into new and existing products.

Scottish venture capital company **Barwell plc** is providing capital to support the new venture, in partnership with Scottish Enterprise's **Scottish Co-Investment Fund**, and is hopeful that the company will generate new jobs and opportunities.

The initial development of the technology was funded through the former **Synergy Fund**, owned by Strathclyde and the **University of Glasgow**, and through Scottish Enterprise's Proof of Concept Programme.

Dr Mike Matthey, Honorary Lecturer at the Strathclyde **Institute of Pharmacy and Biomedical Sciences** and Chief Scientific Officer of Fixed Phage, said: "Bacterial infection is a huge challenge for hospitals and healthcare; and can be at least as harmful to patients as the illnesses they are being treated for. We have had highly promising trial results with a prototype and are looking forward to delivering treatment to the patients who need it and cost-effective solutions for the health professionals who look after them. We have been able to stabilise bacteriophage and develop the technology for application in combating these infections."

Contact: www.strath.ac.uk/sipbs

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

Oxford Chemistry Department spinout Crysalin wins £1.55m fundraising round

Isis Innovation Ltd was closely involved in the formation of the company back in 2007, managing the intellectual property, bringing together the team that formed the company and raising the original cash investment.

Tom Hockaday, MD of Isis Innovation Ltd. said, "It has been great to see the company grow and secure this next round of investment, enabling continued development of the technology."

Crysalin is developing groundbreaking and patented technology for protein structure determination, enabling a step change in the productivity and scope of structure based drug design (SBDD), has also announced that David Brister has been appointed as Chairman.

Investors in the £1.55m funding round include **IP Group, IP Venture Fund, managed by IP Group, Oxford Technology Management** and **Oxford Spin-Out Equity Management**. The funds raised will enable Crysalin to operate out of dedicated facilities, further exemplify the technology and rapidly bring the technology to market.

Crysalin's solution is based on ten years of research carried out by **Professor Martin Noble** and **Dr John Sinclair** at the Oxford University **Laboratory of Molecular Biophysics**.

Professor Noble is a world renowned protein crystallographer and structural biochemist with a strong publication record in these fields. He is also the joint holder of three patents relating to anti-cancer drug design, of which two were jointly developed with **AstraZeneca**. Dr Sinclair also has extensive experience in molecular biology, protein production, crystallization and crystallographic structure determination.

David Brister, Crysalin's chairman, has over 20 years experience in a variety of private equity, venture capital and operational roles. He was instrumental in the successful development of venture businesses at **3i** and **MVM**. As an investor he was responsible for successful investments in **Cambridge Antibody Technology, Acambis** and **Oxford GlycoSciences** and was also chairman of **Domantis** for five years from its inception.

Contact: www.crysalin.com

Norwegian-British imaging system being developed by Setred

Doug Patterson is the director who developed the system along with the Norwegian inventor of the system, **Christian Moller**, and a Swedish fellow student at Cambridge.

Setred's 3D imaging system that can be viewed by multiple observers, simultaneously, Deciding on the best treatment for a patient suffering from a complex condition is difficult at the best of times, especially when having to plan operations using the current imaging systems that can only produce 2D images. Setred aims to change this with their revolutionary MD20-3D imaging system that can be viewed by multiple observers, simultaneously, without the need of special glasses or other devices.

In recent clinical trials, interventional neuroradiologists (brain imaging specialists) have been able to refer to a 3D image on a special monitor placed alongside them in the operating room while performing surgical interventions on patients.

This has already proved invaluable, says Mr Patterson. "In a recent case at a university hospital in the UK, the surgeon was planning both an intervention procedure and an open skull operation to remove two aneurysms from a patient," he said.

"However, the hospital had Setred's 3D system for trial. Having looked at our 3D image of the patient's brain, which clearly revealed the true extent and complexity of the anatomy, the surgeon saw he could

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

in fact remove both aneurysms in one minimally invasive operation, avoiding the need for prolonged and dangerous open brain surgery. This was a great success saving the patient stress and reducing recovery time.”

Setred displays are currently being trialed in hospitals and the first systems have been installed in **Norway, Sweden and Germany**. “We are also seeing some exciting images from ENT surgeons in **AHUS** in Oslo – including the first ever 3D images we believe of the semicircular canals.

Other applications could of course include cardiovascular imaging.” In a completely different field, Setred sees immense potential for oil reservoir mapping to enable cost-effective extraction. The technology was invented by founder Christian Møller during his PhD at the **University of Cambridge**. They believe the development of stereo 3D probably represents a paradigm shift in the way clinicians see and interpret information.

Contact: www.setred.com

Dental diagnostics company 3D Diagnostic Imaging begins trading on AIM

With a placing price of £10.2 million, **James Noble**, 3D chairman, said the company had “transformed itself over the last year” to reach “an exciting stage in its development where the board considers that its strategic objectives can be more readily achieved by a listing on AIM”.

3D, whose first commercial product is a device to monitor tooth decay, will aim to “finance future growth, with the ultimate objective of developing, marketing and commercialising a series of products” with the proceeds of the placing.

“We believe that our first product to market, the **CarieScan PRO**, has the ability to transform dental care,” he added.

FinnCap has been announced as the nominated adviser and broker to the company. 3D first announced in October it was moving to the AIM from the PLUS market.

