



Market Update

March 2021



www.purifloh.com

- PurifLOH Limited
- Owns exclusive global rights to the intellectual property (technology) created by Somnio Global for air, water and surface sterilisation.
- Free Radical Generation (FRG) Plasma technology that destroys biological and chemical contaminants without harmful side effects.
- Patent protection
- Numerous opportunities for applications across multiple industry segments and end-user markets.
- Air / Water / Surface

ABOUT PURIFLOH

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- Global pandemic shifted the building blocks
- Engagement with global OEM organisations disrupted
- Shift from large scale OEM supported consumer product to B2B product and service solution
 - take greater control over technology commercialisation
 - Re-engineer working relationship with Somnio Global to reflect priorities and market focus
 - Focus on delivering a small, limited range of products and applications
 - Showcase the technology and demonstrate compelling features
- On-going review of product and technical evolution – prioritisation (resources/risk/reward).
- Commercial Management capability development

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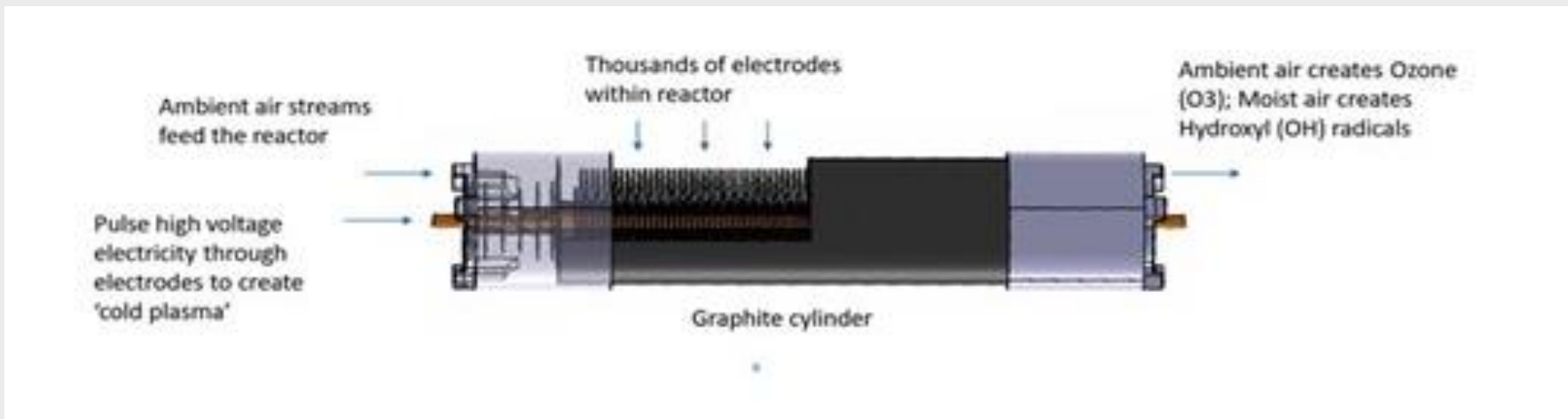
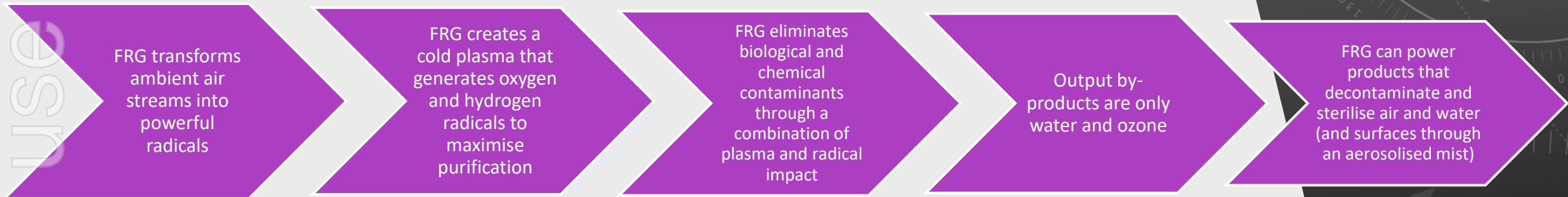
STRATEGIC RESET

