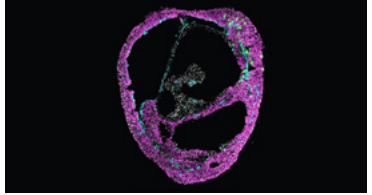
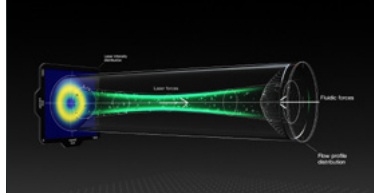
austria wirtschaftsservice aws

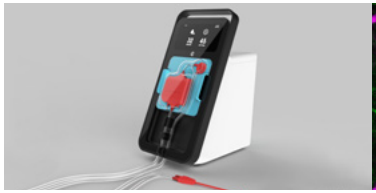
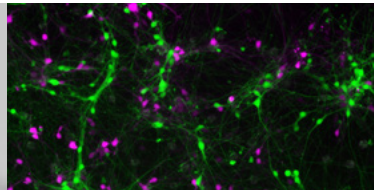
aws Preseed & **aws** Seedfinancing

Projects supported in 2020





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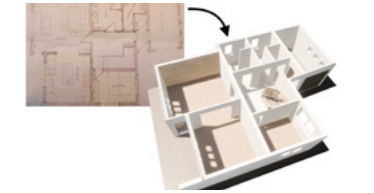
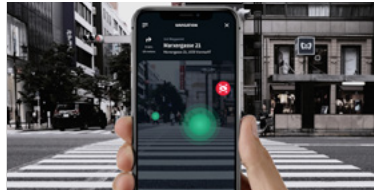
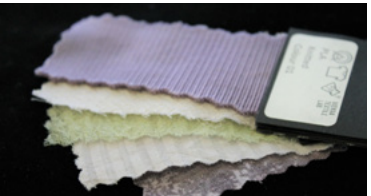
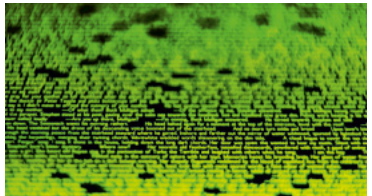


NODEVENTURE





DRAINBOT


© BMDW/Christian Lendl

Margarete Schramböck
Federal Minister for Digital and
Economic Affairs

Federal Ministry
Republic of Austria
Digital and
Economic Affairs

Generally, and especially in times of crisis, startups are the mainstays of our economy because they secure jobs, operate in novel technological areas and can adapt to new challenges much faster. With their innovative business models and creative ideas, startups are the laboratories of the future, important drivers of digitalisation and indicators of a modern business location. This is all the more true in economically tough times.

Despite the difficult overall circumstances, Austria's lively, innovative and well-developed startup scene was once again encouraged in 2020 to turn unconventional, technologically advanced research and development projects into new companies by targeted, long-established advisory and supportive measures such as the Preseed and Seedfinancing programmes. It is the aim of the Seedfinancing programmes to promote the emergence, growth and survival of young, highly innovative enterprises and to overcome financing bottlenecks in the initial phases of company development. Hence, these programmes substantially contribute to Austria's economic dynamism and to stimulating innovation by new firms. Especially in the present situation, this creates and secures jobs in the domestic labour market.

© BKA/Andy Wenzel

Leonore Gewessler
Federal Minister for Climate Action,
Environment, Energy, Mobility, Innovation
and Technology

Federal Ministry
Republic of Austria
Climate Action, Environment,
Energy, Mobility,
Innovation and Technology

The Seedfinancing programme has been a central contact point for startups in Austria for more than 20 years. Nowadays it is considered one of the flagship models of public funding for research, technology and innovation. The programme has supported the founding of numerous high-tech companies as well as substantially contributed to the development of a multifaceted startup scene. In the modern business landscape, startups are indispensable drivers of innovation and growth. As evidenced by the covid-19 pandemic, they not only stand out for new, creative solutions. Due to their resilience, they find it much easier to master challenges by turning them into opportunities.

It is precisely these entrepreneurial characteristics that are also required for tackling the climate crisis. Numerous startups already significantly contribute to achieving environmental and climate goals. In 2021, we have created an additional incentive to this end by introducing a new focus within the framework of the Seedfinancing programme: known as “Green Seed”, it is earmarked for founder projects that are relevant for climate protection and the environment and combines creativity, resilience and sustainability in the best possible way.

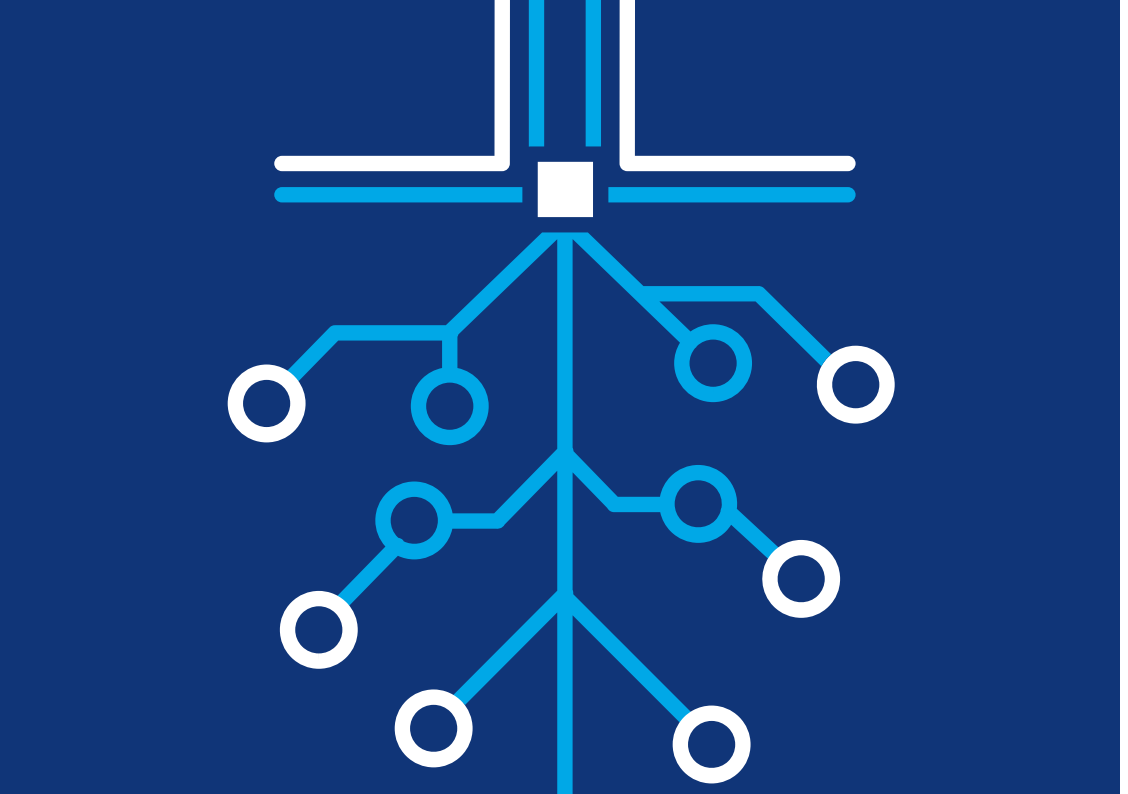
austria wirtschaftsservice aws

Edeltraud Stiftinger
Managing Director, aws

Bernhard Sagmeister
Managing Director, aws

Austria's businesses have been facing major challenges for more than one year. Under these difficult conditions, the innovative strength of entrepreneurs is all the more important. With their products and services, they not only create added value for their own companies but also sustainably contribute to strengthening the country's international competitiveness as a business location. In its capacity of funding bank of the Austrian federal government, aws supports projects' progress from the initial idea to international market success and helps to close financing gaps, especially in the early stages of the companies' development. Our aws Preseed and aws Seedfinancing programmes are central pillars of deep-tech funding. They provide technology-oriented companies with important seed capital in their planning and growth phases. In particular in challenging times, there is a need for such programmes in order to fill the gap in private financing for technology companies during their initial phase.

Moreover, aws also backs innovative ideas by offering advice and assistance in the search for investors and cooperation partners. On the following pages, we present the projects we were able to support in 2020.



aws Preseed

aws supports high-tech enterprises in their pre-founding stage.

In order to make an innovative idea marketable, an enterprise needs a viable, ambitious business concept as a sound basis on which to set up a company. aws PreSeed helps to fund costs arising during the early phase of foundation. Our special focus is on digitalisation, ICT, physical sciences (chiefly clean and quantum technologies) and life sciences.

aws PreSeed finances costs incurred by doing scientific work for and preparing the commercial utilisation of an innovative project. Such costs include expenses for studies and concepts, consumables and human resources. The maximum grant is € 200,000. It is paid out in performance-related tranches based on a milestone concept. Repayment terms normally range from 18 to 24 months.

www.preseed.at

aws Seedfinancing

aws accompanies high-tech enterprises throughout their founding and company building phases. It supports all kinds of high-tech businesses, spinoffs of universities and non-university research institutions. The focus is on digitalisation, ICT, physical sciences (chiefly clean and quantum technologies) and life sciences.

Building up an internationally competitive enterprise takes knowhow, courage and capital. aws Seedfinancing aims to bridge the funding gap between the idea for a product and its marketability. The programme supports investments for founding and market development, external consulting services and resources. In addition, startups are given individualised assistance. The maximum grant is € 800,000, repayable subject to conditions. Repayment, at terms of up to twelve years, is made from profits earned or upon the sale or IPO of the company.

www.seedfinancing.at

Information and Communication Technology

Advoodle

www.advoodle.com

aws
Preseed

Advoodle is developing a digital tool for writing smart contracts within the blockchain, which permits the automated generation and electronic signing of contracts.

Contracts occasionally are works of art, packing future eventualities and complex interests into stylish clauses which reflect the wishes and requirements of all parties involved. However, there are also more straightforward contracts which nevertheless consume considerable time and resources when created “analogously”.

Viennese startup Advoodle has developed a platform that helps users to digitally draft so-called smart contracts, i.e. high-quality, customised contracts in the form of small computer programs that run autonomously and are filed away in the blockchain. Their self-automated operation triggers payments and emails without the need for human intervention. Routine legal procedures are automated with the involvement of all parties and without cutting back on the quality of the result.

Legal tech

Advoodle targets the legal professions and corporate legal departments. The tool, which is sold by a specialised publisher, may be used anywhere, at any time and on any device. Its process automation considerably lightens the work load for law firms and other interested parties. With AI and self-explanatory,

© Advoodle

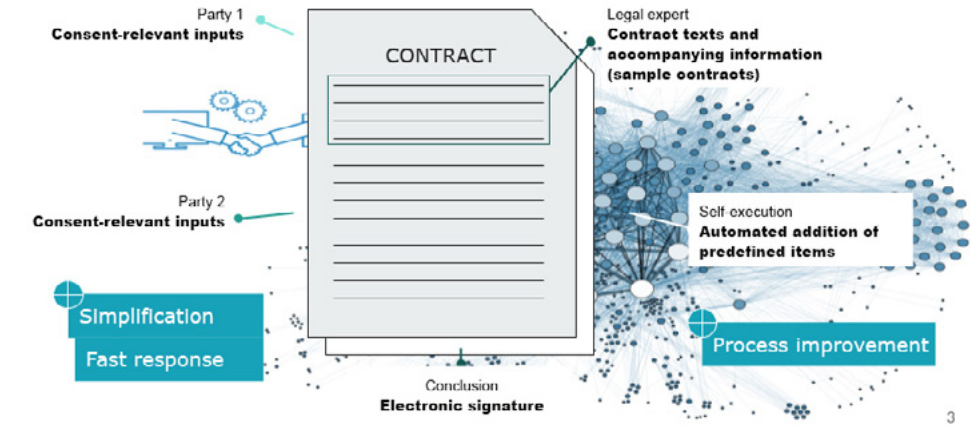
Advoodle Legal Tech GmbH
Schwindgasse 20/2–3, A-1040 Vienna

Founded in 2019
Founder: Andreas Böcskör

www.advoodle.com

ADVOODLE

Smart Contracts



user-friendly interfaces further reducing the scope of administrative work input, resources can be spared. The legal-tech tool uses the latest security standards to transmit data in encrypted form and store them in line with data protection rules. It automatically, securely and quickly generates electronic documents and sets up a collection of electronic sample contracts.

Expert founders

Advoodle was designed by legal experts who were looking for an integrated, easy to use legal solution. The founding team consists of Andreas Böcskör and Peter Puhr, two specialists with advisory and entrepreneurial backgrounds, and Florian Heder who is a blockchain expert. Further assistance comes from lawyers and computer scientists.

enspired

www.enspired-trading.com

enspired uses AI technology for its trading platform in order to actively include small-scale electricity producers in the intraday electricity market so as to stabilise the grid.

The growing share of renewable energy poses considerable challenges to the stability of our grids. Weather-related fluctuations in power generation from solar and wind energy are difficult to predict and need to be compensated for at short notice. Unforeseeable gaps in the supply must be balanced by additional power sources. Electricity surpluses have to be prevented to ensure that the grid will not be overloaded. For all this to work, we need electricity producers that can react without long lead times and around the clock.

Working from the trading platform developed by founders Jürgen Mayerhofer and Mario Schmoltzi, electricity suppliers can deliver their energy to the market at short notice, even when volumes are low and staff is not available on a 24/7 schedule. Drawing on AI technology, quantitative algorithms make decisions that are executed on electricity trading platforms within milliseconds.

Balancing supply and demand

enspired focuses on the intraday market for electricity. The short-term wholesale trading market, where electricity is traded up to five minutes before being physically delivered, comprises all market participants, from wind marketers to operators of thermal power plants and pumped storage hydropower

aws
Preseed

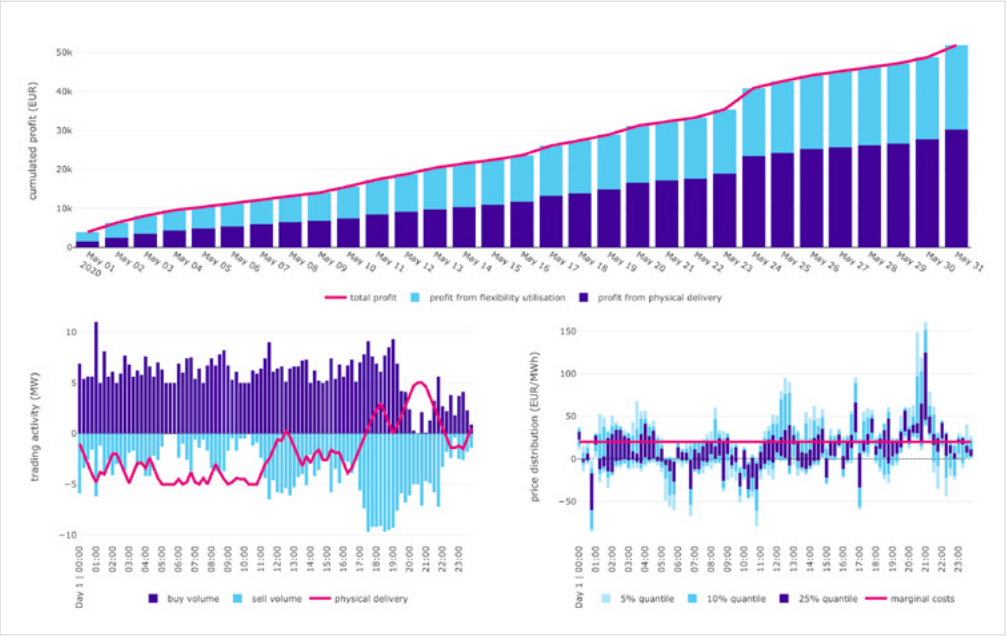
© enspired

enspired

enspired GmbH
Meischlgasse 13, A-1230 Vienna

Founded in 2020
Founders: Jürgen Mayerhofer, Mario Schmoltzi

www.enspired-trading.com



stations. The intelligent algorithms furnished by enspired offer individual marketing solutions for each type of plant, thereby contributing to a stable grid while boosting the profit to be had from the plants. The services of enspired maximise the utilisation of generation potentials, flexibly integrate power stations in the grid and, in the final analysis, expedite the energy transition.

