

GIBSON INDEX NEWSLETTER

OCTOBER 2013 – Issue No. 94

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

Universities and Small Companies – Can Opposites Attract?

With the launch of the **Witty Review**, which explored the performance of Universities in fuelling enterprise and growth, the question that won't go away is this: 'Can Universities do more to help SMEs?'

Small companies are fiercely focused on sales and their cash position at the end of the month. For many, little else matters. The outlook of University staff is very different, and this is why the two worlds exist in parallel, and continue along separate, parallel tracks.

SMEs are often unable to integrate the often over-sophisticated concepts and technical enhancements offered by university tech transfer departments. The vast majority of light industry in the UK died out years ago, but the survivors are highly competitive in world markets. They are fixated on maintaining product niches and supply chain.

However, when it comes to manufacturing and engineering many universities struggle to help the great mass of mid-tech and low-tech companies in the UK. A significant number of SMEs now foresee much greater benefits to themselves in creating a link with their local UTC rather than with their local University.

The core problem is simple: Universities are not built to engage with hundreds, let alone thousands of SMEs in their region. In fact, most **Russell Group** Universities struggle to maintain serious links with more than a few dozen companies each year, and often only with big firms, not SMEs. Instead, their eyes are fixed on big firm employers and the professions, not local commerce.

Earlier, **Sir Tim Wilson**, ex-VC of the University of Hertfordshire, recommended that academics get much more closely involved with SMEs. The **University of Lancaster** claims to have dealt with '5,000 companies since 1999'. The **University of Leicester** claimed this month to have 'become one of the first universities to offer internships of at least one month to all first year students'.

In fact, internships may be the quickest and least expensive link that Universities can forge with SMEs – and an effective one. One of our main clients of recent years has been **Coventry University in London** – sourcing the dozens of SME internships each year.

• **The Witty Review:** www.gov.uk/government/uploads/system/uploads/attachment_data/file/249720/bis-13-1241-encouraging-a-british-invention-revolution-andrew-witty-review-R1.pdf

www.gibson-index.com

The Newsletter is compiled and edited by **Marcus Gibson**, former *Financial Times* technology correspondent, who has been covering enterprise and innovation for more than 20 years. The Newsletter aims to highlight developments in at least 100+ companies each month. It is derived from the wide-ranging news-gathering operation that produces the [Gibson Index SME database](#), which now contains profiles on more than 49,000 UK-based technology SMEs.

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COMPANY OF THE MONTH	4
Five-Quarter aims to pump steam beneath the seabed to produce a 'syngas'	4
SME NEWS – ENGINEERING, CONSTRUCTION & ENERGY	4
Racing car maker RML Group tops 2013 list of Midlands SMEs	4
Newly launched Zenos Cars starts out in Norfolk's Hethel Engineering Centre	5
Prodrive signs record deal to 'work on a new supercar'	5
Fujifilm Speciality Ink Systems Ltd is one of three factory award firms from Kent	5
Engineering firm Cosworth to build a £30m 'centre of excellence' in Northampton	6
Morgan's new three-wheeler an unexpected success for the company	6
Ecospin's electric vehicle finds favour with overseas customers	6
mi Technology Group is bought by certification services firm CSA Group	7
ADEY Professional Heating Solutions opens new chemical laboratory in Kent	7
SME NEWS – ELECTRONICS & TELECOMS	8
In October 2013 Somerset startup Zynstra won a £2.4m for its SME hybrid cloud	8
EnSilica uses years of experience to join with Canadian firm Kili Technology	8
America's firm Excelitas Technologies snaps up Qioptiq Ltd	9
ASH Wireless Electronics' design of bicycle sensor for vehicles wins nomination	9
Cardiff's QMC Instruments Ltd takes centre stage in FP7 space project	10
SME NEWS – CHEMICALS, MATERIALS & ENVIRONMENT	11
Successful microfluidics firm Dolomite seeks ideas for second year in a row	11
Huge biomass power plant destined to open in 2016 in Lincolnshire	11
Applied Graphene Materials Ltd plans flotation on the London Stock Exchange	12
Prize of Kosovo reconstruction wins over founder of Fox Marble plc	12
Fingerprint hunter Consolite Ltd pinpoints prints on thermal paper	13
SME NEWS – BIOTECH, PHARMA & MEDICAL SCIENCES	13
Cheshire-based Proveca makes progress on children's anti-drooling drug	13
Type 2 diabetes drug plant opens at high-capacity facility in Queenborough, Kent	14
Welwyn Garden City-based BioSyntha seeks out high value chemicals	14
University of Strathclyde spinout Biogelx Ltd declared a winner	14
Rare winner of SBIR to develop stroke assessment system for patients	15
Glasgow-based Collbio concentrates on collagen raw materials and manufacturing	15
SME NEWS – IT, SOFTWARE, SERVICES & INTERNET	16
Internet games firm secures 'substantial' investment to fund its next major release	16
Simitive Ltd awarded Universities South West (USW) Innovation Voucher	16
UKTI SME delegation to China follows trail of David Cameron	17
m-commerce firm CloudZync Ltd develops 'first British mobile digital wallet'	17
Cambridge Intelligence to make data visualisation products for the security sector	18
Belfast software company Automated Intelligence targets remote workers	18
GENERAL NEWS	19

Exhibition held to celebrate key SME manufacturers	19
FUNDING & INVESTMENTS	21
BrewDog maintains its reputation as the 'No.1 Outlandish Firm' in the UK	21
Shares in Frontier IP rise after the firm raises £392,000 via share placing	22
Shawbrook Bank passes the '£1 billion lending milestone'	23
New grants announced by The Technology Strategy Board	23
UNIVERSITY NEWS	25
The University of Warwick, The Royal Society and Jaguar Land Rover	25
Rolls-Royce and University of Birmingham to open £60m High Temp Research hub	26
Graphene maker Bluestone Global Tech to open base in Manchester	26
Pot of £750,000 for university-industry projects from IPO's Fast Forward contest	27
Queens University spinout Acksen wins first-time business in the US	27
Loughborough University – footwear recycling project gets a kick-start	28
Incanthera Ltd wins Bionow's Start-Up Company of the Year award	28
Gonville and Caius Fellow Michael Levitt wins Nobel Prize in Chemistry	29
AND FINALLY...	29

COMPANY OF THE MONTH

Five-Quarter aims to pump steam beneath the seabed to produce a 'syngas'

In October 2013 the UK Government was close to guaranteeing a £1bn energy scheme which would see Northumberland open a new gas plant processing fuel recovered from rocks beneath the North Sea. The Treasury has published a provisional £33bn list of projects it is prepared to back as part of a new wave of infrastructure projects.

Five-Quarter Holdings Ltd, a **Newcastle University** spinout, believes this would create around 400 jobs at a new gas plant designed to process the fuel.

The gas would then be piped back to a new processing plant before being sent to the likes of Teesside for its chemical industry. The **UK Government** is understood to be keen on a project designed to ensure the UK's manufacturing industry does not become uncompetitive as America re-energises its heavy industry thanks to cheaper fracking fuel.

The firm says it could repeat the success seen in Aberdeen's oil and gas sector with 'as many as 4,000 jobs' in supply chain industries and related companies.

Company founder **Harry Bradbury** said the 'Deep Gas Winning' method was a unique and vital way of ensuring the UK can maintain a manufacturing capacity in the face of spiralling energy costs.

Bradbury said: "We're on the list of nationally significant projects and as such we effectively have the Treasury with us as we enter the negotiation stage with the major lending banks. Now we have a large scale employment opportunity. While the Government wants to keep the lights on, we need to keep in mind that renewable energy is only going to produce electricity."

Prof Dermot Roddy, Science City Professor of Energy and director of Five-Quarter, said County Durham was the global birthplace of UCG – the world's first UCG experiments were carried out here by Sir William Ramsay in 1912. Although these experiments were successful, further progress was halted by World War I, and progress since made in Russia, Australia and China. Can we bring UCG back home, he asked?

Contact: www.five-quarter.com.

SME NEWS – ENGINEERING, CONSTRUCTION & ENERGY

Racing car maker RML Group tops 2013 list of Midlands SMEs

The 'SME 300' represents a broad cross-section of the region's businesses but manufacturers dominated the top 10 with four entrants. The little-known **RML Group** has claimed seven World Touring Car Championship titles since 2005, with the latest coming in September as **Ivan Muller** sealed the company's fourth consecutive win with a third-placed finish at Suzuka in Japan. It is now the most successful team in the competition's history.

The Wellingborough-based business also develops high-performance road cars for automotive OEMs. It designed and built the Nissan Juke R, which can accelerate from 0 to 60mph in under three seconds. Just 23 of these cars are being built and are expected to be exported. RML recorded sales of £19.8m and pre-tax profits of £5m to claim the top spot on the SME 300 listing.

Contact: www.rmlmallock.co.uk

Section Links

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

Newly launched Zenos Cars starts out in Norfolk's Hethel Engineering Centre

In mid-2013 the firm was only a few months old. But in spite of its relatively fledgling nature, the company has got big plans for its new E10 sports car. It's aiming to take on **Lotus, Ariel** and **Caterham** for the lightweight British sports car crown, and with ex-Caterham CEO **Ansar Ali** and COO **Mark Edwards** – along with ex-Caterham employee **Chris Weston** – Zenos has certainly recruited the expertise to succeed.