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- Unique characteristics of the technology demonstrate advantages over alternative solutions - clear market value proposition
- Established industry partner interest in the core technology with a view to co-development joint venture and/or licencing arrangements.
- Established potential for State and Federal support and advanced manufacturing incentives

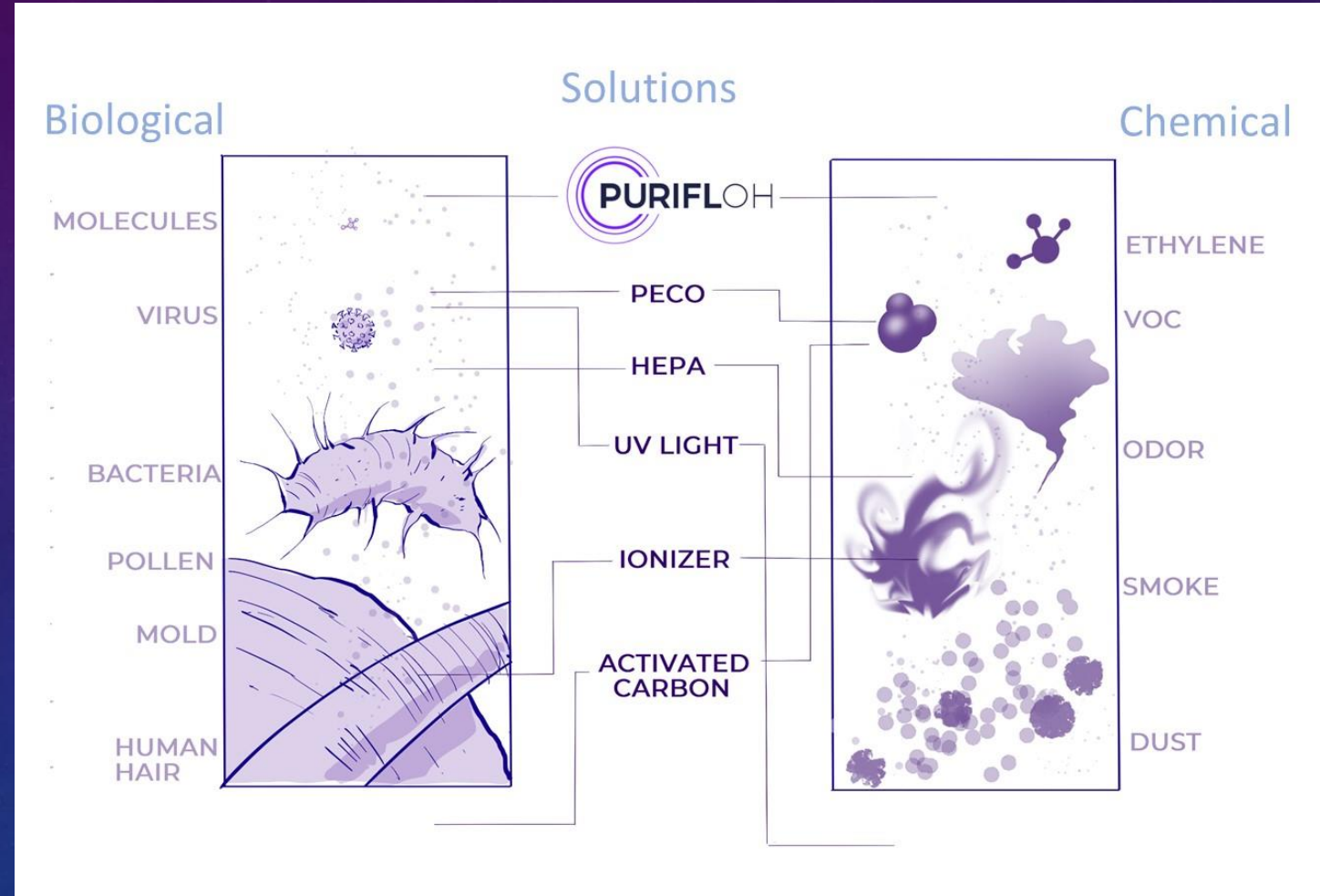
ABOUT THE TECHNOLOGY

- A proprietary method of generating Cold Plasma using Free Radical Generation (FRG).
- Cold Plasma contains three powerful oxidising ingredients known for disinfection and purification, when simultaneously applied result in superior performance.
- Scientifically and independently proven to eliminate harmful biological and chemical containments.
- Destroys viruses, bacteria, spores, mould, VOC and smoke.



BENEFITS OF PURIFLOH FRG TECHNOLOGY

- Highly effective across a broad range of contaminants
- A powerful, chemical-free process
- Low capital and operational cost
- Multiple market segment opportunities
 - Air sanitisation
 - Water sanitisation
 - Surface sanitisation
 - Medical sterilisation



SOMNIO GLOBAL

Research and Development Partner

State-of-the-art research facility on 25-acre campus in Detroit, Michigan.

Facilitate advanced scientific innovation - multi disciplines.



GO TO MARKET APPROACH

Each application has a slightly different market approach, underpinned by collaboration and forming partnerships

Collaborate with key industry participants

Select partners for whom deployment of the technology will drive/expand their core business

Select partners who have existing market access

A commitment to deployment of current technology and a commitment to supporting the pipeline of technology development

MULTIPLE PRE-MARKET READY APPLICATIONS

Clean Air

- Whole of room air purifier (WRAP) currently in Design for Manufacture (DFM).
- To market Q3 / Q4
- Evaluation of dual function air and surface sanitation system
- Air Conditioning Coil passivation solution – POC complete.
 - Novel element could result in patentable property
 - Design for manufacture (DFM) under evaluation

Clean Water

- Pre/post treatment system for Reverse Osmosis plant operators (reducing fouling of filters and membranes)
- Prototype evaluation with Australian based, global water treatment operator
- Prototype evaluation Q2
- Industrial contaminated water treatment using Direct plasma treatment technology development
- Prototype to be evaluated in Australia Q3
- Collaboration with industry stakeholders
- Design and development of larger scale to proof of concept on continuous flow scenarios

Clean Surface

- FRG plasma charged water incorporating a range of free radicals generated as a mist that kills microbes on contact
- Prototypes to be tested Q3

