rexresearch.com

Steve SEDLMAYR
Microwave Still

Produces "structured" water with novel properties & health benefits

http://www.personal.psu.edu/tms9/water.html
[Excerpt]

Characterization and Properties of Structured Waters

"Materials Day" at the Materials Research Institute, Penn State University (15 April 2008)
by Manju Lata Rao, Tania M. Slawecki, M. Richard Hoover, Prof. Rustum Roy

Introduction and Overview:

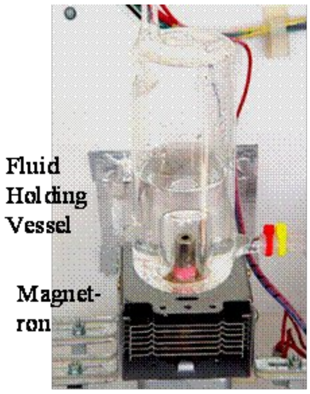
Ultradilute and energetically imprinted waters have been observed to have therapeutic, corrosive or combustible properties although chemically they remain H2O. H. E. Stanley (Boston U.) cites 63 anomalous properties of water that likely correlate with structures and phases of water. Martin Chaplin (U. of London) proposes theoretical models of water clusters: how they arise and can persist, while Rustum Roy proposes a nanoheterogeneous model for the structure of water. Empirically and theoretically, water is understood to possess unusual properties that correlate with its underlying structure rather than its chemistry.

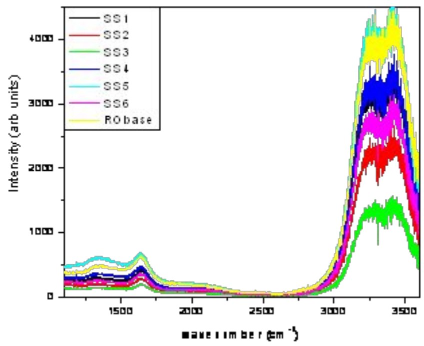
Below is a photo of a typical probe-in-water setup and the resulting standard Raman spectrum for water which exhibits the standard double-peaked primary –OH stretch band and the much smaller –OH bending mode peak and even smaller and broader, the –OH bending and rotation mode as labeled on the graph. Vertical scaling of the graph is arbitrary since it can depend on the intensity of the incident laser light as well as the sample scattering.

Five sample "waters" are presented: silver colloids, energetically imprinted water, a homeopathic remedy, Sedlmayr microwave-distilled water, and a "combustible" water as per the John Kanzius discovery of being able to "burn saltwater". These five samples provide a sense of the complexity of water and shed light on its potential uses in new contexts...

4. Sedlmayr Microwave-Distilled Water

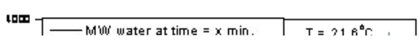
Inventor Steve Sedlmayr was tired of his wife's water distillation units breaking. Frustrated with their poor design, he decided to insert a 2.54 GHz microwave antenna directly into a water distillation vessel. To his surprise, multiple distillations of the same water resulted in unusually corrosive and/or healing properties of this water: those drinking his microwave-distilled waters began to report surprising healing effects, but he found he could not store the water in plastic bottles and, in fact, even the plastic tubing he was using in his condenser unit appeared to get eaten away by this water. Yet, it was just… water! How could this be?



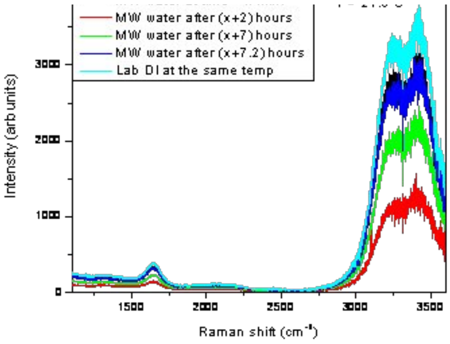


Above : Raman spectra of initially identical water samples after being distilled in one of six differently sized, shaped or coated vessels. Samples were sent via air mail from Sedlmayr in Arizona. Room temperature Raman spectra measurements were acquired approximately 1 week after distillation: clearly, changes persist.