Ansar started his career at Ford Motor Company and in 2000 was appointed General Manager of Lotus Cars where he was responsible for the global launch of the Elise 111R and Exige. In 2005 Ansar led an MBI of Caterham Cars and as MD oversaw its turnaround, delivered record profits in 2011 and executed a secondary buy-out to AirAsia entrepreneur **Tony Fernandes**, thereby taking the brand into Formula 1.

Contact: www.zenoscars.com

Prodrive signs record deal to 'work on a new supercar'

Oxfordshire's premier auto engineering firm **Prodrive** has been linked to many a serious motorsport car in the past, and after a lull in events, it is back with a vengeance with the announcement that it is working on a supercar project.

They have been contracted in a record £15m deal to make composite body structures and trims of an all-new supercar for 'one of the world's best vehicle manufacturers', whose identity is still unknown.

Prodrive say the most complex component in the new contract will, surprisingly, be the front body assembly which integrates the parts from 16 separate pieces of tooling into a single structure. The interior would be a challenge too, as it features a uniquely tactile surface that required a considerable development programme and new technologies. Prodrive has hired 40 new technicians for the project.

Prodrive Composites MD **Dominic Cartwright** said "The combination of component complexity, size and finish means there are only a handful of companies globally that could deliver the high-precision and superb surface finish required by this highly-demanding vehicle manufacturer."

Contact: www.prodrive.com

Fujifilm Speciality Ink Systems Ltd is one of three factory award firms from Kent

The **Best Factory Awards** have been celebrating manufacturing excellence for the past 21 years and no other British county has as many finalists this year as Kent. The county has no less than three – not bad for a county not noted for its manufacturing muscle compared with classic hubs in Lancashire or Yorkshire

The trio – **Cummins Power Generation** at Manston, **EMS Radio Fire and Security Systems** in Herne Bay, and **FujiFilm** in Broadstairs, will feature in the contest run by **Cranfield School of Management** and **Works Management** magazine.

The Cummins plant constructs diesel and gas powered generators for primary and secondary standby power. EMS Security designs and manufactures wire-free fire detection equipment, while FujiFilm produces digital flexo and screen printing inks.

Back in October 2008 the FujiFilm's new Large Format Printing business was launched, bringing together the full range of hardware, ink, media, software and tools needed by printers.

Contact: www.fujifilmsericol.co.uk/ff

Section Links

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

Engineering firm Cosworth to build a £30m 'centre of excellence' in Northampton

In a move which will create around 70 jobs, CEO **Hal Reisiger** said the centre will be used for engine assembly, and the manufacture of engine components for the mainstream automotive sector.

The new facility at the company's base in St James Mill Road, St James, is expected to create about 70 direct jobs, and support 200 jobs indirectly through supply chains. **Cosworth**, which celebrates its 50th birthday next year, has entered into contracts with two as-yet unnamed firms, with the centre due to open in June 2014.

Mr Reisiger said: "We are celebrating our 50th anniversary in 2014, and we are commemorating it with the opening of a new manufacturing facility. This is about making the transition from motorsport to the mainstream. We have the ability to successfully make the transition out of pure motorsport into more mainstream automotive manufacturing.

"We are targeting limited production performance car manufacturers, and are excited about breaking ground in our new facilities to celebrate our 50th birthday. It will include supply chain management initiatives, and also the manufacturing of automotive engine components, and engine assembly."

Contact: www.cosworth.com

Morgan's new three-wheeler an unexpected success for the company

Morgan Motor Company's three-wheeled vehicle has sold widely across Europe and the US, driving sales to almost £35m. Finance director **Tim Whitworth** said the Worcestershire-headquartered manufacturer was looking to consolidate its position in 2013 and was on track to meet its budget. This was coupled with new orders for its four-wheeled brands, such as the Roadster, in China, where the company now has showrooms in Beijing and Shanghai.

Morgan also has its eye on new markets in India and the Middle East in a bid for further growth in the future. Sales in 2012 climbed from £26.2m to £34.8m at the group's holding company **Morgan Technologies**. Revenue in all its markets rose, with the UK contributing £12.2m, Europe £16.4m and the rest of the world £6.3m.

The increases led to profits jumping by more than £1m. Operating profit was £1.7m in 2012, compared with £530,000 in the previous 12 months, and pre-tax profit was up from £714,000 to £1.7m.

The motor company, which still assembles its vehicles by hand at its Malvern facility, began making three-wheeled runabouts in 1910. It launched its latest three-wheeled model in 2011, almost 60 years after the last one was built. Powered by a motorcycle engine, the car has been lavished with praise from critics, including Top Gear's **Jeremy Clarkson**. Morgan now makes more than 1,000 vehicles a year, with about 50 per cent the three-wheeled variety.

Contact: www.morgan-motor.co.uk

Ecospin's electric vehicle finds favour with overseas customers

The company has experienced demand from across the world for its three-wheeled electric vehicle, with 350 units already destined for distributors in the US and Australia.

Backed by strategic and product development support from the Manufacturing Advisory Service (MAS), Ecospin is now putting the finishing touches to the partnership with prototype engineering company ACE Forming.

Section Links

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

In August 2013 the electric vehicle maker entered a partnership with Kingswinford-based ACE Forming Ltd to provide a dedicated production line in Dudley, West Midlands.

A 'successful' first year for Ecospin, the brainchild of Leicestershire brothers Paul and David Loomes, has seen £1.5m worth of orders enter the pipeline.

This move will give the duo the potential to manufacture between 1,500 and 2,000 vehicles every year and, if sold, will boost sales to £10m. MD Paul Loomes said: "When we officially unveiled the Raptor car last year, we knew there would be interest but we didn't expect to have such a guaranteed order book so quickly.

"The big break came when we were approached by the global vehicle manufacturer Vectrix, who wanted to take the Raptor and distribute it in North America."

The development of the Raptor has been three years in the making and MAS has been involved from the outset. The business support organisation worked with the brothers to reshape their target market and push for early testing at MIRA. The Raptor, which starts from £6,500, is the first in a series of electric-powered vehicles planned by the Loomes brothers.

Contact: www.ecospinltd.com

mi Technology Group is bought by certification services firm CSA Group

mi Technology Group is an independent, privately owned company providing analysis, research & development, testing and consultancy services to manufacturers and suppliers around the world. Founded in 1994, the company recorded multi-million pound turnover in the financial year-end April 2013 and employs 110 staff.

Ian Oakes, co-founder of mi Technology, said: "The sale has come at a perfect time for the business as it continues to expand its presence in North America and other parts of the world."

Customers include **Agusta Westland**, which continue to work with mi Technology to validate key air-frame structural components for the new AW159 **Lynx** Wildcat helicopter.

In addition, mi Technology have deep knowledge of testing and developing the very latest trucks and buses (LCV and HCV). From CAE support to concept demonstrator trials, through component testing and system testing to validation, sign-off and certification.

CSA Group is a provider of product certification and testing services. It has branch offices in Italy and the Netherlands, testing facilities for medical and lab equipment devices in Switzerland, and employs more than 400 experts across Europe.

Contact: <http://mi-technology.com>

ADEY Professional Heating Solutions opens new chemical laboratory in Kent

On the **Kent Science Park** near Sittingbourne ADEY has injected more than £100,000 in the new laboratory to develop premium chemicals. It will be run by **Mo Jassal**, a leading industry chemist and water treatment specialist.

The business pioneered magnetic filtration technology since it was founded by former British Gas installer **Chris Adey** 10 years ago. In 2012 it won a Queen's Award for Innovation for its MagnaClean filter.

Section Links

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

Mr Jassal has more than 13 years' experience in developing chemical solutions for the plumbing and heating industry. As chemical technical manager, he will head an elite team of experts.

Mr Jassal said there were many opportunities for ADEY to break new ground on product development. "It's invested heavily in the new R&D lab and is committed to growing its chemical offering and exploring other product opportunities in the future," he said. "So, it's an exciting time to be joining the company and be part of a large science and technology community on the Kent Science Park campus."

James Speck, site director of Kent Science Park, welcomed the arrival of another market-leading company. "Our links with the BEST Network across the country mean we can offer even more business opportunities to new businesses based here."

Contact: www.adey.co.uk

SME NEWS – ELECTRONICS & TELECOMS

In October 2013 Somerset startup Zynstra won a £2.4m for its SME hybrid cloud

Software vendor Zynstra received £2.41m in its latest funding round, less than two months after launching its cloud product. The Bath-based firm's latest funding round, led by **Octopus Investments**, brings total investment in the company up to £3.8m. **Zynstra** provides remotely-managed cloud technology for SMEs.

The company's cloud technology is managed by IT service providers, which use Zynstra's cloud-based management console to manage HP ProLiant servers, providing the firm's customers with storage, security and disaster recovery, in addition to applications such as SharePoint and Microsoft Exchange.

Zynstra claims the pay monthly cloud service can deliver enterprise-class services without any upfront costs. The end-user price for a basic solution is less than £50 per user per month, said East, adding that the final price is driven by the number of users, data volumes and applications and the additional services provided by the partner.

Chief executive **Nick East** said: "We will use the additional funding to build on the existing patent-pending technology – and also aggressively expand our channel programme to reach SMEs."

Frederic Lardieg, of Octopus Investments, said: "Zynstra are developing an exciting product that provides an innovative and cost efficient IT solution to small businesses, and has the potential to be a game-changing technology in the hybrid cloud market."

