Accelerate creation of novel agrochemicals using molecularly targeted agrochemical platforms （AgroDesign Studios）

City	Year of Establishment	Founder	Website
Kashiwa-city, Chiba	2018	Yuki Nishigaya, Ph.D.	https://www.agrodesign.co.jp

Partner VC	Latest round of Fundraising	Valuation
real-tech fund	Series A	JPY 1,000 million

Contact Information :
tel: +81 4-7180-0290
e-mail: info@agro.design

Website : https://www.agrodesign.co.jp

○ Business Plan

As the world population continues to grow, it is important to develop highly effective pesticides to increase crop production, but at the same time, highly safe pesticides are also required. Molecular-targeted pesticides are promising as pesticides that are both effective and safe. This type of pesticide targets enzymes (proteins) that exist only in the organisms to be controlled (weeds, insects, and plant pathogens), thereby making it possible to exert its effect only on the target organism.

Although the advantages of molecular-targeted pesticides have been mentioned for some time, the technological hurdles to realize them have been high. Therefore, this project will establish a platform for the development of molecular-targeted pesticides, which will be useful for our own pesticide discovery and will accelerate the creation of safe and secure pesticides by providing the technology to Japan and global agrochemical companies.

○ Research Outline

In this project, a platform will be developed to efficiently analyze the 3D structure of the enzyme (protein) that will be the pesticide target, which is the most significant technical issue in the development of molecular-targeted pesticides. Furthermore, the platform will be used to actually create pesticide insecticides.

The platform will include: 1) an environment for rapid structural analysis of membrane proteins (using X-ray crystallography and cryo-electron microscopy), 2) computational pesticide discovery (molecular dynamics simulation and AI drug discovery methods), and 3) Degital transformation (DX) for pesticide development (automation of experiments using robots and AI).

Furthermore, these will be utilized to conduct pesticide discovery for highly challenging pesticide target proteins such as membrane proteins.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Food & Agriculture	STS 2023～2024FY	JPY 208 million	—

As of February,2024

Development of automation systems for assisted reproductive technologies（ARCS Inc.）

City	Year of Establishment	Founder	Website
Shibuya-ku, Tokyo	2022	Masayasu Tanase	https://www.arcs-inc.jp/en

Partner VC	Latest round of Fundraising	Valuation
DEEPCORE Inc.	Pre-seed	Non-Disclosure

Contact Information :
tel: 03-5801-6357

Website : https://www.arcs-inc.jp/en

○ Business Plan

Using artificial intelligence (AI) and robotics, we aim to create a world where everyone has access to safe, high-quality fertility treatment. Our system focuses on improving assisted reproductive technology. Concretely, our objective is to reduce the burden on medical workers and increase the success rate of treatment (i.e. improve the pregnancy rate) by automating 1) the selection of most suitable sperm and 2) delicate manipulator operations in the ICSI process. Therefore, we are developing two core technologies: sperm-recognition AI and autopilot feature.

○ Research Outline

This research and development aims to reduce the burden on medical workers and increase the success rate of treatment by utilizing two core technologies.

The goals at the end of the grant project period are as follows.
1. Sperm-recognition AI
By the end of the grant period,
・Collecting sperm imaging data to achieve sorting accuracy beyond that of a experienced embryologist.
(2) Automation system
By the end of the grant period,
・The PoC of an automation system with mice and evaluation tests of a mass-produced prototype have both been completed.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2024FY	JPY 109 million	—

As of February,2024

Development of a non-invasive colorectal cancer screening system based on deep learning （Boston Medical Sciences, Inc.）

Boston Medical Sciences

City	Year of Establishment	Founder	Website
Chuo-ku, Tokyo, Japan	2023	Masaki Okamoto	https://b-ms.tech

Partner VC	Latest round of Fundraising	Valuation
Beyond Next Ventures Inc.	Seed-round	JPY 1,000 million

