AC Biode

"AC Biode's Plastalyst breaks down the most difficult wastes, such as ocean plastics, into useful chemicals"

www.acbiode.com/plastalyst

PROBLEM

Plastic pollution has become one of the most significant environmental challenges facing the world today. From oceans and rivers to food and drinking water, plastic waste is now found almost everywhere on Earth.

SOLUTION

AC Biode's Plastalyst decomposes mixed, dirty plastics and organic waste into valuable chemicals, such as monomers and hydrogen, producing clean water free of micro-plastics.

UNIQUE VALUE PROPOSITION

AC Biode's Plastalyst recycles mixed ocean plastics into renewable methanol, a biodegradable fuel that slashes port SOx/NOx emissions. Unlike pyrolysis, we operate below 200°C with 10x lower CAPEX, enabling local recycling at harbours to end waste shipping. Processing dirty, mixed waste without sorting creates a profitable circular economy for the maritime sector.

OCEAN IMPACT

We restore ocean health by recycling mixed plastics and removing microplastics from wastewater. We incentivize plastic removal from rivers and oceans by increasing waste value. Our renewable methanol provides a biodegradable, low-emission maritime fuel to clean ports. Lastly, enabling island circular economies eliminates the need to ship waste across oceans like in the Maldives.

INDUSTRY INFORMATION

From ports we are looking for piloting with their waste. We can ship our reactor from Indonesia. From shipping companies we are looking for off-take agreements on methanol. From port authorities we are seeking help with permissions and regulations.

TECHNOLOGY & INTELLECTUAL PROPERTY

AC Biode's Plastalyst uses patented chemolysis operating below 200°C with water as a solvent. Our core IP is a unique non-precious metal catalyst that breaks down C-C and C-O bonds in mixed waste into monomers, hydrogen, and methanol. This energy-efficient, zero-CO2 technology is protected by 3 granted patents and 4 pending, enabling easy scalability using off-the-shelf machines.

TRL BASED ON THE NASA SCALE

TRL Level - 6

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

After completing our first large scale 150L reactor pilot in Indonesia, we are now testing at 700L scale in Japan. At the same time we are building our commercial plant at a hotel next to the beach.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

After constructing the first commercial plant in 2027 and completing 8 more pilots, we will raise series A. We are now looking for ports, waste management and chemical companies to scale up.

KEY METRICS

We have 35+ pilots and USD 1.5M in sales. By 2040, we aim for 700 units, recycling 10.6Mt of waste to save 10Mt of CO2. Each 10t/day plant impacts 20,000 people in developing nations. Our tech has a 90% lower footprint than pyrolysis and reclaims 85Mt of water annually, while producing biodegradable methanol to protect our oceans.

KEY TEAM MEMBERS

1. **Tadashi Kubo**, MBA (CEO), tadashi.kubo@acbiode.com
2. **Robert Kunzmann**, MPhil (COO)
3. **Atsushi Mizusawa**, Ph.D. (CTO)

AIMM

"AIMMSorb is a water treatment material, with enhanced uptake, speed, and tuning to the contaminant"

www.aimmlabs.com

PROBLEM

The failure of conventional methods for broad PFAS capture creates a substantial market opportunity for disruptive technology. PFAS are ubiquitous, globally contaminating water supplies and birthing a massive health crisis.

SOLUTION

AIMMSorb is a tunable sorbent that can address specific contaminant needs. Including the unique needs of short chain PFAS, studied under an NIH SBIR. This is a challenge for which there is no other current, scalable solution.

UNIQUE VALUE PROPOSITION

AIMMSorb represents a colossal leap in sorbent materials. AIMMSorb captures contaminants in 5-15 seconds, a step-change improvement to the hours or days required by activated carbon (AC). At these ultrafast speeds, AIMMSorb removes up to 200x more contamination per weight of sorbent as compared to AC. Driving competitiveness, however, is the tunability of the material to target and capture tricky contaminants for which there is no current, feasible solution.

OCEAN IMPACT

A broad spectrum of PFAS variants are abundant in our waters, even in remote ocean environments, meaning virtually every piece of the marine ecosystem and food chain is impacted. AIMMSorb is a novel solution for use at the point of PFAS creation, industry can align themselves with regulation and furthermore protect our environments from widespread contamination with AIMM's technology.

INDUSTRY INFORMATION

The technical baseline for contaminant adsorption is activated charcoal (AC). AC is widely used in industry, research, and home systems for water/waste stream purification. AC, however, struggles with contaminant removal in these aspects: (1) slow contaminant uptake of several hours or days, (2) low ultimate uptake, requiring frequent replacement, and (3) incompatibility with various contaminant profiles that are emerging in industry.

TECHNOLOGY & INTELLECTUAL PROPERTY

AIMM holds a utility patent granted in 2024 for the manufacturing of AIMMSorb (US11878283B2). A continuation claiming priority to US App. No. 17/761,680 was filed for surface functionalization and two provisional patents were submitted for conversion in Q2 of 2026. Combined with proprietary synthesis methods protected by trade secrets, this patent portfolio establishes a formidable and lasting competitive moat.

TRL BASED ON THE NASA SCALE

TRL Level - 7

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

AIMM will continue to derisk with pilots while anticipating a business lead in Q4 of 2026 to aid in scale up fundraising, supporting the transition of current and future pilots becoming customers.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

AIMM's needs are in:
1. Pilots for PFAS remediation
2. Connecting with VCs for seed fundraising
3. Fostering relationships with strategic partners that have expressed interest in our capabilities

KEY METRICS

In under 10 minutes, 0.06kg of AIMMSorb cleans 50 gallons of dye waste versus needing 12kg of activated charcoal. Our first customer estimates that AIMMSorb will double their overall output. PFAS metrics are actively being developed with our pilot. Initial NIH data shows that AIMMSorb reduces EPA Superfund Site levels of long and short chain PFAS to near drinking water levels in under 15 minutes.

KEY TEAM MEMBERS

1. **Dr. Luis Estevez** (CEO & Founder), le1@aimmlabs.com
2. **Erin Estevez** (Director of Operations)
3. **Lauren Brown** (Founding Engineer)

AmHyTech Inc.

