Molecular Impact Energy Inc.

Executive Summary

New & Better Technology

Creating Electrical Power from the Brine Waste of Desalination Plants or from Sea Water

Image depicts a cavitation bubble about to implode and generate intense heat

Introducing the "Molecular Impact Engine" and the Harnessing of Atomic Repulsion.

Molecular Impact Energy Inc. is looking for an investment partner to assist us in developing larger prototypes and to help us better develop our Sales platform

The Problem MIE has the solution for:

Beyond the global need for Electric Power from clean technologies, there is the need for Clean and drinkable water. Seawater has become the necessary origination point for communities all over the world with insufficient fresh water for their needs. Seawater obviously requires Desalinization Plants. These plants consume enormous amounts of Electricity. Electricity is expensive, and even worse, the lifegiving fresh water these plants deliver, also comes at the cost of what can be a catastrophic level of environmental damage from the waste product. Typical Reverse Osmosis Desalination Plants produce a Brine Waste effluent that has 2 to 3 times the salt concentration of sea water, and some plants dump even higher concentrations. When this concentrated Brine Effluent is dumped into the ocean, as is typical, it often creates an extensive DEAD ZONE where all marine life is killed off.

Even where the effluent has not yet created extensive dead zones, it creates high mortality among marine life in the area it is dumped. This is a problem that could cause cataclysmic changes in Seafood Industries around the world, as well as destroying Tourism Economies wherever the dead zones spread to. This is a problem previously with only very poor solutions. This is a problem that has been solved by Molecular Impact Energy Inc.

A Molecular Impact Engine, adapted to a Desalinization Plant, can generate most or all of the electricity needed to run the plant.

The fuel used by the Molecular Impact Engine, IS the Brine Effluent, from the Desalinization Plant.

Our Molecular Impact Engine uses up the Brine no one knew what to do with. The exhaust of our Molecular Impact engine is a combination of Oxygen gas, Hydrogen gas, and some mineral powders that include Lithium, an incredibly valuable mineral, and one that could be extracted later from the precipitate.

A Molecular Impact Engine is a brilliant piece of simple technology.

It is not built with expensive components or the huge footprint of a nuclear plant. Instead, it is built with tech that is much closer to the complexity and scope of diesel engines.

The MIE engine is inherently modular in it's design, and one unit could start out running a city block, and then by adding a series of small modules, ultimately grow to a power output of hundreds of megawatts (power equivalent to run an entire city).

A Molecular Impact Engine has brine or saltwater injected into "Vorticially Shaped Impact Chambers", each one not much larger than the battery of your car. This injection is hydraulically powered at very high "pounds per square inch". The injectors "mist" the high psi brine water into "nano-bubbles" which are too small to see with the naked eye. When these nano-bubbles impact the sides of the impact chamber, the cavitation implosions that follow begin a force that "drives protons together" with so much force, that electrons are

ripped off them, resulting in what is known as Coulombic Explosions. You may remember coulombic explosions from High School Chemistry, where a tiny flake of Sodium is dropped into water, and a massive explosion results. The explosion is faster by far than thermal explosions, and prior to the Molecular Impact Engine, no one had successfully harnessed a continuous series of Coulombic explosions. Our Molecular Impact Engine is not only ideal for harnessing continuous coulombic explosions from the injected brine, it is also ideal for harnessing the much higher speed of explosion in a coulombic reaction. One of our proprietary designs for this is a custom built Rotary Expander by Vengeance Power, which is able to harness "SHOCK WAVE" forces that translate to much more power than simple thermal expansion can supply—such as gas in the engine of a car.

Our next generation prototype is intended to be installed at the city of Lake Worth Beach Power Utility; a natural gas run electric plant which supplies electricity to Lake Worth residents during peak power periods. Not only could our system allow Lake Worth to create 10 to 18 times the electricity it currently does for the same money—meaning FPL would no longer be the primary revenue beneficiary….the MIE Engine would also mean the energy production coming out of Lake Worth Power Utility would have 10 to 18 times less carbon emissions, as our system produces no carbon.

The Lake Worth plant is also connected to a solar installation in Lake Worth, currently producing 2 megawatts, expected to put out over 10 megawatts in the near future. The town and this power utility are an ideal installation site for our Molecular Impact Engine, as a showcase to the world of how it can change the game in energy production. We would plan to add a high-end Sales Trailer on site here, to be close to the 40 foot container the MIE Engine will be built within. This location will draw in Energy Companies, and representatives of Cities and Countries. They will visit for the purposes of understanding our solution to their problems, seeing the Molecular Impact Engine in action, and to purchase our modular solutions. As the working model producing energy for the town becomes national and global news, the real question will become "how many units can we sell per week"? With the Town offering us an ideal location for a manufacturing facility, and with nearby Florida Atlantic University already involved with students and faculty in the prototype builds, we have a ready force of highly trained engineers and the capability of beginning a rapid production manufacturing facility in months rather than years. Equally significant is the fact that the cost to build each unit is a fraction of what each unit could sell for. Profit margins could be quite large, and this would be part of later discussions with our investment partner(s).

Company Overview

Molecular Impact Energy Inc., is a development stage technology company with proprietary technology that enables efficient steam generation at a level never possible before. Our technology leverages hydraulic pressure, cavitation and coulombic explosions to produce steam and electricity more efficiently than existing processes. MIE was founded and managed by a team with a successful track record launching and growing new businesses. The company holds three

patents (one pending), which extensively cover the use of this technology and has developed successful working prototypes that demonstrate viability and efficiency.

MIE seeks to exploit the worldwide industrial markets where steam represents a significant component of operating cost. Major large industrial markets include, but are not limited to:

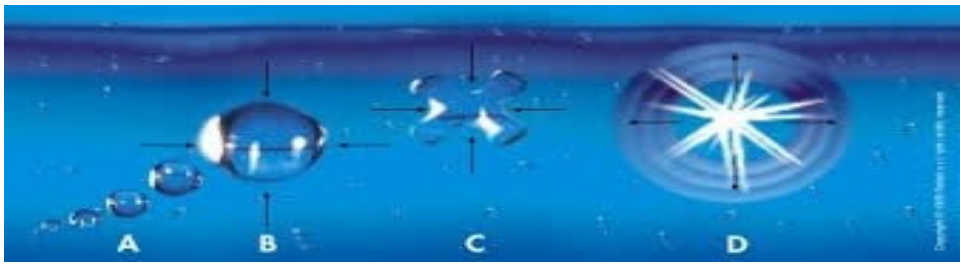
- Power generation – Micro Grids
- Desalinization
- Enhanced oil recovery (EOR)
- Textile manufacturing
- Tri-generation (heating, power generation and desalination)

Our Molecular Impact Engine is the first commercially viable system capable of harnessing the power of cavitation and coulombic explosions to produce continuous steam energy without a boiler, at a fraction of the cost of using traditional steam methods. The applications of this new energy conversion system are very broad. The "Engine" incorporates MIE proprietary impact chamber design technology into a scalable steam generation system capable of producing superheated steam for significantly less energy than traditional boilers.

