



## **Oxford Technology Combined SEIS and EIS Fund -OT(S)EIS-**

*Quarterly Report to 4 April 2014*

### **Summary**

By 4<sup>th</sup> April 2014, OT(S)EIS had raised £2.7m and had completed 14 investments in 10 companies, as shown below.

The objective of the fund is to invest approximately 1/3 of the principal invested by any investor in SEIS qualifying investments within 12 months of the investment in the fund. This objective has now been met for the early investors in the fund and we expect it to be met for the later investors as well. The other 2/3 of the principal will then be invested in EIS investments, 1/3 from months 12-24 and 1/3 from months 24-36, and it is expected that most of these investments will be to support earlier SEIS investments which are showing promise. During January 2014 we invested £75,000 as an EIS investment in Lightpoint Medical, as part of a £1.9m round, which was achieved at 4 times the share price of the original SEIS investment. The fact that OT(S)EIS was able to participate in this fundraising was a contributory factor to the success of the fundraising.

The fund will remain open for investment and the same objectives will apply, so that investors who wish to make further SEIS and EIS investments may invest further in the fund. Some investors have already done this; please feel free to join them. The objectives will be the same - 1/3 of whatever you invest will be invested in SEIS investments in months 1-12 post investment, 1/3 in EIS investments in months 13-24 and 1/3 in EIS investments in months 25-36.

In his 2014 budget, the Chancellor confirmed that the SEIS scheme would become permanent.

## OT(S)EIS Fund Portfolio

*as at 4<sup>th</sup> April 2014*

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple	Method of Valuation
Run3D 	3D gait analysis for physiotherapy	£100,000	18/12/12	SEIS	£50,000	£100,000	2	Share Price
		£25,000	18/10/13	SEIS	£12,500	£25,000	2	
BioMoti 	Improved cancer drugs	£75,000	08/01/13	SEIS	£37,500	£75,000	2	Share Price
Combat Medical 	Bladder cancer treatment	£75,000	05/04/13	SEIS	£37,500	£82,500	2.2	Share Price
		£75,000	05/12/13	EIS	£53,500	£75,000	1.4	
Message Missile 	Mobile App enhancement (geo-location notifications)	£16,000	23/05/13	SEIS	£8,000	£8,000	1	Upcoming Share Price
		£5,000	18/10/13	SEIS	£2,500	£1,250	0.5	
Ibexis Technologies 	Remote datalogging	£50,000	24/05/13	EIS	£35,000	£50,000	1.4	Share Price
Lightpoint Medical 	Real-time imaging for cancer surgery	£75,000	04/06/13	SEIS	£37,500	£300,000	8	Share Price
		£75,000	22/01/14	EIS	£53,500	£75,000	1.4	
Metal Powder & Process 	High quality metal powder production	£150,000	16/08/13	SEIS	£75,000	£150,000	2	Share Price
Power OLEDs 	Improved OLED Technology	£75,000	11/12/13	SEIS	£37,500	£75,000	2	Share Price
Abgentis 	Improved Antibiotics	£42,000	27/03/14	SEIS	£21,000	£42,000	2	Share Price
Designer Carbon Materials	Endohedral Fullerene production	£75,000	03/04/14	SEIS	£37,500	£75,000	2	Share Price

Note: The multiple shows the increase in value of the investments assuming 'fair value' and taking into account only the tax relief against income tax.

**For those investors who also have capital gains tax to pay, the tax reliefs and the multiple will be even greater.**

## Updates on existing investments

### Run3D Ltd



Investments:	18 Dec 2012	18 Oct 2013
SEIS/EIS:	SEIS	SEIS
Amount Invested:	£100,000	£25,000
Shareholding:	40.3%	

#### *Description of business*

Run3D is the brainchild of Dr Jessica Leitch, 30, who is an International Runner herself (representing Wales) and who has a first class degree in Engineering from Oxford and also a D.Phil from Oxford. In her academic career, she specialised in the biomechanics of running. She has numerous blues and was the Oxford Sportswoman of the Year in 2008/09.

