



OT(S)EIS Full Portfolio - Q2 2023

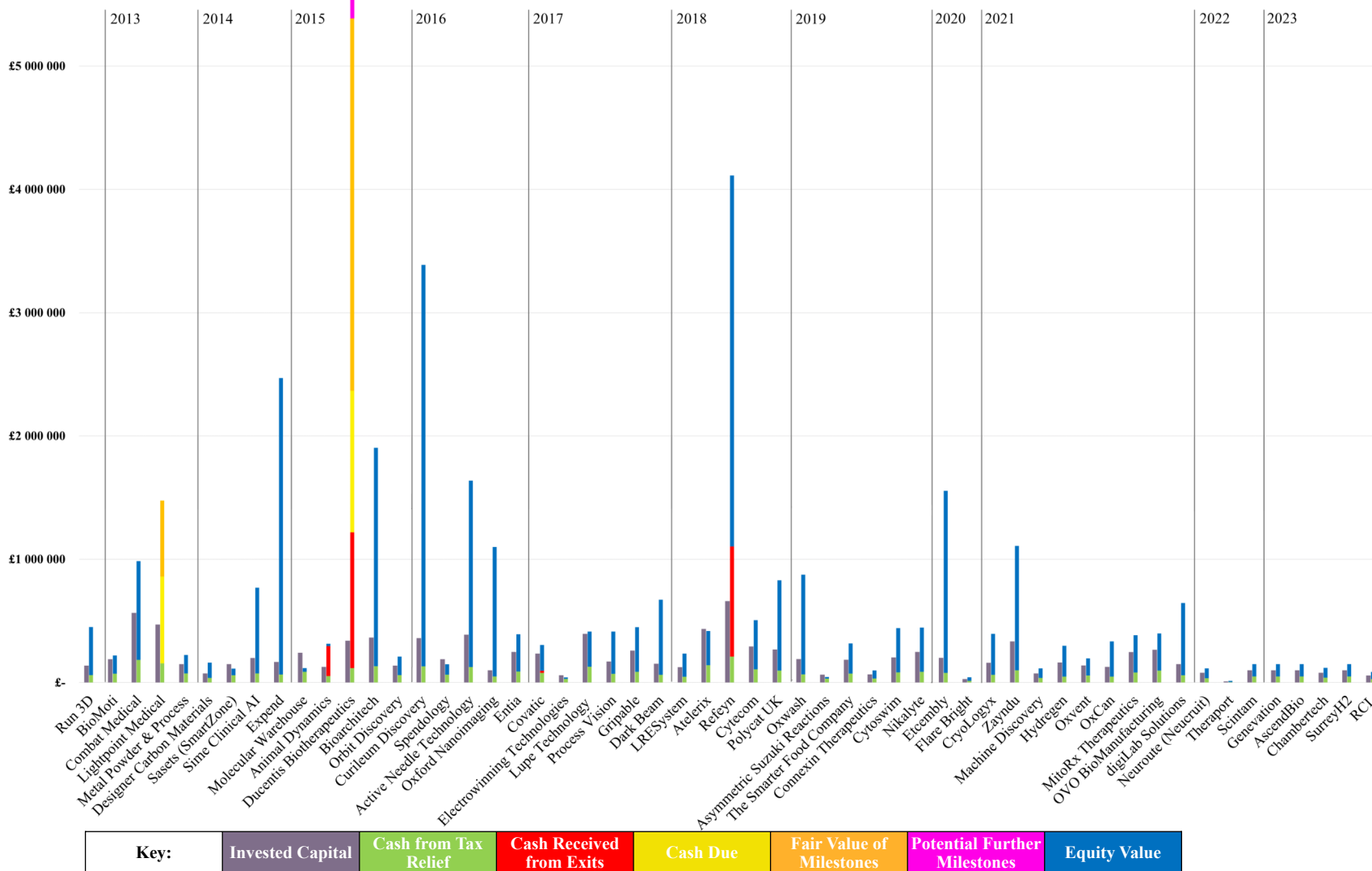
Investment Objective

1. OT(S)EIS invests in life, physical, and data science start-ups based in and around Oxford and London, at the pre-seed and seed stage. Our investment horizon is patient and long-term.
2. We are active investors, using our expertise to help portfolio companies develop scalable business models, robust pricing strategies, and effective R&D programmes.
3. We use the SEIS and EIS tax relief schemes to de-risk investments whilst offering our investors significant (and tax-free) capital growth potential.

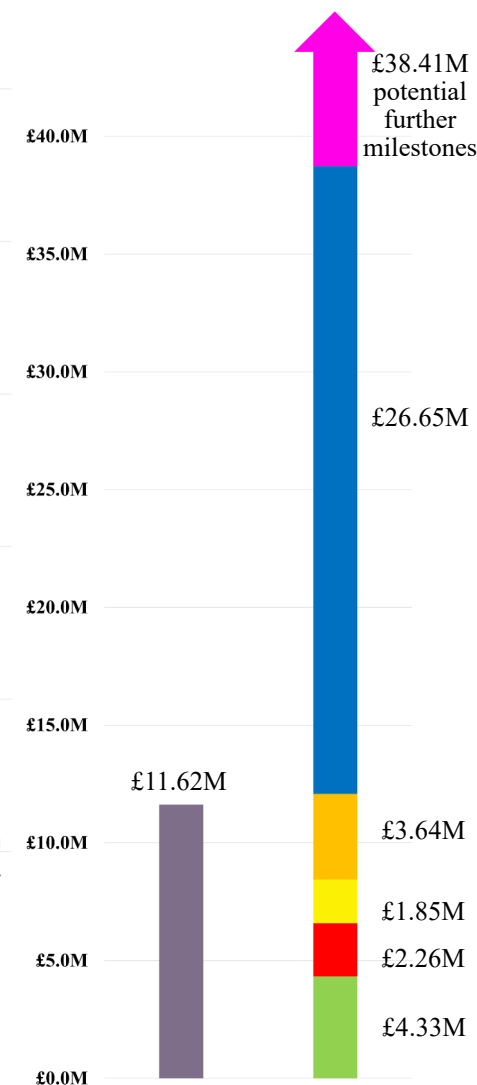
Managers	Lucius Cary and Andrea Mica
Fund Value	£38.73m*
Portfolio	55 Active Companies
Contact	otseis@oxfordtechnology.com

£38.41M potential
further milestones

Portfolio Holding Valuations

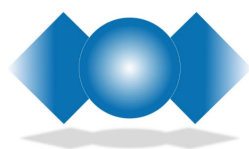


Overall Fund Value



*Excluding potential further Ducentis milestones

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Oxford Technology Q2 2023 Portfolio Report

Summary

This report summarises the progress made by portfolio companies in the latest quarter. By the 30th June 2023, OT(S)EIS had completed 219 investments in 59 companies. It also details useful information about the fund, including how we invest, opportunities for co-investment at presentations, and the intricacies of SEIS/EIS tax reliefs.

The investment figures for the fund as a whole are as follows:

Invested Capital: £11.62m

Cash from Tax Reliefs: £4.33m

Cash from Exits: £2.26m

Cash due from Exits: £1.85m

Fair Value of Post-Exit Milestone Payments: £3.64m

Remaining Equity Value: £26.65m

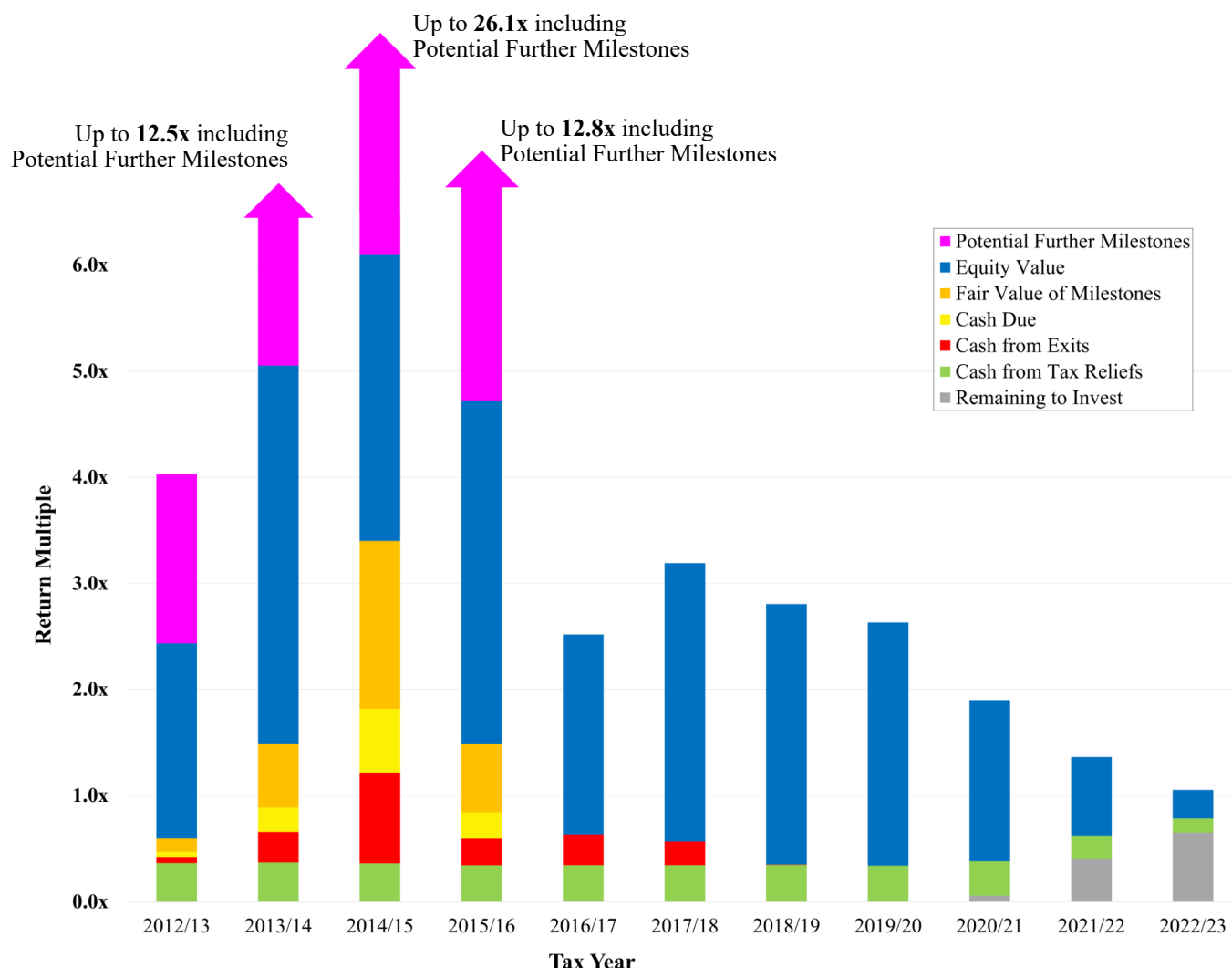
In addition, there is a potential for further £38.41m in milestones from the Ducentis exit.

Valuations are all made according to the most recent price paid by investors in a company. If, following an investment, things have gone wrong, then the valuation is reduced. But if things have gone well, the valuation is not increased unless there is another funding round. To this extent the valuations are conservative, but obviously nothing really counts until the gains are realised through exits.

The figures assume that the investor in question has claimed the full amount of income tax relief available from the SEIS and EIS investments (investors who also get relief against capital gain tax have an additional benefit). The cash back from tax reliefs can take some time to arrive, but it comes in the end. Firstly, the investee company has to meet certain HMRC requirements (e.g. trade for 4 months). Then they inform HMRC, who must authorise the issuance of certificates which will enable investors to claim their tax relief.

Exits are typically expected on a 10 year timescale: investments in OT(S)EIS are illiquid and long term. Nevertheless, the return multiples when exits occur can be considerable. For instance, the Ducentis exit could have a return multiple of up to 127x.

Returns to investors in OT(S)EIS over the last ten years



The graph above shows the returns which have been made so far by those who invested in OT(S)EIS in each of the tax years over the last ten years. So, for example, those who invested £100,000 (to make the sums simple, although some investors did invest this amount) in the 2014/15 tax year have so far been able to claim about £36,000 in income tax reliefs and received back about £85,500 in cash from exits (all tax free). In addition they have about another £60,500 in cash, held in escrow, and likely to be received in autumn this year. In addition, they have another £158,000 which is what we regard as the 'fair value' of the exit milestones from one investment. The fair value of the remaining investments, which have not yet exited is a further £270,500. So the total return, adding all these together is £610,500, a multiple of just over 6x of the initial amount invested. And in addition to this, there is the potential to receive up to a further £2m if all the milestones from one of the exits are met. All these returns will be tax free.

We believe that an investment in OT(S)EIS has been one of the best investments that it has been possible to make in the UK over the last ten years. We believe the reasons are clear. It is not luck. We are all scientists. We focus on the science. We receive a large deal flow and pick carefully (about 5/1,000 each year) and we get actively involved with the founders, especially in the early years to help establish the business model and pricing. We thought that it would work and so far it has. So please consider making an investment in OT(S)EIS. Min £15k.

New Investments

We made one new SEIS-eligible investment in Q2 2023.

A **£60,000** investment in [Revolutionary Concepts Limited \(RCL\)](#).

Gas boilers will be outlawed in new-build houses in the UK in 2025. So how to heat a house economically? Using direct electrical energy is very expensive. The purpose of the investment in RCL is to design and build a prototype of a small compressor heat pump, which calculations show should produce 8kW of heat output for 3kW of electrical input.

Portfolio Progress and Highlights

Run3D has had record numbers of people signing up to attend its day-long conference on musculoskeletal Biomechanics, ending with a dinner, to be held in Trinity College Oxford on Friday 29 September. Details can be seen on the Run3D website.

Towards the end of the quarter, **Oxwash** began operations at Big Blue, which it believes will become the most highly automated and environmentally-friendly laundry in the UK.

Process Vision is now experiencing very rapid growth as the number of LineVu systems in use grows. Suddenly gas engineers can see what is going on inside their pipes for the first time. This enables them to spot problems and do something about them before any real damage occurs. Great interest has been expressed by a company that manages 90,000 miles of natural gas pipelines in the US.

The number of subscribers to **Sasets** climbed to a new high during the quarter.

The number of subscribers to **The Smarter Food Company's** high-glucoraphanin broccoli soup (£20 per month) which helps to delay or prevent the onset of diabetes reached a new high of around 2,000. This takes the company to breakeven. The company is seeking to raise £500k, and has raised £350k of this and would like to raise the balance in order to plant and harvest more high GR broccoli to meet the increased demand.

During the quarter **Expend's** monthly revenue exceeded £100,000 for the first time, and almost every month brings a new high point.

Cryologyx has made more good progress. It raised some additional capital during the quarter at an enhanced share price, and secured premises in which to create a production facility to produce cells using is proprietary technology which means that the cells can be shipped frozen and used and used within hours of arrival. The volume of orders has been growing rapidly including from some household name pharma companies.

Lightpoint has been sold to Telix in a deal worth a headline \$35m. The deal is quite complicated and payment will be received over a two year period. If all the milestones are met, those who invested via Oxford Technology at the start do very well, with a multiple over the net cost of the shares of about 19. Those who invested directly towards the end do much less well.

Our Funds

Oxford Technology manages two funds:

1. OT(S)EIS - The Start-up Fund: Investors' money is invested over 3 years - Approx. 1/3 (less fees) in SEIS investments in year 1, 1/3 in EIS investments in year 2 in those of the earlier SEIS investees which are doing well, and the same again in year 3. SEIS investments are very high risk and some failures are to be expected, although there have been very few so far which is why the track record is so good. So it takes 3-4 years before all the tax reliefs are obtained, which does not suit everybody. The aim is to maximise long-term returns, not tax reliefs.

2. OTEIS - The Development Fund: Investors have all their money invested within one year in EIS investments, mainly in earlier OT(S)EIS investments which are developing well. So this fund has a lower risk profile than OT(S)EIS and investors can claim their tax reliefs more quickly.

Information Memorandums and Application forms are available at www.oxfordtechnology.com/invest

OT(S)EIS Fees

Type	Details
Initial Fee	1%
Management Fee	2% (Years 1-3) 1.5% (Years 4-7) – deferred and to be paid only from proceeds of exits 0% (Year 8 and onwards)
Custodian Fee	0.15% + VAT annually (NB – reduced from 0.35% in 2017). There is also a receiving agent fee of up to £25 + VAT for each subscription, and a £15 fee will apply for any transfers of holdings. Distributions may also incur a small administrative charge. These fees will be paid from the investor's cash pool.
Performance Incentive	Once a typical investor, defined as a 40% taxpayer with no capital gains tax to shelter, has received a return of £1.20 (including tax benefits) for each £1.00 invested then 20% of all further payments to all investors who invested at the same time will be paid to OTM as a performance incentive.

SEIS and EIS Tax Reliefs - Overview

Please consult HMRC or your financial advisor for full details and conditions.

Type of Tax	SEIS	EIS
Income Tax	Reduced by 50% of investment Reduced further by up to 22.5% if the business fails Income tax relief can be applied to tax bill year prior to investment	Reduced by 30% of investment Reduced further by up to 31.5% if the business fails Income tax relief can be applied to tax bill year prior to investment
Capital Gains	50% relief against capital gains tax bill, which is not merely deferred but cancelled No capital gains tax to pay on exits	Deferral relief on capital gains tax bill arising 3 years before, or 1 year after investment No capital gains tax to pay on exits
Inheritance Tax	No inheritance tax (after 2 years)	No inheritance tax (after 2 years)

Example SEIS investment

An individual investor with income tax of £25,000 to pay, and capital gains of £100,000 in the 2020/2021 tax year on which tax of £20,000 at the 20% rate is due to be paid, invests £10,000 in an SEIS qualifying company in 2020/2021:

Initial Investment	£10,000
Income Tax Bill Relief (50%)	-£5,000
Capital Gains Tax Relief	-£1,000
Net Cost of Investment	£4,000

If the above investor had had the same tax status in 2019/2020, they could also choose to treat their 2020/2021 investment as if having been made in 2019/2020, and claim relief for that year instead.

If the investee company fails, the remaining part of the investment on which income tax relief has not been claimed (£5,000 in this example), may be set against the investor's income tax liability. For a 45% taxpayer, for example, this relief is worth £2,250. If they also have capital gains tax to pay, then the total loss on the investment of £10,000 would be reduced to £2,750 if the investment was made in 2020/2021 and not carried back to the previous year - in other words, a downside of 27.5%. There is also the further possibility of capital gains tax loss offsets.

If the investments succeeds, and the shares are sold for, say, £20,000 (twice the purchase price), the £20,000 would be tax free, a multiple of more than 5 times the net cost, or an upside of 400%.

International Team

China Office - chenjie@oxfordtechnology.com

Oxford Technology has an office in Shanghai, China, run by Chenjie Ma, who read engineering at Oxford. She worked for us here in the UK before going to run the office in China. It is naturally a great help to our investee companies to have a Chinese speaker on their side if/when they are seeking to make their first sales in China.

California Office - bijan@oxfordtechnology.com

Oxford Technology also has an office in Menlo Park, just outside San Francisco in California, run by Bijan Kiani. Oxford Technology invested in his first start-up business, INCA, in the 1980s, which was ultimately acquired by a company in California. Bijan then helped to grow Synopsys from 300 to 13,000 people: it is now the No 1 player in Electronic Design Automation. In 2019, Bijan contacted OTM, saying that while he had loved building Synopsys, what he had enjoyed most was the early days of his first business, working with OTM to get it all going and getting the first sales contracts in the US etc. He offered to help our investees in the UK get going in the US. The CEOs of our investees who have worked with Bijan all say how helpful and useful he has been. Bijan has also become the CEO of Machine Discovery, in which he is also a shareholder.

Presentations

At 10am on the first Thursday of every month, Oxford Technology hosts a Zoom meeting at which existing investee companies who are raising additional capital can make presentations to investors. After the presentations and before questions, there is a live performance by pianist Anita D'Attellis. The next meetings are on:

Thursday 3 August Chopin Preludes

Thursday 7 September Chopin Preludes

Thursday 5 October Chopin Preludes

If you would like to attend and don't already have the link, please email otseis@oxfordtechnology.com

Invest in OT(S)EIS

While it is very good to make direct investments into presenting companies, please do also consider making an additional investment into OT(S)EIS as well. The reasons are:

1. OT(S)EIS can get you access to significantly better valuations. Presenting companies are those in which we have already made SEIS/EIS investments, typically at lower share prices. For example, in Q1 2020 we made an SEIS investment into Etcembly at 40p per share (so 20p after SEIS tax relief). In Q4 2020, Etcembly gave a presentation and raised £1.6m of EIS investment at £1.58 per share (so £1.10 after EIS tax relief — more than 5x the after tax share price of the earlier SEIS investment). This could make an enormous difference to returns when it comes to exits, and SEIS offers better tax reliefs.
2. With OT(S)EIS, you make a single investment and we do all the work. We handpick about 5-6 SEIS investments from the ~1000 approaches we receive each year, diversifying risk, and then invest in a similar number of follow-on EIS investments. We send you all the forms necessary to claim your tax reliefs, a report with a valuation each quarter, and we actively help the investees.
3. Companies at presentations are almost always only EIS, whereas OT(S)EIS gets you SEIS exposure and hence better tax reliefs.
4. Unless we raise capital for OT(S)EIS, we're not able to make the initial SEIS investments in start-ups, so there won't be any companies to present down the line!

OT Growth Fund

We continue to believe that there is a good opportunity to create a larger fund, maybe £50m, which would invest in those of the earlier investments in the portfolio which are doing well. The concept is very simple. Since we invest in companies at the very earliest stage, we get to know the founders very well. And we know the things which the founders might prefer that we didn't know - problems with personnel and patents, for example. This puts us in a very good position to be able to judge which investee companies are worth backing with significantly larger investments of several £m. A particular aim would be to use Bijan (who helped build Synopsys in California from 300 to 13,000 people) to help these companies get started in the US. The valuations of technology companies are generally significantly higher in the US than in the UK, so this should benefit the initial UK investors.