East said: "Until now, SMEs had to choose between an all-cloud approach or traditional IT. Unlike large enterprises, they were not offered the option to mix the two and benefit from both – the reliability and security of on-premise IT and the economics and flexibility of the cloud."

Contact: www.zynstra.com

EnSilica uses years of experience to join with Canadian firm Kili Technology

The company, based in Wokingham, Berkshire, is a provider of IC design services, system solutions and IP. It started a collaboration with the **Kili Technology Corporation** of Canada to develop the Kili processor IC, which is designed to meet the needs of payment, authentication and identity applications and production devices.

EnSilica's eSi-RISC microprocessor is unique in being the 'only processor architecture scalable from 16 to

Section Links

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

32 bits, and encompassing optional SIMD, floating point and custom instructions’.

Ian Lankshear, CEO of EnSilica, said “The Kili 3.1 secure processor IC provides a much needed, highly-integrated solution that delivers excellent security and connectivity features with significant potential savings on the bill of materials (BOM).”

Kili 3.1 enables the implementation of cryptography protocols, including RSA, AES and DES, outside the host environment, such as a PC, laptop, tablet or smartphone. It features advanced security functions including mesh sensor; active shield protection; voltage, temperature clock and physical tamper detection; and protected battery backup of key memory with auto erase as well as encryption acceleration and EMV L1/L2 firmware for both contact and contactless applications.

Contact: www.ensilica.com

America’s firm Excelitas Technologies snaps up Qioptiq Ltd

Photonics manufacturer Qioptiq was formed in 2005 when it was acquired from **Thales** by **Candover Partners**. It has been managed by **Arle Capital Partners** since 2010. After 2005 Qioptiq has developed into a strong global specialist in the photonics industry serving the commercial, defence and aerospace markets.

Qioptiq designs and manufactures photonic products and solutions that serve a wide range of markets and applications in the areas of medical and life sciences, industrial manufacturing, defence and aerospace, and research and development. The company is known for its high-quality standard components, products and instruments, its custom modules and assemblies, its leading-edge innovation, its precision manufacturing and its responsive global resourcing.

Qioptiq operates from 10 different locations in Germany, UK, Singapore, US and Hungary and employs over 1,900 people. **Excelitas Technologies** provides innovative, customized optoelectronics and advanced electronic systems to a global customer base of leading OEMs seeking high-performance, market-driven technology solutions.

David Marks, CEO of Qioptiq said: “Since the formation of Qioptiq in 2005, the company has developed into a strong player in the photonics industry, through organic growth and strategic acquisitions. The strength of the new combined entity will benefit our customers and create opportunities for our employees.”

Excelitas Technologies, latterly a spinout from **Perkin Elmer**, is a technology leader focused on delivering innovative, customized solutions to meet the lighting, detection and other high-performance technology needs of OEM customers. Excelitas employs 3,000 in North America, Europe and Asia, serving customers across the world.

Contacts: www.qioptiq.com – www.excelitas.com

ASH Wireless Electronics’ design of bicycle sensor for vehicles wins nomination

The design team of an electronics design consultancy based in Southampton, was shortlisted for the Design Team of the Year Award at the forthcoming **Elektra European Electronics Industry Awards**.

It is recognition of the work Ash Wireless Electronics has done with **Cycle Alert**, which helps to keep cyclists safe by alerting drivers of Heavy Goods Vehicles to their presence.

Cycle Alert has three parts: a sensor fitted to a bicycle, a sensor fitted to a vehicle and a dashboard

Section Links

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

receiver. The three components communicate notifying a driver visually and audibly when a cyclist is in close proximity. The system is based on a distributed RFID technique that gives all round coverage to a truck. Novel low-power techniques and design means 10 year life, battery powered side sensors can be used which allows an installation time of 30 minutes to HGVs.

MD **Steve Braithwaite** said “The design of, and partnership with, Cycle Alert is something we are very proud of. Not only does Cycle Alert showcase our wireless electronic design expertise but it is a system that will help save cyclist’s lives and, as keen cyclists, that is something close to our hearts.”

Founded in 2001, today ASH spans several technology areas, bringing to each one a level of detail and analysis honed through many years of communications system design. Several lines of products designed are now in volume production. **Prof Bill Redman-White**, its consultant, has more than 25 years history working concurrently in both industrial semiconductor product design with **NXP/Philips Semis** as an Engineering Fellow, and also as Professor of IC Design at the University of Southampton.

In June 2012 ASH attended a **Technology Strategy Board** symposium about wireless networks. However, they noticed that presentations of some projects ‘clearly lacked technical understanding’.

Contact: www.ashwireless.com

Cardiff’s QMC Instruments Ltd takes centre stage in FP7 space project

Cardiff University and a series of partners launched the first ever Welsh-led European Union (EU) space research programme, funded by a €2m award from the EU.

The three-year ‘SPACEKIDS’ project will work to develop new detector technology for use in future space missions. The new detectors will be capable of working at extremely low temperatures and will be designed for use in future satellites for astronomy and for the study of the Earth’s atmosphere.

The project brings together some of the leading European institutes with expertise in detectors for far infrared wavelengths – a few hundred times longer than the wavelength of visible light.

Current far infrared detectors being used on board spacecraft are difficult to manufacture and operate. Research carried out by Cardiff’s **School of Physics and Astronomy** to manufacture novel Kinetic Inductance Detectors (KIDs) offers a very real prospect of ultra-sensitive cameras which are easy to make and use.

Ken Wood, director at **QMC Instruments Ltd**, one of the project’s industrial partners, said: “Besides the exciting scientific applications that it will enable, SPACEKIDS will open up new possibilities for commercial and industrial use. We will be delighted to participate in this programme, both in providing high-tech components to the research team and in enabling commercial exploitation of the results.”

Lead researcher of the Cardiff SPACEKIDS team, and inventor of one variant of the KID detector, **Dr Simon Doyle** of the School of Physics and Astronomy said: “With the expertise and state-of the art facilities of the team here at Cardiff and in our partner institutes, we are well placed to make a huge technical advance.”

Contact: www.terahertz.co.uk

Section Links

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

SME NEWS – CHEMICALS, MATERIALS & ENVIRONMENT

Successful microfluidics firm Dolomite seeks ideas for second year in a row

The Royston-based firm, a leader in taking early stage technologies and turning them into market-leading products, is inviting SMEs and academics with innovative microfluidics concepts to enter its '**Productizing Science**' competition.

The competition was created in 2012 to help bridge the gap between scientific innovation and commercial success. Backed by Dolomite's expertise and in-depth understanding of the international microfluidics market, this exciting competition gives you the chance to develop the idea into a successful product – and share in the rewards.

In collaboration with one of last year's winner **Drop-Tech Ltd**, a company formed from an academic collaboration between **Imperial College London** and **University of Cambridge**, Dolomite has already developed Mitos Dropix, an innovative droplet system providing a flexible and automated solution for droplet-on-demand applications.

Liisa van Vliet, MD Drop-Tech, said: "In a university environment, finding the time to convert an invention into a product is often difficult. Dolomite knows and understands microfluidic droplet technologies and had the engineering expertise to productize the solution." The novel system which features a patented droplet "picking" technology was developed in just under a year and Dolomite is already taking orders for delivery in the beginning of 2014.

The second winner in 2012 was **Dr Jeff Martin** at **Novartis Institute for Biomedical Research** in Cambridge, MA, who has developed an integrated microscale analysis system for proteomic studies involving limited amounts of cells. The system allows detailed analysis of the proteins contained in samples of only 5,000 cells, which is far less than typical current requirements for 1,000,000 cell samples.

Dolomite is now developing a disposable sample system for sample handling and processing, for use by all scientists working in this field. *Entries for this year's competition close on the 25 November 2013.*

Contact: www.dolomite-microfluidics.com/en/design/competition

Huge biomass power plant destined to open in 2016 in Lincolnshire

The Brigg Renewable Energy Plant will be developed by British renewable energy company **Eco2** and is expected to be operational in early 2016. In August 2013 a Danish pension fund invested £160m in a new biomass power plant in Lincolnshire. **PensionDanmark** has set up a joint venture with **Burmeister & Wain** to build, own and operate power plants across the globe. Its first investment will be the Brigg Renewable Energy Plant in Lincolnshire which will be primarily fuelled using local straw. The plant is expected to produce enough energy to cover the total consumption of 70,000 households.

BWSC's share of the investment in the new power plant is £32m and they will be in charge of building, operating and maintaining the plant, which is expected to be operational from early 2016.

Anders Heine Jensen, CEO, BWSC said: "This is a breakthrough for Danish energy technology exports. The financial crisis has challenged the success of Danish businesses exporting sustainable energy plants. Now, BWSC and PensionDanmark are forming a joint venture with the aim of building, owning and operating select biomass power plants internationally."

Contact: www.briggprep.co.uk

Section Links

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

Applied Graphene Materials Ltd plans flotation on the London Stock Exchange

A spinout from Durham University, the firm – formerly **Durham Graphene Materials** – has worked out how to manufacture a tonne of pure graphene a year from scratch. Bosses intend to scale up production on Teesside to eight tonnes a year over the next 18 months.

Applied Graphene Materials is a frontrunner in the race to scale up the production of graphene – a wonder material that has revolutionary uses in sectors from automotive to aviation and telecoms.

It's working with household names **P&G** and **Dyson** among others – and its listing on AIM, due in November, is set to value the company at £25m, netting it £10m. Graphene already used in tennis racquets favoured by the likes of **Maria Sharapova**. Microscopic amounts are needed for applications from flexible electronics to coatings, films and semi-conductors – almost anything that uses plastic today. The market for graphene products is expected to reach \$195m by 2018 and \$1.3bn by 2023.