Runners have reflective balls attached to their various joints (hips, knees, ankles) and also at various other points on their legs and then run on a treadmill. Special cameras capture the image of the balls at 200 frames/sec and this data is then fed into a computer programme, originally developed by an academic in Canada and to which Run3D has exclusive UK rights for an initial period of three years. The computer then outputs a complete gait analysis, giving every detail of the gait, the angle of heel-strike, the rotation and rate of rotation of each joint, etc. etc. The gait of the individual is also compared to a database of 3,000+ runners. The operator, often a physiotherapist, is then able to indicate:

1. Where the runner's gait is furthest removed from the norm.
2. Where, if uncorrected, future injuries are likely to arise
3. How the runner should aim to modify their gait to avoid future injuries
4. What particular exercises should be undertaken to strengthen particular muscles in order to reduce the likelihood of future injury.

There are now 2m people who run every week in the UK and the statistics show that 1m of these will develop running related injuries in the course of the next 12 months. The business model is to establish a running clinic in Oxford which will be operated by Run3D. The plan is then to appoint franchisees who will operate the Run3D system in their clinics. The franchisees will be given the software for free and the revenue generated will then be shared in a ratio which will depend on how actively the software is used, with the franchisee getting a larger share the more actively it is used.

## *Progress*

Run3D established its own running clinic in Oxford, as planned, in Q1 2013 in the Iffley Road running track, where Roger Bannister famously broke the 4 minute mile. In Q2 Run3D arranged the first two franchisees, installed the software and hardware and provided the training. In Q4 the third franchisee went live. In Q1 2014 Run3D moved its own clinic from the Iffley Road running track, a prestigious address but not a good place for business, to the new Bosworth Clinic in Cassington just North of Oxford. This clinic established by David Bosworth is visited by the world's top athletes from all sports, including football, rugby, Olympic long jumpers etc. The move brought an immediate increase in business and morale. It is exciting to be conducting gait analyses for the world's top athletes.

The business model has also evolved. Under the current model the franchisees pay a monthly rental for the system, and then share revenue if volumes rise beyond a certain number of assessments per month. This makes Run3D's income more regular and reliable.

The business is now set to expand steadily as more franchisees are added. Enquiries from would-be franchisees come in regularly, including enquiries from Spain and Australia.

At the end of Q1 2014, there were 4 Run3D clinics in operation, the company's own clinic in Oxford and three franchisees, all in London. The fourth franchisee, in the North of England, is expected to be in operation before the end of April. The business is very close to breakeven, and breakeven should be achieved as the next franchisees come on stream.

## *Summary*

Good progress has been since investment. The Run3D service is now operating in four centres in the UK, and is achieving a reputation for being the best of breed. This is greatly helped by the fact that some of the world's top athletes are now using the service. The business is just about at breakeven and should become cash generative as the next few franchisees come on stream.

## BioMoti



Date of Initial Investment:	8 January 2013
SEIS/EIS:	SEIS
Amount Invested:	£75,000
Shareholding:	10%

### *Description of business*

OT(S)EIS invested £75,000 as part of a £150,000 SEIS investment in BioMoti which is a spin-out from Queen Mary College London. Its founders are Dr. Davidson Ateh and Prof. Jo Martin who was appointed as Head of Pathology for the NHS in early 2013. The chairman is Keith Powell who has long experience in early stage biotechnology companies.

Solid cancer cells including ovarian cancers overexpress a particular ligand, CD95L on their surfaces. CD95L causes certain classes of immune cells to shut down their activity and helps protect cancer cells against the immune system. The scientists have discovered that if a small particle is coated with CD95 (which binds to CD95L) the cancer cell will engulf the particle and draw it inside. By loading a chemotherapeutic drug into a biodegradable bead coated with the receptor molecule, it is possible to deliver high concentrations of chemotherapy drug into the cancer cells. The first product uses paclitaxel to target ovarian cancer. The overall result is that when injected into the patient, the beads bind preferentially to ovarian cancer cells. There, the bead enters the cell where over a period of days the chemotherapy agent is slowly released, killing the cell. Other beads which have not bound to an ovarian cancer cell are excreted by normal processes without having released very much of the toxic chemotherapy agent.