Technology

The birth of the industrial revolution began with a proliferation of inventions utilizing steam. To this day steam is still responsible for 90% of the energy generated in this country and worldwide. Steam power requires a heating source. This is typically either fossil or nuclear fuel. The MIE technology utilizes a relatively small electric starter source to inject the brine vapor at high pressures into the impact chambers, where coulombic explosions generate ten to 18 times the electricity used to create the explosions and resultant steam. Traditional power generation methods are exponentially more expensive to produce a Kilowatt Hour of energy with. Current steam generation methods utilize a boiler or tube system heated by a fossil or nuclear energy source, and they require between 10 and 18 times more energy per pound of steam created, than the MIE prototype. The efficiency is achieved through the Molecular Impact engine's ability to harness both cavitation and coulombic energy.

Cavitation is the process of vaporization, hydrodynamic bubble generation and bubble implosion in a flowing liquid. When cavitation bubbles collapse, the instantaneous heat within the bubbles can reach temperatures approaching multiples of the surface of the sun.



Investigation and theoretical analysis of the process of sono-luminescence, whereby light pulses are emitted by collapsing cavitation bubbles, revealed extreme conditions within the collapsing bubble cores: temperatures in excess of 30,000K (5 times hotter than the surface of the sun) and even higher temperatures (in the millions degrees K) have been inferred[i].The challenge has been to develop a practical means of capturing this energy and converting it into a useful source, such as steam.

Molecular Impact Energy Inc. has solved this problem by designing a straightforward electromechanical system. Our system uses mechanical energy to convert water directly into steam via the process of cavitation and subsequent bubble collapse. Modified automotive fuel injectors are used to accelerate water saturated with cavitation micro-bubbles at a specially designed heated impact target in a vorticial impact chamber. During the collision with this target, enormous hydraulic pressures collapse the bubbles within the injection volume to release intense energy. In Physics, a behavior described by the Rayleigh-Plesset Equation very aptly describes how the molecular impact engine produces so much kinetic energy and such large shock waves. The cliff notes version of this Equation is that when very small bubbles approach zero volume, as with our nanobubbles, implosions mean something you would not expect – that with a theoretical zero gas content for a bubble, the implosion of the bubble gains an infinite inward velocity. There is much more to the actual dynamics of this, but for now please see this as a look into the background of why tiny injected bubbles can have so much potential for an explosive release of kinetic energy or heat…In the plasma reaction within the impact chamber which occurs from the imploding cavitation bubbles, the outer electrons are torn off by this energy, and sodium protons from the brine are forced so close together that their coulombic repulsion forces create explosions and shock waves with far greater speed and impact potential than is possible with thermal reactions, as you would find in gas engines or coal power or any normal combustion process.

To reiterate, the bubble implosions in our "Molecular Impact Engine" are so small and the inward velocities are so high, that the kinetic energy involved tears apart the chemical bonds, shearing off the electrons , and this Cavitation induced chemistry THEN causes the Coulomb Explosions when Sodium or potassium is present in the plasma reaction from the cavitation implosion.

The resulting heat contributes to the creation of superheated steam without a boiler and at a fraction of the energy required for traditional steam generation.

The MIE system for producing steam is simple, easy to manufacture and, most importantly, can generate high quality steam for a fraction of the cost of traditional steam generation. Virtually all steam systems require large amounts of energy. Based on our initial prototypes with fresh water Molecular Impact engines, we estimated that the MIE system utilized 1/5 to $1/10^{th}$ the amount of power required to operate conventional boilers. These measurements were validated by Florida Atlantic University in January of 2014. (See the attached document: MIST (MIE Licensee) Steam Production Energy Balance Testing). In the new Saltwater or Brine prototype we are now building, power outputs are predicted to be between 10 and 18 times greater due to the coulombic explosions that are not possible with fresh water(sodium must be present for these explosions to occur).

Molecular Impact Engine

The MIE team has developed numerous prototypes over the past 5 years, with each iteration improving efficiency and operability of the design. The performance of the basic element of the invention, the impact chamber assembly, has been successfully validated and is ready to be scaled up into a pre-production unit.

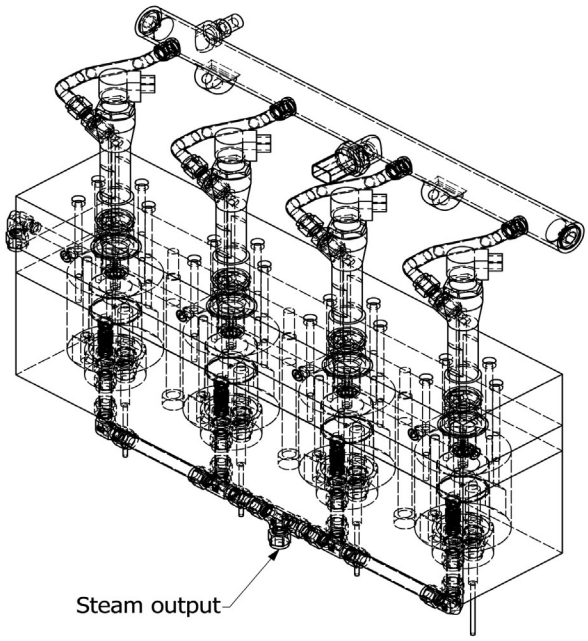
The next phase of developmental work involves scaling up the basic impact chamber unit into a system comprising 32 impact chambers, pumps, hydraulics and electronic controls, which is capable of producing well over 1000 pounds of steam per hour. This can be accomplished within 6-8 months based on current designs. Over this time period we will have developed the available sources for the injector drive system, control software and electronics needed to scale the system up to 25,000 to 50,000 pounds of steam per hour.

Our goal is to build the Lake Worth prototype inside a 40 foot container that powers a one megawatt rotary expander for electrical generation, tied in to the power grid of a town. Due to successful past meetings with the Mayor, the City Manager, and Director of it's Power Utility, we will locate this unit in Florida nearby the "Lake Worth Beach" Power Utility. It will be a working showpiece and it will become the foundation for our Sales efforts as we bring this technology to the world.

Below is a four impact chamber early prototype of the system mounted on a two cylinder steam engine.