Fully automated electricity trading

The software-supported trading service provided by enspired opens up the intraday market for small-scale power producers, which increasingly include operators of renewable sources of energy. Previously operators needed their own access to an electricity exchange, appropriate software and 24/7 shift operation in order to directly participate in the intraday market. Customers of enspired can do without all this: the service offered by enspired comprises everything they need to participate in the intraday market.

Lidarlabs

lidarlabs.com

The Linz-based startup is developing a novel test system for lidar sensors, targeted at the growing market for 3D sensors. Lidar is a radar-related technology for obtaining 3D images of the surrounding with laser beams.

The growing use of autonomous systems in the automotive industry, mining and robotics has generated a veritable sensor boom. Sensors of all kinds provide the basis for machines to act autonomously. In addition to cameras and radar systems, lidar sensors have become increasingly popular. By using laser pulses, the lidar technology enables imaging the surrounding in reliable detail. The sensors collect data on distances, velocities, dimensions and shapes of objects. When intended for use in safety-critical applications, the 3D sensors need to be tested, calibrated and qualified during production. To this end, Lidarlabs is developing automated test systems that will make serial production substantially cheaper and simpler.

aws
Preseed

© Daniel Winters

Automated tests

At present, there are hardly any industrial test systems available. Founder Daniel Winters, who has been active in optical testing for years, knows the status quo of test strategies for lidar sensors: producers and sensor integrators simply test manually, in the field or in large sheds. The inflexibility of this type of testing and its high cost obstruct mass production of the kind required for the emerging lidar market.

Lidarlabs

Lidarlabs GmbH
Hafenstraße 47–51, A-4020 Linz

Founded in 2020
Founders: Daniel Winters, Anja Winters

lidarlabs.com

Desk-size rather than football pitch-size
Lidarlabs will deliver a novel solution for lidar tests that is simple and easy to handle. The startup is developing compact, desk-sized mobile test systems that need minimal space to automatically test the sensor's relevant parameters. In addition, it will be possible to test submodules of the sensors that are tuned to the respective lidar technology.

Advantages for industrial production
Thanks to the Lidarlabs test stations, manufacturers and integrators of lidar sensors will no longer need the large spaces currently required for testing. The procedure will make it possible to carry out flexible and automated tests of long-range lidar sensors in the assembly line, thus reducing the time to profitability for industrial series producers.

NodeVenture

tmia.at

NodeVenture, a startup from Linz, is creating a web app that acts as a digital high-security vault for safekeeping cryptoassets such as bitcoin.

Founders Cagdas Tasdemir and David Schnetzer are convinced that the blockchain technology will change current financial markets. They got their idea for NodeVenture at what was once Central Europe's largest Ethereum mining farm, where the two founders met and collaborated.

Given their lack of transparency, inadequate identity checks and non-harmonised regulations, cryptocurrencies continue to be seen with scepticism by national financial regulators. With its digital high-security vault, NodeVenture, a startup run under the name of TMIA, intends to finally eliminate the criticisms voiced by financial authorities and make handling of cryptocurrencies simpler, more transparent and more secure.

© TMIA

Broad market breakthrough
NodeVenture is a digital high-security custodian for the safekeeping of cryptoassets. The product meets both the technical and the regulatory requirements of the financial market and was licensed by FMA, the Austrian Financial Market Authority, in late 2020. All its users and their cryptoassets are thoroughly checked in accordance with the Fifth Anti-Money Laundering Directive at the time they are registered on the platform. The source of the funds and the identity of users are clearly identified and traced. For the first time, this provides the necessary transparency to make cryptocurrencies suitable for use by financial service providers and banks. The ISO 27001 certification underpins the stable and reliable internal security management offered by NodeVenture.

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Preseed

© TMIA

NODEVENTURE

TMIA GmbH
Peter-Behrens-Platz 10, A-4020 Linz

Founded in 2019
Founders: Cagdas Tasdemir, David Schnetzer

tmia.at

Security of an offline wallet combined with usability of an online wallet

NodeVenture keeps the assets offline, thereby avoiding virtually all online-based security risks posed by hackers and their ilk. Thanks to the multi-layered security technology, users nevertheless have 24/7 access to their digital assets. A genuine air gap enables real-time transactions to be handled bidirectionally (i.e. deposits and withdrawals) between offline and online areas, which is currently a unique selling proposition worldwide.

This concept will be the first to make the custody of cryptoassets scalable.

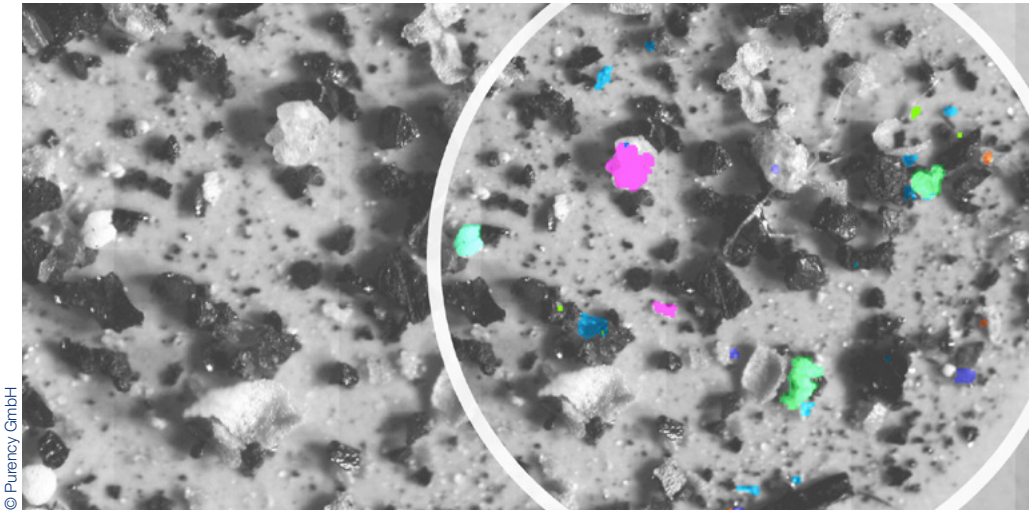
Purency

www.purency.ai

Alumni of Vienna's University of Technology are developing software for the analysis of microplastics that uses AI algorithms to determine not only the amount but also the type of plastic.

Compared to microplastics, fine desert sand is a rough and ready material. Microplastics lurk everywhere. In every wash cycle, clothes release up to 2,000 tiny plastic fibres. In every corner of the world, ageing and decomposition break down wrappings, bags and bottles into tiny particles that find their way into food and living things. Microplastics are frozen into the polar ice cap, seep into the Amazon forests with the rainwater and are ingested by marine animals.

So far, there are no efficient methods to tackle this problem as we lack hard data on microplastics. However, sufficient data on the occurrence and source of plastic particles are a prerequisite for understanding their



© Purency GmbH

effects and finding globally valid solutions. The Microplastics Finder is Purency's contribution to reaching this goal.

Standardised interpretation of data

One of the biggest problems of laboratories is that methods for measuring microplastics are not comparable. Benedikt Hufnagl, a graduate in technical chemistry and process engineering at Vienna's University of Technology, tackled the problem in a roundabout way: he succeeded in automating the data analysis of microplastic measurements. The samples are irradiated with electromagnetic rays in a wide frequency range. Machine learning algorithms then determine the composition of the microplastics in the sample, which not only considerably accelerates the measurement process but, above all, standardises the method. Michael Stibi

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Preseed

© Purency GmbH

Purency

Purency GmbH
Innovation Incubation Center, Floragasse 7/7, A-1040 Vienna

Founded in 2020
Management: Michael Stibi, Valerie Hengl

www.purency.ai

(technical chemistry, Vienna's University of Technology), Valerie Hengl (environmental technology, Vienna's University of Technology) and Aurelia Liechtenstein (business administration, Maastricht University) turned this idea into a business plan. The four graduates jointly founded Purency in August 2020.

Laboratories and environmental authorities as target groups

The Microplastics Finder enables laboratories to detect all polymer particles in a sample and to classify them by type, number and size. The current version processes FTIR images with more than one million spectra and 5 GB each. It distinguishes more than 20 polymer types and delivers results in about ten minutes. The target groups include all types of laboratories that analyse microplastics, irrespective of whether their focus is on research, contract work or issues relevant to the industry. Moreover, the company aims to cooperate with spectrometer manufacturers, environmental authorities and the food industry.

Quantics

quantics.io

Quantics has developed its SaaS-based planning software to help companies predict which products can be sold when, where and in what quantities.

Manufacturing companies and trading firms would very much like to predict the sales of their products on a customer-specific basis and under changing conditions. In times of data mining and self-learning software, this no longer requires a crystal ball. The Viennese startup Quantics is working on a solution that uses primarily proprietary data to predict how products will sell in the future and how factors such as discounts, loyalty club cards or shifts in demand due to covid-19 will influence sales.

Quantics is developing forecasting software that automatically and continuously adapts to circumstances, with forecast errors being 30-70% lower than those of existing solutions. Especially for demand patterns that are difficult to predict, such

as slow-moving goods or batch deliveries, Quantics is significantly more accurate than comparable software.

Easier access for businesses

The founding team consists of data scientists and experts in Software as a Service (SaaS) who met at work. Problems in sales and demand planning as well as companies' reluctance to innovate arguing that existing solutions are expensive and often insufficiently accurate, tipped the scales in favour of taking matters into their own hands.

Forecasts even with small amounts of data

Quantics complements existing business software. The solution aims to enhance this type of programs by providing simpler and more accurate forecasts. The more data that are available in the company, the more precise will be the forecast, but even a relatively small amount is enough. Data on past sales transactions or deliveries of goods and master data on products and production and/or distribution locations suffice for Quantics to build on them. Further input on clearance sales and discount promotions, shifts in demand, loyalty club cards and even the weather is helpful and permits more accurate forecasts.

Quantics charges a monthly fee for the use of its solution. The forecasting software pays off for companies with a turnover of € 20 million or more. The startup has already attracted some domestic companies as customers.

© Quantics

QUANTICS

Quantics GmbH
Wasagasse 31/2/27, A-1090 Vienna

Founded in 2020
Founding team: Resul Akay, Johannes Matt, Christof Bitschnau, Vladyslav Vasylevskyy

quantics.io

Vloor

www.vloor.com

The Vienna-based startup is developing a software that automatically converts images and scans of property layouts into digital plans that are visualised as two- or three-dimensional images or in virtual reality.

Deciding for or against a potential new home greatly impacts on the buyer's well-being. House or apartment hunters therefore put considerable efforts into striking a balance between "well-appointed" and "affordable". Real estate agents, on the other hand, are confronted with the fact that their customary sales tools, from adverts to digital tours, are less than optimally efficient.

The software created by Vienna startup Vloor aims to make home hunting and home design notably easier. The program takes photographs of building and floor plans and turns them into 2D layout visualisations and 3D models. Even virtual reality tours can be created in a few minutes without the need to scan the property on site. The PDF drawings or CAD files (IFC) prepared by the Vloor software can easily be processed by current architectural software, an early step towards building information modelling (BIM).

aws
Preseed

A glimpse into the future

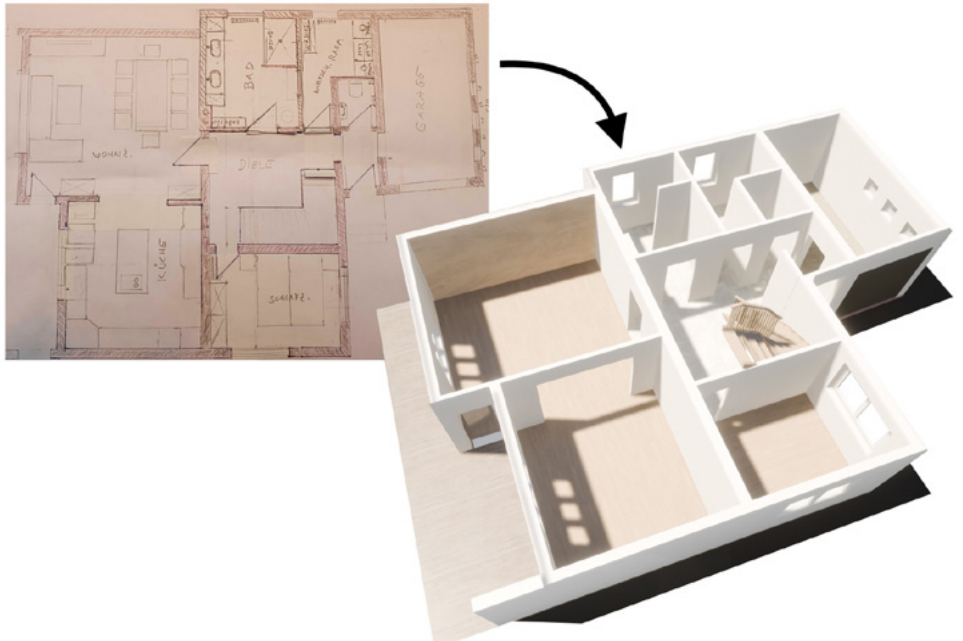
Founders Thomas Lechinger, Felix Haberl and Peter Penzenstadler, all of them graduates of the supplementary course on innovation offered at the Innovation Incubation Center of Vienna's University of Technology, count on the unlimited

© Philipp Blickfang Photography

Vloor GmbH
Seidlgasse 21/17, A-1030 Vienna

Founded in 2021
Founding team: Thomas Lechinger, Felix Haberl, Peter Penzenstadler

www.floorible.com, www.vloor.com



© ArchiCAD

scalability of their product. Because the Vloor software is fully automated, it can be used anywhere and any time. It is particularly attractive for real estate properties that are about to be refurbished, built or still lived in. The 2D and 3D layout models provide a glimpse into the future, regardless of the actual condition of the house or apartment.

A product with endless possibilities

Brokerage firms are the primary target group in the startup's first expansion phase. As its next step, Vloor plans to address real estate companies, property developers, real estate valuation firms and architects by extending the software features provided. Austria and Germany are the first target markets.

linx4

www.linx4.io

linx4 provides a platform for equipment financing that uses a contract middleware to link up data from Industry 4.0 with the world of financing.