AGM chief executive **Jon Mabbitt** said the AIM listing marked “a significant step forward” in its development. The global appetite for, and interest in, graphene is growing at a rapid pace. Many industries have recognised the significant qualities it possesses.”

IP company **IP Group** holds a 22.1% beneficial interest in the company, while the Finance for Business North East Technology Fund, managed by the Group, holds a 21% interest.

Contact: www.durhamgraphene.com

Prize of Kosovo reconstruction wins over founder of Fox Marble plc

Fox Marble plc, which owns the rights to five quarries in three locations in the formerly war-torn Balkan state estimated to contain 300 million cubic metres of marble, is the brainchild of serial entrepreneur **Christopher Gilbert**. It aims to be the first company operating exclusively in **Kosovo** listed on the London market.

Following its AIM listing, **Fox Marble** intends to achieve much more than mere tokenism. The founders also believe it can turn its pre-IPO promise into cashflow, profits and perhaps even dividends in a short space of time.

The quarries hold high-quality material such as honey yellow onyx, and other rarities too, such as an unblemished black marble, which is highly sought after in the US. The quarries, last excavated in the Tito era, contain valuable bounty.

Fox holds 25-year mining licences over the sites with the option to extend. The plan is to plough much of the £9.65 million raised at 20 pence a share as part of the AIM float and convertible loan note issue into acquiring the equipment required to extract the blocks of marble.

Cut and polished into slabs, an eight cubic metre block could be worth anywhere between 9-24,000 euros, based on a price per square metre price of between 40 and 100 euros, a back of the envelope calculation reveals.

Mr Gilbert said “Kosovo has had a horrendous press because of the horrific nature of the conflict that took place in the 1990s. However Kosovo is a can't-fail project for Europe

“It is heavily monitored and supervised; it is a stable, democratic republic and having been there many times I have seen more guns in Los Angeles than I have in Kosovo. It is a very safe and stable place.”

Contact: www.foxmarble.net

Section Links

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

Fingerprint hunter Consolite Ltd pinpoints prints on thermal paper

The company is commercialising a device that reveals latent fingerprints from thermal paper in minutes. Zeals-based **Consolite Forensics** worked with **Dr John Bond**, a senior lecturer in forensic sciences at **Leicester University** and former head of forensic sciences with Northamptonshire police, to develop the Hot Print System (HPS), a patent-pending device that is quick and simple to use, requires no pre-processing or chemical treatment of samples.

It is effective on latent fingerprints that are up to two years old. Thermal paper is commonly used to print receipts, and these are often left in vehicles left at a crime scene.

Traditionally, chemicals would be used to reveal prints on the paper but lab tests are relatively costly and can lead to the paper becoming blackened, which entirely eliminates recovery of the fingerprint.

James Price, sales engineer at Consolite Forensic, explained the HPS only works on thermal paper because the inks embedded in it are activated by heat. He said "What we've found is that the sweat can react with the inks in the paper to make them unstable."

Price added that HPS – designed and built in-house and manufactured in the UK – has so far been sold to customers from America, the Middle East, China, and Australia.

Contact: www.consolite.co.uk

SME NEWS – BIOTECH, PHARMA & MEDICAL SCIENCES

Cheshire-based Proveca makes progress on children's anti-drooling drug

Children living with motor or neurological disorders, such as cerebral palsy, are often unable to effectively swallow the saliva they produce resulting in unavoidable chronic drooling. The north west firm reached a key milestone and struck an agreement with the European Medicines Agency that will enable the development of the drug Glycopyrronium, which will help to reduce this unintentional and disabling loss of saliva.

The EMA's Paediatric Committee has adopted a 'positive opinion on the paediatric investigation plan' for the drug, designed to combat chronic pathological drooling – sialorrhoea – in children..

The adoption of the PIP provides Proveca, based at Sci-Tech Daresbury, in Cheshire, with an agreed programme for the future development of the drug. It will deliver the required quality, safety and efficacy data needed for the future authorisation of Glycopyrronium throughout Europe.

Dr Helen Shaw, director at Proveca, said: "Incessant drooling associated with neurological disorders is out of the control of the person who suffers from it and can be an incredibly difficult issue to manage. As well as causing discomfort and irritation to the mouth and face, it can have profound effects on the digestive system, causes dehydration and increases the incidence of infection."

The agreement with the EMA follows a successful 12 months for Proveca, which includes the appointment of Chris Brinsmead, the former president of Astra Zeneca UK, as chairman. It also secured a £2.6m investment from Albion Ventures in December 2012 and a further £143,000 grant from Biomedical Catalyst, a joint programme from the TSB and Medical Research Council, in August.

Contact: www.proveca.co.uk

Section Links

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

Type 2 diabetes drug plant opens at high-capacity facility in Queenborough, Kent

The 10,000 square-metre facility of **Aesica Pharmaceuticals Ltd** was unveiled after the company invested £30 million in the site. It has been built for production of solid dose medication to treat one of the world's most common diseases in adults: Type 2 diabetes.

Aesica chief executive **Dr Robert Hardy, Viscount De L'Isle** and chairman **David Greensmith** open the new facility, with commercial production due to begin in November.

Aesica will employ 55 technicians at the new building, known as the high-capacity manufacturing facility, recruited locally and trained on site. Aesica Pharmaceuticals chief executive Robert Hardy said: "The new investment and opening of the high-capacity manufacturing facility marks another key milestone for our company and a further step towards achieving our vision to be the world's number one supplier to the pharmaceutical industry."

Contact: www.aesica-pharma.co.uk

Welwyn Garden City-based BioSyntha seeks out high value chemicals

The industrial biotechnology company offers bespoke contract research services to diverse industries. It is developing proprietary methods for the fermentation of high value chemicals from renewable raw materials.

BioSyntha was created by spinning out the experienced industrial biotechnology team, together with relevant assets, from **Novacta Biosystems**. BioSyntha focuses on industrial biotechnology while Novacta continues to develop therapeutic programmes.

BioSyntha has expertise in metabolic pathway engineering and fermentation, biocatalysis process development, production of API and agrochemical metabolites and natural product development. Other capabilities include enzyme development and production, protein production, analytical method development and classical development of microbes.

In mid-September 2013 **Brian Rudd**, Biosyntha's director of metabolic engineering presented a paper with Professor David Fell on the application of metabolic modelling to acetogenic bacteria at the Metabolic Pathway Analysis 2013 conference at Corpus Christi College in Oxford.

Steven Martin has more than 20 years industrial experience in the pharmaceutical and industrial biotechnology sectors. Steve was formerly R&D director at **TMO Renewables Ltd**, which developed a proprietary thermophilic bacterium into a robust industrial platform for the production of biofuels and chemicals from waste biomass. During his tenure at **TMO**, Steve set up the research labs in Guildford, and helped raise more than £50m in financing to move the technology from concept to commercialisation.

Contact: www.biosyntha.com

University of Strathclyde spinout Biogelx Ltd declared a winner

Biogelx co-founder, **Professor Rein Ulijn** and Product Development Manager, **Dr Eleanore Irvine** won the **Royal Society of Chemistry's** inaugural Emerging Technologies Competition.

Biogelx is a new Scottish company that was started to commercialise advances in recently patented, tuneable peptide gels developed by the internationally recognised Ulijn research group at the **University of Strathclyde**.

Section Links

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

The company is based at **BioCity Scotland** on the former MSD research facility at Newhouse. Dr Irvine said: “Biogelx offers a family of designer hydrogels for studying cells in the laboratory. These gels provide an improved platform for cell studies, because the gels are tailored to precisely match the specific needs of different cell types. Our hydrogels can be applied to drug discovery, toxicology screening and, in the future, they could be used in the development of new cell therapies.”

Biogelx will receive a prize that includes bespoke mentoring, access to facilities and introductions to investors on a continuous basis to assist their winning technology along the path to commercialisation.

Contact: www.biogelx.com

Rare winner of SBIR to develop stroke assessment system for patients

Brainomix Ltd, a start-up from **Isis Innovation**, the **Oxford University** technology transfer company, has been awarded over £900,000 to develop a software version of a stroke forecasting system ‘that has already saved lives’. The software can be used by any hospital, helping physicians to identify patients more likely to benefit from life-saving treatment.

The Technology Strategy Board gave the cash as part of its **Small Business Research Initiative (SBRI)**. The £819,000 of funding is in addition to £89,000 that Brainomix received during the first phase of the same competition. The funding is for 18 months and will help the company develop the software, carry out validation studies and make sure it complies with European regulations.

Dr Michalis Papadakis, MD of Brainomix said: “After incorporating less than 6 months ago, this funding is a great vote of confidence in us and the medical importance of our stroke e-ASPECTS software.”

The software automates the Alberta Stroke Program Early CT Score (Aspects) pioneered by Brainomix co-founder **Alastair Buchan**, Professor of Stroke Medicine and Head of the Medical Sciences Division at Oxford. Over the last 12 years Aspects has been adopted worldwide. The automated e-Aspects encapsulates the expertise of Prof Buchan and his team in software that processes CT images.

There is only a four-and-a-half-hour window from the time which a stroke occurs when a clot-busting thrombolytic treatment can be given. Quick, expert assessment and successful treatment of stroke patients saves an average of £10,000 per patient per year and gives the patient a fuller life. In Europe, there are 1.1 million stroke deaths annually.

