



Deeptech Frontier Challenge for Startups

Non-Confidential Abstract

Global Startup EXPO 2026

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Run Your Food Supply Business on Agentic AI

WhatsApp in front. Farmio OS behind. Your customers keep ordering the way they already do — 70+ AI agents turn every chat into structured orders, invoices, credit decisions and delivery plans.

Built by operators, for operators: the same OS runs Farmio's own two-market business — 2,800+ outlets, 130K+ orders automated, a team of 13.

**130K+**
Orders Automated
(>99% without human touch)

**0.18%**
Bad-Debt Ratio
(vs 7.1% industry)

**87.2%**
Customer Retention

**2.9 days**
Repeat Purchase Cycle

**2,800+**
B2B Outlets Served
(Singapore & Hong Kong)

**70+**
AI Agents Deployed
(sales → finance)

**13**
Full-Time Team
(runs both markets)

**+126%**
Revenue Growth YoY
(on Farmio OS)

1 Food supply still runs on chats, calls and re-keying

Every order still passes through too many manual steps before it ships.



Sound familiar?

- WhatsApp, calls and voice notes — all re-keyed by staff
- Credit by gut feel; industry bad debt runs at 7.1%
- Invoicing, chasing and reconciliation eat the back office
- Delivery routes planned by hand every evening
- Generic software asks customers to change — they won't

2 Farmio OS: agents run the order-to-cash loop



Humans handle exceptions and last-mile delivery; selling, order capture, invoicing, credit and coordination run on agents that learn from every order.

 Sales conversations & upsell

 Order capture from chats

 Forecasting & procurement

 Delivery & route coordination

 Invoicing & reconciliation

 Credit limits & collections

 Customer service, 24/7

 Exceptions routed to your team

4 Two ways to work with us

Pick the track that fits your size — both run on the same agents and the same modules.

FOR SMES

Farmio OS Platform

- WhatsApp ordering front-end for your customers
- Order-to-invoice automation, credit intelligence, delivery coordination
- Live in weeks — nothing changes for your customers
- Monthly platform subscription

FOR CORPORATES

Custom Agent Deployment

- Agents built on your workflows, integrated with your ERP, WMS and finance stack
- Dashboards and exception routing for your teams
- Multi-site, multi-market roll-out
- Scoped deployment, then managed service

Same 70+ agents, same modules — start on one workflow and switch on more as you go.

5 How a pilot works

A paid pilot on one workflow, with your real customers, measured against metrics we agree up front.

1 workflow
Pilot scope

Real customers
No sandbox

Agreed KPIs
Go / no-go

Pilot → subscription

- 1 Discovery**
Map one workflow — usually order capture or collections — and baseline the metrics
- 2 Set-up**
Connect WhatsApp, catalogue, price lists and customer accounts; agents configured to your rules
- 3 Pilot**
Agents run the workflow with your customers; your team handles exceptions only
- 4 Scale**
Review results against the baseline, then subscribe across modules, sites and markets

3 Proven on our own business first

We built Farmio OS to run Farmio, then opened it to other suppliers. The numbers below are our own.

Metric	First 12 Months	Today (Sep 2026)
Orders automated	55K+	130K+
Active B2B outlets	1,600+	2,800+
AI agents in production	26	70+
Team size (FTE)	5	13
Revenue run-rate (indexed)	1.0x	2.6x

600+ outlets in 3 months
Hong Kong launch · Apr 2026

Breakeven in month 4
Hong Kong · Jul 2026

Millions of AI chats
250K+ transactions processed

6 Why Farmio — and how to start

**Operator-built**
We run 2,800+ outlets across two markets on the same OS you would be using

**Domain-native agents**
Built for food: perishables, daily frequency, trade credit and route logistics

**Backed by supply-chain strategics**
LFX (Li & Fung), HKIC (Hong Kong Government), IOI Group and institutional VCs

Our investors



Book a paid pilot

One workflow, your customers, measured results — then subscribe.

pchan@farmio.io
farmio.io · Paco, Founder

AironWorks

Cyber Vaccine: Agentic AI that defends the **human layer** of cybersecurity

1,400+

Companies protected

700K+

IDs published

\$12.5M

Raised to date

20+

Countries served

PRODUCT

AironWorks Agentic AI

AironWorks vCISO

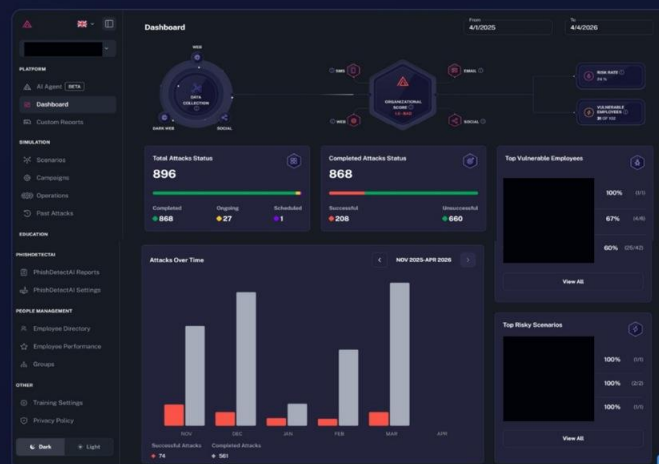
Security Monitoring AI Agent

PhishDetectAI

Phishing and BEC defense

Adaptive Training

Employee attack simulation



Cyber Vaccine into **one dashboard**.