For the typical non-expert, neither the Internet of Things (IoT) nor the fortes of Industry 4.0 are obvious launching points for financing ideas. Yet, the son-and-father team of founders Paul and Michael Bruckberger has built a bridge between these two concepts. Their linx4 startup supports machine builders (OEMs) in selling equipment and manufacturing systems by offering a flexible financing solution in cooperation with financial services, calculated on the basis of units produced. Encrypted throughout, it combines the latest Industrial IoT technology with state-of-the-art financing ideas. The outcome is the so-called pay-per-use leasing: a new, scalable solution to finance equipment, which lowers previously high investment hurdles.

aws
Seedfinancing

Equipment data deliver financing schedule

The contract middleware developed by linx4 combines Industry 4.0 data with the world of financing. Using IoT data and financing algorithms, it computes, for the equipment maker's customers, the rate of repayment at given production quantities, and handles automated invoicing and risk management. This approach entirely depends on a broad data base that visualises risks and permits their proper pricing. It needs to be based on reliable equipment data from which to compute

© linx4

linx4 GmbH
Eitzenbergerstraße 4–6/B06, A-2544 Leobersdorf

Founded in 2018
Founders: Paul Bruckberger (CEO),
Michael Bruckberger (IoT expert)

www.linx4.io

rates – and this is where linx4 shows its merits.

Number of units produced to serve as unit of calculation
The startup is set to revolutionise the sale and financing of equipment. Converting investment costs into operative costs substantially lowers the investment hurdle for the buyer of the equipment. Moreover, repayments can be handled off the balance sheet in accordance with IFRS 16. Customers have much more leeway when worst case scenarios such as a low backlog of unfilled orders or a lockdown reduce equipment utilisation.

In addition to selling more equipment, OEMs can use the flexible financing solution to boost their aftersales revenues, develop new business fields and resell the equipment to the secondary market in a second life cycle. For individual and institutional investors, the solution provides a new and attractive asset category.

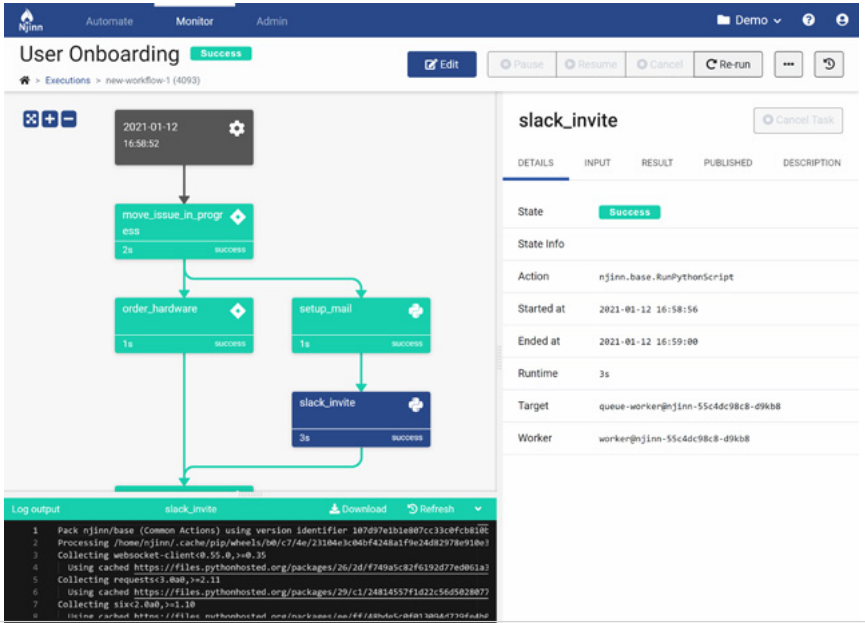
Njinn

www.njinn.io

Njinn is developing automation software that gives SMEs access to an Industry 4.0 technology previously reserved for large-scale enterprises.

For small and medium enterprises, the Fourth Industrial Revolution usually remains little more than a catch phrase. Automating repetitive processes with standard methods rarely makes economic sense for SMEs because of the high cost of conversion and inadequate economies of scale. Njinn, a startup from Vienna, has set itself the goal to get Industry 4.0 into smaller enterprises. Founders Christopher Hejl and Stefan Leitich are creating a solution for workflow automation which closes the gap between open-source frameworks and sophisticated ITPA tools, offering a professional method for process automation to all companies regardless of their size.

Great solutions for small enterprises
Njinn's software is the first to provide SMEs



aws
Seedfinancing

with an alternative to high-input customised solutions and high-price products. The online platform run by Njinn allows automating day-to-day operational routines and maintenance processes, developing consistent, repeatable processes for effective change management, automated troubleshooting, automation at the touch of a button for business users, and a well-defined and documented process library.

As simple as setting up an email account

The automation sector is dominated by

Njinn Technologies

Njinn Technologies GmbH
Mooslackengasse 17, A-1190 Vienna

Founded in 2018
Founders: Christopher Hejl (CEO), Stefan Leitich

www.njinn.io

products tailored to large-scale companies. Yet for Njinn, automation solutions for SMEs are an essential component of their digital transformation, even though they have inadequate human, technical and financial resources for implementing and servicing such projects.

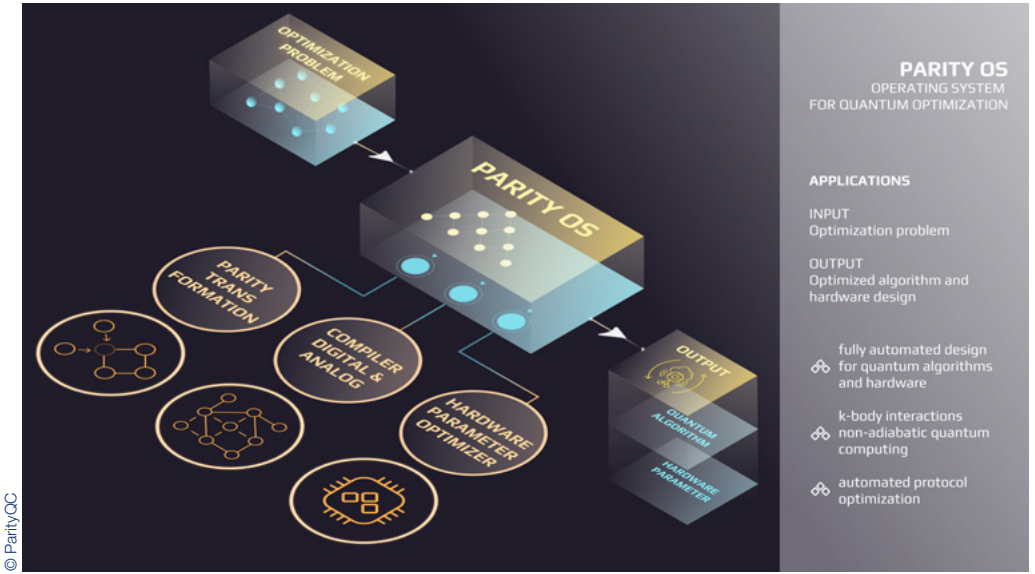
Njinn's solution makes the implementation of automation software as simple as setting up an email account, thus rendering complicated sales and consulting processes redundant. Njinn's pricing model is transparent, non-binding and risk-free, and has already been a market success: its automation solution has been implemented by high-growth startups, medium-scale wholesalers and banks.

ParityQC

parityqc.com

The startup from Innsbruck is developing an operating system that unravels optimation problems with quantum computers. Its software architecture aims to become the standard solution for quantum technology for all manufacturers.

The commercial use of quantum computers is not yet within easy reach. However, numerous platforms put enormous efforts into their development. The goal is ambitious: quantum computers should surpass current (super) computers whenever several challenges need to be optimally combined. Quantum technology will be used for solving abstract problems such as protein folding for faster and cheaper drug development (drug design) as much as for analog tasks such as day-to-day traffic route optimation. And when it comes to constructing smart



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aws
Seedfinancing

grids for the supply of electric cars, quantum technology is playing an ever more important role.

On their own

The patented ParityQC architecture (a blueprint for quantum chips) developed by the university spinoff is a completely new approach to building quantum computers. One of its key advantages is that it is compatible with all currently existing quantum hardware platforms (superconducting transmons, atoms,

© ParityQC

ParityQC

Parity Quantum Computing GmbH
Rennweg 1, Top 314, A-6020 Innsbruck

Founded in 2020
Founders: Wolfgang Lechner, Magdalena Hauser

parityqc.com

ions, etc.) and methods (digital and analog). The architecture was developed and patented by Wolfgang Lechner jointly with Philipp Hauke and Peter Zoller in 2015. In spite of a lucrative offer to sell his innovation, patent owner Wolfgang Lechner joined forces with Magdalena Hauser, who had been manager of the Institute for Entrepreneurship Cambridge in Tyrol and is well-versed in the establishment of startups, to set out on their own, launching ParityQC in January 2020.

Hardware manufacturers as a target group

ParityQC's target customers are the manufacturers of quantum chips who are currently struggling with fundamental problems such as connectivity between qubits, scaling of chips and simplification of structures. The ParityOS operating system links these problems in a fully automated process and develops solutions. This approach enables manufacturers to adopt the software architecture created in Innsbruck without wasting significant resources on its implementation.

Software standard of quantum technology

The business idea is to license the patented ParityQC solution to manufacturers of quantum computers. The first year was highly promising: after just one year, the startup has accumulated paying customers on three continents. By 2022, ParityOS is expected to run on at least two more platforms and to have become the sector's standard.

Symflower

symflower.com

The startup from Linz uses artificial intelligence and mathematical models to test software cheaply and efficiently.

New software is like new car models: you need to expect bugs. Scheduling systems for tests or vaccination registration don't work, hackers weasel through security gaps, car and plane manufacturers stop production, tried-and-tested software is tripped by an update – software development is full of hidden snags. Each program has to be thoroughly tested in order to succeed on the market. An expensive course of action: according to Gartner, an IT consultant, more than $ 250 billion are invested in software testing every year. Yet this is no guarantee for success: in spite of the enormous expenditure, undetected software bugs cause annual losses of more than $ 1 trillion.

Fully automated

Symflower, a company based in Linz, intends to put an end to the orgy of testing: it has developed a product which performs a novel type of software quality assurance by drawing on artificial intelligence and mathematical models. Just like a spell-checker which automatically runs through texts to find errors, Symflower detects bugs and security issues in software programs – fully automated without the need for human intervention. The economic merits are enormous: the test program, which is up and running in 60 minutes, promises software developers cost savings of up to 60%.

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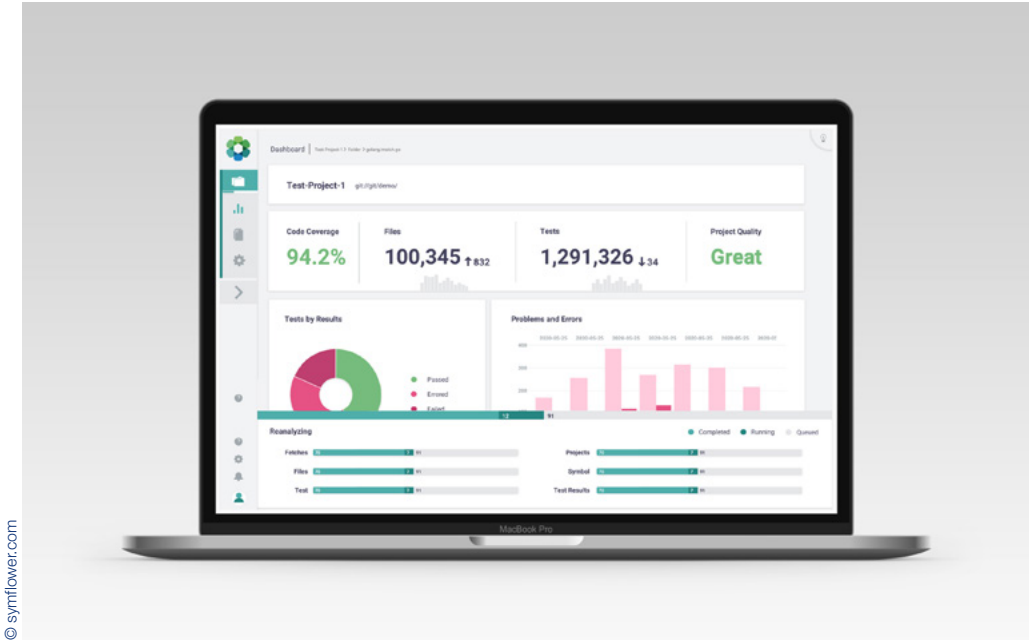
symflower
AUTOMATING QUALITY ASSURANCE

Symflower GmbH
Coulinstraße 24, A-4020 Linz

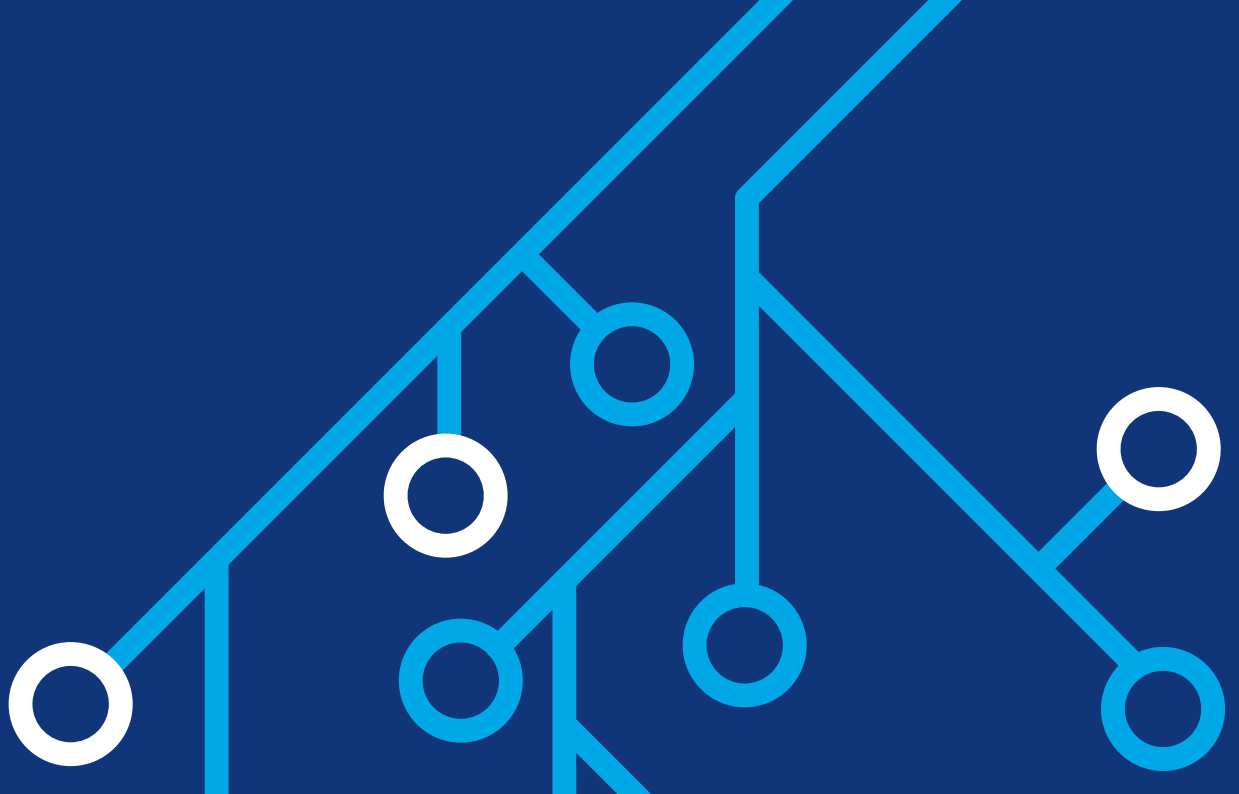
Founded in 2018
Founding team: Norbert Presslaber, Evelyn Haslinger, Markus Zimmermann

symflower.com



Thesis bears fruit

It all started in 2015 with a diploma thesis written by Markus Zimmermann. Working from this, he and his co-founder Evelyn Haslinger used their spare time to develop prototypes for practice-testing theoretical deliberations with the help of mathematical models and AI. In addition to various static and dynamic source code analyses, Symflower uses Symbolic Execution, a technique to generate all unit test cases. Advances in the field of software verification and symbolic reasoning in conjunction with the hardware's enormous growth in sheer computing power helped to successfully put Symflower's approach into practice. The company is confident that it can increase the productivity of software developers by 30% and at the same time massively improve the quality of their software.