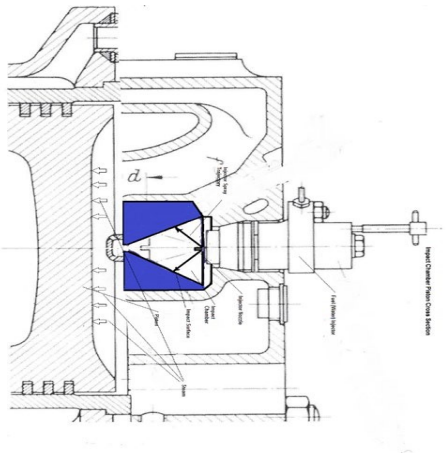
Early 4 impact chamber module operating a simple steam engine/generator combination

Shown below is a similar engineering drawing of the 4 impact chamber test unit shown above:



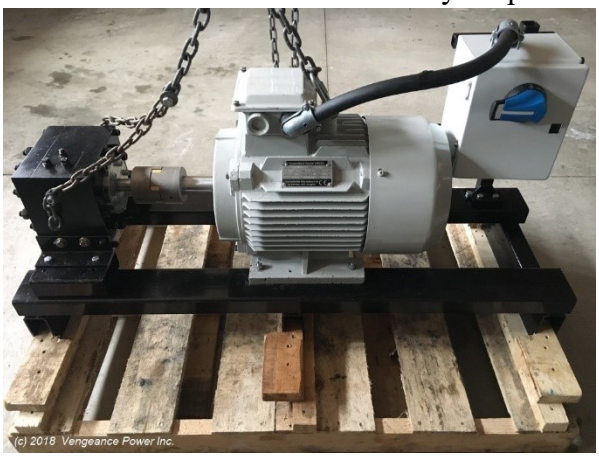
4 impact chamber module

Rotary Expander by Vengeance Power

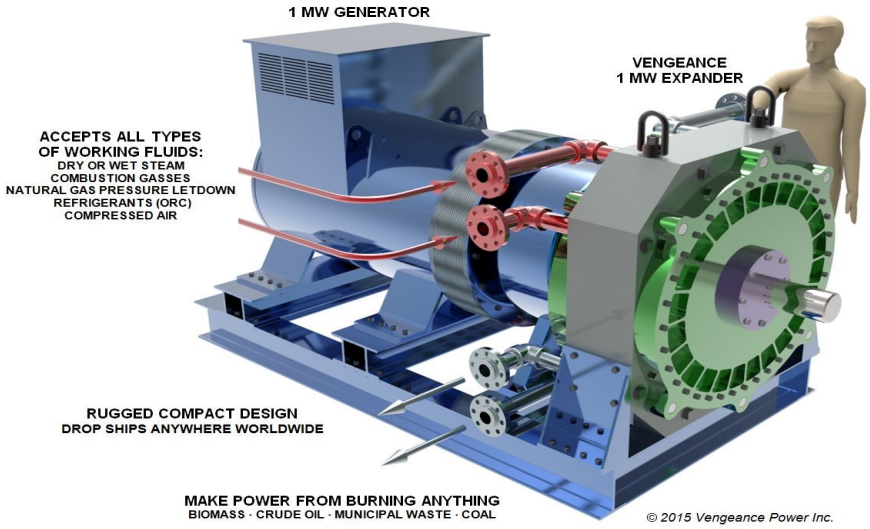


Single impact chamber module for a Rotary Expander. The Steam generated by a cavitation engine drives the Rotary Expander, which is the most efficient system in existence for capturing the combination Shock Wave and Steam energy produced by the Molecular Impact Engine.

The 10 KW model of the Rotary Expander below, can accept steam and shockwave power efficiently from a Molecular Impact Engine…



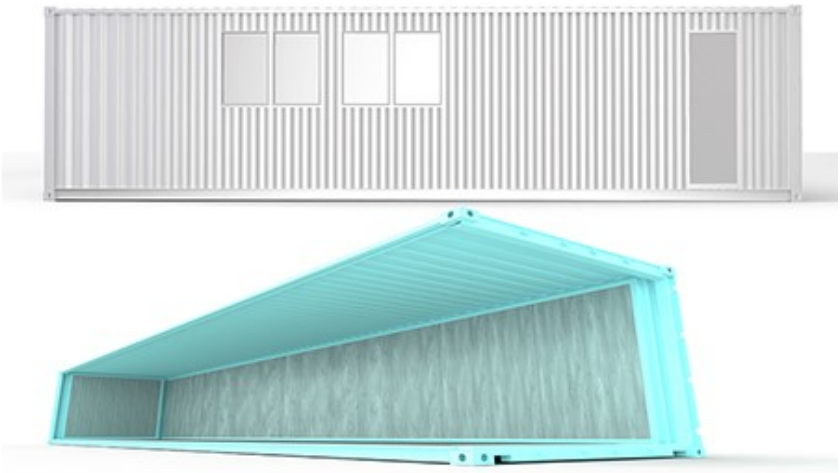
The custom Molecular Impact Energy Systems version of the "Vengeance Power" Rotary expander for phase one of our project, will look similar to the 10 KW version at left.



The 1 Megawatt version below is the size we would be paring with the Molecular Impact Engine at the Lake Worth Power Utility site, for initial demonstration in powering parts of the Lake Worth grid..

MIE has a workable design of our customized Rotary Expander and this will be a priority in the ongoing development program for MIE.

The Molecular Impact Engine will fit easily into the 40 foot container used for micro grid sized installations.



Depiction of a 40 foot container.

Intellectual Property

MIE has strong patent coverage for its technology. Relevant patents held by Richard Aho and William Mee (See Executive Team) is summarized below:

• Generation of Steam by Impact Heating US Pat Application No. 13.324,353 12/13/2011
Allowed in US to be filed in multiple venues
• Cavitation Engine PCT International Application
Application No. PCT/US2016/032689 (Patent Cooperation Treaty)
• Apparatus For Recovering Energy From Water European Patent Application 10778095
Issued in China and Hong Kong

In the case of MIE our application is fully explicable, easily reproducible and all aspects for the invention are covered by the patent.

There are several atomic level mechanisms involved in our cavitation system, being studied at this time by multiple Universities. The manner in which we harness Coulombic Explosions is obviously one of these, and the potential for "Proton to Proton Fusion" occurring has been well developed in a paper by Dr. Nigel Dyer, entitled "**On the possibility of hydroelectric Fusion – The evidence from the CES steam generators**" (Available upon request).