Investors who might be interested in such a fund should contact us.



Run3D.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£1.49m	£0.45	26.1%

Run 3D Investment History

Date	Amount	Share Price	Type
Dec 2012	£100,000	£0.15	SEIS
Oct 2013	£15,000	£0.15	SEIS
Oct 2013	£10,000	£0.15	N/A
Nov 2017	£3,000	£0.30	EIS
Mar 2019	£10,206	£0.45	EIS

Description of Business

Run3D is the brainchild of Dr Jessica Leitch, who is an International runner herself (representing Wales) and who has a D.Phil from Oxford in the biomechanics of running. 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. This data is then fed into a computer programme which 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. The analysis can be used to modify the gait for two purposes; to reduce the likelihood of injury and to increase speed.

Progress since Investment

Initial progress was quite good. But after a few years, it became clear that improvements in the software were needed, so Run3D then spent the next two years, in collaboration with a company in Amsterdam, rewriting the software. The new software was used for the first time in summer 2016, and was a big step forward - easier to use and with many new features. In Q1 21 Run3D's AI went live to interpret the results. The AI add-on software automatically interprets a gait report, and makes suggestions as to what the issues might be, making Run3D less complicated to use and more appealing to a wider market of less-experienced clinicians.

Date	UK & Ireland	US	Europe	Rest of World	Mobile	Total
Dec 2017	7		1			8
Dec 2018	8		1	2		11
Dec 2019	10	1	1	2	1	15
Dec 2020	13	0	4	2	1	20
Dec 2021	19	1	4	3	1	28
Dec 2022	27	1	2	3	1	34
Jun 2023	30	1	1	2	1	35

Recent Developments

The number of clinics has increased to 35 and, resulting from the exhibition in March, there is another US clinic in California currently trialling the system. Walk3D, the same idea but aimed at helping the elderly to walk pain free, should launch in the next quarter, slightly later than originally hoped.



Biomoti.com

Company Valuation	Valuation Share Price	Fund Holding
£0.92m	£0.05	16.1%

Biomoti Investment History

Date	Amount	Share Price	Type
Jan 2013	£74,998	£0.05	SEIS
May 2014	£40,000	£0.05	EIS
Mar 2021	£74,661	£0.12	EIS

Description of Business

BioMoti is based on technology from Queen Mary University of London. Its founders are Dr. Davidson Ateh and Prof. Jo Martin who was appointed as Head of Pathology for the NHS in 2013.

Tumour cells including those from ovarian, breast, pancreatic, colon, prostate, and bladder cancer overexpress a particular ligand, CD95L on their surfaces. CD95L helps tumours to avoid the immune system by killing off certain classes of immune cells and is also associated with triggering cancer metastasis. The scientists have discovered that if a small particle is coated with CD95R (which binds to CD95L), the cancer cell will engulf the particle and draw it inside. By loading a chemotherapeutic drug into a biodegradable particle coated with the receptor molecule, it is possible to deliver high concentrations of chemotherapy drug into the cancer cells.

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.

Progress since Investment

BioMoti has carried out many successful preclinical experiments. They have experimented with different production techniques, in part due to the fact that the original technique they had used became unavailable. The experiments show that their technology, Oncojans, deliver on the promise of higher activity and lower toxicity than the standard of care delivery for paclitaxel. The Oncojan formulation enables the drug to give performance similar to cisplatin, a much more powerful drug which has limitations which the Oncojans would not have. Although only observed (as there was quite a lot of variation and relatively few samples) the Oncojans also seem to encourage the penetration of Cytotoxic T cells into the tumour environment.

The original manufacturing technique is now available again in two different versions and Biomoti has also tested new technologies which give very high loading of drug in the particles.

Recent Developments

Unfortunately the promising results achieved last time in the immunotherapy space have not translated to larger scale experiments with immune cells. Biomoti is reviewing its options. We have reduced the valuation.



CombatCancer.com

Company Valuation	Valuation Share Price	Fund Holding
£30.19m	£11.28	2.7%

Combat Investment History

Date	Amount	Share Price	Type
Apr 2013	£74,999	£4.31	SEIS
Dec 2013	£74,998	£4.74	EIS
Oct 2014	£10,002	£4.98	EIS
Dec 2014	£34,271	£4.98	EIS
Mar 2016	£74,998	£14.10	EIS
Oct 2016	£64,995	£11.28	EIS
Mar 2017	£129,212	£14.10	EIS
Mar 2018	£27,058	£14.10	EIS
Mar 2021	£54,223	£11.28	EIS
Apr 2022	£21,218	£11.28	EIS

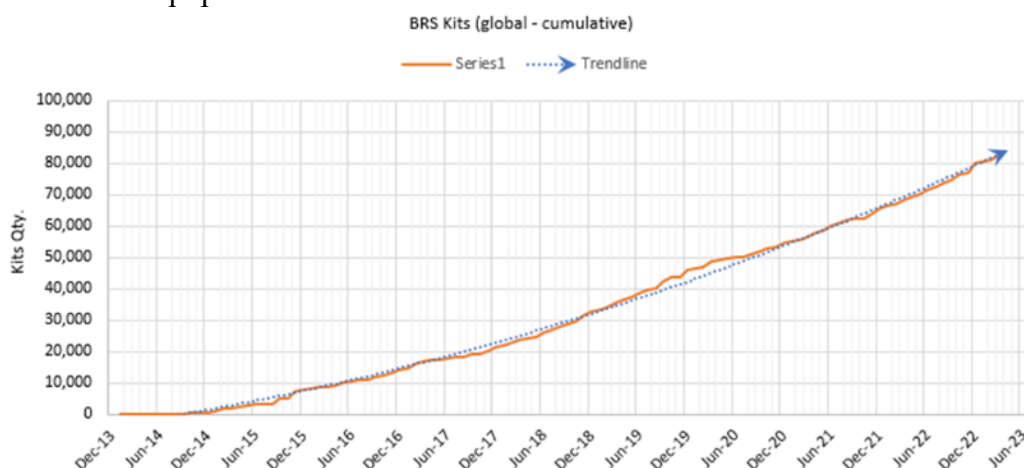
Description of Business

Combat Medical develops and manufactures devices for the treatment of bladder and peritoneal cancers. The bladder cancer device consists of a control unit and a disposable heat exchanger and catheter. These are used to deliver a treatment consisting of heating a chemotherapy liquid and circulating this through the bladder. The standard treatment for bladder cancer involves cutting out the tumours in the bladder and results in up to 78% recurrence of tumours which then require increasingly drastic surgery. Combat's treatment, called HIVEC (hyperthermic intra-vesical chemotherapy), reduces recurrence rates by up to 4 times. The peritoneal cancer device works according to a similar principle, with the addition of CO2 agitation.

Sales are growing well, and the core business is profitable. The devices are CE marked and in use with doctors. Thus far they have been used in combination with surgery, but they are also being investigated as standalone treatments. This would reduce costs for medical providers, as repeated surgeries are extremely expensive. Combat is now undertaking further clinical trials in order to make the treatment a standard of care. Success here should further accelerate sales of the device and dramatically increase the value of the company.

Recent Developments

Combat continues to produce and sell the bladder and peritoneal products. Sales are going well and clinical work continues. It is a very full task to keep a complex supply and manufacturing operation going smoothly. As you can see Combat is succeeding. The figures for the PRS are similarly positive but slightly lumpier due to the greater cost of the equipment.



The team has been working to prepare a large fundraising to support a US expansion.

Summary

Business as usual, which translates to never a dull day when you are manufacturing and developing innovative medical equipment and deploying across much of the world.



LightpointMedical.com

Exit Value	Exit Share Price	Multiple*
Up to \$35m	Up to £0.46	1x - 19x

*Depending on the investment round, assuming full options conversion and that all milestones are met. The multiple is calculated based on the share price of £0.46 and in respect to the net cost of investment, i.e. includes tax reliefs.

Lightpoint Investment History

Date	Amount	Share Price	Type
Jun 2013	£74,999	£0.047	SEIS
Mar 2014	£75,000	£0.19	EIS
Nov 2014	£9,991	£0.238	EIS
Dec 2014	£124,895	£0.238	EIS
Mar 2016	£100,000	£0.509	EIS
Mar 2016	£20,000	£0.509	EIS
Mar 2019	£26,941	£0.65	EIS
Mar 2020	£38,825	£0.65	EIS

Description of Business

In cancer surgery, a surgeon cannot see whether the entirety of a tumour has been removed. In prostate cancer surgery, for example, roughly one quarter of surgeries will leave some cancerous tissue behind after surgery. Lightpoint has developed an imaging technology based on existing imaging PET and SPECT radiopharmaceuticals, to provide surgeons with a real time image of the cancer. Lightpoint is very actively engaged with surgeons to ensure that the products are best suited to their needs.

Sale of Lightpoint

OT(S)EIS was the initial investor in Lightpoint when we invested £75k in 2013 to get the company started.

In June 2023, Lightpoint announced that it had been acquired by Telix, a radiopharmaceutical company which is quoted on the Australian Stock market. The acquisition will be completed once certain conditions precedent have been met, such as security related permission to transfer image analysis AI technology overseas. The deal comes with an initial allocation of \$20m of Telix shares to be held in escrow with a further \$15m to follow against milestones over the next two years. The milestones are in line with Lightpoint's development plans and, unforeseen circumstances aside, should be achieved.

Those investors who invested in OT(S)EIS at the start do very well with a return of about 19x the net cost of the investment if all the milestones are met. Those who invested directly more recently do much less well.

Lightpoint was in a difficult position since semiconductor chip shortages that started during Covid meant that the chips used in its product suddenly became unavailable. This meant that Lightpoint could make no more sales. It could have redesigned the product using different chips, but this would have meant applying for a CE mark all over again, an expensive process which might take several years to achieve with uncertainty about availability of slots with the notified bodies.

Under these circumstances Lightpoint sought to sell the company and it is much to its credit that the deal with Telix has been concluded.

We hope that with Telix backing, the technology will be able to go on to fulfil its potential, to save lives and reduce morbidity associated with cancer surgery.

METAL POWDER AND PROCESS

MetalPowderProcess.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£1.25m	£1.25	12.0%

MPP Investment History

Date	Amount	Share Price	Type
Aug 2013	£150,000	£1.25	SEIS

Description of Business

Metal Powder & Process (MPP) was established to produce high quality metal powders by gas atomisation for the aerospace, medical, and other industries. 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. gear wheels 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 can be stronger and more accurate. Now demand is increasing even more quickly due to the rapid growth of 3D printing of metal parts.

Due to the incorporation of some novel technology, it is hoped that the atomiser (known as Bertha) 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.

Progress since Investment

Work on completing and commissioning Bertha has been continuing since the investment. The first sales were achieved in Q1 2015 for trial quantities. In Q4 2016, and after a development programme lasting about a year aimed at producing powder of a novel alloy for diamond attachment for an overseas customer, MP&P received its first significant order. This order was worth >£1m, to be delivered at steadily increasing monthly quantities. This was a great achievement and an important milestone in the development of the company, but it brought new challenges. Unfortunately, in 2020, the customer sold the product line which used the MP&P powder and MP&P lost its largest customer. In Q2 2017, Bertha produced her first titanium powder. During Q1 2021 the new fluidised bed, owned by MP&P's sister company PSI, became operational. This will be used, initially experimentally, to coat particles used in battery anodes in electric vehicles in a way which, it is hoped, will result in longer life batteries, capable of a significantly increased number of charge/discharge cycles. If this works, the potential is large. The rig will also be used to heat treat post-production metal powders to make them more suitable for repairing military aircraft in remote locations. The other use for the rig will be to recondition waste powder from AM operations. Several of these developments are grant-funded and with several parties involved.

Recent Developments

MPP has continued to supply hundred kg quantities of an alloy used in liquid fuelled rocket motors. The powder is used to make highly stressed components, both thermally and mechanically, by laser powder-bed additive manufacturing. To develop optimal properties in the component, unusually close tolerances in the alloy powder composition must be achieved. The possible order of £300k per month is seemingly getting closer.

MPP is involved in discussions about a major programme to develop a new method to make titanium powder, in conjunction with a consortium of aerospace companies. The next generation of military planes will be manufactured from Titanium powder and having a supplier of this powder in the UK has strategic importance. So if this all works out, it could be very good for MPP.



DCM Investment History

Date	Amount	Share Price	Type
Apr 2014	£75,000	£0.75	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.9m	£1.25	13.9%

Description of Business

Professor Kyriakos Porfyrakis developed a method of producing small quantities of endohedral fullerenes, while working in the Materials Department of Oxford University. 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. Professor Porfyrakis developed a method of making fullerenes which contain an atom of another element inside. At the time of the investment, the elements chosen were Gadolinium, Yttrium and Nitrogen. It was 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 had been considerable interest from researchers around the world. Production capacity at the time of investment was about 1 gram per month. This is a classic high risk, high potential reward investment.

Progress since Investment

Production of the materials and research continued in the lab. An important milestone was achieved in Q3 2014, when DCM received its first order, £22,000 for 0.2mg of a nitrogen-containing fullerene, with a purity of 1 in 1,000, so 200 micrograms of the N@C60. This is a price of more than £100m per gram, so we think this might be the most expensive material on the planet.

The material is being used in a research project whose aim is to produce an extremely accurate atomic clock on a chip so that it could be used in a mobile phone. In Q1 2018, a contract was signed with LocatorX, a US company, which will be seeking to commercialise the atomic-clock-on-a-chip application. DCM agrees to supply LocatorX N@C60 exclusively for this application and they agree to buy only from DCM. DCM received 100,000 founder shares in LocatorX.

In 2020, Professor Porfyrakis became Head of Research for the school of Engineering at the University of Greenwich. Work on the atomic clock continues and DCM manufactures and supplies the N@C60 for this work. In Q4 21, a team, including Professor Porfyrakis, was able to align N@C60 and N@C70 derivatives in a liquid crystal matrix with ordering parameter $O_{zz} = 0.61$. (Perfect alignment is 1, random is 0 and orthogonal anti-alignment -0.5.) With the aligned samples, the company was able to achieve addressability of the available 4-electron spin levels in endohedral nitrogen by coherent manipulations. Furthermore, these functionalised molecules give rise to endohedral fullerene qubits: multi-level computational units which could be an alternative to the conventional 2-level qubits used in quantum computing. Qubits offer a larger state space for encoding information and thus can offer enhancement of quantum algorithm efficiency. The paper published by Professor Porfyrakis and his collaborators in one of the most prestigious chemistry journals: Angewandte Chemie, has now received 6 citations. A substantial research proposal will be submitted to UKRI funding agencies as a collaboration between the Universities of Oxford and Greenwich, and DCM by Q4 2023.

Recent Developments

Professor Porfyrakis has been chosen to lead the newly-formed Centre for Advanced Manufacturing and Materials (CAMM) at the University of Greenwich, leading a team of approximately 30 academics. The centre will aim to increase the Research & Knowledge Exchange impact for the University and to bring several stakeholders together, including spin out companies such as DCM.



Sasets Investment History

Date	Amount	Share Price	Type
Jul 2014	£75,000	£0.12	SEIS
Jan 2016	£75,000	£0.28	EIS

Company Valuation	Valuation Share Price	Fund Holding
£0.7m	£0.06	7.6%

Description of Business

Sasets provides software for construction companies which enables them to replace paper forms with forms on mobile devices. The forms may have information such as the weather entered automatically. The net result is a jump in efficiency and a big time saving. The forms are transmitted instantly to the department where they are needed, a huge improvement on the old methods of sending forms in triplicate by post to departments which then had to re-enter the data. Time stamped, geotagged photographs may be added to the forms, a great advantage in many situations.

Progress since Investment

As so often, things went more slowly than hoped, and new issues emerged when the product began to be used in the field. But technical development continued, and the number of users started to increase. Users pay a monthly subscription to use the software. Sasets grew to a peak of 493 users. Then two bad things happened. First, Keir acquired A1, which had about 150 Sasets users. Despite the protests of the users who liked the Sasets platform a lot, the contract with Sasets was cancelled. Then Covid struck, many construction sites were closed, and some construction companies went out of business

Date	Paying users
Dec 2015	102
Dec 2016	200
Dec 2017	310
Dec 2018	422
Dec 2019	493
Dec 2020	437
Dec 2021	409
Dec 2022	453
Jun 2023	513

Recent Developments

The upward trend continues, with the number of users having now increased to 513.

There are currently 18 corporate customers, the smallest of which has 2 users and the largest 155. The platform works very well and the users are very complimentary about Sasets, saying how useful they find it, and indeed how they could not now operate without it.

A next generation Sasets, incorporating a substantial element of AI, is being planned. A business plan is being developed around this. It is likely that some additional capital will be needed to finance this development, so Sasets may do a fundraising in the autumn.



SIME Investment History

Date	Amount	Share Price	Type
Sep 2014	£75,000	£2.11	SEIS
Apr 2016	£100,000	£2.35	EIS
Nov 2018	£25,040	£5.00	EIS

Company Valuation	Valuation Share Price	Fund Holding
£14.10m	£8.36	4.9%

Description of Business

Sime Diagnostics makes use of mathematical techniques to extract information from spectrometric readings of medical samples. The first application is in determining whether premature babies (and possibly babies born by Caesarean) need an application of lung surfactant to protect their lungs. Respiratory Distress Syndrome (RDS), a breathing disorder caused by surfactant deficiency, affects 1 in 4 premature babies.

Babies with RDS require mechanical ventilation, oxygen therapy and longer hospitalisation - all at significant cost. RDS can be prevented with surfactant treatment at birth. Prophylactic surfactant treatment harms healthy babies so neonatologists have to wait for RDS symptoms to develop before starting treatment. Sime's new test should give results within 10 minutes of birth. Sime's technology was used successfully for the first time on a premature baby in China in Q4 2018.

Sime's work has now been published and shows the Lung Maturity test has a very high sensitivity of 91% (accurately identifies 91% of babies that have a deficiency) and a specificity of 79% (accurately identifies 79% of those who don't).

Progress since Investment

Using the data generated from Sime's Lung Maturity Test to predict RDS at birth, Sime's propriety AI was able to successfully predict another lung disease at birth, BPD (Bronchopulmonary Dysplasia, more commonly known as chronic lung disease), a life-threatening disease that can have serious complications and large economic costs.

In parallel Sime's unique data and positioning in the respiratory diagnostic space has enabled Sime to rapidly develop a respiratory test for adults in intensive care with Acute Respiratory Distress Syndrome (ARDS), including Covid-19 patients. Insufficient surfactant in the lungs is a major contributor to ARDS, and treatment requires high-cost invasive ventilation. Early scientific validation of the test achieved positive results and IP has been filed.

In Q4 22, Sime achieved its CE mark that enabled its device to be sold for clinical use.

Recent Developments

In Q1 23, Sime started a clinical trial to revalidate its earlier results, using a fully automated CE Marked POC device and an improved AI algorithm to predict neonatal RDS. Samples of gastric aspirate (a fluid routinely extracted at birth) from 50 babies have been analysed using the POC device and disposable, and the trial is expecting to finish by August for 70 babies. The platform's AI will evaluate the data generated to determine lung surfactant by measuring the ratio of two key lung maturity biomarkers: lecithin-sphingomyelin. The results will remain blinded to the clinicians and will not be used to guide treatment. The real-world data generated will support an upcoming fast track FDA submission and prepare the company for market entry in 2024. Sime is currently raising money for series A to enable production and marketing for sales.



Expend.com

Company Valuation	Valuation Share Price	Fund Holding
£20.97m	£0.15	11.5%

Expend Investment History

Date	Amount	Share Price	Type
Dec 2014	£75,000	£0.005	SEIS
Feb 2017	£17,338	£0.06	EIS
Dec 2017	£3,000	£0.16	EIS
Aug 2018	£13,000	£0.10	EIS
Mar 2019	£30,719	£0.10	EIS
Mar 2020	£29,300	£0.10	EIS

Description of Business

Expend is designed to simplify expense management for SMEs and larger organisations. Expend's vision is to offer a "zero-touch" experience via a fully autonomous expense and spend management platform for businesses. Through an innovative mobile app and web platform, Expend provides optional contactless payment cards, receipt & invoice management, mileage tracking, spending approvals and expense reimbursements, and integrations with common accounting platforms, all in one platform. Expend supports all transaction types, regardless of the source, and is developing partnerships with financial institutions, including banks, to provide turnkey solutions for their business customers.

Progress since Investment

Growth has been steady over the last few years and accelerated in the last year. An increasing number of companies across various sectors now trust Expend as their expense and spend management platform. The platform works well for SMEs and also for larger companies. Notable customers include Amazon, Cote Restaurants and AgeUK. Overall, feedback has been excellent, as can be seen from customer reviews.

Expend has developed its commercial offering and now benefits from a hybrid, multi-revenue model. Like a typical SaaS business, Expend enjoys monthly recurring revenue from subscriptions and generates income when people use its payment products and cards (for example, through payment interchange when a card is used and fees for items like foreign exchange transactions). Expend also receives revenue from its partnerships with financial institutions.

Expend's revenues have risen steadily almost every month since the company started and surpassed £1m ARR in April 2023. Expend should continue to grow well and see notable growth acceleration in the coming months and through 2023 as phased updates are rolled out to customers, with many new features scheduled for release.

The company's new real-time Visa transaction support "Card Connect" feature, allowing users to "Bring their own card", is now live with customers and has attracted good PR. Expend believes it is the first company to bring this innovation to market. This allows companies to pull their transaction data from Visa automatically into Expend, which is then used to automate the expenses and spending management process. Expend believes this will drive growth as it opens up the platform to many new users, including financial institutions and, ultimately, its "non-Expend card" customers.