Contact Information :
tel: 070-6993-6006
e-mail: info＠b-ms.tech

Website : https://b-ms.tech

◯ Business Plan

Colorectal cancer ranks second worldwide in both incidence and mortality among cancer types (in Japan, it ranks first in incidence and second in mortality), making it a malignancy with a significant disease burden. Over the next 20 years, both the incidence and mortality rates of colorectal cancer are expected to deteriorate rapidly. Despite the fact that early detection and early therapeutic intervention can prevent cancer death and significantly improve life prognosis, the situation is worsening due to the reality that detailed examinations of the lower gastrointestinal tract are often avoided. The mental and physical invasiveness of the preparation involving the consumption of large amounts of laxatives starting the day before, the insertion of a scope through the anus, and the need for sedation and recovery are contributing factors to this avoidance.
Our goal is to solve this "examination aversion issue" by implementing a completely laxative-free virtual colonoscopy, thereby promoting early detection and early therapeutic intervention to ultimately eradicate deaths from colorectal cancer.

◯ Research Outline

In this research and development project, we aim to develop a medical device software program, named AIM4CRC, that applies a deep learning approach to perform virtual colon cleansing and automatic polyp detection in colon CT images. The initiative seeks to solve the challenges associated with implementing a "completely laxative-free virtual colonoscopy," which has been clinically difficult to achieve. In the STS phase, we will complete the prototype version of the product and achieve the following Proof of Concept (PoC) objectives, leading to clinical trials and regulatory approval applications starting from the fiscal year 2025, with the goal of early domestic and international clinical implementation.
1. Evaluate the detection accuracy of colon polyps at domestic medical institutions (generalization performance verification) and demonstrate clinical effectiveness.
2. Demonstrate at U.S. medical institutions that the reading support provided by this product improves physicians' detection accuracy.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2024FY	JPY 190 million	Japan, the United States, Europe, China, and across all countries and regions around the world

◯International collaborative technology demonstration

・Contract with local partners

To demonstrate the clinical effectiveness of AIM4CRC in the United States and provide foundational data for FDA approval, a preclinical observer study (interpretation test) will be conducted. The hypothesis for validation posits that the interpretation of colon CT scans aided by AIM4CRC will enhance the detection capabilities of radiologists for colorectal cancer and polyps.

The study will utilize a validation dataset that does not involve laxatives and will conduct two sessions: "Session A: Non-AI-assisted reading" and "Session B: AI-assisted reading", to statistically compare their detection performance. All patient information and disease prevalence data will be anonymized, and a defined washout period will be implemented between the sessions.

As of March,2024

Development of exercise workload optimization function and cardiac rehabilitation program medical device （CaTe inc.）

CaTe inc.

City	Year of Establishment	Founder	Website
Bunkyo-ku, Tokyo	2020	Kazuhiro Terashima	https://cate.co.jp/

Partner VC	Latest round of Fundraising	Valuation
Jafco Group Co., Ltd.	Series A	JPY 1,115 million

Contact Information :
tel : 03-6273-8578
e-mail : cate1@cate.co.jp
Website : https://cate.co.jp/

○ Business Plan

Although cardiac rehabilitation has proven therapeutic benefits for patients with cardiac disease, participation in outpatient cardiac rehabilitation in Japan is low, at about 4-8%, resulting in many cardiac patients being repeatedly re-hospitalized, and society as a whole is burdened with medical costs.
CaTe aims to create a healthier future by providing appropriate exercise therapy and behavior modification for a variety of patients, including those with cardiac disease, thereby creating an environment in which many patients can receive better medical care at home.

○ Research Outline

This research and development will develop a cardiac rehabilitation program medical device that will realize exercise therapy in a standing position that is both effective and safe by developing an exercise load volume optimization function.

(1) Development of the function to optimize the amount of exercise load
(2) Develop a cardiac rehabilitation program medical device equipped with (1)
(3) Conduct exploratory investigator-initiated trials
(4) Preparation of a validative clinical trial including protocol development.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2024FY	JPY 191 million	—

As of February,2024

Globalization of Single Enzyme Activity-based Liquid Biopsy（Cosomil, Inc.）

City	Year of Establishment	Founder	Website
Tokyo, JAPAN	2022	Yu Kagami	https://cosomil.com/en/index

Partner VC	Latest round of Fundraising	Valuation
ANRI Inc.	Pre-series A	JPY 930 million

Contact Information :
tel : 81-3-6823-2260
e-mail : ykagami@cosomil.com

Website : https://cosomil.com/en/index

○ Business Plan

We revolutionize disease diagnosis and drug development with our proprietary 'Single Enzyme Activity-based Liquid Biopsy' technology, enabling enzyme activity analysis at single protein level.