Contact: www.diagnosticimaging.com

FUNDING & INVESTMENTS

Outsourcing company MITIE launches £10m fund to back new business start-ups

The **MITIE Entrepreneurial Programme** is open to people from both the private and public sectors who want to create a business in the support services sector, according to a statement from the company. MITIE will take a minimum stake of 51 per cent in each new venture, and will back only start-ups that do not compete with any of the outsourcer’s existing businesses.

It is the first time MITIE has launched a fund, although the FTSE 250 company claims to have invested in the management teams of more than 80 companies using its ‘MITIE model’ since the business began 23 years ago.

MITIE chief executive **Ruby McGregor-Smith** said that under the ‘MITIE Model’ management teams take an equity stake of up to 49 per cent in the proposed business and are supported to grow over a five to ten-year period. It is anticipated that MITIE will eventually buy the business.

McGregor-Smith adds: ‘We are passionate about providing opportunities for people to develop their careers and grow successful outsourcing businesses. With the launch of this fund we hope to attract

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

dynamic entrepreneurial teams that want to start mutually owned businesses which provide innovative services to their customers and create jobs in the UK.' The fund is open until 31 March 2013.

Contact: www.mitie.com/Entrepreneurial_Fund_Launch

Government's Regional Growth Fund is discretionary £1.4bn fund for England

It will operate for 3 years between 2011 and 2014 to stimulate enterprise by providing support for projects and programmes with significant potential for creating long term private sector led economic growth and employment.

In particular it will help those areas and communities that are currently dependent on the public sector make the transition to sustainable private sector-led growth and prosperity.

Who Qualifies? Bids for funding from private bodies and public private partnerships across England on a challenge basis will be accepted.

The Government envisages bidding partnerships coming together that include a combination of large private sector players, SMEs and social enterprises working together with public partners. In particular it is expected that **Local Enterprise Partnerships** will play a role in coordinating across areas and communities, and in bidding for the Fund.

While all areas of England are eligible to bid for the RGF some parts of the country (particularly where there is currently high employment, low-levels of deprivation and a vibrant private sector) may struggle to demonstrate how they meet the second objective of the fund.

The Regional Growth Fund will provide a mixture of direct support for private sector investments and support for some basic infrastructure that removes the barriers that trigger private sector led economic growth as part of a wider investment. Bids must be able to demonstrate that the Fund will create long term growth by leveraging private sector investment and jobs.

The ministerial group will be assisted by an independent advisory panel chaired by **Lord Heseltine** that will make recommendations on which proposals best address the objectives of the RGF

Round 1 of the bidding closed on 21 January 2011. The second round will be announced shortly. It is planned that there will be at least three rounds of bidding.

Contact: www.bis.gov.uk/policies/regional-economic-development/regional-growth-fund/faq

Intellectual Property Minister Baroness Wilcox unveils new competition

Baroness Wilcox has launched the competition which aims to support innovative schemes to improve the way publicly-funded institutions conduct research and manage their intellectual property rights.

The **Intellectual Property Office** is putting £500,000 prize money into the competition, which aims to help ensure the maximum possible benefit is created from taxpayer-funded research.

The competition is open to universities and other publicly funded research establishments such as **The British Library, Ordnance Survey, and the Social and Public Health Sciences Unit.**

Competition entries could include innovative partnerships with businesses, new ways of groups of universities sharing facilities or fresh methods for turning cutting-edge research into economic benefits.

Contact: www.ipo.gov.uk/fastforward

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

GENERAL NEWS

'Huge expansion' in Government's New Enterprise Allowance

In the wake of the elimination of **RDAs** and many Business Links, the Government has been trying to put some backbone back into its innovation stimulus strategy.

It announced plans to boost the number of small businesses, with an expansion in the **New Enterprise Allowance** (NEA) which it hopes will help create up to 40,000 new businesses by 2013.

The Allowance will help unemployed people set up their own businesses. The scheme's forerunner was created by the last Conservative Government. One of its success stories is clothing brand **Superdry**, which recently floated on the stock exchange, and it has stores worldwide.

The NEA will be available to twice as many people as was originally planned. It will give people who have been unemployed financial support for their early months of self-employment, access to a start-up loan, and an expert business mentor to help guide them as they set up their business. This comes on top of our plans to make it much easier to start and register a new enterprise.

The Government has also announced 'significant changes to the way information, guidance and advice is provided to businesses', with more focus on improving small business performance and growth and a greater emphasis on further and better private sector provision.

There will also be an overhaul of www.businesslink.gov.uk – providing online business information and tools tailored to the needs of business; a national contact centre to help businesses who cannot find the information they need on the web or who are not connected to the internet; a network of at least '40,000 experienced business mentors' offering practical advice to existing businesses and people who want to start a business; and lastly, **Business Coaching for Growth** – a new scheme backing the 'gazelles' of the business world, which have the potential to increase turnover or employment by 20 per cent each year for three years.

Contact: www.bis.gov.uk

Technology Strategy Board aid for small and micro businesses including Biotech

The Technology Strategy Board proposes to stimulate innovation across its core technology areas to help ensure that small and micro businesses in the UK are well-equipped to respond to society's current and future challenges.

Through its 'Feasibility Studies for Technology-Inspired Innovation' funding competition, the Technology Strategy Board is to invest up to £2 million in feasibility studies in technologies that are closely aligned with its six core areas – **Advanced Materials** -including technologies for healthcare; **Biosciences** – genomics, industrial biotechnology, agriculture and food; **Electronics, Photonics & Electrical Systems**; **High Value Manufacturing**; **Information & Communications Technology** and **Nanotechnology**.