The company completed a widely-publicised partnership with Virgin Money Bank in 2022 and is in talks with another sizeable UK financial institution to provide Expend's services to its customers.

Recent Developments

Some excellent recent news is that the company has received financial incentive offers from two of the world's largest payment card networks. These agreements help formalise a partnership with Expend and include notable financial support to the company and ongoing incentives to assist Expend's growth.

The company believes deepening such partner relationships will help support an efficient route to opportunities within the banking and payment sectors.



MolecularWarehouse.com

Company Valuation	Valuation Share Price	Fund Holding
£0.62m	£0.10	5.0%

MW Investment History

Date	Amount	Share Price	Type
Apr 2015	£75,000	£0.60	SEIS
Feb 2016	£75,000	£0.80	EIS
Mar 2016	£20,000	£0.80	EIS
Sep 2016	£52,005	£0.97	EIS
Sep 2017	£20,000	£2.00	EIS

Description of Business

Molecular Warehouse (MW) has technology to rapidly develop and test new proteins for diagnostic and therapeutic uses. MW has developed a new type of sensor for diagnostics which yields new quantitative devices. The devices take a small drop of fluid and give a numeric readout in seconds without any additional operations (like a blood glucose sensor but for almost any physiological analyte).

The key technology is an enzyme with a hinge which we call a biosensor. When the hinge is open the enzyme doesn't work and no signal is produced. When the molecule of interest is present, the enzyme is pulled into shape and the enzyme can function happily and produces a signal that is easily read.

These biosensors can be used for many applications where it is useful to know how much of a molecule is present. One area is therapeutic drug monitoring. There are several drugs where it is important that a patient has neither too little nor too much drug in their system, so patients need to be monitored until the dosing is accurately determined. MW will allow patients to measure this themselves with high accuracy and communicate back to the doctors. Its first products are aimed at the transplant market and will allow accurate monitoring of drug levels outside a hospital environment.

For the development of new sensors, MW makes use of the services of the Queensland University of Technology Brisbane where a large number of proprietary and commercial tools are brought together in one location allowing very rapid development of new products or leads.

Progress since Investment

The company has developed a sensor for calcium which may have applications in monitoring kidney disease and hyperparathyroidism. The sensor demonstrates the functionality of the whole system of biosensor, reader and software. However, it is not a sensor which is likely to be commercially successful.

MW had also been developing enzyme cascade based sensors for Theophylline (used in therapy for respiratory diseases) and Lithium (for treating bipolar disorder). MW divided into two entities in May 2020: Luas Diagnostics has licensed IP from MW and will develop the enzyme cascade based sensors. MW has a minority stake in Luas, which has now also become the distributor of a 20 minute Covid antibody test and a Covid antigen test. The lab in Guildford was closed and Andrea has taken on the role of caretaker, while Kirill Alexandrov is developing new technology for MW in the lab in Brisbane.

Recent Developments

Once again, there has been little progress we can report on, but the plan to license the MW technology to a company able to exploit it more effectively in combination with other technologies is still in place.



**ANIMAL
DYNAMICS**

Animal-Dynamics.com

Company Valuation	Valuation Share Price	Fund Holding
£2.15m	£0.05*	0.9%

Animal Dynamics Investment History

Date	Amount	Share Price	Type
Jun 2015	£75,000	£0.14	SEIS
Nov 2017	£35,220	£0.36	EIS
Jul 2018	£3,001	£0.97	EIS
Mar 2020	£14,391	£0.97	EIS

Description of Business

Animal Dynamics is a spin-out company from Oxford University. It was founded by Dr Adrian Thomas, Professor of Biomechanics in the Animal Flight research group in Zoology, and Alex Caccia, an entrepreneur with start-up experience in media, technology and manufacturing and a background in finance. Adrian is an expert on how animals - birds, fish and insects - move through water and air and on land. Unsurprisingly, over millions of years, they have evolved very efficient means of doing this. Animal Dynamics aims to adapt the techniques and structures used by animals to create more efficient and effective means of flying and moving through water and over land.

Progress since Investment

Animal Dynamics has three vehicle development programmes:

1. Stork: A system for delivering packages autonomously. In Q4 2017, Animal Dynamics won a contract against 100 bidders to develop this system, and has subsequently delivered the first production units. This is now the company's lead product with full-scale production of the STM (135 kg payload, 400 km range, autonomous) planned for 2023.

2. Skeeter: A micro drone like a dragonfly. The Company successfully delivered the Skeeter project to Dstl in April, and achieved the target flight time and wind tolerance. This is a world class technical achievement, and has built unique skills in air vehicle control systems. The Skeeter nano-UAS project is on hold whilst the company focuses on Stork. During the year, the Skeeter R&D team also explored a larger propeller aircraft, after winning a DASA grant to build a highly gust tolerant mid-sized UAS called Shearwater. This project was also delivered successfully, and is on hold while focus shifts to Stork

3. Raydrive (formerly known as Malolo): Two underwater R&D projects were successfully completed in 2019, exploring the potential of underwater autonomous systems using flapping propulsion. The first was a navigation system using the Earth's magnetic field to aid navigation, and achieved useful resolution on both latitude and longitude; the second is RayDrive, which is an underwater vehicle based on the configuration of manta rays. The prototype vehicle delivers high efficiency, low noise signature and moves well. But this programme too, is on hold.

In March 2019, Animal Dynamics raised £6m at 97p per share. The round was very oversubscribed and 50% of the SEIS shareholders took the opportunity to exit at this price (14x the initial after tax share price.) The others opted to stay for the ride.

Recent Developments

As described in earlier reports, OSE, who already owned 99% of the company, invested another £7m in Q1, to keep the company afloat and to buy time to raise another £7m from outside investors to take the company forward. Talks were held with many investors but no satisfactory offers were received. In hindsight, many mistakes were made along the way. The products developed by the company are wonderful and have attracted great interest from defence forces both in the UK, US and elsewhere. The company has been put into 'hibernation' and the hope is that a way forward will be found. But the outcome for the current shareholders is unlikely to be good. We have reduced the valuation to the amount that the average SEIS/EIS shareholder will be likely to recover through tax relief.

*We value the holding at 5p/share, but the value ranges from 3p to 27p for different SEIS and EIS investments made at different times. This value represents further tax reliefs against income tax upon failure (for a 40% taxpayer), and does not include the standard tax breaks assumed to have been already claimed.

Exit Value	Exit Date	Multiple
Up to \$400m	12/09/22	Up to 127x

Ducentis Investment History

Date	Amount	Share Price	Type
Jul 2015	£50,000	£0.14	SEIS
Dec 2015	£30,000	£0.18	SEIS
Mar 2017	£160,275	£0.36	EIS
Mar 2018	£45,314	£0.40	EIS
Mar 2019	£53,820	£0.70	EIS

Description of Business

CD200 is a protein that modulates the activity of mature immune cells. It protects certain tissues in the body such as muscles and nerve tissue from the immune cells. People who have low levels of the CD200 receptor on their immune cells are at higher risk of autoimmune diseases. The herpes virus is able to survive in the human body by producing a protein very similar to CD200 – a viral homologue. CD200 acts on both the innate and adaptive arms of the immune system but does not impair the function of immature immune cells so response to infections is not affected, making it an attractive target. Other groups had carried out research on naturally occurring CD200 and its homologues. They are effective but not practical, because they would require very frequent injections. By modifying CD200, Ducentis sought to turn it into a practical treatment. There are many autoimmune diseases that might benefit from such a treatment, including arthritis.

Progress since Investment

Ducentis made excellent progress after the investment. It first designed and then made a modified CD200 protein which requires between 1/100 and 1/1000 of the wild type CD200 to produce the same binding effect. Ducentis applied for a patent on this family of molecules and it has since been granted. In 2019 Ducentis raised a round of >£1.5m to continue its development programme. The cornerstone investor was LifeArc. Eli Lilly, a major pharma company, also announced a programme in CD200, using antibodies. They completed a successful clinical trial in Atopic Dermatitis. This encouraged Arcutis, <https://www.arcutis.com/> a Nasdaq listed dermatology company, who then acquired Ducentis in Sept 2022.

The deal was quite complicated but definitely very good for OT(S)EIS shareholders and for those who invested directly as a result of a presentation. It consisted of an upfront payment of \$15m in cash and \$15m in Arcutis shares with up to \$400m of milestone payments and mid single digit royalties for sales surpassing a high (but not impossible) annual threshold. The deal is summarised below. Return to someone for whom we invested a total of £5k in Ducentis following an £25k investment in OT(S)EIS:

Date	Invested	Tax Return	Capital Return
2015 14p/share	£1,250	£625	
2016 18p/share	£1,250	£625	
2017 36p/share	£2,500	£750	
2022			£21,669
2023			*£35,000
Potential Future Milestones			**£800,000
Total	£5,000	£2,000	£856,669

*In Arcutis shares + escrow cash

**In steps over the next 10 years, and NOT guaranteed.

Small update: The Arcutis share price has fallen from \$20 at the time the deal was concluded to \$8.75 (close on 3rd July). What will matter is the share price at which we will be able to sell once the shares come out of escrow, but at the moment it has fallen from £17.28/share to £6.89/share. Generally the news for Arcutis seems good with their first product starting to sell. All the analysts predict a return to share prices above \$24, with the average projection being 4x today's share price. We will just have to wait and see.



Bioarchitech.com

Company Valuation	Valuation Share Price	Fund Holding
£7.91m	£6.00	22.4%

Bioarchitech Investment History

Date	Amount	Share Price	Type
Aug 2015	£79,560	£0.60	SEIS
Mar 2016	£40,000	£1.00	SEIS
Jul 2017	£16,200	£1.00	EIS
Oct 2017	£29,000	£1.20	EIS
Mar 2019	£89,674	£1.80	EIS
Dec 2019	£4,637	£2.80	EIS
Mar 2020	£36,758	£2.80	EIS
Mar 2021	£69,804	£4.00	EIS

Description of Business

Bioarchitech aims to improve cancer treatment by creating a drug that attracts, activates and redirects a patient's immune system to destroy their tumours. Known as immunotherapy this technique has shown the potential to cure patients. The drug which Bioarchitech is developing will be able to be administered to many more types of cancer than is currently possible. Bioarchitech is also developing an improvement for RNA therapeutics by producing a form of RNA that can self-amplify inside cells.

The CEO is Dr Geoff Hale who has an international reputation in therapeutic immunology. As a scientist, he has published over 300 articles on the mechanisms of action of antibodies. He was formerly head of the Therapeutic Antibody Centre at Oxford University, and was the founder and CEO of BioAnaLab Ltd, a successful spin-out from Oxford which grew from nothing to c.50 people. Kevin Maskell is the principal researcher and developed the idea together with LiLi Wang and Hannah Chen. From 2002 -2009, Kevin was a research assistant in the department of clinical pharmacology at Oxford University, then principal scientific director of DDS, a subsidiary of Merck Millipore. Before starting Bioarchitech, he was a senior scientist at Oxford Cancer Biomarkers.

Progress since Investment

Bioarchitech is working on generating in vivo model proof of concept data using both in-house models and through contract research organisations which is taking up all their research time over the coming months. Although taking longer than initially hoped there is sufficient cash available to cover the planned in vivo studies and progress is being made. Bioarchitech has a collaboration with antiviral company SIGA Technologies Inc. to safely enhance oncolytic virus delivery.

Recent Developments

Bioarchitech is continuing to produce in vivo data with its viruses for proof-of-concept studies. The dosing regimen for delivery to tumour via intravenous or intratumoural routes of administration have been established and current experiments are focusing on the efficacy of the therapeutic transgenes inserted into the genome of the viruses. As the therapeutic transgenes target human genes and some are designed to work as combination therapies it has taken considerable effort to adapt these to mouse models of cancer. One of the self-amplifying RNA projects has now reached the in vivo proof of concept stage which will provide go/no-go decisions for further development.



ORBIT DISCOVERY

OrbitDiscovery.com

Orbit Investment History

Date	Amount	Share Price	Type
Nov 2015	£100,000	£0.73	SEIS
Jul 2017	£38,245	£0.81	EIS

Company Valuation	Valuation Share Price	Fund Holding
£17.96m	£0.81	0.8%

Description of Business

Peptides are an increasingly popular class of pharmaceuticals, sitting in between conventional small molecules and biologics such as antibodies and proteins. They can be made chemically like small molecules, but confer significant enhancements in specificity akin to other biologics, such as antibodies.

The founders are Prof Graham Ogg and Prof Terence Rabbitts FRS from Oxford University's Weatherall Institute of Molecular Medicine. The technology enables the rapid selection of peptides that bind onto drug targets using a process that minimises unintended or non-specific binding. The underlying technology consists of creating millions of micron-sized beads each with a unique peptide attached and mixing them with a target molecule that may be associated with a disease state. The beads that bind can then be identified and larger quantities produced for further experimentation as therapeutic candidates. If necessary, iterative steps can be made where the technology is used to further enhance properties of the therapeutic candidates. A particular strong capability in Orbit is to be able to screen against cells for function. This enables the technology to be used for screening agonist peptides, or peptides that switch on specific functions within a cell, at very high throughput. These agonists are more difficult to find than peptides that block activity (antagonists), but have high utility in preventing disease.

Progress since Investment

Orbit completed a funding round of £5.25m in May 2018. Now at the Oxford Science Park, the team expanded to 29 employees. Due to different interests among the major shareholders Orbit split into two companies. One company will focus on T Cells, and is called T-Cypher. Shareholders of Orbit will have the beneficial ownership of 1/9th of a share in T-Cypher for every share they currently hold in Orbit. T-Cypher currently has 12,401,540 fully diluted shares. In 2021 Orbit raised £5.8m and Neil Butt joined Orbit as CEO.

Recent Developments

Interest in Orbit's services continues to increase as news of the technology is spreading. Orbit has recently finalised three Master Service Agreements and is in discussion about specific Work Orders (or projects) associated with these. Unfortunately, one current customer terminated a project due to technical complexities outside of the Orbit platform (it was not possible to create appropriate starting materials). Whilst disappointing, the project pipeline is strong, with other discussions supporting a continued expansion of services.

Summary

Orbit's pipeline is looking good and growing despite a setback on one programme. Orbit is seeking to raise money in order to expand to service capabilities and support future increasing demand.



Curileum.com

Company Valuation	Valuation Share Price	Fund Holding
£17.04m	£4.00	19.1%

Curileum Investment History

Date	Amount	Share Price	Type
Mar 2016	£75,000	£0.63	SEIS
May 2016	£25,950	£0.63	SEIS
Jul 2016	£20,000	£0.63	SEIS
Jul 2016	£20,000	£0.63	EIS
Oct 2016	£19,997	£0.31	EIS
Nov 2016	£20,002	£0.31	EIS
May 2017	£30,000	£0.31	EIS
Mar 2019	£106,349	£0.31	EIS
Mar 2020	£13,000	£1.00	EIS
Dec 2022	£29,656	£4.00	EIS

Description of Business

Dr Jeff Moore established Curileum Discovery in labs adjacent to St Mark's Hospital in London, one of the few hospitals in the world that specialises entirely in treating serious gastrointestinal diseases. The company has six employees: two managing operations and business development and four stem cell scientists – two of whom are completing company-sponsored PhD programmes at UCL.

Curileum aims to discover drugs to intervene early with treatments to reduce disease progression in colorectal cancer and inflammatory bowel disease. The company generates "mini-gut" organoids from patient and healthy gut mucosa to discover and characterise drug candidates before testing in preclinical in vivo models. These gut organoids are microscopic three-dimensional cellular structures that mimic the structural and functional properties of the mucosal layer of the gut. From these studies, two novel drug candidates that the company discovered are in preclinical development for licensing to pharmaceutical companies.

Progress since Investment

Curileum has continued to make excellent progress with its preclinical candidates since the investment in Q4 2021:

1. **ULI-015** (ULI means powerful in Chinese) is the active small molecule compound that Curileum isolated from a plant extract component (PLE015) of a traditional Chinese medicine. The company is developing ULI-015 to intervene early in the development of bowel cancer.

2. Stem cell therapy candidate for healing fistulas.

Curileum has discovered an adult stem cell in the lower region of the gastrointestinal tract that can produce a wide range of cell types in the culture dish. The company has tested the regenerative capacity of these stem cells in an in vivo preclinical fistula model. In two studies, these stem cells filled the fistula tract with healthy cells, effectively healing a fistula for the first time.

Curileum received wonderful data during Q123 from a trial on pigs with the FAP gene (meaning that they develop bowel cancer). One pig was fed with a daily dose of PLE015 for three months, while the control pig was fed a normal diet. In the treated pig, 255 polyps became necrotic (meaning that they had become dead skin and there was only one 'progressive' polyp remaining).

Curileum raised more than £500k, mainly from its existing shareholders, in Q1, but would now like to find a pharma partner or a large funder to take this forward. The possibility is that ULI could be the active ingredient in a pill (ULI has already been shown to be safe and works when taken orally) to be taken by millions of people worldwide to prevent and or slow the development of bowel cancer.

Recent Developments

Curileum has been in negotiations with several pharma companies and with several potential investors, with a view conducting a clinical trial. But no deal has yet been signed.



Company Valuation	Valuation Share Price	Fund Holding
£1.03m	£0.15	6.5%

Spendology Investment History			
Date	Amount	Share Price	Type
Apr 2016	£37,500	£1.00	SEIS
Oct 2016	£62,500	£1.00	EIS
Sep 2017	£25,000	£1.00	EIS
Mar 2023	£65,000	£0.15	EIS

Description of Business

Spendology was founded by three entrepreneurs from software, foreign exchange and personal finance backgrounds. The business provides a white label solution for the travel industry which allows tour operators, airlines and travel agents to offer a mail order or click & collect travel cash add-on service to their holiday customers. Spendology Cloud allows the travel industry to increase turnover, boost profits and enhance customer retention. In 2021, Spendology launched a franchise solution, offering any business anywhere in the world the opportunity to use the Spendology Cloud platform to provide an ecommerce front-end to their foreign currency distribution business. In February 2022, the \$23bn international travel conglomerate, Internova Travel Group, signed a multi-million dollar franchise deal with Spendology for the US market.

Post-pandemic Performance

Travel chaos caused by staff shortages marred what was beginning to look like a dramatic recovery for the travel industry in Summer 2022 – and virtually no country was unaffected. So 2022 fell short of the 2019 peak.

Recent Developments

By mid-June, Spendology had raised £310k of the £400k that they were seeking. Plus, an additional £65k was raised via an Advanced Subscription Agreement, with a fallback position of conversion at 15p per share, the same price as the equity raise. There is room for a further EIS investment of £24,165.75 at 15p per share.

The deal with Internova, with 43,000 US travel outlets, was signed during Q2. Internova has executed a license with GMT (Golden Money Transfer), and Spendology now has to integrate GMT and provide training for GMT staff. It is expected that the Internova launch with GMT will be in mid-July.

In the UK, the New Advantage Travel partnership has been launched, and the first travel agent on this scheme is being set up at the time of writing. The expectation is that 6 further independent agents will be enrolled before the Summer Holidays.

Many other active negotiations are in progress. Spendology had a good quarter.



ActiveNeedle.com

Company Valuation	Valuation Share Price	Fund Holding
£12.58m	£0.93	12.0%

Active Needle Investment History

Date	Amount	Share Price	Type
Apr 2016	£50,000	£0.12	SEIS
Aug 2016	£65,000	£0.19	EIS
Mar 2017	£19,000	£0.19	EIS
Mar 2017	£30,000	£0.19	EIS
Jan 2018	£28,000	£0.26	EIS
Mar 2019	£102,000	£0.35	EIS
Mar 2020	£32,100	£0.35	EIS
Mar 2021	£55,650	£0.42	EIS
Apr 2023	£7,500	£0.93	EIS

Description of Business

Doctors make use of long needles for taking biopsies or making deep injections, but the needles are difficult to see on ultrasound, and long thin needles often deflect and do not end up exactly where intended. Active Needle Technology provides minute longitudinal ultrasound movement to the needle. This results in the needle being very bright on the ultrasound (from all directions) and much less deflection. The ultrasound drive also has an additional benefit in that the force required to insert the needle is much reduced. In early studies, this has been shown to result in less pain upon insertion and less risk of overshoot.

Possible applications include:

- Biopsies - enabling surgeons to take biopsies (small samples of tissue) from tumours deep inside the body with much greater ease and with much greater accuracy.
- Injecting a chemotherapy drug directly into a solid tumour much more effectively. The ultrasound signal used with a needle with holes in the side enable the drug to be dispersed throughout the tumour. One Professor of oncology said he has been "looking for this needle for 25 years". Active Needle is gaining wide interest on this application and is collaborating with a UK pharma company.
- Tattooing - Active Needle has developed a prototype tattooing system (branded as Tranquill) using the same ultrasound technology. A trial in volunteers has shown greatly reduced pain and skin trauma.

Recent Developments

Not too much news other than progress all around. The negotiations for the TranQuill device have proceeded smoothly so far.

The Hyperfuse technology for injecting and diffusing drugs into tumours continues to raise interest. Additional tests are being arranged ahead of planned clinical trialling early next year.

Active Needle has started fundraising, seeking to raise up to £2m at 93p per share.

With the CE mark in hand, Active Needle is now planning manufacturing, aiming to start once the current funding round has been completed.



[ONI.bio](https://oni.bio)

ONI Investment History

Date	Amount	Share Price	Type
Apr 2016	£100,000	£0.02*	SEIS

*Adjusted for 1000:1 share split. EIS certificates remain valid.