TEAM

CEO

Ani Terada

12+ yrs cross-border business, MBA

CTO

Gonen Krak

Unit 8200 team leader, MSc

VP R&D

Bar Perach

ex-Google R&D leader

Ext. Director

Noam Shaar

ex-Head of Unit 8200, MBA

INVESTORS

Founded August 2021 · AironWorks, Inc.

WiL

All Star SaaS Fund

Salesforce Ventures

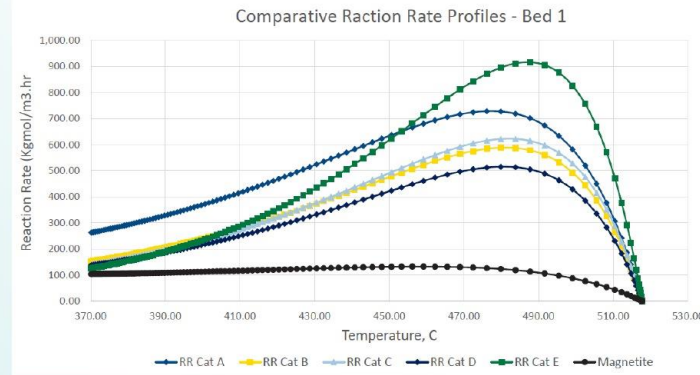
Rakuten Capital

SBI Investment

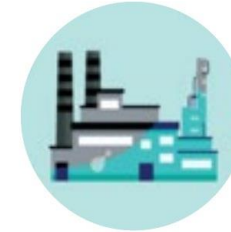
“The **catalyst** is the only way to get an **efficiency or productivity improvement** for **ammonia production**.”

Senior Executive at the world's largest ammonia engineering design firm

Liquium is delivering
>2x faster ammonia
synthesis in a
5x smaller reactor
with **our catalyst**



2,000 tonne/day ammonia plant model developed by leading ammonia engineering company based on our experimental data. Liquium catalysts "RR Cat A - E"



Drop in: Increase productivity & efficiency of existing assets



Optimise: Unlock new productivity & efficiency for new assets

Liquium has work agreements and engagement across the entire value chain

liquium

Raw Materials

Catalyst Development

Catalyst Toll Manufacturing

Ammonia Engineering design

Ammonia Operator

End Users

Liquium unlocks the next frontier of ammonia

MISSION From stronger drugs to treatment-responsive tumors ~Overcoming cancer treatment resistance by targeting the tumor microenvironment~

■ Investment highlights

- ✓ First-in-class exon21-selective periostin antibody platform by targeting the TME
- ✓ HER2-low/negative metastatic breast cancer; Novel modality for unmet resistance challenge
- ✓ Preclinical POC established, Phase I/IIa ongoing in Japan; IPO target 2029 Q1

Funding ask
Series D-2 (Bridge) : USD 5M
Series E : USD 20M

Target close
March 2027
June 2028

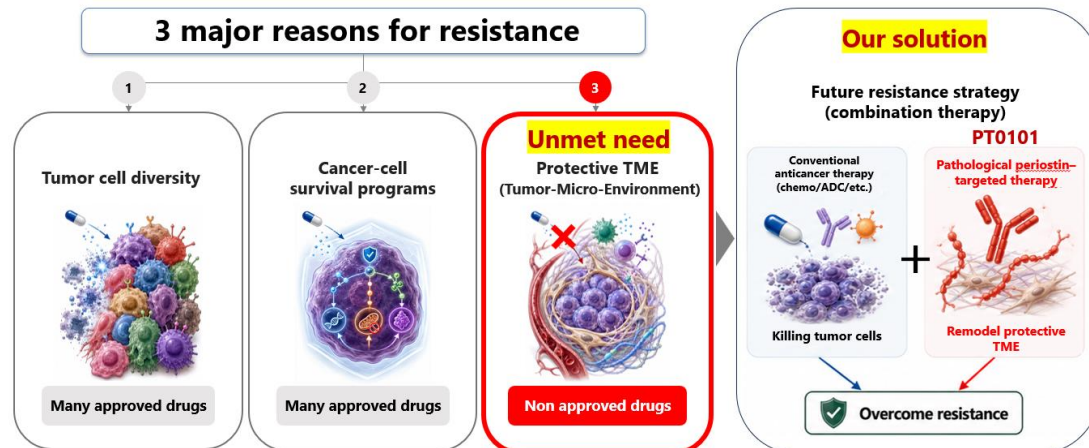
■ The Unmet need & Our solution

【 Unmet Need】

Second-line treatment resistance in HER2-negative metastatic breast cancer (No approved drugs directly targeting CAF activation exist)

【Our Solution】

Reset the upstream control nodes of the TME to reverse resistance and maximize combination efficacy.



■ Evidence & IP

- ✓ Pathological periostin expression confirmed in clinical samples
- ✓ Strong synergy with paclitaxel & approved ADCs
- ✓ No dose-limiting toxicity in GLP safety studies and No DLT in Phase1
- ✓ 5 patent filings; Exclusive license agreement with The University of Osaka

■ Development milestones

Timing	Milestone Goal
2026 4Q	JP Phase I DLT assessment completion
2027 1Q	JP Phase IIa / US Phase I initiation
2028 2H	JP Phase I /IIa readout (Proof of Concept)
2029 1Q	IPO / M&A (Global pharma)
2030 2H	US Phase I readout

■ Management & Founder team



Eiji Tahara, Ph.D.
President CEO



Yoshiaki Taniyama, MD, Ph.D.
Founder / Director



Fumihiko Sanada, MD, Ph.D.
Co-founder / Director



Toshihiko Tamura
CFO



Kensei Sakata
Head, Clinical Dept.