Markets

The worldwide market for steam is enormous, particularly where industrial processes require a steam source that can meet their specific needs. The global market for steam generators and boilers is expected to reach beyond $36B by the end 2019[ii]. Demand is being driven by expansion of electricity generation and the replacement of old and inefficient boilers and steam generators. Environmental considerations are a major driver in the increased demand for more efficient steam generation technology. MIE is targeting four major markets where steam is extensively used and the ongoing cost of producing steam directly impacts the unit costs of the end products. The four markets are as follows:

- Desalinization
- Micro grid and localized electric power generation
- Textile manufacturing industry and co-generation
- Enhanced oil recovery (EOR)

Desalinization

There are 160,000 desalination plants worldwide producing 140 million cubic meters of brine per day. 175 countries have desalinization plants. Saudi Arabia, UAE, Qatar and Kuwait produce 55% of the global desalination brine. In a typical desalinization plant with an average daily need of 15,000 KW Hours of power, a Molecular Impact Engine would use 1000 KW Hours per day of power input from the pre-existing electric power grid, to generate coulombic explosion based power of well over the 15,000 KW Hours of power required to run the plant. Power production could be ramped up to utilize all the Brine effluent, and excess electric production would become a profit centre for each facility. Meanwhile MIE solves the environmental catastrophe that increased dumping of brine into the oceans will cause, and does so without carbon emissions.

Micro Grids

Generally, steam used in power generation is highly centralized and produced on a large scale, utilizing massive boilers and turbines. MIE is looking to supply the markets where wind and solar are growing components in “micro-grids” where there is a need for power sources that are independent of the wind and sunlight, but are still minimally grid connected. Such micro-grids, especially in developing countries, India for example where fuel is mostly imported and expensive, are viewed as an alternative to costly infrastructure grid connections. The company’s CES500xx product line is adapted to localized small scale power generation.

Textile Manufacturing

Steam is widely used in the textile industry. In every process related to manufacturing textiles such as, in spinning, weaving, processing and garments, it is used. Steam is used for drying, heating and maintaining the temperature of textile production systems. All of these applications and systems require electrical power. The high pressure and temperature steam exiting the CES500xx system can first be circulated through the low capacity power generation apparatus. We have selected technology partners that will supply critical components including external power generators and turbine expanders.

Oil Extraction

The term ‘enhanced oil recovery’ (EOR) refers to the technology used to extract crude oil that cannot be extracted through conventional technologies from oil reservoirs. It is also termed as tertiary recovery process as it takes place after primary and secondary oil recoveries. Oil extracted via primary recovery accounts for 5% to 15% of the total reservoir while secondary recovery can extract about 20% to 60% of the total oil present in the reservoir. By installing enhanced oil recovery technology, 35% to 75% oil can easily be extracted from the oil reservoir.

To extract the proved reserves, oil extraction companies are pushing the use of enhanced oil recovery in existing oil wells. Thermal enhanced oil recovery technology consumes hot water and steam to stimulate the extraction of crude oil from the reservoir. The commonly used steam injection enhanced oil recovery methods are cyclic steam stimulation (CSS), steam assisted gravity drainage (SAGD) and steam flooding.

Steam dominates the thermal technology market and is significant in North America as most of the imported crude from Canada (35% of all US imported crude) is extracted using SAGD. Per barrel energy costs in producing this oil are heavily dependent on the cost of manufacturing steam. We estimate the MIE steam technology can cut the energy required

for extraction by as much as 75% making this oil more competitive in a market which has witnessed wide swings in crude unit prices.

MIE breakthrough technology will significantly change the various markets using steam, because boiler efficiency is an important part of a purchase evaluation since the annual cost of fuel can easily be 2 to 3 times the installed cost of the equipment. Therefore, a difference in efficiency and the resultant difference in fuel cost, which in the MIE case can easily offset the difference of installing the product. In many cases, the fuel savings in the first year exceed the difference of the installed cost of the steam system.

Revenue Opportunities

Products – Development Path

The basic product MIE will manufacture is it's Molecular Impact Engine, a steam generator, albeit the most efficient steam generator ever created. The initial models will be the MIE1000xx series, using MIE proprietary technology.

As you look at Steam Power generation around the world, the greatest cost component with steam boilers would be the annual operating cost, not the installation cost. We estimate the MIE steam generator would cut this annual operating cost by much more than 75% and potentially add much more steam production potential than existed before it's implementation. The "xx' portion of the model refers to the number of modules added to meet the steam requirement of the specific industry.

The MIE1000 is a steam generation system producing over 1000 pounds of steam per hour. Depending on the industry, multiples of this steam generator may be employed with varying degrees of cost savings as certain elements of the basic system can also operate additional modules without additional cost. Steam consumers can replace existing boilers with the low operating cost MIE1000xx and save the cost of purchasing and installing the MIE1000xx system within 1 or 2 years.

For our cost to sale profitability at this early stage, the following proposal by Richard Aho for a desal plant is worth using as an example. ***This formal offer is to produce a prototype MIE device capable of processing 1.2 cubic meters of 16% brine solution. The proposal includes a rough estimate of how much power this device can produce.***

Richards quote: *We would use 16 injectors or 4 sets of 4, all grouped together and exiting from the same output. This will be 100 lbs of brine, each total of 400 pounds of Energy output per 4 injectors, will deliver 20 KW. This is using 600 degrees for a sealed impact chamber and 900 PSI. This unit will produce 80 KW or more for the ganged injectors as described.*
This assumes the rotary expander output is 70% efficient .

The 4 units are mounted in a X shape each coming into the center output pipe for the specially designed rotary expander, that absorbs the shock waves from all 4 units at the same time. 16 injectors will each fire 10 times a second, meaning we get 160 injections a second and a very powerful shock wave.

Cost for one such unit would be about $93,000. The next 3 we build will cost about $70,000 each. The Rotary Expander is a separate cost for each unit, and would be in the neighborhood of $70,000 each. Total sales price to the Desalination Plant could be quite a bit more, and as each new MIE Engine is built, our cost to build each will decrease. As the technology develops over the following few years, costs will drop dramatically, and profit potentials will soar with this new technology.

*****It is extremely important to note in this discussion of costs and profits, that Desalinization and environmental destruction by brine effluent will drive Sales of the Molecular Impact Engine, with cost being a minor factor in the price ranges we could profitably offer. The only solution to their problem is the Molecular Impact Engine. *****

Licensing

The company is exploring licensing arrangements based on market vertical and geography. Following the successful completion of our pre-production "proof of concept" system we will seek to license our proprietary technology to manufacturers with distinct geographical territories. MIE has already licensed the technology to entities in the Indian and UK to commercialize the technology. This particular manufacturing group has facilities within the Special Economic Zone (SEZ) in Hyderabad, which allows them to bring in material duty free and export finished product tax free for 10 years, they also have distribution in the Middle East and China.

We expect to sell exclusive licenses for North America, South America, Europe, Middle East, China, Southeast Asia, Australia and Africa. We anticipate some of these opportunities will involve co-ownership of the manufacturing companies and others will be a mixture of royalties and ownership.