Physical Sciences

BrightComSol

www.brightcomsol.com

BrightComSol is developing highly stable, light-emitting perovskite quantum dots. Thanks to this novel technology luminous nanocrystals can, for the first time, be used in displays and X-ray devices.

Nanocrystals have surprising properties. One type is able to emit incredibly bright colours. These special nanocrystals consist of caesium-lead-halide compounds that have a so-called perovskite crystal structure. Perovskite quantum dots (PQDs) are extremely bright sources of light that can change from one colour into another. By varying the chemical composition of the nanoparticles, the PQDs can be made to display all colours of the visible spectrum. Produced at low cost, PQDs may well revolutionise the production of solar cells, displays, screens and scintillators.

The breakthrough

So far, it has been impossible to use PQDs for industrial purposes, as their unique properties could not be replicated in mass production. BrightComSol has developed a special technology that provides PQDs with long-term stability so that they can be applied in polymer film and thus utilised in large-scale series production.

Double-track strategy

The enterprise is currently focusing on two products: BrightLeaf™ is a PQD-loaded thin film that converts high-energy photons into visible green photons. BrightComSol markets it as scintillators

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© BrightComSol

BrightComSol GmbH
Simon-Zeisel-Haus, Muthgasse 11, A-1190 Vienna

Founded in 2020
Founders: Behzad Shirmardi (CTO), Erik Reimhult (CSO)

www.brightcomsol.com

© BrightComSol

that convert X-rays into visible light. BrightSplash™, its second product, is a resin formulation that allows third parties to use their own PQD-containing devices and polymer film for photon conversion. BrightSplash™ is of particular interest to manufacturers of displays as it permits production of the latest generation of LCDs with the purest and most vivid colours.

Next generation

BrightComSol was founded by Behzad Shirmardi and Erik Reimhult in 2020, as a spinoff of the Department of Nanobiotechnology at Vienna University of Natural Resources and Life Sciences. Its objective is clear: the Viennese startup intends to become the technological and market leader for the next generation of PQD-based scintillating and colour-generating resins, inks and thin film.

CeraMicro

ceramicro.eu

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Martin Kunze is creating an almost indestructible ceramic microfilm that can be densely written on, with the aim to achieve an alternative for the photochemical microfilm used in archives.

Ever since humans began to walk upright, they have wanted to preserve their knowledge for posterity. Yet there is still no recording method that will persist through the ages. The risk of a “digital dark age” worries technological companies, scientists and governments the world over. Martin Kunze, a native of Gmunden who studied ceramics at Linz University of Arts, has made it his life’s work to preserve knowledge and data for a future when hard disks may have become dysfunctional, cloud silos wrecked and libraries vulnerable. Memory of Mankind (MOM) is how Martin Kunze names his project of an ultimate long-term archive. In MOM, texts and images are burnt onto ceramic slabs in real size and stored in the salt mine of Hallstatt.

Steep learning curve

Since starting out on his quest in 2012, Martin Kunze has considerably refined the ceramic microfilm technique. The initial dot size of 40 µm has since been reduced to 240 nm, thereby increasing resolution by 25,000 times. The text or image is laser-written onto an extremely thin (200 nm) layer of dark ceramics which, in turn, is placed on a thin (1 mm)

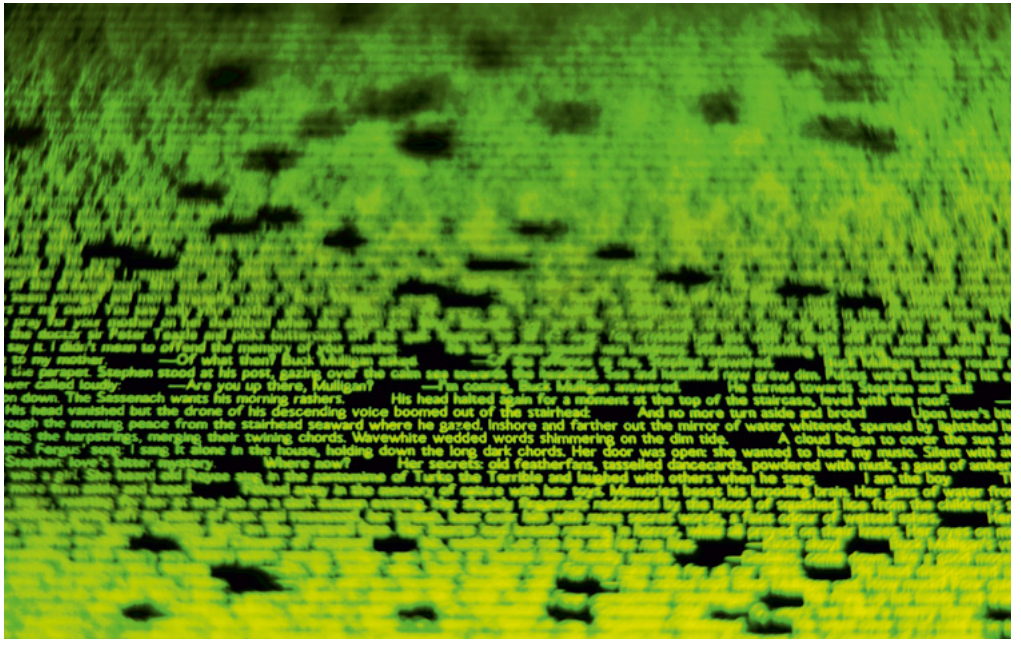
© Martin Kunze

CERAMICRO

CeraMicro GmbH
Salzfertigergasse 3, A-4810 Gmunden

Founded in 2021
Management: Martin Kunze

ceramicro.eu



© CeraMicro

ceramic carrier. Five million characters fit onto a 200 mm x 200 mm panel of ceramic microfilm. Two such panels suffice to save all of the Harry Potter volumes for posterity. Patents protect the concept of a durable ceramic data carrier.

Safekeeping for 100,000 years

Under normal conditions, the ceramic microfilm CeraMicro will keep for more than 100,000 years, is fire-proof up to 1,200°C and cannot be destroyed by water either. The supply of blanks made from clay, a universally available raw material, is similarly guaranteed for all eternity.

Fit for the market

In 2018, Martin Kunze teamed up with Christian Pflaum, a business economist, to turn his prototypes of a durable ceramic data carrier into something bigger: plans are to start up CeraMicro in 2021, in cooperation with the materials technology and photonics department of Vienna's University of Technology, and to make the product commercially viable.

DrainBot

drainbot.at

The Graz-based startup has developed the world's first automated robot system for cleaning tunnel drains. Use of the robot makes long tunnel closures unnecessary and dramatically reduces the consumption of water.

Tunnels need servicing too, as motorists find out when they are kept waiting outside a closed tunnel tube at night because of "maintenance works". It is especially the drain pipes in the tunnel walls that need the operator crew's attention, because they tend to get clogged. To prevent harm, the drains are regularly flushed with high-pressure systems that consume large quantities of water. This purging requires the partial or full closure of the tunnel, with all its attendant traffic holdups and congestions.

Cheaper, cleaner, more sustainable

This is where the startup run by mastermind Philipp Lepold and co-founder Slevan Stekovic comes in. Thanks to its technology, DrainBot is able to autonomously clean tunnel drainage systems without the need to close the tunnel. The robot makes maintenance-related tunnel closures obsolete and significantly reduces the tunnel's ecological footprint. While tunnel drainage systems are normally cleaned with high-pressure jets, consuming some 400 litres of (fresh) water per minute, DrainBot uses the water held in the drainage pipes. As a result, the operator finds the tunnel's maintenance cost plunging while its climate protection

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© DrainBot

DRAINBOT

DrainBot GmbH
Riesstraße 19c, A-8063 Eggersdorf bei Graz

Founded in 2019
Founder: Philipp Lepold (CEO)

drainbot.at

© DrainBot

rating is substantially augmented. Moreover, DrainBot promises easier implementation of preventive maintenance concepts which, in turn, lengthens the lifespan of the tunnel.

No supervision on site

The DrainBot system consists of a modular robot unit for cleaning and several charging stations. It is powered by electricity rather than fossil fuels. The electricity is sourced from a battery system built into the body of the robot. It is charged in a charging/data station, which gives it a range of more than ten kilometres. Human supervision on site is not necessary, and the system works while traffic continues to flow. DrainBot envisages maintenance cost cuts of 10-30%. The startup has some obvious target groups in its sight: its robots for cleaning tunnel drains will be chiefly interesting for operators of (underground) railways and roads. A pilot project is already underway.

FAUTECH

FAUTECH is developing a CO_2-based refrigerating system that works without the aggressive fluorinated gases typically used for cooling. Fluorine gases are markedly more harmful to the climate than CO_2.

FAUTECH, a startup from Dornbirn, specialises in the development and production of CO_2 compressors optimised for transcritical CO_2 cooling and heating pump circulation. Its innovative feature is the combination of FAUTECH compression technology and a sealing system designed to withstand high CO_2 pressures. Transcritical operation of CO_2-based cooling means that the units are used at an ambient temperature in excess of 31°C.

Cleaner and safer

FAUTECH founder Florian Ausserer has developed a highly efficient CO_2 compressor that makes using the natural refrigerating agent simpler and safer for everyday purposes. Current CO_2 cooling systems are plagued by maintenance and safety concerns due to the high pressure required for the CO_2 cooling circuit (100 bar and over, compared to about 2.5 bar in a car tyre).

Paradoxon: CO_2 may protect the climate

In the mid-1930s, the introduction of safe refrigerants based on fluorinated gases produced an upheaval in refrigeration. They superseded the CO_2 units that were manageable only as large-sized devices, blazing the trail for refrigerators and

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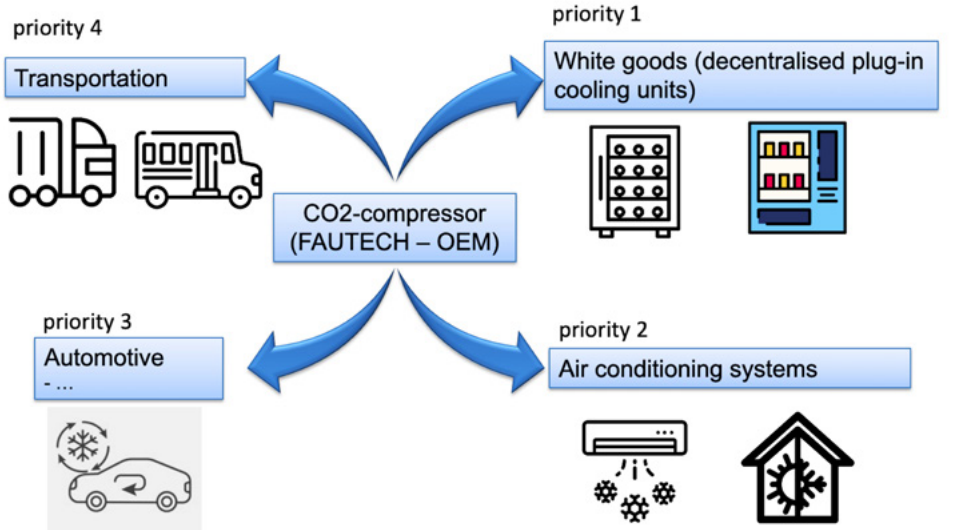
© Thomas Steinlechner

FAUTECH
Am Floßgraben 1a, A-6850 Dornbirn

Founded in 2020
Founder: Florian Ausserer



© FAUTECH

cooling units that could be used around the house. However, fluorinated gases have been found to greatly accelerate the greenhouse effect. When these gases are emitted into the atmosphere, their effect is up to a thousand times worse than that of a comparable quantity of CO_2. Consequently, CO_2 is much preferable as a refrigerant (R744) in terms of ecology and safety. It is neither toxic nor flammable, not liable to deplete ozone, chemically inactive, cheap and much less harmful to the climate than currently used refrigerants.

Promising market potential

The FAUTECH technology is to be fitted into plug-in CO_2 cooling systems for food retailing and catering, such as bottle coolers, fridges, freezers, fridge shelves and food vending machines. A second large target group is the field of building temperature control where CO_2 air conditioning systems are easy and simple to use. Once they have been successfully launched on the market, potential future markets are the automotive industry (cars, recreational vehicles, etc.) and the transport sector (rail, coach, etc.).

SpeedPox

www.speedpox.com

The enterprise located at Korneuburg is developing epoxy resins that can cut down energy and time input by up to 99%.

Epoxy resin is incredibly versatile. Typically supplied as two components, it seals, laminates or bonds, depending on how the joining is done. Boat builders, the automotive, aviation and construction industry – hardly any trade can do without this stabilising, adhesive and curing plastic. Its global market volume is estimated at € 20 billion. The synthetic material normally consists of two components – the resin and the curing agent which need to be mixed in an exactly specified ratio in an additional step which is constrained by a very short time limit.

Curing at the push of a button

With his curing method, founder Daniel Grunenberg, a specialist in polymers, has given a new outlook to manufacturers. SpeedPox offers ready-mixed epoxy resins that can be used immediately and have unlimited pot life. The resin will harden at the push of a button: a local light or temperature stimulus triggers a curing wave that propagates through the workpiece autonomously and without the need to add further energy, thereby bypassing conventional curing in industrial-size furnaces. The SpeedPox systems may also be used for composite materials and even under water.

