



catalyst

Cambridge Science Park Newsletter Summer 2017



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parklife



Augmented reality has the potential to equip surgeons with 'X-ray vision'

Cambridge Consultants takes augmented reality into the operating theatre

Cambridge Consultants is exploring how augmented reality (AR) could transform surgery through a surgical system that might lower the risk involved in operations – and lead to better results for patients.

Using Microsoft's HoloLens headset, Cambridge Consultants has developed a highly intuitive AR surgical system that equips surgeons with 'X-ray vision' – making it possible to see inside a patient in real time, while operating

through minimally invasive openings. Having the correct information in the right place at the right time is essential for successful surgery, yet the operating theatre is typically a very busy environment with limited access to any type of real-time imaging. The advanced system demonstrated by Cambridge Consultants also uses data visualisation to give surgeons easy access to patient records and operating information while they work.

www.cambridgeconsultants.com

A new travel hub opens at Cambridge North Station

Trains began running from Cambridge North Station on 21 May, connecting Cambridge Science Park to services travelling between London, Ely and Norwich.

The £50 million new station has three platforms and a 450 square-metre-building based on the Game of Life design by Cambridge mathematician John Conway. The station, which is expected to be used by 3,000 passengers per day, has parking spaces for 450 cars and 1,000 bikes. Solar panels on the cycle park provide 10% of the station's total power.

A direct service to Stansted International Airport is expected to be introduced in 2019.



Cambridge North Station (image courtesy of Travel Plan Plus)

The Wellness, Transport and Food Park Expo at Cambridge Science Park on 11 May

Employees at Cambridge Science Park had the opportunity to explore greener, cheaper and faster ways to get to work at the Wellness, Transport and Food Park Expo held on 11 May at the Trinity Centre.

A range of stalls provided information on travel options including the guided busway service, Cambridge North Station, car sharing, pooled bike schemes and green taxis.



The Travel Plan Plus stand

Bradfield Centre opens for business

The Bradfield Centre welcomed its first members on 3 July, the start of a collaborative entrepreneurial community of technology start-ups and scale-ups housed in a stunning building at the heart of the Cambridge Science Park. The new Centre is expected to become the gateway and focal point for Cambridge's ever-expanding technology cluster.

Designed to appeal to entrepreneurs, researchers and students, the Centre will become home to innovative high growth start-up and scale-up businesses. These will work alongside project teams from more mature, innovative businesses



The Bradfield Centre (cgi)

developing exciting new products. The Bradfield Centre was part-funded by the Department for Business, Energy and Industrial Strategy (BEIS) and is managed by workspace operators Central Working on behalf of Trinity College. The Centre is the largest

of Central Working's global network of rapidly expanding membership-based communities.

Members have access to spacious communal facilities throughout the

40,000 sq. ft. building which has capacity for over 600 people. Non-members are welcome to use the café and auditorium.

www.cambridgesciencepark.co.uk/company-directory/bradfield-centre



Harren Jhoti, CEO, Astex

Astex celebrates as cancer drug receives US marketing approval

Astex Pharmaceuticals, a pharmaceutical company dedicated to the discovery and development of novel small molecule therapeutics for oncology and diseases of the central nervous system, announced in March that its long-standing pharmaceutical collaborator, Novartis, had received US Food and Drug Administration (FDA) marketing approval for Kisqali® (ribociclib, formerly known as LEE011) as a first-line treatment for breast cancer.

Kisqali® (ribociclib) is a selective cyclin-dependent kinase inhibitor, a class of drug that helps slow the progression of cancer by inhibiting two proteins (CDK4 & CDK6) which, when over-activated, can

enable cancer cells to grow and divide quickly.

Under the collaboration with Novartis, Astex scientists, (based at the company's research laboratories in Cambridge UK), were responsible for solving the crystal structure of the key cancer target protein CDK4. This was an important scientific breakthrough that no other group had previously been able to achieve, leading to a peer-reviewed publication in PNAS. Working with Novartis, Astex then applied its structure-based drug discovery technology in the collaboration that led to the discovery of LEE011, (now known as Kisqali) which was then taken forward into clinical trials.

www.astx.com

Aviva invests in Owlstone Medical Breath Biopsy Platform

Owlstone Medical, a diagnostics company is developing a breathalyser for disease, and has secured an investment from Aviva Ventures, the venture capital arm of Aviva plc, a global leader in insurance.

The investment takes Owlstone Medical's total funding to \$23.5 million USD (£19.3 million GBP) since its spin-out from Owlstone Inc in 2016 and will be used to drive test adoption and commercialisation of the company's Breath Biopsy® platform.

Owlstone Medical is leveraging proprietary and proven Field Asymmetric Ion Mobility Spectrometry (FAIMS) technology in its disease breathalyser product range. FAIMS measures volatile organic compound (VOC) metabolites in patient's breath or biospecimens which are specific to disease. Measurement of VOC biomarkers allows non-invasive diagnosis of disease at a very early stage, enabling more effective treatment and better patient outcomes.