"We build last-mile ammonia infrastructure for maritime fuel and agriculture"

www.amhytech.com

PROBLEM

Ammonia is acutely toxic and requires pressure or refrigeration, driving complex handling, high capital costs, and difficult permitting. This slows its use as an energy carrier, especially for use as a maritime fuel at ports and on board vessels.

SOLUTION

We hold ammonia as a stable liquid at ambient temperature and pressure, eliminating pressure vessels and refrigeration while sharply reducing release hazards and simplifying permitting onboard, at ports, and near communities.

UNIQUE VALUE PROPOSITION

AmHyTech complements existing ammonia infrastructure. Conventional pressurized and refrigerated storage is proven, but becomes costly and difficult where space, safety zones, and permitting are constrained, such as vessels and distributed energy sites. We fill this last-mile gap with ambient liquid storage: up to 99% safer, ~3× less capital, less permitting friction, and compatibility with existing tanks and equipment.

OCEAN IMPACT

AmHyTech supports healthier oceans in two ways. Zero-carbon ammonia fuel cuts shipping emissions that drive ocean warming and acidification. Ambient-pressure storage sharply reduces toxic-release risk at ports and in coastal waters, cutting release rates 8,000× and the impact zone from 3 miles to under 100 feet.

INDUSTRY INFORMATION

Shipping is ammonia's fastest-growing new market. IEA projects ammonia at 44% of shipping energy by 2050; DNV models ~250 million tons of ammonia demand for marine fuel. Ammonia already underpins fertilizer and is expanding into power and hydrogen trade. Every ton passes through storage, yet storage, bunkering, and permitting remain critical bottlenecks.

TECHNOLOGY & INTELLECTUAL PROPERTY

2 Patent Cooperation Treaties and 5 U.S. patent applications covering our ammonia storage and delivery technology, all owned by AmHyTech.

TRL BASED ON THE NASA SCALE

TRL Level - 5

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Finalize our 1-ton modular ammonia storage system, complete an initial stationary pilot in a port environment ahead of shipboard testing, and complete DNV technology qualification.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. A marine ammonia engine or test vessel for system integration
2. Bunkering or terminal operators to host paid pilots
3. Port authority engagement to establish approval pathways.

KEY METRICS

Traction: Best Newcomer Startup Worldwide 2026; Breakthrough Energy ; 2 government grants; state pilot fund 2026; $1M raised.
Emissions: 800Mt CO_2e/yr reduction potential across maritime, hydrogen, and green ammonia.
Economics: $3–4M saved per ship bunkering; up to 50% lower fertilizer cost; 40% lower H2 delivery.
Pipeline: Fortescue, MOL, ACME, TalusAg, Onterris. Paid pilots in discussion.

KEY TEAM MEMBERS

1. **Morteza Sarp**: CEO, morteza.sarp@amhytech.com
2. **Kevin Rouwenhorst**: Technology Manager at Ammonia Energy Association, and our Business advisor
3. **Pojman Kazempoor**: Expert in the energy field and ammonia based engineering design, and technical Advisor
4. **Ali Ghiaseddin**: VP of Engineering

Amphitrite

"AI ocean intelligence for safer, lower-emission maritime operations worldwide"

www.amphitrite.fr

PROBLEM

Ocean currents change in ways that are difficult to predict. Inaccurate forecasts can increase ships' fuel use and emissions, disrupt offshore operations and hinder efforts to track drifting pollution.

SOLUTION

Amphitrite combines satellite observations, ocean measurements and AI to forecast ocean currents. Its data services and voyage-planning tools help operators choose efficient routes and understand conditions at sea.

UNIQUE VALUE PROPOSITION

Amphitrite combines an ocean-current model trained on observations, regional forecasting and vessel-specific performance modelling. This connects satellite science to practical voyage decisions. Published Gulf Stream tests show lower current-forecast errors than the Mercator baseline, while Heerema reports fuel-related emissions and voyage-time savings. Data services and planning tools support integration into customer workflows.

OCEAN IMPACT

Better voyage decisions can reduce fuel use and emissions. Heerema reported 14-18% lower CO2 emissions on a Rotterdam-to-New York transit compared with its originally planned route, using Amphitrite's vessel modelling and routing. Current forecasts also support tracking drifting plastics off California. Further coastal applications would require local validation with environmental partners.

INDUSTRY INFORMATION

Our target markets include shipping, offshore energy, defence and environmental services. Customers need reliable ocean information for voyage planning, offshore operations and tracking drifting material. Buyers include vessel operators, navigation-software providers and public agencies. Amphitrite supplies forecasting data and decision tools, with Atlantic shipping and Canadian navigation partnerships providing a basis for Americas growth.

TECHNOLOGY & INTELLECTUAL PROPERTY

Observation-trained AI combines satellite data and ocean measurements to forecast currents. Public records identify Amphitrite as assignee of French patent FR3144272B1 for sea-surface velocity mapping. An exclusive research-patent licence agreed in 2022 covers eddy detection from sea-surface-temperature imagery. Our IP strategy combines these rights with software and confidential know-how; international protection depends on territorial status.

TRL BASED ON THE NASA SCALE

TRL Level - 8

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Expand Atlantic validation, complete customer pilots, improve forecast uncertainty reporting and deepen navigation-software integrations. Scope a Florida environmental pilot with a local partner.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Local observations and validation partners in the Americas
2. Funding for product development and delivery capacity
3. Commercial partners to turn pilots into recurring contracts.

KEY METRICS

Heerema's Rotterdam-New York voyage: 14-18% lower CO2, 240 nautical miles shorter and 2.5 days faster than the planned route. Published Gulf Stream benchmark: next-day mean vector error of 24 cm/s versus Mercator's 38 cm/s, using 24-hour averages of 2023 drifters and currents above 0.25 m/s. Results are specific to these tests.