Projects may be collaborative or carried out by a single company. Lasting up to three months, the projects can cost up to £33,000 and funding of up to 75% of costs (£25,000) may be available. The projects must be led and undertaken by small or micro companies (50 employees or fewer), whether working individually or in partnership.

The competition closes on 10 February 2011.

Contact: Claire Cunningham, Media Relations Manager, M: 07554 115745; E: claire.cunningham@tsb.gov.uk or Nick Sheppard, Media Relations Consultant, M: 07824 599644; E: nick.sheppard@tsb.gov.uk

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

FOREIGN NEWS

'Beaming electricity without wires' – the achievement of Seattle firm LaserMotive

Independent research and development company LaserMotive specialises in so-called laser power beaming.

The Seattle company is developing laser power beaming systems to transmit electricity without wires, for applications where wires are either cost prohibitive or physically impractical. In its first project the firm won \$900,000 in the **NASA-sponsored Power Beaming Competition**, part of the Space Elevator Games.

Not content to have actually developed the laser power beaming technology, the engineers at the Seattle-based company have even demonstrated its efficacy by working with the German firm of **Ascending Technologies** to build a free-flying quadcopter that has flown for more than 12 hours within a square of 2 x 2m – the longest flight of a small UAV during its record flight.

It can transfer energy wirelessly to the helicopter over a distance using lasers. The helicopter, appropriately fitted out with photovoltaic cells, would then convert the laser light into electricity that would power it for an indefinite period of time.

Co-founder **David Bashford** is a professional applied technologies developer, electro-mechanical designer and prototyping specialist with over 30 years experience in the innovation business. He provides robust practical solutions and an entrepreneurial approach to concept creation and refinement, to detailed design and engineering, prototyping, testing, and evaluation.

Prior to joining LaserMotive, Dave served as Technical Associate in R&D at **Philips Oral Healthcare/Sonicare** where he managed the operation of the Innovation & Development laboratory and provided prototyping and failure analysis expertise during the development of Sonicare's resonant drive system based product line – Flexcare. Dave's other development work includes Laboratory management, electro-mechanical and computer systems design, and product development at **Coinstar Inc** from launch to IPO.

Contact: www.lasermotive.com

EU's ChipCheck project probes for fakes among counterfeit component imports

Development of an x-ray system for inspecting components that may be counterfeit is being undertaken by organisations, including **SMART Group Ltd**, as part of a two year EU project called **ChipCheck**. To support the project SMART Group is looking for assistance from industry in this fight against counterfeit components.

In order to test and calibrate the system and software recognition components are needed; one of which is known to be good and the other to be a counterfeit part of the same package type. Ideally these will be unused parts but could be removed from an assembly. SMART Group assures participants that the source of the components will be kept completely anonymous.

All package types and sizes are required in order to make sure the system and the software recognition is capable of comparing the range of parts used in industry. The main focus will be surface mounted devices; however dual in-line parts will also be assessed. The final goal of the project is to be able to handle components in their original packaging.

It is hoped that quality, purchasing, design and production engineers will help with the growing commercial and technical issues surrounding counterfeit electronic components.

Contact: **Bob Willis** at technical@smartgroup.org

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

EuropaBio calls for applications for European Biotech SME Award, 2010

This new award will acknowledge the outstanding contribution made by biotech SMEs towards developing a smart, sustainable and inclusive EU economy for 2020 by providing solutions to some of society's biggest challenges for the future.

Dr Andrea Rappagliosi, Chairman of EuropaBio said: "We want to provide a showcase for the very best of the many creative, visionary and innovative European Biotech SMEs and to highlight the vital solutions that they are providing to some of our most pressing societal and environmental needs."

EuropaBio represents the interests of over 1800 SMEs as well as 66 corporate and 7 associated members, 4 BioRegions and 22 National Biotechnology Associations.

Tom Saylor, Chairman of EuropaBio's SME Platform and CEO of **Arecor**, concluded: "SMEs truly are Europe's innovation engine. Biotech SMEs in particular face a long and difficult pathway towards sustainability. Although we lead in scientific excellence in the EU, we lack the framework and support that these enterprises so desperately need in order to grow strong, sustainable and successful in the long-term."

Contact: Julie Kjestrup, SME Platform coordinator, EuropaBio – +32 2 739 11 78,
j.kjestrup@europabio.org

Japanese NGO lays claim to world's cheapest hydrogen production process

High temperature cracking of water to create hydrogen before. I've also talked about adding a catalyst such as aluminium or magnesium to aid the cracking of water into hydrogen.

Now a Japanese company **FUKAI Environmental Research Institute** has found a way to do both and do so at low cost. According to the company, "This newly developed technology generates hydrogen by adding aluminium or magnesium to what is known as 'functional water' in the boiling state. The amount of hydrogen generated is 2.0L per 1g of aluminium or 3.3L per 1g of magnesium.

"Thanks to this technology, it is possible to generate the amount of hydrogen required to generate 1kWh of electricity for a cost of merely 18 cents or so, the world's lowest cost."

The functional water and functional water generation units are proprietary to the FUKAI Environmental Research Institute, but they say they can use regular city water as a feedstock to produce hydrogen.