Ben Luckett, Managing Director at Aviva Ventures, said: "Our intention is to invest in unique and innovative start-ups that look to disrupt the future

of insurance. Owlstone Medical is a great example of this. Its strong team and ground-breaking product gives us every confidence in its future success."

www.owlstonemedical.com



Owlstone Medical's FAIMS platform for non-invasive detection of disease biomarkers in breath

Pressing ahead

Empowering the next generation of smartphone displays with Cambridge Touch Technologies

Looking to bring affordable pressure-sensitive multi-touch technology to billions of smartphone and tablet users worldwide, Cambridge Touch Technologies is a company with a vision. Catalyst spoke to CEO and co-founder Corbin Church about the story so far and the road ahead.

In a little over ten years, interacting with our smartphone or tablet screens via touch technologies has become a habitual act ingrained into the fabric of our daily lives. From bus stops to boardrooms, the way we organise our schedules, manage our relationships and stay connected to the wider world is defined by the swipe or tap of the screen never far from our sides.

Despite the rapid and almost ubiquitous uptake of the smartphone, manufacturers have to date been unsuccessful in their attempts to add the obvious next dimension to the touchscreen offering: pressure-sensitive touch technology which can be used with multiple fingers. Which is, in essence, the reason behind the formation of Cambridge Touch Technologies (CTT), as CEO and co-founder Corbin Church goes on to explain.

"Myself and the other two co-founders [Arokia Nathan, Chief Technology Officer, and S.B. Cha, Chairman] have each been in this industry for 15 to 20 years now, and we spotted an opportunity," he says. "We certainly weren't the first people to come up with the idea of being able to measure the pressure of finger touches on a mobile phone – many have tried but failed to make it a commercial reality. We came together in 2011 because we believed that our combined experience gave us a real understanding of what was required to make pressure-sensitive technology interesting and feasible in terms of mass production."

Currently, touchscreen technology is based around an approach known as projective capacitive (PCAP) touch, to be found in all the leading smartphone and tablet brands. A piezoelectric film is incorporated into the display stack-up which changes its properties and delivers a charge when a touch is applied to it. With the correct sensing electronics, the level of charge delivered is proportionate to the amount of pressure applied, which makes pressure-sensitive technologies an achievable reality. Nevertheless, the mainstream adoption of such a technology had proved elusive until the launch of the iPhone 6s in September 2015.

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We want to be one of the key technology enablers for cost-effective, scalable, mass-deployed 3-D touch technology.

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"By that point, we'd been working on our pressure-sensitive technology for a few years and had some interesting IP and had made some IP filings, but this changed everything," says Corbin. "The fact that Apple, the world's biggest brand, had decided to invest in this kind of technology was really positive in terms of how it is perceived as an integral part of a smartphone's capabilities. It generates demand."

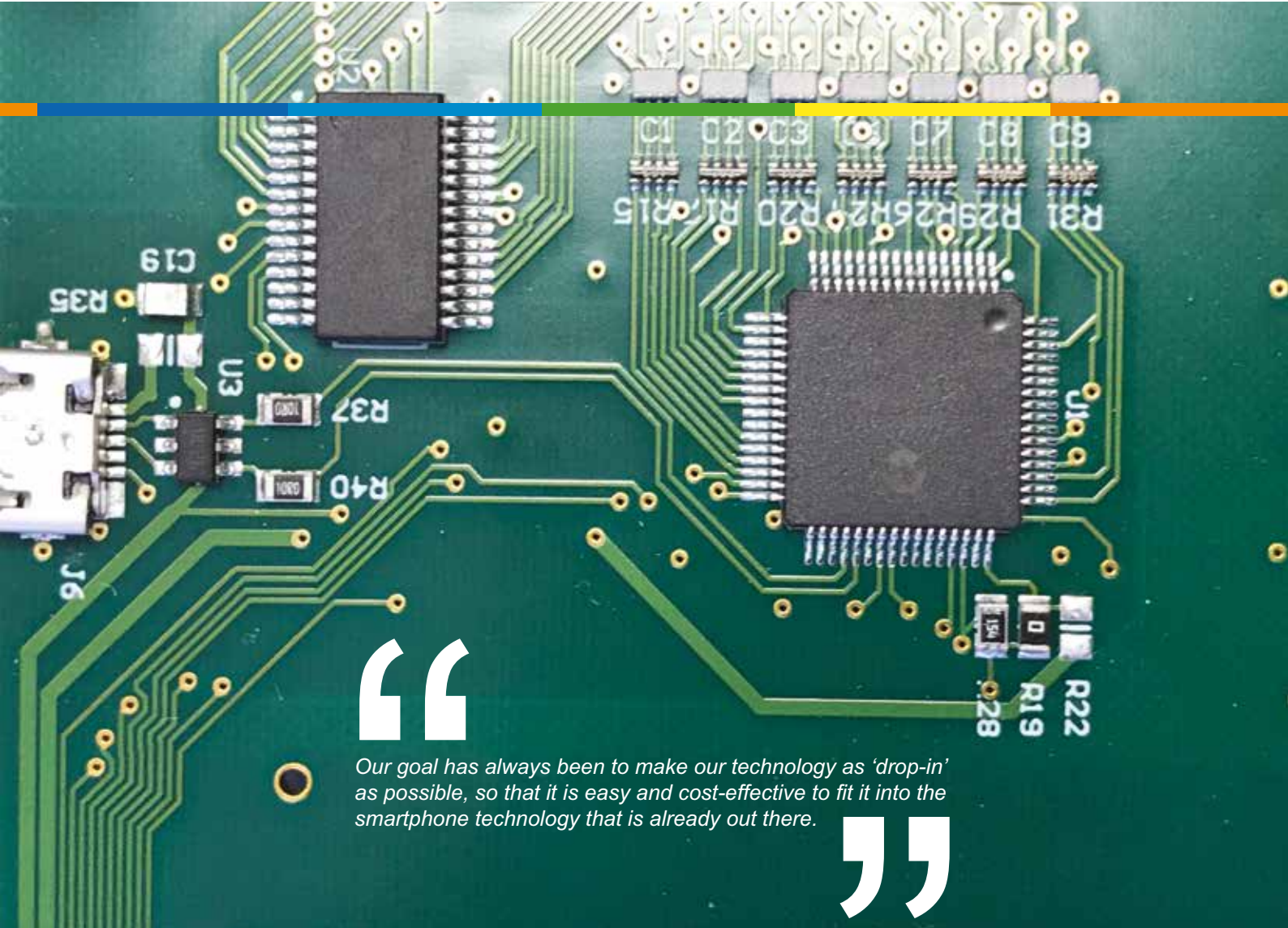
As with most first-generation technologies, however, there are some significant drawbacks to Apple's 3-D touch system, as Corbin points out. "It's a very complex technology which makes it not very scaleable in terms of product size," he says. "At the moment, it's not incorporated in anything larger than a smartphone. It's also very expensive, so that means it's only going to be available in a few premium smartphone models such as the latest Apple or Samsung products."