Brainomix came out of the **Isis Software Incubator** which supports software ventures in the development of products or services.

Contacts: www.brainomix.com – Dr Michalis Papadakis – mpapadakis@brainomix.com

Glasgow-based Collbio concentrates on collagen raw materials and manufacturing

It was started by life science financiers **Diagnostic Capital Ltd**, together with former senior management team members **Stewart White** and **Ross Andrews**. Its initial funding raised in excess of £250,000 from a number of private investors.

The new funds will primarily be used for working capital to enable the business to generate revenue via **Stewart White**, CEO, said “This reflects the robustness of our business model and the significant opportunity provided by Collbio for investor return. It follows the signing of our first major contract with US-based **Cardium Therapeutics** for the manufacture of formulated collagen for Cardium’s FDA approved Excellagen product.

Section Links

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

“More than ever it is becoming apparent that companies utilising collagen biomaterials require secure and reliable raw material supply, together with the expertise and quality control systems to convert these materials into products. Collbio is able to provide this level of support to customers from the initial phase of product formulation, through to manufacture of the device itself.”

Alex Clarkson, CEO of Diagnostic Capital said, “We have been able to secure investment from a group of prominent high net worth individuals.”

Contact: www.collbio.com

SME NEWS – IT, SOFTWARE, SERVICES & INTERNET

Internet games firm secures ‘substantial’ investment to fund its next major release

Wilmslow-based **Playdemic** won cash from **The North West Fund for Digital & Creative**. The social game developer has already created popular titles *Gourmet Ranch* and *Village Life*, which is one of the most-played **Facebook** games. The NWFDG investment follows a similar equity investment by **IBM** heir **David Watson**. Playdemic was founded four years ago and is headed by chief executive **Paul Gouge**. Manchester-born games industry guru **Ian Livingstone** is chairman of the firm.

He co-founded retailers **Games Workshop** and is life president of **Eidos**, where as chairman he was instrumental in bringing to market leading titles like *Lara Croft: Tomb Raider*.

Mr Gouge said: “This investment represents a significant milestone in the continued growth of Playdemic and our mission to deliver the best Free-to-Play games services to our players. We have developed a strong relationship with AXM through this process and look forward to growing Playdemic with them.”

Village Life was launched by Playdemic in December 2012 and since then has attracted 16 million players. It said the investment will be used to continue the development of the mobile version of Village Life and to support the launch of Playdemic’s next major social game, in early 2014.

Contact: www.playdemic.com

Simitive Ltd awarded Universities South West (USW) Innovation Voucher

The Bristol-based company, specialising in organisation performance management systems, received the voucher in order to support its work in the university sector.

The voucher will allow **Simitive** to work collaboratively with academics and HR staff at the **University of Bristol** to develop new and innovative performance management system for the University sector that increases the effectiveness and productivity of teams and individuals, working towards complex and overlapping goals in the academic and non-academic environment.

Judge Singh, director at Simitive, said: “The Innovation Voucher supports Simitive’s mission to create highly innovative systems that really add value and will make a step change in the performance of organisations.”

Caroline Clark, Innovation Voucher Adviser at **Science City Bristol** said: “We are looking forward to helping more companies in our region to access external expertise using Innovation Vouchers. The scheme is a great way for small companies in the South West to innovate through collaboration with universities, colleges or public sector research organisations.”

Contact: www.simitive.com

Section Links

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

UKTI SME delegation to China follows trail of David Cameron

Web accessibility company **Recite Me Ltd** was part of the recent UK Trade & Investment delegation of leading British technology companies which includes: **Busuu, Cambridge Communication Systems, Darktrace, Epic Learning Group, Fat Pebble, Genalys, Immerse Learning, Inspired Gaming Group, Invoke Capital, Kinosis, Level39, Licentia Group, Memrise, Monitise, myPinPad, Omnisoft Services, Sayduck, SwiftKey & The Livingstone Foundation.**

Recite Me Ltd CEO **Ross Linnett** took part in the official British trade mission to China.

The company was one of 20 technology companies chosen to take part in the trade mission, from a list of over a 100 leading British technology firms.

Ross Linnett said: “We offer a cloud based solution that works on any device, anywhere in the world; an ideal solution for economies with developing infrastructure and a heavy reliance on mobile technology.

Recite Me allows website visitors to customise websites the way they need it to work for them. The software includes text to speech functionality, dyslexia software, an interactive dictionary, a translation tool with up to 52 languages and many other features.

He claimed: “There are around 285 million people with a visual impairment in the world, 10-15% of the world’s population has dyslexia and 774 million people in the world cannot read or write. Recite Me provides the software to make any website more accessible to millions of people, by reading out the content, changing the colour contrast settings or translating into one of 52 languages, including Chinese.”

Contact: www.reciteme.com

m-commerce firm CloudZync Ltd develops ‘first British mobile digital wallet’

CloudZync Ltd, which is based in Brentwood in Essex, worked closely with **Essex University’s** internship team to find the right graduates to fulfil the company’s positions.

The company founded the digital wallet, a free smartphone app which allows users to safely pay in store, over the phone and online with your smartphone. It works by customers using the app on their smartphone to pay, and the retailer accepts the payment by scanning a QR code on the customer’s phone.

Zwallet is a free mobile wallet app, offering secure contactless payments from a Smartphone. It allows users to pay in participating stores, online and by phone, use and redeem loyalty points, use deals and vouchers. CloudZync Ltd’s mobile wallet app is already available on iPhones and Windows Phone and will be available to all android phones by the end of the year.

By August 2013 CloudZync had signed up 280 merchants for the launch of its mobile wallet, which will let customers pay for items straight from their phones, as well as integrate loyalty cards and access special offers.

Once they have downloaded the free app (initially for iOS and Windows phones, with Android to follow) and loaded it with funds from their bank account, customers can open the wallet with a PIN and select the ‘make payments’ option at participating retailers.

CloudZync says that, unlike many card schemes, it does not charge its merchants any set up fees or administration costs to make payment – and no additional hardware is required.

Andrew Smith, co-founder and CTO, CloudZync, says: “Consumers are offered a range of new ways to

Section Links

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

pay using their smartphone or NFC 'quick pay' solutions. However, none of these payment options truly take advantage of the mobile technology that most consumers now carry in their hands, with most just offering another way to pay by card."

Contact: www.cloudzync.me

Cambridge Intelligence to make data visualisation products for the security sector

In October 2013 its first product, **KeyLines**, was named the 'Most Innovative Graph Application in Visualisation' at an awards dinner in San Francisco.

The **GraphConnect Awards**, also known as The Graphies, are a unique accolade created to recognise innovation and achievement within the graph database community.

Hundreds of business people, developers and academics attended the Graphies, now in their second year, to hear about ground-breaking projects and products from around the world that are helping to solve complex data problems.

The award's hosts were **Neo Technologies**, creators of Neo4J – the world's most popular graph database. This latest award comes just months after Cambridge Intelligence was named as one of *Business Weekly's* Killer-50, the list of the region's most disruptive science and technology companies. Cambridge Intelligence also recently celebrated their 15th major new customer.

Corey Lanum, manager of Cambridge Intelligence in the US, said of the Graphie: "KeyLines has become known for being ahead of the curve in terms of technology and innovation, and to have this confirmed by an organisation as globally renowned at Neo Technologies is a real honour."

Contact: www.cambridge-intelligence.com

Belfast software company Automated Intelligence targets remote workers

The company has developed a new application that enables workers to access organisational data via their mobile devices. **Automated Intelligence** was set up in 2010 to develop products for the content management market. The new AI.MOBILE product provides improved mobile access to corporate information and is targeted at organisations whose employees work remotely.

Its software is helping private and public sector organisations to analyse, manage and control access to their data. **Mark Godfrey**, Automated Intelligence's CEO, said: "People are increasingly using mobile devices as part of their working toolkit, as they are convenient and flexible. We recognised that there was a gap in the market for a product that would allow secure access, via a mobile device, to centrally held content.

"AI.Mobile enables an organisation to determine what data can be accessed through a mobile device, and how long the data can exist on the mobile application. It is designed to grant and control access to over 40 corporate content systems through a single control-centre and mobile application layer.

"The product is currently being piloted with existing customers including the **British Red Cross**. Our partners **Fujitsu** and **Kainos** are also actively promoting it as part of their offering."

Contact: www.automated-intelligence.com

Section Links

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

GENERAL NEWS

Exhibition held to celebrate key SME manufacturers

The **Department of Business** and the **Manufacturing Advisory Service** recently held an exhibition to celebrate the UK's more successful SME manufacturers at its HQ in Victoria Street in central London. The following firms took part:

- **Alucast Ltd**

Wednesbury, West Midlands: Turnover: £8m, Employees: 90

Active in aluminium casting Alucast played a crucial role in the success of **London 2012** by successfully manufacturing the top and bottom caps to hold the inner and outer skin of the iconic Olympic torch.

Using over 50 years of technical experience, the firm provided tooling, machining, polishing and gravity casting technology to produce the high quality aluminium parts.

More than 15 people were involved in the high profile contract, ranging from design, technical staff and apprentices to the quality department and experienced casters.

As a result of its involvement in the Olympic torch, Alucast enjoyed global exposure and this had led to new opportunities across a host of demanding sectors.