KEY TEAM MEMBERS

1. **Alexandre Stegner**, Co-founder and CEO
2. **Evangelos Moschos**, Co-founder and CTO
3. **Thomas Joyce**, Co-founder and VP of Business Development, thomas@amphitrite.fr

BeamSea Associates

"Revealing the ocean's hidden biological signals for smarter, sustainable stewardship"

www.beam-sea.com

PROBLEM

Existing underwater surveys provide limited biological intelligence at scale, making it difficult to detect ecosystem change early and manage marine habitats efficiently.

SOLUTION

TCLMF (True Color LiDAR co-registered with Multispectral Fluorescence) combines color-corrected 3D mapping, biological fluorescence, and automated analytics to deliver quantitative ecosystem intelligence across large marine areas.

UNIQUE VALUE PROPOSITION

TCLMF combines wide-area, color-corrected 3D mapping with fluorescence measurements that reveal biological pigments unavailable from conventional imagery alone. Automated analysis transforms these measurements into repeatable habitat maps, classifications, and change indicators while reducing diver dependence, survey cost, and post-mission labor.

OCEAN IMPACT

TCLMF supports earlier detection of habitat degradation, invasive species, ecosystem stress, and biological change. By improving monitoring of coral reefs, seagrass habitats, and coastal ecosystems, TCLMF enables more effective restoration, conservation, fisheries management, and resilience planning.

INDUSTRY INFORMATION

The ocean-monitoring market is shifting from qualitative surveys and raw imagery toward quantitative environmental intelligence. Governments, survey firms, conservation organizations, and infrastructure operators increasingly require repeatable, scalable, data-driven ecosystem assessments.

TECHNOLOGY & INTELLECTUAL PROPERTY

TCLMF combines advanced ocean sensing, environmental intelligence, and AI-driven classification to reveal hidden biological signals that drive ecosystem health. BeamSea Associates has submitted a U.S. provisional patent covering co-registered 3D LiDAR, multispectral fluorescence sensing, automated classification, anomaly detection, and wide-area underwater mapping across biological and marine environments.

TRL BASED ON THE NASA SCALE

TRL Level - 6

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Complete expanded field trials, validate ecosystem monitoring capabilities, advance AI analytics, and deploy pilot systems with early-adopter partners in coastal and marine monitoring programs.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

(1) Field validation, (2) customer partnerships, and (3) commercialization funding to scale deployments, strengthen AI capabilities, and transition TCLMF into operational monitoring programs.

KEY METRICS

Classification accuracy, survey coverage rate, habitat area mapped, turnaround time to decision-ready products, area of reef and seagrass monitored, pilots completed, customers converted, paid deployments, recurring contracts, and management decisions informed.

KEY TEAM MEMBERS

1. **Fraser Dalgleish**, CEO/CTO, fdalgleish@beam-sea.com
2. **Walter Britton**, President and Director of Engineering
3. **Roberto Solorzano**, Senior Mechanical Engineer

CHITELIX

"A zero-waste marine biorefinery turning seafood waste into high-value bio-based solutions"

www.chitelix.com

PROBLEM

Seafood processors face millions of tons of shell byproduct yearly: costly to discard, polluting when landfilled, rarely upcycled, while agriculture and industry stay dependent on synthetic chemicals this waste could replace.

SOLUTION

Chitelix builds a modular, scalable, zero-waste biorefinery platform, upcycling marine biomass into chitosan, marine calcium and bioingredients used to design tailored solutions for agriculture and industry.

UNIQUE VALUE PROPOSITION

Unlike large centralized chitosan producers, we deploy modular, right-sized units beside processing hubs, cutting capex and transport while locking in local feedstock. We monetize the entire biomass stream, so marine calcium, proteins and co-products subsidize our chitosan cost and beat commodity margins. Our multi-biomass platform adapts to any shell supply.

OCEAN IMPACT

We upcycle seafood processing byproducts, removing a coastal waste stream before it reaches landfills or waterways and cutting pollution at its source. Our bio-based inputs help farms and industry replace synthetic chemicals, easing the nutrient and chemical runoff that degrades coastal waters and lands, protecting water reserves. Chitosan also serves as a natural water-treatment bioflocculant.

INDUSTRY INFORMATION

The global chitosan market is ~$2.3B (2024), growing ~12% CAGR (Mordor Intelligence), driven by demand for bio-based alternatives to petrochemicals in agriculture, water treatment, cosmetics, food, pharma and aquaculture. Crustacean feedstock is abundant yet under-valorized, with few localized extractors. Agriculture offers ready, immediately deployable demand; higher-value segments scale as clients adopt bio-based materials.

TECHNOLOGY & INTELLECTUAL PROPERTY

Our proprietary multi-biomass platform re-tunes to each feedstock via a greener, low-chemical process recovering marine calcium and co-products. Defensibility rests on trade secrets (we built our own production line and key equipment) and scale-up know-how, backed by R&D with Institut Pasteur de Tunis, CBBC Borj Cedria and Faculte des Sciences de Tunis. US IP will target chitosan applications and formulations co-developed with partners.

TRL BASED ON THE NASA SCALE

TRL Level - 9

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Launch the feasibility study in US/Florida and SE Asia to include regulatory de-risking phase: processor supply LOIs, permitting roadmap, and EPA/USDA/FDA registrations; in parallel, scale Tunisia output and launch our vet line.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Non-dilutive funding to launch the de-risking phase
2. Supply partnerships with processors
3. Regulatory support for EPA/USDA/FDA product registrations.

KEY METRICS

1. Tunisia: on track to divert 900 t/yr shell byproduct from landfill by 2027.
2. 100 kg/day chitosan capacity replacing synthetic chemicals.
3. Traction: orders for 200,000 L/yr chitosan solution, 200 t CRUSTAMIX, 100 kg/mo chitosan to a scaling NL water-treatment client.
4. Morocco distribution in talks.
5. Enabling a major EU shrimp processor's new Tunisia unit (15 t/day byproduct) supporting 2,000+ jobs.

KEY TEAM MEMBERS

1. **Kais AOUAIEB,** Cofounder and COO, kais.aouaieb@chitelix.com
2. **Anis BEN GHALIA**, CEO

DisperseBio

"Sustainable and efficient Natural biofilm treatment addressing $100B+ damage and ocean pollution"

www.dispersebio.com

PROBLEM

Biofilms are a major hidden cost across water and marine industries, increasing energy use, chemical consumption, maintenance, biocorrosion and pollution. Existing solutions remain chemical-intensive and unsustainable.