Company Valuation	Valuation Share Price	Fund Holding
£129.67m	£0.21	0.8%

Description of Business

Oxford Nanoimaging is a spin out from the biological physics lab of Prof Achillefs Kapanidis at Oxford University. It specialises in super resolution microscopy, which refers to being able to resolve dimensions smaller than the wavelength of light. Prof Kapanidis, Robert Crawford and Bo Jing have invented an optical assembly which allows a microscope to be shrunk from the size of a small car to the footprint of a tablet (with a PC sized box under the bench). This not only gives a big advantage in crowded and expensive laboratories, it also does away with many of the adjustments and control requirements of other super resolution microscopes, making it suitable for beginners and experts. With the microscope, it has been possible to image the processes of DNA repair in a cell. The expertise in the company is not only in the device, but also in the molecular biology techniques and the image processing. A bit like a smart phone, we expect there will be advances both in the hardware and in the applications that can run on it. The company is aiming for rapid expansion, with a distribution network being developed around the world. The company also has the backing of Oxford University Innovation and Oxford Science Innovation.

Progress since Investment

Good initial progress was made with sales of nanoimagers exceeding expectations. In March 2017, the company raised £3m at £62.50 per share compared to the initial price of £20 per share to accelerate the rate of growth. In Q2 2018, the company raised \$25m at £173.40 per share. The money came from existing shareholders, and from new shareholders from New York, China, Singapore and London.

ONI moved its headquarters to San Diego. In Q1 22, ONI closed a fundraising of \$75m at £0.21 per share, (a price after a 1,000:1 shares split, so equivalent to £210).

In Q123 Paul Scagnetti joined as CEO. He was previously Vice President of Corporate and Business Development at Illumina and worked at FEI and Intel.

You can see some of the fantastic images captured by ONI's microscopes here <https://oni.bio/applications/gallery/>.

Recent Developments

ONI is now headquartered in California, and we hear very little from the company.



entia

[Entia.co](https://entia.co)

Company Valuation	Valuation Share Price	Fund Holding
£16.61m	£26.38	1.8%

Entia Investment History

Date	Amount	Share Price	Type
May 2016	£75,000	£14.78	SEIS
Oct 2016	£9,504	£14.78	EIS
Nov 2017	£48,554	£21.96	EIS
Feb 2019	£89,934	£31.79	EIS
Mar 2021	£26,017	£35.64	EIS

Description of Business

Entia was founded by Dr Toby Basey-Fisher in 2015. Entia is empowering cancer patients with greater freedom whilst also equipping healthcare professionals with the insights to make more informed and personalised clinical decisions regarding treatment toxicity. At the heart of Entia's approach is a novel and easy-to-use blood analyser that allows patients to perform a suite of blood tests in their own home. It can monitor haematological toxicity of cancer treatment via a patient's full blood count. Results are seamlessly shared with healthcare professionals via Entia's cloud network and integration tools. This approach creates new insights into how individuals are responding to care and subsequently may enable more personalised decisions to mitigate life-threatening complications.

Entia has also launched a home monitoring solution for anaemia of chronic kidney disease under its Luma brand (www.lumahealth.uk). The product and service, which is similar to the upcoming Liberty solution, has been very well received with 100% patient preference over previous care pathways.

Progress Since Investment

Home monitoring has become the main focus for Entia, with multiple large pharma companies partnering with Entia to deliver the company's virtual solutions as part of blockbuster therapies. Entia's main focus is currently to bring its virtual oncology solution, Liberty, to market. The name reflects the freedom given to patients to be at home or at work rather than travelling to hospital for routine blood tests required to monitor the toxic side effects of cancer treatment.

The company employs 52 people. To date, the company has raised over £21m through equity financing and £5m from government grants. This has allowed the company to develop a multi-award winning team, establish world-leading clinical and pharmaceutical partnerships and positively change patients lives with its innovative products. The company's management systems have achieved accreditation against ISO 13485 and ISO 27001. The company also CE marked and launched Luma in 2020 for managing anaemia of chronic kidney disease.

Recent Developments

Entia has agreed a new funding round - primarily from existing investors at a price of £26.38. This downround reflects the general difficulty of the fundraising environment rather than any difficulties within Entia which is progressing well. Entia has started a 6 centre pilot with the NHS and expects to obtain its UK CA mark this year.

Summary

Entia has a publicly announced partnership with Pfizer, and work with other companies is progressing.



[Covatic.com](https://covatic.com)

Company Valuation	Valuation Share Price	Fund Holding
£8.19m	£9.19	2.6%

Covatic Investment History

Date	Amount	Share Price	Type
Feb 2017	£39,776	£8.00	SEIS
Feb 2017	£60,224	£8.00	EIS
Feb 2018	£30,000	£16.00	EIS
Mar 2021	£67,997	£9.41	EIS
Apr 2022	£37,926	£18.00	EIS

Description of Business

For the past 20 years, Google and Apple and other tech companies have gathered and sold data about their users' browsing habits, via cookies, and sold this data to advertisers. This has now become unacceptable and Apple have given people the ability to opt out. 85 % have done so, and advertising revenues have slumped.

Covatic has developed a set of tools, now branded 'A-Type' which sits on a user's phone (within the client's apps) and gathers data about a user and can then categorise the user into one of 1,000 types. So a particular user might be female, aged 30-35, with two young children, a car and a weekly shopping bill of £50-£75. The app might be able to offer 105,000 of this category to an advertiser who could then advertise nappies. But the user's data never leaves her phone and is unknown to the advertiser.

'A type' is now being deployed by an increasing number of the world's largest broadcasting organisations.

In Q1 2023, Covatic completed a fundraising of \$3m at a disappointingly low share price of £9.19. But the fact that Comcast, one of the largest broadcasting companies in the world, invested \$1.5m and is an active user of Covatic should be helpful in bringing other customers on board.

Recent Developments

Covatic has been busy since the funding round completed recruiting new staff members and bringing new customers on board.

Joining the Executive team are two well-seasoned industry pros – Sarah Lawson Johnston (formally at Covatic and Chair), as the new CRO, and Sarah Whitfield, as the CMO. More info may be found from Inside media at <https://www.insidermedia.com/news/midlands/covatic-confirms-leadership-appointments>.

Covatic aims to become the market leader for ad tech data provision and has appointed Business Development executives for North America and Australia.



EW-Technologies.com

Electrowinning Investment History

Date	Amount	Share Price	Type
Feb 2017	£25,000	£0.10	SEIS
Sep 2017	£35,000	£0.50	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.03m	£0.04	39.0%

Description of Business

Duncan Grant is an electrical engineer and spent his life in academia, at Bristol University developing novel methods of controlling minute currents and voltages to minimise power consumption and also controlling very high currents. At one time he developed a radio which used 1/10 of the power of the next lowest powered radio, and which had been intended for use in low income economies. The purpose of the investment in Electrowinning Technologies was to improve the quality and quantity of copper produced in electrowinning and electro refining plants by controlling the huge currents used in these plants with greater precision than had ever been done before.

Progress since Investment

The business started well when a contract was obtained to install the system in a single cell in a large European electrorefining plant. The hope was that this would have demonstrated the economics of the business, both the improved quality output and the reduction in power used. However, just before the system was due to be installed, and for reasons which remain unclear but which were believed to be political/internal management issues at the client customer, the contract was cancelled at the last moment.

So since then Electrowinning Technologies has been in mothballs.

The company continues to inform the mining industry of its existence and its hopes for the technology.

Recent Developments

There has been little progress in the last quarter and the company remains in mothballs. The renewal fees on the patents have been paid and there are no paid employees. Unless a way forward can be found, it is likely that the company will be wound up, in which case investors will be able to obtain loss relief on the investment. There has been no change to this situation over Q2.



LupeTechnology.com

Company Valuation	Valuation Share Price	Fund Holding
£2.58m	£1.12	11.0%

Lupe Investment History

Date	Amount	Share Price	Type
Feb 2017	£51,000	£0.68	SEIS
Feb 2017	£30,000	£0.68	EIS
Mar 2018	£51,000	£1.50	EIS
Mar 2018	£37,001	£1.50	EIS
Mar 2018	£9,999	£1.50	EIS
Mar 2020	£138,719	£2.78	EIS
Mar 2021	£50,243	£3.50	EIS
Apr 2022	£27,864	£4.50	EIS

Description of Business

Lupe was formed to design and launch a better vacuum cleaner. One that would work well and last a long time, with all parts designed to be maintained and replaceable, unlike today's throw-away vacuums. The two founders were previously on the engineering design team at Dyson.

Progress since Investment

Lupe made excellent progress. The production prototype was completed in Sept 2018 and rapturously received at a huge trade fair in Germany. In 2018 Lupe did a kickstarter campaign hoping to raise £75k by asking people to pay 9 months in advance of delivery, to help fund production, but raised £650k. In summer 2020 the first production units arrived. Lupe received rave reviews with over 250 media articles, and was judged to be by far the best cordless vacuum cleaner in the world by Vacuum Wars, which, in its own words, is strictly for nerds. They test everything (eg putting 100g of sand on a deep pile carpet and weighing the amount collected by each brand). You can see this video at shorturl.at/aoKU1.

Partly as a result of these excellent reviews and the associated comments on social media, Lupe achieved steadily rising sales direct from its website with almost 90% of the sales being in the US, a market which Lupe hadn't expected to target initially. This was excellent, given that it's one of the largest markets for vacuum cleaners in the world.

In Q4 21, Lupe became a victim of its own success when it completely sold out of stock. However, it transpired that people were prepared to order and pay in advance for delivery up to five months later. During 2022 Lupe achieved year on year revenue growth of 40%, despite declining consumer demand across the globe. It came very close to break-even.

Recent Developments.

Despite talking to many potential investors, Lupe has not succeeded in raising additional capital. So it has made all staff redundant and is surviving by selling the remaining stock. Lupe will be able to carry on in this manner until the end of 2023, but does not have enough capital to replenish the stock. Sales have been quite good, and the majority of sales continue to be in the US. Dyson's new product is now priced at c\$1,000 while Lupe's (Lupe would say significantly superior) product is priced at \$699. Lupe is continuing to seek investment and another possible outcome, in the absence of significant investment, might be the sale of the rights, the moulds, etc. to another vacuum cleaner manufacturer.



[ProcessVision.com](https://www.ProcessVision.com)

Company Valuation	Valuation Share Price	Fund Holding
£14.61m	£5.00	2.4%

Process Vision Investment History

Date	Amount	Share Price	Type
Mar 2017	£99,999	£3.00	SEIS
Jun 2018	£3,000	£3.00	EIS
Mar 2021	£68,494	£2.00	EIS

Description of Business

Process Vision Ltd has developed an inspection system for gas pipelines. Paul Stockwell, the founder, worked for many years in the field of sensors for the gas and oil industry and became acutely aware of the requirement for detecting and measuring liquids in gas pipelines. Gas pipelines should transport clean, dry gas, but PV's initial product, LineVu, is revealing that there are often liquids present in the gas. This has three major implications for the industry:

- **Financial:** Natural Gas Liquids (NGLs) are recovered from the gas during gas processing. These are mainly Ethane, Propane and Butane and command a high price. In fact, some gas processing plants are paid more for NGLs than gas. LineVu is discovering that, due to measurement sampling standards, many of these liquids are missed, and failures in NGL recovery processes go unnoticed, resulting in NGLs being sent to the gas line where the supplier misses out on revenue.
- **Safety:** Sending liquids into gas systems is unsafe. Gas compressors and gas turbines in power stations rely on clean, dry gas and suffer increased maintenance costs when liquids are present in some cases leading to the complete failure of the compressor or gas turbine. In addition, corrosion in pipelines occur when liquids are allowed to enter the system.

These two aspects are the market drivers to install a camera and discover what is actually happening in the pipeline.

- **Compliance:** When the gas is wet it is "out of scope" for two of the main international standards for gas quality measurements as "Attempting to sample a wet natural gas flow introduces the possibility of extra unspecified uncertainties in the resulting flow composition analysis". In other words, the main fiscal measurement of calorific value will not be within an acceptable accuracy so the only way these measurements can be validated is to ensure the gas is not wet with a LineVu system.

Progress Since Investment

PV has been able to employ a General Manager for North America who has a great track record of introducing new technology to the industry and the company expects to get better traction in the USA and Canada as a result. There are currently 5 LineVu systems in use and the forecast for the next few quarters is as follows:

	Europe	NAFTA	RoW
2023 Q3	2	8	4
2023 Q4	2	8	4
2024 Q1		6	13

So it is expected that all of the current paid trials will convert to orders.

Recent Developments

A portable version of the system should be ready at the end of July. It is anticipated that this will shorten sales cycles. Progress has been made on the LineVu 300 and PV hopes to perform a beta test with this in the USA during the summer. The LineVu 300 is a leap forward for the technology: converting to a colour camera, up to 100 frames per second and power over ethernet. Thermal testing continues and PV hopes that it will be able to operate even with an ambient temperature of up to 55 Deg C meaning that additional cooling systems may not be necessary.



Gripable.co

Company Valuation	Valuation Share Price	Fund Holding
£17.54m	£5.47	2.1%

Gripable Investment History

Date	Amount	Share Price	Type
Sep 2017	£49,999	£2.27*	SEIS
Feb 2019	£106,934	£4.21*	EIS
Dec 2020	£33,219	£5.47	EIS
Mar 2022	£69,682	£5.47	EIS

*Adjusted for 100:1 share split. EIS certificates remain valid.

Description of Business

Worldwide some 430m people suffer with hand and arm disabilities. The current treatment for people who have lost the use of a hand following a stroke is to squeeze a ball, repeatedly maybe for up to 8 hours. This is extremely boring.

Dr Paul Rinne, a doctor who had been doing research at Imperial College on the rehabilitation of stroke patients, and Mike Mace, a robotics engineer at Imperial, developed an intelligent variable strength grip, which incorporates accelerometers and wi-fi. This means that a patient is able to play computer games which makes life much more interesting and with the result that patients enjoy their therapy and recover much more quickly. The founders have developed a range of games whose difficulty can be increased to match the returning dexterity of the patient. The brain is extremely plastic, and although a stroke may have destroyed the areas previously responsible for hand operation, given the right feedback the brain is able to relearn how to control hands, using entirely new areas.

Progress since Investment

ISO 9001 and 13485 have been awarded.

The team has expanded and is working on the software which is not just standalone games, but also a framework which tracks the patient's progress. One of the key features of Gripable is the possibility to interact at a distance with other patients or relatives. It can also distinguish between situations where activities are limited by physical capability and those where mental abilities are holding back progress. The trainers who make use of Gripable particularly like the ease with which Gripable can be set up and used. A study at Imperial showed a vast increase in exercise among patients given the opportunity to use the device. An example of the benefits of Gripable can be seen in a case study of a stroke patient. His grip strength rose from 0.8kg to 12kg. This was achieved by the patient spending 160hrs over 30 weeks with the device. With a normal therapist that might have cost £15,000 and in normal unassisted care, a patient might only average 200 reps rather than the 10,000 reps the patient achieved. In 2022 Gripable raised £8.3m investment in order to push forward the US and closed a distribution deal with Medline who is the US's largest privately held manufacturer and distributor of medical supplies.

Recent Developments

Gripable has started to build momentum in the US where there has been a change in strategy. Gripable has done a deal with a company which is contracted to look after patients once they are discharged from hospital and who suffer a major financial penalty if ever patients have to return to hospital. So Gripable is now involved in two pilot studies one with Johns Hopkins Healthcare and another 20 centre study backed by a midsize medical care company in which the Gripable device is given to patients when they return home. The device is connected so that it is possible to monitor how the patients are doing in real time by seeing how they are using their Gripable device. In this way it is possible to spot patients who are deteriorating and so to intervene early to prevent readmission to hospital.



[Darkbeam.com](https://darkbeam.com)

Company Valuation	Latest Share Price	Fund Holding
£8.60m	£3.00	7.1%

Darkbeam Investment History

Date	Amount	Share Price	Type
Oct 2017	£50,000	£1.00	SEIS
Feb 2018	£25,000	£1.00	SEIS
Feb 2018	£10,000	£1.00	SEIS
Mar 2018	£18,200	£1.00	EIS
Sep 2018	£50,000	£0.50	EIS

Description of Business

Lots of bad things happen on the web, which has become so large (>1bn servers) that it has become difficult for law enforcement agencies to track. Darkbeam has developed a suite of cyber security technologies that deliver clients real time supply chain situational awareness. This involves the integration of supplier vulnerability detection and real time cyber threat intelligence through darkweb monitoring. These services provide vital information to customers which is designed to alert them to vulnerabilities and to take action to prevent their data and IP from being stolen.

Progress since Investment

Having had a challenging first year, which resulted in a change of managing director, Darkbeam is now positioned as a supply chain cyber risk management system. There are three main planks in one simple-to-use offering:

- Cyber Vulnerability Intelligence: this is the real time mapping, classification and prioritisation of a company's digital footprint and vulnerabilities on the open web – including the dark web.
- Cyber Threat Intelligence: the real-time monitoring of hackers and their behaviours.
- Cyber Vulnerability + Threat Intelligence = Darkbeam's Cyber Score

These variables roll up into the Darkbeam score (1 low – 999 high risk) which provides an analyst a predictive indicator as to the vulnerability of a company. This is important in insurance and supply chain circles. The Darkbeam score for any company can be obtained in seconds.

During 2023 Darkbeam has seen a material increase in hostile activity in supply chains. Darkbeam has enabled clients to respond to a growing number of threats at a speed and scale they would not have been able to do using traditional approaches. The most recent being the MOVEit vulnerability which has seen some of the largest companies in the UK announce ransoms. Darkbeam developed a scan for this vulnerability in a matter of a day which was deployed across all its clients, providing them immediate visibility of those suppliers that may be vulnerable. They were able to engage them and ensure that gaps were instantly closed.

Recent Developments

Negotiations with the possible US acquirer continue and have reached an advanced stage, and Darkbeam expects to be updating shareholders shortly.

The company continues to make progress in key verticals. Of particular note has been the partnerships, which, after a long hard slog, are beginning to deliver results. In one day in Jun Darkbeam received 11 new prospective clients from one partner. In this case, all the data is integrated into the partner platform which is already being used by these clients enabling Darkbeam to deploy its services seamlessly and instantly across this large user base.



LRESystem Investment History

Date	Amount	Share Price	Type
Jan 2018	£50,000	£0.95	SEIS
Jan 2019	£75,050	£2.14	EIS

Company Valuation	Valuation Share Price	Fund Holding
£2.69m	£2.14	7.0%

Description of Business

Whilst knee and hip replacements are quite common, elbow replacements are much less so. One of the reasons is that the only surgical solution on offer had been the total elbow replacement which left the patient unable to rotate the wrist and only able to lift very modest weights. The treatment was therefore only offered to retired people. The alternative treatments were drugs and removal of part of the elbow. Mr. Joe Pooley, who is a top orthopaedic surgeon, realised that almost all elbow problems start with the outer elbow joint and developed a replacement joint that only replaces the ends of the bones.

The technology was developed in 2005 and licensed to a large medtech company. The medtech company later underwent a merger and returned the ownership of the IP to Joe Pooley. With his brother, David Laskow Pooley, he has created LRESystem to develop and commercialise the Lateral Resurfacing Elbow.

LRESystem has been developing a kit (Elbow in a Box) so that everything the surgeon needs will be in one sterile pack. With an improved surgical technique, it will be possible to carry out the surgery very quickly so the decision to have surgery rather than taking strong immunosuppressive drugs and painkillers will be quite easy. The market for replacement elbows may become much larger than it is currently.

Progress since Investment

Everything went well with production and sterilisation certification. The biggest delay was in going through the hugely bureaucratic (and expensive) process of obtaining a CE mark. LRE's Elbow-in-a-box finally obtained its CE mark on 11th March 2020.

Year	LRE Elbows Sold	Cumulative Total
2019	9	9
2020	19	28
2021	0 (Covid)	28
2022	16	42
Q1 2023	2	44

Covid meant that all elective surgery ceased all over the world and there were no LREs installed in 2021.

Recent Developments

A small number of operations have taken place with the device and the surgeons continue to be happy about the device and the outcomes. LRE are in continued negotiations with a company who would help run the company in exchange for a shareholding. The negotiations are progressing, if more slowly than everyone would have wished.



Atelerix.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£2.71m	£0.90	10.3%

Atelerix Investment History

Date	Amount	Share Price	Type
Jan 2018	£50,000	£0.82	SEIS
Apr 2019	£133,187	£1.70	EIS
Mar 2020	£196,851	£1.95	EIS
Jun 2021	£44,767	£0.80	EIS
Nov 2022	£11,099	£0.90	EIS

Description of Business

Cell cultures are widely used in medicine. Whether it is to test stem or T-cells for new procedures or to develop new drugs, the cells need to arrive at the place of use in the best possible condition. In most cases, when cells (or assemblies of cells) need transporting, they are cryogenically frozen, shipped, then thawed and brought back to functioning status. The process has many steps, is expensive and time sensitive – you don't want the cells to thaw in transit. Some cell types can withstand this treatment without problems, but many cell types struggle, with delayed cell death rendering experiments invalid or difficult to interpret. There are some cell assemblies that cannot withstand freezing at all and are therefore impossible to ship.

Prof. Che Connon's group in Newcastle discovered that when their special gel was put on cells, the cells were just suspending their function and when the gel was removed, they resumed as if nothing had happened. The gel also protects the cells during transportation. Atelerix may play an important role in enabling the development of drugs for complex conditions, enable easier administration of stem cell therapies, and better handling of pathology samples. Its three products are BeadReady, WellReady and TissueReady. Mick McLean, founder CEO and now Non Executive Director and adviser, has led new ventures and start-up companies in drug discovery and development, pharmaceutical manufacturing, research tools and contract research.

Progress since Investment

Atelerix' first deal was signed in India with LVPEI in Q2 2018 for a stem-cell treatment for corneal blindness. Using Atelerix technology, the treatment will be available all over India. Sales of kits have now started and there are distributors around the world. Cells, tissues and organoids from all over the body are being stored and transported. Some others have particular needs which require Atelerix to run experiments. Atelerix moved into new premises during the Summer of 2019 and expanded the team bringing on new people in the lab and growing its research and development operations. It has several Innovate UK projects underway, for research and therapeutic applications.