This approach can dramatically increase the efficacy of the standard clinical treatment whilst reducing side-effects in healthy tissues. This is no longer an idea. Preclinical tests have shown remarkably good results, with 65-fold reductions in tumour burden, doubling of median survival and significant decreases in toxicity seen in an ovarian cancer model when the technology is applied and compared with the current clinical standard-of-care. The company won a TSB Biomedical Catalyst grant to carry on the work, which indicates that the TSB rates this approach and the £150,000 SEIS investment was to provide matched funding for this grant.

The business plan is to develop the technology and to prepare for clinical trials. Further funding will be required for this, but the plan will be to obtain some of this from pharma companies, to whom the treatment will ultimately be licensed. It is also likely that further support will be forthcoming from the TSB and other grant sources. OT(S)EIS will be able to participate in this further funding.

### *Recent Developments*

BioMoti is now starting a new funding round of £2m, in which we intend to participate. Under the TSB grant BioMoti currently testing the new sources of CD95 which it has developed, including its own and an externally sourced version which is already approved for use in human trial.

The market research and commercialisation plan has now been completed and will be used to engage with potential partners and investors. Grant applications are being prepared to pay for additional researchers.

### *Summary*

Work has started under the TSB grant. Although BioMoti always has an eye open for commercial opportunities, the main focus is currently on the development of the technology including the production aspects.

# Combat Medical



Date of initial Investment	5 April 2013	5 December 2013
SEIS/EIS:	SEIS	EIS
Amount Invested:	£75,000	£75,000
Shareholding:	2.9%	

## *Description of Business*

Combat Medical develops and manufactures devices for the treatment of urinary cancers. Its devices consist of a control unit and disposable heat exchangers and catheters. These are used to deliver a treatment consisting of heating a chemotherapy liquid and circulating this through the bladder, rather than cutting out tumours in the bladder which is the current treatment. The existing treatment results in a 78% recurrence of tumours which then require increasingly drastic surgery. The company's treatment, which still involves surgery, but hopefully only once, results in a recurrence rate of less than 20%. It is also much less expensive, since the repeated surgery required to treat bladder cancer is extremely costly. Combat's devices are already CE marked and may therefore be used by doctors and the company is undertaking additional clinical trials to make it a standard of care. The hope is that the new treatment will in time become the most common treatment both in the UK and globally. If so then the company will become very profitable and valuable.

A video describing the system can be seen at [www.combat-medical.com/en](http://www.combat-medical.com/en)

## *Recent Developments*

The original clinical study has now reported the 30 month progress and so far there has only been 1 recurrence out of 15 patients, where with standard treatment more than 10 might have been expected to have had a recurrence. Since the investment was made Combat has made good progress. It has signed a distribution deal in Spain with INIBSA, the company that distributes Mitomycin C which is the drug used with the Combat BRS device. INIBSA has 17 sales agents operating in Spain and this should help to accelerate sales and penetration. Discussions are taking place – and progressing well - with distributors throughout Europe, with training sessions now taking place.

The UK clinical trial has been approved with the kick-off meeting on the 10<sup>th</sup> of December and now includes 12 centres. The trial will combine with a Spanish trial with 8 centres and the same protocol directed at treating earlier stage bladder cancer. Combat has raised £530,000 (£80,000 more than it was looking for) to finance the clinical trial. Although Combat will pay for the units used in the clinical trial, the participating centres will be able to use the machines and purchase the disposables for patients treated outside the trial.

The design of the new disposables and new base units is progressing well and is expected to be complete by mid spring.