SOLUTION

DisperseBio uses biomimetic peptides to trigger natural microbial self-dispersal, preventing and removing biofilms without killing microbes, reducing chemical and energy use while preserving natural marine microbiomes.

UNIQUE VALUE PROPOSITION

DisperseBio offers a new alternative to toxic biocides: biomimetic peptides that trigger microbes to self-disperse from biofilms without killing them. Effective at ppt-ppb levels and easily integrated into existing systems, our technology cuts chemicals, energy and maintenance while preserving natural microbiomes. Unlike conventional biofilm control, it combines ultra-low dosing, zero toxicity and broad water and marine applicability.

OCEAN IMPACT

DisperseBio prevents and disperses early-stage biofilms without killing microbes, reducing harsh treatments. By replacing toxic biocides and reducing physical cleaning, it limits chemical pollution, paint particles and microplastics while preserving natural microbiomes essential to nutrient cycling, carbon sequestration, oxygen production and resilient oceans and coastal ecosystems.

INDUSTRY INFORMATION

Biofouling costs water and marine industries billions through higher energy use, corrosion, cleaning, chemicals and downtime. Growing RO desalination, water reuse and maritime activity, combined with tighter environmental rules, drive demand for safer solutions. DisperseBio targets these markets, with future applications in subsea sensors and emerging subsea data centers, where biofouling threatens critical ocean-facing surfaces and cooling.

TECHNOLOGY & INTELLECTUAL PROPERTY

DisperseBio's biomimetic peptides trigger natural biofilm dispersal at ppt-ppb levels without killing microbes. Four granted patent families protect our core technology. Three new application-focused patents cover periodic and permanent coatings that enhance antifouling and foul-release performance, and peptide-enhanced cleaning that reduces biocide use. Simple dosing or surface application enables easy integration into existing systems.

TRL BASED ON THE NASA SCALE

TRL Level - 7

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Expand DB-Clean (TRL7) pilots in land and shipboard cooling, RO and water systems. Pilot DB-Coat (TRL5) with the Israeli Navy; develop periodic & permanent coatings and sensor applications.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Secure funding for scale-up and market entry
2. Expand industrial and marine partnerships and commercial pilots
3. Advance NSF, EPA and EU regulatory approvals

KEY METRICS

- $1.1M pre-seed raised from deep-tech/blue-economy investors incl. SOSV & SOA; $1.5M seed underway.
- NDAs/MTAs with 2 global water-treatment leaders + 2 major desalination plants. Two paid customer-site deployments underway.
- Demonstrated 66% lower biocide use in Legionella control, 50% in MIC/biocorrosion & >50% potential RO cleaning reduction.
- Navy marine coating pilot initially validated.

KEY TEAM MEMBERS

1. **Ori Choshen** – CEO | Ori@dispersebio.com
2. **Dr. Amir Zlotkin** – Founder & CTO

Hybrid Reefs

"Technology that helps nature repair itself"

www.hybridreefs.com

PROBLEM

Coral restoration remains labor-intensive, costly, and difficult to scale. High maintenance demands and inconsistent biological performance limit the impact of restoration programs despite growing global investment.

SOLUTION

CoralGuard™ is a non-toxic anti-fouling coating that improves biological performance while reducing manual maintenance. This enables restoration programs to restore more coral reefs with the same team and budget.

UNIQUE VALUE PROPOSITION

Unlike organizations that restore reefs or build coastal infrastructure, Hybrid Reefs supplies enabling biomaterials that improve biological performance across both markets. Our lead product is commercially available and fits existing workflows to reduce fouling, accelerate coral growth, and improve restoration efficiency. We complement rather than compete with practitioners, helping them lower costs, increase impact, and scale faster.

OCEAN IMPACT

By making coral restoration more effective and scalable, Hybrid Reefs accelerates reef recovery, strengthening biodiversity, fisheries, tourism, and the living reef structures that protect coastlines. Healthier reefs enhance ecosystem resilience, reduce coastal flooding or damage risk, and sustain the local communities and economies that depend on them.

INDUSTRY INFORMATION

Hybrid Reefs operates in the rapidly growing reef restoration and coastal resilience markets. Increasing investment in nature-based solutions is driving demand for technologies that improve restoration efficiency and scalability. Coral Guard™ serves restoration organizations today while creating expansion opportunities in aquaculture, aquariums, and reef-enhancing coastal infrastructure.

TECHNOLOGY & INTELLECTUAL PROPERTY

Hybrid Reefs was spun out of Scripps Institution of Oceanography at UC San Diego, building on research supported by a $25M DARPA award. Our growing IP portfolio includes 7 provisional patents and 2 exclusive UC San Diego licenses, spanning Coral Guard™, SNAP-X™ for coral recruitment, and Symbion™ for bleaching resilience. Proprietary formulations and manufacturing know-how provide additional protection as we scale.

TRL BASED ON THE NASA SCALE

TRL Level - 8

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Scale Coral Guard™ manufacturing, launch South Florida deployments, generate independent field validation, and advance SNAP-X™ toward commercial field readiness.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Manufacturing scale-up
2. South Florida deployment partners
3. Independent field validation to accelerate commercial adoption

KEY METRICS

- Multiple paying customers/organizations, including a 35,000-unit institutional order.
- Coral Guard™: 90% less algal fouling, 70% less manual cleaning, ~3× greater median coral growth 12-month field trial.
- SNAP-X™: 20× higher coral genetic diversity.
- Symbion™: ~50% reduction in bleaching.
- 12-month targets: 2,500 units/day production and COGS reduction from $3.54 to ~1.45/unit.

KEY TEAM MEMBERS

1. **Dr. Daniel Wangpraseurt**, Founder & CEO, support@hybridreefs.com
2. **Cooper Lachenbruch,** Business Operations
3. **Alex Ferré**, Corporate Development Lead

Ignition Packaging

"Biodegradable protective packaging made from agricultural waste to replace persistent EPS"

www.ignitionpkg.com

PROBLEM

EPS protects products for hours, but persists for 500+ years, breaking into particles that reach waterways, ecosystems, and human bodies. Sustainable alternatives often trade off performance, cost, or manufacturability.

