Pontic Technology

Germ-Free, Clean Water from any Source

Innovative Technology for Water and Fluid Sterilization

Pontic Technology, LLC

US Patent No. 9,757,485 - SYSTEM AND METHOD FOR FLUID STERILIZATION
US Patent No. 10,213,517 – SYSTEM FOR FLUID STERILIZATION

Introductions

- Dr. Michael Papadopoulos – CEO & Founder
- Jim Lewis – CTO, Chief Technology Officer
- Dr. Gerald Voecks – CSO, Chief Science Officer
- Dr. John Solomon – Consultant and Scientist
- Dr. Adrian Ponce – TSO, Test and Sterility Officer

The engineering and science teams are all affiliated with NASA's Jet Propulsion Laboratory

About Our Company

Pontic Technology is a cutting edge technology corporation founded by Dr. Michael Papadopoulos and is located in Los Angeles, California.

Dr. Papadopoulos had one goal in mind, to be the global leader in providing an innovative process for cost effective clean water and fluid treatment, water recovery and recycling.

The company to-date has not sought any outside funding, it has no debt. All technology development and company growth has been self-funded by the company founder and CEO Dr. Michael Papadopoulos.

This unique team has developed and patented two completely new and innovative approaches to water cleanup using two new technologies to solve the increasing problem of providing low cost, germ free and toxic chemical free water and fluids.

About Our Team

- Pontic Technology LLC has an entrepreneurial and innovative team
- The company has a multidisciplinary group of scientists, engineers and master fabricators, from the Caltech Jet Propulsion Laboratory (JPL) in Pasadena, California
- Together, they have extensive experience bringing innovative ideas to practice and preparing new technologies for production, marketing and distribution

Competitive Landscape

- Most community water treatment systems today are based on reverse osmosis or filtration technology. These systems require maintenance and routine replacement of all membrane/filters. The use of water filtration and reverse osmosis are expensive, and poor maintenance or failure to replace cartridges can expose users to pathogens, while the use of chlorine to disinfect water produces carcinogenic trihalomethanes and haloacetics acids. Consequently, Pontic Technology LLC has developed TDSS technology to meet the urgent need for sterilizing large volumes of water cheaply, without consumables or regular maintenance requirements, without degradation of chemical water quality, and no waste product. Our high temperature/pressure purification and sterilization system has no filters, no moving parts and requires little maintenance. Moreover, the distinctive and unique taste of refreshing mineral water is due to the dissolved mineral content, which remains after TDSS treatment, which is not the case for RO systems. It can operate for years with only water and standard voltage/amperage electricity. The thermal disinfection process significantly outperforms current water treatment systems, including Reverse Osmosis (RO), UV lighting, ozone and chlorine, as shown in sterility assurance level results achieved via bacterial spore inactivation. The TDSS technology is fully autonomous with a host of pre-programed safety features, and can be monitored and controlled remotely by smart phone apps.

Why Is Our Company A Solid Investment

- Our technology is disruptive and innovative
- It's USA patented and foreign patents
- It has been tested and validated
- The company has been self funded
- We have no debt
- With the right partner, we can take our turnkey technology to market