Ko Hasegawa, Ph.D.
Head, Business Dept.

AI-based radiation treatment planning support service

Improving the quality and efficiency of radiation treatment planning with AI to expand access to cancer care

Solution

Our AI radiation treatment planning software provides AI support directly from planning CT images:

Background & Challenges

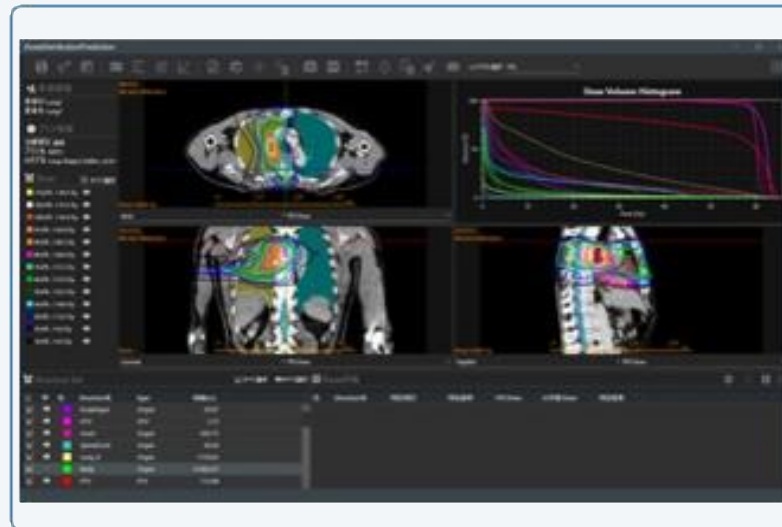
High Complexity & Trial-and-Error: While Intensity-Modulated Radiation Therapy (IMRT) concentrates dose on tumors, plan creation heavily relies on experience and trial-and-error.

Heavy Workload: Generating a single plan takes approximately 6 hours, causing a significant burden on medical staff.

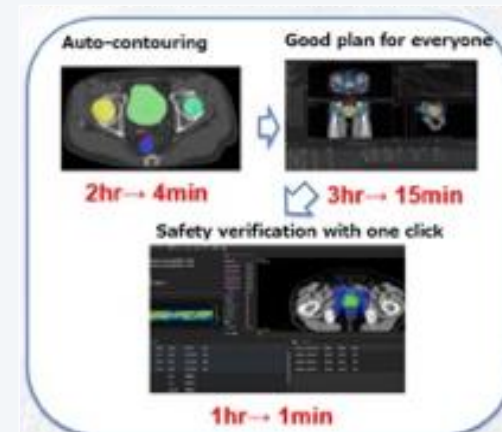
Quality Disparity: A system is needed to reduce variability across facilities and planners, delivering high-quality treatment to more patients.



IMRT is a technique aimed at reducing dose to healthy tissue while concentrating radiation on tumors



Workflow of AI-based radiotherapy planning



Target Indications: Head and Neck Cancer, Lung Cancer, Prostate Cancer, Cervical Cancer

Progress & Milestones

- Obtained Class III SaMD (Software as a Medical Device) approval in Japan as a startup (June 2026).
- Conducting performance evaluations and joint research across research across 14 facilities in Japan, as well as in Thailand, Thailand, Malaysia, and Singapore. Achieved AI planning accuracy within 3% for prostate cancer treatment.