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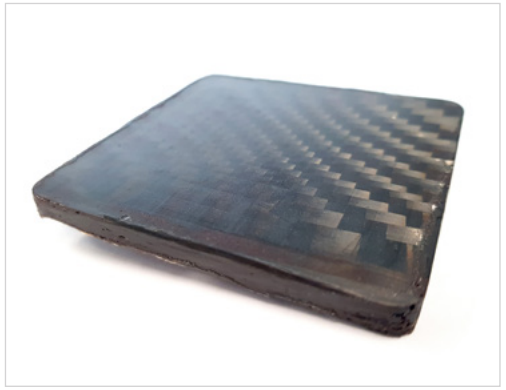
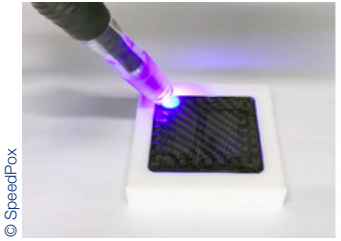
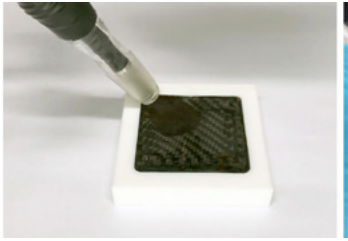
SpeedPox GmbH
Industriestraße 1, Objekt O.09, A-2100 Korneuburg

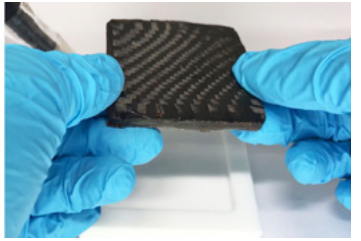
Founded in 2020
Management: Daniel Grunenberg

www.speedpox.com









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Patent-protected
Daniel Grunenberg worked at improving the technology already at Vienna's University of Technology when he was a member of the CURRATEC (FFG) spinoff fellowship project, getting considerable attention with the SpeedPox expoxy resin. Its development is protected by several patents and industrial property rights.

Planned production site
Currently, Daniel Grunenberg is working with his first international pilot customers.

Following the technological development, a production site is scheduled to be built at the company's premises at Korneuburg in 2022. The resin is to be launched on the Austrian market by 2023.

Aviloo

aviloo.com

Aviloo has developed a test system for second-hand electric cars which checks the state of the batteries using machine learning algorithms for assessment.

For the time being the market for used electric cars is still slack. Nevertheless, growing sales of electricity-powered cars indicate that, in time, demand for second-hand models will grow at the same rate. The key problem is checking the state of the vehicle and in particular the battery that supplies its power. The condition of the battery cells inside determines the value of the car. However, as yet no independent, neutral test is available.

The two founders Wolfgang Berger and Nikolaus Mayerhofer have established an independent test method for lithium-ion batteries in electric and plug-in vehicles that can be used regardless of the brand and will yield comparable ratings.

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Diagnosing batteries with the Aviloo Box is designed to become the standard assessment system in any future deal involving second-hand electric cars. The battery is worth at least 50% of the overall value of the car. A replacement battery costs between € 10,000 and € 25,000, depending on its size.

One test drive is enough

For a test drive, the Aviloo Box is plugged into the car. During the test drive, the data are recorded and analysed by a software developed in-house. A web app guides the

© Aviloo

Aviloo GmbH
Brown-Boveri-Straße 16, A-2351 Wiener Neudorf

Founded in 2019
Founding team: Wolfgang Berger (CEO), Nikolaus Mayerhofer (CTO), Marcus Berger (COO/CFO)

aviloo.com

© Aviloo

test driver through the test procedure. The analysis uses data that provide information on features such as voltage, power and temperature. The enormous amount of data is transmitted to the backend at Aviloo by mobile phone, where machine learning algorithms are used to determine the battery's "health".

Cross-brand rating

The Aviloo test is simple to use: the customer gets the Aviloo Box for the OBD interface of the car from the nearest Aviloo partner, makes a test drive and receives a certificate showing the Aviloo rating. This Aviloo rating provides an assessment of the battery regardless of the brand. In 2020, initial tests were made with the Austrian automobile club ÖAMTC and TÜV Rhineland. Additional partnerships on a European scale are currently negotiated with motoring associations, car dealers and garages.

Dreamwaves

www.dreamwaves.io

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Dreamwaves draws on augmented reality technology to develop an audio navigation system that helps guide the blind and visually challenged as well as other mobility users to find their way in unfamiliar surroundings.

Getting to an unknown destination may be quite a challenge, and not everybody finds it easy to navigate their way to their goal. Blind and visually impaired people, as well as many elderly persons or riders of bicycles or e-scooters may quickly become disoriented. Dreamwaves makes navigation easy for them as they can simply follow a guiding sound.

Orientation by acoustics

Dreamwaves exploits the human ability to intuitively recognise the direction from which a sound is coming. People can locate their position by acoustics. The startup uses augmented reality to embed virtual waypoints in real open-air places. Users can hear these waypoints through their headphones and then simply follow a series of virtual sound waypoints. This method of spatial audio navigation allows finding one's way by intuition and hands-free.

Several target groups

In addition to the blind and visually challenged, Dreamwaves intends to target users of bicycles and e-scooters: they profit greatly from the app as it guides them along their route without

© Tatjana Sternisa

Dreamwaves GmbH
Marxergasse 24/2/5/R7, A-1030 Vienna

Founded in 2019
Founder: Hugo Correia Duarte Furtado

www.dreamwaves.io

© Dreamwaves

the need to look at a screen. Currently, Dreamwaves is in its beta test phase. The app incorporates all functions needed to navigate streets by audio signals. Moreover, it permits planning and filing away routes for later navigation. Dreamwaves is about to achieve marketability for its product, to be followed by scaling up the operation.

Roots in augmented reality

Dreamwaves was founded by Hugo Furtado in 2019. He is experienced in augmented reality applications for surgery purposes and in managing R&D projects. Dreamwaves is his current challenge.

Lambda Wärmepumpen

www.lambda-wp.at

The startup based in the Tyrolean Brixen valley is utilising a novel process that substantially boosts the efficiency of heat pumps. The idea is that, in the future, its energy-saving models will be able to supply entire housing complexes with heat.

The new process marketed by the Tyrolean enterprise has the potential to revolutionise the use of energy-saving and climate-friendly heat pumps. Founders Florian Fuchs and Florian Entleitner developed the so-called 3K process which overcomes previous technological hurdles to the wider use of heat pump technology. The process improves the transition of environmental heat from air, water and soil by four to six times, thereby distinctly cutting energy input as well as operating costs.

While writing their master theses, Messrs. Fuchs und Entleitner came across a process that greatly improves thermal transition in heat pump evaporators. The 3K process developed by the founders put the theory into actual practice. Tests made by an independent institute confirmed that Lambda heat pumps cut energy consumption by 26% compared to current top models of energy efficiency category A+++.

Use of natural cooling agents

The 3K process makes it easier to use propane, a natural and climate-friendly cooling agent. As a result, the Tyrolean startup reduces the greenhouse potential of

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© Lambda Wärmepumpen

LAMBDA
Wärmepumpen

Lambda Wärmepumpen GmbH
Brixentaler Straße 10, A-6364 Brixen im Thale

Founded in 2019
Management: Florian Fuchs, Florian Entleitner

www.lambda-wp.at

© Lambda Wärmepumpen

a cooling-agent filling for heat pumps from 13 tons to just 3 kg of CO_2 equivalents.

Supplying large-scale systems

Lambda has already got two types of heat pumps ready to go into serial production. Its systems are deployed in Austria, Germany, Switzerland and Norway. Currently, the startup is busy developing new types of heat pumps using 3K technology for higher capacity rates that will allow extending their use from typical single- and two-family homes to large housing complexes.

Suitable for refurbishment projects and existing buildings

Given the considerable reduction of energy consumption, the Tyrolean founders see excellent potential in the refurbishment market. Previously it had been assumed that installing heat pumps in existing buildings does not make economic sense. Thanks to Lambda's 3K process in combination with optimised operation, it is now possible for the first time to offer ecologically and economically attractive solutions to this market segment.

octogon

www.octogon.org

The startup based at Leoben developed a novel type of strain gauge sensor for materials testing and component maintenance.

Strain gauges are essential to check for materials fatigue and in materials testing. The tests help make materials, structures and other products better and safer. Traditional standard methods are inconvenient as strain gauges need to be applied to the component with extreme care and accuracy. They require the highest precision in order to avoid falsified results. As the gauges must be fitted by specially trained staff, their use currently tends to be restricted to test and lab series. Three years ago, founders Daniel Eisl and Matthias Ottlinger ventured into the development of a new concept for a strain gauge that would combine easy handling with precise results.

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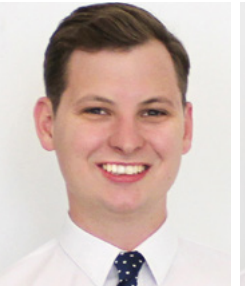
Exact strain measurement without gluing

Contrary to customary strain gauges, the StrainPad® sensor developed by octogon is simply press-fitted onto the component. There is no need for the work-intensive application process that involves cleaning, sanding, more cleaning, precise gluing and sealing. The result is significant savings on costs and time.

First applications

So far, octogon's sensor has mainly been used in materials testing and injection



© octogon GmbH

OCTOGON
MESSTECHNIK

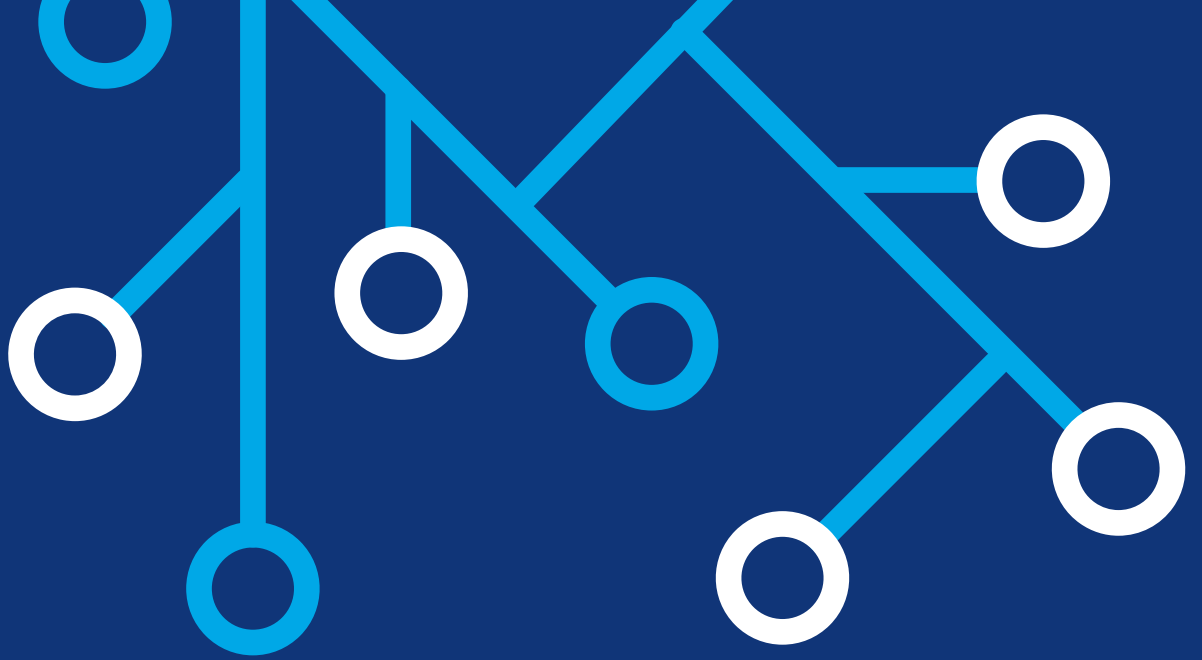
octogon GmbH
Peter-Tunner-Straße 19, A-8700 Leoben

Founded in 2018
Founders: Daniel Eisl, Matthias Ottlinger

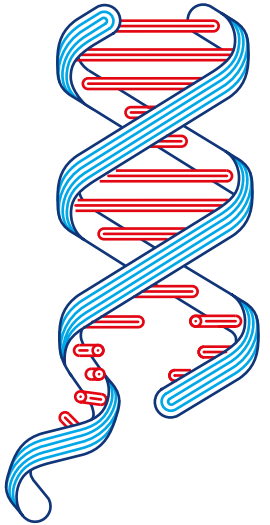
www.octogon.org

moulding. Thanks to octogon's sensors, testers can check the alignment of each test specimen, thereby excluding the risk of faulty measurements due to strains caused by clamping. The company's Align Meter checks such strains in a minimum of time. The results are processed with a specially designed amplifier made by octogon.

In developing its StrainPad® octogon aims to substantially facilitate precise strain measurement in applications ranging from structures to materials testing. Daniel Eisl and Matthias Ottlinger are positive that their method will greatly expand the use of (highly accurate) strain gauges.



Life Sciences



aws LISA – Life Science Austria

Bringing life sciences from the lab to the market

Austria as a business location will benefit from the most innovative ideas only once they have made it from the lab to the market. Austria Wirtschaftsservice (aws) has established Life Science Austria (LISA) as a one-stop shop that spans the entire value-added chain of startups in the life sciences. LISA provides customised support at every stage of a startup's development.

www.lifescienceaustria.at

AgroBiogel

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The spinoff of the Vienna University of Natural Resources and Life Sciences is developing a hydrogel from natural raw materials that keeps moisture in the soil longer, fertilises fields and significantly improves the quality of the soil in the long term.

Fields are thirsty. Global farming consumes more than 70% of all available freshwater. Around 60% of the world's grain farmers depend exclusively on rain without artificial irrigation. In many regions, climate change is turning droughts from an occasional phenomenon into a permanent condition. Hydrogels can be a way to mitigate the consequences of increasingly warmer summers and less and less rainfall. The additives, usually applied in granular form, absorb large amounts of water and gradually release it back into the soil. Researchers at the University of Natural Resources and Life Sciences in Vienna have developed a completely biodegradable hydrogel based on natural raw materials. The additive not only irrigates plants, but also fertilises them and improves the quality of the soil.

Woody plants as raw material

With Gibson Nyanhongo as their spiritus rector (he heads the Biomaterials Technology working group at the University in his day job), the founders of AgroBiogel have succeeded in bringing to the market a wood-based hydrogel that can store exceptionally

© Keith Nyanhongo

AgroBiogel GmbH
Königstetter Straße 128–132, A-3430 Tulln

Founded in 2021
Founding team: Gibson Nyanhongo, Johannes Paul Schwarz, Enrique Nacif

© Keith Nyanhongo

high amounts of water. They use woody plants that incorporate biopolymers into their cell walls and have amazing storage capacities.

Storing water in the soil

Soil mixed with this hydrogel can absorb up to 95% of the seepage water, saving up to 40% on irrigation. By storing the added water, the substance can ward off droughts and compensate for irregular or reduced water supply. With the AgroBiogel additive even sandy soil may be turned into farmland.

Unlimited areas of application

The biohydrogel is preferably applied in the same way as fertilisers. It is available in the form of granules and powder, both wet and dry. The product developed by the Tulln-based company can be used in open fields as much as in greenhouses and other artificial growing systems. The areas of application are unlimited.

Brave Analytics

www.braveanalytics.eu

The Med Uni Graz spin-off is developing a novel, laser-based measuring technology that provides for continuous real-time characterisation of (nano) particles.

Nano is really small. One nanometre is one billionth of a metre. Hence, nanoparticles are clusters of atoms or molecules of 1 to 100 nanometres in size. Nanoparticles can be found everywhere – as natural components or as artificially added ingredients: in sun creams, where they ensure that UV radiation does not cause skin damage, as lipid droplets in milk, in many other foods, in eye drops, vaccines and other medical products. The effectiveness of the respective products very much depends on the (nano) sizes of their ingredients. Put simply, the small particle size gives materials new properties.