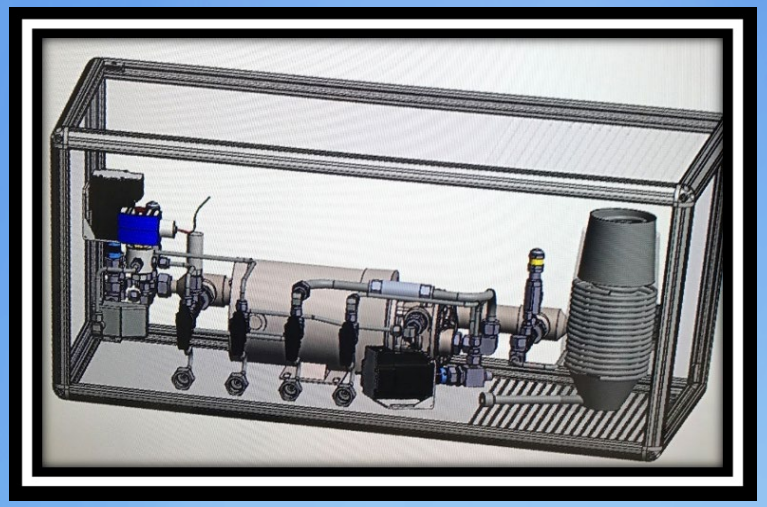
Our Novel Technology

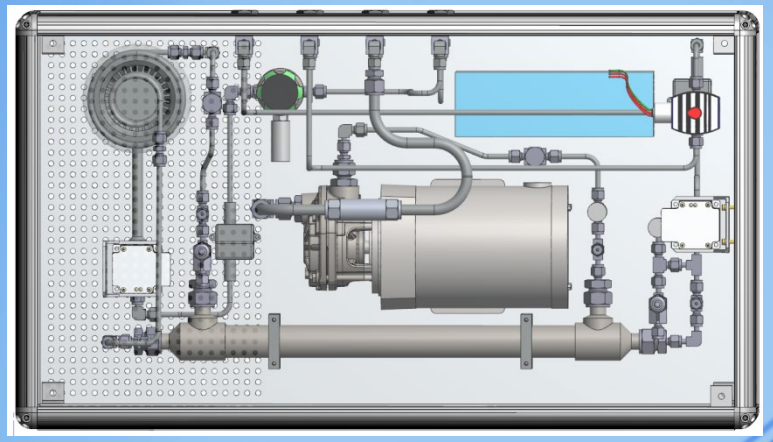
Thermal Disinfection Sterilization Systems
(TDSS)

Water and Fluid Sterilization via High Heat Inactivation

Our TDSS Products

- Our first technology offering is a revolutionary, no filter, continuous flow, low cost, customizable, no waste product, water sterilization system for eliminating microorganism/biological contaminants
- It is designed to provide clean, germ free water regardless of the contamination level of the source





TDSS Technology Overview

- Single flow pass through process
- No filters
- No Added Chemicals
- Eliminates all Microorganism Contaminants (bacteria, viruses etc.)
- USA Patented and foreign patents
- Competitively Priced
- Continuous Flow
- Can change temperature and pressure while operating
- Independently Tested & Validated – 3 times
- No Waste Product, volume in equals volume out
- Minerals Not Removed
- Scalable & Customizable
- Remote Monitoring and Controlling by smart phone app

TDSS – Differentiators vs. Current Water Treatments

- Significantly outperforms current water treatments including:
  - Reverse Osmosis
  - UV Lighting
  - Ozone, Chlorine & Chloramine Processes
- Models use Natural Gas/Hydrocarbon Fuel or Electricity. Options include solar power and solar concentration heating methodologies
- Pressure, Temperature, & Dwell Time is the primary method for sterilization
- Designs include using waste heat from existing sources (generators, engines etc.) to reduce operating costs

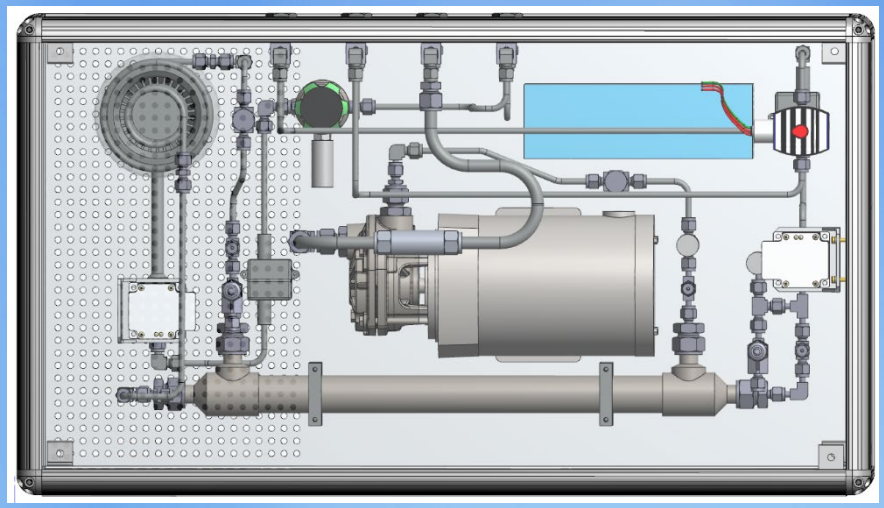
TDSS – Differentiators vs. Current Water Treatments (Cont.)

