

### Project: Ultrasonic Nano Water

Ultrasonically modified water (using MMM technology specifically designed sonicators, with very strong and wideband, or white-noise cavitation) is being transformed in nano-water, and it can be used as:

1. Healthy potable water for regular consumption
2. As medicament for body purification and revitalization
3. For preparing different nano-solutions (with organic and inorganic ingredients)
4. For producing different beverages
5. For agricultural watering of plants and activating germination of seeds
6. For fish farms (stimulating fish growth). Also for animals' farms.
7. For sanitation, disinfection, sterilization (when mixed with added ingredients)

#### Effects of MMM ultrasonic agitation on water:

Ordinary, natural and other healthy and potable waters always have specific and structurally stable mineral content, usually well and homogeneously dissolved and uniformly distributed (as micrometres size particles, that are not easily penetrating membranes of living cells). This is often calcium and other minerals that are not directly problematic or damaging for humans' health, but susceptible to create scaling, deposits and hard precipitations, when consumed, or treated in technological equipment and boilers. However, drinking some of minerals-charged waters could be problematic on a longer time scale.

***Acoustically or ultrasonically treated, water can be structurally decomposed, and reorganized***, regarding its mineral content, and involved molecular structures and internal connections of minerals (and it will contain dominant quantity of nanometres size ingredients, able to penetrate living cells easily). ***After MMM ultrasonic processing, modified nano-water is again able to be good cleaning solvent, and to absorb and carry new minerals.***

There are known memory effects related to water structure (still not well explained, but experimentally verifiable). Water can be, on different ways, acoustically or ultrasonically modified, and keep certain structural information, which could have different consequences on health, metabolism and other biology-related situations. ***MMM ultrasonic water processing will erase "old memory signatures", and create new, targeted (desirable) ultrasonic water modification***, with significant content of nano-size structures.

#### MMM Ultrasonic agitation of water is producing effects such as:

1. ***Wideband Cavitation***, which presents a short living, imploding microbubbles that are locally producing until 5000°C and thousands of bar pressure. Such cavitation bubbles are reacting like micro explosions (or implosions), and making water sanitation, disinfection, passivation and oxidation of minerals and organic content. Practically creating healthy water. Such treated water is not producing mineral scaling and deposits.
2. Specifically created ultrasonic agitation is producing ***effects of accelerated disintegration, deagglomeration and precipitation*** of minerals and other chemicals that are usually present in a potable water. This way, we can easily separate and eliminate all surplus of bigger particles and minerals that are originally present in water. The remaining water (after treatment) is on some way becoming biologically and chemically active, like a sponge or like good, new and non-saturated solvent (since it will dominantly have some kind of nan-structure susceptible to absorb other mineral and organic content, and it will easily penetrate living cells membranes of humans, plants and animals). By drinking such water, we create effects of de-toxication, rinsing, or internal body cleaning.
3. In the same time, MMM sonication of water is ***creating specific content of nanoparticles and nanocomposites***. Humans' cells are easily and efficiently absorbing Nano-particles and ultrasonically purified water, what is not the case with ordinary, ultrasonically non-treated potable waters. Usually, mineral content of healthy waters is composed of micro particles dissolved and well homogenized in

water. Micro particles are 1000 times bigger than nano-particles and human or plants' cells are stopping such mineral content. Cells membranes are reacting like filters (for micro particles), and we can get internal calcification and mineralization of living organs and blood vessels. If we transform certain potable water into water content with nanoparticles, such ***nano-water is easily penetrating cells membranes***, cleaning, and watering our body much more efficiently. This way, we could add medicinal and tea plants and active substances in water, transforming water into very useful medicaments (meaning into nano-waters). ***Plants watered with ultrasonically modified water are growing faster*** and reaching a much bigger size, compared to plants watered with ordinary agricultural water. ***Ultrasonic processing of seeds in water is creating almost 100% of germination***. We can realize different ***aging, blending and homogenizing of waters*** using ultrasonic MMM sonic and ultrasonic processing. Genetic content of plants and humans in some cases has significant mutual overlapping, what is supporting ***nano-waters applications for stimulation, optimization, revitalization and internal cleansing of all living species***.