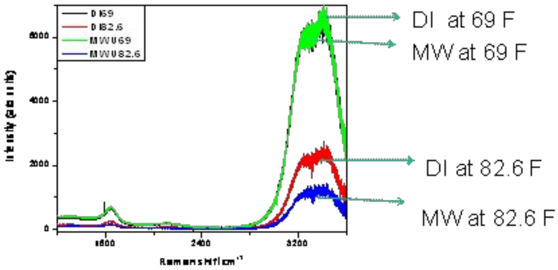
Right: Raman spectra of a water sample that



was microwave-distilled, cooled to room temperature and was then examined for structural changes as a function of time. Temperature thus remains fixed while the structure clearly changes dramatically (red trace) and then relaxes (dark blue trace) almost back to its original (black) trace, indicating significant changes to the main OH-stretch band but also to bending and rotation modes



Below: Microwave-distilled water compared with DI water and as a function of temperature



***Discussion:** Metastable suppression of -OH vibratory modes from microwave radiation may result in the observed corrosive properties of the water. A great deal more work is required to understand the radiation-structuring of water.*

---

http://www.localnews8.com/news/local-inventor-creates-allnatural-cosmetics/22378296

Local inventor creates all-natural cosmetics

IDAHO FALLS, Idaho -

A local inventor is rolling out a line of cosmetics that he says will make your whole body healthier.

The line is called Eau du Visage.

It is made only from ingredients found in nature, but developer Steve Sedlmayr of Idaho Falls said the most special ingredient of all is the water.

He discovered a process to purify the water to the point where its cell structure is changed. After years of testing, Sedlmayr said the water's health benefits are astounding.

"It has been able to remove blemishes from the face, scars from the face -- so it's the basis of all of our products right now," Sedlmayr said.

To order products or find out more about them, visit http://www.eauduvisage.com/.

---

http://www.lojoule.com/

Lojoule Water

Why Lojoule? The name indicates why. It is a low joule water, named after the derived unit of energy, work, or amount of heat in the International System of Units. It is created by bombarding the water in a very special resonant chamber with low energy photons at the resonant frequency of the hydrogen and oxygen bond, creating an entirely different energy of water from any other on the face of this planet.

---

http://www.researchgate.net/publication/228085859_Polarized_microwave_and_RF_radiation_effects_on_the_structure_and_stability_of_liquid_water

Polarized Microwave and RF Radiation Effects on the Structure and Stability of Liquid Water

by

M. Rao, et al.

[[PDF](#)]

Polarized microwave and RF radiation effects on the structure and stability of liquid water

Manju Lata Rao[1], Steven R. Sedlmayr[2], Rustum Roy[1,3,*] and John Kanzius[4]

[1]105 MRL Building, Materials Research Institute, The Pennsylvania State University, University Park, PA 16805, USA
[2]Sedlmayr Technologies, LLC, Arizona
[3]Arizona State University, Tempe, AZ 85287, USA
[4]3710 Volkman Rd., Erie, PA 16506, USA

It is now established that liquid water has many struc-

tures with distinctive properties. We have established that ultradilute (≈ 1 ppm) aquasols are different both in structure and properties. We present here, the effects of electromagnetic radiation on water, including our own work from Penn State established in the past decade on the effects of polarized microwave (2.45 GHz) on solids and liquids and radiofrequency (RF) (13.56 MHz) radiation on water. Detailed Raman spectroscopy provides the data on major changes in the water structure including striking reduction in the main stretching modes. The time required for relaxation of the structure at room temperature is in hours.

US7119312
Microwave fluid heating and distillation method

Inventor(s): SEDLMAYR STEVEN R [US] +

A microwave energy emitter (108) is positioned in a microwave transparent chamber (123) within a fluid holding vessel (106) of a microwave containment vessel (122). The fluid holding vessel (106) may be transparent to microwave energy and is further provided with a microwave reflective component outward, on, or beyond an exterior surface (121) of the wall of the fluid holding vessel (106). The microwave reflective component reflects microwaves back into the fluid holding vessel (106). The fluid holding vessel (106) encloses a material that absorbs microwave energy. An inlet path (116) and outlet path (112) is provided for material to flow in and out of the holding vessel upon predetermined conditions. Heated material can be condensed via a condenser (124) into a collection vessel (120).; A controller (126) is provided to send control signals to a switching device (100) for controlling the material flow and receiving sensing signals for decision generation.