○ Research Outline

This grant project aims to achieve the following and increase the likelihood of expansion into the U.S. market:

1. Conduct a clinical study of approximately 1,000 U.S. participants to provide the basis for selling a pancreatic cancer diagnostic laboratory developed test (LDT) in the U.S.
2. Conduct a clinical study using very early stage (Stage 0-I) pancreatic cancer samples to differentiate and demonstrate the utility of the pancreatic cancer test
3. Conduct a clinical study to provide the basis for selling a colorectal cancer diagnostic LDT in Japan
4. Develop a home test kit to enable at-home testing using fingertip blood collection
5. Develop a fully automated measurement system to significantly increase testing throughput
6. Conduct PMDA consultations and obtain FDA Breakthrough Device Designation for obtaining regulatory approval in Japan and the U.S.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2024～2025FY	JPY 499 million	United States

○International collaborative technology demonstration

・Contract with local partners
・ Local base establishment

We will conduct clinical development and prepare for the sale of our cancer screening test in the United States, which is the largest market for the test. Specifically, we will collect blood samples from approximately 1,000 American pancreatic cancer patients and healthy individuals to evaluate the test's performance and establish the evidence needed to sell the test in the U.S. We will also obtain the FDA Breakthrough Device Designation to receive prioritized support for future clinical development. Additionally, we will conduct research for establishing our company's laboratory in the United States.

As of April,2024

Development of High-Frequency Space Experimentation and Recovery Platform.（ElevationSpace Inc.）

City	Year of Establishment	Founder	Website
Sendai, Miyagi	2021	Ryohei Kobayashi	https://elevation-space.com/en/

Partner VC	Latest round of Fundraising	Valuation
TOHOKU University Venture Partners Co., Ltd.	Seed-extension	Non-Disclosure

Contact Information :
e-mai : info@elevation-space.com

Website : https://elevation-space.com/en/

○ Business Plan

The objective is to provide an integrated service that will conduct demonstration of space components and services necessary for future expansion of space activities in low Earth orbit, provide autonomous platform capable of conducting science and engineering experiments utilizing space environment as well as prototyping and manufacturing materials, and recover experiment results (products) to Earth and return them to customers.

○ Research Outline

This research and development project aims to acquire core technologies necessary for commercialization by resolving R&D challenges related to the following element technologies:

①Acquisition of small satellite bus system technology enabling low Earth orbit space experimentation and manufacturing.
②Acquisition of re-entry technology.
③Acquisition of recovery technology.
④Acquisition of safety and reuse technology.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Aerospace	STS 2023～2025FY	JPY 291 million	—

As of January,2024

Realization of high-precision, high-speed machining of difficult-to-process materials by high-power laser processing machines（EX-Fusion Inc.）

EX-Fusion

City	Year of Establishment	Founder	Website
Suita City, Osaka, JAPAN	2021	Kazuki Matsuo Yoshitaka Mori Shinsuke Fujioka	https://ex-fusion.com/

Partner VC	Latest round of Fundraising	Valuation
Delight Ventures, Inc.	Seed	Non-Disclosure

Contact Information :
tel : 050-5526-7508
e-mai : info@ex-fusion.com

Website : https://ex-fusion.com/

○ Business Plan

This project will develop a laser processing system for CFRP, which has been difficult to achieve both "speed" and "quality" using the world's first laser cutting method based on the double-wobbling method. The initial target will be the automotive industry, where cost and quality are important and market expansion is expected in the future, with the aim of later expanding the application to the aircraft field.

○ Research Outline

This R&D will realize a laser cutting process using a high-power laser with a double-wobbling method. The following development items will be implemented to efficiently and effectively use high-power lasers.