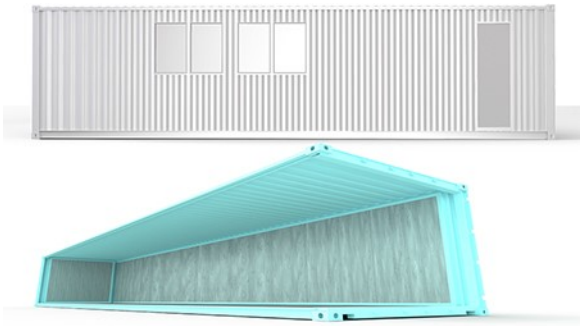
Current Licensing arrangements include.

Market / Region	Entity	Interest
India	Greenberg Ventures	49% Equity Interest
United Kingdom	David Allsopp	None. In consideration for $500K loan forgiveness (amount subject to revision).

Canada & MA Boston, (Non-Performing)	MIST Steam LLC	25% Equity Interest

MIE Investment Priorities

The protype MIE Engines will be built within 40- foot Containers at Florida Atlantic University Dania Campus, in close proximity to a US Naval installation.



The Naval Surface Warfare Center Carderock Division's South Florida Ocean Measurement Facility (SFOMF) is located on the south side of Port Everglades inlet in walking distance to the College of Engineering at FAU. SFOMF is a member of the Naval Sea Systems Command team and falls under the cognizance of the Naval Surface Warfare Center. Naval Sea Systems Command is developing several technologies that will reduce the Navy's energy consumption across the fleet. The US Navy has aggressive energy goals to reduce the Department of Navy's consumption of energy, decrease its reliance on foreign sources of oil, and significantly increase its use of alternative energy. The purpose of these energy goals is to improve US Naval combat capability and to increase our energy security by addressing a significant military vulnerability: dependence on foreign oil.

One of the Navy's energy goals is to demonstrate and then deploy a "Great Green Fleet," which will include ships and aircraft using alternative sources of energy, including nuclear power, and utilizing multiple energy conservation measures as part of their regular, scheduled deployments. Naval Vessel propulsion is yet

another major market for the MIE Engine, and FAU is already collaborating on many projects with the Naval installation. The people from FAU helping us in the buildouts of our two new prototypes are constantly involved in projects with the Naval installation, particularly our contacts at FAU's Seatech Research Center. Our Collaboration with FAU should provide many benefits beyond just the engineering and manpower issues.

The table below sets out the budget for the development of two next generation prototypes and key tasks required to secure CES intellectual property and initialize a licensing and sales organization.

Budget Area Description	**Budget Amount**
MIE 1000 Prototype Build (Two Systems)	
Engineering, Design, Machining & Tooling	$300,000
Components	$300,000
Software Development	$100,000
Outside Validation Testing	$200,000
Sub-Total	**$900,000**
IP Filings & Legal	$500,000
Licensing & Sales Facility at Lake Worth Power Utility and Sales Team	$500,000
	$1,900,000

Upon the successful completion of the MIE1000 prototype and successful third party validation testing management anticipates the emergence of licensing opportunities that will provide the first revenue stream. Management also anticipates the need for additional funding to continue development of the technology and the development of preproduction prototypes once the prototype phase is complete.

Executive Team

Richard Aho

Richard Aho is the President of MIE. Richard is actively involved in research and development in the field of Molecular Impact technology and is co-inventor of the technology covered by the current provisional patent and continues to work on design improvements and ancillary applications that utilize MIE technology.

Rich has an aptitude for engineering and entrepreneurial enterprises. Rich founded automotive aftermarket company Mile Marker Inc. in 1979 and managed the company as President and CEO until 2005. Mile Marker Inc. grew to over $50M in revenue based in part on Rich's innovative two speed hydraulic winch which became a standard winch for the U.S. military's HUMVEE during the first Gulf war.

After retiring from Mile Marker, Richard, began experimenting with mechanical steam production. After many tests Rich filed the first patent covering impact heating.

William Mee

Bill co-founded Cavitation Energy Systems in 2012 with Richard Aho. He has a deep technical expertise and background in electronic control engineering, biomedical engineering and software systems engineering. Bill started as an engineering consultant to the company and later became Director of Technology Development. Bill performed the original investigational research which led to the discovery of cavitation as the heating mechanism and later worked closely with Richard in drafting the basic provisional patent covering the company's core technology.

Prior to joining the company Bill was an independent engineering consultant, working on embedded design and complex Internet based Saas (Software as a Service) applications.

Bill was the co-founder and chief design engineer for Verimed, Inc. in 1983. Verimed was a Florida corporation focused on the design and manufacture of computerized instruments for use in the evaluation and rehabilitation of neurological deficits of voluntary motion. Bill holds several patents, the most significant of which was for a Proportional Response Electrical Muscle Stimulation System (PREMS).

Bill earned his Master of Science degree in engineering from the University of Miami in Florida and his Bachelor of Science degree in Engineering from Brown University in Providence Rhode Island.

Matteo Cucchiara

Matteo was a partner in CES since its conception in 2012 and is now on the board of Molecular Impact Energy Inc. as the Treasurer of MIE. As a former geologist, systems analyst, author & entrepreneur Matteo brings significant science and business experience to the team.

Matteo handles technical writing and communications for MIE. Matteo has degrees from Fordham and New York University and has worked as a senior systems analyst for both Merrill Lynch & Chase Manhattan Bank. Matteo is the CEO of Cinema Island Productions and has written three screen plays, authored four books..

Natalija Koverznevova

Natalia Koverznevova is a Mechanical-Engineer who graduated from the Ivano-Frankivsk International University of Oil and Natural Gas; located in the Ukraine. In the U.S.A., she continued with her education and earned a Master's degree in Arts & Science.

From the beginning, Natalia participated in, and contributed to, many of the numerous research studies which have supported and proven the value of the CES technology.

Natalia's mission was always to bring something exceptional to this world and to help people increase the quality of their daily lives; Natalia believes that this new and evolving technology is a great opportunity for her to complete her mission and introduce to the world a unique and inexpensive way of using green energy.

Sales Team

Cynthia Gorsica

Cynthia has an extensive and successful record in Communications, Advertising & Marketing, and in Real Estate Sales. As point person with investor relationships, Cynthia will be working at the highest levels of sales for MIE, both Internationally and for Energy Tourism in Lake Worth Beach, as the working model goes on line.

Dan Volker

Dan Volker has an extensive background in Advertising, Marketing and Science, and Dan has produced the current Cav-energy.com website, as well as many of the technical papers now in use. Dan brought Florida Atlantic University to the project for their engineering potential in building the prototypes, and for their credibility as a stakeholder in our technology and its application. FAU also supplies MIE with a ready supply of Students and Engineers that will be qualified for employment with MIE in the future manufacturing facilities. Additionally, Dan succeeded in selling the Mayor of Lake Worth Beach on the promise of this technology for the Town of Lake Worth Beach itself, and was able to get the City Manager of Lake Worth and the Director of the Power Utility to agree that as soon as the current prototype is completed at FAU and generating KW hours of energy, at the indicated levels, they will want the MIE Engine in it's 40 foot container installed at the Lake Worth Power Plant.