BACKGROUND OF THE INVENTION

[0004] I have invented a new apparatus, machine, and method for the heating of fluids via microwave frequencies induced into the material to be heated. The process began by trying to invent a better water distiller and purification system than the current one I am using at home. The unit I currently utilize for home has electrodes in a boiling chamber and the electrodes corrode because of the impurities in the water that supplies the house. This started me thinking how I might create a unit that would not have components that corrode because of the corrosive action of water in contact with metallic parts. To attempt a cure for this problem with the current home unit that is now being used I have installed several water conditioning units in front of it, including carbon filters and reverse osmosis filters. However this water is more "aggressive" and the units' electrodes seem to break down more rapidly and had more failures. The water purification process of the machine with electrodes heating the water is comparatively slow with the machine taking 24 hours or more to make 8 gallons of water and power intensive. The distilled water made is used mainly for drinking and cooking, as the replenishment times are prohibitively slow for other high volume usages.

[0005] Since I did not want the process to involve corrosion it seemed to me that a new way of boiling or heating water was necessary. I knew that a microwave oven could boil water but after doing the research found out that microwave ovens create "super heated water" and that boiling or steaming water was a problem in a microwave oven. I also did not want to cause microwaves to be injected into a cavity with another container in the cavity, as this seems to be a waste of power and efficiency because of the difference in the cavity geometries. This method has been utilized in U.S. Pat. No. 6,015,968 Armstrong, U.S. Pat. No. 5,711,857 Armstrong, U.S. Pat. No. 5,286,939 Martin, U.S. Pat. No. 4,694,133 Le Viet, and other patents mentioned in my patents examined further in this document. I then had the idea of building the antenna into the middle of the cavity, which held the fluid to be heated with the cavity being the wave-guide. The concept of having a remote antenna inserted into a vessel is mentioned in U.S. Pat. No. 6,175,104 Greene et al. The problem with the '104 patent is that the antenna, or emitting device, is in direct contact with the fluid to be heated. As a result of using a material that was transparent to the microwaves I could design and build a device that can have an antenna physically isolated from the cavity for water heating, be in the middle of it, and cause the fluid to be heated without any direct contact by using the cavity as a wave guide/resonance chamber. This also causes the material or fluid surrounding the cavity into which the antenna or microwave emitting device is located to be evenly irradiated by the microwaves.

[0006] Others have proposed building microwave fluid heaters with their design entailing the conventional use of a microwave generator device located off to one side of the cavity or built into the side of the cavity, as in U.S. Pat. DES No. 293,128 Karamian, DES No. 293,368 Karamian, U.S. Pat. No. 6,015,968 Armstrong, U.S. Pat. No. 4,671,951 Masse, U.S. Pat. No. 4,671,952 Masse, U.S. Pat. No. 4,694,133 Le Viet, U.S. Pat. No. 4,778,969 Le Viet, U.S. Pat. No. 4,417,116 Black, U.S. Pat. No. 5,387,780 Riley. They typically use wave-guides to direct the microwaves from the source into the cavity containing the water or fluid to be heated or steamed. This invention uses the direct output from the microwave source or antenna to heat the fluid.

[0007] Another problem with heating water in a microwave is the super heated water problem. That is, water will heat to over the boiling temperature of water at sea level of 100[deg.] C. without boiling, or going into steam. As pointed out in the article Ask a Scientist Chemistry Archive, SuperHeated Water, by the USA Department of Energy, obtained from the internet, water heated in a microwave in a cup will superheat the water, but will not cause it to steam. A boiling point must be established for other water molecules to boil. From the above article "Boiling begins at a temperature when the vapor pressure of a liquid equals the ambient atmospheric pressure that is above the pool of liquid. However, you WILL NOT have boiling water if there are no sites for the vapor (within the liquid) to nucleate (grow) from.

[0008] Good nucleating sites are scratches, irregularities and other imperfections inside the cup, mug, or in your case the Pyrex." Thus, when a fork is put into a cup, the super heated water then explosively boils and steams vigorously. This is also a problem with very smooth glass, such as a pyrex bowl, and presents a technical barrier to be solved in the invention that I have outlined using a pyrex boiling/wave guide chamber. One solution is to make the pyrex chamber side walls uneven and rough, while another solution is causing the fluid or matter in the chamber to be stirred by an internal force, such as a fan, or an external stimulation, such as an ultrasonic transducer or even low frequency waves, or a device that rotates when the electric field is applied due to EMF forces. This is a problem when trying to heat a fluid to a boiling point and above to produce vapor or steam. It further helps the thermal distribution through out the mixture by causing a stirring of the mixture that will even out the heating throughout the fluid or material being heated.