Contact: www.alucast.co.uk

- **Anglepoise Ltd**

Portsmouth, Hants: Turnover: £3-5m, Employees: 14.

Makers of famed desk lighting, Anglepoise has been creating table lamps for over 80 years, priding itself on a British design classic that has stood the test of time and redefined the versatility of a table lamp, regardless of its intended use.

The company was supported by MAS to create an intensified manufacturing simulation, which demonstrated the effects of unnecessary waste on production throughput and the benefits of introducing lean manufacturing techniques in accelerating flow and reducing effort on employees.

This change in approach has helped it successfully develop and bring to market the **Giant Lamp** – a product three times the size of a standard lamp. A new LED light module has been sourced and now applied across the whole product range and, importantly, movement around the shopfloor has been reduced from 300 metres to just 38.

Anglepoise's turnover since its involvement with MAS has increased by 115% and output has grown from 180 units in 2009 to a projected 400+ this year.

Contact: www.anglepoise.com

- **Ashwood Products Ltd**

Somerset: Turnover: £300,000, Employees: 5.

Ashwood Products is a small family-run business specialising in designing and manufacturing timber buildings for a range of UK clients.

In recent times, the company has focused on **its Shepherd Huts** range and this has resulted in significant

Section Links

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

interest from customers looking to use them as a B&B, guest room, art studio and those looking to cause a stir whilst 'glamping'.

The firm used MAS to provide guidance on structuring, developing and growing the business, with a focus on manufacturing efficiency and sales strategies.

Boosted by this external advice, Ashwood Products has successfully reduced manufacturing times and increased turnover, necessitating the need to relocate to larger premises and the possibility of new jobs in the future.

Contact: 01823 251 488.

- **Ecospin Ltd**

Leicester: Turnover: £1.5m, Employees: 7.

While on holiday in 2009, brothers **David** and **Paul Loomes** came up with the concept of a three-wheeled electric vehicle that would be the first in the UK to be 'road legal'.

Ambitious plans, but four years later and their vision has become reality with the '*Raptor*' now in production and more than 350 units already sold to the US and Australia.

Ecospin received guidance on the development of the product and secured early stage funding to undergo testing at MIRA. The feedback gained here allowed it to refine a number of design features and soon led to the company being the first in the world to hold European Whole Vehicle Type Approval for an electric vehicle.

£1.5m sales have been accrued already this year and this is set to rise to £10m as the international distribution network grows.

To cope with demand, Ecospin has joined forces with **ACE Forming** in Dudley to create a dedicated production line for the Raptor, creating six jobs initially and 30 by 2015.

Contact: www.ecospinltd.com

- **Flying Fish Ltd**

Sandwich, Kent: Turnover: £900,000, Employees: 25.

Established in 2001 by hovercraft designer **Ivan Pullen**, Flying Fish has become the 'industry standard' in recreational hovercraft design, producing four different models at its factory in Kent.

Securing sales has never been a problem for the company, instead issues around staffing, production volume and quality were causing delays with delivery schedules.

Working with **MAS**, the firm has been able to improve stock control, introduce a new manufacturing method and implement a system where a team of two people is given responsibility for the production of a craft, from start to finish.

This approach has helped Flying Fish reduce lead times and increase the number of hovercrafts it manufactures to 70 last year and a predicted 105 in 2013. Turnover has tripled to £900,000 and it will shortly be undergoing a massive lean improvement project to increase efficiencies even further.

Contact: www.flyingfish.co.uk

Section Links

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

- **Grillstream Technology**

West Midlands: Turnover: £7.5m, Staff: 3.

The company is responsible for the patented science of open bar grilling and cooking, and it secured £7.5m of domestic and international sales with its original BBQ range.

This got the management team thinking and has resulted in them adopting the technology for use in commercial catering, especially for the chargrilled systems used by the big pub and restaurant groups across the UK. Tapping into MAS support, the firm was able to develop CAD drawings and create a working prototype of its twin open bar catering system.

This allowed the team to make modifications to the design before identifying a local casting and tooling company to move into full production with the technology.

It has already been fully tested in a leading pub company's kitchens and results have shown it reduces gas usage by 30%, smoke by 80% and is 50% faster reaching the required temperature. Volume manufacture has started and the Grillstream commercial catering technology is being sold direct into pubs, restaurants and hotels in the UK and across the rest of the world.

Contact: www.grillstream.co.uk

- **Kleenoil Ltd**

West Yorkshire: Turnover: £1.35m, Employees: 14

For 36 years, Kleenoil has been the market leader in depth filtration systems, helping the commercial transport sector conserve fuel and improve the performance of its engines.

The company's latest innovation is the launch of 'Kleenfuel', a fuel efficiency and emissions reduction product that increases the range of vehicles and offers significant environmental benefits.

MAS is playing a vital role in this future growth, securing funding to help with the installation of a new production line in North Yorkshire and MIRA testing to gain the necessary approvals for the product. Eight new jobs have been created as a result of this expansion with sales forecast to rise to £22m.

Contact: www.kleenoil.co.uk

FUNDING & INVESTMENTS

BrewDog maintains its reputation as the 'No.1 Outlandish Firm' in the UK

In June 2013 BrewDog cofounders **James Watt** and **Martin Dickie** arrived in the City of London in typically unorthodox fashion, driving past the **Bank of England** in a tank.

This Scottish brewer launched its second unconventional capital-raising exercise in as many years to bankroll the opening of a chain of bottle shops as it further diversify its business.

This launched a third round of their '**Equity For Punks**' scheme, with 42,000 shares being offered at £95 each to raise £4 million. Their previous fundraising drew in £2.2m in 2011, with £1m of the latest cash going to expand its brewery, creating 30 jobs at the site to take the total up to 100 in Aberdeenshire and more than 200 across the UK.

Watt said his firm will spend another £1m opening a London 'beer academy' in early 2014, at which the

Section Links

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

public will be able to learn about the brewing process alongside professionals. A provisional site has been agreed in the trendy London area of Dalston.

Watt said a further £1m would be earmarked for American expansion next year, with the most-favoured location for one of its nascent chain of international bars being either New York or San Francisco. A one-hour documentary about BrewDog and its US ambitions will be aired on the **Esquire** TV network in September.

The company – which opened a bar in **Stockholm** earlier this year, and has plans for bars in **Sao Paulo, New Delhi, Tokyo** and **Rome** in the next six to nine months – claims that the latest fundraising will be the “world’s biggest independent crowdfunding initiative”.

“With the help of almost 7,000 punk investors, BrewDog has become the fastest-growing food and drink company in the UK,” Watt said.

“As we need funds for more growth plans, we never considered a bank or an investment group – it is open to everyone, including our customers, to benefit from our growth directly. With **Equity For Punks**, beer fans are able to become part of a revolution – not just redefining beer in the UK, but shifting the balance of power away from the banks and back into the hands of the people.”

Watt hopes the first bottle shop will open in either **Farringdon** or **Angel Islington** in London by October, with up to five targeted nationwide over the next 12 to 18 months, including one in **Glasgow**. “Our shops will only sell beer, our own beers and some of the best beers from around the world,” he said.

BrewDog has previously branded larger brewing rivals as ‘monolithic mega corporations peddling sub-standard insipid liquids’. Its own products included Punk India pale ale (IPA) and extra-strong brews such as *Sink The Bismark* and *Tactical Nuclear Penguin*.

In January, the company – which exports 60 per cent of its output – announced that its unaudited profits jumped to £600,000 in 2012 from £400,000 in 2011. Turnover leapt 86 per cent to £11m, partly through opening of warehouse-style bars, which include outlets in **Aberdeen, Edinburgh**, Glasgow and London.

Contact: www.brewdog.com

Shares in Frontier IP rise after the firm raises £392,000 via share placing

Aim-quoted **Frontier** was spun-out in 2009 from **Sigma Capital**, which is expected to pocket a £70,000 profit on the sale of its shares for £228,000. Frontier placed the shares with new and existing institutional investors at 10p each, helping to push its share price up 0.88p to 9.75p.

Neil Crabb, chief executive at Frontier, said: “The placing has been oversubscribed and we have been able to raise the full amount to invest in the future of Frontier and to enable Sigma to reduce its shareholding. The placing has been supported by both new and existing investors – testimony to the quality of our underlying university relationships and investee companies.”

Sigma Capital, the Aim-quoted investment vehicle in which **Sir Tom Hunter** has a 22 per cent stake, reduced its holding in Frontier from 26.7 per cent to 5.9 per cent as part of the move to place new and existing stock.

In a separate deal, Crabb and **Michael Brennand** – one of Frontier’s regional directors – are swapping their stakes in **Nandi Ltd**, a food technology spinout from Edinburgh’s **Heriot-Watt University**, for more shares in Frontier.

Section Links

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

Crabb's stake in Frontier will rise to 14.45 per cent, while Brannand – who is also Nandi's executive chairman – will see his holding rise to 6.4 per cent. Meanwhile, Frontier's stake in Nandi will increase to 20.15 per cent from 3.68 per cent.

In December, ingredients maker **Tate & Lyle** signed a deal to use Nandi's technology.

Contact: www.frontierip.co.uk

Shawbrook Bank passes the '£1 billion lending milestone'

The firm, the 'challenger' bank with a burgeoning Scottish presence, stated it had lent £1.13bn since its launch in 2011, comprising £766 million to UK SME businesses and £369m to individuals.