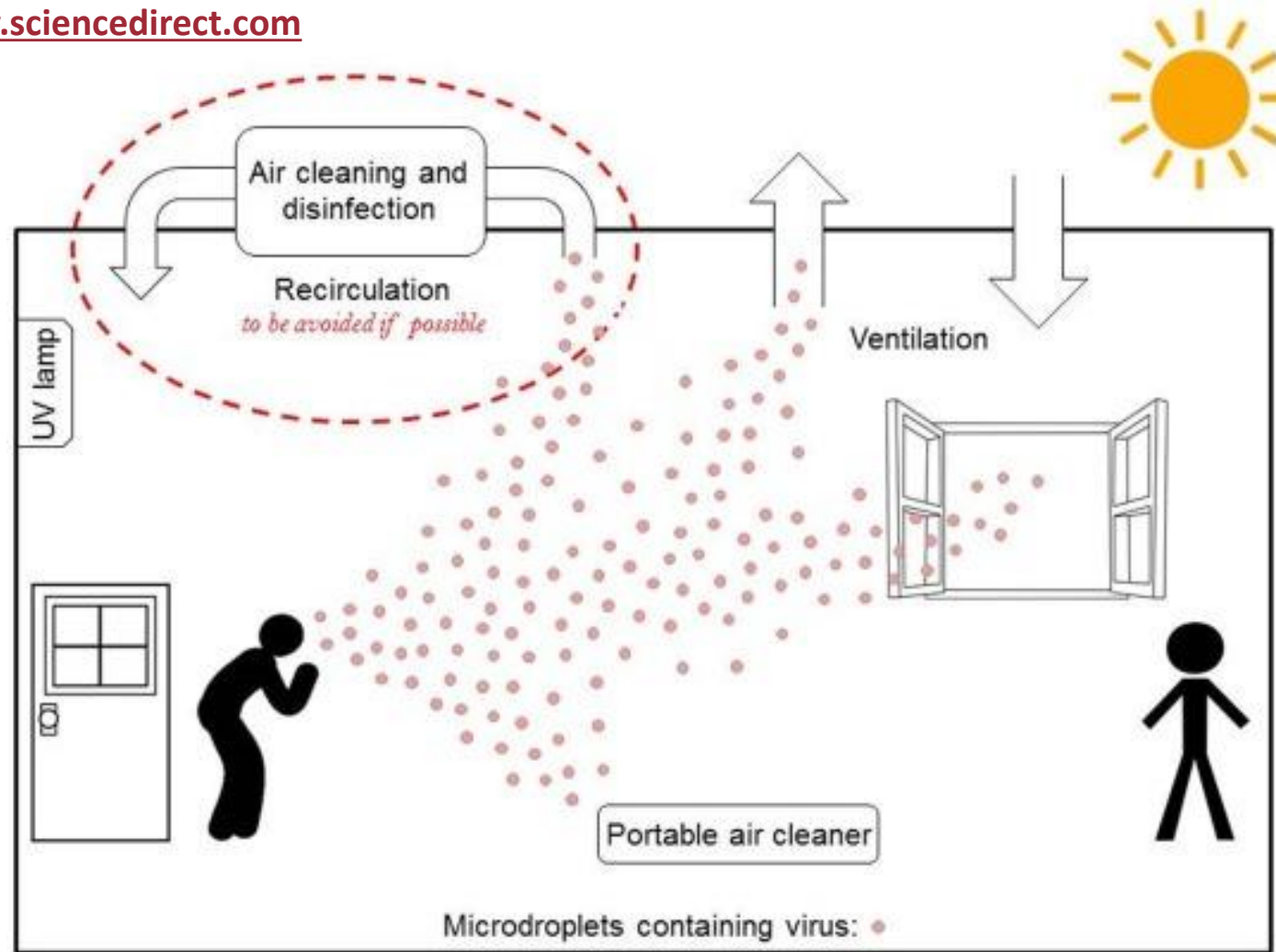
PurifLOH Safe – Infection Control in the Built Environment



How airborne transmission of COVID19 indoors can be minimised

No silver bullet – risk mitigation strategy

www.sciencedirect.com



AIR PURIFICATION

The global UV disinfection market size alone, is projected to reach USD 3.3 billion by 2026, from USD 2.1 billion in 2020

Major factors driving air disinfection market size are increasing demand for equipment due to threats of infectious diseases

	PATHOGEN STERILIZATION	VOC BREAKDOWN	SMOKE REMOVAL	EMISSION SAFE NO BY-PRODUCTS	CONSISTENCY OVER TIME	ETHYLENE REMOVAL	ODOR REMOVAL
IONIZER	Blue	Blue	Blue	Blue	Blue	Blue	Blue
PECO	Blue	Blue	Blue	Blue	Blue	Blue	Blue
HEPA	Blue	Blue	Blue	Blue	Blue	Blue	Blue
CARBON	Blue	Blue	Blue	Blue	Blue	Blue	Blue
UV	Blue	Blue	Blue	Blue	Blue	Blue	Blue
OZONE	Blue	Blue	Blue	Blue	Blue	Blue	Blue



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AIR PURIFIER

Pandemic inspired – re-directed company efforts to take control of commercialising the air purification technology.