- Single Flow Pass Through Process
- Continuous Flow with Real Time Variation
- Continuous flow with Real Time Temperature Variation
- Sterilization Assurance Level Achieved- Better than 6 log bacterial reduction
- Portable, Scalable, Customizable -100 -100,000+ GPD
- No Waste
- No Filters and No Moving Parts
- No consumables
- Smaller footprint
- Thermal inactivation is the most optimal method of micro-destruction
- Minimal Maintenance Required, time and operations
- Operating Performance By App or Smart Phones
- Operates at Competitive Price in Remote Areas
- 5+ Year Lifetime
- No Expense of Adding Chemicals
- Change pressure and temperature when operating
- Mobile Units

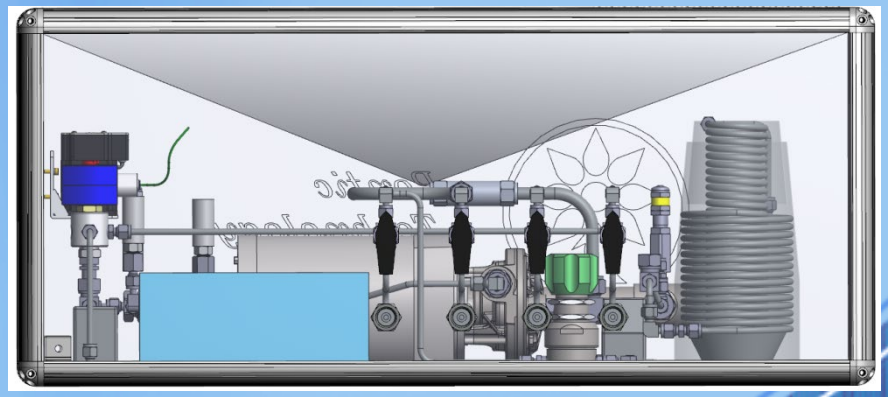
TDSS - Base Model Specifications

- **Dimensions**
- 86cm x 45cm x 45cm
- Mass: 25kg
- Production: 2000 liters/day at a 6 log reduction SAL
- Energy Consumption:
- Gas Model – 0.0017 Liters of fuel used per liter of water sterilized at a cost of ~$0.0004/liter
- Electric – 0.023 KWhr per liter of water sterilized at at cost of ~$0.002/liter
- **Options include:**
- Solar Panel & Rechargeable Batteries
- Solar Concentration (for areas with 80% sunlight)
- Remote System Control - Fixed, Vehicle or Airplane

TDSSe (electric)



TDSSg (gas)



Technology Markets

- **Residential** - End of line use, Whole house, Counter top models, Under sink, Recycle water (Re-use)
- **Industrial** - Clean waste water\fluids of organic and inorganic contaminants, germs, grey\black water decontamination treatment and recycle water\fluids
- **Industrial** – Food and Beverage, Pharmaceutical, Semiconductor, Aerospace, Energy companies
- **Medical** – Dialysis water, decontaminate surgery waste fluids, water autoclave. Decontaminate hospital laboratory waste water
- **Pediatric & Neonatal** – Clean, safe water for infant formula
- **Dental** – Germ free dental water use

Technology Markets (cont.)

- **Commercial** - Bottled water, restaurants, hotels
- **Government** - Disaster sites, refugee camps, internally displaced peoples, military deployment units
- **Hotel & Food Industry** – Potable water distribution systems
- **Groundwater Recharge** – Decontaminate water
- **Ships** – Ballast water treatment
- **Agricultural** – Water Reuse
- **Petroleum** – Fracking-produced water cleanup & recycle
- **Spas** – No chorine and chemicals
- **Municipalities** – Potable water, re-use projects

Company Overview

- Formed LLC in August 2016
- 100% Privately Owned
- Self-Funded
- **No Debt**
- No Contingencies
- Additional Technologies To Come- Chemical Decontamination
- Strategic Objectives:
  - Continue to develop, Test and Validate chemical decontamination technology (3DOSS)
  - Build Business Infrastructure around TDSS and 3DOSS
  - Present Opportunity - an Early Stage, Pre-Revenue “Turn-Key” Technology and Company

Investment Goals

- Technology Alliance Agreement (TLA)
- Joint Operating Agreement (JOA)
- Technology Licensing Agreement (TLA)
- Strategic Alliance Agreement
- R&D Investment
- Partnerships
- Collaboration

Leadership Team

Dr. Michael Papadopoulos - Founder & CEO

The driving force behind Pontic Technology and the development of its first technology – an innovative, competitive cost, no waste, patented thermal disinfection water sterilization system. Has self-funded all technology development and company operations to-date. A practicing Dentist for more than 28 years, whose business acumen is highly respected, as is his knowledge and expertise in clinical training and advanced oral health care. Education: DDS, University of Southern California (USC) Herman Ostrow School of Dentistry.