SOLUTION

Ignition turns agricultural residues into Ignition Biofoam, our high-performance biodegradable material. Our first product, the BioCooler, targets biotech and pharma companies shipping temperature-sensitive products.

UNIQUE VALUE PROPOSITION

Ignition Packaging delivers EPS-level utility without centuries of persistent waste. Our Biofoam combines agricultural-residue inputs, 365+ day shelf stability, ~60-day home-compostable decomposition, and material economics of ~$2k/ton. We enter the market through the BioCooler, then expand into shippers, inserts, loose fill, and molded protection, creating recurring revenue as customers replace persistent foam.

OCEAN IMPACT

Ignition Packaging prevents ocean pollution at the source by replacing EPS before it can escape waste systems, fragment, & reach waterways. Each BioCooler is expected to displace ~0.24 kg of EPS; 10k units equal ~2.4 metric tons. Our material pathway indicates ~70% lower carbon emissions than EPS. We track units deployed, EPS displaced, customer programs, & agricult. residue utilized.

INDUSTRY INFORMATION

EPS remains widely used for its low weight, insulation, protection, manufacturability, and cost. Alternatives include mycelium, molded fiber, and bio-based foams. Ignition is entering through biotech and pharma shipping, with the plan to expand into marine, industrial, and broader packaging markets. We differentiate through cellulose from abundant agricultural-residue feedstocks.

TECHNOLOGY & INTELLECTUAL PROPERTY

Ignition Biofoam is patent pending, with IP covering its material formulation, cellulose-based feedstock processing, and protective-packaging applications. Proprietary know-how also spans processing, biodegradation behavior, and product design. Development has demonstrated 365+ days of shelf-life stability and ~60-day decomposition under home-compostable conditions as we advance toward commercial manufacturing.

TRL BASED ON THE NASA SCALE

TRL Level - 6

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Launch the BioCooler commercially, convert pilots and signed LOIs into orders, expand the customer pipeline, and establish repeatable production and fulfillment.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Manufacturing scale-up; 2. Inventory and working capital to fulfill orders, convert LOIs, and strengthen supply resilience; 3. Third-party performance testing

KEY METRICS

Impact:
~0.24 kg EPS displaced per Biocooler
~70% lower carbon emissions than EPS
~60-day home-compostable decomposition
~365+ days shelf-life stability.
Traction:
- 6 signed LOIs across U.S., Europe & Africa
- 1 commercial pilot in development
- Manufacturing trials underway
- $75,000 total non-dilutive funding raised.
Economics:
~$2,000/ton$ *vs.* ~1,700/ton EPS.
- Within ~$300/ton of EPS cost parity

KEY TEAM MEMBERS

1. **Abdurrahman Bejjaj,** Founder & CEO, abdu@ignitionpkg.com
2. **Evan Phillips**, CSO and Materials Science Ph.D. researcher
3. **Christian Pompa**, R&D Engineer and UF engineering undergrad

Konree Innovation

"Managing and controlling aquatic parasites and pests at the larval stage - e.g., lice in fish farming"

www.konreeinnovation.com

PROBLEM

The problem of lice parasites in salmon farming -these tiny parasitic crustaceans feed on the fish scales, flesh, blood and mucus, causing stress to the fish & entries for secondary bacterial & viral infections in the wounds.

SOLUTION

An efficient way to disrupt the sea lice population by constantly driving down larval numbers in the salmon pen and returning levels back toward natural environmental levels (& help protect wild salmon stocks at sea).

UNIQUE VALUE PROPOSITION

Konree has microscopic eyes in the water that can monitor for and detect underwater microscopic threats and alert the salmon producer to take management actions e.g. sea lice larvae, microjellies (e.g. M. atlantica) For sea lice parasites, Konree isolates larval stages from the body of water, images them, identifies the development stage & terminates them for reliable control 24/7 in a non-fish contact way.

OCEAN IMPACT

Konree solution helps protect wild salmon by preventing spread of microscopic larvae from the farms. In addition, Konree can help monitor, halt biodiversity loss and restore natural healthy aquatic ecosystems plagued with Aquatic Invasive Alien species.

INDUSTRY INFORMATION

It is standard practice in the AquaTech industry to supply and maintain the technology so that the salmon farmers can keep their CapEx low and instead incur a monthly OpEx cost. Salmon farmers readily uptake advanced solution e.g. lasers terminating lice (Stingray Marine Solution), camera systems that count the sea lice on the fish, measure biomass, health index of the fish (e.g. AquaByte), and acoustic devices determining fish feeding satiety.

TECHNOLOGY & INTELLECTUAL PROPERTY

Norwegian Patent granted - this covers >50% global Atlantic salmon production. UK patent pending, PCT filed in 2024 and jurisdictions to be named by year end.

TRL BASED ON THE NASA SCALE

TRL Level - 6

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Tech:

1. Proving the technology at sea over a relevant time period - currently deployed in Norway.
2. Improve the imaging.
3. Improve the digital library.

Business:

1. Develop the right business model.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Funding to prove out the technology at sufficient scale & team hire.
2. CFO to build the business processes.
3. Business Developer.

KEY METRICS

1. Reduced infestation on the fish – reduced sea lice counts on fish. Note sea lice numbers on fish must be counted and reported every week in Norway & every month elsewhere.
2. Improved growth vs time – target weight reached faster & harvesting may be pulled forward by up to 7 weeks
3. Better Health Index for fish farmed, e.g., using Welfare Indicators & Assessment Tools by Noble, C., et al. (2018)

KEY TEAM MEMBERS

1. **Margaret Rae, PhD** - Founder, CEO/CSO, margaret.rae@konreeinnovation.com
2. **Michael Flynn** - CoFounder CTO
3. **Damien O'Keeffe** - Aquaculture Specialist, Marine Zoologist & former Fish Farmer

Ocean Alliance

"A drone-based toolkit that makes whale disentanglement safer, faster, and more scalable"

www.whale.org

PROBLEM

Fishing and ghost gear kill thousands of whales per year. Current disentanglement responses are dangerous, ineffective, and hard to scale. Because of this many whales are never reached, and are left to die.

