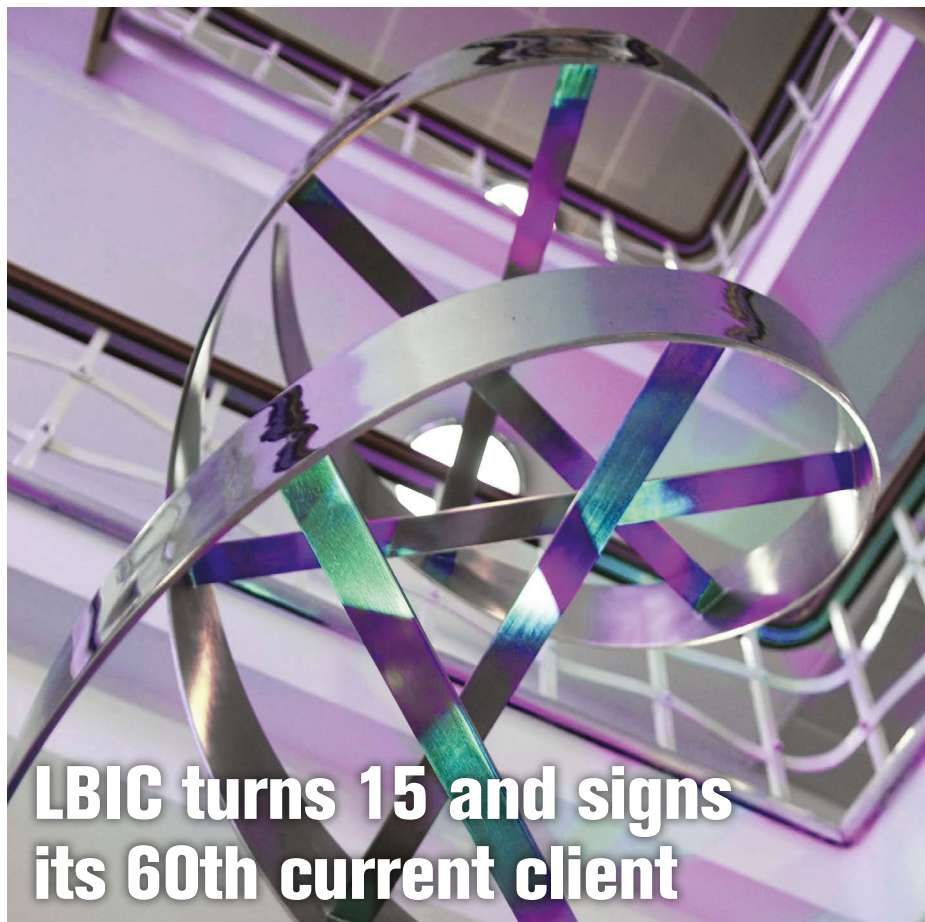


LBICnews

From the London BioScience Innovation Centre



LBIC turns 15 and signs its 60th current client

BY CEO DR KEN LARKIN

LBIC reached two impressive milestones in 2015: in June we celebrated LBIC's 15th anniversary, and shortly afterwards we signed up our 60th current client.

Since its incorporation on 12th June 2000, LBIC has supported over 130 clients in total, from 17 different countries across the world. Client companies have ranged from: nascent start-up activities; spin-outs from a

number of London universities; 'exploratory' operations for companies from overseas markets and serial entrepreneurs returning to LBIC with new businesses; to novel units associated with some of the largest multi-national pharmaceuticals.

LBIC's 60th client is ReCellerate Ltd., the new UK subsidiary of a US regenerative medicine company focusing on veterinary stem cell therapies. ReCellerate has a particular connection with the Royal

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WELCOME

It is my pleasure to introduce this winter edition of the LBIC newsletter. We are proud to have marked LBIC's 15th anniversary this year, and to have exceeded 60 current clients.