Assembled 4.3" force sensing touch platform. The thin glass force sensor is seen at the top, and built using a high volume manufacturing process for smartphone touch panels (Photo courtesy of Cambridge Touch Technologies)

In contrast, the 3-D Multi-Touch technology devised by CTT is simpler, more powerful, more scaleable and cheaper. Using a low-cost force sensor that needs no external power, it can detect both force and location of touch at the same time without adding any extra thickness or weight to the display. Unlike Apple's offering, the 3-D Multi-Touch approach also responds to two or more touches simultaneously, offering potentially huge new opportunities to developers looking to create powerful multi-finger apps for gaming and other sectors.

"We consider ourselves as a next-generation technology which is more capable than what is currently on the market because we have multi-



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Our goal has always been to make our technology as 'drop-in' as possible, so that it is easy and cost-effective to fit it into the smartphone technology that is already out there.

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CTT technology resides inside a silicon integrated chip (Photo courtesy of Cambridge Touch Technologies)

touch capability,” says Corbin. “Our approach is less complex, so it’s simpler, cheaper and uses less power, meaning longer battery life. It’s also highly manufacturable. This means it can be scaled and will work not just in smartphones, which is where Apple is limited to today, but it could also go into tablets, automobile displays and so on. Our goal has always been to make our technology as ‘drop-in’ as possible, so that it is easy and cost-effective to fit it into the smartphone technology that is already out there. That’s the key to getting it adopted on a truly global scale.”

Currently, CTT is in the initial commercialisation stages and is working with well-known smartphone manufacturers and their supply chains to develop the engineering samples which are a precursor to market entry, expected as early as next year. The company expects to grow its current team of 12 to about 15 to 20 employees within the next six months. As it draws towards its first commercial application, it’s an exciting time for CTT, but not one without challenges.

“The smartphone business is notoriously fast with extremely short design cycles,” explains Corbin. “So we’re always trying to move as fast as our customers want to move, matching those very short design cycles. And to do that, we need to be able to grow and to find the right people to work with us – even in a great talent pool like Cambridge, that is not always easy.”

Nevertheless, the opportunities are vast, as Corbin points out when describing at where he hopes CTT will be in five years’ time. “I think if we can hit the price points we’re aiming for, then you’re going to start seeing this kind of 3-D pressure-sensitive touch technology being adopted in all kinds of devices, not just in premium phones,” he says. “We want to be one of the key technology enablers for cost-effective, scalable, mass-deployed 3-D touch technology, working with multiple OEMs [original equipment manufacturers] and partnering with them (and their app

developer ecosystem) to develop improved and exciting new experiences for people using their smart devices.”

It’s an ambitious vision, but one which has been endorsed by some big hitters in the investment world. As a VC-backed company, CTT’s three current investors are Cambridge Enterprise (the funding arm of the University of Cambridge), Amadeus Capital Partners (co-founded by Cambridge hi-tech entrepreneur Hermann Hauser) and Parkwalk Advisors of London.

Aside from smartphones and tablets, Corbin also sees huge potential for 3-D touch technology in other sectors. “Because the technology measures how hard the sensor is touched, it could be a really important safety mechanism to gauge whether an instruction is deliberate or not,” he says. “So this could be really valuable in automotive displays, or in medical or defence applications for example.”

Having begun in what he describes as a “classic, nimble start-up” model, CTT is ready to move to a new level of exposure and influence in one of the world’s most valuable markets. “It’s exciting to be developing technology that we believe will be adopted on literally hundreds of millions, if not billions, of touch devices,” says Corbin.