BACKGROUND OF THE INVENTION-OBJECTS AND ADVANTAGES

[0009] This invention is superior to other microwave fluid heaters because:

It does not use a vessel that is impervious to corrosion or degradation because of chemical reaction in the presence of heated fluid

The microwave generator is surrounded by the medium to be heated and does not have any power loss due to coupling through wave guides delivering the microwaves to the medium to be heated

It is very inexpensive to build

It reduces power consumption by large efficiencies

It can be scaled in size from very small to very large

It heats the medium to be heated very quickly

It can be used to purify water or other fluids inexpensively

The microwave generator can be replaced quickly and inexpensively to or replenish the device

It can generate extremely pure water without contamintants

It can adapt its efficiency to the medium it is trying to heat

It reduces pollution

It can be used to heat water or other fluids

It can be made small enough to be portable

It is one of only a few viable ways to destroy estrogenic contaminates in water

The microwaves directly irradiate the source, destroying bacteria and viruses that are susceptible to the wave length of the microwaves and the heat of the fluid

This invention allows the material to surround the microwave source and be more evenly radiated than other inventions.

DESCRIPTION OF THE DRAWING FIGURES

[0026] I have included 6 drawings:

[0027] FIG. 1 is a schematic drawing of the invention used in a water distillation system.

[0028] FIG. 2 is an illustration of the containment vessel with chamber I had made for this invention.

[0029] FIG. 3 is an illustration of a magnetron removed from a LG microwave oven.

[0030] FIG. 4 is an illustration of the containment vessel with chamber sitting on a microwave generator source (magnetron) and the antenna inserted into the cavity or chamber in the containment vessel.

[0031] FIG. 5 is an illustration of a working breadboard and model of this invention that I built and tested.

[0032] FIG. 6 is another illustration from a different viewpoint of a working breadboard and model of this invention that I built and tested.

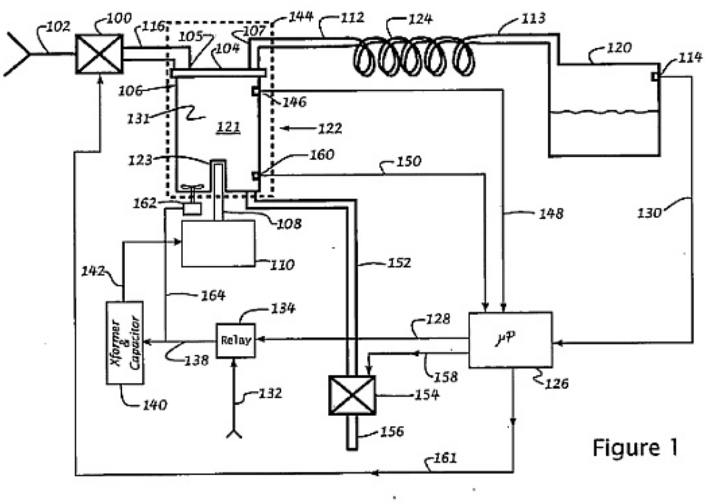


Figure 1

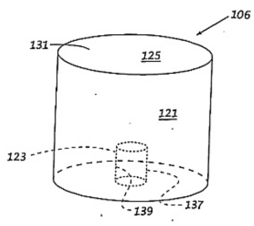


Figure 2

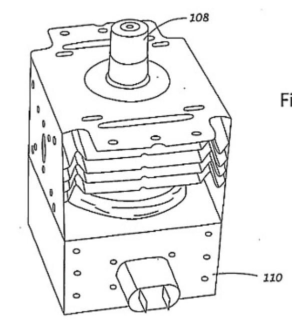
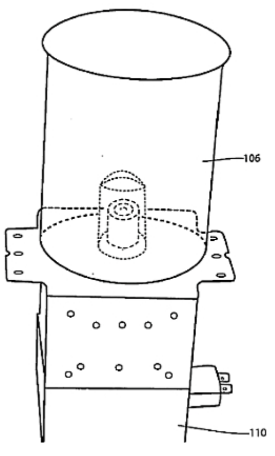
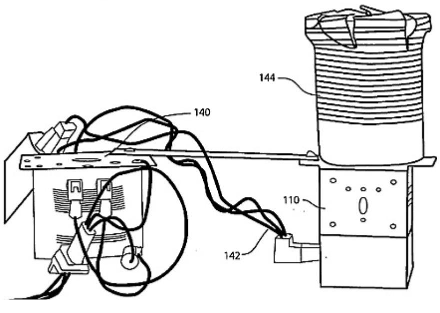