Cynthia and Dan will be the primary Sales Force for MIE.

Advisory Board

David Allsopp

David is an early investor and advisor to CES (the company preceding MIE) and provides guidance to the company regarding equity investment and financing. David currently holds a license for the CES technology for the United Kingdom.

Prior to his involvement with CES he started several companies in the UK. He began his career managing the London office of Hayden and Stone and then later Prescott and Co. His specialty was in institutional marketing of securities. David is a graduate of Eton College in the United Kingdom.

Alfred Cucchiara, PhD.

Dr. Alfred Cucchiara, PhD., was a consultant for CES for a number of years. Alfred spent over thirty-five years at Hanford National Laboratory in nuclear biophysics and Los Alamos National laboratory working in the nuclear weapons and nuclear health science. Alfred has been instrumental in helping to explain the physics behind the CES technology.

Alfred holds three patents covering sub-atomic particle analysis and a noble gas separation. Alfred has authored or co-authored twelve nuclear-related papers, one of which was recognized at the American Radiation Safety Conference & Exposition in 2002 in Tampa.

Nigel Dyer, PhD.

Nigel is a technical consultant to MIE with experience in bio-informatics, water chemistry and the physics of liquids. Nigel presently has a teaching position at the University of Warwick in the United Kingdom. Nigel has numerous publications and has developed intriguing theories regarding the physical interactions occurring within the MIE system.

Bruce A Pankow

Bruce was involved in an Engineering and Design capacity with CES. Bruce is responsible for the design and machining of the CES prototypes and provides engineering and design support to the CES team.

In 1980 Bruce started Proto Tool Company serving automotive, aircraft, defense, agricultural, energy industries. Proto Tool Company has provided continuous service to noted industries from

coordinated design concepts, program management, prototype development, short run production. Projects include cad design, fabricate, build and build to customer prints and concerns. Ferrous, non-ferrous, non-metals in material forms such as castings, billet stock, weldments, forging, etc. are areas of development and sometimes require product testing , best manufacturing process development. Also a supplier of Tooling Aids, Gaging / Check Fixtures, reverse engineering of components.

Bruce is a graduate of Henry Ford and Schoolcraft College and is a chapter chairman of the Society of Automotive Manufacturing Engineers (SME).He is a former member of the American Society of Quality Control Automation Alley (ASQC).

Don Prohaska

Don is a Managing Shareholder of MIST Steam Power LLC located in Boston, MA, and early investor in the CES technology. MIST has a licensing arrangement with CES and has been involved with the CES team for over four years.

Don was responsible for recruiting Florida Atlantic University to do initial testing/due diligence on the CES technology (which led to the MIE system) as well as engaging other universities to examine the technology. California State University, for example, suggested that the CES technology may represent a superior technology for producing on-site hydrogen via steam reformation using natural gas as a feedstock.

Don has thirty-five year background in technology transfer and venture capital. He spent eighteen years in Germany assisting alternative energy companies there in funding raising and international marketing of their respective technologies. He is the former president of a PEM (low temperature fuel cell company) fuel cell venture that was sold to a US oil major, and also the former president of a solid oxide fuel cell venture that is still in operation in Europe.

In addition to his activities with MIST Steam Power LLC, Don is a partner in a wireless power venture that has already raised approximately fifty million dollars, a BlockChain/ICO venture headed by a former director of Intel, as well as a cancer immunotherapy venture funded by twenty million dollars to date that has shown extraordinary results in treating all types of cancer in socalled “first-man” trials without the need for chemotherapy.”

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Appendix – Florida Atlantic University Energy Balance Testing

MIST LLC (A CES Licensee) Steam Production Energy Balance Testing

MIST Steam Production Energy Balance Testing

Florida Atlantic University (FAU) , Boca Raton, Florida, was contacted in January of 2014 regarding the possibility of collaborating on testing the MIST LLC steam production prototype.

Dr. Manhar Dhanak, head of FAU's Department of Engineering (see "Profile" below), agreed to visit with MIST executives and an initial meeting was held in early January of 2014, which included participation by Dr. Dhanak and some of his staff including FAU Senior Engineer John Frankenfield (see "Profile" below).

Dr. Dhanak was very interested in the MIST technology and agreed to arrange for his staff to witness and participate in additional demonstrations and testing of the MIST prototype which at the time was located at MIST's Ft. Lauderdale facilities.

Subsequently John Frankenfield visited MIST LLC facilities several times to witness and monitor the operation of the MIST prototype. The prototype energy balance tests were monitored by John Frankenfield during a demonstration on March 14, 2014, and are described below. They have been attested to by John Frankenfield in an email exchange dated April 3, 2014 (available upon request).

Based on the positive results of the prototype energy balance witnessed and attested to by John Frankenfield, Dr. Dhanak sent MIST Steam Power LLC an official Letter of Interest regarding FAU's interest in a collaboration with MIST LLC on further testing and development of the MIST technology (see copy of attached letter from Dr. Dhanak, dated March 26, 2014).

At the time of initial meetings between MIST and FAU, FAU was involved with various research activities with the US Navy. FAU's interest in MIST therefore extended to possible application of the MIST technology for US Navy applications such as shipboard power generation, desalination and possibly propulsion.

The State of Florida curtailed FAU's budget by thirty percent shortly after their meetings with MIST and they were unable to follow-up on a collaboration. MIST executives have continued to update FAU on their prototype development activities and MIST is now