SOLUTION

A portable drone toolkit that enables authorized teams to assess, track, monitor, and cut fishing gear from entangled whales while reducing dangerous close boat approaches.

UNIQUE VALUE PROPOSITION

Ocean Alliance has +50 years of experience in whale science, a global network of partners, and a powerful track record of developing novel, innovative, practical, scalable, and cost-effective drone-based tools to solve some of the most pressing challenges in whale science. Working alongside disentanglement expert Ed Lyman every step of the way ensures the tool meets the needs. Our integrated and innovative system is safe and effective.

OCEAN IMPACT

Entanglement kills whales, removes breeding adults from vulnerable populations, and causes prolonged (and often extreme) suffering. Our toolkit will help disentanglement teams reach more animals, cut gear safely, and document each response. Whales recycle nutrients, support marine productivity, and connect ecosystems. Safer rescue means healthier whale populations and more resilient oceans.

INDUSTRY INFORMATION

Large-whale disentanglement response is a specialized global market serving wildlife agencies, authorized response networks, fisheries managers, and marine nonprofits. Fishing gear kills an estimated 300,000 whales and dolphins annually. Many reported entanglements receive no response owing to a lack of safe, affordable, practical tools. Demand is driven by conservation mandates, though better tools such as this will increase demand.

TECHNOLOGY & INTELLECTUAL PROPERTY

The commercially available drones we use carry an array of custom hardware: a 3D-printed three-blade cutting grapple, auto-release, drogue-chute system, laser-altimeter targeting, load sensing for tool release, and a compact VHF/Iridium tracking buoy.

We create these tools to be used free of charge. The more people using these tools, the better it is for the whales.

TRL BASED ON THE NASA SCALE

TRL Level - 8

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Station our lead pilot in Hawai'i on call for an authorized live response; Complete final engineering and dynamic testing; finalize permits, procedures, training materials, and the field toolkit.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1) Access to a live-whale disentanglement response; 2) final engineering and manufacturing; 3) permitting, disseminating protocols widely across the globe, training.

KEY METRICS

Key metrics from 2026 include:

- 44 open-ocean test flights
- All core functions successfully demonstrated
- Repeated cuts of entanglement gear (taken from real disentanglement activities to reproduce real-world accuracy) within minutes
- NOAA Level 2 disentanglement certification
- Five buoy configurations with satellite confirmation

KEY TEAM MEMBERS

1. **Dr. Iain Kerr**: Ocean Alliance CEO
2. **Andy Rogan**: Science & Conservation Director
3. **Ed Lyman**: NOAA Hawaiian Islands Humpback Whale National Marine Sanctuary Large Whale Entanglement Response Coordinator, and IWC Expert Advisory Panel on Entanglement Response

Ocean State Sensing

"Persistent full depth intelligence for better forecasting, healthy fisheries and resilient coasts"

www.oceanstatesensing.com

PROBLEM

Critical ocean processes occur below the surface, but satellites see the surface, fixed sensors sample selected depths, and casts provide snapshots. This leaves gaps in thermal structure needed for forecasting and decisions.

SOLUTION

ThermoTrawl™ uses a recoverable fiber-optic cable to measure temperature through the water column while a vessel is underway, creating repeated, high-resolution profiles without requiring a dedicated observing platform.

UNIQUE VALUE PROPOSITION

ThermoTrawl fills the space between surface-only, fixed-point, and snapshot observations. One reusable cable becomes a dense distributed sensing array, producing continuous vertical temperature data while vessels continue normal operations. OSS combines the technology with proven at-sea deployment experience, system integration, and an operator-focused approach that is difficult to replicate from the laboratory alone.

OCEAN IMPACT

Better subsurface temperature data can improve storm and coastal forecasting, strengthen ocean models, identify habitat shifts, support fisheries management, and improve understanding of changing marine conditions. By making the full water column visible at operationally useful resolution, OSS helps communities and ocean users make better decisions for healthier, more resilient oceans and coasts.

INDUSTRY INFORMATION

OSS serves ocean observing, weather and coastal resilience, fisheries, research, maritime operations, and defense. Initial customers include government agencies, research organizations, vessel operators, and other groups that need higher-resolution subsurface environmental data. Revenue begins with customer-funded deployments, system integration, data services, and direct system sales or leases.

TECHNOLOGY & INTELLECTUAL PROPERTY

ThermoTrawl combines distributed temperature sensing, marine cable assemblies, deployment hardware, processing, and visualization. OSS has demonstrated continuous profiling during vessel operations. A provisional patent is secured. Competitive know-how includes architecture, calibration, deployment methods, cable and hardware integration, and derived products. OSS protects these assets through documentation, trade secrets, and IP strategy.

TRL BASED ON THE NASA SCALE

TRL Level - 7

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Refine the user interface and data path; complete the next ThermoTrawl deployment; improve operational packaging and integration; and prepare the system for broader customer use in ocean observing and coastal applications.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Capital for production and validation
2. Fisheries and coastal-observing partners
3. Manufacturing and commercial support to convert pilots into repeatable system and data-service revenue

KEY METRICS

- Ocean impact: profiles collected; depth, area and hours observed; thermal events detected; storm-induced heat extraction; expendable probes avoided.
- Technology: collect above 10 knots, profiles to 100 meters depth or more, 0.25 meter resolution, near-real-time delivery.
- Execution: production units, projects & area coverage, customers, integrated platforms, subscriptions, and cost per profile.

KEY TEAM MEMBERS

1. **Dr. Antone "Tony" Eliasen**: Co-Founder & CEO, tony@oceanstatesensing.com
2. **Brian Amaral**: Co-Founder & COO
3. **Dr. Jennifer Amaral**: Chief Scientist

OctaPulse

"Automation for smarter seafood production from hatchery inspection to plant analytics"

www.tryoctapulse.com

PROBLEM

Seafood producers still rely on manual inspection and fragmented plant data, causing waste, mortality risk, inconsistent quality and slow scale at the moment aquaculture must produce more with less.