Figure 3





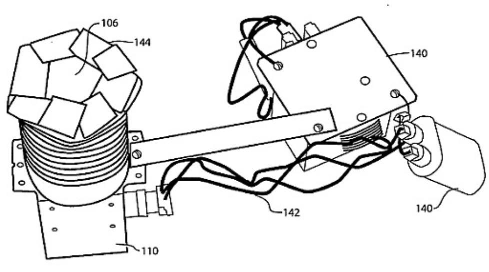


Figure 4

Figure 5

Figure 6

SUMMARY

[0033] The principle of microwave generators, sources and amplifiers are well understood and documented. As also is the principle of heating substances with microwaves as evidenced by the current popularity of the microwave oven in modern society. Briefly, microwaves in microwave ovens cause the water in the inserted matter to vibrate at a resonant frequency (that is, their bonds) and cause the molecules to become "excited". This causes the water molecules to "bump" into each other and cause heating because of the collisions of the water molecules. This is why the substance being cooked or heated will become hot from the inside out and continue to heat even after the microwave energy source has been turned off. Microwave ovens are typically a square enclosure made of metal that reflect microwaves back into the formed cavity and have a microwave generator coupled to the enclosure through a wave-guide that directs the microwaves into the oven. This arrangement can cause hot spots in the heating of substances in the cooking cavity at the nodes of the microwave frequency lengths, so the microwaves are either "stirred" or the substance is rotated to intersect at different spots in the substance where the nodes occur. The hot spots are also caused by the geometry of the material to be heated being at different distances from the microwave source and the microwave distribution pattern from the source and the wave-guide. Furthermore, the typical microwave generator can become very hot, so a fan is used to cool the generator (of which one typical generator is called a Magnetron manufactured by LG model number 2M213-240GPo). There are many manufactures of magnetrons and microwave generators. These microwave generator devices are usually set for only one frequency, somewhere between 2.4 and 2.6 GHZ. It has been determined by others that this is the best frequency to cook foods, however other frequencies are understood to be better for other materials and substances depending upon the materials and needs and requirements. For instance, the article at URL-http://www.straightdope.com/mailbag/mmicrowave2.html, by A Staff Report by the Straight Dope Science Advisory Board, points out that 10 GHz is better for heating water molecules alone not bound in another substance. For the sake of this patent it is understood that when a frequency is mentioned for a microwave generator that it can use other frequencies than the one mentioned depending upon the application and the material used. Also, that the material heated can be a fluid, a solid, a vapor, or plasma depending upon the application and desired results.

DESCRIPTION OF THE INVENTION

[0034] Referring to FIG. 1, the water, fluid, or material to be heated is connected via pipe 102 to a solenoid switch 100. This description will start with the invention in a startup state and then describe a complete cycle. While this demonstrates a batch processing technique and method, it should be understood that it could also be adapted to a continuous process. Microprocessor 126, which also can be a solid state controller, state sequencer, PROM, or other signal processor/determiner, processes the signal from level sensor 114 in holding vessel 120 and level sensor 146 in microwave containment vessel 122 and determines that water should be made. (In this example water will be used, but should be considered a subset of fluids and materials that can be processed this way.) Microprocessor 126 generates a signal to solenoid 100 via signal line 160, which opens the valve 100 and allows the material to flow into microwave heating chamber vessel 122 via entry port 104 until sensor 146 via signal line 148 generates a signal to microprocessor 126 that the fluid holding vessel 106 is full. Microprocessor 126 then generates a signal via signal line 160 to solenoid 100 to close and causes the material flow into microwave heating chamber vessel 122 to cease.

[0035] Microwave heating chamber vessel 122 consists of fluid holding vessel 106 and lid or cap 104, a level sensor 146, level sensor 160, exit port 112 for the steam, an entry port 116, and outer shell or microwave reflector 144. It can furthermore consist of a material stirrer 162 and temperature sensor (not shown). It can monitor the temperature of the water actively (not shown). Fluid or material holding vessel 106 is made of a material that is transparent to the frequency of the microwaves being generated and can take the pressures and temperatures of the materials being heated and in contact with its interior surface. Because of the cycling of the cold water and the subsequent heating into hot water that occurs this material should be resistant to temperature cycling. This type of material can be pyrex glass or other glass or material that fulfills these requirements. Pyrex is the trademark name for any class of heat- and chemical-resistant glass of different compositions depending on the needs and requirements of strength, weight, temperature cycling, smoothness, and other mechanical and reliability requirements. Pyrex(R) glass was developed by the Corning(R) Glass Company and was labeled Corning 7740. It is lead free and labeled a borosilicate type of glass. It was developed for its ability to withstand thermal shock created by sudden shifts in temperatures and its strength. It typically has a composition that has high resistance to strong acids or alkalis. The strain point is 510[deg.] C., annealing point of 560[deg.] C., and softening point of 821[deg.] C. makes it applicable to high heat applications. The typical composition is 80.6% SiO_2, 4% NaO_2, 13.0% B_2O_3, 2.3% Al_2O_3, and 2.3% K_2O.