## *Summary*

Although sales are a little slower than initially predicted, Combat is making good progress. The production is being transferred to prepare for the growth of sales that is expected to follow the appointment of distributors. The fact that 12 centres have chosen to participate in the clinical trials indicates the high level of interest in Combat's bladder cancer treatment and should form a good platform for commercial expansion.

# Message Missile



Investments:	23 May 2013	18 Oct 2013
SEIS/EIS:	SEIS	SEIS
Amount Invested:	£16,000	£5,000
Shareholding:	37.3%	

## *Description of Business*

Message Missile is a software company founded by Thomas Young, who is 18, and is based in Manchester. Message Missile will provide an additional functionality to mobile phone apps – geolocation push notifications. By adding this software to their app, businesses will know the location of the phone using that app. They can then use this information to target messages.

This could enable them to:

- Send a message to everyone in a particular area (e.g. everyone within 2 miles of Oxford, everyone in a certain postcode - a grocery store could send a message in the early evening to all its customers who are within 500m of the store, saying that they have unsold corn on the cob and that there is a special offer starting immediately.)
- Enable them to automatically send a message to anyone crossing a certain boundary (e.g. anyone walking within 100m of your restaurant would be sent a special offer)

Without this software, businesses could only send messages to all their users. The vast majority of these messages would be irrelevant, and the app users would find this highly irritating, and possibly uninstall the business' app, severing this highly valuable link to their consumers.

Targeting enables the business to tailor their messages to the user, and so only provide them with information or special offers that they will actually want. This enables them to develop a relationship with their customers for unparalleled brand loyalty, as well as provide them with highly effective advertising – over 90% of such mobile phone messages are read by users, compared to much lower rates for text messaging, or adverts in websites/newspapers.

## *Recent Developments*

The software for the application was completed in September, and the app was approved by Apple soon after. However, progress has been very slow since then and there have been no sales to date. The fundamental problem is that Thomas Young is now in his first year at University, and finds that he is simply not able to devote as much time to the business as he had hoped.

Therefore, by agreement with Thomas, OT(S)EIS will invest an additional £20,000 in the business to bring in new management to focus on sales. This investment should fund the business for about 12 months, and the hope is that the business will be able to achieve its first sales and to become cash generating.

## *Summary*

Technical progress has been good, but there has been almost no commercial progress so far. The hope is that the extra investment will put this right.

# Ibexis Technologies



Date of initial Investment	24 May 2013
SEIS/EIS:	EIS
Amount Invested:	£50,000
Shareholding:	25%

## *Description of business*

Ibexis Technologies designs and manufactures self-contained dataloggers which will operate in remote places and record and transmit data back to base either using the local mobile phone network or via a satellite. One of the founders was previously involved in a similar business which was ultimately unsuccessful but which had supplied dataloggers for the following applications:

1. Monitoring the sale of ice from ice vending machines on garage forecourts in the US
2. Weather stations in Indonesia
3. Monitoring water levels in Norway and Sweden
4. Measuring snowfall and water levels in remote mountain regions in Norway
5. Monitoring rainfall in the US
6. Weather stations in Holland
7. Monitoring temperatures in buildings in the UK
8. Monitoring the second by second power consumption of large telecom infrastructure in Austria.
9. Monitoring levels of fuel in rail depots in the UK
10. Monitoring temperature and salinity in a lake in Greece.

Ibexis dataloggers are small fully-integrated boxes designed to be very power efficient so that they may be powered by a battery or by a small solar panel or windmill in remote locations and may be programmed to send back data from up to 75 different sensors both digital and analogue at whatever interval is required, maybe every few seconds or maybe once per day. As can be seen, the Ibexis dataloggers can be used anywhere in the world in a wide variety of applications. The hope is that the volume and variety of the applications will grow and that Ibexis will become financially successful as this happens.

## *Recent Developments*

Some sales have been achieved, and the company has secured a design and development contract to produce a system for use in the UK to monitor fire and smoke detection. One of the advantages of the Ibexis technology is that it is two-way. As well as reporting on an event in real time (e.g. that smoke has been detected in a building) the operator or an automatic system can also send instructions (e.g. to instruct a camera to transmit images and to close a vent). It is believed that this design contract could ultimately lead to substantial orders.