SOLUTION

OctaPulse turns fish images and processing video into operating data: faster inspection, deformity and trait scoring, counts, quality signals, yield visibility and dashboards for seafood teams.

UNIQUE VALUE PROPOSITION

We focus on high-value seafood workflows competitors often miss: hatchery inspection and processing visibility. Models have exceeded 98% accuracy, onboard new species with ~800-1,000 images, and convert vision into actionable yield, quality and traceability data. The same perception layer can later power robotics.

OCEAN IMPACT

OctaPulse helps aquaculture produce more seafood from the same biological input. Earlier inspection keeps weak fish out of costly growout, while processing vision reduces yield loss and waste. Better data improves traceability, feed efficiency and planning, lowering pressure on wild fisheries and supporting resilient coastal food systems.

INDUSTRY INFORMATION

Aquaculture is a $350B global market and has surpassed wild catch, but operations still depend on manual QA and fragmented data. Most tech targets in-water monitoring; hatchery and processing workflows remain underserved. Farms must scale seafood production while reducing waste, labor burden, disease risk and pressure on wild fisheries.

TECHNOLOGY & INTELLECTUAL PROPERTY

OctaPulse combines standardized image capture, edge computer vision, proprietary labeling/data pipelines, customer-specific models and dashboards. IP is protected through a robust multi-species data moat, trade secrets, model weights, deployment know-how and proprietary customer data; patents may be evaluated in the future for specific hardware or robotics inventions.

TRL BASED ON THE NASA SCALE

TRL Level - 8

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Deepen Riverence contract (Riverance Aquaculture Company), convert processing work, launch Florida scoping with Pine Island/MRC/Spring Genetics, expand Chile pipeline and harden cross-species model deployment.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Customer deployments and data
2. Engineering hires for edge CV/data/dashboarding
3. Aquaculture and processing partners to validate species, workflows, and scale

KEY METRICS

- $240K paid Riverence contract
- ~300K projected 2026 revenue
- >98% model accuracy
- Inspection cut from up to 5 min/fish to seconds
- New-species onboarding reduced to ~800-1,000 images
- Active 24/7 processing camera
- Florida work scoped with Pine Island RedFish, MRC Fisheries and Spring Genetics Tilapia

KEY TEAM MEMBERS

1. **Paul L. Grech**, CEO, paul.grech@tryoctapulse.com
2. **Rohan Singh**, CTO

Subtidal

"Solar buoys that tell lake communities when the water is unsafe and what is driving their blooms"

www.subtidal.com

PROBLEM

Nutrient pollution costs the U.S. ~$2.2B a year, and toxic cyanobacteria blooms are its sharpest edge. Communities lack data on water safety, and cannot afford the $25K$ –100K study that identify causes and how to fix them.

SOLUTION

Continuous buoy-based monitoring and analytics for real-time water safety and root cause assessment. Communities see whether the water is safe all season, then learn what is driving their blooms and what to do about it.

UNIQUE VALUE PROPOSITION

Continuous monitoring exists, typically at an order of magnitude more cost, at a single depth, and delivering raw time series with no analytics to turn data into decisions. Assessments deliver analysis, often ~$100K per lake, but rest on samples and short logger deployments, so they often miss causal mechanisms that only continuous multi-depth data reveal — while remediation runs into the millions. Subtidal delivers both, affordably.

OCEAN IMPACT

Blue-green algae and their toxins do not stop at the salt line. Two of our current deployments are brackish ponds on Martha's Vineyard; in Florida, Lake Okeechobee blooms persist into the Caloosahatchee and St. Lucie estuaries. These transition zones fall between freshwater monitoring programs and marine monitoring systems. Extending into open-water harmful algal blooms (HABs) requires additional pigment channels and analytics—not an entirely new platform.

INDUSTRY INFORMATION

U.S. freshwater monitoring, assessment and management runs roughly $2-3B a year across 60,000+ lakes and ponds, combining recurring monitoring with $20K$ –100K diagnostic studies. Nutrient pollution and blooms cost the U.S. an estimated $2.2B annually. Our serviceable market is the 10,000-15,000 stewarded lakes with an association, HOA or agency program. Warming water and nutrient loading keep lengthening bloom seasons.

TECHNOLOGY & INTELLECTUAL PROPERTY

A WHOI spinout funded by NSF, NOAA and DOE Phase I SBIRs, a NOAA Phase II SBIR, Schmidt Marine Technology Partners and angel investors. Held as trade secrets: a low-cost multi-channel fluorometer (phycocyanin, chlorophyll-a, turbidity, expandable to phycoerythrin and CDOM); a 5-stage antifouling system enabling six-month maintenance-free deployment; and sensor-integrated root cause and toxin-risk analytics. Full IP review planned this winter.

TRL BASED ON THE NASA SCALE

TRL Level - 8

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Expand into public-sector customers to reach a larger, more scalable market; refine automated root-cause analytics and the water-safety risk models that turn continuous data into advisories.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Public-sector procurement access and references.
2. Partner and agency introductions in Florida and the Midwest as we expand beyond the Northeast.
3. Hardware, sensor and model refinement.

KEY METRICS

2025: 3 paid pilots from 7 sales conversations; 100% renewed for second season.
2026: 12 paying customers, 13 lakes, 14 buoys across three states, plus 2 in contracting. 66% price increase between 2025 and 2026.
First public-sector customer: Martha's Vineyard Commission, two brackish ponds. Buoy senses 7 parameters at multiple depths; under $5,000, 4-year life, pays for itself in its first season.

KEY TEAM MEMBERS

1. **Casey Wilson,** Co-Founder & CEO, casey@subtidal.com
2. **Dr. Matthew Long**, Co-Founder & Chief Scientist

Titanium Technology

"Creating biofouling free submerged structures without harming the ocean"

www.titech.es

PROBLEM

Biofouling heavily affects seawater infrastructure: fuel loss on ships, degraded cooling systems, forced equipment replacement. Normal Antifouling solutions have a huge environmental impact.