[0036] Another Corning(R) glass, Corning(R) Vycor(R) 7913 would also be a contender to use for the fluid holding vessel 106. Pyrex glass can also be used as a generic term for borosilicate glass types used in the glass industry, but when used in reference to Corning(R) glass is a registered trademark.

[0037] Because of its composition and lack of any hydrocarbons in its formula, pyrex glass is "transparent" to microwave energy. That is, the glass does not absorb a significant amount of energy, if any, into its bonds of matter from the microwaves penetrating its matter and passes the microwaves through its matter. The usual heating of pyrex glass in a microwave operation is in the contact of the fluid or matter that is held within and in contact with its surface and the temperature flow from the heated matter to the glass containment vessel.

[0038] Pyrex is a good candidate because it is a smooth surfaced glass that has no pores and absorbs nothing so when it is cleaned it will not contain or transmit viruses or bacteria, nor will the surfaces be attacked by viruses or bacteria to scar the surfaces. However, because of these qualities, it does not contain a boiling point on its surface that can be used to start the water boiling process. Thus, a boiling point would be advantageous to be introduced into the fluid containment vessel 106 in some manner. One solution would be to cause the surface of the interior to be roughened, causing boiling points. Another solution is causing the shape of the fluid containment vessel 106 to be irregular that will cause nucleation sites due to the geometry of the vessel. Another solution would to have a stirrer causing the fluid or matter to be stirred by stirrer 162. Stirrer 162 is a motor, shaft and propeller. The motor would be on the outside of vessel 106 while the shaft penetrated the vessel and the propeller is on the inside. Another solution would to use a magnetic stirrer that is moved around by the introduction of a magnetic field. Another solution would be to have a device that is sensitive to microwaves and becomes excited and moves around when the microwaves are impinging upon it when the microwave source is emitting microwaves into the fluid containment vessel 106.

[0039] Fluid containment vessel 106 is shaped so that a chamber is formed in the vessel for the insertion of an antenna 108. The antenna 108 can be directly connected to the microwave generator 110 or be remotely connected to it via a co-axial cable for transmitting the energy from the source 110 to the antenna 108. Furthermore, antenna 108 can be of the length and size that is determined to be best for the usage. For instance, the antenna 108 can be a quarter wave, half wave, full wave, or multiple wavelength antenna. The antenna length is dependent upon the frequency used for the microwave generator source. For a 2.5 Ghz microwave, the quarter wavelength is 1.1232 inches, for the half wave it is 2.2464 inches, and the full wavelength is 4.4928 inches. For a 10 Ghz signal the quarter wavelength is 0.2808 inches, the halfwave is 0.5616 inches, and the full wave is 1.1232 inches. These configurations would give the best transfer of energy into the material in the fluid material containment vessel 108. The fluid holding vessel 106 should be designed such that the distance from the antenna to the microwave reflector 144 is exactly a multiple of the wavelength distance. For example, if a quarter wave antenna were used, it would be beneficial to use a quarter wave, half wave, full wave, or some other multiple of the wavelength distance to the reflector 144. The microwave/antenna can also be designed to be a microwave diode operating at a predetermined frequency, of which the output is sent to a power amplifier that then sends the amplified signal to the antenna 108.

[0040] Microwave reflector should be designed such that the material used reflects the microwave energy not absorbed by any of the water molecules is reflected back into the water for further absorption. It would be made of metal. Thin films are made of layers of metallic materials and could be utilized by coating the outer surfaces of the fluid holding vessel 106. The thin film coatings should be optimized for the best reflection of the microwaves back into the vessel itself. The reflector needs to be connected to a ground so that no microwaves can escape the containment chamber around the apparatus. This should also apply to the microwave generator source 110 and microwave antenna 108. One of the advantages of a thin film coating on the fluid holding vessel 106 is that it can follow and be suited to the geometry of the vessel. It also would be durable and lightweight. Either the Physical Vapor Deposition or Chemical Vapor Deposition or any other method that is suitable to the task could apply them.