But commercial progress has been slower than hoped.

In Q1 2014 there has been a slight improvement in business with some slightly larger contracts being won and paid for.

## *Summary*

Progress has been slower than hoped. But the business is surviving and hoping that larger contracts will eventually be secured on the back of the ever-growing numbers of users and uses for the system.

# Lightpoint Medical



Date of initial Investment	4 June 2013	22 January 2014
SEIS/EIS:	SEIS	EIS
Amount Invested:	£75,000	£75,000
Shareholding:	8.3%	

## *Description of Business*

In breast cancer surgery a surgeon cannot see whether the entirety of a tumour has been removed. Roughly one quarter of breast cancer surgeries need to be repeated to remove small residues which were missed in the first operation.

Lightpoint is developing imaging technology based on Cherenkov emission which will provide surgeons a real time image of the cancer. The patient will be given FDG-18, a common radioactive tracer which is taken up preferentially by tumours and the surgeon will be able to see the tiny amounts of light emitted from the radioactive tissue. The first product is a specimen viewer which will allow surgeons to determine whether the tissue they have removed has a safe margin around it. Lightpoint is very actively engaged with surgeons to ensure that the product is ideally suited to their needs.

## *Recent Developments*

Lightpoint Medical has signed a £97k development agreement with Papworth Hospital, yielding a total of over £3m to date in non-dilutive grant funding. The company is completing the research phase for its lead product and regulated product development is now underway. Also in the first quarter of 2014, the company filed two additional international patent applications. The specimen analyser has now been delivered to Guy's Hospital where clinical trials have been approved and have started recruitment.

Lightpoint Medical successfully signed off a £1.9m round of fundraising at the end of March, in which Oxford Technology was able to participate.

## *Summary*

Lightpoint has continued to deliver good results with technical and commercial development progressing smoothly. It continues to secure numerous grants, and successfully fundraise.

## Metal Powder and Process



Date of Initial Investment:	16 August 2013
SEIS/EIS:	SEIS
Amount Invested:	£150,000
Shareholding:	12%

### *Description of Business*

Metal Powder & Process (MPP) will produce high quality metal powders for the aerospace, medical, and other industries, by gas atomisation. Metal is melted at the top of the atomiser, a machine the size of a small house, poured through a nozzle and blasted by jets of supersonic argon gas, and so turned into dust.

The use of powdered metals has been growing steadily over the last 50 years. It is less expensive to produce certain components, e.g. gearwheels used in cars, by metal injection moulding powdered steel, than it is to start with solid steel and then cut each tooth on a machine. Metal injection moulding also produces parts which are more accurate and stronger.

Due to the incorporation of some novel technology, it is hoped that the atomiser operated by MPP will produce powder of higher purity than the powders produced by existing atomisers. This, in turn, should make the powder suitable for use in the aerospace industry. In the past, the aerospace industry has been reluctant to use powdered metal since the impurities which are present in powders produced by existing designs of atomisers are potential crack-initiation sites.

### *Recent Developments*

Work on completing and commissioning the atomiser has been proceeding apace. But there is much to be done. This is a large and complicated system. At the end of Q1 the first melting trials were being conducted. The first production of commercial quantities of metal powder are currently scheduled for the end of May.

### *Summary*

The atomiser to be operated by MPP should be able to produce a wide range of powders. It is not appropriate to give more details here, but it is hoped that first production will be achieved by mid-2014.

## Power OLED



Date of Initial Investment:	11 December 2013
SEIS/EIS:	SEIS
Amount Invested:	£75,000
Shareholding:	15%

### *Description of Business*

Professor PK Kathirgamanathan, based at Brunel University, and known as PK, is one of the world's leading experts on OLEDs (Organic Light Emitting Diodes). The specialist materials that he has developed are already used in a large number of commercial Organic Light Emitting Diode (OLED) applications, most commonly in the screens of mobile phones. He has now established a new company, Power OLED Ltd, the purpose of which is to develop and market new materials which will be used in the next generation of OLEDs.