I am always impressed by the variety of activity that goes on at LBIC, and seeing our clients at the forefront of innovation. This issue includes features on the latest client developments including mobile healthcare, radiocarbon dating and biobased content testing, visible perfume and synthetic biology.

Synthetic Biology continues to be an area of great interest, and on page 5 we hear how SynbiCITE in London is accelerating commercialisation of synthetic biology research and technology. This could have great benefits for the UK economy as well as the life science sector.

Lucy Garnsworthy, Editor

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SYNBICITE

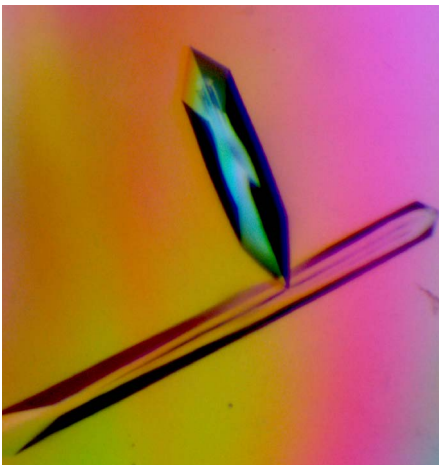
Accelerating the commercialisation of synthetic biology

AQIX receives drug design award

AQIX has won an Award for Innovation in Drug Design from Acquisition International. This award recognises the company's work in developing AQIX RS-1[®], a solution designed to prolong the functionality of donor tissue outside the body. Currently only used for laboratory research, the aim is for AQIX RS-1[®] to be given certifications that would expand its use globally to organ transplants and transportation. AQIX RS-1[®] is already being used by the Consortium for Organ Preservation in Europe (COPE).

CRT Discovery Laboratories set up in new space

CRT Discovery Laboratories (CRT-DL) moved to their new home in LBIC at the end of 2014. Their Protein Sciences and Target Validation and Disease Positioning groups, comprising around 28 people, moved into newly refurbished offices and labs on the first and second floors of the Amoroso building at LBIC. More recently CRT-DL acquired additional space on the second floor allowing their structural biology team to relocate to the site. CRT-DL's structural biologists support their in-house drug discovery programmes by determining the three-dimensional structures of cancer target proteins bound to small molecule inhibitors.



CRT-DL: Crystals of AKR1C3 in complex with a small molecule inhibitor



Left-Right Lars Chr. Lilleholt (Danish Minister for Energy, Utilities and Climate), Henrik Busch-Larsen (UniBio CEO) and Prof. John Villadsen (DTU)

UniBio U-Loop pilot plant opening ceremony and conference

On Thursday 8 October a ceremony was held to officially open a U-Loop technology fermentation centre at the Technical University of Denmark in Lyngby. UniBio A/S, a wholly-owned subsidiary company of UniBio International Ltd., will establish and run a U-Loop pilot plant in close cooperation with DTU to develop an optimized process for the production of environmentally friendly UniProtein[®] on the basis of natural gas. UniProtein provides a sustainable replacement for current commercial sources of protein in animal feeds.

The keynote speaker was Lars Chr. Lilleholt, the Danish Minister for Energy, Utilities and Climate. Before cutting the ceremonial rope, Minister Lilleholt emphasized the huge growth perspective of the project and the scope for utilising gas resources in a more sustainable way and for reducing emissions from agriculture.

Innovative 'BacVac' technology from APCure

APCure develops immunotherapy products based on BacVac, a highly innovative technology that uses live attenuated bacteria (derived from *Pseudomonas aeruginosa*) as an immunotherapy agent to efficiently educate the immune system to identify and destroy the target (cancers and pathogens). This technology is unique as it combines great efficacy and safety with simplicity of pharmaceutical development. LTvax, the first BacVac-based product, will be the first immunotherapy product used for the treatment of the ~20% of lung cancers that are associated with a recently discovered oncovirus: the Merkel Cell polyomavirus. Clinical trials of LTvax are slated to begin in 2017.