If the claims turn out to be as stated, then this will offer not only a solution for creating low cost hydrogen, but creating it on demand as well.

At least half of the world's usable hydrogen is obtained through a process known as steam reforming, in which steam reacts with fossil fuels such as natural gas to produce hydrogen gas.

"If we make the most of this technology, in the future it will be possible to run automobiles using water only – no need to use gasoline or electricity," stated **Toshiharu Fukai**, the developer of the system. "We are also pushing forward with technology that will allow us to generate hydrogen with zero cost. If we succeed in this development, even ordinary households will be able to produce hydrogen."

Contact: www.fukaisouken.jp/en – +81-(0)268-27-3750 – fukaisouken@soseiworld.co.jp

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

UNIVERSITY NEWS

UCL Advances announces further two firms from Student Hatchery

The Sport Review and **Zooza** are to become the second and third companies to be based in the **UCL Advances Student Hatchery**.

The purpose of the hatchery is to provide a base for new student led businesses when they first need it and to help prepare them for their upcoming life as full grown businesses in the outside world.

UCL held its most successful **Enterprise Bootcamp** on 8-10 November 2010 with over 160 students attending. This is the fifth such bootcamp they have hosted since 2009 and the first in this academic year. The aim of the bootcamp is to introduce UCL students to the fundamentals of the modern business world. Over the three days students received lectures on topics such as finance and innovation and learn through exercises in teamwork and presentation. Participants' found the bootcamp to be extremely useful and felt it would give them a competitive edge in the current work market.

UCL Advances organises training for entrepreneurs, SMEs and UCL members.

Up-coming courses that may be of interest to you are:

- **Technology Strategy:** 31st January to 4th February 2011, 9.00am to 5.00pm each day
- **Entrepreneurial Marketing:** Wednesday 16th to Friday 18th February 2011, 9.00am to 5.00pm each day

Contact: www.ucl.ac.uk/advances/shortcourses

University of Leicester seeks partners for 'air fingerprinting' device

The University's **Real-time Air Fingerprinting Technology (RAFT)** idea was the first to be posted to the **East Midlands Development Agency's (emda)** new, online innovation Exchange (**iExchange**) service.

Professor Paul Monks, professor of physical chemistry at Leicester who developed the idea, said sample air is drawn in and reacted with our gas-phase fingerprinting solution; the choice of the fingerprinting solution can change the fingerprint giving added functionality. After the 'inking' process all the molecules are weighed simultaneously.

This process is very fast with one million fingerprints being collected every second. The information coming from the fingerprints is then sorted very quickly using computer techniques to classify the fingerprints in real-time.

Simply put it is an electro-mechanical nose that is capable of instantaneously measuring trace constituents in air. As a nose it measures many components simultaneously leading to the ability to create fingerprints of complicated compositions. The technology is fast, sensitive, quantitative and real-time. This is powerful information about gas-phase composition.

RAFT can help companies from all sectors develop new innovations and products to follow in real time the emissions of volatile organic compounds and gases, from automotive emissions sampling to breath analysis for healthcare.

The University of Leicester is looking to generate joint IP to help exploit commercial opportunities for the RAFT device, which works like a 'nose' by measuring trace constituents in the air and creates fingerprints of these complicated compositions, giving powerful information about gas-phase composition.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

Commercial target areas for the RAFT include medical diagnosis equipment, food analysis, automotive emissions and crime detection.

Contact: www.le.ac.uk/departments/chemistry/facilities/raft

Glasgow University licenses its camera particle tracking technology to Elliot

Camera Particle Tracking technology (CPT) is a technique developed at **Glasgow University** to enhance quantitative measurement capability in research involving optical trapping.

Optical trapping is a difficult and multi-faceted technique, involving lasers, microscopes, imaging systems, specialist software and complex opto-mechanical design. It can take one to two years for a post-doc student to DIY build and calibrate a laser tweezer before they can begin meaningful experiments.

Now the system is being released by **Elliot Scientific** – offering optical trapping systems work “straight out the box”, allowing research to begin from day one.

Laser tweezers have become an invaluable tool for measuring and exerting forces in the microscopic world. The picoNewton forces that light can exert on minuscule particles have empowered scientists, particularly those in biomedicine, enabling them to perform important studies on single molecules, cells and colloids without inflicting damage.

Current systems can only measure the force exerted on one particle, but the CPT technology will enable the collection of data from multiple particles at a higher rate.

Elliot Scientific is the first company to benefit from the University’s **Easy Access IP** initiative, a scheme designed to freely transfer some of the University’s technical, scientific and medical intellectual property to research and industry for the benefit of all.

Elliot Scientific will demonstrate their first system incorporating CPT technology at the American Biophysical Society Annual Meeting, Baltimore, in March 2011.

Elliot Scientific is a major supplier of opto-mechanic, laser, cryogenic, magnetic, telecom and datacom components to the scientific and research communities.

Contact: Colin Freeland – www.elliotscientific.com

Edinburgh University plans to build the 30m-diameter testing tank for renewables

The world’s first multi-directional wave- and current-testing centre for marine energy is set for construction in Scotland after receiving £6m in public funding.

Edinburgh University plans to build the 30m-diameter indoor tank on its King’s Buildings campus, following a grant award by the **EPSRC**.

The tank, which will hold more than 1.4 million litres of water, will provide a controlled environment for initial trials of wave- and tidal-powered turbines without the large costs and risks associated with testing them at sea.