[0041] An embodiment of the invention would have a method whereby the microwave source 110 and the antenna 108 can be removed or swung out of the way to gain access to fluid holding vessel 106 in order to facilitate the removal of the vessel for maintenance. Furthermore, fluid-holding vessel 106 can be made to unscrew or disconnect from the lid or cap 104 for replacement if necessary.

[0042] At this point in the cycle, when the microprocessor 126 has determined that the water in the containment vessel is full it will then generate a signal on signal line 108 that causes relay 134 to switch the power on to microwave source transformer and capacitor 140 to energize the microwave generator 110 and emit microwaves via antenna 108 through the containment vessel 106 walls and cause the water inside to be heated. Also, at this time the water stirrer 162 is operated by relay 138 via power line 164.

[0043] Water is heated above its boiling point and turns into steam, whereby it exits the fluid holding vessel by exit port 112 and enters into the condensation coil 124. The coil of tubing can either be cooled by blowing air across them or by using the incoming water to cool the condensing coil 124. Also, the coil 124 can be made out of copper, stainless steel, plastic, ceramic, etc. It is in this condensation coil 124 that steam is converted back to water again and is deposited into collection holding vessel 120. It would be advantageous, but not necessary, to have a charcoal filter in the line between the condensation coil 124 and the collection holding vessel 114.

[0044] The microprocessor 126 is continually checking level sensor 114 and level sensor 146 and level sensor 160 to see if the operation should be stopped at anytime. When level sensor 114 indicates that holding vessel 120 is full, then no further distilling operations will take place until level sensor 114 then indicates that it is below the level and needs more water to fill up. Instead of level sensors a mechanical float can be used.

[0045] Also, microprocessor 126 will distill water until such time that sensor level 160 indicates via signal line 150 that the fluid has been evaporated and at that time microprocessor 126 will then send a signal via line 128 and turn relay 134 off, which in turns stops the power to the microwave transformer and capacitor 140 which then stops microwave source 110 to stop emitting microwaves. It will also stop material stirrer 162 from turning, however it would be advantageous to have stirrer 162 to keep turning for a predetermined amount of time. This can be caused by either an external circuit, another and separate relay from the microprocessor 126, or by the motor and capacitor connected to the stirrer 162.

[0046] When the process is actively boiling and distilling water the microprocessor 126 can monitor the rate of evaporation and/or collection in the different vessels. By varying the frequency of the microwave source and using the above information the microprocessor can determine what is the best frequency for the best efficiency of the system and self adjust to this frequency on a predetermined basis. Thus the system can be a self-adjusting system for the maximum efficiency by using feedback.

[0047] Furthermore, when the microprocessor 126 has processed a predetermined number of water boils from the fluid holding vessel 106 the microprocessor 126 can then initiate a cleaning cycle for the fluid holding vessel 106. It does this by causing the vessel 122 to be filled, heated to a certain temperature, and then causing this water to be discharged through line 152 into a disposal water line 156 controlled by solenoid 154 that is further controlled via line 158 from microprocessor 126.

[0048] Another embodiment of the invention could have another valve on the exit port 112 (not shown) that could be controlled by the microprocessor 126. It would also have another entry port 118 (not shown) that would go to an external holding vessel 136 (not shown). Microprocessor 126 could then open the extra entry port 118 that leads to external holding vessel 136 that would contain a substance that is used to clean the fluid holding chamber 106 on a predetermined basis. The microprocessor 126 would notify the user that they should pour a substance into the external holding vessel when necessary. The microprocessor 126 would close entry port 116 and entry port 118 and exit port 112 and heat the liquid to a predetermined heating point to clean the fluid holding chamber 106. After a predetermined amount of time microprocessor 126 would open the entry port 116 and then after another predetermined time it would open exit port 152 to flush the system. After this cleansing it would begin the proper cycle of purifying the water again.

[0049] Another embodiment of this invention could have the fluid containment vessel 106 shaped in the form of a sphere with a chamber formed therein rather than a cylinder shape as shown in FIG. 2 or FIG. 4. Any shape can be used that is suitable and is not constrained to the above mentioned shapes.

[0050] Thus, the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.