LBIC welcomes these new clients to the Centre:

- APCure
- FeedAlgae
- Global Eye Trials
- ReCellerate
- UniBio

Continued from front page

Veterinary College, LBIC's parent organisation, as it has acquired rights to the equine stem cell treatment for tendon injury first patented by RVC in 2002, and senior members of the RVC team sit on the Scientific Advisory Board of ReCellerate Inc.

LBIC has a bright and exciting future ahead of it: the opening of the Francis

Crick Institute will provide another key focal point for life science activity in the local area, while in a wider context, King's Cross St Pancras has seen huge regeneration and is rapidly transforming from a standard transit hub to a destination in its own right. We've certainly come a long way in the past 15 years, developing an international

reputation for excellence and becoming a destination of choice for many life science companies in the capital.

So Happy Anniversary LBIC – here's to the next 15 years and a great team of whom I'm immensely proud!

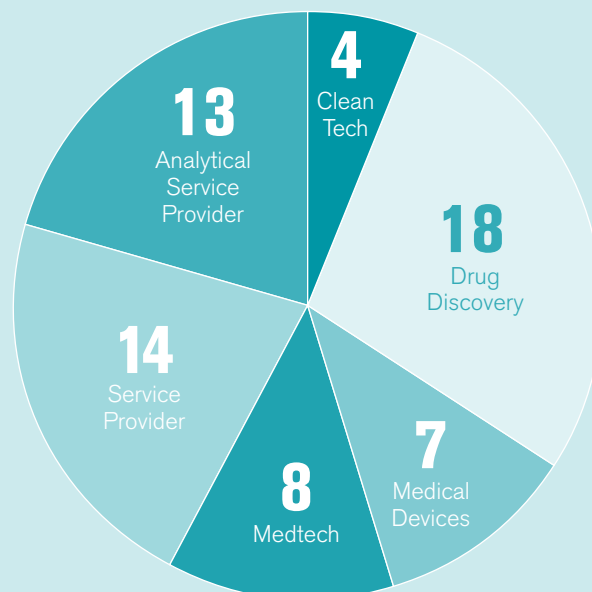
LBIC clients per country

📅 Since 2000



LBIC clients by sector

📅 Current



Synthace: the growth of a synthetic biology company

We are delighted to announce that synthetic biology and bioengineering company Synthace has expanded and now occupies two labs and an office at LBIC, marking an exciting new chapter in the company's development.

Synthace was established by Sean Ward, Markus Gershater and Chris Grant in January 2011 as a spin-out from University College London (UCL). The relationship between LBIC and Synthace began when Sean attended LBIC's first BioPioneer Bootcamp in July 2011, by which time Synthace was already operating independently of UCL. Sean's impressive pitch at the bootcamp helped him win a six-month virtual tenancy at LBIC and since

then Synthace has gone from strength to strength, including having raised £4.0 million in funding from Sofinnova Partners, SOSVentures, Bioeconomy Capital and other investors.

Synthace engineers biology for applications across health, food, energy and manufacturing and now operates with a team of 18 people. Combining computation, biology and automation the company rapidly develops robust, high-yielding bioprocesses to make bio-based products with strategic partners.

Central to Synthace's technology is Antha, a platform that brings quality by design and design for manufacturing to biological research and development. The company describes Antha as bioscience's

missing link – a high-level programming language for biology that easily links lab equipment, protocols and processes. By linking everything, Antha allows vast and speedy development, enhancing productivity for any bioscience from pure research to volume manufacture.

In October 2015, Synthace announced research collaborations with US companies Dow AgroSciences, to use Antha to improve and develop crop protection products, and Merck & Co. to develop a new biomanufacturing platform.

Learn more at www.synthace.com and www.antha.com



SYNTHACE

Beta Analytic

World leader in biobased content testing



Beta Analytic is an ISO/IEC 17025:2005-accredited testing laboratory founded in 1979 and headquartered in Miami, Florida.