Chaired by former **Royal Bank of Scotland** chairman **Sir George Mathewson**, Shawbrook said Scotland is its busiest area for lending after greater London and the south-east of England, with loans of £129m north of the border.

Chief executive **Ian Henderson** said the lender's figures show "there is no question challenger banks are needed to the five main high street banking players that control 90 per cent of the UK banking market".

Shawbrook, which does not have a branch network, has more than 28,000 loan customers and 29,000 deposit customers. It offers commercial mortgages and asset finance for small firms and property investors, along with savings and loans for individuals. In May, the company reported underlying profits of £2.6m for 2012, against losses of £8.4m in its first year of operation.

Contact: www.shawbrook.co.uk

New grants announced by The Technology Strategy Board

The Technology Strategy Board announced that the following SMEs had been awarded grants under the Materials and Manufacturing Launchpad programme.

- **2DHeat Ltd** (www.2dheat.com)

New "bake-out" coating for ultra-high vacuum ("UHV") systems.

- **Arcis Biotechnology Ltd**

A blend of agents which can deconstruct cells to release and protect DNA and RNA for a number of hours.

- **Advanced Laser Technology Ltd** (www.aktlaser.co.uk)

A laser applied surface shielding technique using a gel to decrease the manufacturing process saving time, energy, and material use to create less waste, and minimise storage.

- **AeroDNA Ltd** (www.aerodna.com)

Online system enabling high value manufacturing companies to input and integrate their production systems and provide visibility of internal and external performance to partners.

- **Air Quality Research Ltd** (www.energysavingresearch.com)

Energy saving air sanitisation device improving indoor air quality.

Section Links

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

- **Climostat Ltd** (www.climostat.co.uk)

Recycling technology to convert carbon dioxide into valuable and saleable chemical products.

- **Croft Additive Manufacturing Ltd** (www.additive-manufacture.co.uk)

A new in-house testing system using 3D filter designs, for innovative filters decreasing the pressure drop across filters thereby decreasing the energy and time needed for pumping.

- **DB Brew and Food Ltd** (www.dbbrew.com)

A magnetic mixture process for the treatment of contaminated soil and sand sediments, drinking water, waste water and industrial processing.

- **ESP Technology Ltd** (www.esptech.co.uk)

An advanced new materials technology to resolve the serious medical complication of post-needling bleeding from ePTFE vascular access grafts after haemodialysis.

- **GEM Nutrition Ltd** (www.gemnutrition.co.uk)

Electronic systems that tells users exactly how many calories their body needs.

- **LPW Technology Ltd** (www.lpwtechnology.com)

Optimised powders for sustainable additive manufacturing.

- **NanoFlex Ltd** (www.nanoflex.com)

First commercial nanoelectrode offering enhancements in performance characteristics enabling electrochemical applications solutions that are not currently addressable existing systems.

- **Nanomedpharma (NMP) Ltd** (www.nanomedpharma.com)

Smart antibacterial materials using metallic nanoparticles.

- **Perceptive Engineering Ltd** (www.perceptiveapc.com)

Improve the repeat use of consumer products across global supply chains through visualising interactions between raw materials, process and product.

- **Spheritech Ltd** (www.spheritech.com)

A new biopolymer which mimics the biological and physical properties associated with collagen to be used in the treatment of wounds. Compared to animal derived collagen, this material is inexpensive to manufacture and contains no components of animal origin.

- **Teknisolar Ltd** (www.teknisolar.com)

World's first photovoltaic (PV) multilevel laminator that can work without the silicone membranes.

Section Links

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

UNIVERSITY NEWS

The University of Warwick, The Royal Society and Jaguar Land Rover

On 23rd September **Dr David Clark**, former chief executive of the EPSRC, organised a meeting of select personnel from **The Royal Society**, the **University of Warwick** and **Jaguar Land Rover** at Warwick's **International Digital Laboratory**.

The morning session covered the ways in which Universities and industry could collaborate more closely, and the afternoon was devoted to research that could 're-energise engineering industries'.

One interesting success story was given by **Prof Michael Reece** of QMUL, an expert in thermal electronic materials, who had been given a one year Royal Society Industrial Fellowship to enable him to help two small materials companies – **PCME Ltd**, of St Ives, and **European Thermodynamics**, based in Leicester, create a breakthrough innovation.

Prof Peter Bruce, Wolfson Chair of Materials at the University of Oxford, looked at the difficulties surrounding electrical energy storage – and a 500km range – from lithium air batteries in future vehicles.

Prof Richard Dashwood, WMG's academic director, outlined the challenge of 'lightweighting' the modern car, or the 'removal of 170kg from the average car'.

He explained how the inclusion of carbon fibre composites into cars had big problems, including the technical hurdles required to join, assemble and repair these materials which were yet to be achieved.

Prof Lord Bhattacharyya, chairman of the famed **Warwick Manufacturing Group**, outlined the success of WMG's many contributions to Jaguar Land Rover's engineering innovation, alongside **Dr Wolfgang Epple**, JLR's director of research and technology.

JLR's investment in R&D of £2.35bn 'is bigger than that of either **Rolls-Royce** and **BAE Systems**, and the company's products form 20% of all exports to China'.

JLR has been reformed and refreshed by enormous investment from new owners Tata Group, but its success is largely due to its development of a series of best-selling car designs, said **Dr Tony Harper**, head of research at JLR.

The £100m **National Automotive Innovation Campus**, funded by HEFCE, JLR and Tata Group, will open next September on the Warwick site. Over 900 staff from academic and industry teams from WMG, Jaguar Land Rover, Tata Motors European Technology Centre and other partners will work collaboratively on research projects.

The £10m academy in Canley is a place for budding young engineers in the Coventry, Warwick and Solihull area to explore engineering outside a traditional classroom setting.

The collaborative spirit that lies at the heart of the success in re-establishing the UK car industry in the region may serve as a blueprint for the revival of other British industry sectors that have fallen on hard times.

A delegate stated that in place of a "sporadic, strategic alignment the players involved had created a grouping that was 'multi-disciplined, industry-aligned, and had critical mass", and this should be replicated and applied to any ailing sectors of the UK economy.

Contacts: www.warwick.ac.uk/fac/sci/wmg – www.royalsociety.org

Section Links

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

Rolls-Royce and University of Birmingham to open £60m High Temp Research hub

The new centre will be a unique casting, design, simulation and advanced manufacturing research facility. Focused initially on the key manufacturing areas of investment casting, design for manufacture and systems simulation, the centre will then draw in additional research competencies.

Professor Paul Bowen, Head of the School of Metallurgy and Materials, is an expert in mechanical metallurgy, in particular within the areas of fracture and fatigue in the operation of safety-critical components, especially within gas-turbine aero-engines.

Paul's advice to HSE/ Nuclear Installation Inspectorate on the structural integrity of graphite was influential in encouraging the life extension of Oldbury and Wylfa Magnox nuclear power stations.

Dr Hamid Mughal, Rolls-Royce's VP for manufacturing technology said; "High temperature metallurgy and the related advanced manufacturing processes will give our customers more efficient products."

University of Birmingham said the centre will offer casting and related materials research, radical manufacturing process improvements and predictive manufacturing process modelling, and the development of research into ICT tools to enhance product quality and production efficiency.

It is funded by a £40m from Rolls-Royce and £20m from the Higher Education Funding Council for England (HEFCE), through the **UK Research Partnerships Investment Fund**. This major new public and private capital investment will provide a significant economic stimulus for the UK and new high skilled jobs. There is an expectation that an additional £10m of private sector revenues through research programmes from the wider industrial base interacting will be possible over the first five years of operation.

Contact: www.birmingham.ac.uk/research/heroes/staff/paul-bowen.aspx

Graphene maker Bluestone Global Tech to open base in Manchester

The firm, one of the world's largest makers of graphene, agreed a £5m collaborative research partnership to open its European base at University of Manchester. The decision to locate their European production plant at the home of graphene could attract a significant number of jobs to the city.

The partnership will allow the University of Manchester's foremost academics to work closely on research projects with Bluestone, in order to produce the next generation of graphene applications. Graphene was first isolated at Manchester by **Andre Geim** and **Kostya Novoselov** in 2004, earning them the Nobel Prize for Physics in 2010.

Work has begun on the £61m **National Graphene Institute** (NGI), funded by the **EPSRC** and the **European Regional Development Fund**, which will provide a centre for industry and University academics to work side by side on emerging graphene applications. The deal with Bluestone marks the first strategic partnership of the NGI.

Bluestone, who currently have laboratories in New York and Taiwan, are leading the emerging graphene market, providing mass production of high-quality 2D materials to enable the commercialisation of many graphene-enhanced applications such as advanced displays, flexible electronics, energy storage materials, and cosmetics.

Bluestone joins **Graphene Industries** and **2D-Tech**, the University spinout companies supplying graphene and other 2D materials around the world, in a group of graphene manufacturers based at the University.

Contact: www.graphene.manchester.ac.uk

Section Links

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

Pot of £750,000 for university-industry projects from IPO's Fast Forward contest

The **Intellectual Property Office** (IPO) launched its annual *Fast Forward* competition and the closing date for entries is, aptly, Friday December 13th 2013.

It encourages universities and public sector research establishments to collaborate with businesses and local communities on innovative projects that benefit UK society and can help grow the economy.

Now in its fourth year, Fast Forward has so far provided £2m in prizes to 35 winning projects in diverse areas, ranging from the creative industries to medical research and social enterprises.