Most existing tanks, such as Edinburgh’s existing facility, are smaller and only simulate either waves or tides. Those that can fulfil both functions, such as the one in Nantes, France, were built to test ships.

Prof David Ingram, one of the project’s co-investigators, who is Professor of Computational Fluid Dynamics in the **Institute for Energy Systems**, in the School of Engineering said ‘Testing in a tank gives you two advantages. The first is you’re testing in a controlled environment. So if you want to know the

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

survivability of a machine, you can dial up a once-in-200-years storm every few minutes.

‘The other is it’s much, much cheaper than testing at sea. Testing in a small facility costs a few thousand pounds, a larger facility tens of thousands. Even with the smallest-scale model at sea it’s tens of thousands of pounds just for the boat. If you go to more than quarter scale it could cost, in total, tens of millions.’

These specifications are designed for deep and intermediate water equipment, and are suitable for most existing technologies, but the tank could be adapted for shallow-water turbines such as **Aquamarine’s Oyster** device.

The university is working with wave-generator firm **Edinburgh Designs** and designers led by **Mace Group** to draw up the building specification and civil engineering plans and hopes to start a 12-month construction programme in October 2011.

Contact: www.see.ed.ac.uk

New tie-up sealed between University of Nottingham and electronics firm e2v

e2v, a provider of specialised solutions, subsystems and components, has agreed a technology collaboration agreement with **Nottingham** via a £1m grant from **e2v**.

It will see a partnership started in the area of microwave semiconductor devices – to develop and manufacture advanced devices for use in microwave and terahertz applications.

An example of this is a range of devices known as **P-i-N diodes**, which are used in sensitive microwave receiver systems. The collaboration’s initial focus will be to develop new devices which have a much faster response time than currently available and can work over wider frequency ranges.

RF/microwave frequency sources used in radar imaging, as well as mixers and detectors used in the receive chain, are also high on the agenda for the collaboration. Applications of these sources include motorway traffic monitoring, large area security imaging and lightweight radar systems for **un-piloted airborne vehicles** (UAVs). In addition, the scope of work on novel devices will extend to sub-millimetre wave and beyond, where there is a strong interest in devices for high-resolution imagers which can ‘see’ through other materials such as clothing or buildings.

Contact: **Dr Chris Mellor**, School of Physics and Astronomy, University of Nottingham, 0115 951 5147, chris.mellor@nottingham.ac.uk; Jessica Broom, e2v: 01245 453607 – jessica.broom@e2v.com

‘World of Work’ VC to retire from Liverpool John Moores University

Professor Michael Brown is to retire from his position as vice-chancellor of **Liverpool John Moores University** (LJMU) at the end of August 2011.

His proudest moment during his 10-year tenure has been incorporating World of Work (WoW) skills into the degree offering. He also criticised other higher education institutions for delivering courses that are “no longer fit for purpose”.

Brown said the university had taken a “vital decision” to ensure all students graduated with the workplace skills that employers demand. The WoW skills include professional and business ethics, finance, entrepreneurship and negotiation skills.

“With the backing of the board and senior colleagues I was able to change the way we managed and led the university,” he said.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

LJMU is the first and only university in Europe to have achieved the standard required for a full **European Foundation for Quality Management (EFQM)** Business Excellence Award. “No one in higher education understands it and ministers don’t understand it, but that doesn’t really matter to us,” said Brown. “We decided to be a business-engaged university – and that’s real engagement with business and industry; not just playing at it.”

Brown said the EFQM allowed the university to demonstrate to blue chip companies that it was serious about delivering business-focused courses. This enabled it to develop the WoW scheme with senior figures from the likes of **Marks & Spencer, Sony, Shell** and the **CBI**. The organisations decided what skills the students should have and are in charge of assessing them through external accreditation.

“This isn’t about going on courses and ticking boxes,” said Brown. “We had continual moaning from employers that graduates weren’t getting what they wanted so all our students now have the opportunity to graduate with skills that are vital for success in the global knowledge economy. There are now 3,000 students working their way through the system.” The Malaysian government has now commissioned LJMU to pilot the approach across **Malaysia**.

Contact: www.ljmu.ac.uk

Lancaster’s Professor Hans Gellersen develops onscreen ‘object manipulator’

In 2010 tabletop touch screens such as **Microsoft’s Surface** are designed for sharing and collaboration, but it’s difficult for them to tell one person from another.

Researchers at **Lancaster University** developed a new way to identify different users: via mobile phones. The prototype system, called **PhoneTouch**, lets users manipulate onscreen objects, such as photos, or select buttons, by touching any part of their phone to the screen.

This also makes it possible to personalize interactions, says **Hans Gellersen**, a professor of interactive systems, who developed the system with his student **Dominik Schmidt**. PhoneTouch also makes it possible to transfer files between the phone and the surface. “Surfaces in general are good for working together in parallel,” says Gellersen. “But when people work together they also want to bring information into the group.” PhoneTouch uses a camera positioned beneath the surface to recognize finger contact. The system can also discern the pattern made when the edge of a phone touches the surface. “The phone gives a different visual blob than the finger,” says Gellersen.

To identify which phone is in contact with the surface, the PhoneTouch interrogates the accelerometers built into connected phones to see which of them experienced a slight bump at precisely the moment of contact. “These two events are correlated in time,” he says. This is an approach known as separate event detection.