The world leader in carbon-14 analysis for applications in archaeology, geology and hydrology, the lab also provides precise biobased content measurements and technical expertise to top level R&D specialists, engineers, manufacturers and governmental institutions across the globe. The facility at LBIC enables the company to have a strong presence in Europe and increased proximity to its European clientele.

Beta Analytic does all biobased content measurements in-house using the radiocarbon method. This dependable and foolproof test method borrows the principles of carbon-14 dating to define the percentage of carbon derived from renewable sources as opposed to fossil sources in all solid, liquid and gaseous samples.

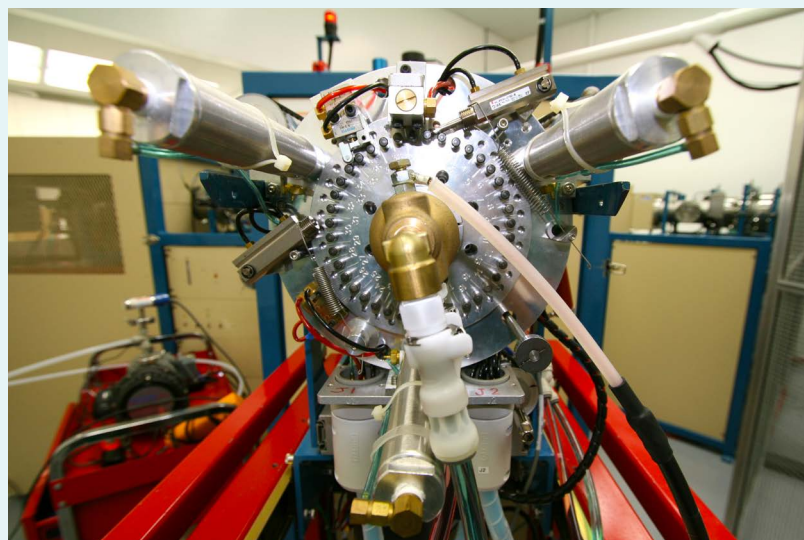
Multiple Accelerator Mass Spectrometers (AMS) ensure the highest precision and accuracy and allow Beta Analytic to routinely deliver results and quality assurance reports online in 3-5 business days. The service includes high-quality customer support and unlimited expert technical consultation.

In 2008, the company was awarded the ISO/IEC 17025:2005 accreditation, which is universally recognised as the highest level of quality a testing facility can achieve. This certifies that the lab possesses the technical expertise and quality management systems essential

for providing consistently accurate results.

Today, Beta Analytic is established as the world's largest radiocarbon dating and biobased content testing facility. Its commitment to accuracy, reliability and excellence is recognised worldwide.

More information on Beta Analytic's services can be found at radiocarbon.com and at betalabservices.com



Accelerator mass spectrometer (AMS)

Accelerating the commercialisation of synthetic biology

Dr Stephen Chambers, CEO of the Innovation and Knowledge Centre for Synthetic Biology (SynbiCITE), discusses the centre's role in translating research exploiting synthetic biology into new products and services.

Based at Imperial College in London, SynbiCITE is the UK's national centre for the commercialisation of synthetic biology. SynbiCITE is funded by the UK Research Councils, EPSRC and BBSRC, and Innovate UK as an Innovation and Knowledge Centre (IKC) for Synthetic Biology.

The prime objective of SynbiCITE is to accelerate and promote the commercial exploitation of synthetic biology research and technology. SynbiCITE is creating a nucleating point for this rapidly emerging industry capable of delivering sustained and substantial benefits to the UK economy.

SynbiCITE is a unique public-private collaboration of the UK's leading academic institutions and industrial partners, ranging from start-ups to large multinational companies, and supporting organizations including the Governments of Northern Ireland, Scotland and Wales and the Greater London Authority.