“It’s going to influence how people interact with their devices and in small ways it will help improve their day. They may get some added convenience, they may be using a 3-D touch app that makes them smile, they may save some battery life which helps keep them connected for longer. Once this kind of technology becomes ubiquitous, then we will really see what it’s capable of.”

www.camtouch3d.com

Grid unlocked

Creating a versatile energy marketplace with Origami Energy



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We think of it as similar to the moment when the telecoms industry went from analogue to digital. We are on the verge of enormous change and we can be a leading part of it.
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Oliver Burstall, Chief Technology Officer

Using intelligent technology to match supply against demand, Origami Energy is working to make the energy market cheaper, greener and more secure. Catalyst spoke to Chief Technology Officer Oliver Burstall to find out how.

“We’re creating a marketplace for the distributed energy world,” explains Oliver from the Origami Energy Technology Office at 140 Cambridge Science Park. “You can think of it a bit like an Amazon or an Airbnb for the energy sector, to allow buying and selling the inherent flexibility found in nearly all energy assets.

“These could be energy generators, such as a wind turbine, or energy consumers, like a refrigeration unit, for example. The amount of energy generated and the amount of energy required across assets is variable, so we’ve set the objective to build a system that optimises the fluctuations in supply and demand.”

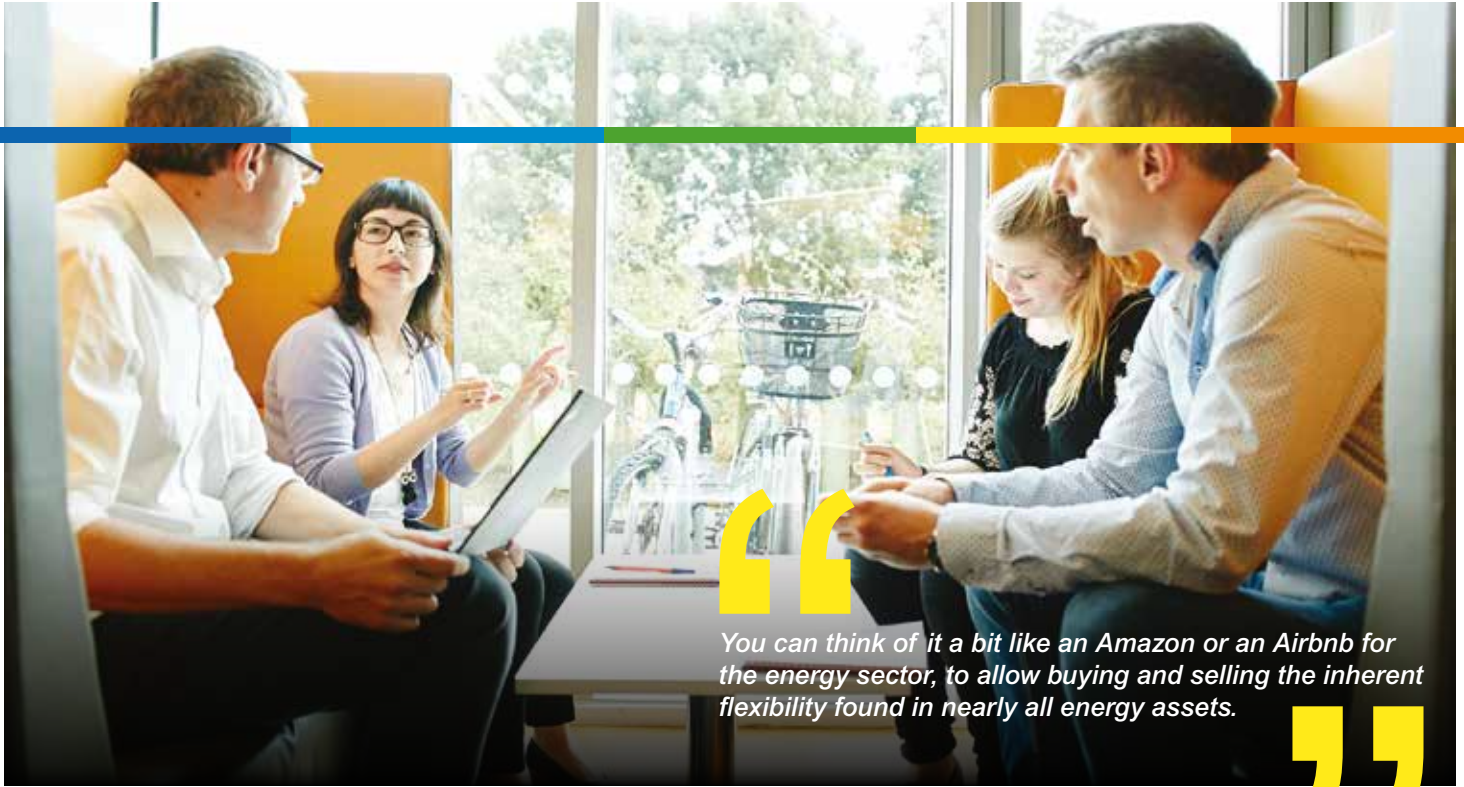
It’s an ambitious plan devised in response to some very specific challenges the industry currently faces. “The ever-increasing deployment of renewable energy generation across the UK network is a very important change that the current system is not yet equipped to serve,” says Oliver. “Renewable energy sources such as solar and wind are unpredictable, therefore inflexible. We’ve also seen an increased volatility in the market of electricity prices and there are increased constraints within the network.