Seventy times faster than current methods

For all their tininess, nanoparticles can vary considerably in size. If they are too large, they cause milk to flocculate or obstruct the transport of a vaccine to its target. In order to obtain the desired properties, their size must be constantly checked, which is usually done in a tedious process in the laboratory.

With their “OptoFluidic Force Induction” technology (OF2i), founders Christian Hill and Gerhard Prossliner have developed a continuous rapid measurement that is 70 times faster than currently used methods. Thanks to their measuring system,

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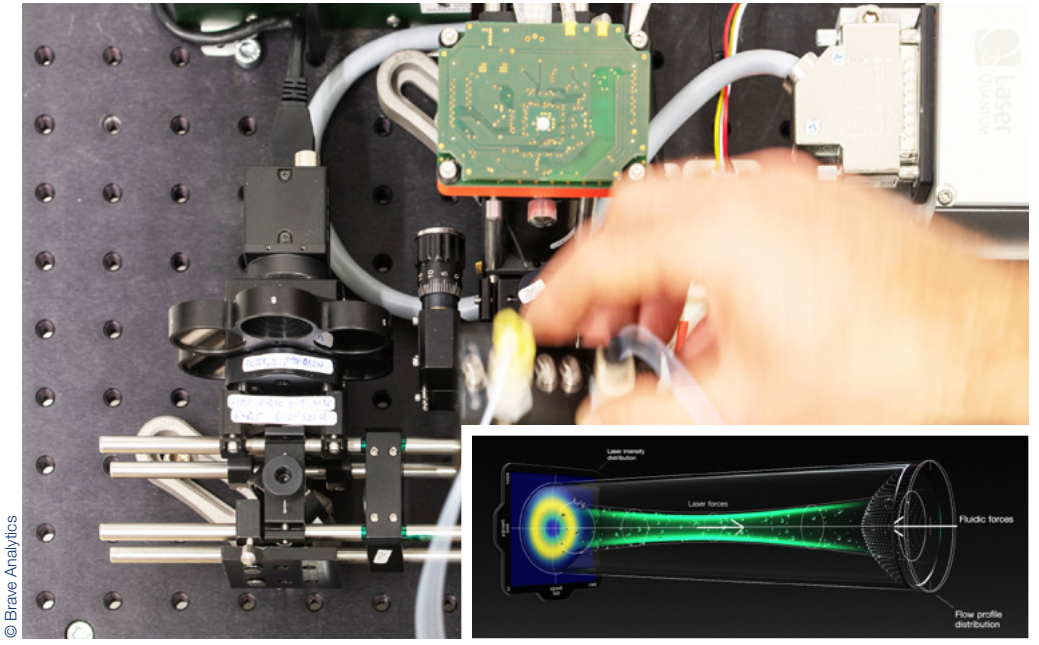
© Alexander Leljak, Brave Analytics

BRAVE
ANALYTICS

Brave Analytics GmbH
Neue Stiftingtalstraße 2, Eingang B, A-8010 Graz

Founded in 2020
Founders: Christian Hill, Gerhard Prossliner

www.braveanalytics.eu



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nanoparticles can be continuously and automatically characterised in real time. Sophisticated evaluation algorithms make it possible, for the first time, to collect statistically relevant characterisation data of the particles responsible for the quality of the product during the manufacturing process.

Food, pharma, biotech

The next stage in the company's development is to advance the continuous and automated sample preparation and to implement the quality specifications of the ISO 9001 standard. In addition, work is being done on tests for long-term stability, thermal management and further stress tests for industrial use. The lightning-fast measuring technology can be utilised in the pharmaceutical and biotech industries, in food technology and dental care, for coatings, but also in environmental analysis methods.

CellEctric Biosciences

www.cellectric-biosciences.com

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The start-up is establishing an automated platform technology for the electrodynamic manipulation of cells. This first application of this technology will be the isolation of pathogens in blood samples for the diagnosis of sepsis.

Analysing blood is a complex process. Diagnosticians searching for pathogens, i.e. disease-causing microorganisms, always struggle with the high proportion of human material as compared to the germs they are looking for. This ratio of >109 to 1 either requires long cultivation times in which the pathogens are grown to high levels, or the untreated testing of the sample. However, dispensing with the preparation of the blood sample comes at the expense of accuracy. This does not have to be the case, says the Viennese company CellEctric Biosciences. The platform takes a different approach: with its novel technology, in-vitro diagnostics laboratories can isolate the pathogens from a 10 ml blood sample in just 30 minutes. The pre-treated samples can be used immediately for accelerated blood cultures or established direct methods such as PCR, next-generation sequencing (NGS) and mass spectroscopy (MALDI-TOF).

Speeding up diagnosis

The technology is based on a novel strategy for bringing electromagnetic fields into contact with biological samples in order to target and destroy cells. The throughput of the samples can be adapted to the application. This process

© CellEctric Biosciences

CellEctric Biosciences GmbH
Giefinggasse 4, A-1210 Vienna

Founded in 2021
Management: Klemens Wassermann, Terje Wimberger

www.cellectric-biosciences.com

is, moreover, fully automated, purely physical and requires minimal electricity. The cell-type-specific effects observed in the company's system are unique worldwide and prove to be extremely robust in repeated applications.

Sepsis diagnosis as a starting point

For the time being, the focus is on the sepsis diagnosis market. However, the opportunities are manifold. As the prototype is a platform technology, it promises access to markets in the biotech, pharmaceutical and food industries.

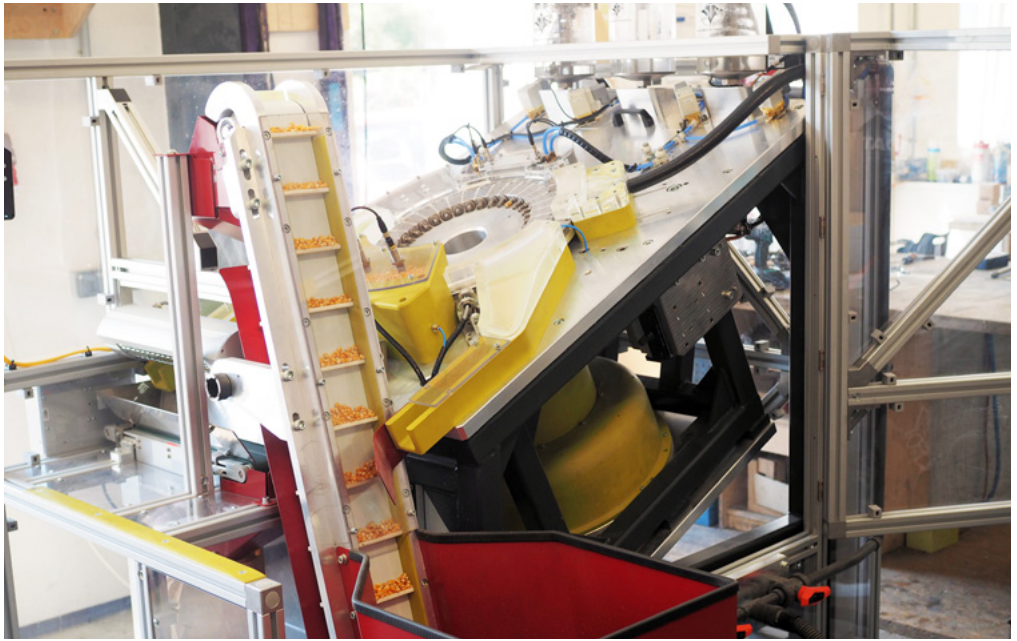
The team

Founder Klemens Wassermann developed the basics of the CellEctive technology, co-founder Terje Wimberger is driving its characterisation and diversification. The team is completed by surface physicist Michael Hollerer and biotechnologist Julia Dolezel.

Ensemo

Ensemo is developing a method for injecting special microbes into large numbers of seeds, thus turning them into a biological alternative to chemical fertilisation.

In times of climate change, drought and nutrient deficiency, beneficial microbes can help plants to thrive against all odds. The microorganisms make nutrients such as nitrogen and phosphorus available to the plants or ward off diseases. Beneficial microorganisms are considered a biological alternative to agrochemicals. The great challenge is to get the microbes to and, above all, into the plants, and to do so as efficiently and effectively as possible (high throughput with low material input). Standard coating (i.e. applying microorganisms externally around the seed) only works to a limited extent because the sensitive bacteria die off due to UV radiation, abrasion and dehydration.



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High-speed seed injection

The two founders Birgit Mitter, who holds a doctorate in microbiology, and Nikolaus Pfaffenbichler, a graduate food and biotechnology engineer, have developed a method for treating individual seeds at high speed, thus enabling the precise and stable integration of microorganisms. In the so-called SeedJection™ method, the seeds are singled and fixated, the position of the embryo is optically detected and the individual seeds are treated by slicing them, injecting the microbes and sealing

© Stéphane Compant

Ensemo GmbH
Technopark 1, A-3430 Tulln

Founded in 2021
Management: Birgit Mitter, Nikolaus Pfaffenbichler

the cutting. The method is protected by a European patent.

Successful proof of concept
To date, Birgit Mitter and Nikolaus Pfaffenbichler have developed a prototype of a laboratory demonstrator and tested the use of plant-promoting bacteria on maize and soybean seeds. Robust proof-of-concept data have shown that bacteria inoculated by the SeedJection™ method colonise maize and soybean plants more efficiently than bacteria that are simply coated around the seeds.

AIT spinoff
Ensemo is a spinoff of the Austrian Institute of Technology (AIT) which draws on more than 20 years of experience in research on beneficial plant/microbe interactions.

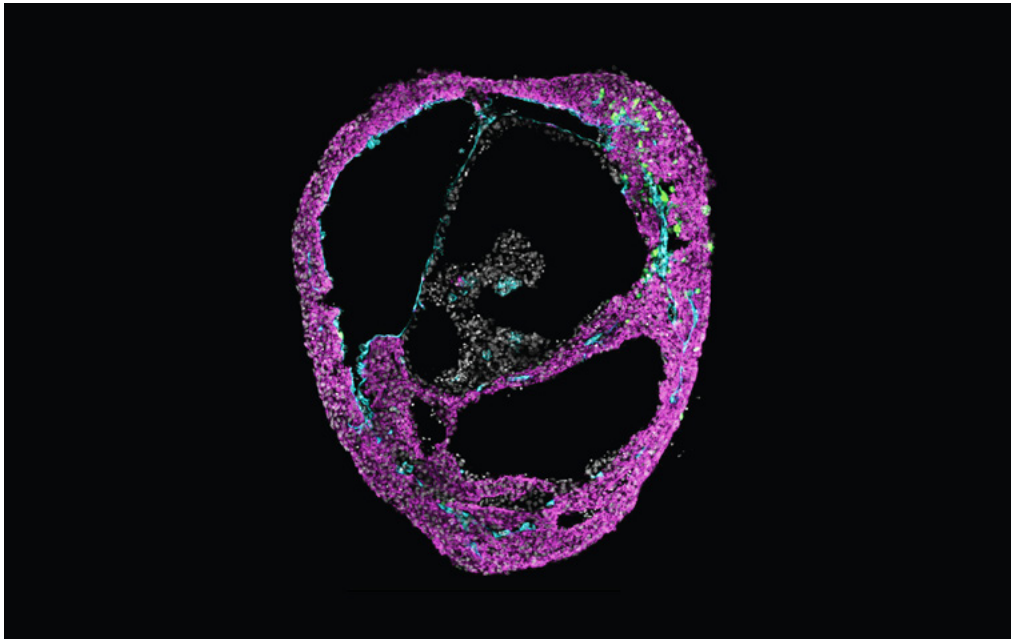
HeartBeat.bio

www.heartbeat.bio

HeartBeat.bio is developing a screening platform based on human heart organoids that aims to revolutionise drug discovery for diseases such as heart failure and cardiomyopathies.

The models of cardiac diseases currently used in preclinical settings are often medically inadequate reconstructions. They lack the physiology, architecture and cell interaction of a normal human heart. Moreover, they do not contain a replica of the human ventricle, which is a prerequisite for measuring the heart's pump function.

Exact replicas
The cardiac organoids (cardioids) generated from stem cells by Sasha Mendjan and Pablo Hofbauer, the two founders of HeartBeat.bio, mimic the natural structure of the human heart and ventricle with unprecedented precision. By using established genetic methods or external stressors, it is relatively easy to



© HeartBeat.bio

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generate a wide variety of different disease models. Manufacturing of the organoids is reproducible and very cost-efficient, so that they can be routinely used in day-to-day pharmaceutical drug development.

Precise interaction

The heart organoids have the potential to radically change pharmaceutical drug research in the field of cardiology. The development of active substances can be geared towards the exact natural structure of the human heart right from the start, which entails lower failure risks

© HeartBeat.bio

HEART BEAT.bio
REINVENTING CARDIAC DRUG DISCOVERY

HeartBeat.bio AG
Dr.-Bohr-Gasse 7, A-1030 Vienna

Founded in 2021
Founding team: Oliver Szolar, Pablo Hofbauer, Sasha Mendjan, Michael Krebs (CEO)

www.heartbeat.bio

and substantial savings in time and costs throughout the preclinical and clinical development.

Experienced founding team

The founding team consists of Sasha Mendjan and Pablo Hofbauer, the two inventors of the technology, who look back on many years of experience in stem cell biology, tissue engineering, regenerative medicine and cardiogenesis. Oliver Szolar and Michael Krebs, two startup managers and directors, who have worked in the life sciences industry for more than 20 years, complete the team. Target customers are pharmaceutical companies and contract research organisations working in the cardiovascular field.

HydroUnity QLabs

The Kapfenstein-based startup is developing a soil additive which stores water, is fully biodegradable and comes in the form of salt (“HydroDots”). As droughts become more prevalent, the HydroDots keep fields and meadows moist for longer and provide ecological fertilisation.

In Central Europe, fields and forests depend on an increasingly uncertain supply of water. Owing to climate change, drought has become a regular guest where it was previously only an occasional visitor. Modern agricultural research is looking for ways and means to return strength to the parched soil. In pursuit of this goal, the Styrian startup HydroUnity QLabs is treading a promising, revolutionary path: it is working on novel additives that help agricultural soil to preserve and even increase its fertility – in harmony with nature.

The team led by Andreas Kleinbichler, Harald Koch, Heinz Ploder and Mathias Eisenhut

© HydroUnity

is developing so-called HydroDots. This granulate consists of hydrogel, a soil additive in the form of salt and made of cellulose, which stores water and nutrients for a long time (even in situations of extreme heat and drought or in nutrient-poor soil). HydroDots

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consist of 100% biochemically modified cellulose (a new type of biopolymer), a renewable and sustainable raw material obtained from wood.

Energy for the soil

HydroDots enrich the fields with microorganisms that are beneficial for plants and have a lasting positive impact on the soil flora. The microorganisms are packed into the additives. As soon as the HydroDots come into contact with water, they swell many times over and thus activate their “cargo”.