SynbiCITE has a number of resources available to all its academic and industrial partners to use for the translation of their research into new products, tools and processes. These resources have been assembled to create an innovation platform specifically tailored to translating synthetic biology research. Would-be entrepreneurs are provided with a series of innovation programmes to accelerate the commercialisation of their synthetic biology research.

The innovation programme includes: education and training, funding for proof of concept and development of prototypes, and business support. An important feature of the innovation programme is the access it provides to laboratory facilities and in particular the DNA foundry. This allows the translation of ideas and designs, as well as the generation of products and critical data, to advance the technology and to remove uncertainty and risk in the process.

Innovation educational programmes include Lean LaunchPad for Synthetic Biology and the 4-day MBA, which have been specifically designed for would-be entrepreneurs looking to start their own companies in synthetic biology. Training in Lean LaunchPad methodology includes evidence-based entrepreneurship, customer discovery and building a business model canvas – all to equip the prospective entrepreneur with the groundwork for building a sustainable business.

Funding opportunities are available to accelerate and enhance innovation in synthetic biology that meet clear selection criteria and can demonstrate significant commercial potential.

Support for innovation at different stages of translation is provided through Proof of Concept (PoC) and Development of Prototype (DoP) awards.

Currently located at the Imperial College Incubator, the laboratory facilities at SynbiCITE include the equipment to explore the commercial potential of synthetic biology. These labs allow researchers and companies to rapidly evaluate new ideas and designs, collecting robust data, to advance the technology, removing much of

the risk and uncertainty in the process. SynbiCITE is staffed with a team of highly experienced scientists to help its partners manage their research projects from concepts to commercialization.

SynbiCITE is also home to the DNA Synthesis and Construction Foundry. Funded by the research councils (RCUK) 'The Foundry' is at the core of SynbiCITE's facilities hub, providing a suite of state-of-the-art robotic equipment supplying automated end-to-end design, construction and validation of large gene constructs, critical to the ability to effectively translate academic research into industrial products and services.

A goal for SynbiCITE is to help both large and small UK companies grow



through the adoption of synthetic biology, while at the same time facilitating new companies to fully exploit this new technology in a safe and responsible manner. SynbiCITE has amongst its partners many of the UK's leading synthetic biology companies, which are already benefiting from its innovation programmes.



Px HealthCare launches mobile cancer support app



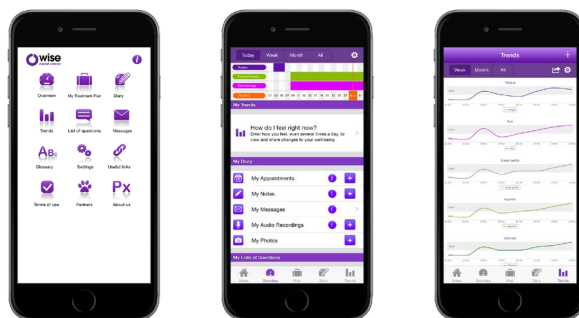
Px HealthCare, the patient experience company optimising outcomes in oncology, is the prime developer of validated, mobile apps to support cancer patients during and after medical treatment. It collects and analyses the anonymised, real-time patient reported data to improve clinical outcomes in cancer.

Established by medical scientists in The Netherlands in 2012, Px HealthCare recently moved its headquarters to the London BioScience Innovation Centre.

Px has developed the only

validated, personalised medical support platform for cancer patients, called Owise, which has been demonstrated to improve the patient-physician relationship. Originally developed in the Netherlands but about to be launched in the UK, the award-winning

mobile app 'OWise breast cancer' has been independently assessed, revealing that 90% of the patients and 90% of the treating clinicians recommend Owise to breast cancer patients. With the widespread use of smartphones, Owise is designed to support patients as part of their everyday life during treatment. NHS England recently selected Owise to be part of its Innovation Accelerator, a fellowship programme aiming to deliver on the commitment set out in the NHS Five Year Forward View published in October 2014.