Leadership Team

Jim Lewis – CTO, Chief Technology Officer In charge of overseeing the design, development and implementation of all company technology systems. Senior Test Engineer at NASA's Jet Propulsion Laboratory (JPL) and their lead for chemical propulsion and process automation. Lead integration engineer for Mars In-Situ Resource Utilization (Air & Water) Experiment (MOXIE). Past duties include Space Shuttle Systems Engineer and Test Director for Mechanical Truss systems on the International Space Station. Veteran: U.S. Special Forces officer (27 years active and reserves), including multiple Middle East combat tours as a Special Forces team, company and battalion commander. Recipient of 30+ military awards including Bronze Star and U.S. State Department Meritorious Honor award for work with Afghan District Governors in Afghanistan. Education: B.S. in Physics/Computer Applications, University of Alabama; Masters in Aerospace Engineering; Masters in Space Systems Engineering, both from Florida Institute of Technology.

Leadership Team

Dr. Gerald Voecks – CSO, Chief Science Officer In charge of technology advancements and use of maximum science applications. Senior Scientist at NASA's Jet Propulsion Laboratory (JPL) and their lead for development of in situ sensors for NASA's life support systems and in advancing technologies of NASA's space program for In Situ Resource Utilization for future human missions. Past duties include development of heterogeneous catalysts, designed for hydrogen production/hydrocarbon combustion. His work has pioneered catalyst systems designs and reactor designs that have been incorporated into operations on aircraft, vehicles and stationary powerplants and been active in fuel cell systems development. Currently holds 20 patents, is co-author 20+ publications, and is a Visiting Scientist at Caltech. Education: BSE, MA, PhD in chemistry, covering areas of inorganic synthesis, photo catalysis and reaction mechanisms. Postdoctoral work was in inorganic/organic surface chemistry.

Leadership Team

Dr. John Solomon: Dr. John Solomon is one of the consultants and scientists that overlook research and development of flow systems and water sterilization experiments. He is a tenured Associate Professor of Mechanical Engineering at Tuskegee University, Alabama. His research interest is experimental fluid mechanics and he holds two US patents for developing actuators for high-speed flow control.

Leadership Team

Dr. Adrian Ponce – TSO, Test and Sterility Officer In charge of ensuring the development and testing of company technology in meeting highest water sterilization assurance and validation standards. Senior Scientist at NASA's Jet Propulsion Laboratory (JPL) and chemistry faculty at Caltech. Research interest investigating microbial survival and growth have taken him to extreme environments, including the Atacama Desert, Chile, and the Kilimanjaro glaciers. A list of published articles is available online at http://ponce.caltech.edu. Education: Ph.D. Chemistry, Caltech for research on electron transfer in proteins and water.

Other technology development team members include engineers and scientists in thermal dynamics, computer science, and fabrication development.

TDSSg - Gas Base Model System

TDSSe/g - Front Panel

TDSS - Emergency Deployment Unit

Connects to car battery or small generator

Pontic Technology in Puerto Rico

A team from Pontic Technology arrived in Puerto Rico during the aftermath of Hurricanes Irma and Maria. The challenges brought about by these hurricanes only weeks apart caused a tremendous amounts of devastation to Puerto Rico including loss life, severely damaged infrastructure, impassable mobility corridors, electric grid problems and drinking water shortages.

The mission of our team was to set up, assess and evaluate the Thermal Disinfection Sterilization System (TDSS) under these conditions in the field.

TDSS Field Testing was a Success!

- The TDSS unit was easy to set up with the provided step by step instructions.
- The time from initial set up to continuous sterile water production was generally around 40 minutes.
- This unit produced 500 gallons per day making germ-free drinking water available for over 1000 people per day.
- The small (16oz.) propane tanks were readily available and very efficient.
- The electrical inverter attached to the car battery had no problem running the system.
- We were able to draw from a water source that was 10 feet lower than the TDSSg. There were no problems with the pumps capacity.
- The over all weight of the TDSSg was manageable with two people.
- As a result of this field test, we designed and produced an Emergency Deployment Unit specifically for these types of operations.