

BBN Nanobubble Hydrogen Pure Water Production line



BBN 나노버블 수(산)소수 생산라인 건립 사업계획안

bbn world

blue energy & back to the nature

T: +82-2-6000-3979 M: +82-10-2979-6201 E: bbn@bbnworld.com

Waste to Energy, Recycling, Water Treatment, Renewable Energy
Global Market Expansion, Strategic Sourcing, Cross-border Financing,

본 사업계획안은 BBN World가 디자인하고 설계된 문건으로 지적재산권을 지니고 있으므로 외부 유출 시 사전 동의를 받으셔야 합니다.

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VALUE

국내와 해외의 첨단 수처리 기술과 장비 융합
Advanced water treatment technology and equipment convergence

기존 제품과 차별성을 지닌 기술력과 경험
Technology and experience with differentiated products

화약 약품 제로화 친환경 음용수 생산 방식
environment-friendly Production method of drinking water Without Chemical
세계적인 환경, 수자원, 에너지 회사 긴밀한 협업 체제 구축
Establish close collaboration with global environment, water Treatment, plasma and energy companies

Introduce innovative drinking water production technology
Based on the four elements of technology necessary for this project

BBN
World



2016/7년

하천, 호수,댐의 Nano Bubble 수질정화와 수질회복 기술개발
Technology development for Nano Bubble water purification and water quality restoration of rivers, lakes and dams

2018년

Nano Bubble + Plasma+ Hydrogen을 융합한 신개념의 정수(음용수) 기술 개발
New Conception of Water Treatment by Plasma + Nano Bubble Fusion with Oxygen and Hydrogen for Drinking Water and Waste water

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MISSION

사업제안 내용 Project Proposal

Pure Hydrogen Nanobubble Water



Hydrogen contained
Nano bubble Water
production Factory

하천/ 지하수를 원천수로

BBN AWP 플라즈마 리액터로 살균과 TDS 상관 없이 중금속, 비소 석회석 등 스케일을 발생시키는 미네랄을 산화 침전 하여 제거 합니다

River & ground water as source water are converted to nano-bubbled drinking water contained hydrogen by BBN Plasma Reactor. 100% sterilization of all bacteria and remove heavy metals, arsenic, lime stone, TDS, chemicals, contaminated organics, odor etc., by multiple oxidation and precipitation..

산소, 수소 등을 우리 몸 구속구속까지 보낼 수 있도록 건강(Heath) 중심의 수퍼 프리미엄 음용수의 생산 공장을 건립 합니다

BBN has developed and supply Turnkey plant for pure hydrogen contained nanobubble drinking water by Any Water Plasma and nano-bubble generator

So we can send oxygen, hydrogen contained nano-bubble water to the body of human by construction of plant for super premium clean drinking water .

BBN

What is Pure Hydrogen Nanobubble Water?

오염된 지하수와 하천물을 마실 수 있는 순수한 물로 만들고, 건강한 삶을 향상시키는 물입니다.

Any Water...

Use
Under Ground Water,
River, Lake, Stream
Poor City Water

Plasma

AWP Remove
Heavy metal, Arsenic
Poison chemicals,
Smell & odor
All bacteria

Nano Bubble

Nanobubble
Generator for
Infusion of Pure
Hydrogen into
Nanobubble

High cost-to-
benefit ratio

First and Cheap
Mass Production
Technology for
Hydrogen Contained
Nanobubble Water



MACRO BUBBLE

눈으로 관찰할 수 있는 크기의 버블
빠른 속도로 수면 상승 / 기화

MICRO BUBBLE

100만분의 1
눈으로 관찰하기 힘든 크기의 버블
수면상승 / 기화 속도가 느림

NANO BUBBLE

10억분의 1 관찰이 힘들 정도로
극히 작은 크기의 버블
장시간 수중에서
브라운 운동(자유운동) 진행
기화되지 않고 수중에서 파열

BBN Pure Hydrogen Nanobubble Water

원/천/기/술

버블(기포) 입자를 얼마나 작게
많은 개체 수를 만들고
기포 안에 수소를 함유하도록 하는 것이 BBN의
원천 기술이다.