(1) Development of laser processing head
(2) Development of processing head driving device
(3) Optimization of laser irradiation conditions

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Materials	STS 2023 - 2024FY	JPY 200 million	—

As of March,2024

Microbial production of useful compounds by multistep gene introduction system （Fermelanta, Inc.）

Fermelanta

City	Year of Establishment	Founder	Website
Ishikawa, Japan	2022	Shogo Fukizaki Hiromichi Minami Akira Nakagawa	https://fermelanta.com/

Partner VC	Latest round of Fundraising	Valuation
Beyond Next Ventures Inc.	Seed	JPY 800 million

Contact Information :
e-mai: info@fermelanta.com

Website : https://fermelanta.com/

○ Business Plan

A lot of compounds with complex chemical structures derived from nature have useful bioactivities promoting human health. But there is a lot of issues for mass production based on traditional processes, especially agricultural cultivation and extraction. The total synthesis by chemical reaction is also technologically difficult , inefficient and unreasonable. We develop artificial microorganisms capable of producing target compounds with high productivity, which whould be achieved by introducing more than 20 foreign genes into a microorganism, expressing enzymes functionally and controlling the whole biological sytem as a living cell. By solving the technical problems with constructing a multi-step biosynthetic pathway of continuous enzymatic reactions, we aim to realize social implementation of the innovative process.

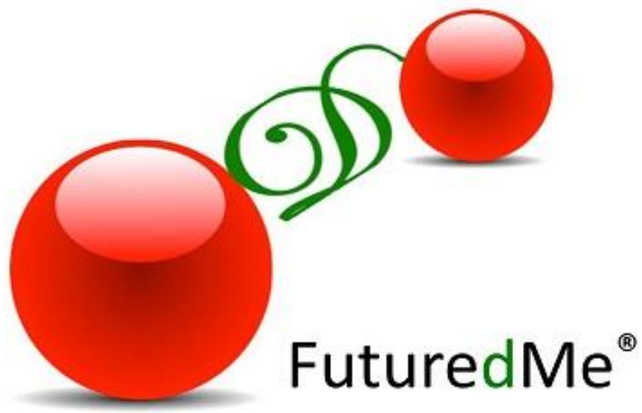
○ Research Outline

In this R&D project, we will solve the technical problems for constructing alternative biosynthetic pathways and improving metabolic systems of cells with our original multi-step genes transfer technology. We taking model compounds with commercial demand but limited supply as examples, especially those requiring complex biosynthetic pathways. Through the construction of prototype cells and their optimization, we aim to achieve practical production yields (at the order of grams per liter) in laboratory culture equipments.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Materials	STS 2023～2024FY	JPY 192 million	—

As of February,2024

Construction of drug development platform of disease-specific degradation by CANDDY（FuturedMe Inc.）



City	Year of Establishment	Founder	Website
Chuou-ku,Tokyo	2018	Etsuko Miyamoto-Sato	https://futuredme.com/jp/#secMV

Partner VC	Latest round of Fundraising	Valuation
KSP,Inc.	Series A	Non-Disclosure

Contact Information :
tel : 81-4-7197-6230

Website : https://futuredme.com/jp/#secMV

○ Business Plan

In the era of precision medicine, genomic medicine needs to solve the problem (pain) that even if the causative molecule (target) of a disease is identified, there is no therapeutic drug for the target. To this end, we will raise the barrier to entry for CANDDY, the next-generation degradative drug discovery technology, and build a disease-specific degradative drug development platform that will establish a differentiated prototype, expand the market, and reduce side effects.

○ Research Outline

In this research and development, we will construct the "Immune CANDDY Platform" as a degradative drug development technology that does not act on normal cells but can target degradation only in cancer cells due to immunoproteasome selectivity.

① Shows the difference in the degradation index (DC50) between normal cells and diseased cells.
② Shows the degradation of naturally denatured proteins.
③ Showing the POC of the initial prototype of the CANDDY molecule.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2025FY	JPY 61 million	Worldwide, especially in the US

○International collaborative technology demonstration

・Contract with local partners

STS phase plans to have a Japanese pharmaceutical company become an expert and obtain a "letter of interest" from PCA phase to realize a partnership. We will also be in contact with pharmaceutical companies in the United States or Europe etc., and plan to partner with overseas pharmaceutical companies after graduation.