4. Potable waters in urban water supply systems usually have specific, stable (strange, still not well explained, but experimentally verifiable) ***memory effects***, being like some kind of structural water signature. This memory effect sometimes produces a negative impact on humans' behaviours, health and psychological states, including negative effects of scaling and hard deposits. ***MMM Ultrasonic water processing is erasing and eliminating already existing memory situation and making water clean of mentioned structural signatures*** (like deleting memory medium of computer-related memory devices). Similarly, we can (acoustically and optically), modify water structure by implementing certain new and healthy or stimulating structural modification (or by creating new and beneficial memory signature). This way, ***nano-water will become additionally active and healthy with targeted medical properties***. It is already known (and experimentally verifiable) that music applied conveniently on water is structurally modifying water. There are trends and successful activities to make structural modifications of water to react as bacteria and micro species killing or sanitizing substance (just by applying specific acoustic and light processing on a clean water).
5. Ultrasonically modified nano-water can be mixed with different ingredients, in order to create different beverages, technological, pharmaceutical or medical liquids. It is already well known that ***ultrasonically treated wine and other hard drinks are becoming stabilized, aged and with very much improved taste***.
6. ***Ultrasonically, it is possible to inject big quantity of air, different gasses, or ozone in water***. It is also possible to remove gaseous content previously dissolved in water (using different processing). This way it is possible to create ***modified waters for different agricultural applications, for fish farms, sanitation, and biological revitalizations and stimulations***.

### PROJECT: WATER WITHOUT DANGEROUS CHEMICAL RESIDUALS

Urban consumption of fresh (as well as other useable waters) that are satisfying present quality and safety standards are often charged with multiple nano-quantity pollutants, chemicals, pharmaceutical and medical residuals, heavy metals, different minerals and poisons, which are below, or far below present official and legally prescribed standards. Present laboratory analyses for certifying water quality are simply not obliging water supply systems to perform measurements of extremely small, or nano quantities, of different dangerous and poisonous ingredients of potable water. Such waters are simply considered as being healthy and acceptable for human consumption. Health-hazardous content of such waters is presently still considered as being within acceptable threshold levels.

Modern and well-developed world communities are increasingly experiencing new medical problems, most probably produced by consuming potable waters with forementioned and dangerous nano-contents of pollutants, such as:

- significant sterility levels,
- cancer related illnesses,
- physical deformations of babies,
- psychological deviations, depressions and mental problems

Nobody is even addressing technological situations how to efficiently eliminate cocktails of nano-ingredients of dangerous chemistry in potable waters.

#### **The way to eliminate such water nano-content is:**

- Ultrasonically assisted water ozone processing
- Ultrasonic nano-dissolving of specific metals (like silver, copper etc.) in water
- High intensity wideband ultrasonic cavitation
- Natural sand and active carbon filtration

#### **The effects of ultrasonic ozone treatment are as follows:**

- making total biological sterilization and water clarification
- making total poisons oxidation, burning and elimination (transforming all kind of organic and inorganic poisons and dangerous chemical content into neutral and harmless oxides).

By ozone and by ultrasonic cavitation treated water, before being fully sanitized, healthy and potable, should pass certain natural filtration (using traditionally known good filtration methods) in order to eliminate larger particles, and to dissipate dissolved ozone. Such water can be considered as free of any dangerous content.

In addition, such water will be clean of memory-related, structural formatting, and can be used for medical and pharmaceutical applications.

Other of aforementioned ultrasonic processing methods are only auxiliary, beneficial and additional in cases of very critically polluted waters.

MPI has relevant ultrasonic technology for addressing mentioned problems.