Objective - premium product with highest levels of infection control efficacy, showcasing PurifLOH technology

Design and Industry Pty Ltd, industrial design / product development.

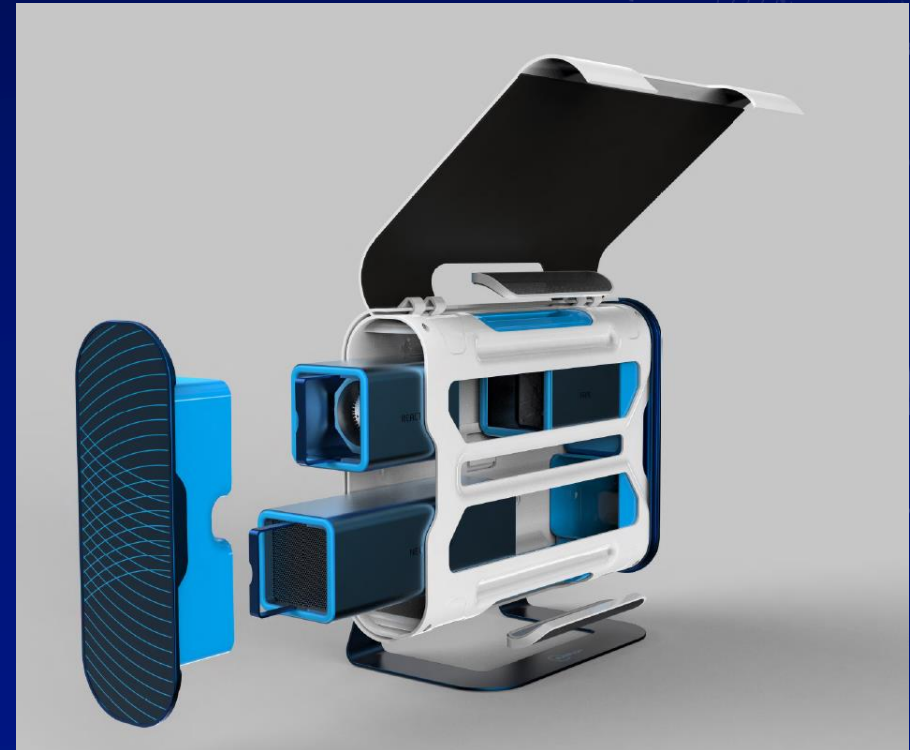
Well progressed in the Design for Manufacture phase.

Whole of room air purifier targeted at commercial clients.

Engaged with a national infection control service provider regarding channels to market for this product.

Business to business (not consumer)