© HydroUnity

HydroUnity QLabs GmbH
Kapfenstein 105, A-8353 Kapfenstein

Founded in 2020
Founding team: Andreas Kleinbichler (CEO), Harald Koch (CSO), Heinz Ploder (CMO), Mathias Eisenhut (CTO)

More crop yield in hard times
HydroDots help to save up to 70% water and up to 80% fertiliser. As a result, plants grow faster and crop yields increase. HydroDots prevent drought stress in plants, either fully or at least partly in case of persistent droughts. The goal is to minimise crop failures.

Only needs to be applied once a year
HydroDots can be used on fields, in gardens, glass houses or indoor living spaces. Used indoors, they simply have to be mixed well with the soil. For outdoor use, they are worked into the soil with suitable tools (rake, plough, harrow) to a depth of 100 to 500 millimetres, depending on the crop plant. One of the great advantages of HydroDots is their simplicity of use. They are applied once a year together with the seeds and the young plants.

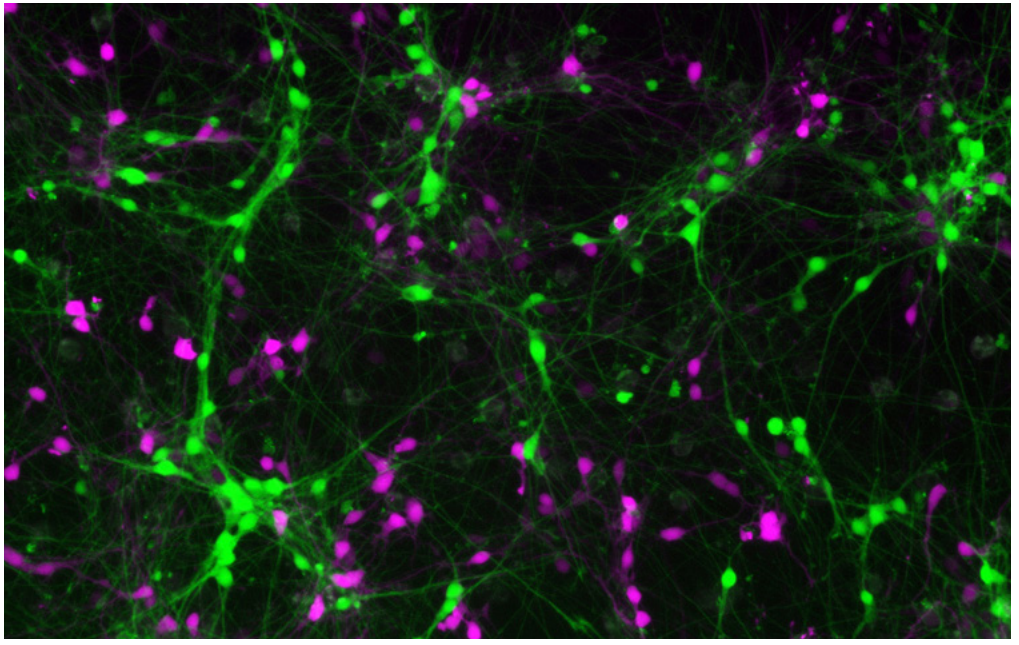
Neurolentech

neurolentech.com

The spinoff of the Institute of Science and Technology (IST) Austria is developing a novel examination method that facilitates better diagnosis and individual treatment of patients with autism or epilepsy.

Every year, around 150,000 newborns in Europe are diagnosed with neurological disorders such as autism or epilepsy. Often ADHD or depression are co-occurring conditions. At present, little help can be extended as there is no effective medication for autism patients and many epilepsy patients. Despite high public demand, an accurate diagnosis of these disorders and the development of therapies pose as yet unsolved challenges. The genetic diversity of the diseases makes it difficult to generate suitable disease models for improving the diagnostic and therapeutic situation.

Tracking down the causes
Neurolentech is developing a method that



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replicates patient-specific cellular disease models. They are used for studying the disease mechanisms and developing new therapies. To this end, cells taken from the patient's skin or blood are converted into brain cells in several steps. They are genetically and functionally identical with the cells in the patient's brain and can be examined in the laboratory and/or used in drug screening procedures.

Biobank for personalised drugs

The goal is to build a comprehensive biobank filled with patient-specific disease models

© Neurolentech

Neurolentech GmbH
IST Park, Plöcking 1, A-3400 Klosterneuburg

Founded in 2020
Founding team: Carsten Pfeffer (CEO), Gaia Novarino, Christoph Bock

neurolentech.com

and the pertinent clinical, genetic and cellular data. Over the next two years, the platform will be expanded and automated to generate and analyse many patient-specific disease models. The cell models and data will subsequently be utilised to discover effective drugs and develop novel, urgently needed therapies and diagnostics in partnerships with pharmaceutical and biotech companies.

IST Austria
Neurolentech, the first spinoff of IST Austria, will continue and expand existing clinical partnerships in Austria and worldwide to "recruit" patients. The members of the founding team consisting of Carsten Pfeffer (CEO), Gaia Novarino (professor at IST Austria) and Christoph Bock (professor at MedUni Vienna and CeMM) are recognised as leading experts in autism, stem cell research, disease models and their genetic and functional analyses.

Proxygen

www.proxygen.com

The Viennese company specialises in molecular glue degraders – molecules characterised by a novel mode of action that can eliminate proteins previously thought "undruggable".

Most drugs are designed to block one specific function of a disease-causing protein. However, more than 80% of all human proteins are not accessible via this approach and are commonly considered "untreatable". Although many important disease triggers have been known for decades, they are beyond the reach of classical pharmacology.

A new type of drugs
This is about to change. Proxygen has specialised in a new class of drugs called molecular glue degraders. Instead of merely inhibiting the function of a harmful protein, molecular glue degraders completely eliminate the protein by making the cell

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use the naturally available protein-recycling machinery to break down the harmful proteins.

Strategy rather than coincidence

The immense potential of this type of agents is best exemplified by two drugs available on the market (Revlimid® and Pomalyst®), which have revolutionised the treatment of multiple myeloma, a cancer of the bones and bone marrow. However, their discovery was a stroke of pure luck. Replicating the success was hampered by the lack of rational drug development strategies.

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proxygen

Proxygen GmbH
Dr.-Bohr-Gasse 7, VBC6, A-1030 Vienna

Founded in 2020
Founding team: Georg Winter, Stefan Kubicek, Giulio Superti-Furga, Matthias Brand

www.proxygen.com

Poxygen's research platform is the first to permit the development of novel molecular glue degraders on a large scale.

Interdisciplinary research
The combination of cutting-edge functional genomics, proteomics and medicinal chemistry is a prerequisite for the discovery and development of these molecules. The interdisciplinary approach facilitates identifying molecules which are active where it matters: inside diseased cells and irrespective of the type of disease. Proxygen was founded as a spinoff of the Research Center for Molecular Medicine of the Austrian Academy of Sciences (CeMM) by Georg Winter, Matthias Brand, Stefan Kubicek and Giulio Superti-Furga. The startup wants to identify new molecular glue degraders for a wide range of diseases and bring them to clinical use.

Solgate

Solgate is developing pharmaceutical drugs that target solute carrier proteins which play an important role in neurological diseases, diabetes and cancer.

The company is working on pharmaceutical drugs that target the protein family of solute carriers (SLCs). The 450 different SLCs are the cell's gatekeepers, acting as transporters and orchestrating the import and export of nutrients and the removal of waste products. These processes are out of balance in illnesses such as cancer, metabolic diseases (diabetes) or neurodevelopmental disorders. Solgate wants to utilise the huge potential offered by the SLCs' wide range of properties to develop new drugs.

A platform for many branches of science
To open up this new area for research, Solgate has implemented a multidisciplinary

experimental platform that pools the professional expertise of organic chemistry, molecular biology and cell biology. The platform is customised for the search of new drug candidates that influence the activity of SLC transporters. It exploits synergies and creates added value by combining overlapping methods and adaptable experimental approaches.

Research accelerator

Solgate's innovative and integrative drug development platform lets users identify, compare and analyse the effect of potential drug candidates more quickly and cost-effectively. Solgate offers its customers (primarily other pharmaceutical companies) both the developed drugs and various platform-based methods for the targeted identification of disease-relevant SLCs.

A new type of cooperation

Solgate was founded by Ariel Bensimon, Stefan Kubicek, Gaia Novarino, Giulio Superti-Furga and Georg Winter in 2020. It is the first biopharmaceutical spinoff of the cooperation between the Research Center for Molecular Medicine of the Austrian Academy of Sciences in Vienna (CeMM, located at the campus of MedUni Vienna/ Vienna General Hospital) and the Institute of Science and Technology Austria (IST Austria) at Klosterneuburg.

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Solgate GmbH
Plöcking 1, A-3400 Klosterneuburg

Founded in 2020
Founding team: Stefan Kubicek, Georg Winter, Gaia Novarino, Giulio Superti-Furga, Ariel Bensimon

Tridem Bioscience

www.tridem.at

The biotech company is developing an immunotherapy platform that is based on the novel WISIT technology. For certain indications, the efficacy of WISIT-based immunotherapeutics is markedly higher than that of conventional peptide vaccines.

The skin is the most exposed organ of the human body. It is subjected to ultraviolet radiation, heat and cold, and the continuous onslaught of bacteria and viruses. Hence, evolution has equipped the epidermis with a number of defence mechanisms. One of these protective shields is a highly effective immune system optimised for initiating specific reactions. It serves as a blueprint for the WISIT technology which makes ideal use of the immune system's functional elements, thereby creating the basis for the potency of the immunotherapeutics derived from it. The second key aspect of WISIT-based immunotherapeutics is their safety. The biotech startup founded by Markus Mandler and Sabine Schmidhuber utilises the strengths of WISIT for a novel immunotherapy platform primarily designed to explore new pathways in the study of active agents to fight Parkinson's disease.

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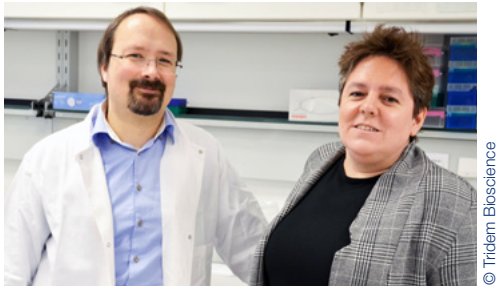
Scientific proof of efficacy

The data obtained so far confirm the concept of the WISIT technology. The immunological efficacy of WISIT immunotherapeutics and conventional peptide-based vaccines was compared in



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TRIDEM BIOSCIENCE

Tridem Bioscience GmbH & Co KG
Rudolf-Waisenhorn-Gasse 33a/2/3, A-1230 Vienna

Founded in 2020
Founders: Markus Mandler, Sabine Schmidhuber

www.tridem.at

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animal models. Modifying individual drug components considerably altered the efficacy of the products – various WISIT candidates significantly outperformed the benchmark peptide vaccines. The platform integrates requirements on the safety of the final product, its GMP format and the scalability of its manufacturing pathway already in the design phase of the individual immunotherapeutics.

Parkinson's disease as first indication

Tridem Bioscience plans to initially use the WISIT technology to fight Parkinson's disease, a neurodegenerative disorder and the most common example of synucleinopathies. Patient numbers are growing, the medical need is urgent and continues to be unmet.

Novel therapy format

If successful, the experiments in the pipeline and currently under way will establish a novel therapy format that combines high efficacy and good tolerability. Moreover, it will permit cost-effective implementation and fundamentally change the treatment of neurodegenerative and other chronic diseases.

VTL

www.viennatextilelab.at

The Viennese startup is developing a method that makes bacteria produce natural substances for textile dyeing. This is much more eco-friendly than conventional petrochemical dyeing processes.

Colours can be painful – not only to the eye. The problem is most glaring with fabrics and other textiles in loud colours: the textile industry, specifically through its dyeing process, is said to be the second biggest polluter of water in the world. Almost all agents used for dyeing textiles are made from petroleum products, resulting in contaminated wastewater and high CO_2 emissions.

Trained chemical engineer Karin Fleck founded VTL (short for Vienna Textile Lab) to establish biogenic dyes as an alternative to petrochemical processes. She lets bacteria work for her. When the microorganisms metabolise, they produce colours that are more intense than conventional natural dyes. Moreover, unlike plant-based raw materials, they do not require arable land for growing. The biogenic colours can even be applied directly to the fabric fibres. VTL is currently researching how to get as much colour from the bacteria as possible in the most efficient way. The nutrient medium plays a decisive role in this process.

Ecological alternatives

The biogenic colours can either be applied directly or extracted and processed in

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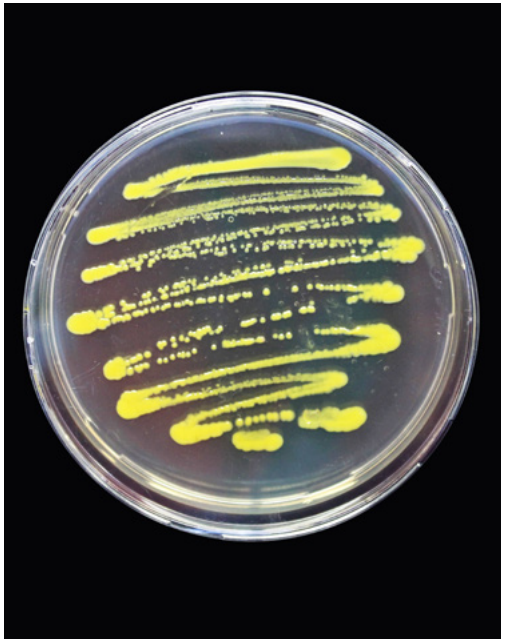
© VTL

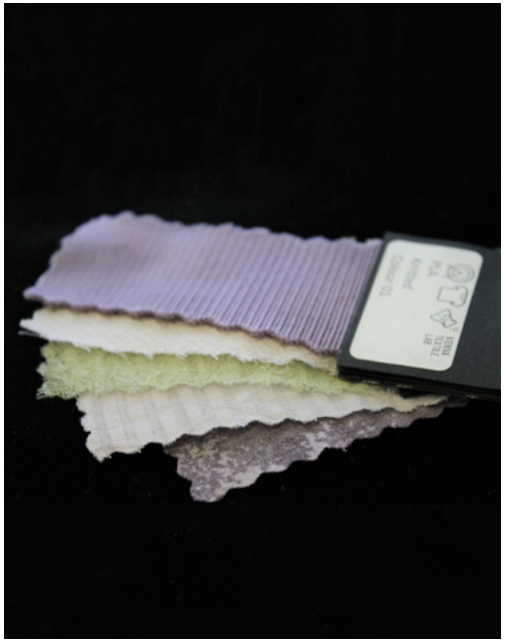
VIENNA TEXTILE LAB

VTL GmbH
Rudolf-von-Alt-Platz 4/13, A-1030 Vienna

Founded in 2021
Founder: Karin Fleck

www.viennatextilelab.at





© VTL

the same way as other dyes. Founder Karin Fleck emphasises that she can match any colour tone with her bacteria: garish yellow, blue or red, but also muted colours. However, not every colour is suitable for textiles and not every shade can be produced economically. Karin Fleck discovered the method during one of her stays in the Netherlands where she met a designer who aimed to achieve sustainability in the textile sector. One field of experimentation was the dyeing of fabrics with colours generated by bacteria.