94% Efficiency Boost

6 hours → ~20 minutes per plan

5x Capacity Increase

Potential to increase annual IMRT treatment capacity by 5x

~2,000 Hours/Year

Estimated workload reduction per facility

9,000 Global Facilities

Target market size of radiation therapy facilities worldwide

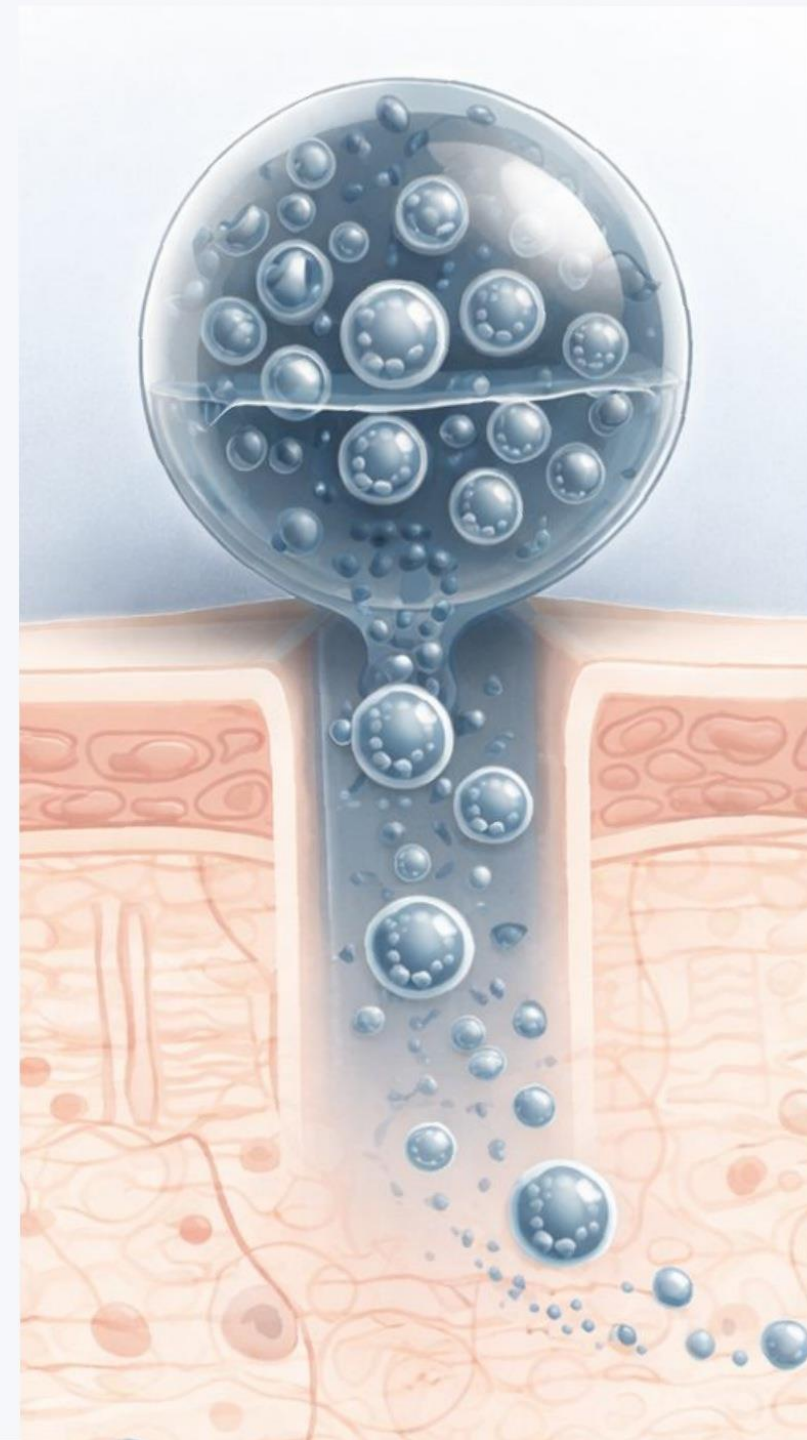


NanoEmitters: Next Generation Formulation for Drugs and Cosmetics

Next generation, large molecule drug and skincare products offer game changing efficacy and precision. Yet critical formulation hurdles - specifically shelf stability and effective *in vivo* delivery - have historically kept them from surpassing traditional small molecules. Blockbuster treatments overcome these obstacles through specialized solutions, like the oral delivery of peptide GLP-1s (e.g. Wegovy), the cold-chain stabilization of mRNA vaccines (e.g. Comirnaty), and the targeted delivery of protein immunotherapies (e.g. Keytruda). Serial entrepreneurs Jay Sarkar (Stanford PhD) and Akira Yamamoto (SRI veteran) have also developed product-specific mRNA and protein formulations in prior successful startups. Yet they sought to develop a more versatile solution, and thus co-founded the Silicon Valley startup reThink64 around the novel technology of “NanoEmitters”. These microparticle constructs are scalably manufactured from GRAS materials and optimized by AI to hold 1MMx more cargo (e.g. peptides, proteins, RNAs, polysaccharides) and 10x longer stability than conventional formulations. Upon administration, the local tissue triggers the NanoEmitters to package and emit the cargo in a focused stream of daughter nanoparticles. This achieves 5X-10X more delivery in live mouse and human compared to standard formulations, and is concentrated to targets like skin, eye, pancreas and solid tumor.

In just 4 years and \$2.4M in funding, reThink64 progressed the NanoEmitters from basic concept to commercial readiness and initial revenue, outperforming typical biotech (revenue in 10-15 years on \$15-30M). This is attributed in part to reThink64’s elite team of researchers from Stanford and Harvard and industry veterans from Hoya, J&J and Roche. But it is also due to reThink64’s efficient business model of custom NanoEmitter formulation and targeted early outlicensing with commercial partners. We have a number of existing partnerships - including a large strategic in Japan - across high value sectors: Peptides (\$40B), Immunomodulators (\$70B) and Unstable Actives (\$145B). As we scale, we are raising more capital, expanding operational capacity, and looking to onboard more partners across the US, Europe, and Asia. We are especially eager to engage prospective partners and investors in Japan seeking breakthrough technologies for therapeutics and cosmetics. We believe the NanoEmitter technology will enable a transformative new standard for patient health and wellness worldwide.

For Partnering and Investments please reach out to
Jay Sarkar at jsarkar@rethink64.com



Unlock the Full Potential of Microbes

bitBiome is a pioneering biotechnology start-up poised to revolutionize the global bio-manufacturing industry through the strategic convergence of proprietary microbial genomics data and labeled data, high-throughput platform, and advanced artificial intelligence "SENS-AI" for various industries.