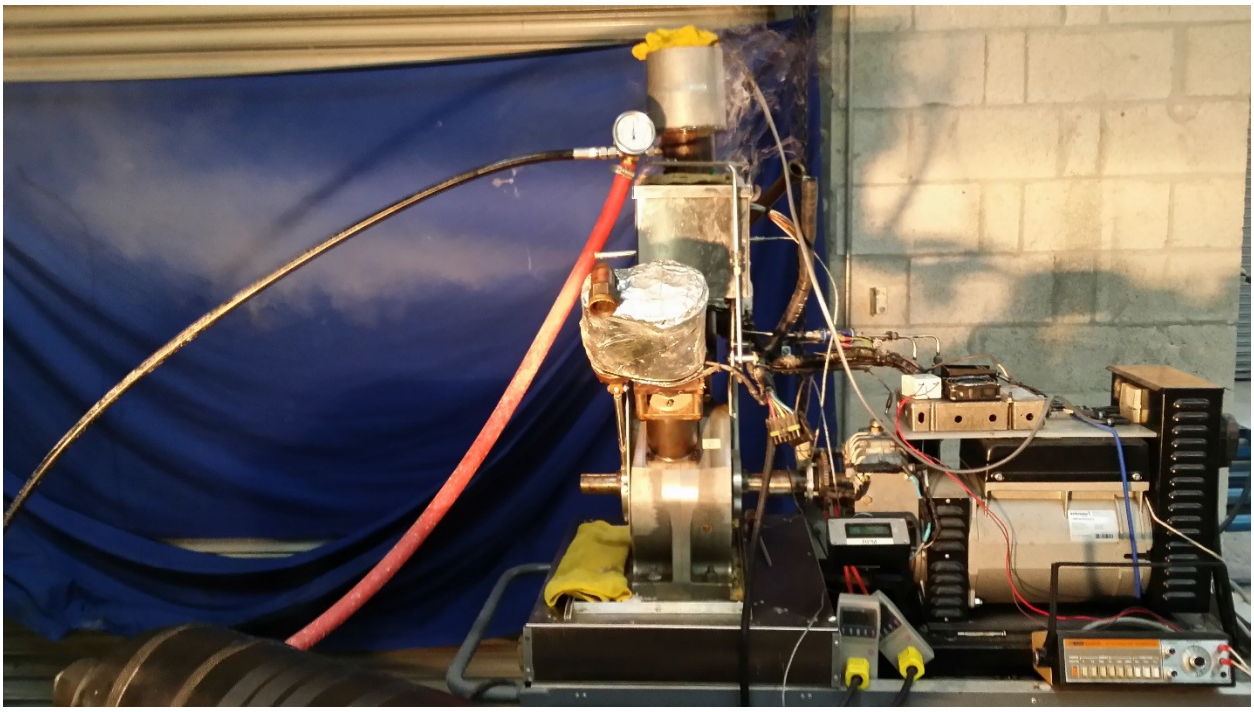
seeking outside funding to continue activities with FAU with possible participation by the US Navy.

The following is a summary of the March 14, 2014 prototype demonstration that FAU's lab engineer John Frankenfield monitored and subsequently served as the basis for FAU official declaration of interest in collaborating with MIST LLC. The report was prepared by William Mee, a MIST LLC associate who has a Master's of Science degree in Mechanical Engineering from the University of Florida including extensive course work in thermodynamics.

On March 14th of 2014 the single injector impact chamber was tested at our facility. The objective of this test was to evaluate the energy balance. Thus it was our challenge to compare the MIST system to a conventional Rankine cycle boiler. To accomplish this we were tasked with measuring the power consumption of each of the system components and comparing this to the amount of steam generated by the system. This is the prototype unit that we have been working with over the last few years.

The impact chamber is situated at the top, just above the inlet pressure valve to the hydraulic injector. The impact unit is mounted on top of a V-twin steam engine, which presently is not being used, but will later be employed when we add the 4-8 chamber piezo-electric injector bank. To the lower right is a 15 KW generator set which is also not being used. To the lower right a variable frequency output pulse generator is visible. This is used to control the injection pulse rate. To the bottom lower left the pressure tank of the hydraulic accumulator is visible as is the black pressure line connecting the inlet pressure gauge.

In the middle center two of the power meters are visible with yellow connectors plugged into the respective receptacles.



Experimental Apparatus

Experimental Setup

MIST prototype unit with recording power meters (wattmeters) connected to the chamber heater/thermocouple assembly, hydraulic accumulator pump and circulating feedwater pump.

1. The energy for the injector is derived from a hydraulic pump system based on a 3000 psi hydraulic accumulator. The pump maintains a pressure opf 2550 – 2900 psi and drives an injector with a 7.0 to 1 amplifier piston. The pump runs intermittently to maintain this pressure.

2. A separate heater and thermocouple is used to provide initialization heating of the impact chamber and a an electronic injector drive module operating from a 12 volt DC system is used to provide the control signals to actuate the injector at different pulse rates.

   The heater/thermocouple module has a heater system that utilizes 900 watts per hour maximum.

3. A recirculating water pump is used to provide feedwater to the injector body.

Testing

Two separate tests were run. Both test durations were for 20 minutes.

1. The first test was run using an injection rate of 5 pulses (injections) per second which translates to 18,000 per hour or 6,000 injections for the duration of the 20 minute test.
2. The second test was run using an injection rate of 8 pulses (injections)per second which translates to 28,800 per hour or 9,600 injections for the duration of the 20 minute test.
3. The amount of water injected per injection is precisely 0.3 ml. In subsequent measurements where the exact weight of water passing through the system during the test was weighed the discharge factory rating of the fuel injector was validated to be precisely 0.30 ml per injection.

Summary of Test Results

NOTE: The water pump runs continuously for 20 minutes per test and uses 90 watts. The hydraulic pump runs intermittently.

The following table summarizes the results of the two tests. The first test was conducted for 20 minutes using an injection rate of 5 pulses per second and the second test used an injection rate of 8 pulses per second. The following table shows the computed results.

TEST 1: 5 pps	Min	Total Inj	lbs of H2O	KWh	Watts In	BTUs	Watts Out	Heat Ratio Out/In
Water Pump	20	6000	3.80	0.09	90			
Hydraulic Pump	7	6000	3.80	0.1	100			
Heaters *	Intermittent	6000	3.80	0.146	146			
Totals		6000	3.80	0.336	336	4750	1392.088	4.14

Test 2: 8 pps	Min	Total Injections	lbs of H2O	KWh	Watts In	BTUs	Watts Out	Heat Ratio Out/In
Water Pump	20	9600	6.080	0.09	90			
Hydraulic Pump	12	9600	6.080	0.14	140			
Heaters *	Intermittent	9600	6.080	0.22	220			
Totals		9600	6.080	0.45	450	7600	2227.34	4.95

* Heater runs Intermittently

Conclusions

These results raise major questions, particularly with respect to the first and second law of thermodynamics. The energy balance test shows between four and five times more energy produced than consumed. Firstly, there is no violation of these immutable laws. There is however, a physical and chemical dynamic explanation for these results. The results we observe are consistent with what is well known regarding cavitation.

The modified diesel fuel injector propels,under high pressure, a cloud of cavitation energy bubbles. This is well established science with respect to injector theory. Given the proximity of the injector orifice to the impact chamber wall and the geometry of this orientation there is an immense impact pressure event. During this event the cavitation bubbles within the ejection fraction are crushed and release enormous heat energy.

Similar “excess” energy has been observed in a commercially available cavitation heating device marketing by Hydro Dynamics Corporation for processing bio oil to exhance yields (described here in this September 17, 2013 article: http://www.natlantis.com/griggs_pump.htm). The MIST technology represents a substantial upgrade in efficiency of steam/heat production in comparison to the Griggs Pump.