“All these factors mean that flexibility becomes more and more valuable at the end of the wires where you can alter the way electricity gets used in terms of time and space.

“At Origami Energy, we believe the solution to those challenges is a marketplace that facilitates flexibility trading. A marketplace to connect flexible assets, such as a generator or storage or demand system with flexibility, to market players who want to use that flexibility. Currently that’s primarily National Grid for balancing services, which is trying to keep the network stable in response to changing demands. But there are also people who manage their own private wire networks and substations within big industrial or commercial areas.”

This kind of flexibility is only crudely met by energy aggregators, who typically use one kind of asset to supply flexibility to specific end users. In contrast, Origami Energy has created a system that is able to respond quickly to volatile market changes and connect diverse supply and demand assets. It’s a highly robust and secure software platform held in a private cloud alongside some key hardware technology implemented across the network.

“A marketplace like Amazon works because we’ve all got a mobile phone or laptop as a means of interacting with the platform,” says Oliver. “But the vast majority of the energy network, and particularly the electricity system, is not that sophisticated. Due to the very few monitoring points,



You can think of it a bit like an Amazon or an Airbnb for the energy sector, to allow buying and selling the inherent flexibility found in nearly all energy assets.

Origami's team in the Cambridge Office

there is limited visibility of what is exactly happening in the system. In the industrial network space, many assets are monitored only once every six months, therefore the number of data points available for managing constraints and local balancing is very small. Generally monitoring systems have no built-in communications capabilities and no decision-making intelligence to react to changing conditions."



Energy router

equipment," says Oliver. "It can talk to virtually any asset. Our software platform talks to the energy router, finds the best way of using the assets and tells the energy routers what they need to do in order to maximise that value."

One of the challenges that the Origami system is responding to is the new way in which energy generation is modelled across the network, as a result of the shift towards renewables. Traditionally, electricity is generated at the geographical centres of the network and relies on coal-, gas- and nuclear-powered large rotating machinery that inherently has a lot of inertia. Designed to generate electricity at a constant frequency of 50 Hz, it is slow to start up and slow to stop.

Renewable energy represents a very different model. Wind and solar farms are often located at the geographical edges of the network and rely on electronic generation technology with very little inertia, but, are subject to changeable atmospheric conditions. "As more and more electricity is generated by renewable sources, there is less inertia in the system to help maintain frequency," explains Oliver.

Origami Energy's hardware installed in the field bridges this gap by providing crucial interaction points right across the network. Known as an energy router, this is a high-quality smart meter with communication and processing capabilities within the network to enable local control and decision-making. Overlaying this, a cloud-based software platform provides high-level control and optimisation of the system at a macro level.

"Our energy routers have a range of built-in capabilities so that they interact with 80-90% of the standard communication interfaces that are used in industrial

"This is a challenge for National Grid, which uses system frequency as a measure of balance. A simple example of the way in which an asset owner might receive revenue as a result of working with Origami is by allowing the flexibility of their asset to be provided to National Grid to help with system balance. But the fact that we can control the asset in near-real-time means that the same asset might be traded on the wholesale electricity market by a trader. It's all about providing flexibility in an intelligent fashion."

Origami Energy, which achieved its first £4 million round of funding in May 2014, certainly does not follow the typical tech start-up narrative. "We didn't have some core piece of IP that came out of the University or somebody's inventive mind", says Oliver "The original investment was based purely on the commercial case and our ability to engineer a solution. To many investors, that is actually a more attractive proposition."

After the development of an alpha prototype, the company secured a £13.8 million second round of funding in February 2016 and now operates across two main locations: technology and operations at Cambridge Science Park and commercial and corporate teams based in London, with a custom test facility located just north of Cambridge. Its technology has been deployed around the UK network for more than 18 months, the first 12 months as field trials, followed by a revenue-generating model since the start of 2017.

"The biggest challenge for Origami Energy is uncertainty," explains Oliver. "The market we are working in moves very, very slowly. If you consider hardware decisions, network operators change their assets at a rate of 2% per annum, so that means many assets are 50 years old before they are replaced. There's massive inertia in the hardware but there's also a great volatility in the actual markets. Most of the big actors, such as National Grid, are monopolies and it's also a highly regulated industry. In this environment, change doesn't happen overnight."

Nevertheless, Oliver is confident the company's solutions represent a disruptive platform to meet growing needs. "In five years' time, we expect to be critical national infrastructure in the UK, the place you go to if you want to manage flexibility and to optimise use of assets. Rather than providing one part of the solution, we build an all-encompassing capability that offers real versatility for the future. We think of it as similar to the moment when the telecoms industry went from analogue to digital. We are on the verge of enormous change and we can be a leading part of it. That's exciting."

www.origamienergy.com

Following the beat



Wearable heart monitoring technology and artificial intelligence from Cambridge Heartwear



Founders Dr Rameen Shakur and Dr Robert Lowe

Cambridge Heartwear is hoping to increase detection of irregular and dangerous heart rhythms and reduce the impact of stroke with an innovative new monitoring device, coupled with cutting-edge artificial intelligence algorithms to make diagnosis in real time. Catalyst spoke to the co-founder Dr Rameen Shakur about med-tech, heart monitors, clinical problem-solving and the Cambridge scene.

Catalyst: Cambridge Heartwear is developing a wearable medical device to detect irregular heartbeats – can you tell us how you got started?