Recent Developments

Atelerix has been attracting a lot of new business as well as growing old contracts. An example of the new business they are doing is with Umami Meats, a cultivated meat company. Umami needed to transport tissue samples internationally while retaining cellular viability. Atelerix products were able to help in a way no others had. LeukoStor which enables white cells extracted from blood to be stored has received first orders from a large pharma company and a research team at Duke university.

Atelerix has now confirmed that its Cytostor material is able to help preserve lentiviral vectors. For applications where the use is within 14 days, Atelerix outperforms freezing and thawing.

A large project has started to make the production GMP (Good Manufacturing Practice) compliant. This will cost up to £1m but will expand Atelerix market and we hope to be able to apply for grants to help with this.

Summary

New products are finding rapid take up and the company is finding success with its increased marketing activity. Fundraising still continues.



Refeyn.com

Company Valuation	Valuation Share Price	Fund Holding
£205.05m	£5.00	1.5%

Refeyn Investment History

Date	Amount	Share Price	Type
Jun 2018	£66,240	£0.40*	SEIS
Jun 2018	£33,760	£0.40*	EIS
Jan 2019	£121,851	£0.64*	EIS
Jul 2019	£67,468	£0.64*	EIS

*Adjusted for 100:1 share split. EIS certificates remain valid.

Description of Business

Refeyn (named for the physicist Richard Feynman) was previously called Arago Biosciences. Refeyn is a spin-out from the University of Oxford that has developed an optical technology able to determine the mass of individual molecules in the range from 40 kDa to >5 MDa (Daltons is another name for Atomic Mass Units). This range encompasses most proteins and assemblies of interest to medicine. The measurement can take place in solutions with a wide range of biologically relevant concentrations and is rapid, with only a few minutes being enough to collect high quality data. A very helpful animation has been added to the Refeyn website (www.refeyn.com) showing how the device works.

The technology has brought together experts from a range of fields; optics, image processing, software, chemistry and biology. Prof Philipp Kukura invented the interferometric scattering methodology, Prof Justin Benesch is an expert in mass measurement techniques and applications, and Daniel Cole and Gavin Young are graduate students who developed the prototype hardware, software, and experimental methodologies. The team is growing quickly and very good people have been attracted to the opportunity including Jonathan Flint, former CEO of Oxford Instruments who has joined as chairman and Anthony Fernandez, the new CEO.

Refeyn now highlights 4 key applications of its technology: determining sample composition and purity; the assembly of protein complexes; the measurement of complex biomolecules; and understanding protein-protein interactions. Refeyn is developing and manufacturing a range of devices with different capabilities, from quality-control type instruments to full-blown research tools.

Progress since Investment

In 2019 Refeyn won 3 top awards for innovation from the Royal Society of Chemistry, R&D magazine and The Scientist. In Nov 2020 Refeyn raised £18m. New CEO Anthony Fernandez joined from Teledyne e2V and Philipp Kukura has moved back to the University and remains closely involved with Refeyn as a non-executive director. Part way through 2021 Refeyn launched the Refeyn TwoMP which has replaced the OneMP. In 2022 they launched the SamuxMP to measure the full empty ratio of AAVs - viruses used in cell and gene therapy. These have now been joined by the TwoMP Auto which as the name suggests allows automation of certain functions and allows the user to walk away from the instrument and then return to a set of results. In 2021 Refeyn made its second move, to a new building in Littlemore, Oxford to enable it to expand manufacturing and operations. Refeyn is now also able to carry out extensive demonstration and testing work with companies without having to use university labs. Manufacturing pace has increased and sales numbers have increased satisfactorily. Refeyn now has offices in the UK, US and Japan.

Recent Developments

Science is what Refeyn is about and another 60 publications have been added bring the year's total to 126 and 643 since the start. The website indicates that more than 250 instruments have been installed around the world and we understand that the company is very happy with the way sales and manufacturing are going. The applications keep expanding and given the accuracy of the device for different sizes of molecules and structures, this is not surprising. A researcher from Basel university said:

I think that it will rapidly become a first-choice method in our facility for the characterisation of the increasingly complex, sensitive and hard-won macromolecular samples that are studied at the frontiers of structural biology.



Cytecom.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£1.35m	£2.23	29.5%

Cytecom Investment History

Date	Amount	Share Price	Type
Jul 2018	£100,440	£1.55	SEIS
Nov 2019	£55,000	£1.55	EIS
Dec 2020	£84,021	£1.55	EIS
Mar 2021	£53,986	£2.23	EIS

Description of Business

Many people all over the world need to test for the presence of live bacteria, for example hospitals and the water, food and brewing industries. Currently, the procedure is to place the sample, diluted by a suitable factor, in a media-containing dish and then wait for several days while cultures develop which can then be counted and analysed. Cytecom has developed and patented a technology in which a fluorescent dye is added to a sample, which is then placed between electrodes and a voltage shock applied. The electric shock alters the cell membranes so that living cells take up the fluorescent dye at an increased rate. Dead cells will not take up the fluorescent dye. Measuring the change in fluorescence over the few seconds after the shock gives a count of the living cells. Cytecom is a spinout from Warwick University. Before the initial investment, Cytecom was awarded an Innovate UK grant of £230,000 which officially started in November 2018.

Progress since Investment

CyteCount is a stand-alone device about the size of a small shoebox. It contains proprietary electronics, optics and software to count the number of live cells in a sample. Users simply have to place a sample on the special slide (which contains the electrodes for administering the shock), and CyteCount will then carry out the procedures automatically to give the user a readout of the number of live cells in each sample. CyteCount was demonstrated publicly for the first time at Lab Innovations at the NEC in October 2019, where there was interest from various industries. The first sale was achieved in Q1 21. In that quarter, the company also raised £150,000 at £2.23 per share to further develop the device and hire a distribution team. Dr Magdalena Karlikowska, microbiologist and ex-PHE clinical scientist, joined Cytecom as CEO in April 2022 to lead the expansion into new geographies and sectors.

Recent Developments

Sales have not been growing as hoped at Cytecom. So there has been a change in strategy. Cytecom will now focus on antibiotic resistance. The issue is as follows. A patient with sepsis presents at a doctor's surgery or A&E. The doctor needs to prescribe an antibiotic to treat the condition which may even be life-threatening. But the doctor has no idea which antibiotic to prescribe. Some might work, others might not. Using the CyteCount device, a sample from the patient could be taken and divided into 6 parts (say) and each treated in a glass vial with six different antibiotics. After two hours the samples could be tested on the CyteCount device which would reveal which antibiotics had worked and which hadn't. To achieve the same result by conventional means would take 48 hours.

Cytecom has won an initial £20k award from i4i and has progressed to the presentation stage for a £1.5m i4i award to address antibiotic selection in sepsis.

Summary

Cytecom is concentrating its development work in the field of antibiotic resistance where the need and economics best match the technology's capabilities. It is a crunch point for Cytecom, but we believe it is the right course to pursue.



PolyCAT.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£4.02m	£0.25	18.2%

PolyCAT Investment History

Date	Amount	Share Price	Type
Oct 2018	£50,002	£0.03*	SEIS
Mar 2019	£22,058	£0.13*	SEIS
Mar 2020	£11,985	£0.13*	SEIS
Dec 2020	£112,998	£0.19	EIS
Feb 2021	£11,784	£0.19	EIS
Apr 2022	£60,350	£0.25	EIS

*Adjusted for 1000:1 share split. EIS certificates remain valid.

Description of Business

PolyCAT has developed an economic, scalable process to produce metal nanoparticles on polymer substrates. This has allowed the company to develop a range of products across diverse applications, from highly antiviral materials for use in healthcare, to catalytic spill kits that can degrade extremely hazardous industrial chemicals. The following are in commercial development:

Steri-CAT Antiviral coating - During the pandemic, PolyCAT developed a method of producing materials impregnated with colloidal silver and copper, both famous for their antimicrobial properties. Extensive testing has confirmed that the coating deactivates viruses within minutes and can be produced to scale at a low cost, allowing PolyCAT to make continuously self-disinfecting disposable PPE items that previously were not cost effective. Unfortunately due to the large volumes of PPE still lying unused in the market, the target customer has postponed the project indefinitely. PolyCAT has therefore decided to file IP covering the process and freeze development work until the outlook improves.

React-CAT - Earlier in the year, the EU passed legislation cutting the allowed release limits of formaldehyde from industrial processes. PolyCAT has two candidate catalysts that are being adapted for use as filtration media. There are two specific customers who are actively interested in the solution. The company has a specific performance milestone to reach before the customers will consider placing larger orders, so development work proceeds apace. We expect this to conclude by the end of Q3.

Spill-CAT - PolyCAT has developed a range of catalysts that can degrade chemical warfare agents discovered in old munitions dumps or during counter terrorism operations. A joint project run with the UK MoD and US DoD won a competition for the best solution back in early 2022. Follow on work funded by DSTL Porton Down has now completed and an enhanced solution was discovered that is currently undergoing testing against real warfare agents. This testing has shown very good results, and PolyCAT is closing in on the 95% destruction level that will trigger orders from specialist military users and civil defence agencies.

Recent Developments

The company has spent the first half of 2023 focusing on getting Spill-CAT market-ready. The logic behind this is to get to profitability as soon as possible by concentrating on these types of low volume/high margin products and then consolidate from there. PolyCAT has had increasing revenues over the last six months due to several small defence projects and just about broke even over the first 2 quarters of 2023. Pricing of the final product has been agreed with a sales partner, and PolyCAT expects this to be a very profitable product as there are no competitors in the space that can offer the performance in such a compact kit.



AsymmetricSuzuki.co.uk

ASR Investment History

Date	Amount	Share Price	Type
Mar 2019	£65,040	£5.42	SEIS

Company Valuation	Share Price	Fund Holding
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Reduced to Loss Relief	£1.08*	37.5%
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*Representing loss relief per share, for an investor with 40% tax rate.

Description of Business

The ability to synthesise complex chiral molecules is of increasing importance across the chemical industries. Challenges with asymmetric catalytic processes have limited the ability of drug development and agrochemical screening programmes to access new chemicals. Stephen Fletcher, Professor of Chemistry at University of Oxford, has developed efficient and low-cost solutions to some of the most difficult problems in asymmetric catalysis. Together with Dr Sarah Morrow, Stephen has formed Asymmetric Suzuki Reactions (ASR) to provide better access to existing complex targets and new chemical space. ASR will provide:

- A digital compound library for screening
- Custom compound libraries
- Process design for chemical manufacturing
- Custom synthesis of complex chiral molecules
- New active molecules and discovery of new targets

In order to develop the opportunity, Oxford Technology invested £65,000 in March 2019. The initial market scoping and business development phase sought to de-risk the project for a more substantial seed investment. ASR has the capacity to provide small amounts (<1g) of compounds of interest to potential partners. These can be synthesised in an ad hoc fashion to avoid the need for long term rental of laboratory space.

Progress since Investment

Asymmetric Suzuki Reactions developed its website and marketing materials for circulation to > 30 potential customers and collaborators, with contacts generated by attending conferences and by word-of-mouth. Initial interest led to conversations with approximately half of this group, and ASR was invited to present at the Agrochemical company Syngenta. However, although one pharma company expressed interest in using ASR's technology, no contract with suitable payment was forthcoming and ASR was therefore put into hibernation at the end of Q1 2020.

Recent Developments

The company's efforts reported in Q1 have not resulted in any meaningful contracts, and a decision has been taken to dissolve ASR.

The table on the right-hand side shows an illustrative investment of £1,000 made via OT(S)EIS. The calculations assume an investor with 40% income tax rate. Investors who also had capital gains tax will have had an even lower loss.

Investment of £1,000 in ASR via OT(S)EIS

Cost of investment	£1,000
Cash back via reduced income tax	£500
Net cost of investment	£500
Shares bought (at £5.42)	185
Value of shares now	£0
Loss relief (40% of 500)	£200
Loss relief per owned share	£1.08
Total loss on investment	£300



OxWash.com

Company Valuation	Valuation Share Price	Fund Holding
£26.79m	£6.69	3.0%

OxWash Investment History

Date	Amount	Share Price	Type
Mar 2019	£50,000	£1.13	SEIS
Mar 2019	£50,000	£1.13	EIS
Nov 2019	£54,679	£2.45	EIS
May 2021	£36,069	£3.58	EIS

Description of Business

Kyle Grant, an ex-NASA scientist, co-founded Oxwas, aiming to transform the laundry and washing market.

The original idea was to have a commercial and hyper-sustainable laundry in a shipping container style box or disused commercial unit. The laundry could be placed anywhere and be operational within hours. The laundry would be primarily for contracted regular B2B customers such as organisations who run multiple Airbnb units. They need to wash tablecloths, sheets and towels in volume and on short notice. These modules could be bolted together to make a larger unit.

The Oxwash system is super energy efficient. Using special technology, washing is close to room temperature. The main oxidising (deodourising and disinfectant) agent is Ozone, generated on site. Solar panels on the roof collect energy, which is stored in a large battery or fed into the grid. Water is filtered and recirculated, so microfibres or damaging chemicals will not be discharged to the environment. A sludge tank will need to be emptied periodically. A state-of-the-art automated ironing and folding machine has also been incorporated. Delivery and collection are performed exclusively by electric cargo bike.

Progress since Investment

The first unit, in Oxford, became operational in Q3 2019 as planned. The laundry is arguably the most energy efficient and the most environmentally friendly on the planet. The plan was to open more units, starting in the UK but expanding globally. The first units were in Oxford, Cambridge and London. Covid was damaging to Oxwash, with universities closed.

Recent Developments

Oxwash is now implementing a new strategy and will no longer do washing in its three sites. Instead these will become collection/delivery hubs and all the washing will take place at Big Blue, the large industrial unit in Swindon, which was just starting to be fitted out when we visited at the end of the quarter. The idea is that Big Blue will be the most highly automated, most efficient and greenest laundry on the planet. As soon as it is able to demonstrate performance it hopes to win very large contracts from very large customers (e.g. the NHS, the military and hotel chains.)

Oxwash has reduced its staff and also many other overheads to suit the new business model. The company has £4m in cash and, after the redundancies, a runway until Q1 2025. It is likely that there will be a fundraising in 2024.



**THE
SMARTER FOOD
COMPANY**

[SmarterNaturally.com](https://www.smarternaturally.com)

Smarter Food Investment History

Date	Amount	Share Price	Type
Apr 2019	£89,998	£1.97	SEIS
Mar 2021	£96,058	£2.70	EIS

Company Valuation	Valuation Share Price	Fund Holding
£2.39m	£3.00	10.2%

Description of Business

The Smarter Food Company (TSFC) was established to produce a food to reduce blood glucose (FBG) levels in people who are defined as being ‘pre-diabetic’.

Recent Developments

A good quarter and the number of subscribers increased to 2,000, taking the company above breakeven. A part of an article which appeared in The Guardian (<https://www.theguardian.com/business/2023/may/27/broccoli-super-soup-type-2-diabetes-smarter-food>) is reproduced below:

Imagine eating a bowl of soup once a week that could help bring down your blood sugar levels and so reduce your risk of developing type 2 diabetes. This may sound like wishful thinking or the latest fad, but Smarter Food says this is already a reality for its customers. The secret, according to the company, is the star ingredient of its packet vegetable soup: a special type of broccoli first discovered growing wild in Sicily by the company’s lead scientist, Prof Richard Mithen. After years of research and plant breeding, it has developed a new strain of broccoli called GRextra, which it grows and processes into soup in Scotland. Cruciferous vegetables – the part of the brassica family that includes broccoli, cauliflower, brussels sprouts and cabbage – naturally contain a compound called glucoraphanin. Once this chemical reaches the gut, it is converted into an active form called sulforaphane, which helps to improve the way cells in the body work, and has been seen to reverse the slowdown in metabolism associated with ageing.

Smarter Food, which sells its products under the brand SmarterNaturally, was spun out from the Quadram Institute, the Norwich-based food and health research centre and is part government-funded through grants from UK Research and Innovation, along with venture capital funding. The soup’s benefits are based on Mithen’s research on glucoraphanin. “There is a really large and growing body of published data, which is all peer-reviewed, published science around glucoraphanin and sulforaphane” says the chief executive, Laura Knight. “We’ve created a food product that delivers a really high quantity of this compound.”

Their research has found that each portion of soup, made from GRextra which is freeze-dried raw, contains as much glucoraphanin as people would get from eating five or more heads of raw broccoli. The company’s trials have shown that eating just one bowl of the soup a week can help lower elevated blood glucose levels, and maintain these lower levels over time. This is a particular help for people with high blood sugar levels, a key risk factor for developing diabetes. Other research has also shown that eating glucoraphanin-rich foods, while also making lifestyle changes, could help other age-related diseases, including supporting those who want to reduce their risk of developing cancer, and could also help to lower blood pressure and cholesterol.

So what does the soup actually taste like? Prepared with 250ml of boiling water and a good stir, the bright green soup has a thicker consistency than one would expect from a packet, and has a mild vegetable taste, like a mixture of broccoli and cauliflower. It may not be the culinary highlight of the week for most, but would not be hard to include in people’s diets. After raising £1.5m since launch, the SmarterNaturally team hope to raise a further £500,000 by the end of May, to increase their product range, and scale up output.

The company is developing more soup flavours, with the same key ingredients and same associated health benefits, which they are planning to launch by the end of the year, while a smoothie is also in development. SmarterNaturally has been selling its vegetable soup at a small scale in the UK for nearly a year. Available as a subscription from the company’s website, it costs £5 a portion, and £20 a month.





ConnexinTX.co.uk

Connexin Investment History

Date	Amount	Share Price	Type
Apr 2019	£66,325	£7.00	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£1.42m	£7.00	4.7%

Description of Business

There are over 60 million glaucoma cases globally and up to 40% of the patients will be severely visually impaired in one eye. Existing drugs can slow the disease progression, but are not protective. There are no drugs in development with any demonstrated ability to protect retinal cells and prevent vision loss in patients with glaucoma. Connexin Therapeutics is developing novel drugs to protect vision and prevent blindness.

In glaucoma, increased intraocular pressure causes cell death, which by “Bystander Effect” causes death of the neighbouring cells, so cell death proliferates, which leads to vision loss. By blocking the correct connexins (an ion channel) in the retina, it is possible to block the Bystander Effect and preserve vision. Connexin 36 (Cx36) is a protein found in the retina. By blocking Cx36, the Bystander Effect is prevented, thereby preserving neighbouring retinal cells and preserving vision in glaucoma. It is known that there are some molecules that have some effect but safer, more specific Cx36 inhibitors are needed. Connexin Therapeutics wants to create patentable drug candidates which are highly selective for Cx36. The international team will create, screen, and test Cx36 inhibitors to find novel, patentable compounds. Within 24 months from investment, it will hopefully have enough data to start filing provisional patents on compounds.

This should interest pharmaceutical partners and/or the investment community. Roche has stated, “In Glaucoma we are particularly interested in therapies that have demonstrated the ability to protect retinal neurons compared to intraocular pressure lowering therapies.” and Bayer has stated, “[We] are focused on identifying innovative partnering opportunities for retinal disorders to help improve or prevent loss of vision”.

Progress since investment

The research programme has started and the first experiments are complete. The new compounds are based on a molecule which has already demonstrated efficacy in mouse models of glaucoma. They are being synthesized and tested as novel small molecules in animal models of glaucoma. Chemical modification enhances specificity, makes administration and delivery easier, and will allow Connexin Tx to get composition of matter patents.

Working with Cambridge-based o2h Discovery, Connexin Tx designed and tested three novel derivatives of meclofenamic acid. Some blocked gap junctions in a dose-dependent manner and others didn't, so Connexin learned a great deal about the structural requirements for blocking retinal connexins. This helps direct further chemical development work. Covid slowed work down, but it has all restarted.

Recent Developments

Carlos Velez has been working with a UK university to apply for grants which should enable the progression of multiple Connexin programmes. Recent developments in AI tools for modelling proteins and their interactions is expected to provide a boost to Connexins work.



Cytoswim.com

Company Valuation	Valuation Share Price	Fund Holding
£1.86m	£6.18	19.3%

Cytoswim Investment History

Date	Amount	Share Price	Type
Apr 2019	£100,274	£2.44	SEIS
Sep 2021	£11,489	£6.18	SEIS
Sep 2021	£59,038	£6.18	EIS
Apr 2022	£34,194	£6.18	EIS

Description of Business

In vitro fertilisation (IVF) is a large and growing market for humans and animals. One of the key steps in IVF is the selection of healthy sperm cells, characterised by swimming fast and straight. Cytoswim has developed a new, easy-to-use chip, essentially an obstacle course, which separates the healthy from unhealthy cells.

The current techniques for selecting healthy cells are not particularly effective. The most commonly used process is centrifugation, which takes up to an hour, requires expertise and causes damage to sperm DNA. The current preparation techniques cost the patient from £100 to £300. In Europe, there are 800,000 IVF procedures per year and in Japan and the US combined roughly 650,000. Territories such as China and India do not report IVF cycles with the same accuracy, but are estimated to carry out an additional 1m cycles in total. Altogether the global accessible market is approximately £500m-£1bn.

Progress since Investment

Work at Sheffield University testing the prototype devices with sub-standard human sperm showed the DNA fragmentation index (an indicator of unhealthy sperm and future miscarriage) was 10x lower for samples that had been through the Cytoswim devices than other separation techniques.

The company moved all the prototyping work into its own lab in the Warwick University Venture Centre and continues to use labs in the Warwick University Physics Department only for biological work. In April 22, Cytoswim accepted a £250,000 investment from Logixx Pharma to fund the next stage of certification, accelerate USA deployment and continue collaborations with industry partners. The founder of Logixx Pharma distributes products to IVF clinics globally and has a very good understanding of the market and of the potential for Cytoswim. He has become a director and provides invaluable input at board meetings. OT(S)EIS invested a further £34,000 at the same time.