“It’s very clever,” says **Eva Hornecker**, who studies the usability of touch surfaces at **Strathclyde University**. “Normally surfaces don’t know who’s who.” PhoneTouch could, perhaps, ensure that files taken from a phone can be shared with others, but without allowing anyone else to alter or save them, Hornecker notes.

Contact: www.comp.lancs.ac.uk

University – Short Stories:

>> The **University of Kent** is encouraging businesses to enhance their business growth opportunities by launching a new Innovation Voucher.

Companies wishing to develop a new project with the help of expertise from the University of Kent could

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

be eligible for a 50% contribution towards the cost.

Innovation Vouchers give your business the opportunity to improve growth and performance by tapping into academic knowledge, and getting access to specialist facilities and consultancy.

The dedicated business support team at **Kent Innovation & Enterprise** will assist companies with their applications; making it easy to spend your Innovation Voucher. Limited funds are available and applications will be assessed as they are received, so do contact the team to discuss your project in more detail.

Contact: Kent Innovation & Enterprise – 01227 827376 or email enterprise@kent.ac.uk

>> The **Innovative Vector Control Consortium** (IVCC) has received \$50 million from the **Bill & Melinda Gates Foundation** to continue its work to develop new insecticides for the improved control of mosquitoes and other insects which transmit malaria, dengue and other neglected tropical diseases.

IVCC is a major international research project co-ordinated by the **Liverpool School of Tropical Medicine**. IVCC was established in 2005 with an initial grant of \$50.7 million over five years from the foundation. Since then, an unprecedented development pipeline of new, reformulated and repurposed insecticides has been established in partnership projects with leading global chemical companies. A suite of information systems and diagnostic tools for the more effective and efficient use of insecticides has also been developed, with these products now nearing the end of their development phase and being readied for rollout in the coming year.

Contact: www.gatesfoundation.org

>> **Hull University** researchers have won a **National Institute for Health Research** Innovation for Innovation grant worth £640,000 to develop a unique feeding tube prototype into a market-ready product.

It means that critically ill patients that need to be fed through nasogastric tubes will be able to receive safer and more secure treatment. Feeding patients via tubes is common practice in hospital wards, neonatal and intensive-care units, and in homes where parents are caring for children with diseases, or who have a disability that means they cannot eat normally.

Contact: www.nihr-ccf.org.uk/site/programmes/i4i

>> **Brunel University** has announced it will sign a technology development and licensing deal with **Guangxi Yuchai Machinery Company** that could see the its air hybrid system installed on buses throughout China.

Guangxi Yuchai Machinery Company is the largest diesel engine manufacturer in China and supplies 70 per cent of the Chinese bus engine market.

The university's air hybrid system is based on regenerative engine braking stop/start technology developed by a team of academics in Brunel's **Centre for Advanced Powertrain and Fuels**. It is claimed to be more efficient than an electric stop/start system and can lead to better vehicle performance.

Contact: www.brunel.ac.uk/about/acad/sed/sedres/ee/ceqg

>> The Innovation Centre at **De Montfort University** (DMU) in Leicester has been filled for the first time since it was established a decade ago.

A total of 21 businesses are now housed in the centre, which also provides support for 12 pre-incubation businesses. In the past nine months the centre has led to 40 new jobs being created.

Stuart Hartley, business incubation and enterprise manager at the university, said: "The Innovation

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

Centre provides a home for innovative new businesses from within the region with access to free information and resources. DMU is seeing increasing levels of pre-start business activity, particularly from its own students and graduates looking for incubation space.”

Contact: www.dmu.ac.uk/partnerships/business-services

>> The future ultra-high-bandwidth mobile internet infrastructure could rely on signals being passed from person to person through novel sensors, according to a wireless communications expert from **Queen's University Belfast**.

Dr Simon Cotton from the wireless communications research group at Queen's University is leading a five-year £550,000 project, sponsored by the **Royal Academy of Engineering** and **EPSRC**, aimed at modelling how signals could propagate from one person to another through sensors either worn on the body or in a mobile phone.

Once the results of the research are published next year, he said, it will provide a 'foundation stone' for wireless systems designers wishing to develop enabling technology. Cotton believes that body-to-body networks (BBNs) will create a new paradigm for mobile communications.

Contact: www.ee.qub.ac.uk/wireless

>> Engineers at **Edinburgh Napier's Institute for Sustainable Construction** (ISC) have developed a thin membrane insulation specifically for reducing heat loss in attached houses.

The product, dubbed Wallcap, is currently being manufactured and sold through Icopal, based in Manchester. New building regulations introduced in Scotland, England and Wales on 1 October changed thermal and acoustic insulation requirements for housing.

Wallcap's developers say their product is the first of its kind to provide a thin membrane solution for reducing heat loss in attached houses.

Contact: www.napier.ac.uk

>> Energy giant **Halliburton** has stepped up its collaboration with the **University of Aberdeen**. The company has signed a partnership agreement to donate new equipment and nurture talent for the oil and gas industry. This follows software totalling £7m donated by Halliburton since 2001.

A total of £200,000 will be used to develop the Halliburton Room, which will allow seismic data gathered from surveys of the earth's crust, to be viewed in 3D for the first time at the university. This will be used to study the methods involved in oil and gas exploration. An extra £30,000 over the next three years will be used to support sector-related scholarships.