The fund available for this year's competition is £750,000, which will be awarded to around a dozen projects in individual awards of between £10,000 and £100,000.

One winner was the ITALIA project from **Buckinghamshire New University**. The project was awarded £70,000 to bring together a variety of medical experts, university academics and **Buckinghamshire County Council** to develop new telehealth solutions to connect patients and doctors.

Critics claim the quality of the winners has not been terribly high and that the competition could do with better projects and better entrants, even if the prize money for each winner is modest.

Contact: www.ipo.gov.uk/fastforward

Queens University spinout Acksen wins first-time business in the US

The spinout has won first-time business in both the US and Bulgaria worth more than £500,000. **Acksen** is a manufacturer of data loggers that monitor electricity supplies from conventional and solar sources. The data loggers are also used for energy management including electrical fault finding or testing and can be used to solve supply problems and identify areas to improve efficiencies in energy use.

The success this small and ambitious company is now experiencing shows how support can help strengthen the competitiveness of a local business in the global marketplace.

It has enabled the company to access a number of international markets, including the US, where the company secured a distribution partner in **Ohio**. The company also focused on **Bulgaria**, participating in an **Invest NI** trade mission in 2012 where they secured a first time contract with a distributor in Sofia.

Charlene Thompson, Acksen's Marketing Manager said: "The new business from the US is our biggest so far. A key selling point of our data loggers is that they offer continuous monitoring of energy input and thereby enable customers to develop measures to ensure cost effective and more efficient use of electricity supply.

Eastern European markets such as Bulgaria have shown a growing demand for its technology. In addition, Acksen secured new orders from **University of Dar es Salaam** in **Tanzania** for solar loggers and **The Electricity Company of Ghana**, where its products are being used to ensure effective use of solar energy and power generation; this represents a growing market opportunity for us."

Acksen's customers include electrical contractors, power distribution companies, facilities management, electrical or site-services and maintenance engineers. Acksen was established in 1994 and currently employs five people.

Contact: www.acksen.com

Section Links

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

Loughborough University – footwear recycling project gets a kick-start

'The world's first comprehensive system for separating and recovering useful materials from old footwear' has been successfully trialled. It is able to granulate and segregate leather, plastic foams and rubber so that they can be re-used in products ranging from rubber playground surfacing to new shoes!

The system was developed and tested at Loughborough University's **Innovative Manufacturing and Construction Research Centre (IMCRC)**, whose ten year research programme was funded by the EPSRC.

Professor Shahin Rahimifard, who led the project, said "Footwear is incredibly difficult to recycle as it can contain up to forty different types of material, many of which are stitched or glued together. In our process, the first, manual step is to pre-sort shoes into broad types, such as trainers, and to recover metals, such as eyelets. Next the shoes are automatically shredded and granulated, with the granules automatically separated into four waste streams: leather, foams, rubber and other material."

The shoes are turned into 3-4mm fragments using a granulator. Low-cost air-based technologies developed by the project then separate the materials by exploiting their different sizes and weights: an air-cascade separator first removes lighter textile particles and other fine leather and foam residues by blowing them away from heavier granules; then a series of vibrating air-tables separate rubber from foam and leather by stratifying the granulated materials, with lighter granules ending up on top of heavier ones.

The development of the footwear recycling process was part of the two-year IMCRC project 'Minimisation of End-of-Life Waste in the Footwear Industry' carried out by Loughborough University's **Centre for Sustainable Manufacturing and Reuse/Recycling Technologies**, known as the Centre for SMART.

Contact: www.centreforsmart.co.uk/Footwear

Incanthera Ltd wins Bionow's Start-Up Company of the Year award

Since launching in 2010, Incanthera, which is backed by the **University of Bradford** where its academic founders benefit from the support of **Yorkshire Cancer Research** and **Cancer Research UK**, has secured investment from **SPARK Impact**, managers of the North West Fund for Biomedical.

Incanthera has also raised funding from private individuals who share a concern for improving the chances of surviving cancer, and are now in the final stages of securing further investment to progress to Phase 1 clinical trials.

The firm has focused on MMP molecule ICT2588, which was designed to kill tumours without causing any nasty side effects and the in vivo data 'backs this up', says the firm. ICT2588 may not be fashionable or have a hot target, but maybe it shows that true innovation in drug development means not following the crowd.

The late **British Biotech** progressed 5 different MMP targeting compounds as far as Phase I to III clinical trials. The fiasco that killed off British Biotech over its Phase III results with Marimastat lingers in the minds of many to this day.

The development of ICT2588 shows that MMPs are not dead as a target and that the unwanted toxicity of VDAs can be tamed.

Recent analyses of nearly 1,000 cancer projects in the US (PhRMA 2012) show that a mere eight drug targets account for around 40% of all projects in pre-clinical or clinical stages of development.

Contact: www.incanthera.com

Section Links

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

Gonville and Caius Fellow Michael Levitt wins Nobel Prize in Chemistry

Though many people have heard of the Nobel Prize recently awarded to Prof Peter Higgs, the one awarded to **Michael Levitt**, who was a PhD student in Peterhouse, Cambridge, before gaining a Research Fellowship at **Gonville and Caius College**, has attracted far less attention.

Levitt, 66, now based at **Stanford University**, shared the prize with **Martin Karplus**, of the **University of Strasbourg** in France and Harvard University, and **Dr Arieh Warshel**, of the **University of Southern California**, “for the development of multiscale models for complex chemical systems”.

Levitt’s work focuses on theoretical, computer-aided analysis of protein, DNA and RNA molecules responsible for life at its most fundamental level. Delineating the precise molecular structures of biological molecules is a necessary first step in understanding how they work and in designing drugs to alter their function.

He worked in Cambridge as a PhD student, based at the **Laboratory of Molecular Biology**, from 1968 to 1972, where he developed a computer programme for studying the conformations of molecules that underpinned much of his later work.

Professor Sir Tom Blundell, Professor of Biochemistry at the University of Cambridge and a personal friend of Michael Levitt, said: “Michael Levitt is a brilliant computational structural biologist, who became interested when in Cambridge in the structure of proteins. His ideas as to how they fold and how they might be classified led him to the question as to how they move.

Professor Adrian Dixon, Master of Peterhouse, at the University of Cambridge said: “The college is very proud of this wonderful achievement. Michael’s research studentship brought him into very close contact with three other Petrean Nobel Chemistry Laureates (**Max Perutz**, **Sir John Kendrew** and **Sir Aaron Klug**).”

Contact: www.nobelprize.org/nobel_prizes/chemistry/laureates/2013/levitt-facts

AND FINALLY...

>> Laugh... **The Great British Banjo Company**, the tiny Norwich-based instrument manufacturing business **The Shackleton Banjo**, has exceeded its **Kickstarter** crowdfunding target more than a week ahead of schedule. The company’s founder is predicting the continued growth of crowdfunding and demise of **Dragon’s Den**-style investment.

The company has received pledges totalling more than £33,500, ahead of target £30,000, and eight days ahead of schedule: securing its funding to create the ‘UK’s only mass-market banjo’.

The company’s campaign has been supported online by a wide range of musicians and banjo luminaries, including **Bela Fleck** and **Ned Luberecki**, the UK’s **Mike Harding** and **Martin Simpson**.

Supporters from all over the world have pledged between £15 and £2,500 (\$4,000) to claim a variety of rewards ranging from souvenir gifts and clothing through to first-edition Shackleton banjos.

Why ‘Shackleton’? The name was chosen because **Sir Ernest Shackleton** back in 1914 insisted on keeping the beleaguered Antarctic team’s precious instrument – in order to maintain morale of his 26 companions on the hazardous journey back to civilization.

Contact: www.thegreatbritishbanjocompany.com

Section Links

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

>> Laugh... Edinburgh's trams are expected to take *longer* than the bus to travel from the city's airport to the city centre. **Lothian Buses** advertises its Edinburgh Airport bus service as offering a journey time of 30 minutes to the city centre. Meanwhile, modelling of the tram route by consultant **Parsons Brinckerhoff** suggests that a fully-laden tram will take 32 minutes.

Next, critics have blasted the 'laughably' meagre shelter designs for failing to cater for Edinburgh's weather. **Simon Johnstone**, *Tramways and Urban Transit* magazine editor, said they looked good but questioned their ability to "shelter". The shelters on the eight-mile route to the city centre are just 8ft wide – no protection from wind and rain.

>> **Camden Council** has granted planning permission to **Google's** £300m new headquarters building in King's Cross. The massive building project, dubbed 'Project Queen' by the company, will boast a swimming pool and a running track on the roof and space for as many as 5,000 workers.

Bam Construction will start work in early 2015, on what will be one of the company's largest offices outside its 'Googleplex' corporate headquarters in California. The near 1m sq ft building sits in a 2.4 acre site that has cost Google £650m. The floor plans will extend 300m with buildings ranging from seven to 11 stories.

>> Attendees on a recent medical ethics course heard that one-in-five of the GPs who sit on the boards of England's new **Clinical Commissioning Groups** (CCGs) – the groups of GPs who decide how NHS money is to be spent – also has a stake in a private healthcare firm that is providing services to their own CCG. Even if that interest is declared, this cannot be right, and cannot be professionally unethical. Let's see what happens to these commissioning doctors and how they 'walk the high wire between greed and responsibility'. As very few GPs can be even persuaded to make evening or weekend calls anymore the new opportunities for graft must seem eye-watering – even to the many who retire early on unbelievably generous pensions and benefits.

Section Links

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