As of February,2024

Development of a small hybrid thruster for a small spacecraft （Letara Ltd.）

City	Year of Establishment	Founder	Website
Sapporo, Hokkaido	2020	Shota HIRAI Landon KAMS Harunori NAGATA	https://www.letara.space/

Partner VC	Latest round of Fundraising	Valuation
SBI Investment	Pre-Seed	Non-Disclosure

Contact Information :
tel: (+81)-11-600-6840
e-mail: info＠letara.space

Website : https://www.letara.space/

○ Business Plan

Spacecraft such as satellites need propulsion systems with high thrust for large-scale space travel, but until now they have used extremely dangerous propellants that are toxic, flammable, and explosive. Letara, a start-up company from Hokkaido University, has been researching and developing a hybrid chemical propulsion technology that uses plastics as fuel. By applying this technology, we will realize the world's first innovative propulsion system that simultaneously satisfies safety and thrust and gives small satellites freedom of movement.

○ Research Outline

This R&D will build on the hybrid chemical propulsion technology that has been developed at Letara and optimize it to fit into a small size. Using the technology officially licensed from Hokkaido University, we will develop a safe and high thrust hybrid chemical propulsion system fueled by plastic, and conduct a PoC for commercialization.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Aerospace	STS 2023～2024FY	JPY 236 million	—

As of February,2024

Development of long-distance quantum communication system and market creation（LQUOM, Inc.）

City	Year of Establishment	Founder	Website
Yokohama-shi, Kanagawa	2020	Kazuya Niizeki	https://lquom.com/

Partner VC	Latest round of Fundraising	Valuation
SBI Investment Co., Ltd.	Series A	JPY 1,800 million

Contact Information
e-mail: contact@lquom.com

Website : https://lquom.com/

○ Business Plan

LQUOM, named after Long-Distance Quantum Communication, develops hardware for "quantum repeater systems" necessary for long-distance quantum communication.
Quantum key distribution is a well-known application of quantum communication. The highest communication security based on information theory makes it possible to prepare for the "Harvest now, decrypt later cyberattacks" (holding the ciphertext until future improvements in computing power). The quantum repeater system we are developing can generate "quantum entangled states," which will enable applications other than key distribution, such as quantum teleportation and world clocks, and will be extended to a network that can be called the quantum Internet.
Aiming for such technological innovation, LQUOM will continue to develop long-distance quantum communication hardware day by day, with a group of physicists specializing in cutting-edge technologies such as quantum mechanics and optics at the core.

○ Research Outline

In this R&D, we will develop the two-photon source toward the entanglement generation, quantum memory, and interface technologies based on the research results we have cultivated so far. These are essential elemental technologies for the development of quantum repeater products.
At the same time, we will conduct global market research and customer development using the two-photon sources as initial products.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Information & Communication	STS 2023～2025FY	JPY 402 million	—

As of March,2024

Development of mass-produced hybrid rocket system（MJOLNIR SPACEWORKS Inc.）

MJOLNIR SPACEWORKS

City	Year of Establishment	Founder	Website
Sapporo Hokkaido	2020	Tor VISCOR	https://mjolnir-sw.com/en/

Partner VC	Latest round of Fundraising	Valuation
REAL TECH FUND	SEED	JPY 580 million

○ Business Plan

We aim to mass produce hybrid engines in order to provide rocket engines, which are the main component that determines rocket performance, to more rocket development organizations and companies. This project aims to improve the performance of this mass-produced hybrid engine to a practical level and then demonstrate its performance through launch demonstrations.

○ Research Outline

In this research and development, we aim to solve the problem by developing a rocket system using a hybrid rocket engine that is safe and easy to mass produce. We will also develop an observation rocket for demonstration launches using a hybrid rocket engine.
In addition, the performance of the engine and rocket system will be demonstrated by conducting a launch demonstration test.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Aerospace	STS 2023～2024FY	JPY 168 million	—

Contact Information :
tel: +81-50-5879-9964

Website : https://mjolnir-sw.com/en/

As of March,2024

Creation of a Japanese materials industry through mass production and overseas expansion of silkworm biomaterials（Morus Inc.）

City	Year of Establishment	Founder	Website
Shinagawa, Tokyo	2021	Ryo Sato	https://morus.jp/

Partner VC	Latest round of Fundraising	Valuation
DG Daiwa Ventures Inc.	Pre Series A	Non-Disclosure

Contact Information :
tel: +81 50-5896-2681

Website : https://morus.jp/

○ Business Plan

Silkworms, for which Japan boasts world-class research technology, will be used overseas as a bio-based raw material, most recently as a food protein raw material. Silkworms have unique functional components that are not found in other insects, allowing them to enter a variety of markets, and because they are domesticated insects, they are highly suitable for mass production, making them one of Japan's strengths in food. Together with our technology and brand, we aim to create a materials industry originating from Japan.