Product and Service Model



AIR - Technology

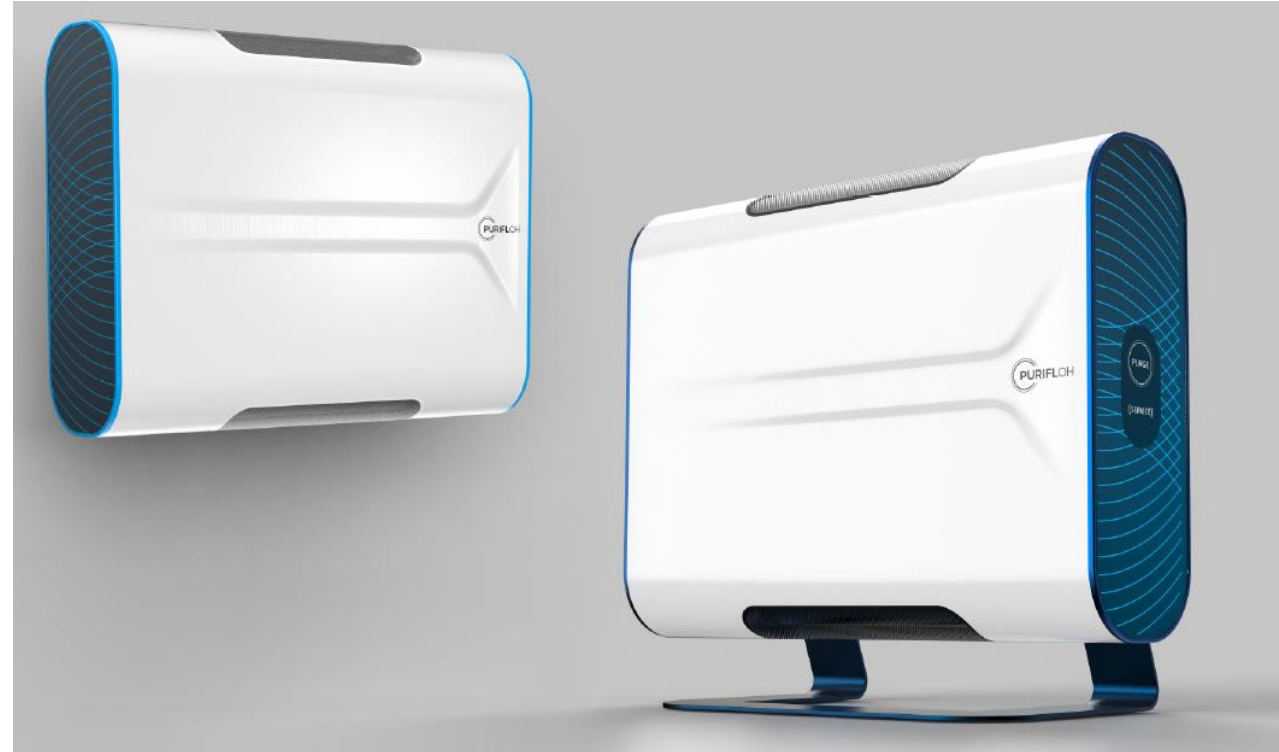


FRG – Free Radical Generation
Uses water and oxygen to create
ozone and hydroxyls to burst cell
walls (biological)

Electrons (plasma)
Kills biological by destroying cell
wall
Rip chemical bonds (even double
carbon bonds)

UV light
Destroys DNA of cell (biological)

Utilizes ambient air – does not
need pure air



Concept drawing

WATER TREATMENT – GLOBAL ISSUE

Key drivers:

- Growing global population.
- Pollution of surface and ground water supplies
- Insufficient and poor-quality water infrastructure.
- Increasing affluence and urbanization in the developing world.
- Increased demand through agricultural and industrial segments.

Market Potential

Oxidation technologies are a common water treatment application — a USD \$178 billion market pa.



Somnio Global Facilities, Water testing infrastructure

PURIFLOH WATER TREATMENT TECHNOLOGY

Substantially different to existing alternatives

Key, powerful oxidising agents including ozone and hydroxyl radicals (OH).

More powerful than Chlorine and hydrogen peroxide

Able to neutralize both organic and inorganic species.

Does not require the use of chemicals (eg hydrogen peroxide) or other consumables (eg oxygen).

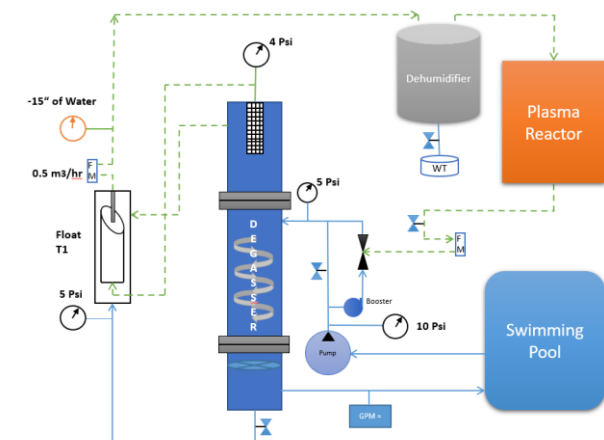
Uses ambient air, no toxic waste or by-products

Refine next phase of direct plasma technology for enhanced power and performance.