Domainex expands and partners with Imperial on cardiac project

Domainex is expanding all aspects of its drug discovery service business including biology, analytical chemistry and medicinal chemistry.

To support the expansion, Domainex and Aviva Investors are planning to invest several million pounds in a new research

building at Chesterford Research Park, Cambridge.

Domainex has also partnered with Imperial College London to discover new treatments for myocardial infarction (heart attack). Domainex will undertake studies on the enzyme identified by an Imperial

research group as playing a key role in cardiac muscle cell death. The Imperial group has already received a £3m grant from the Wellcome Trust Seeding Drug Discovery programme.



Chesterford Research Park in Cambridge

Visible Perfume

by Fabrican

The latest innovation from Fabrican Limited, the creator of Spray-on fabric and whose research laboratory is based at the London BioScience Innovation Centre, is a solvent-free, hypoallergenic and reusable Visible Perfume, delivered from an aerosol.

Using a base of essential oils and cotton fibres, allied with Fabrican's patented instant Spray-on fabric technology, this ground-breaking way of creating fragranced products means that perfumers can experiment with new, exciting notes that have, until now, proven challenging for the perfume industry. The oils have a dual function: as well as serving as a binder for the fibres, they also impart the all-important scents that are seamlessly integrated into the patch.

Visible perfume can be applied to human skin as a patch, perhaps taking the form of a temporary decorative tattoo. As the fragrance is micro-encapsulated in a fabric, it doesn't react with the skin in the same way as a conventional liquid perfume. This opens the

opportunity to introduce a much greater range of oils and essences, many of which lose their inherently appealing fragrance because of the way they react with the natural oils in our skins.

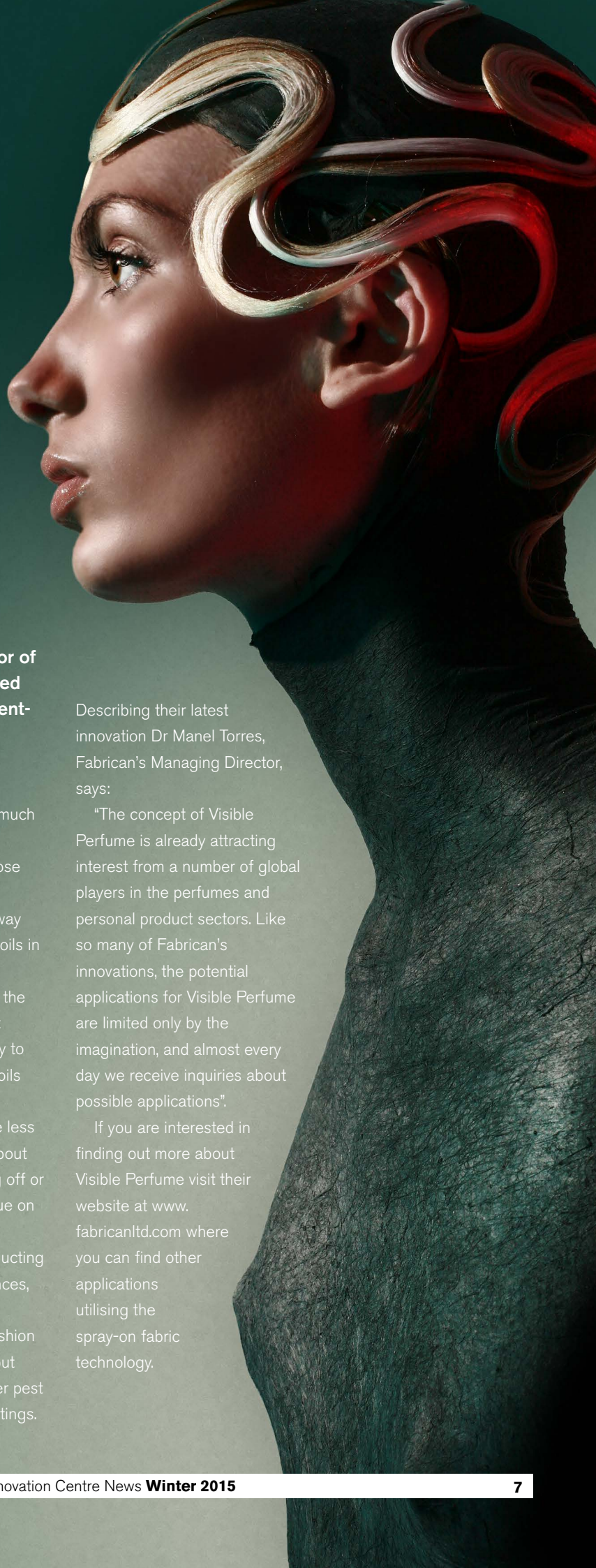
The fabric can also hold the fragrance for longer than it would last if applied directly to the skin; this is due to the oils evenly dispersing in the formulation. There is hence less need to reapply or worry about the fragrance fading, going off or leaving an unwanted residue on clothing.