Founded Nov 2018 | >\$45m Raised

Pioneering startup with 2/3 non-dilutive funding



Global Footprint

HQ in Japan with active presence in the US, the UK and India



Unique Proprietary Platform

Flexible platform addressing all forms of bio-manufacturing



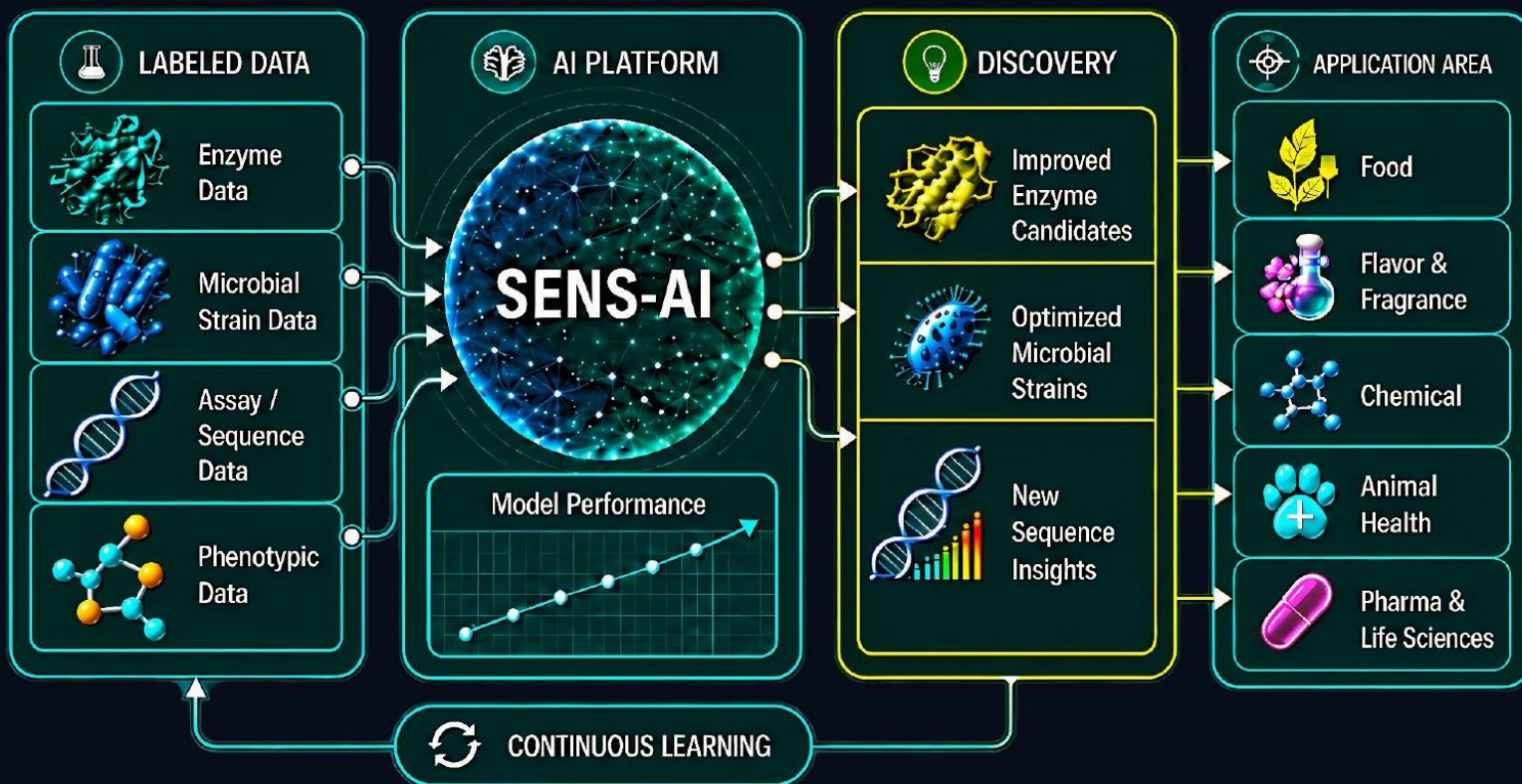
State-of-the-Art Tokyo Labs

Highly efficient operations with significant cost advantage



Reputation & Global Talent

First Japanese biotech backed by I-Q-T



BIobyTES · 2026

Turning Human Data into **New Medicines** for Muscle Aging

800+

Participants enrolled

A 15-year prospective sarcopenia cohort integrating clinical, functional, blood, muscle tissue, and multi-omics data.

5

Promising drug targets identified

Built and exited before — surgeon-scientist founder, ex-Pfizer CDO, ex-CTO of an IPO'd company.

0.97

AUROC screening accuracy

Screening product & supplements already generates revenue, funding our own pipeline.

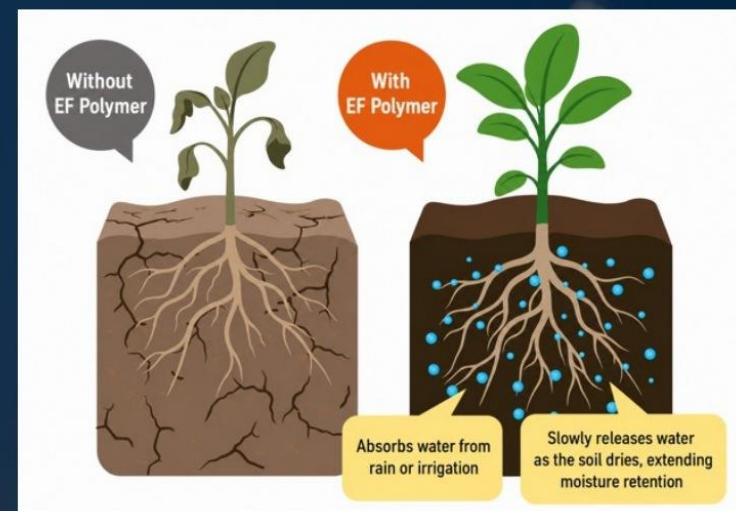
Others start with models. We start with patients.

jwlee@biobytes.kr
biobytes.ai

EF Polymer - Eco-Friendly Polymer



- Made of **Bio-waste**
(Orange and Banana Peels)
- **High Absorption Capacity**
(50~130 times of its own weight)
- Fully Biodegradable in
Soil & Marine Environments



Agriculture

Helping farmers to have stable yield,
while saving water and fertilizer



EF
POLYMER

Other Applications

Supporting industry to achieve green transformation (GX)