Contact: www.abdn.ac.uk

>> Two teams of researchers led by academics at **London South Bank University** have been awarded funding from the European Union to help develop innovative, environmentally friendly technology.

The first project will examine ways to reduce energy use in the cold storage of food, reducing the impact of refrigeration on global warming. The second project will see academic research experts work with industry to encourage wider use of nanotechnology in areas such as solar cell production and new battery technology.

Together, the projects led by LSBU have attracted £1.5 million of EU funding, and will help industries across Europe by developing practical technologies that will both increase their efficiency and reduce

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

environmental impact.

Contact: www.lsbu.ac.uk

>> **Li Ning Co**, one of the leading sports manufacturers in China, has signed an agreement with **Loughborough University** spinout company, **Progressive Sports Technologies Ltd**, to develop innovative new clothing for the Chinese national team that will compete at the London 2012 Olympic and Paralympic Games.

The agreement between Li Ning Co and Progressive came about after the East Midlands Development Agency's (emda), China Business Bureau, together with UKTI, arranged a visit by the company's founder, Dr. Li, to the region earlier this year, to see various East Midlands businesses involved in sports development and research.

Contact: www.eastmids-china.co.uk – www.lining.com – www.progressivesports.co.uk

>> **Imperial Innovations Group plc** (AIM: IVO, "Imperial Innovations", "the Group"), a leading technology commercialisation and investment group, proposes to raise £140 million to accelerate the making of, and increase the size of, investments in companies established under its existing intellectual property pipeline agreement with Imperial College London.

The Group also intends to invest in companies founded by or based on technology from the University of Oxford, the University of Cambridge and University College London.

Contact: www.imperialinnovations.co.uk

>> **Staffordshire University** has given the go-ahead for the construction of a £30m Science and Technology Centre. The centre, which will be developed on the University Quarter site, will be supported by an £8m investment from the Higher Education Funding Council for England (HEFCE).

Edinburgh-based **Miller Construction** has been appointed to start work on the Leek Road site immediately. It is due to open in the autumn of 2012.

Contact: www.staffs.ac.uk

>> Scientists at **University College London** (UCL) are hoping to learn more about how solar activity affects the Earth by developing technology for Europe's next space-science mission.

The **UK Space Agency** awarded £3.7m to help scientists prepare for three missions that the **European Space Agency** is considering: the Solar Orbiter satellite, the Euclid telescope and the PLATO space observatory.

Although only two of the missions will go ahead, members of UCL's **Mullard Space Science Laboratory** (MSSL) are optimistic that Solar Orbiter will be the first ready for a launch in 2017.

Contact: www.mssl.ucl.ac.uk

>> Researchers at **Bolton University** have developed a flexible photovoltaic-piezoelectric fibre that can be woven to create energy-harnessing fabrics.

The research scientists from the university's Institute for Materials Research and Innovation (IMRI) developed the material with funding from the **Knowledge Centre for Materials Chemistry** (KCMC). They are now working with a development company in China to bring their smart material invention to market.

Prof Elias Siores, principal inventor of the hybrid fibre and director of research at the university said: 'Our

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

hybrid photovoltaic-piezoelectric material... can be woven into everything, including laptop and mobile phone cases. In its casing the appliance could be charging, as it is handled or placed near sunlight.

Contact: www.bolton.ac.uk

>> **Coventry University's** Faculty of Health and Life Sciences has been awarded over £1m of funding. The Department of Health investment will go towards research developments for palliative care.

The university said the research will benefit the lives of babies, children and young people with palliative care. It is part of a £4m research grant awarded to the West Midlands from the **Department of Health**.

The main focus of the project will aim to develop and deliver a completely innovative mode of training using e-learning for health and social care professionals.

The projects will be led by **Professor Jane Coad**, professor in children and family nursing and **Natalie Mills**, head of continuing professional development.

Contact: www.coventry.ac.uk/hls

>> The **University of Southampton** has launched a new iPhone app to showcase its 2011 Undergraduate prospectus, as well as giving further details into life at the University.

The key features of the app include full and searchable course listings with detailed course information, entry requirements, testimonials and information on how to apply. Direct contact details to the relevant University departments are also listed, giving applicants the option to email or telephone departments to find out more, streamlining the enquiries process. There are maps and PDF layouts of each campus, with the ability to search for directions too.

Contact: www.ecs.soton.ac.uk/inthenews

>> "This is the most exciting development in this field for many years," said **Prof Alan Jardine** from **Glasgow University's Institute of Cardiovascular and Medical Sciences** – one of the 24 international sites that were involved in the study.

He was describing a new device that uses radio waves to reduce high blood pressure has been successfully trialled in London and Glasgow. The technique, pioneered by researchers in **Australia**, involves transmitting radio-frequency energy via a catheter to disable overactive nerves in the kidney that are involved in regulating blood pressure.

Although the treatment didn't eliminate the patients' high blood pressure, it did reduce the risk of strokes and heart attacks, and could be particularly useful in cases where drugs have been ineffective.

Contact: www.gla.ac.uk/researchinstitutes/cms

>> If university students find themselves paying fees of more than £6,000 a year, how will they be able to ensure they are getting good value for money? The answer, according to academics and students at **Kingston University**, may lie in an idea that's proved influential in Japan and India.

Kingston has set up what is thought to be the first **Student Quality Circle** at a British University. Quality Circles are groups of students who identify issues surrounding their learning and work out ways to resolve them. Lecturers play a back seat role as facilitators.