○ Research Outline

In this research and development, we will work on research and development that will contribute to the following matters when using silkworms as food.
① Adding high value to silkworm-derived food ingredients
② Mass production of silkworm-derived food ingredients
③ Overseas expansion of silkworm-derived food ingredients and food products containing them

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Food & Agriculture	STS 2023～2025FY	JPY 217 million	Singapore, United States

○International collaborative technology demonstration

① Contract with local partners
② Local base establishment
③ Relationship development with potential local partner
④Supply chain development
We have already secured a local partner in Singapore, where we plan to expand our business, and we plan to establish our own base in 2023 (②,③). In addition, we are collaborating with partners on the premise that after the demonstration in Singapore, we will expand to other countries around the world, including ASEAN (④).
At the same time, we are conducting joint research with a local university in the United States, another country we plan to expand into (①), and are building a foundation for future expansion into the United States.

As of February,2024

Development of an Innovative Anti-Thrombotic Coated Stent for Intracranial Aneurysm Treatment （N.B.Medical Inc.）

◯ Business Plan
Non-Disclosure

◯ Research Outline
Non-Disclosure

City	Year of Establishment	Founder	Website
Chuo-ku, Tokyo, JAPAN	2021	Kazuya Shobayashi	Non-Disclosure

Partner VC	Latest round of Fundraising	Valuation
ANRI Inc.	Non-Disclosure	Non-Disclosure

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2024 - 2025FY	Non-Disclosure	Non-Disclosure

As of April,2024

Development of quantum repeater utilizing cavity QED （Nanofiber Quantum Technologies, Inc.）

City	Year of Establishment	Founder	Website
Shinjyuku, Tokyo	2023	Masashi Hirose Takao Aoki Akihisa Goban	https://www.nano-qt.com/

Partner VC	Latest round of Fundraising	Valuation
Waseda University Ventures	Non-Disclosure	Non-Disclosure

Contact Information :
tel : 070-4006-8333
e-mai : dai.tsukada@nano-qt.com

Website : https://www.nano-qt.com/

○ Business Plan

Quantum network combines quantum computing and communication. This project develops core technology, quantum repeaters, using a unique method to set global standards.

○ Research Outline

This project aims to implement foundational technology for an optical fiber network with absolute security, different from existing information and communication systems, by developing quantum repeaters using cavity QED. To achieve this goal, the following development items are undertaken:

1. Manufacturing of low-loss nano-fiber resonators in the communication wavelength band
2. Development of Yb atom arrays trapped near nano-fiber resonators
3. Implementation of logic gate operations in the communication wavelength band
4. Research on business strategy, regulations, and standardization activities

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Information & Communication	STS 2023～2025FY	JPY 492 million	United States (California/ Maryland State)

○International collaborative technology demonstration

・Contract with local partners

NanoQT Inc.: Conducting site surveys and feasibility studies on the U.S. market environment and technology demonstrations.

University of Maryland: Exploring applications of quantum networks using quantum repeaters and detailed examination of small-scale quantum networks using Yb cavity QED systems.

As of March,2024

AI-based Thermal-Fluid Simulation Leading to Automated Product Design（RICOS Co. Ltd.）

RICOS

City	Year of Establishment	Founder	Website
Chiyoda-ku, Tokyo	2015 (Year of business start)	Yu Ihara	https://www.ricos.ltd/

Partner VC	Latest round of Fundraising	Valuation
The University of Tokyo Edge Capital Partners Co., Ltd.	Series A-2	JPY 1,200 million

Contact Information :
tel : +81-3-5615-9777
e-mail : info@ricos.co.jp

Website : https://www.ricos.ltd/

○ Business Plan

In current product design, simulations take time and are limited in application. RICOS aims to develop an AI-CAE system for thermal fluids using proprietary AI technology highly compatible with physical phenomena to solve various issues in analysis. Customer needs have already been identified, and the development system will be swiftly introduced to the market and expanded for sales.