Rameen: My background is as a clinical academic in cardiovascular regeneration and cardiology at the University of Cambridge. My specialist interest is in electrophysiology and inherited cardiac disorders of the heart. In particular, I am interested in developing new clinical pathways, therapies and in understanding the mechanisms to treat the underlying biology behind these not-so-rare disorders.

Why are irregular heartbeats so important? We know from national and international data that over 80% of people who either sadly die or are left with severe neurological deficits following a stroke had an irregular heartbeat as the underlying cause. The association is very strong, with 1-2% of the UK's over-65-year-olds having such a rhythm. Worryingly, this figure is set to rise to 5% by 2025, due to obesity and the poor lifestyle epidemic. This is a global problem. However, very often, we only diagnose such rhythms when someone has already had a stroke.

Consequently, it makes sense to pick up this condition before someone has a stroke and put preventative treatment in place. Unfortunately, the technology and clinical care systems we have in place aren't really doing this – so solving this clinical problem was the reason for the birth of Cambridge Heartwear.

Catalyst: Can you say a bit more about the way this problem is currently approached in the NHS?

Rameen: We measure the rhythm of the heart through an electrocardiogram [ECG]. If we want to take an ECG as someone is going about their daily business (rather than while resting in a GP surgery), we

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My clinical and active research background has helped me to see the wood for the trees – I feel this is an important skill set to have in a med-tech company.

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need to use a device called a Holter monitor. This requires fixing 12 leads on to the patient's chest and carrying around this rather cumbersome device that only has a few hours' power.

To fit a Holter monitor you need to be referred by your GP to a cardiology department, which could mean a three- to four-week wait if you're lucky. Then you need to have that data interpreted – it could be more than a month-and-a-half between the decision to take an ECG and actually having a diagnosis as to whether atrial fibrillation is present or not. The data it provides is good, but because you don't wear it for long, the irregularity can be missed. And it's also a very expensive piece of equipment; typically they cost around £1,500- £2,000.

Catalyst: So how did you come upon an alternative to this kind of approach?

Rameen: The Holter monitor seemed rather arcane and expensive to me and it got me thinking. I'm not an engineer, but given my clinical experience I knew the problem and the process. So I thought: "Why not try to make even just a proof-of-concept device that would be more accessible to patients?" Something that they could wear, and, most



We see big companies all around us on this site that have come from very small beginnings, and that's very inspiring.

importantly, would give us real-time data for heart rhythms in three individual positions around the heart. So that's what I did.

It's a very different kind of device. There are no leads, so it's much more comfortable to wear and easy to fit. Everything is enclosed in a waterproof casing, so it's very robust and the data produced is much more sensitive as we have used our knowledge of clinical anatomy and electrophysiology to place leads for maximal signal output. This data is wirelessly streamed in real time to the cloud where our next bit of innovation, the use of novel algorithms and artificial intelligence, is able to identify aberrant rhythms just as a physician would. Now we're the only company with not just one but multiple independent sensors to measure heart rhythms on a wearable device. That means we can triangulate the readings to produce much more specific and sensitive data.

Catalyst: Can you say more about these novel algorithms and artificial intelligence?

Rameen: It was obvious to me from the start that analysing the data effectively was one of the most important issues. If you're wearing an ECG over a period of time, you are collecting a huge amount of data. And finding an irregularity amongst all the normal rhythms can be like looking for a needle in a haystack. I wanted to automate this process, helping the physician and patient in getting a diagnosis and therefore starting on treatment.

That's the reason I began a research collaboration with Professor Roberto Cipolla, who is a world leader in computer vision and real-world applications. As two academics and with students from the Engineering Department, we discussed the problem and we came up with the solution. It led to us founding Cambridge Heartwear and we have now developed some powerful algorithms that are able to interpret this data on the cloud as an automated system.

Catalyst: What will this mean for the patient and the doctor from a clinical perspective?

Rameen: What we propose is to quicken the diagnostic process and be disruptive in the clinical care process. We have made this device for use in primary care and to therefore offload the burden for cardiology departments. The device will gather real-time sensitive and specific data and it interprets this data to spot whether you have an irregularity or not, without the need for a specialist assessment. This information will be

accessed immediately by your GP, who can then instigate treatment or refer you to a cardiologist if necessary. It saves time, it's user friendly and it's also important for our dream of having this in the NHS as a screening tool, especially given it is so much cheaper.

Catalyst: What stage are you at now in the product development cycle?

Rameen: We've already conducted sensitivity and specification tests to validate our algorithm and it has an accuracy level in excess of 98%. We've tested it on a variety of patient data and we know it works. So now we're in the process of trying to get our CE [European Conformity] Marking so that we can be sold as an accredited medical device. More importantly, we've built a highly skilled, motivated and interdisciplinary team here in Cambridge, so it's a very exciting time for us. I get a real buzz spending time with such a dynamic team.

Catalyst: The company is called Cambridge Heartwear – is this location important to you?

Rameen: Absolutely. As part of my clinical and academic training, I've trained in other places in the world such as the Mayo Clinic [Minnesota, US], Harvard and Oxford and there is nothing that really compares to what we have in Cambridge and the collaborative spirit you find here. This is important for innovation and research to see the commercial dawn. Here at Cambridge Science Park Innovation Centre it is the perfect environment for us. We see big companies all around us on this site that have come from very small beginnings, and that's also very inspiring.