Sustainable textile designs

Demand in this sector is high: the fashion industry is continuously looking for new, sustainable materials that are consistent with the principles of the circular economy. Biogenic dyes are of natural origin, are more readily biodegradable and also dye at low temperatures. Most importantly, their production is more friendly to the environment and more sustainable. The current challenge for the founder is to make the biogenic dyeing process industrially scalable.

CCore

www.ccore.at

CCore is developing a novel blood purification method that makes artificial ventilation more tolerable and available for patients with respiratory disorders in outpatient care.

Artificial ventilation of severely ill patients is one of the greatest challenges posed by covid-19. At up to 40%, the mortality rate of patients who need to be put on a ventilator in the intensive care unit is extremely high. This is partly due to the underlying disease, but also to additional mechanical lung injury. Conventional invasive mechanical ventilation causes extreme physical strain for these patients.

This fundamental problem was known long before the onset of the pandemic. Claus G. Krenn and Roman Ullrich, the founders of CCore, have studied and taught intensive care medicine for more than 20 years. They are developing a solution that completely avoids or greatly reduces lung damage caused by invasive ventilation methods and might even render invasive ventilation superfluous. The patent-pending platform technology (LiquiClear®) is designed to save lives, alleviate therapeutic problems and cut down on the enormously high treatment costs.

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Assisting patients in exhaling CO_2

CCore is working on miniaturised minimally invasive systems for blood purification. In its MELA project, the company is developing a device that is

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CCore Technology GmbH
Argentinierstraße 35/22, A-1040 Vienna

Founded in 2016
Founding team: Claus G. Krenn, Thomas Herndl (CEO), Roman Ullrich

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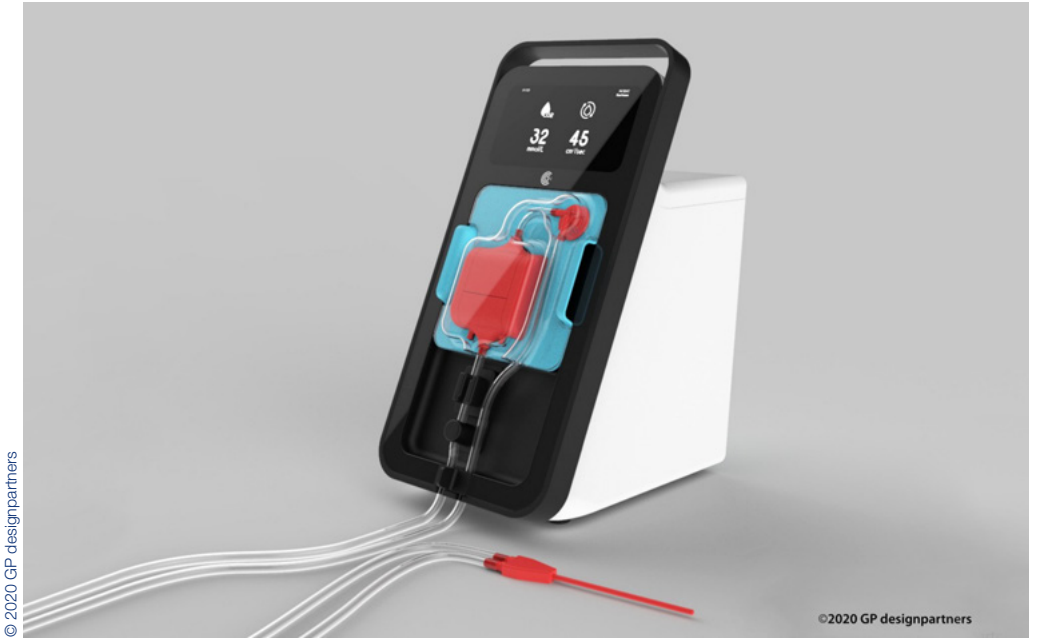

easy and safe to handle, gently assists patients in exhaling CO_2 and can also be used outside specialised centres. While conventional methods extract blood from the body in a complex procedure that can only be implemented by highly specialised teams and then purify the blood in an extracorporeal circuit, the CCore method just requires inserting one catheter into the patient.

Smaller and more effective

Unlike other devices for blood purification, all MELA components can also be used outside intensive care units. The method can be utilised in therapies for COPD and covid-19 patients, but also for patients in the weaning process and for bridging the time to lung transplantation. CCore plans to develop further products that will position it as a versatile company in the medical device sector.

cortEXplore

www.cortexplore.com

The Linz-based company is developing a highly innovative surgical navigation system for precise, safe and efficient interventions on the brain.

Operations on the brain continue to be classified as high-risk interventions. With functional tissue and blood vessels closely packed together, brain surgery is particularly difficult. Imprecisely positioned and guided instruments may injure blood vessels as well as highly specialised brain tissue, which may entail serious consequences or even death for the patient. The technology developed by cortEXplore significantly reduces the surgical risk. The startup's neuronavigation system improves the planning, simulation and provision of complex surgical interventions. It permits surgeons to plan the individual steps in detail before operating on a brain tumour to ensure that they can access the affected area as efficiently as possible.

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Virtual planning

cortEXplore's software fuses images of the patient obtained with various techniques such as computed tomography, magnetic resonance imaging and functional magnetic resonance imaging to build up a detailed reconstruction of the skin, skull, brain tissue and blood vessels. This computer model is used to virtually plan the surgical intervention based on a 3D print model of the patient's anatomy, which can be utilised to simulate interventions in detail before the actual surgery.

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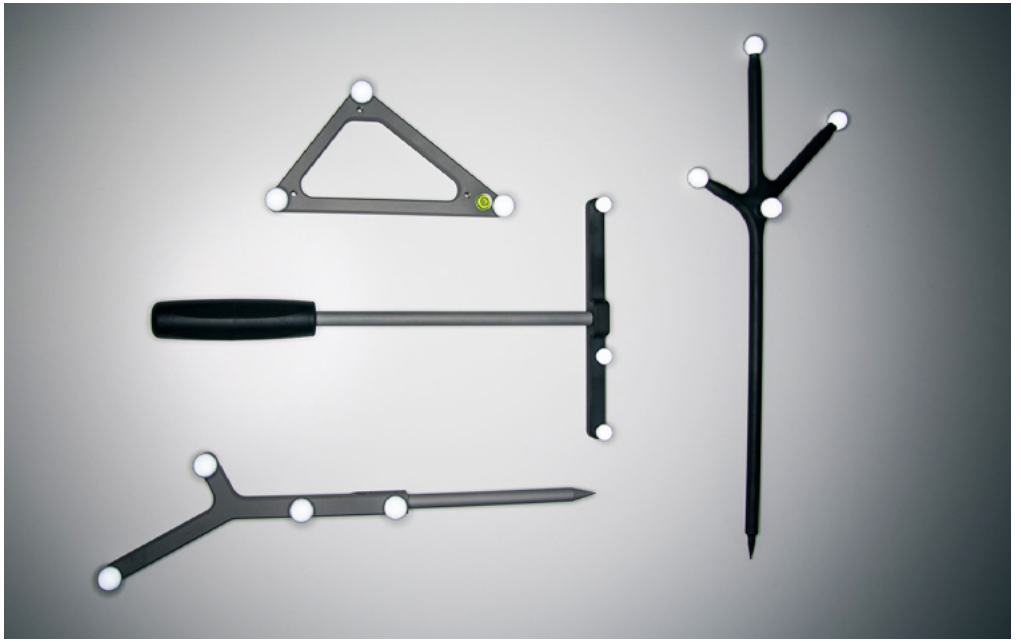
cortEXplore GmbH
Industriezeile 35, A-4020 Linz

Founded in 2018
Management: Stefan Schaffelhofer, Robert Prückl

www.cortexplore.com



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However, the greatest advantage of the company's technology is in its intraoperative monitoring and navigation. During the surgical intervention, several high-resolution cameras scan the patient's head to create a mathematical link to the previously generated computer model. Thanks to this link, the position of surgical tools, which are also captured by the camera system, can be displayed to the submillimetre and in real time relative to the patient's anatomy. In other words, surgeons can virtually see the underlying anatomical structures and can therefore optimally position and guide their tools.

Entering the market via research

cortEXplore currently offers its system to neuroscience research to enable invasive interventions on the brain for pharmacological and electrophysiological applications. In cooperation with the Kepler University Hospital in Linz, the company's aim is to obtain approval for use on humans by 2023.

digitAAL Life

www.digitaal.life

digitAAL Life offers tablet-based training schemes for people suffering from dementia. The integrated solution can be used as therapy and as diagnostic tool.

Dementia is a global challenge. Currently, around 50 million people worldwide are affected by this disease which gradually leads them into a state of clouded consciousness. Given the current state of science, a cure is not in sight, although it is possible to slow the disease's progression. To this end, the Styrian startup digitAAL Life has developed a tablet-based training scheme in the form of a serious game that can be used as a therapy to delay the onset and progression of dementia. For the first time ever, eye tracking is used as a biomarker in conjunction with the other result parameters to monitor the dementia status.

Monitoring the status of dementia

digitAAL Life is the only company on the market to offer personalisable multimodal training schemes for therapy and tools for diagnosing dementia in an integrated solution, which, moreover, may be utilised for preventive treatment and for other neurodegenerative diseases.

The research projects carried out so far have already provided first clues on objectively measurable indicators of the dementia status. They are based on the patients' eye movements and movement patterns. In conjunction with the performance data collected in the serious game, the "eye tracker" will constitute the

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© digitAAL Life/T. Kubin

DIGITAAL life

digitAAL Life GmbH
Halbärthgasse 2–4, A-8010 Graz

Founded in 2020
Founding team: Maria Fellner, Heinz Mayer, Josef Steiner (Sozialverein Deutschlandsberg)

www.digitaal.life

© digitAAL Life

supportive basis of decision-making in future assessments of the dementia status.

A spinoff located in Graz

The founding team collected by Maria Fellner consists of partners from Joanneum Research and Sozialverein Deutschlandsberg. Maria Fellner previously headed a project on the same topic at the Institute for Information and Communication Technologies (Digital) located at the Graz-based research institute. The company has already acquired its first renowned customers (the Red Cross and private individuals). Developing additional high-tech features for dementia therapy and diagnostics are major items on its current agenda. In addition, work is in progress to certify digitAAL Life as a medical device for dementia therapy. The company has also started to build up its distribution network with a focus on the German-speaking, Benelux and CEE regions.

G.ST Antivirals

www.gst-antivirals.com

The Viennese startup is developing active ingredients that prevent rhinoviruses from accessing the host cell's metabolic products. In the medium term, it plans to extend these therapeutic principles of action to other viruses (SARS-CoV-2).

Viruses are parasites. They have no metabolism of their own and usurp the metabolic products of their host cell in order to multiply. This is where G.ST Antivirals comes in: the spinoff of the Medical University of Vienna is developing active ingredients that inhibit this process and lead to the intracellular starvation of viruses. In particular rhinoviruses – the pathogens that cause the common cold – strongly respond to this treatment strategy. Founders Guido Gualdoni and Johannes Stöckl have discovered how to stop the viruses and how to fight colds in the future.

The Achilles' heel of viruses

As virus replication requires higher amounts of nutrients, viruses have found strategies to force host cells to increase their nutrient uptake so as to ensure a successful infection cycle. G.ST Antivirals is developing therapies that prevent the virus from accessing the host cell's metabolites.

The G.ST Antivirals team takes advantage of the fact that rhinoviruses are particularly vulnerable to inhibited sugar utilisation. The researchers found a substance that is highly effective against rhinoviruses: 2-deoxyglucose inhibits

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G·ST Antivirals
Metabolic Solutions for Viral Infections

G.ST Antivirals GmbH
Löwengasse 39/11, A-1030 Vienna

Founded in 2019
Founders: Guido Gualdoni, Johannes Stöckl

www.gst-antivirals.com

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glycolysis in the host cell, thus starving the virus inside the cell.

As the molecule is cheap to produce and highly effective, it is ideally suited for widespread application in the treatment of rhinitis. In view of the solid and clear data available on safety, preclinical research could be completed quickly. Clinical trials are scheduled to start before the end of 2021. Thanks to the rapid progress, the product developed by G.ST Antivirals enjoys patent protection beyond the customary time limit.

Research approach for a covid therapy

The metabolites of the host cells are crucial not only for rhinoviruses. They are needed by each and every viral pathogen. Researchers at G.ST Antivirals were able to prove that the company's therapeutic strategy is also highly effective against a wide variety of other viruses, among them SARS-CoV-2. In the medium term, these therapeutic principles of action may therefore be utilised to fight other viruses and also contribute to providing protection against future pandemics.

reha buddy

www.rehabuddy.at

The app developed by reha buddy turns the smartphone into a self-learning sensor, thus making therapeutic progress visible to both patients and therapists.

According to Statistics Austria, more than 300,000 surgical interventions involving the musculoskeletal system are performed in Austria every year. Many of them require subsequent rehabilitation. As each rehab course should be tailored to the individual patient's needs and meet the highest standards, this entails a lot of work for the hospital staff in terms of documentation and patient care.

Support from the hospital to home therapy

The reha buddy app assists users in enhancing therapeutic success during the rehabilitation phase. Medical technicians Harald Jagoš, Andrés Igor Tkachenko Bril, Paul Kressnik and Dietmar Rafolt, the four founders of the Viennese startup, have developed a telemedicine system that supports patients who want or have to exercise at home to restore their musculoskeletal systems. Sensors (a smartphone worn on the body or insoles equipped with sensors) record the movements of the lower limbs. They analyse the gait and other functional movement tasks. It takes just the touch of a button to evaluate these movements and to seamlessly transfer the results to the

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Seedfinancing

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reha buddy gmbh
Lindengasse 56/18–19 (Impact Hub Vienna), A-1070 Vienna

Founded in 2019
Founding team: Andrés Igor Tkachenko Bril, Harald Jagoš (CEO), Paul Kressnik, Dietmar Rafolt

www.rehabuddy.at

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hospital's information system. Patients are given the opportunity to continue their therapy at home and can feel just as safe as in inpatient care.

Promising feedback

In the seed phase, the startup's technical focus is on increasing user-friendliness. The software takes over tasks such as timekeeping, making lists, measuring distances or preparing reports. This not only reduces the workload but also provides objective and comparable results.

Professional marketing

reha buddy's target group are private clinic operators and rehabilitation centres, physiotherapists and patients. The software is about to enter the market in the German-speaking countries. Functions and user-friendliness are being tested in pilot studies and applications are being optimised. The longer-term plan is to offer a comprehensive package for home therapy.

aws Preseed & **aws** Seedfinancing

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Njinn	Seedfinancing	ICT	45
NodeVenture	Preseed	ICT	27
octogon	Seedfinancing	Physical Sciences	92
ParityQC	Seedfinancing	ICT	49
Proxygen	Preseed	Life Sciences	127

Purency	Preseed	ICT	31
Quantics	Preseed	ICT	35
reha buddy	Seedfinancing	Life Sciences	158
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Boosting key technologies

On behalf of the Austrian Federal Ministry for Digital and Economic Affairs and the Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, Austria Wirtschaftsservice Gesellschaft mbH (aws) helps high-tech companies locate and set up business in Austria. A special focus is on supporting technological areas with high growth potential and innovative strength such as life sciences, information and communication technology, and physical sciences.

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