The latest set of materials combines the following beneficial traits:

- Higher efficiency
- Greater stability at higher temperatures
- Better matched electronic levels

For the end user this will result in brighter, more efficient, longer lasting screens on laptops, tablets and mobile phones. The manufacturer benefits from a reduction in the number of manufacturing steps, an increase in yield, and a consequent reduction in costs. It is also possible that these improved OLEDs will in future be used as lighting. Such lights would be in the form of flat panels, rather than today's tubes and point source LEDs.

The technology has been tested at lab scale, but on machines that mimic the production equipment used by the large OLED players. The investment will be used to produce sufficiently large volumes of the material to test on the manufacturers' production lines and then do the inevitable fine adjustment to match the other materials in the OLEDs. OLEDs are typically composed of 7 layers. Power OLED will start work on improving the performance of two of these layers, but has IP covering more of the layers.

Due to PK's long activity in the field he has well-established links with the supply chain and manufacturers of OLED displays and devices.

The market for OLED materials is currently estimated to be \$300m/year and is growing very rapidly, with the market leaders bringing in curved and flexible OLED TVs at this year's Consumer Electronics Show.

### *Summary*

Work has now started in the labs, producing the larger volumes of material needed. Visits to potential customers have highlighted an urgent requirement for the performance improvement that Power OLED's technology is likely to bring

# Abgentis



Date of Initial Investment:	28 March 2014
SEIS/EIS:	SEIS
Amount Invested:	£42,000
Shareholding:	4.2%

## *Description of Business*

Dr Lloyd Czaplewski FRSC is the founder of Abgentis and an experienced entrepreneur as well as an expert in the structure of antibiotics.

The rise of anti-biotic resistance has put pressure on pharmaceutical companies to acquire new products. Abgentis will deploy Lloyd's unique insight into the structure-activity relationships, microbiology, pharmacology and efficacy of antibacterial DNA supercoiling inhibitors to rapidly re-engineer and optimise a compound that was effective in the market but was not competitive due to resistance and side-effects. The programme of work is designed to improve the potency and resistance frequency and to minimise the side-effects in order to create an internationally competitive product.

The aim is to develop the new product, which is already showing an 8-fold increase in performance over the existing product, to the point where it can be acquired. This will require testing microbiology and pharmacokinetics as well as toxicology of a number of variants.

## *Summary*

The investment was completed on the 28<sup>th</sup> of March and we expect to be able to provide information on significant progress of the programme by the end of 2014.

Although high risk, the development path to the next major value inflection point is quite short.

## Designer Carbon Materials

Date of Initial Investment:	3 April 2014
SEIS/EIS:	SEIS
Amount Invested:	£75,000
Shareholding:	17%

Professor Kyriakos Porfyrakis works in Materials Department of Oxford University. Over the last few years, he has developed a method of producing small quantities of endohedral fullerenes. Carbon exists in many forms, including graphite and diamond. But carbon can also exist as fullerenes, hollow spheres of carbon atoms, the simplest of which is made up of 60 carbon atoms. Kyriakos has developed a method of making fullerenes which contain an atom of another element inside. So far the elements chosen are Gadolinium, Yttrium and Nitrogen.

These are very early days but it is believed that these novel materials will have potential uses as a better contrast agent for MRI scans, for improving the efficiency of photovoltaics, and for use in certain quantum computing applications.

There has been considerable interest in these novel materials from researchers around the world, and Kyriakos has sold small quantities for prices of up to £12,000 for 0.1 gms. Current capacity is about 1 gram per month.

The purpose of the investment is to move the business into commercial premises on one of the Oxford Science Parks, to build an improved production machine, and to employ someone to concentrate on sales.

This is a classic high risk high potential reward investment.