SOLUTION

Electrochemically active titanium surface (under 1mm) uses ~1 W/m² of low-voltage current to permanently prevent marine biofouling — data center cooling system, marine cooling systems, ship propellers.

UNIQUE VALUE PROPOSITION

Unlocking marine free cooling for data centers delivers up to 80% cooling energy savings (~20–25% of total site energy). Removing biofouling from propellers enables a reduction in fuel consumption and greenhouse gas emissions. Furthermore, it improves performance and reduces maintenance requirements.

OCEAN IMPACT

Our technology eliminates biocidal antifouling chemicals from seawater infrastructure, preventing the toxins, microplastics, and metals these coatings release with every reapplication. It also prevents the 3-8% fuel and GHG increase biofouling causes on ship propellers, and avoids the capacity loss and equipment failures untreated marine cooling systems suffer over time, confirmed in real seawater pilots with independent water-chemistry testing.

INDUSTRY INFORMATION

Biofouling costs global shipping an estimated $30B/year in wasted fuel (Clean Shipping Coalition). The antifouling coatings market was $9.48B in 2023, growing to $16.4B by 2030 (8.2% CAGR). Data center liquid cooling, our fastest-growing vertical, is projected to grow from $4.07B (2026) to $27.65B by 2033 (31.5% CAGR), amid the EU's 2025-2027 ban on biocidal paints. Titech sits at this intersection of cost, growth, and regulation.

TECHNOLOGY & INTELLECTUAL PROPERTY

An electrochemically active titanium surface (under 1mm thick) uses a low-voltage current (~1 W/m²) to prevent marine biofouling and corrosion without biocides, via modular electronics covering ~500 m² each. Protected by two filed PCT patent applications (PCT/EP2023/062912; PCT/EP2023/078259), both pending. We're developing a lower-cost adhesive/film format to extend beyond solid-titanium components. Disclosed at non-confidential level only.

TRL BASED ON THE NASA SCALE

TRL Level - 8

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Advance the lower-cost adhesive/film format, launch the Hempel Singapore trial, and complete the MB92/PORTS 4.0 deployment, start the US NAVY project.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Closing our ~€2M seed round.
2. Converting pilots into full contracts with the US Navy and Carnival/AIDA.
3. First data center projects.

KEY METRICS

Impact to date: 4 real-world deployments/pilots (Enagás, MB92, US Navy, Hempel); zero chemicals released across a completed pilot. Prevents the 3-8% fuel/GHG increase biofouling causes on propellers, and unlocks up to 80% cooling-energy savings while eliminating 100% of cooling water in data centers. Traction: >€2M grants secured; aquaculture license signed; ~€200K expected 2026 revenue.

KEY TEAM MEMBERS

1. **Alejandro Samaniego, PhD**, Founder & CEO, samaniegoal@titech.es
2. **Gonzalo Oliveros**, Commercial Lead

Vycarb

"Technology company developing water-based carbon capture and storage solution"

www.vycarb.com

PROBLEM

Conventional carbon capture and storage (CCS) requires costly CO2 purification, compression, and pipeline transport to geologic sites, viable only for large emitters near suitable geology, with no direct way to verify how much CO2 is actually stored.

SOLUTION

Vycarb provides a full-stack on-site CCS solution as low as $50/tonne, accelerating the ocean's natural carbon storage chemistry by converting CO2 into bicarbonate, verifying storage in real time with a novel sensor.

UNIQUE VALUE PROPOSITION

Unlike geologic CCS, Vycarb needs no pipelines, injection wells, or high-purity CO2, cutting cost and deployment time at any coastal facility. Unlike other ocean-based approaches, which rely on models or proxies, Vycarb directly measures CO2 conversion, validated at >99% accuracy. This lower cost, faster deployment, and verifiable measurement is why Rio Tinto, Shell, Idemitsu, and Mitsui O.S.K. Lines have invested in and partnered with Vycarb.

OCEAN IMPACT

Vycarb's process directly reduces local water acidification by releasing bicarbonate and alkalinity at measurement-set targets. By storing carbon at the source, it also eliminates the CO2 pipeline and injection infrastructure that carries leak risk to coastal communities and offshore ecosystems.

INDUSTRY INFORMATION

The CCS industry has relied on capturing, purifying, and compressing CO2 for pipeline transport to geologic storage sites —needing >1 million tonnes/year to make financial sense, and costing over $100/tonne all-in. Vycarb instead uses water chemistry to capture and store CO2 on-site, opening CCS to hard-to-abate sectors like energy, shipping, cement, and steel priced out of conventional storage.

TECHNOLOGY & INTELLECTUAL PROPERTY

Vycarb's core innovation is a closed-loop reactor that accelerates natural mineral weathering to convert CO2 into stable bicarbonate, paired with a first-of-its-kind sensor measuring CO2, bicarbonate, and carbonate in water. Vycarb holds four patent applications across 10 jurisdictions covering CO2 neutralization and carbonate sensing technology. Independently validated by groups like the University of Rhode Island and Ramboll.

TRL BASED ON THE NASA SCALE

TRL Level - 6

SOLUTION ROAD MAP - IMMEDIATE NEXT STEPS

Finish commercial-ready system development for low-purity CO2, complete independent bicarbonate fate/transport validation with Atdepth (ocean-monitoring and modeling company out of MIT), and deploy the next 5,000 tpa project.

THREE GREATEST NEEDS IN NEXT 12 MONTHS

1. Series A capital for the 5,000 tpa commercial project
2. Continued independent ecosystem/water quality validation to support scale-up
3. Siting and offtake partnerships with industrial hosts

KEY METRICS

- 200 tonnes CO2/yr nameplate capacity at the Brooklyn pilot
- >99% independently validated measurement accuracy
- 30M+ real-time sensor data points collected in 2025
- >90% CO2 conversion to bicarbonate
- Next project to sequester 5,000 tonnes CO2/yr
- $7.5M investment closed
- >$400k carbon credits sold to Stripe, Milkywire, & selection by US DOE for credit purchase prize

KEY TEAM MEMBERS

1. **Garrett Boudinot**, Founder & CEO, garret@vycarb.com
2. **Benjamin Smith**, Lead R&D Scientist, ben@vycarb.com