Florida Atlantic University

Florida Atlantic is classified by The Carnegie Foundation for the Advancement of Teaching as a research university with high research activity.[40] The university has established notable partnerships with major research institutions such as The Scripps Research Institute, the Torrey Pines Institute for Molecular Studies, and the Max Planck Society.[9][41][42]

The university is the home of two centers of excellence: The Center of Excellence in Biomedical and Marine Biotechnology and The Center for Ocean Energy Technology. These centers have been selected by Florida's Emerging Technology Commission to receive grants to continue and increase their operations. Florida Atlantic beat out some of Florida's top research universities, including the University of Florida and Florida State University, for the initial money from the state.[43]

SeaTech - The Institute for Ocean & Systems Engineering

Dr. Manhar Dhanak Profile

Director: ***Manhar Dhanak, Ph.D.***
Professor & Director,
Institute for Ocean and Systems Engineering - SeaTech
Department of Ocean and Mechanical Engineering,
Florida Atlantic University

DR. MANHAR DHANAK is the Director of The Institute for Ocean and Systems Engineering (SeaTech) at Florida Atlantic University, having served as the chair of the Department of Ocean Engineering for the past six years. He is also a professor in the newly formed Department of Ocean and Mechanical Engineering with research interests in hydrodynamics and physical oceanography. Dr. Dhanak serves on the Board of the Southeast Coastal Ocean Observing Regional Association (SECOORA) and is the Chair of the Florida COOS Consortium. He is a graduate of the University of London and has served as a Research Fellow at Imperial College, London, as a Research Scientist at Topexpress, Cambridge, UK and as a Senior Research Associate at University of Cambridge before joining FAU.

Dr Dhanak is one of the early users of autonomous underwater vehicles (AUV) as mobile platforms for oceanographic observations, including measurement of ocean turbulence. He has participated in at-sea AUV-based observational experiments in the Mediterranean and the coasts of Bermuda and Florida and has carried out research funded by the Office of Naval Research (ONR) and the National Science Foundation. Dr Dhanak was the Principal Investigator on ONR's National Naval Responsibility for Naval Engineers program at FAU, is currently PI on ongoing ONR-funded programs in advanced autonomous surface vehicles and development of advanced-vehicle hydrodynamic assessment tools, a co-PI on a $2M project in ONR's Seabasing

program, and a co-PI on FAU's Center of Excellence in Ocean Energy Technology. He has consulted on development of several outfalls off the US east coast and water intake systems for power plants in Mexico and the Philippines. He provided expert witness testimonies for a fatal air crash in the Bahamas and for wave-induced coastal damage in Baja-California. He is the author of several publications in scientific journals.

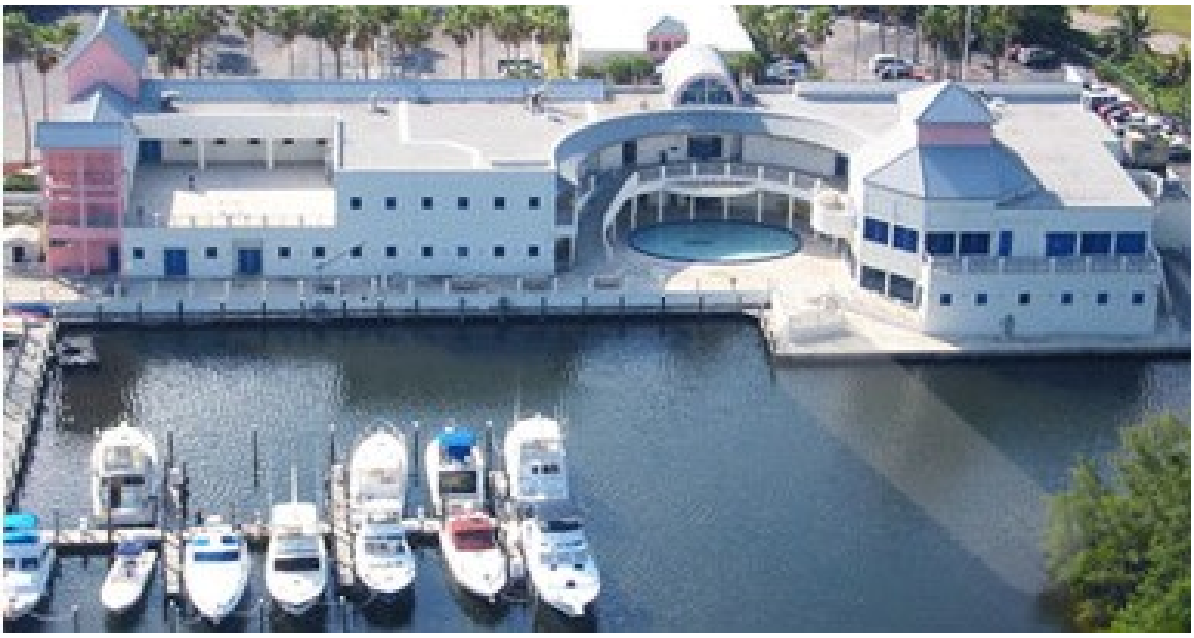
Dr Dhanak has served on the Governing Board of the Consortium of Oceanographic Research and Education (CORE) and is currently an institutional representative on the Consortium of

Mission

The mission of SeaTech - The Institute for Ocean and Systems Engineering - is to provide an environment for advanced engineering research and technology development aimed at solving problems in the ocean. SeaTech builds on and complements the academic programs of the Department of Ocean and Mechanical Engineering and forms the means for technology advancement, collaboration with academia, industry, and government, and transition of research products to applications.

About SeaTech

Established in 1997 as a State-funded Type II Research Center, the Institute for Ocean and Systems Engineering (SeaTech) is part of FAU's Department of Ocean and Mechanical Engineering, and the College of Engineering and Computer Science. It is primarily located on eight acres of land between the Atlantic Ocean and the intracoastal waterway in Dania Beach, Florida, with valuable easy access to the ocean. Its team of world-class faculty, graduate students and engineers and technicians are engaged in federally and industry sponsored ocean engineering research and technology development in the following areas:



John Frankenfield Profile

Senior Engineer at Florida Atlantic University

Senior Engineer
Florida Atlantic University

1996 – Present (19 years)
Florida Atlantic University
Master of Science (MS), Mechanical Engineering, 3.226
1997 – 2012

Activities and Societies: Human Powered Submarine Club, FAU Dive Club

Florida Atlantic University
Bachelor of Science (BS), Ocean Engineering, 3.266
1993 – 1997

Activities and Societies: Society of Naval Architects and Marine Engineers, Tau Beta Pi, Marine Technology Society

Design, build and test AUVs, ASVs and their handing and operations equipment.

Skills:

- Matlab
- Simulink
- Simulations
- ANSYS
- Finite Element Analysis
- Signal Processing
- C++
- Embedded Systems
- C
- Labview
- Algorithms
- Image Processing
- Fluid Dynamics
- Solidworks
- Digital Signal