Catalyst: What's the biggest challenge for you at the moment?

Rameen: For me personally, it has been adjusting to a very different working environment and still trying to juggle my research, clinical work and providing the guidance to the company. My clinical and active research background has helped me to see the wood for the trees. I feel this is an important skill set to have in a med-tech company. It seems that most people in med-tech actually come from the tech side of things or from management. But I think having a very extensive clinical experience of working with patients in the NHS and understanding the deficiencies in our UK and global care pathways allows us to innovate for the future. It means you really understand the medical and the technology sides together. Our device is designed to meet clinical diagnostic needs and to be accessible to patients and physicians – that's the vision that has inspired us and will continue to do so.

parklife connections



Cambridge AWiSE

(Association for Women in Science & Engineering) is a multidisciplinary membership networking organisation composed of individuals from institutions, businesses, associations and other organisations all of whom share the common goal of advancing the interests of women in science, engineering, technology, maths and medicine. Cambridge AWiSE holds regular meetings and events; for details see the website or get in touch.

web: www.camawise.org.uk

email: info@camawise.org.uk

twitter: [@camawise](https://twitter.com/camawise)

linkedin: <http://www.linkedin.com/groups?gid=43043>

Cambridge Enterprise

exists to help University of Cambridge inventors, innovators and entrepreneurs make their ideas and concepts more commercially successful for the benefit of society, the UK economy, the inventors and the University.

web: www.enterprise.cam.ac.uk

email: enquiries@enterprise.cam.ac.uk

Cambridge Network

is a membership organisation. We bring people together – from business and academia – to meet each other and share ideas, encouraging collaboration and partnership for shared success. With over 1,200 corporate members, including start-ups, SMEs and global corporations, Cambridge Network represents the majority of the technology businesses in Cambridge.

web: www.cambridgenetwork.co.uk

email: Claire.Ruskin@cambridgenetwork.co.uk

tel: 01223 300148

Cambridge University Technology and Enterprise Club (CUTEC)

is the leading student-run technology and entrepreneurship society at Cambridge University. Supported by advisors in the local business community, we nurture and enhance the entrepreneurial spirit amongst academics and students and host an annual Technology Ventures Conference that brings together over 300 students, researchers and professionals. Founded in 2003, CUTEC now boasts 4,000+ members worldwide.

web: www.cutec.org

email: info@cutec.org

twitter: [@CUTEC](https://twitter.com/CUTEC)

Chase

(formerly the Cambridge Hi-Tech Association of Small Enterprises) is a lively networking group for entrepreneurs, start-ups, small firms and people interested in business and hi-tech, based in Cambridge.

web: www.chase.org.uk

One Nucleus

is the largest membership organisation for life science and healthcare companies in Europe. A not-for-profit company with more than 470 member organisations across the world (mainly Cambridge and London based), its mission is to maximise the global competitiveness of its members. Its core activities include networking events (from eight to 800 delegates), training, a Group Purchasing Consortium which saves its members £4 million per annum, special interest groups and an international strategy.

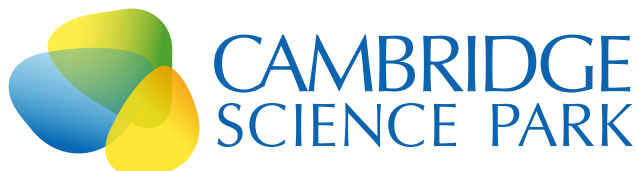
web: www.onenucleus.com

email: info@onenucleus.com

Science Technology Network (STN)

is an online database service that provides global access to an integrated network of the most important and comprehensive chemistry, sci-tech and patent databases from the world's most respected producers.

web: www.stn-international.com



CAMBRIDGE
SCIENCE PARK

The Cambridge Science Park

is managed by Bidwells on behalf of Trinity College.

Cambridge Science Park tenants can post news, events and jobs free on

web: www.cambridgesciencepark.co.uk

Twitter: [@CamSciencePark](https://twitter.com/CamSciencePark)

Facebook: [Cambridge Science Park](https://www.facebook.com/CambridgeSciencePark)

LinkedIn: [Cambridge Science Park](https://www.linkedin.com/company/CambridgeSciencePark)

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Companies based on Cambridge Science Park