Cosmetics Alternative to petroleum-based thickeners 石油系増粘剤からの代替へ	Ice Packs Reduced disposal costs & regulatory risk 廃棄コスト・規制リスク低減	Hygiene Products Soft, reliable performance for diapers & sanitary products 肌に触れる素材だから自然由来
Construction Materials Enhanced Durability & Lifespan with Biodegradable Materials 耐久性・作業性を向上し、製品寿命を延長	Emergency & Relief Supplies Absorb. Use. Biodegrade. 吸収して、使って、自然に還る。	Household Products High performance with environmental benefits 高い機能性と環境配慮型の特徴

Sold EF Polymer in

10 Countries



Cumulative Sales
1,000 Tons

A-SEEDS: Pioneering Next-Generation CAR-T Therapy

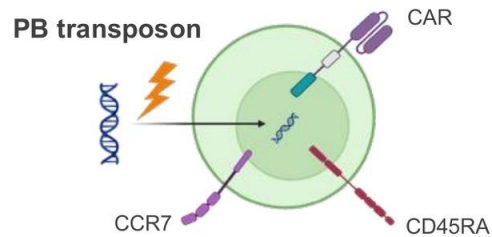
Faster, Safer, Cheaper, and Better non-viral piggyBac CAR-T cells targeting high-unmet needs in AML and Solid Tumors

The Clinical Bottleneck

- Target limits:** Approvals restricted to B-cell tumors & Myeloma
- T-cell exhaustion:** Reduced efficacy in the tumor microenvironment
- Toxicity:** On-target/off-tumor damage to normal tissue
- Antigen escape:** Relapse due to tumor heterogeneity
- High Costs:** Dependency on expensive viral vectors



The piggyBac (PB) Platform Solution



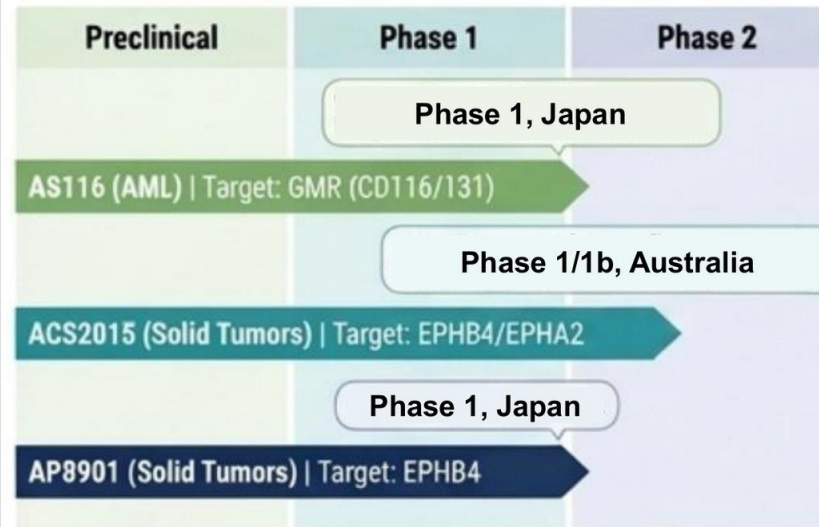
Non-Viral Production:
Uses PB transposons,
eliminating high viral vector
costs

Memory-Rich CAR-T:
Resists immune exhaustion
for durable efficacy

Toxicity Mitigation:
Precisely distinguishes active
tumors from normal tissue

Bispecific Targeting:
Multi-antigen recognition
prevents tumor escape

Clinical Pipeline



Multi-center clinical trial collaboration &
GMP manufacturing partnership

Manufacturing Edge



Automated, closed-system manufacturing
established



Utilizes frozen patient PBMC, enabling flexible
patient scheduling and robust global logistics

Competitive Advantage

	A-SEEDS (PB CAR-T)	Traditional Viral CAR-T
Cost	High Advantage (Non-Viral)	High Cost
Persistence	High (Memory Phenotype)	Low (T-cell Exhaustion)
Antigen Coverage	High (Bispecific)	Low (Vulnerable to Escape)

Corporate Profile & Financials

- Sprouted from Shinshu University (>70 peer-reviewed papers)
- Led by **Shigeki Yagyu (CEO)**; Founded by **Yozo Nakazawa**
- Funding: Secured **¥2.24B (\$15M) Series A** + **>\$10M in non-dilutive grants** (NEDO, AMED)
- Next Milestone: Pre-B / Series B targeting clinical PoC readouts (2027/2028)

Contact Information

A-SEEDS Co., Ltd.