Evaluation of additives to further enhance qualities



Swimming Pool System Layout



PURIFLOH WATER TREATMENT TECHNOLOGY

- Kills biological contaminants including bacteria, viruses and protozoa (including cryptosporidium)
- Eliminates chemical contaminants including toxic compounds such as PFAS
- Elimination of other organic and inorganic pollutants including metals is highly likely with more testing needed.

Oxidizing Agent	Oxidation Potential (Volts)
Hydroxyl Radical	2.80
Oxygen (Atomic)	2.42
Ozone	2.08
Hydrogen Peroxide	1.78
Hypochlorite	1.49
Chlorine	1.36
Chlorine Dioxide	1.27
Oxygen (molecular)	1.23

Relative Oxidation Power of Common Oxidising Agents

PURIFLOH WATER APPLICATIONS

Potential applications for broad market segments include:

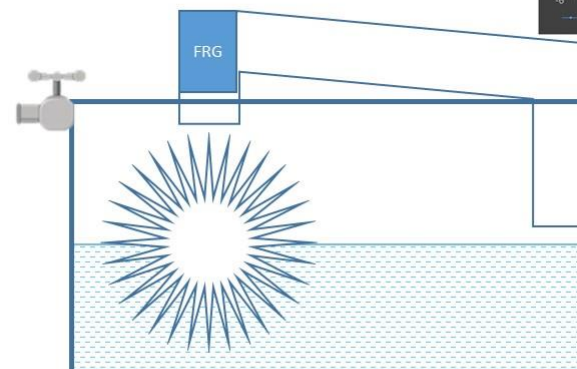
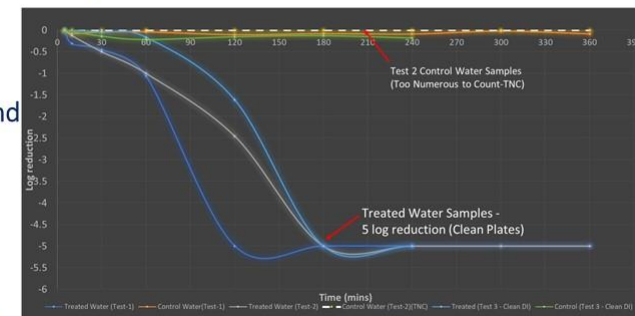
- Pre / post treatment within RO plants
- Industrial Wastewater including waste from textiles, petroleum, dyes, surfactants and pesticides.
- Environmental imperatives – PFAS, Algae
- Recreational Water (pools)

Technical platform can also produce sanitizing mist which can be utilized to eliminate infectious contaminants in medical rooms/environments.

Water Purifier – Close loop FRG

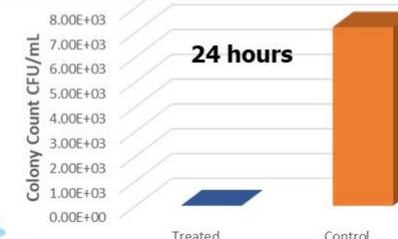
Objectives

- Biological sterilization
- Small foot print and energy demand
- Holds water sterile for months