○ Research Outline

In this R&D effort, in the area of thermal fluids (and related fields), we aim to 1) complete the AI algorithm that will serve as the core of the system to be provided to customers and achieve the prediction speed and accuracy they require, and 2) implement a system for the thermal fluidics field that uses that algorithm, identify the functions that customers require, and set a goal for development and implementation.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Information & Communication	STS 2024 - 2025FY	JPY 190 million	—

As of April,2024

Commercialization of a device for the treatment of acute ischemic stroke due to atherosclerosis.
（T.G.Medical Inc.）

◯ Business Plan
Non-Disclosure

◯ Research Outline
Non-Disclosure

City	Year of Establishment	Founder	Website
Chuo-ku, Tokyo	2020FY	Kohei Banno	Non-Disclosure

Partner VC	Latest round of Fundraising	Valuation
Beyond Next Ventures Inc.	Non-Disclosure	Non-Disclosure

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2024FY	Non-Disclosure	—

Contact Information : Non-Disclosure

Website : Non-Disclosure

As of February,2024

R&D of a new immersive solid-phase synthesis method （TKG Therapeutics, Inc.）

City	Year of Establishment	Founder	Website
Tokyo	2022	Akimitsu Okamoto/ Masaaki Matsui	https://www.tkg-na.com/en

Partner VC	Latest round of Fundraising	Valuation
Real Tech Holdings Co.,Ltd.	Seed	JPY 300 million

Contact Information :
tel : 050-5375-0508
e-mai: contact@tkg-na.com

Website : https://www.tkg-na.com/en

○ Business Plan

We are advancing the commercialization of an immersion solid-phase synthesis method known as the 'jabot-zuke' method. This synthesis method is anticipated to enable the production of nucleic acid materials that are capable of mass production, cost-effective, and have a reduced environmental impact. By commercializing this project, we aim to contribute to the expansion of the nucleic acid materials market, including nucleic acid pharmaceuticals.

○ Research Outline

We are going to create a prototype of an automated synthesizer utilizing the immersion solid-phase synthesis method, aiming to achieve the following Proof of Concept (PoC) goals: 1. Synthesis on a milligram scale using the prototype machine 2. Synthesis with less than 50% of the reaction reagent amount compared to conventional solid-phase synthesis methods 3. Synthesis of our company's proprietary new functional nucleic acids.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Materials	STS 2023～2024FY	JPY 80 million	—

As of March,2024

Development of drug delivery capsule that selectively delivers mRNA et al. to immune cells （United Immunity Co., Ltd.）

UNITED IMMUNITY

City	Year of Establishment	Founder	Website
Chuo-ku, Tokyo	2017	Naozumi Harada	https://unitedimmunity.co.jp/eng/

Partner VC	Latest round of Fundraising	Valuation
The University of Tokyo Edge Capital Partners Co., Ltd.	Series B	JPY 2,420 million

Contact Information :
tel: +81-3-6265-1670
e-mail: info@unitedimmunity.co.jp

Website : https://unitedimmunity.co.jp/eng/

○ Business Plan

The development of mRNA vaccines and nucleic acid drugs is fiercely competitive worldwide. Conventional drug delivery capsules for delivering nucleic acids to cells have faced some challenges including side effects, storage stability, low cell selectivity, and the potential risk of infringing upon overseas patents. In response, we have invented a novel technology to overcome these challenges, demonstrating high accumulation within immune cells, high efficacy, and strategic avoidance of pre-existing patents. In this project, we aim to establish prototypes of vaccines or pharmaceutical drugs by optimizing the efficacy, safety, and stability of our technology, and develop manufacturing methodologies for large-scale production. Our goal is to address societal challenges, such as potential pandemics following the novel coronavirus, by leveraging domestically developed technology.

○ Research Outline

In this project, we aim to accumulate points of differentiation from technologies already in practical use, such as mRNA vaccines, by optimizing capsule compositions using proprietary lipids. In the development of the proprietary lipids, joint research is being conducted with Hokkaido University. The following are the R&D items.
(1) Optimization of formulation composition
(2) Concept validation in cells and animals (pharmacological experiments)
(3) Safety validation in cells and animals
(4) Establishment of scalable manufacturing processes

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2024FY	JPY 300 million	—

As of February,2024