Address: #206 CSMIT, 3-1-1 Asahi,
Matsumoto, Nagano, Japan

Website: <https://www.a-seeds.co.jp/eng/>

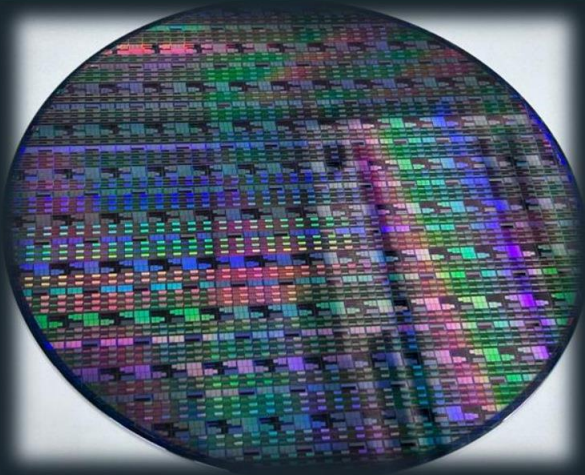
Email: kiyohito.tani@a-seeds.co.jp

Official site



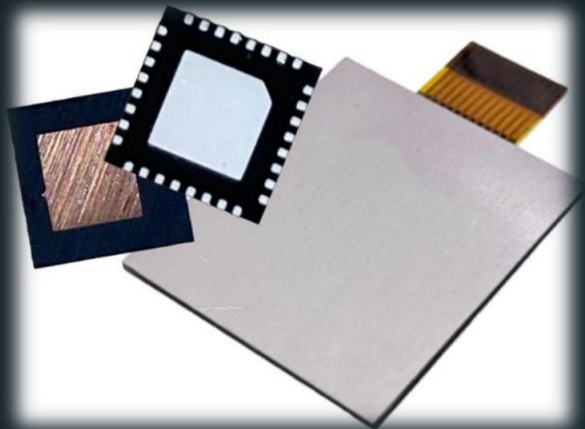
TopoLogic at a glance

TopoLogic develops disruptive technologies using the novel physics of topological materials, bringing drastic innovations in semiconductor device engineering



High-capacity cache memory TL-RAM

- Solves the “memory wall” lack of cache memory for AI computing, significantly improving GPU edge AI processor performance
- 4x memory capacity compared to current cache memory technology
- Can be embedded to standard GPUs, edge device processors



High-speed heat sensing TL-SENSING

- Solves battery fires by detecting early signs of battery issue
- 100x detection speed improvement over conventional thermal sensors
- Silicon based design allows high packaging compatibility and low cost

“17m Wireless Power Charging”

As Is

Powering sensors with batteries and wiring fundamentally limits the scale of the IoE

To Be

2040, the 6G era, an IoE(Internet of Everything) world with tens of trillions of sensors in operation



Transmitter

Sensor

The printing press, steam engine, light bulb, internet — each revolutionized the world, and every turning point that expanded human prosperity was built on a foundational technology.

Wireless power transfer is that foundation for the IoE era.
Our mission is to bring it into society and unlock Physical AI at scale.

Powering the Next Generation of Photonic Integrated Circuits

A fabless electronic and photonic integrated chip company building compact, high-precision test and control platforms for next-generation photonic and mixed-signal systems.

120

independent source-measure channels in a single chassis

99+

end customers across 24 countries

3x / 20x

lower cost / smaller footprint vs legacy racks

5

patents granted — US, EU, China, Japan

PRODUCT & TECHNOLOGY — ONE ANALOG CORE, ONE SOFTWARE LAYER, THREE LEVELS OF INTEGRATION

INSTRUMENT

XDAC — 16-bit precision source and measure, 4 to 120 channels.
miniATE — precise analog test with built-in digital processing.



MODULE

XSOM — board-level PIC driver and system-on-module the customer designs onto their own board.



CHIP

XEIC — collapses multichannel DAC and ADC control onto a single SPI bus. In development.



A customer moving down the stack keeps the same toolchain — the instrument earns the design-in, the module goes inside their product, the chip makes it a volume component.

PROBLEM

Photonic chips are scaling — but their control and test infrastructure is not.

Packaging, assembly, and testing already represent 70–80% of photonic chip manufacturing costs, versus ~20% for electronic ICs (Light: Science & Applications).

Today's chips require hundreds of independently controlled elements; next-generation designs will require tens of thousands. Current methods add instruments, racks, cabling, and software with every channel.

Without scalable control and testing, photonics will be constrained by infrastructure — not fabrication — blocking high-volume manufacturing.

SOLUTION

Nicslab puts 120 independent source-measure channels into one compact instrument, with power, signal generation, sensing, measurement, and control integrated and automated — replacing the equivalent rack at 3x lower cost and 20x smaller footprint.

COMPETITIVE ADVANTAGE

Built from two-channel benchtop units, a 64-channel photonic test rig takes thirty-plus instruments. Nicslab delivers it in one box, one ground reference, one interface — and sustains thirty published configurations across channel counts, output topologies, and connector options in-house.

BUSINESS MODEL

Integrated hardware-and-software platforms plus OEM/ODM solutions, on subscription as well as outright purchase — which no incumbent offers at instrument level. Development, production, and fulfilment are in-house.

ROUTE TO MARKET

Website and content marketing generate the majority of new orders, supported by distributors in the US, Japan (Hikari Inc., Tokyo), Europe, China, and Southeast Asia, and by DigiKey and Amazon.

TARGET MARKET & MARKET SIZE

Research labs, semiconductor and photonics companies, foundries, and hardware teams across integrated photonics, quantum computing, AI infrastructure, and data centers. The PIC market is projected to grow from ~\$14–15B in 2024 to ~\$90–99B by 2034.

TRACTION & KEY MILESTONES

2024 Luminate NY Company of the Year. 99+ end customers across 24 countries, about a third of them repeat buyers. 5 patents granted, with 5+ filed.

TEAM

Andri Mahendra, PhD (CEO) — 15 years in electronics and photonics; previously IBM T.J. Watson, a Lockheed Martin project, and Dongjin Semichem.

Anggi Utami, M.Eng (COO) — Korea University; market strategy and operations.

18-person team including 1 PhD and 2 Master's-level engineers.

ADOPTED BY

NTT · Fujitsu · MIT Lincoln Lab · NASA/JPL · NVIDIA · Harvard, and others

JAPAN — NTT and Fujitsu are existing customers, with in-country distribution and support through Hikari Inc. (Tokyo), a Nicslab distribution partner since the company's earliest years. Nicslab is raising a growth financing round, now in progress, to scale XDAC and miniATE production, advance XEIC through to silicon, and build go-to-market and applications engineering capacity. We are seeking investors and technology partners within Japan's deep-tech and semiconductor ecosystem.