- | | |
|-------------------------------|---|
| Abcam 330/200/204 | Espial Ltd 406 |
| Agenus 315 | FlexEnable 34 |
| Amgen 240 | Frontier Developments Plc 306 |
| Arthur D. Little Ltd 18 | GHX UK Ltd 326 |
| Astex Pharmaceuticals 436 | Grant Thornton LLP101 |
| AstraZeneca 310 | Hawkins & Associates Ltd 120 |
| Aveillant 300 | Heraeus Noblelight Ltd 161/163 |
| Bard Pharmaceuticals Ltd 191 | Huawei UK Research Centre 302 |
| Bayer Crop Science 230 | Huber+Suhner Polatis Ltd 332 |
| Beko Plc 12 | Jagex Game Studio 220 |
| Bright Horizons 319 | Johnson Matthey Catalyst 28 |
| British American Tobacco 210 | Linguamatics 324 |
| Broadcom 406 | Mundipharma International Ltd 194 |
| Cambridge Assessment 332 | Mundipharma IT Services Ltd 194 |
| Cambridge Business Travel 325 | Napp Pharmaceutical Ltd 196 |
| Cambridge Consultants Ltd 29 | Owlstone Ltd 162 |
| Cambridge Electronic Design 4 | Philips Research 101 |
| Ceverance 418 | Pragmatic Printing 322 |
| Citrix 101 | Revolution Health & Fitness Club 24 |
| Cryptomathic 327 | Ricardo UK Ltd 400 |
| Dassault Systèmes 334-335 | Roku Europe Ltd 205 |
| DisplayLink (UK) Ltd 140 | Royal Society of Chemistry 290 |
| Dr Reddy's 410 | Sigma Aldrich International Ltd 328/329 |
| Eight19 9a | Spiral Software Ltd 101 |
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Innovation Centre, unit 23,
home to over 30 companies;
for a full list of occupants go to
www.cambridgesciencepark.co.uk

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Working in partnership with managing agents Bidwells, I have been tasked with leading the rejuvenation of the site over the next few years in addition to creating a strong sense of community on the Science Park.

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Jeanette Walker, Director Cambridge Science Park

Viewpoint

Originally from Ireland I came to Cambridge in May 1990. I had only planned to stay for the weekend but a chance meeting with a friend from university led to a job offer at the former Cambridge Instruments Company. I accepted the job and have been here ever since.

Over the 27 years I've been in Cambridge I have worked in international business development roles including Director of Business Development at the Inward Investment Agency which was established in 1997. In this role I was fortunate to travel the world persuading internationally mobile companies to locate their European subsidiaries in the Cambridge area. More recently I was the Project Director for the developers of the Cambridge Biomedical Campus where I devised and implemented the marketing strategy that resulted in AstraZeneca and Abcam moving to the site. I also worked hard to create a sense of place across the campus - an achievement which was recognised in 2014 when the campus won Property Week's prestigious Place Making Award.

At the Science Park my role is proving to be incredibly interesting and varied. From delving into the world of virtual reality to planning outdoor spaces, from presenting to overseas delegations and raising investment for new buildings, since

I started in February no two days have been the same. My ambition is to make the Science Park the best location for people to work and relax, so getting to know the companies and the people who work here has been a priority over the last five months.

Based on a visionary, landscaped master plan, the Science Park is embarking on an exciting new phase in its evolution. Working for Trinity College alongside Bidwells – the Science Park's managing agents since 1972- I have been tasked with leading the transformational developments planned over the next few years in addition to creating a strong sense of community on the Science Park.

These developments include state-of-the-art laboratories and offices, improvements to the transport infrastructure, a range of new amenities such as a hotel, conference and leisure centre, and innovative public areas. I am fortunate to be based at the Bradfield Centre since it opened on 3 July. Not only is the building stunning with its innovative design and views over the lake but the open-plan layout means I am constantly bumping into interesting people. The café, which is open to the public, serves a range of healthy breakfasts, lunches and snacks as well as some not-so-healthy pastries baked on the premises.

In June I launched a Science Park-wide consultation called "It's Your Park". The aim is to give everyone the opportunity to comment on

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There are thousands of smart people working for smart companies on the Science Park. My ambition is for the Science Park to be as smart as the people and the businesses located here.

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the plans we have developed with our team of specialist advisers on transport, landscaping, master-planning and energy as well as amenities and social activities. The consultation will continue over the summer but we've already received hundreds of practical ideas for both short-term and longer-term improvements. The most popular requests have been for a cash machine and more outdoor seating. Many people are not aware of the Science Park's current amenities such as the gym and beauty centre, so I've started "ParkLife" - a short, weekly e-bulletin summarising what's happening in and around the Science Park including special offers and events as well as issues such as road closures. I am excited to be leading the development of a new website which we have commissioned from the Cambridge-based agency OneSpaceMedia. This will incorporate a range of new features in addition to making it easier for people to post and search for jobs, news and events.

One of the biggest issues we are currently addressing is traffic congestion. We have appointed

consultants to develop a transport strategy but we need to encourage people, where practical, to switch to sustainable modes of travel. To this end we are running the Summer Commuter Challenge. Any drivers who try a different mode of transport for three days are guaranteed a prize in the Park's Lucky Dip. Our commuter centre manager is available to help drivers identify suitable alternative modes which may range from using electric bikes to car sharing. The new Cambridge North Station is a great asset to have on our doorstep and we are working with the Chinese company Ofo to ensure we have a good supply of bikes for hire around the Science Park.

What particularly attracts me about the Science Park is the fact we have such a diverse range of companies operating across different sectors and at all stages of development, from start-ups to multi-nationals. I am interested in convergence and the opportunity to apply technologies from one sector to address the challenges in another - for example, the application of machine learning in the discovery of new medicines.

We have over 80 companies and this number is set to grow significantly in the next five years. Facilitating research, development and business collaborations between the companies through formal meetings or impromptu social gatherings will be a major part of my role in the future. I will also be seeking to attract companies to the Science Park that can add value to our existing occupiers.



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I am keen to reach out to the schools in our neighbourhood with a view to encouraging young people, especially those who are disengaged, to consider careers in the STEM subjects.

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