Contact: www.kingston.ac.uk

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

LATE DATES FOR JANUARY 2011

25 January 2011 – ‘Real Magic – Quantum Mechanics’, hosted by Dr Nic Harrigan

Sir Alexander Fleming Building, Imperial College London. They have already taken bookings for 250 people.

The February 8th event: “Can Humanity survive in the age of information?” is a lecture being given by one of our most popular and interesting lecturers, Emeritus Professor Igor Aleksander, Senior Research Investigator at the Department of Electrical and Electronic Engineering at Imperial College. His theme is “the role of information” and how the brain translates and uses it. In this age of information some people seem lost without their iPhones or other informational gadgets, while others are totally alienated by them.

Bookings can be made online at website – www.friendsofimperial.org.uk

26 January 2011 – Grant Thornton Quoted Company Awards 2011

Natural History Museum, Cromwell Road, London SW7 5BD.

The awards is the City’s must-attend event for high-achieving listed companies quoted on the FTSE 350 and below through to AIM and PLUS, as well as the entrepreneurs and management teams that drive their success and the advisers and investors with a stake in their growth stories.

Contact: Jenna Parker: 020 7250 7043 – jenna.parker@vitessemedia.co.uk – www.quotedcompanyawards.com/QCA2011

26 January 2011 – e-Government National Awards

London Guildhall, London.

In 2003, the inaugural ‘e-Government National Awards’ were established to reward outstanding achievement and innovation in the use of technology to help businesses and citizens interact with Government.

Covering national and local government, the NHS, agencies, emergency services, education and many other public sector organisations, the awards attracted over 450 entries in 2009 – but only 72 entries across 11 categories made it through to the shortlist. In 2010, the Awards will again focus on rewarding the most innovative and effective uses of technology to connect the public to government services. The Public Technology portfolio was founded in 2003 by Chris Histed, and Chris continues to advise & assist Public Technology on its future strategy in his role as e-Government Award Ambassador.

www.e-governmentawards.co.uk

31 January to 4 February 2011 – UKTI International Trade Week

UK-wide

UKTI is holding events across the region to help companies achieve success overseas.

For information on how UK Trade & Investment can help companies succeed overseas call the North East International Trade Hotline on 0845 05 05 054 – enquiries@ukti.rito.co.uk

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...

AND FINALLY...

Has innovation hit a brick wall? Canadian academic thinks we have...

Governments sink billions of dollars into research and development every year, and yet the country remains an innovation laggard compared with most of its trading partners. Their angst is understandable. Innovation is the key to our prosperity and well-being.

But what if Canada's problem were part of a much broader global phenomenon?

University of British Columbia economics professor **James Brander** has concluded that the pace of innovation is slowing dramatically in four key areas: **agriculture, energy, transportation and health care.**

The consequences could have a profound impact on our lives. The world's great technological leaps typically unleash periods of rapid economic growth. Think of the impact of planting crops from seeds, the steam engine, the light bulb, the motor car, refrigeration, or the computer.

"Current and projected rates of innovation might not be sufficient to improve or even maintain living standards in the face of still rapidly growing population, global warming, and other challenges of the 21st century," said Prof Brander.

Innovation is literally hitting a wall, of physical and biological limits. Larger and larger investments are netting increasingly modest and incremental gains. We've all been living off the fruits of what our parents and grandparents achieved.

In **Agriculture**, for example, Prof Brander argues that the major leaps came in the third quarter of the 20th century during the so-called green revolution. Improved crop varieties, irrigation, fertilizers, pesticides, improved machinery and education – these all produced remarkable increases in crop yields. But growth rates are now slowing for most major crops since the golden age of the 1950s and 1960s, he says.

Innovation in energy shows a similar pattern. Prof Brander points out that nothing in the past 30 years has come close matching the impact of electrification – and that was more than a century ago. The key advances since (photovoltaic cells, large-scale wind turbines, biomass fuels) have yet to make a major dent in the dependence on fossil fuels. Other new technologies, such as hydrogen fuels, aren't coming fast enough to match rising energy thirst.

Prof Brander is similarly pessimistic about the **Transportation sector**. We already have the car and the plane, developed during a "period of revolutionary innovation" from 1910 to 1960. Beyond the space program, however, the 50 years since has been marked by "incremental innovation."

Of the four sectors he looked at, Prof Brander says **Health care** offers the greatest promise. But it remains unfulfilled. He suggests that manipulation of human genes has "potentially enormous consequences" that could dwarf the impact of antibiotics and vaccines. But for now, "we're living in an age of marginal improvement rather than major leaps forward."

There is glimmer of hope amid all this gloom. *But it's going to cost us all dearly.* Perhaps the single most important way to spur more innovation is to create better price incentives.

We can't go on under-pricing the world's most precious resources, such as water and energy, says Prof Brander. "Charge farmers the real cost of their water, for example, and they'll use it more efficiently, which will vastly improve yields. The same goes for energy, where development of alternatives is being held back by cheap fossil fuels," he said – and there are many who will disagree with him.

Section Links

Company of the Month // SME News – Engineering, Electronics, Telecoms // SME News – Chemicals, Materials & Environment // SME News – IT, Software, Services & Internet // SME News – Biotech, Pharma & Medical Sciences // Funding & Investments // General News // Foreign News // University News // Late Dates for Jan // And Finally...