Nicslab Ops, Inc. · Rochester, NY · Palo Alto, CA · Bandung, Indonesia · support@nicslab.com · www.nicslab.com

Challenge to the Ultimate Clean Energy

p-¹¹B Advanced-Fuel Fusion — tritium-free, minimal neutrons, siting-flexible power

Power demand is surging on AI and data centres, yet ~60% of the global mix is still fossil — with reserves concentrated in a handful of countries.

TECHNOLOGY

FRC-Mirror Hybrid Fusion Reactor

A mirror magnetic field confines high-energy proton beams; a Field-Reversed Configuration (FRC) confines the boron-11 target plasma — its main reaction channel releases no neutrons.

Research base: Nihon Univ. (large-scale FRC device) · Univ. of Tsukuba (world's largest tandem mirror)



DIFFERENTIATION

- **Tritium-free**
Only light hydrogen and boron — no rare, radioactive fuel cycle.
- **Minimal neutrons**
No neutrons from the main reaction; activation and neutron damage greatly suppressed.
- **Flexible siting**
Direct energy conversion, no steam turbine — compact plants.

BUSINESS MODEL

Core

100 MW-class reactor sales — utilities, hyperscale data centres, industrial complexes (NA / EU / Asia)

Early revenue

Industrial plasma ion sources, specialty isotopes, subsystem supply

\$243B /yr Fusion plant demand by 2040

REACTOR CONCEPT



100 MW-class · ~30 m overall · direct energy conversion

TARGET COST

2 – 3.5

US¢ / kWh · LINEA target

Compared with today

Nuclear	4*
Solar	6
Fossil fuels	8 – 15

* Excluding social costs.

MILESTONES

● **2027-** Fusion reaction demonstration — ● **2031-** Power generation demonstration — ● **2035-** Commercial power generation demo

LEADERSHIP TEAM

Yuta NOJIRI
Co-founder / CEO
Deep-tech CXO

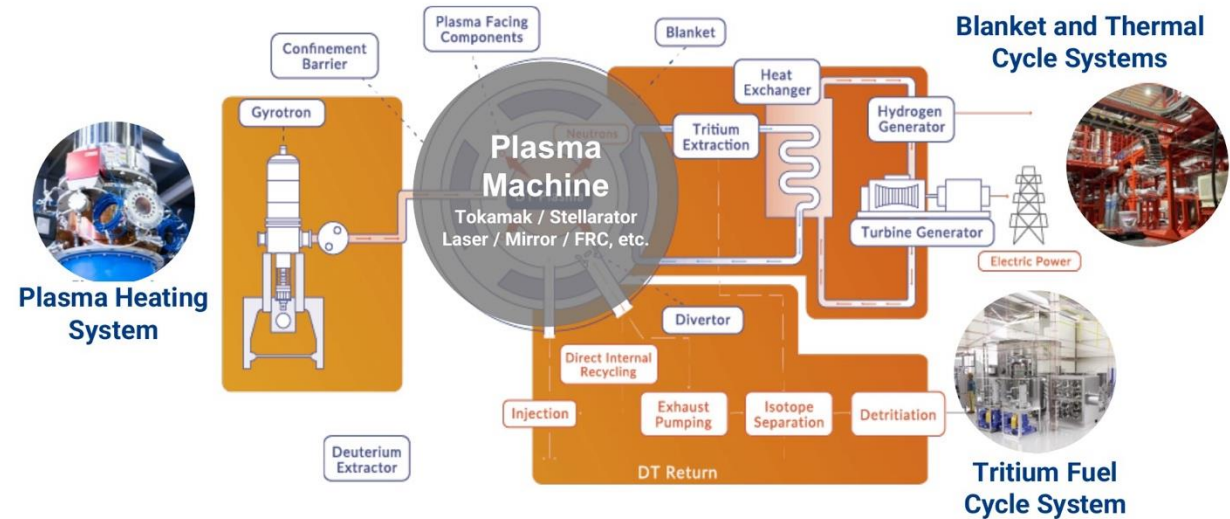
Tomohiko ASAI, Ph.D.
Co-founder / CSO
Leading authority on FRC fusion

Mizuki SAKAMOTO, Ph.D.
Co-founder / CTO
World-renowned mirror-fusion expert

Ryo TAMAKI
CFO
Ex-CFO, SmartHR; unicorn scaling

Kyoto Fusioneering (KF) is the world's premier fusion technology and integrated systems developer. It delivers **plasma heating system**, **tritium fuel cycle system** and **tritium breeding blanket and thermal cycle systems** that advanced fusion programs worldwide depend on, regardless of confinement approach.

KF operates globally across Japan, the UK, the US, Germany, and Canada.



2019
founding

180+
members

\$60M+
order backlog

\$207M+
raised

CEO
Satoshi Konishi



President & COO
Kiyoshi Seko



KYOTO FUSIONEERING
Tokyo, Kyoto, Shiga, Japan



KYOTO FUSIONEERING
America Ltd.
Tennessee, U.S.



KYOTO FUSIONEERING
U.K. Ltd.
Culham, U.K.



KYOTO FUSIONEERING
Europe GmbH
Karlsruhe, Germany



STARLIGHT ENGINE
Tokyo, Japan
** Subsidiaries with third-party equity participation*



FUSION FUEL CYCLES
Chalk River, Canada
** Joint venture with Canadian Nuclear Laboratories*

UNITY™ Program



UNITY-1
Kyoto



UNITY-2
Chalk River



UNITY-3
Oak Ridge