The device will not be able to be used commercially for human fertilisation until a CE mark or FDA approval is obtained. It had been hoped that this would be in Q4 2022, but, as so often happens, the regulatory bodies move at a snail's pace. The device is being tested by leading IVF clinics in the UK, India, and South Africa.

Recent Developments

Progress towards regulatory approval continues to be made, with all performance and safety testing now completed. The technical file for the company's product is currently being compiled and barring any unwelcome surprises it is anticipated that it will be ready for submission by mid July. Following this, approval under the FDA and CE mark scheme should be obtained Q4 2023-Q1 2024.

While little commercial activity can happen before regulatory approval is granted, the company has been very active in recruiting pre-clinical testing partners, with the device now being tested in around a dozen IVF labs across 6 countries. Early feedback is positive, and the company has secured testimonials and letters of intent from both leading IVF clinics and large fertility consumable distributors.

On the veterinary front, progress has been limited due to the mismatch between manufacturing cost of the product and what veterinary clinics are willing to pay. However a commercial evaluation has just been started with one of the largest cattle IVF companies in the world, a contract that could be worth at least 5,000 annual sales.



Nikalyte.com

Company Valuation	Valuation Share Price	Fund Holding
£1.38m	£1.50	26.0%

Nikalyte Investment History

Date	Amount	Share Price	Type
Aug 2019	£49,738	£0.95	SEIS
Feb 2020	£16,152	£0.95	SEIS
Oct 2020	£77,886	£0.95	EIS
Dec 2021	£44,987	£0.95	EIS
Feb 2023	£60,000	£1.50	EIS

Description of Business

Nikalyte was founded by Dr Alistair Kean, Dave Mason and Srinivasa Saranu who have spent years working in the specialised coatings industry, particularly in methods for producing metal nanoparticles. They provided the IP for a company, Mantis Deposition Ltd, which developed a range of instruments for producing nanoparticles and laying these down on a substrate. But although this company was a technical success, its instruments were expensive (many >£200,000) and mostly one-off designs for particular applications, and the company ultimately failed. The objective of Nikalyte is to develop a nanoparticle generator, which will be priced at less than £100,000 and enable researchers to produce nanoparticles of almost any metal or alloy on almost any substrate via a user-friendly interface.

Metal nanoparticles are being ever more widely used, in a growing number of applications, including cancer therapies/diagnostics, catalysis, metamaterials, photonics, electrochemistry and batteries. Nanoparticles are of huge interest to the life science research community in areas such as cell binding and drug delivery. Presently there is no clean, non-chemical method of depositing pure, non-agglomerated nanoparticles onto a substrate such as an agar plate.

Progress since Investment

The first benchtop nanoparticle system, known as the NL50, became operational in Q2 20. A demonstration of the machine in action can be seen at shorturl.at/qsHRT. Nikalyte has expanded its product portfolio to include the NL-UHV nanoparticle source, and also has the capability to build custom systems based on Nikalyte's proprietary technology. Nikalyte also operates its own fully functional nanoparticle deposition system. By changing the operating parameters of the instrument, primarily the voltages and currents used, it is possible to change and measure the mean particle size and the shape of the nanoparticle size distribution curve. Nikalyte uses this machine to provide consultancy and samples of nanoparticles on suitable substrates. In partnership with Wasatch Photonics, it is now also producing state-of-the-art SERS substrates, which can be purchased directly from the company's website: nikalyte.com

Recent Developments

In Q2 Nikalyte commissioned a bespoke system for a blue-chip FTSE customer. The Nikalyte team is now building a second bespoke nanoparticle system which will be delivered at the end of Q4 to Scottish University for use in medical nanotechnology research.

The SERS business continues to grow with online sales and key partnerships with global Raman suppliers playing a key part in driving the business. Nikalyte is now supplying SERS substrate to over 40 different institutes world-wide including trials at an overseas government border control agency. Nikalyte has seen a growing demand for SERS substrates for medical diagnostics and is working with several companies to develop biosensors to detect cancer and to monitor serious health conditions including heart disease and diabetes. Nikalyte continues to invest in its SERS technology and has developed a second SERS product that will be launched in Q3.

Date	SERS Revenue
Q3 2022	£471.80
Q4 2022	£1,182.04
Q1 2023	£2,274.04
Q2 2023	£4,781.00



[Etcembly.com](https://etcembly.com)

Company Valuation	Valuation Share Price	Fund Holding
£22.74m	£6.00	6.5%

Etcembly Investment History

Date	Amount	Share Price	Type
Jan 2020	£70,588	£0.40	SEIS
Nov 2020	£20,587	£1.58	SEIS
Nov 2020	£49,411	£1.58	EIS
Feb 2021	£17,677	£1.58	EIS
Apr 2022	£42,444	£3.00	EIS

Description of Business

Etcembly uses its own AI platform to analyse and understand how TCRs (T Cell Receptors), an important component of the immune system, function. The immune system is very complex and has long been an inspiration for pharmaceutical development. Curing diseases using biologic agents derived from components of the immune system has saved countless lives and is a multi-billion dollar success story.

Etcembly is a true 21st Century drug discovery company. It uses informatics from its machine learning platform EMLy™ to understand and exploit the immune system by observing the TCR (T Cell Receptor) repertoire as it responds to health and disease. It is these differences in the TCR repertoire of individuals which may explain why people react so differently to viral infection and cancer. Some people throw off the infection and develop immunity with no symptoms at all; others die

Just as computers are now able to play chess better than humans, so Etcembly aims to bring its machine learning platform, EMLy™, (Etcembly Machine Learning) to bear on the immune system. Etcembly has created a massive database of TCR sequences (in order of hundreds millions) and uses machine learning to understand the rules of target engagement and specificity.

The aim is to shorten drug development timescales cycles, lower drug development costs and potentially to create a new TCRs.

Progress since Investment

£5.2m was raised in the last round at £6.00 a share in Q4 22. A larger round to progress the TCR based therapeutic assets is now being raised, aiming to close in November 2023.

Recent Developments

Etcembly continues to make excellent progress. Staff have now increased from the two founders at formation to 33 employees. Etcembly has recently released its ETCer (Etcembly T cell engaging receptor) pipeline. The pipeline comprises of four programs;

- 1) lead candidate, ETC-101 PRAME HLA-02*01;
- 2) ETC-201 undisclosed oncology target for HLA-A24:02;
- 3) ETC-301 MAGE-A4 HLA-02*01;
- 4) ETC-401 undisclosed autoimmune target to an undisclosed HLA type.

Etcembly has also achieved picomolar affinity of the lead TCR candidate, ETC-101. This was done using in silico engineering and further refinement will continue to be carried out. However, this milestone now puts the candidate in the affinity range required for bispecific therapeutics.



FlareBright.com

FlareBright Investment History

Date	Amount	Share Price	Type
Sep 2020	£29,000	£100.00	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£2.30m	£100.00	1.3%

Description of Business

Flare Bright is developing systems to enable drones to fly safely even if they lose radio contact with their controller or lose GPS signal. A drone which loses contact at the moment could fly out of control and crash, which is hampering obtaining full regulatory approval, particularly in Beyond Visual Line of Sight operations. This system is being extended to Advanced Air Mobility (Air Taxis) as it saves weight compared to the nearest competing system, and every kg of weight saving is critical for increased endurance and safety. Flare Bright is implementing its system (machine learning developed software which can be augmented with a 50 gram box of sensor electronics if these don't already exist on other drones). Although an initial gliding nanodrone was developed by Flare Bright from scratch, the business model is to implement Flare Bright's software on other drones and Air Taxis. The founders of Flare Bright are Kelvin Hamilton, Conrad Rider and Chris Daniels, all seasoned technical entrepreneurs.

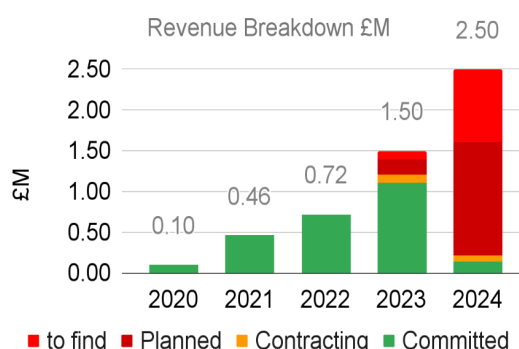
Progress since investment

Flare Bright has now won eight defence contracts worth over £2m together as well as four UKRI grants to develop its systems, and has been working hard on delivering these contracts. Staff numbers have increased to from 3 to 16. Flare Bright is becoming a recognised “go to” name in the defence and UAV sector and is now regularly asked to speak at conferences and has a decent amount of name recognition within the industry.

Recent developments

Through the Boeing Aerospace Xelerated programme Flare Bright was invited to showcase the company and technology at Boeing's stand at the Paris Air Show (the largest air show globally). It was one of 5 companies invited to present to all Cohort companies in the UK Government (UKRI) £300m Future Flight challenge in early July and appeared in the main trade journal (AIN) associated with the Paris Air Show.

Flare Bright has successfully completed two UKRI Future Flight grants and is in the next phase of these projects. A number of MOD contracts are being rolled out under an umbrella of an MOD Test & Evaluation trial at Radnor Range in Wales, worth over £500k in total. Testing is happening during the first week of July and will culminate in a key GPS-free drone trial in October. Simultaneously, Flare Bright is progressing with multiple US Department of Defense (DoD) contracts and is about to commence its third contract, which will focus on GPS-free drone technology over featureless terrain. It is highly unusual for a small UK company, without a US presence or US employees to win a contract of this nature. A trial will take place with the US DoD off the coast north of Barcelona in October to demonstrate GPS-free drone flight in action. Flare Bright is contracted with a one of the key Prime contractors to the MOD on two further projects, which is likely to lead to further business.





Cryologyx.com

Cryologyx Investment History

Date	Amount	Share Price	Type
Mar 2021	£75,000	£3.34	SEIS
Mar 2023	£86,000	£8.00	EIS

Company Valuation	Valuation Share Price	Fund Holding
£2.76m	£10.00	12.0%

Description of Business

Prof. Matt Gibson's group at Warwick University is a cross-disciplinary group that works on glycosciences and biomaterials. In particular, they have been studying the freezing and thawing of biological materials. Having discovered a material that improves the ability of cells to survive freezing and thawing, Cryologyx was created. Tom Congdon who worked in this group, did an ICUR programme which involves a lot of interaction with industry and helped focus their plan. He is joined by an experienced Chairman, Paul Garman.

Cells are normally frozen using a material called DMSO, which stops big ice crystals from forming and destroying cells, but which is also toxic to cells in the concentrations required. By using the Cryologyx materials, it is possible to reduce the concentration of DMSO used to levels which are not toxic to cells. This opens up many opportunities.

One of the pharma industry problems Cryologyx is addressing is that of having to re-culture cells after freezing before being able to use them in experiments. This typically takes up to three days. With Cryologyx technology it is possible to prepare the cells for experiments, typically in Multi Well Plates, then freeze them. At this point they can be shipped, stored almost indefinitely at - 80 degrees and then taken out of the freezer and be ready to use within a few hours - with no additional culturing required.

Recent Developments

Cryologyx had a very good quarter and received the first orders for its cells from 8 customers including several household name pharma companies. So it needed to establish a production facility to deliver these orders and successfully raised £251,000 during the quarter from existing and new shareholders and also located a suitable lab.

It secured access to this lab at the end of the quarter and equipment is now being purchased and the lab fitted out. It is expected that the first products will be supplied to the first customers during July. Most of these customers have already tried and tested samples supplied from the tiny research lab, but now want to scale up their orders.

Once up and running Cryologyx will produce assay-ready cell products aimed at virologists and drug development scientists.

Cryologyx has also started the DASA Rapid Impact project to develop a functional prototype of the rapid-deployment frozen blood bank for defence. If all goes well, blood would be held frozen in bags and could be kept almost indefinitely in this way. When needed the blood could be thawed and ready for use within 15 minutes. This would have many applications and would save many lives in Ukraine, for example. The project has a value of £350k and the company has expanded its business development operations, retaining Dr Gavin Bowyer (Lt Col, RAMC, ret.), to ensure there is a strong commercial outlook for this technology in the future.



Zayndu.com

Company Valuation	Valuation Share Price	Fund Holding
£6.55m	£0.33	15.4%

Zayndu Investment History

Date	Amount	Share Price	Type
Mar 2021	£133,505	£0.062*	EIS
Apr 2022	£83,029	£0.158*	EIS
Sep 2022	£51,548	£0.30	EIS
Feb 2023	£66,500	£0.33	EIS

*Adjusted for 1000:1 share split. EIS certificates remain valid.

Description of Business

Zayndu uses plasma to treat seeds before planting. The benefits are far-reaching; more seeds germinate, fewer seedlings are lost to fungus or disease, and typically many crops see yields increased by 15-25%. The process is entirely dry, using only a very small amount of electricity and air.

The founders of Zayndu are Ralph Weir and Dr Felipe Iza. Felipe developed the technology at Loughborough University, which is also a shareholder in the business. In Q3 22, Andrew Neil who had previously been in charge of a 150 strong engineering team at Jaguar Landrover joined and the engineering function has since become much more robust.

Zayndu has attracted much interest from indoor growers, particularly from the US where the culture is more open to trying new ideas. The original investment (which also secured a £700,000 Innovate Loan), enabled the company to produce the first commercial product and to make first sales. The business model is that customers pay a monthly fee for the service. The service includes the use of the machine and also the recipes for each seed type. For example, the treatment required to produce the best results for watercress is different to the treatment required for spinach. The machine is run online and obtains the protocols it needs for each run from Zayndu's database in the cloud.

Recent Developments

Zayndu made solid progress during the quarter. The UK's biggest vertical farm purchased a machine in January (delivered February); after some teething problems this is now performing well. Two machines have been running trials in the US – one at a large glasshouse-based propagator with potential for multiple sales, the other at one of the world's biggest vertical farming companies, also with the potential for multiple repeat sales. In Europe, two trials were completed with major seed companies – one in flower seeds, one vegetables; both trials were successful; both machines performed flawlessly, and both are moving into negotiations for machine supply. Those trial machines have now returned and been reallocated; one is now on trial with one of the UK's biggest vegetable seed producers, while the other is being prepared for a trial with Canada's largest herb producer (with the potential for at least half a dozen machines).

Meanwhile the ongoing practical research in the biology lab (lead by Dr Alberto Campanaro) is steadily building a database of optimised protocols for each individual seed variety, building a treatment library which will be a core part of Zayndu's IP. Protocols from this library can be downloaded/upgraded to an individual machine using the company's SeedCloud management system. Work on human pathogen elimination has also continued, delivering two orders of magnitude reduction in enterobacteria – the pathogens which cause human food poisoning. This is a significant result with far-reaching consequences for the food supply chain.



[Machine-Discovery.com](https://machine-discovery.com)

Company Valuation	Valuation Share Price	Fund Holding
£3.82m	£5.00	2.1%

MD Investment History

Date	Amount	Share Price	Type
Mar 2021	£74,999	£4.77	SEIS

Description of Business

Machine Discovery (MD) is an ambitious early-stage software company developing machine learning technology to simplify, automate and accelerate simulation tasks. The company is a spin-out of the University of Oxford. Its founders are highly regarded in their respective fields. Prof. Gianluca Gregori, Prof. Sam Vinko, Dr. Muhammad Kasim, and Dr. Brett Larder are experts in laser and plasma physics and ML. They co-invented the concepts behind the company's software technology during their academic research at the University. As an example, the team was able to predict how the atmospheric smoke from the fires in Australia would disperse globally. They reached the same conclusions as NASA using the same publicly available datasets with 99.9% accuracy but achieved the result with 1 billionth of computing power.

In Q1 2020, Bijan Kiani, an executive who has spent over 30 years in the enterprise software and simulation business and runs Oxford Technology's office in San Francisco, joined Machine Discovery as CEO. Bijan previously led the product marketing team at Synopsys, an industry-leading Electronic Design Automation ("EDA") software company, and previously founded and successfully exited his electronics design start-up in which Oxford Technology had invested. Several large investors have become involved in Machine Discovery and the initial capital raised was £1.6m. But because OTM initiated the investment, and introduced Bijan, etc, all our £75,000 was a SEIS investment. The company had already secured its first sales contracts with several companies on Fusion technology and is expanding its offerings into the semiconductor market.

Progress since Investment

Following the initial investment, MD hired additional research, software development, and business expertise as part of its expansion plan. The company has grown to more than 12 employees. It has already demonstrated its ability to sell and support the solution to multiple Fusion companies while expanding into the semiconductor market.

Recent Developments

Machine Discovery operated in stealth mode until October 2022 when it launched its website and followed this with a steady stream of customer adoption news, a program which will be continued. On January 30th, 2023 the company announced First Light Fusion has adopted the Discovery Platform to address complex multi-physics computational tasks (details <https://machine-discovery.com/resource-ffl.html>).

In May 2023, the company announced First Light Fusion, the University of Oxford, the University of York, Imperial College London, and Machine Discovery will collaborate under a £12 million grant award from UK Research and Innovation's Prosperity Partnership program (details <https://machine-discovery.com/resource-grant.html>). Machine Discovery's solution is being selected to support the above consortium.

For more than a year, Machine Discovery has been working closely with one of the top 10 semiconductor companies as a teaching partner to model chip design and predict their performance using the company's AI-powered solution. Based on encouraging early results the company is now in the process of expanding its business development and technical support in this space for wider availability of its solution



HydregenOxford.com

Hydregen Investment History

Date	Amount	Share Price	Type
Mar 2021	£100,005	£15.00	EIS
Mar 2023	£63,000	£27.98	EIS

Company Valuation	Valuation Share Price	Fund Holding
£6.61m	£27.98	3.8%

Description of Business

One of the most common reactions in organic chemistry is hydrogenation (adding hydrogen atoms to a compound) which represents 14% of all organic chemistry reactions. 20% of drugs, for example, have chiral alcohol groups in them which are frequently created by hydrogenation of aldehydes or ketones. To date, there were two main methods of hydrogenation: high temperature catalysis using metals - which had disadvantages of non specific reactions, high energy use and expense of the metals, and enzymatic biocatalysis typically using glucose as the fuel to drive the reaction - which has the downside of large amounts of waste and not being suited to flow reactors. Hydregen has developed a third method, which consists of combining separate enzymes on a carbon particle, and using gaseous hydrogen as the source of hydrogen and energy so that at the end of the reaction there is no waste to dispose of. The Hydregen method is fast, clean and accurate. Furthermore it is easy to integrate into flow chemistry and should scale very well from lab to large scale.

The three key people in Hydregen are CEO Holly Reeve, scientific founder Kylie Vincent and Sarah Cleary, with the support of experienced chairman Will Barton.

Hydregen was set up with £200k in funding of which half came from OTSEIS, to support an Innovate grant to help develop and market test small flow reactors packed with their proprietary enzyme beads to which customers will be able to add their enzyme of choice and their reagents.

Recent developments

Hydregen has licensed in a nitro to amine reduction catalyst from the University of Oxford and has done a lot of work to test it on a variety of molecules and find optimal conditions. Under the name of Bio2Amine it allows the conversion of nitro compounds (organic compounds with oxygen attached to nitrogen) to amines (organic compounds with hydrogen attached to nitrogen). This solves a major headache in more than one way. First of all it can simplify the production of paracetamol significantly - and this is already attracting a lot of interest. Secondly, as the enzyme is very specific it allows the conversion to happen at any point during the process of creating a complex molecule without the risk of making other unintended changes to the molecule. Using other catalysts might require many additional steps to protect other parts of the molecule or might result in a very much more complicated clean up procedure at the end of the process. The catalyst is suitable for both batch and flow processes.

The hydrogenation reactions are also progressing well with projects moving on from exploratory to development or, in other words, from “will it work?” to, “just how well will this work?” and “can it scale up to the volumes we will need?”

Hydregen is continuing to grow and works hard on making sure it's a very motivating place to work.



OxVent.org

Company Valuation	Valuation Share Price	Fund Holding
£1.51m	£0.002	9.2%

OxVent Investment History

Date	Amount	Share Price	Type
Apr 2021	£79,124	£0.002	SEIS
Apr 2022	£60,000	£0.002	EIS
Jul 2022	£28,314	£0.002	EIS

Description of Business

OxVent was created to exploit the ventilator designs developed at the beginning of the Covid crisis by Kings College and Oxford. It was founded by Profs Mark Thompson, Federico Formenti, Sebastien Ourselin, Andrew Farmery together with CEO Peter Phillips. The UK govt placed an order for 3,000 ventilators and agreed to purchase the parts. In the event the order was cancelled, but the purchased parts were given to OxVent. The original ventilator has not been built and to accelerate the commercial side of the company, OxVent closed a contract with The Ventilator Partnership in Boston and acquired all rights to its AIRA ventilator. It is a more sophisticated device with a higher price-point and a wider range of features than the OxVent device. Importantly, it already has Emergency Use Authorisation from the FDA which meant it could be sold in a number of countries with minimal additional regulatory barriers.

OxVent has been certified to the ISO 13485 quality standard for design, manufacture and distribution of ventilators and this qualification would allow the AIRA ventilator to be manufactured by OxVent in compliance with FDA requirements.

The OxVent was designed at breakneck speed in Spring 2020 but in the following months the academics at Oxford, having thought more about ventilators, have since come up with what is believed to be an altogether better and simpler design, the OxVent P: Patents are in application and the potential for licensing to other manufacturers as well as in house exploitation is very real.

Recent Developments

OxVent has closed down the Kingston Bagpuize site and has managed to sell some surplus stock it had. This enables the company to keep advancing the AIRA and, to a lesser degree in the recent period, the Oxvent P. OxVent is still working on bringing the AIRA to market and is looking to get non-emergency approval, so it can be marketed more widely.