Fabrican is already conducting trials with a range of essences, and exploring possible applications not only for fashion and fragrance producers, but also as a new way to deliver pest repellents and medical coatings.

Describing their latest innovation Dr Manel Torres, Fabrican's Managing Director, says:

"The concept of Visible Perfume is already attracting interest from a number of global players in the perfumes and personal product sectors. Like so many of Fabrican's innovations, the potential applications for Visible Perfume are limited only by the imagination, and almost every day we receive inquiries about possible applications".

If you are interested in finding out more about Visible Perfume visit their website at www.fabricanltd.com where you can find other applications utilising the spray-on fabric technology.



LBIC: Where enterprise comes to succeed

The London BioScience Innovation Centre (LBIC) provides a focus for life sciences activity in the UK capital, offering laboratory, office and meeting room facilities of an exceptionally high standard and a professional front door that cannot fail to impress. LBIC also offers a popular Virtual Tenancy option for those companies who do not currently require on-site physical space.



Virtual client offer

Virtual tenancy at LBIC is an excellent choice for companies looking for a low-cost way to establish a presence in the UK capital. Virtual clients gain the advantage of a central London address and access to a community of life sciences professionals as well as a range of other benefits.

Client benefits

- Reception services
- Full business support package via the LBIC Business Support Network
- Regular invitations to events, training and seminars
- Complimentary 12 months' One Nucleus membership with access to its Purchasing Scheme
- Presence in LBIC marketing and communications
- Access to Royal Veterinary College services and equipment, including contract research, diagnostics and imaging
- LBIC's hot desking facility means you can rent a permanent desk in a shared office, or simply pay by the hour as needed

Meeting rooms and conference facilities

LBIC offers a number of meeting rooms and conference facilities for client use or occasional hire by non-resident companies. Catering can be provided upon request.

Contact us at lbic@rvc.ac.uk or
Tel: +44 (0) 20 7691 1122 to see
how we can help.

Contact us

LBIC has been supporting life sciences companies since 2001. Today we host more than 60 companies, ranging from entrepreneurial start-ups to more established UK companies and overseas subsidiaries from Europe, North America and Asia Pacific. The Centre is owned



and operated by the prestigious Royal Veterinary College, one of the independent Colleges of the University of London.

The Centre is a 10-minute walk from St Pancras International for Eurostar services and the site of The Francis Crick Institute.

Our management team comprises:

Dr Ken Larkin
Chief Executive

Patricia Latter
Deputy Director

Janette Pickles
Operations Manager

Lucy Garnsworthy
Communications Manager

For further information, or to enquire about our services, contact:

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Would you like to feature in our newsletter?

If you would like to contribute to a future issue of LBIC News, contact **Lucy Garnsworthy** on +44 (0) 20 7691 0982 or email lgarnsworthy@rvc.ac.uk



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