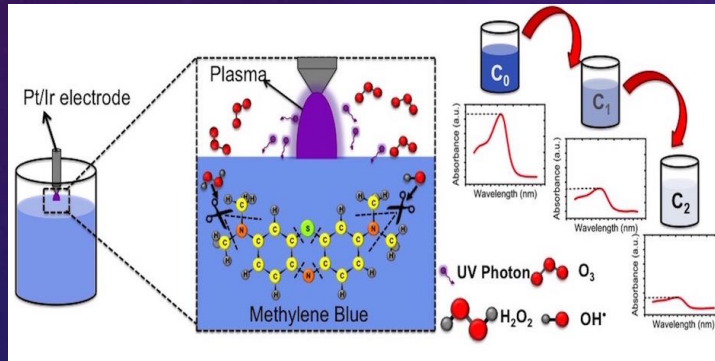
Key IP:
• Close loop FRG sterilization

Bacteria Combination	Inoculum Concentration /mL in 20 L
E. coli (ATCC 51739)	2.07E+05 CFU/mL
P. Aeruginosa (ATCC 39327)	3.26E+04 CFU/mL
E. Faecium (ATCC 55326)	8.44E+04 CFU/mL
S. Epidermidis(ATCC 14990)	1.02E+05 CFU/mL



PURIFLOH WATER TREATMENT CONCEPTS

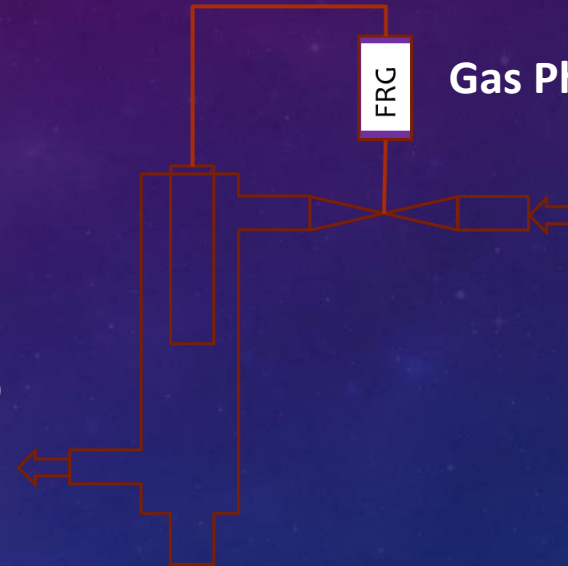
Ground/Wastewater



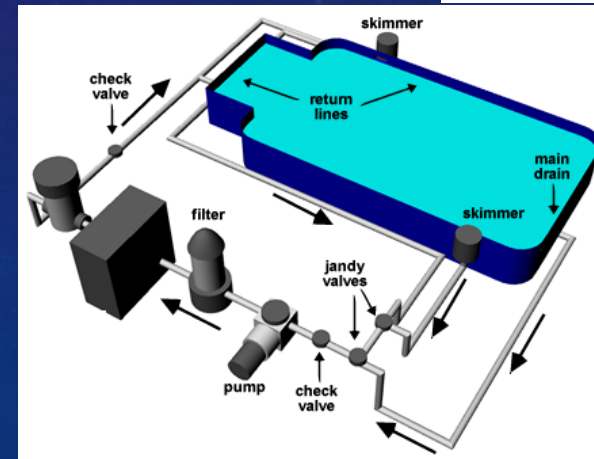
- PFAS
- Algae
- Dyes
- Drugs
- Organic compounds

Large Volume

Gas Phase Treatment



Primary goal: Pathogen Removal





WATER MARKET DEVELOPMENT STRATEGY

- Prototype evaluation of a pre/post treatment system for Reverse Osmosis plants
- Engaged with water industry professionals.
- Collaborating with peak industry organisations
- Generating Water Industry awareness of the technology and its credentials
- Aligning technology with intractable water treatment issues for evaluation
- Strategic roadmap for water to be defined Q3

NEXT PHASE DEVELOPMENT

Hydroplasma – Air Purifier and Surface Disinfection System

Core technical component is the Purifloh direct plasma water purification unit.

Cold plasma enriched mist contains powerful disinfection qualities.

- Kills pathogens and bacteria in the air
- Removes pollution and grime from the air
- Eliminates odour and smoke
- Treats high volumes of air
- Optional mist cycle to produce an aerosol borne disinfection agent – cleaning all surfaces in the vicinity

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ersonal use only

QUESTIONS