OxCan.org

Company Valuation	Valuation Share Price	Fund Holding
£16.56m	£102.96	1.7%

OxCan Investment History

Date	Amount	Share Price	Type
Jun 2021	£50,000	£40.00	SEIS
Jul 2021	£50,000	£40.00	EIS
Jul 2022	£28,314	£102.96	EIS

Description of Business

A company founded by Peter Liu and Andreas Halner, two Oxford DPhil researchers with medical training. They have developed machine learning algorithms to detect early stage lung cancer with 85% sensitivity and specificity over 99%. They are focusing on recurrent lung cancer as the first niche. Lung cancer is usually detected quite late and while it is often curable by surgery in stage 1, once it has reached stage 3 or 4 the prognosis is much worse.

When we first met them they had recently completed a study comparing the performance of their algorithms with those published by Johns Hopkins University. With the same specificity they were able to detect double the number of early (stage 1) lung cancers. The test is based on a liquid biopsy, where a blood sample is taken and genetic, protein and epigenetic information is collected.

We participated in a £1.2m investment round led by Chinese lab robotics company MegaRobo.

Progress since Investment

Since our investment, OXcan has rapidly scaled to a team of 12, adding expertise in Machine Learning, Liquid Biopsy, Business Development, and Regulatory Affairs. They have also taken on three employees via the Government Kickstart scheme, helping to get disadvantaged young people into work during these challenging times.

Recent Updates

OXcan has made great progress on multiple fronts. The areas we can disclose are:

OXcan's key paper was published in iScience.

Phase 2 of the ISO 13485 quality management for medical devices review went well and the recommendations OXcan received will be implemented over the next 6 months. ISO13485 is a key step towards getting approvals.

OXcan's lung cancer panel has been validated with 600 patients.

All this good news (combined with the confidential good news) has led to preparations for a series A round of \$15-\$20m. Following on from the publication, OXcan has started to receive unsolicited approaches, but any further introductions to investors - especially US - will be welcomed.

Summary

Progress at OXcan is very good and the next big steps are being prepared.



MitoRxTherapeutics.com

Company Valuation	Valuation Share Price	Fund Holding
£8.20m	£1.2411	3.7%

MitoRx Investment History

Date	Amount	Share Price	Type
Nov 2021	£60,000	£0.75*	SEIS
Nov 2021	£12,450	£0.75*	EIS
Jan 2022	£9,750	£0.75*	EIS
Dec 2022	£112,920	£1.2411	EIS
Feb 2023	£92,000	£1.2411	EIS

*Adjusted for 100:1 share split. SEIS/EIS certificates remain valid.

Description of Business

When bacteria developed in the early earth, several billion years ago, there was no oxygen in the atmosphere and bacteria developed using chemistry based on sulphur. Later, when cells developed, they hijacked the sulfur-based energy-producing bacteria and incorporated this into the mitochondria, the part of all our cells where energy is produced to drive all the thousands of processes which go on inside cells. Sulphur is still required for the mitochondria to work, and if anything goes wrong with the sulphur-based chemistry, then the cells cannot function properly. MitoRx believes that this is the fundamental cause of many diseases, and that by fixing this fundamental problem, lasting cures can be found.

MitoRx was founded by Prof Matt Whiteman (CSO), Jon Rees (CEO), Norman Law (CTO / Head of IP). Oxford technology invested £75,000.

The list of diseases which may be treated by targeted sulfide delivery (it has worked in nematode and mouse models) is very long, including inflammatory diseases, genetic diseases and neurodegenerative diseases. The initial focus will be on Duchenne Muscular Dystrophy (DMD) and Huntington's disease, but it could also help in Alzheimer's disease, Parkinson's disease, sarcopenia, cancer cachexia, COPD, and IPF.

Progress since Investment

MitoRx completed its seed round investment in late April 2022. It announced that Glyn Edwards MBE has joined as chairman of the company. The science has been going well so far and there has already been interest in the company and its programmes from both pharma and investors.

Recent Developments

The MitoRx team have advanced Duchenne's Muscular Dystrophy with improvements in efficacy and reduction in toxicity compared to the original tool compounds. DMD preclinical program has entered longer term dosing and an initial in vitro proof-of-concept has been achieved in a neurodegenerative disease model using human neurons derived from iPSCs (stem cells).



OVO BIOMANUFACTURING

OVOBiomanufacturing.com

OVO Investment History

Date	Amount	Share Price	Type
Nov 2021	£90,799	£10.99	SEIS
Mar 2023	£176,000	£15.00	EIS

Company Valuation	Valuation Share Price	Fund Holding
£2.06m	£15.00	14.6%

Description of Business

When viruses replicate, they create lots of imperfect copies of themselves. (It is this quality of viruses that enables them to mutate and create variants). Vaccines are manufactured using viruses which have been engineered to include the genetic code of the vaccine, so that when the viruses replicate they produce the vaccine. However as well as copies of the vaccine, the viruses also produce variants which in turn go on to reproduce. So after a number of generations the mixture will contain all sorts of other material as well as the desired vaccine. As well as particles with minor deficiencies, the vaccines also produce much smaller particles maybe with only 20% of the mass of the original vaccine. But if these smaller particles, known as DIPs (Defective Interfering Particles) also have the correct starting and ending codons, they will also take over the replication mechanism of the cell and replicate. As they are much shorter, they will replicate faster than the original virus. In this case, after a few generations, the mixture will be composed almost entirely of DIPs because of their much shorter reproduction time. OVO Biomanufacturing is a spin-out from Warwick and Coventry University aiming to control/exploit DIP production. There are two strands to OVO's technology:

1. Vaccine Optimisation Platform: Manufacturers of virus-based vaccines culture the vaccine in eggs. The vaccine enters the cells in the eggs and there takes over the reproduction mechanism, so that each infected cell then produces 1000's of copies of the vaccine. But manufacturing efficiency may be hampered by the production of DIPs at the same time. OVO's software platform can estimate what will happen to the rate of future vaccine production given the mix of Vaccine and the various DIPs at an early stage of the production process. The aim here is to maximise the output of vaccine. OVO believes that it can approximately halve the annual \$1bn cost of vaccine production.
2. Novel Antiviral Therapies: OVO aims to create therapeutics using DIPs to outcompete and inhibit the reproduction of the real virus.

Progress since Investment

On the Vaccine Platform side, OVO felt that they could provide some form of benefit for vaccine manufacturers at the technology's initial stage of development. OVO has been in discussion with several vaccine manufacturers since the outset. The aim is to enable these manufacturers to reduce their manufacturing costs by many £m pa, by using OVO's technology.

Recent Developments

Development of the vaccine platform is progressing well, with strong data being generated from trialling the platform internally. OVO has had an encouraging quarter and is now in the process of showcasing the technology to two global household name producers of vaccines. These are the beginning stages of trialling the technology in preparation for implementation. The next few months are likely to see crucial commercial negotiations.

For the antiviral platform OVO has continued to generate positive data within cell culture. OVO managed to reduce toxicity and improve stability of the compound whilst maintaining the efficacy of the treatment. OVO feels that it is now ready to begin testing the treatment in early-stage animal trials and is beginning to plan these experiments.



Digilab.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£7.01m	£0.51	8.3%

digiLab Investment History

Date	Amount	Share Price	Type
Dec 2021	£75,000	£0.075*	SEIS
Aug 2022	£75,001	£0.51	EIS

*Adjusted for 1000:1 share split. EIS certificates remain valid.

Description of Business

digiLab is a spinout building on the work of Prof Tim Dodwell (CTO), who leads the Data Centric Engineering Group at Exeter University and holds a prestigious Turing AI Fellowship. Heading up the company as CEO is one of Prof Dodwell's former PhD students, Anhad Sandhu; supporting them on the board are two experienced directors in Paul Garman (Chairman) and Dan Hatfield, both of whom we know from Cryologyx. OT helped to seed digiLab with a 75k investment.

Many companies generate lots of data about their systems, but don't know what to do with it. Companies in sectors with difficult operating environments also suffer from highly variable data quality, with the result that existing ML/AI solutions would suffer from the "Garbage In, Garbage Out" phenomenon. digilab is harnessing these big, but variable quality, data sets to improve decision intelligence. Their algorithmic models can learn from the time series data produced by real world sensors, in order to build a virtual system; this virtual system can then predict what those sensors will say in the future, or even what they would say if certain conditions were to occur.

Progress since Investment

digiLab has been working with the UK Atomic Energy Authority, Jacobs Engineering, and South West Water, as well as other unnamed clients. Delivering on the above contracts should validate its industry-agnostic approach.

One of digiLab's key tasks has been to figure out how to distill its academic knowledge into scalable, widely-deployable software tools. The company has identified the need for three core, interoperable modules: a data cleaning tool, an emulator tool to accelerate existing simulators, and an easy-to-use intelligence tool on the front-end, for controlling workflows and understanding data.

Recent Developments

digiLab has launched the Academy. If you are interested in AI or Machine Learning or know anyone who is, the courses are extremely clear and well taught. The aim is to teach the basics and provide access to digiLab's specialist tools in a way that requires relatively limited programming skills. For many applications, the expertise baked into the tools is sufficient to have a great impact. Some companies with more complex requirements will still benefit from support or bespoke developments.

The company is growing quickly and now has 24 employees.

Turnover continues to grow as new contracts have been won across many fields, with a particularly big one from the fusion industry in the last month.



[Neuroute.co](https://neuroute.co)

Neuroute Investment History

Date	Amount	Share Price	Type
Jan 2022	£55,813	£1.89	SEIS
Jan 2022	£24,185	£1.89	EIS

Company Valuation	Valuation Share Price	Fund Holding
£3.21m	£1.89	2.5%

Description of the business

Neuroute (formerly Neucruit) provides software to accelerate clinical trial recruitment and planning, by aggregating real-time data from over 25 million health-related conversations initiated online everyday. This helps sponsors and investigators pick the best trial locations, optimise their recruitment process, and access hard-to-reach demographics.

Founder Livia Ng introduced the company with the following question: “Could you imagine being locked down for 12 years?” That's how long it takes, on average, for a life-changing therapy to reach vulnerable patients. Clinical trials take up the majority of those 12 years, and over 86% of them are delayed by at least 6 months, costing the pharmaceutical industry more than \$500bn a year. Finding the right patients in the right places is tough. Our hope with Neuroute is for synergies across the portfolio: many of our companies have been hit by difficulties and delays with trials.

For instance, Neuroute can virtualise the screening process by using chatbots to select which patients are eligible. By providing a patient registry that fulfils a study's eligibility criteria, the platform has reduced some RCTs' enrolment timelines by ~90%.

Progress since Investment

Neuroute closed 14 contracts in 2022 (13 companies and one CRO) of which 60% were medical devices, 15% digital therapeutics and 25% traditional therapeutics.

Recent Developments

Neuroute's new tool does many things for its customers. It helps identify protocols from similar studies across industry to make it easier to design new studies. It also enables companies to find out which centres have the best recruitment statistics, and what they really are as opposed to what they say they might be. When a study is designed it is then possible to ensure the correct inclusion and exclusion criteria are selected and the clinical centres are involved. It makes it possible to turn what might have been a 6 month £200k piece of work into a few minutes and a considerable saving.

The tool is currently being refined with 5 test customers and will be launched in the near future.



Theraport Investment History

Date	Amount	Share Price	Type
Aug 2022	£10,004	£7.41	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.08m	£7.41	11.9%

Description of the business

Theraport was set up by Anne Thomas, Travis Prescod and Anna Huhn, all still currently studying at Oxford. The founders are developing methods to increase and improve the loading of drugs into exosomes, vesicles and other small hollow targeted drug carriers.

Exosomes are one of the ways in which cells in the body communicate with each other. Proteins or other payloads are wrapped up in small bits of lipid bilayer with appropriate receptors and ligands on their surface so they are taken up by the right cells.

The possibility of directing more of a drug to the cells that need it by using exosomes is being developed, but one of the bottlenecks is the consistent and sufficient filling of the exosomes.

Although we can't say how Theraport achieves this, the first proof of concept experiments show positive results.

Theraport has won an Innovate grant to help with further development of its technology.

Recent Developments

Theraport expanded its testing to a greater range of molecules. This has shown a requirement for adjustments to be made for different molecules. This was not unexpected and the next steps will be to expand the testing to understand which adjustments are required for different molecule properties. More work is also required on the production of the exosomes with the Theraport features. Theraport is currently pursuing grants and is working with exosome companies to help direct its work into the most critical areas.



Scintam.com

Scintam Investment History

Date	Amount	Share Price	Type
Oct 2022	£100,002	£7.00	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£1.03m	£7.00	9.8%

Description of the business

When expensive mechanical machinery has been in service for many years, often in hostile environments such as seawater or steam, it is often necessary to do repairs and maintenance and, in many cases, to replace certain parts. Often the original fixings, frequently bolts or nuts, will have become corroded so severely that they cannot be removed by conventional means. Another example is jet engines which require inspection and maintenance after 8,000 hours of flight. By effectively dissolving metallic fasteners, Scintam eliminates the need for drilling, grinding and heating processes that are hazardous for the operator and the component.

Scintam was founded by three young engineers who have developed a spark erosion machine which is designed especially for this task. The Scintam machine has a hand-held erosion head, which fits inside a purpose-made fixture, which fits snugly over the particular bolt/fixing which is to be removed. The operator can set the precise depth to which the erosion is to happen, and can then squeeze a trigger to carry out the process.

In the case of an aircraft engine, Scintam believe that using their device will reduce the time taken to separate an engine from its casing from 30 hours to 2. That would result in a saving of about £1.96m over the lifetime of the engine.

The initial target markets will be aerospace, wind turbines, remanufacturing, and nuclear decommissioning.

The company filed patents in August 22. The original research was done at the University of Nottingham, sponsored by Rolls Royce, who are aware of the need.

Recent Developments

Scintam is in the final stages of commercial development with multiple paid pilot-studies completed and is due to launch in the aerospace maintenance market in Q3 2023.

Scintam has had an excellent quarter, securing multiple new leads that are moving towards commercial sales. The leads for FastEDR include aero engine maintenance bases in the UK, Switzerland and Israel.

The Innovate UK grant ('ARTES') to part-fund development of an automated platform that targets high-volume remanufacturing of automotive components has reached a critical milestone with major technical risks overcome. A new motion control system has been combined with the existing EDM system carried over from the portable equipment, which will be demonstrated to a launch customer in mid-July. This customer is a large automotive turbocharger OEM with a large in-house remanufacturing line.

The hand-held FastEDR system has passed all EMC testing and the full CE certification document pack is due to complete in July 2023. Quotes for sales of FastEDR totalling £460k have been provided to multiple aerospace companies and are at varying stages of the sales cycle. We anticipate the first purchase orders to be received in August.



Genevation.co.uk

Genevation Investment History

Date	Amount	Share Price	Type
Jan 2023	£100,000	£0.40	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.40m	£0.40	25.0%

Description of the business

Genevation was founded by Dr Prasun Chakraborty, a former Research Fellow at Dana Farber Cancer Institute, Harvard University and University of Dundee, with over 10 years of experience in RNA, cancer, molecular and cell biology and biochemistry. He previously raised more than £1m for research in the role of mRNA in cancer.

Genevation aims to be able to take a sample of healthy tissue from a patient, and also a sample of a tumour, and then, in a period of weeks, to produce an mRNA vaccine which will destroy the tumour. The first step is to demonstrate that this works in mice. The investment is to enable this first step, and the hope is that this will be completed by the end of 2023.

Recent Developments

The mice whose tumours will be extracted and sent to Genevation have been bred, and the tumours should be of a size to be extracted and sent to Genevation in early July. Genevation will then sequence these tumours and try to develop a vaccine which will then be injected into the next generation of mice, with the same cancer, hopefully curing the cancer.

There is also other news, as almost always, a mixture of good and bad. An application has been made to the Home Office for licensing intranodal injections in mice. The panel of 9 different cancers has been agreed with Illumina/University of Cambridge. Genevation will seek to develop a vaccine which would be effective against all 9 cancers. Genevation completed development of the first universal mRNA vaccine delivery vector for use in both mice and humans.

On the negative side, Genevation was unsuccessful with several grant applications. Also it has transpired that the cost of the Neoantigen screening platform will be more than anticipated. As a remedy, Prasun has initiated talks with Qiagen and the University of Cambridge and others to deliver the data without incurring costs. Lastly despite what seemed to be very positive conversations with VCs, and even after due diligence, no offers of funds were secured.

So the plan is to carry on with the initial aim to demonstrate that Genevation can develop a vaccine which is effective against tumours in mice, and do this within a matter of weeks. If this can be achieved, Genevation should be able to secure additional funds for expansion.

AscendBio Investment History

Date	Amount	Share Price	Type
Mar 2023	£100,000	£0.25	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.60m	£0.25	16.7%

Description of the business

AscendBio was founded by Marcus Yeo and Prof Ludovic Vallier. The company will develop cells from different organs based on induced pluripotent stem cells.

Marcus was previously CEO of Definigen, a Cambridge University company providing stem cells for research based on Prof Vallier's research.

Ludovic now serves as Professor of Stem Cells in Regenerative Therapies at the Berlin Institute of Health at Charité (BIH). His group, based at the BIH Centre for Regenerative Therapies, employs human stem cells to generate cells with a clinical interest for disease modelling and cell-based therapy. Some of his lab remain at the Cambridge Stem Cell Institute.

The first cell products that AscendBio will be developing are pancreatic cells, but there are more that 40 cell types which can be developed based on the technology and they will be used for research and also for clinical applications. The idea is to put the pancreatic cells in a matrix in the body so that they will produce insulin in response to rising blood sugar levels and in this way provide a treatment for diabetes.

OT(S)EIS invested £100k to get the company started.

Recent Developments

AscendBio has set up in the Oxford BioEscalator, which is optimally located to access the Oxford Centre for Diabetes, Endocrinology and Metabolism (ODEM) expertise and the University of Oxford Old Road campus platform scientific services. Human pancreatic beta cells with a physiologically relevant glucose sensitive insulin response have been generated and the company will be commencing its full seed round raise of £4.5m in July 2023 with a forecast autumn close. To accelerate commercial development, the company has also engaged with corporate partners to leverage its platform technology in key areas of the fast-growing stem cell industrial sector.



Chambertech Investment History

Date	Amount	Share Price	Type
Mar 2023	£80,000	£0.42	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.50m	£0.42	16.0%

Description of the business

Richard Chambers studied exercise physiology in Oxford and has worked in industry as a specialist in the measurement of the electrical signals that cause atrial fibrillation. While assisting over 3000 cases he saw that the current methods for treating arrhythmia either required a very long and open heart operation which has risk of complications or a long and frequently unsuccessful process of cardiac ablation. He has invented a new process (and associated device) for carrying out atrial ablation that it is hoped will reduce the duration by more than half and increase the success rate.

The first investment will be used to make prototypes and test their safety.

Recent Developments

The first prototypes have been made and are being assessed ahead of the first animal trials, now scheduled for late July. The first prototypes are constructed as separate devices, which will be combined into a single device after the first trials.



SurreyH2 Investment History

Date	Amount	Share Price	Type
Mar 2023	£75,000	£1.26	SEIS
Apr 2023	£25,000	£1.26	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£1.45m	£1.26	6.9%

Description of the business

SurreyH2 (legal name Clean Hydrogen Ltd) is developing a technology for very cost-effective production of green hydrogen. The patented technology was developed by Dr Bahman Horri of the University of Surrey. The CEO is Dan Somers who has a background in spinouts and chemical engineering.

The technology makes use of two parallel processes joined together with a 'chemical loop'. The first process is a standard alkaline electrolysis process (splitting water into hydrogen and oxygen). The second process is a thermochemical process whereby a cheap metal catalyst is oxidised in water to generate hydrogen, and the metal oxide solution 'loops' into the electrolyser where it is reduced back to metallic powder. This two step process allows for a very high rate of hydrogen production relative to the energy inputted.

The technology is very cost-effective for locations where hydrogen is required and where is variable availability of cheap or excess electrical energy from renewable sources such as wind or solar.

OT(S)EIS has invested £100k as an SEIS investment as part of a £175k round.

Recent Developments

SurreyH2 has come to the end of its Innovate UK programme with a number of new inventions and developments. Nothing we can talk about in detail. The next step for the company is to build a demonstrator. SurreyH2 is looking for partners interested in using hydrogen. In particular, the technology gives big advantages when either the supply of electricity or the rate of usage of hydrogen is variable.



Revolutionaryconcepts.co.uk

RCL Investment History

Date	Amount	Share Price	Type
May 2023	£60,000	£0.34	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.4m	£0.34	15.0%

Description of the business

Gas Boilers will be outlawed in new build houses in the UK from 2025 via the implementation of the future homes standard. Water heating can be provided by an electric boiler but one gets out only the heat one puts in, so that it is not sensible to provide space heating in this way. Will Spain has established RCL to design and build a system which should be a very much more efficient system for heating a house which is simpler and has reduced installation costs compared to other heat pumps. The purpose of the investment is to build a prototype to test the idea and to see how well it works in practice.

The basic idea is to draw air in from outside the house and then to compress it whereupon it becomes hot. The hot compressed air will then have its heat extracted by low pressure air flowing through a heat exchanger and the low pressure warm air will then be ducted as necessary to provide space heating for the house.

The now cold compressed air will then be expanded through a second turbine, on the same shaft as the original compressor and helping to drive it, and will cool as it expands, finally leaving the house at maybe -15C.

The theoretical calculations show that 3 kW of electrical energy in may provide 8 kW of space heating for the house. (The actual numbers will depend on the temperature of the external air on the day and the desired house temperature.) Unlike conventional air-source heat pumps, the RCL compressor will be a much smaller unit and would be much the same size as a conventional boiler, and able to fit in a small cupboard. Additionally, there is no requirement for external components or refrigerants which reduces installation cost and complexity.

Since the investment, Will has been working on the details of the design, and the hope is to have a working prototype, using 3D printed metal parts by September. This will then be extensively tested to calculate its actual performance and efficiency.

Will Spain also has ideas for improved and more efficient designs of compressors and energy recovery expanders, and will work on this when time allows.

Investee companies no longer in the portfolio





Name of Company	Description of Business	Date of initial investment	Initial investment	Follow-on investment	Total investment	Date of closure	Net loss after tax relief (1)
Message Missile	Mobile phone app	May 2013	£16,000	£25,000	£41,000	Jan 2016	£12,300
Ibexis	Remote data loggers	May 2013	£50,000		£50,000	Feb 2017	£21,000
Abgentis	Improved antibiotics	March 2014	£42,000		£42,000	July 2019	£12,600 (2)
Power OLEDs	Improved OLED Technology	December 2013	£75,000	£178,397	£253,397	Dec 2020	£97,427 (2)

(1) Assuming 40% taxpayer and ignoring any reliefs on capital gains tax which will have applied to investors with capital gains tax to pay.

(2) Investors in Abgentis and Power OLEDs have received emails about how they can claim loss relief.






OT(S)EIS Fund Portfolio

30th June 2023

Company		Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Run 3D		3D Gait Analysis for Physiotherapy	£100,000	18/12/2012	SEIS	£50,000	£300,000	6.00	Latest Share Price
			£15,000	18/10/2013	SEIS	£7,500	£45,000	6.00	
			£10,000	18/10/2013	Non SEIS/EIS	£10,000	£30,000	3.00	
			£3,000	10/11/2017	EIS	£2,100	£4,500	2.14	
			£10,206	29/03/2019	EIS	£7,100	£10,200	1.43	
BioMoti		Improved Cancer Drugs	£74,998	08/01/2013	SEIS	£37,500	£76,593	2.04	Latest Share Price
			£40,000	28/05/2014	EIS	£28,000	£40,850	1.46	
			£74,661	31/03/2021	EIS	£52,300	£39,571	0.76	
Combat Medical		Bladder Cancer Treatment	£74,999	02/04/2013	SEIS	£37,500	£196,300	5.23	Latest Share Price
			£74,998	05/12/2013	EIS	£52,500	£178,400	3.40	
			£10,002	29/10/2014	EIS	£7,000	£22,700	3.24	
			£34,271	05/12/2014	EIS	£24,000	£77,700	3.24	
			£74,998	10/03/2016	EIS	£52,500	£60,000	1.14	
			£64,995	12/10/2016	EIS	£45,500	£65,000	1.43	
			£129,212	30/03/2017	EIS	£90,400	£103,400	1.14	
			£27,058	12/03/2018	EIS	£18,900	£21,600	1.14	
			£54,223	26/03/2021	EIS	£38,000	£54,200	1.43	
Message Missile		Mobile App Geo-location Notifications	£16,000	23/05/2013	SEIS	£8,000	£3,200	0.40	Discounted to £0
			£5,000	18/10/2013	SEIS	£2,500	£1,000	0.40	
			£20,000	19/06/2014	SEIS	£10,000	£4,000	0.40	







*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company		Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Ibexis Technologies		Remote Datalogging	£50,000	24/05/2013	EIS	£35,000	£14,000	0.40	Discounted to £0
Lightpoint Medical		Real-time Imaging for Cancer Surgery	£74,999	04/06/2013	SEIS	£37,500	£724,776	19.33	Latest Share Price
			£75,000	10/03/2014	EIS	£52,500	£180,250	3.43	
			£9,991	07/11/2014	EIS	£7,000	£19,311	2.76	
			£124,895	04/12/2014	EIS	£87,400	£241,394	2.76	
			£100,000	10/03/2016	EIS	£70,000	£90,373	1.29	
			£20,000	24/03/2016	EIS	£14,000	£18,074	1.29	
			£26,941	27/03/2019	EIS	£18,900	£18,952	1.00	
			£38,825	25/03/2020	EIS	£27,200	£27,312	1.00	
Metal Powder & Process		High Quality Metal Powder Production	£150,000	16/08/2013	SEIS	£75,000	£150,000	2.00	Latest Share Price
Power OLEDs		Improved OLED Technology	£75,000	11/12/2013	SEIS	£37,500	£15,000	0.40	Discounted to £0
			£25,000	18/07/2014	EIS	£17,500	£7,000	0.40	
			£30,000	27/04/2015	EIS	£21,000	£8,400	0.40	
			£30,000	04/09/2015	EIS	£21,000	£8,400	0.40	
			£60,065	05/04/2017	EIS	£42,000	£16,800	0.40	
			£33,332	08/03/2018	EIS	£23,300	£9,300	0.40	
Abgentis		Improved Antibiotics	£42,191	27/03/2014	SEIS	£21,100	£8,400	0.40	Discounted to £0

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)





For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company		Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Designer Carbon Materials		Endohedral Fullerene Production	£75,000	03/04/2014	SEIS	£37,500	£125,000	3.33	Latest Share Price
Sasets		Software for Construction Industry	£75,000	30/07/2014	SEIS	£37,500	£37,500	1.00	Latest Share Price
			£75,000	22/01/2016	EIS	£52,500	£30,600	0.58	Share Price
Sime Clinical AI		Rapid Diagnostic to Protect Pre-term Baby Lungs	£75,000	04/09/2014	SEIS	£37,500	£297,200	7.92	Latest Share Price
			£100,000	07/04/2016	EIS	£70,000	£355,700	5.08	Share Price
			£25,040	12/11/2018	EIS	£17,500	£41,900	2.39	
Expend		Software to Reduce Paperwork for Expenses	£75,000	23/12/2014	SEIS	£37,500	£2,250,000	60.00	Latest Share Price
			£17,338	09/02/2017	EIS	£12,100	£42,800	3.53	Share Price
			£3,000	04/12/2017	EIS	£2,100	£2,800	1.34	
			£13,000	28/08/2018	EIS	£9,100	£19,500	2.14	
			£30,719	29/03/2019	EIS	£21,500	£46,100	2.14	
			£29,300	25/03/2020	EIS	£20,500	£44,000	2.14	
Molecular Warehouse		Proteins for Diagnostics and Therapeutics	£75,000	21/04/2015	SEIS	£37,500	£22,500	0.60	Latest Share Price
			£75,000	02/02/2016	EIS	£52,500	£26,600	0.51	Share Price
			£20,000	24/03/2016	EIS	£14,000	£7,100	0.51	
			£52,005	14/09/2016	EIS	£36,400	£17,800	0.49	
			£20,000	22/09/2017	EIS	£14,000	£6,200	0.44	
Animal Dynamics		Mechanical Engineering inspired by Animal Motion	£75,000	29/06/2015	SEIS	£37,500	£256,750	6.85	Latest Share Price
			£35,220	27/11/2017	EIS	£24,654	£9,861	0.40	Share Price & Proceeds
			£3,001	30/07/2018	EIS	£2,100	£840	0.40	
			£14,391	30/03/2020	EIS	£10,074	£4,029	0.40	From Sale**

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

**Note: Valuation of Animal Dynamics investments is based on the proceeds from sales and the latest share price for the shares remaining in the portfolio.






For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company		Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Ducentis Biotherapeutics		Immune Modulation Therapeutics	£50,000	13/07/2015	SEIS	£25,000	£559,100	22.36	Proceeds From Sale & Fair Future Milestones**
			£30,000	14/12/2015	SEIS	£15,000	£299,700	19.98	
			£160,275	30/03/2017	EIS	£112,200	£730,100	6.51	
			£45,314	29/03/2018	EIS	£31,700	£189,200	5.96	
			£53,820	13/03/2019	EIS	£37,700	£155,700	4.13	
Bioarchitech		Engineered Oncolytic Virus	£79,560	13/08/2015	SEIS	£39,800	£795,600	20.00	Latest Share Price
			£40,000	08/03/2016	SEIS	£20,000	£240,000	12.00	
			£16,200	07/07/2017	EIS	£11,300	£97,200	8.57	
			£29,000	12/10/2017	EIS	£20,300	£145,000	7.14	
			£89,674	29/03/2019	EIS	£62,800	£298,900	4.76	
			£4,637	19/12/2019	EIS	£3,200	£9,900	3.06	
			£36,758	25/03/2020	EIS	£25,700	£78,800	3.06	
			£69,804	31/03/2021	EIS	£48,900	£104,700	2.14	
Orbit Discovery		Peptide Drug Development	£100,000	27/11/2015	SEIS	£50,000	£111,200	2.22	Latest Share Price
			£38,245	07/07/2017	EIS	£26,800	£38,200	1.43	
Curileum Discovery		Intestinal Tract Therapies	£75,000	07/03/2016	SEIS	£37,500	£476,200	12.70	Latest Share Price
			£25,950	19/05/2016	SEIS	£13,000	£164,800	12.70	
			£20,000	15/07/2016	SEIS	£10,000	£127,000	12.70	
			£20,000	16/07/2016	EIS	£14,000	£127,000	9.07	
			£19,997	28/10/2016	EIS	£14,000	£258,000	18.43	
			£20,002	08/11/2016	EIS	£14,000	£258,000	18.43	
			£30,000	11/05/2017	EIS	£21,000	£387,100	18.43	
			£102,020	27/03/2019	EIS	£71,400	£1,316,400	18.43	
			£4,330	29/03/2019	EIS	£3,000	£55,900	18.43	
			£13,791	25/03/2020	EIS	£9,700	£55,200	5.71	
			£29,656	19/12/2022	EIS	£20,800	£29,700	1.43	

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)






**Note: Valuation of Ducentis investments is based on the proceeds from sales (after the exit) and the fair value of future milestones (approx. 10% of the max potential milestones)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company		Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Spendology		Online Financial Interface	£37,500	01/04/2016	SEIS	£18,800	£10,875	0.58	Latest Share Price
			£62,500	20/10/2016	EIS	£43,800	£23,125	0.53	
			£25,000	13/09/2017	EIS	£17,500	£9,250	0.53	
			£65,329	06/03/2023	EIS	£45,731	£65,329	1.43	
Active Needle Technology		Ultrasound Visible Needles	£50,000	05/04/2016	SEIS	£25,000	£375,580	15.02	Latest Share Price
			£65,000	23/08/2016	EIS	£45,500	£312,480	6.87	
			£19,000	07/03/2017	EIS	£13,300	£91,318	6.87	
			£30,000	29/03/2017	EIS	£21,000	£144,185	6.87	
			£28,000	02/01/2018	EIS	£19,600	£100,154	5.11	
			£101,781	18/03/2019	EIS	£71,200	£270,447	3.80	
			£32,122	25/03/2020	EIS	£22,500	£85,353	3.80	
			£55,653	24/03/2021	EIS	£39,000	£123,231	3.16	
Oxford Nanoimaging		Super-resolution Microscopes	£100,000	29/04/2016	SEIS	£50,000	£1,050,000	21.00	Latest Share Price
Entia		Portable Blood Analyser	£75,000	19/05/2016	SEIS	£37,500	£133,825	3.57	Latest Share Price
			£9,504	21/10/2016	EIS	£6,700	£16,962	2.55	
			£48,554	30/11/2017	EIS	£34,000	£58,326	1.72	
			£89,934	01/02/2019	EIS	£63,000	£74,629	1.19	
			£26,017	24/03/2021	EIS	£18,200	£19,257	1.06	
Covatic		Personalised Media Feed	£39,776	02/02/2017	SEIS	£19,888	£42,743	2.15	Latest Share Price
			£60,224	06/02/2017	EIS	£42,157	£65,001	1.54	
			£30,000	05/02/2018	EIS	£21,000	£17,890	0.85	
			£67,997	31/03/2021	EIS	£47,598	£66,407	1.40	
			£37,926	01/04/2022	EIS	£26,548	£22,237	0.84	






*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company		Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Electrowinning Technologies		Electrical Metals Capture	£25,000	06/02/2017	SEIS	£12,500	£11,000	0.88	Latest Share Price
			£35,000	29/09/2017	SEIS	£17,500	£8,700	0.50	
Lupe Technology		Better Vacuum Cleaner	£51,000	20/02/2017	SEIS	£25,500	£84,000	3.29	Latest Share Price
			£30,000	22/02/2017	EIS	£21,000	£49,412	2.35	
			£51,000	12/03/2018	EIS	£35,700	£38,080	1.07	
			£37,001	12/03/2018	EIS	£25,900	£27,627	1.07	
			£9,999	27/03/2018	EIS	£6,999	£7,466	1.07	
			£138,719	25/03/2020	EIS	£97,103	£72,374	0.75	
			£50,243	12/03/2021	EIS	£35,170	£23,714	0.67	
			£27,864	01/04/2022	EIS	£19,505	£11,963	0.61	
Process Vision		Gas Inspection Optics	£99,999	27/03/2017	SEIS	£50,000	£166,700	3.33	Latest Share Price
			£3,000	28/06/2018	EIS	£2,100	£5,000	2.38	
			£68,494	31/03/2021	EIS	£47,900	£171,200	3.57	
Gripable		Mobile Rehab Technologies	£49,999	15/09/2017	SEIS	£25,000	£120,300	4.81	Latest Share Price
			£106,934	27/02/2019	EIS	£74,900	£138,900	1.86	
			£33,219	15/12/2020	EIS	£23,300	£33,200	1.43	
			£69,682	02/03/2022	EIS	£48,800	£69,700	1.43	
Dark Beam		Web Data Security	£50,000	06/10/2017	SEIS	£25,000	£150,000	6.00	Latest Share Price
			£25,000	05/02/2018	SEIS	£12,500	£75,000	6.00	
			£10,000	09/02/2018	SEIS	£5,000	£30,000	6.00	
			£18,200	26/03/2018	EIS	£12,700	£54,600	4.29	
			£50,000	03/09/2018	EIS	£35,000	£300,000	8.57	

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)







For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation	
LRESsystem		Lateral Resurfacing	£50,000	12/01/2018	SEIS	£25,000	£112,600	4.51	Latest Share Price
		Elbow Replacement	£75,050	21/01/2019	EIS	£52,500	£75,000	1.43	
Atelerix		Transport of Viable Cells	£50,000	22/01/2018	SEIS	£25,000	£55,000	2.20	Latest Share Price
			£133,186	03/04/2019	EIS	£93,200	£79,600	0.85	
			£196,851	30/03/2020	EIS	£137,800	£109,600	0.80	
			£44,767	04/06/2021	EIS	£31,300	£50,400	1.61	
			£11,100	29/11/2022	EIS	£7,800	£11,100	1.43	
Refeyn		Imaging Biomolecular Interactions	£66,240	26/06/2018	SEIS	£33,100	£840,300	25.37	Latest Share Price & Proceeds From Sale**
			£33,760	27/06/2018	EIS	£23,600	£422,500	17.88	
			£121,851	24/01/2019	EIS	£85,300	£955,900	11.21	
			£67,468	04/07/2019	EIS	£47,200	£528.600	11.19	
Cytecom		Detection of Bacteria Viability	£100,440	31/07/2018	SEIS	£50,200	£144,500	2.88	Latest Share Price
			£55,000	27/11/2019	EIS	£38,500	£79,100	2.06	
			£84,021	04/12/2020	EIS	£58,800	£120,900	2.06	
			£53,986	31/03/2021	EIS	£37,800	£54,000	1.43	
Polycat UK		Nanoparticle Polymer Catalysts	£50,002	05/10/2018	SEIS	£25,000	£441,300	17.65	Latest Share Price
			£22,058	29/03/2019	SEIS	£11,000	£43,300	3.92	
			£11,985	23/03/2020	SEIS	£6,000	£23,500	3.92	
			£112,998	16/12/2020	EIS	£79,100	£148,700	1.88	
			£11,784	10/02/2021	EIS	£8,200	£15,500	1.88	
			£60,350	19/04/2022	EIS	£42,200	£60,400	1.43	

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)








**Note: Multiple = Valuation of Refeyn investments is based on the proceeds from sales (after the partial exit) and the latest share price for the shares remaining in the portfolio

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company		Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Asymmetric Suzuki Reactions		Synthesising Complex Chiral Molecules	£65,040	18/03/2019	SEIS	£32,520	£13,008	0.40	Once Discounted to £0
Oxwash		Hyper-sustainable Laundry	£50,000	15/03/2019	SEIS	£25,000	£295,500	11.82	Latest Share Price
			£50,000	22/03/2019	EIS	£35,000	£295,500	8.44	
			£54,679	07/11/2019	EIS	£38,300	£149,300	3.90	
			£36,069	12/05/2021	EIS	£25,200	£67,400	2.67	
The Smarter Food Company		Foods for Pre-diabetics	£89,998	03/04/2019	SEIS	£45,000	£136,900	3.04	Latest Share Price
			£96,058	31/03/2021	EIS	£67,200	£106,700	1.59	
Connexin Therapeutics		Glaucoma Treatment	£66,325	04/04/2019	SEIS	£33,200	£66,300	2.00	Latest Share Price
Cytoswim		Sperm Cell Separation	£100,274	04/04/2019	SEIS	£50,100	£254,000	5.07	Latest Share Price
			£11,489	16/09/2021	SEIS	£5,700	£11,500	2.00	
			£59,038	28/09/2021	EIS	£41,300	£59,000	1.43	
			£34,194	01/04/2022	EIS	£23,900	£34,200	1.43	
Nikalyte		Nanoparticle Generators	£49,738	06/08/2019	SEIS	£24,900	£49,700	3.16	Latest Share Price
			£16,152	24/02/2020	SEIS	£8,100	£16,200	3.16	
			£77,886	16/10/2020	EIS	£54,500	£77,900	2.26	
			£44,987	29/11/2021	EIS	£31,500	£45,000	2.26	
			£60,276	23/02/2023	EIS	£42,193	£60,276	1.43	








*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company		Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Etcembly		Immune pattern recognition system	£70,588	21/01/2020	SEIS	£35,300	£1,058,800	30.00	Latest Share Price
			£20,587	16/11/2020	SEIS	£10,300	£78,200	7.59	
			£49,411	18/11/2020	EIS	£34,600	£187,600	5.43	
			£17,677	23/02/2021	EIS	£12,400	£67,100	5.43	
			£42,444	19/04/2022	EIS	£29,700	£84,900	2.86	
Flare Bright		Autonomous drones	£29,000	28/09/2020	SEIS	£14,500	£29,000	2.00	Latest Share Price
CryoLogyx		Cell cryopreservation	£75,000	12/03/2021	SEIS	£37,500	£224,550	5.99	Latest Share Price
			£86,336	29/03/2023	EIS	£60,435	£107,920	1.79	
Zayndu		Seed treatment	£133,505	26/03/2021	EIS	£93,453	£710,820	7.61	Latest Share Price
			£83,029	01/04/2022	EIS	£58,120	£173,910	2.99	
			£51,548	01/09/2022	EIS	£36,084	£56,703	1.57	
			£66,562	23/02/2023	EIS	£46,593	£66,562	1.43	
Machine Discovery		Simulation Optimisation	£74,999	31/03/2021	SEIS	£37,500	£78,600	2.10	Latest Share Price
Hydregen		Biocatalysis	£100,005	31/03/2021	EIS	£70,004	£186,543	2.67	Latest Share Price
			£63,151	27/03/2023	EIS	£44,206	£63,151	1.43	
Oxvent		Low cost ventilator	£79,124	01/04/2021	SEIS	£39,600	£79,100	2.00	Latest Share Price
			£60,000	27/05/2022	EIS	£42,000	£60,000	1.43	






*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company		Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
OxCan		Early cancer detection	£50,000	29/06/2021	SEIS	£25,000	£128,700	5.15	Latest Share Price
			£50,000	02/07/2021	EIS	£35,000	£128,700	3.68	
			£28,314	27/07/2021	EIS	£19,820	£28,300	1.43	
MitoRx Therapeutics		Therapeutics targeting Mitochondria	£60,000	16/11/2021	SEIS	£30,000	£99,288	3.31	Latest Share Price
			£12,450	18/11/2021	Non SEIS/EIS	£12,450	£20,602	1.65	
			£9,750	24/01/2022	EIS	£6,825	£16,134	2.36	
			£101,820	17/11/2022	EIS	£71,274	£101,820	1.43	
			£11,100	29/11/2022	EIS	£7,770	£11,100	1.43	
			£52,803	23/02/2022	EIS	£36,962	£52,803	1.43	
OVO BioManufacturing		Improving vaccine manufacturing and antivirals	£90,799	19/11/2021	SEIS	£45,400	£123,930	2.73	Latest Share Price
			£176,355	24/03/2023	EIS	£123,449	£176,355	1.43	
digiLab Solutions		Next-generation machine learning	£75,000	13/12/2021	SEIS	£37,500	£510,000	13.60	Latest Share Price
			£75,000	04/08/2022	EIS	£52,500	£75,000	1.43	
Neuroute		Making clinical trials easier	£55,813	26/01/2022	SEIS	£27,900	£55,800	2.00	Latest Share Price
			£24,185	02/02/2022	EIS	£16,900	£24,200	1.43	
Theraport		Exosome Loading Technology	£10,004	15/08/2022	SEIS	£5,002	£10,004	2.00	Latest Share Price
Theraport		Spark erosion tooling	£100,002	07/10/2022	SEIS	£50,001	£100,002	2.00	Latest Share Price

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For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company		Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Genevation		Personalised mRNA cancer vaccines	£100,000	24/08/2023	SEIS	£50,000	£100,000	2.00	Latest Share Price
AscendBio		Cell generation from human stem cells	£100,000	03/03/2023	SEIS	£50,000	£100,000	2.00	Latest Share Price
Chambertech		Improving the treatment of heart arrhythmia	£80,000	15/08/2022	SEIS	£40,000	£80,000	2.00	Latest Share Price
SurreyH2		Cost efficient green hydrogen	£74,999	30/03/2023	SEIS	£37,500	£74,998	2.00	Latest Share Price
			£25,001	12/04/2023	SEIS	£12,500	£25,001	2.00	
RCL		Novel compressor heat pumps	£60,000	12/05/2023	SEIS	£30,000	£60,000	2.00	Latest Share Price

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For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.