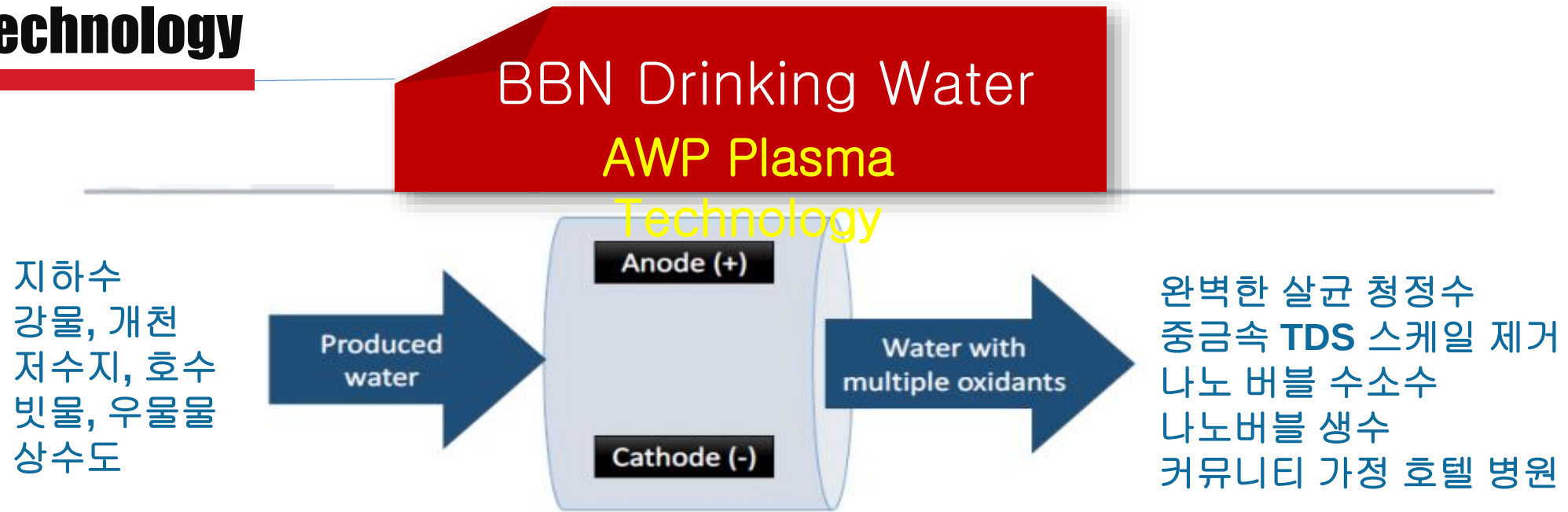
BBN Plasma remove Heavy Metal,
Arsenic, Bacteria, Odor and
nanobubble generator
make bubble less than
100 nm and infuse
Hydrogen into
Nanobubble,
which is BBN
Key Tecnology



**Plasma +
Nano Bubble +
Hydrogen
Technology Fused
New Concept of
Drinking Water**

BBN Plasma Nanobubble Hydrogen Pure Water

Key Technology



Simple, low cost technology

- Direct electrolysis of water
 - No chemicals
 - No sacrificial anodes (Electrodes)
 - No clean brine as a source
- Enabling technologies
 - Electrode geometry
 - Proprietary coatings
 - Advanced controls/switching

Benefits

- Complete bacteria elimination
- Scale reduction
- Heavy metal oxidation



SIMPLY ELECTRIFYING WATER

Any Water Plasma

BBN Any Water Plasma is Korea based water-engineering company formed by a group of professionals who are experts in chemical-free, Hyper-advanced oxidation processes. Applicable in many types of water industries, AWP's technology is available to fit every application. With its low operating costs and high regard for safety, AWP is revolutionizing the process of treating challenging water using simple electricity. Any Water Plasma offering solution for global water challenges.



대기오염, 미세먼지, 배기가스, 산업 폐수, 분뇨 와 쓰레기투기는 빗물, 지하수, 강물을 중금속 비소 다이옥신, 페놀, 세균등 으로 오염시키고 있으며 동남아 중국 인도 아프리카 중동 등은 심각한 식수난을 겪고 있습니다. 식수로 인하여 수천만에서 수억명이 전염병, 각종 암에 노출 되어 있습니다

Air pollution, fine dust, exhaust gas, industrial wastewater, manure and garbage pollute rainwater, groundwater and river with heavy metals such as arsenic, dioxins, phenol, bacteria, etc. Hundreds of millions of people in Southeast Asia China India Africa Middle East etc. are exposed to infectious diseases and cancer due to drinking water.

Bacteria Disinfection

AWP's hyper oxidation technology produces multioxidants (H_2O_2 , O_3 , OH Radicals, etc.) directly in the effluent for disinfection. These oxidants kill all classes of microorganisms including bacteria, viruses, and protozoan oocysts. The oxidants also remove biofilm and neutralize odor-causing microorganisms.

Mineral Precipitation

AWP's electrodes are treated with mixed metal oxide coatings. In the electro-oxidation process, all scale-causing minerals are precipitated on the negatively charged cathode surface. After treatment, the water produces no scale and behaves like de-ionized water.

Oxidation of Heavy Metals

AWP's hyper oxidation process oxidizes any heavy metals that may be present in the water. This feature is mainly applicable where heavy concentrations of iron (Fe^{2+}) cause numerous complications for process engineers.

AWP produce a unique, state of the art “Fusion” water processing technology, which is helping to shape a new generation of green, low power consumption water treatments.

How it works

BBN has developed a patent pending technology in which a Programmable Logic Controlled (PLC) high voltage energy pulse is delivered directly into contaminated water at a controlled frequency. This energy pulse initiates primary and secondary electron avalanches which produce multiple oxidants (like OH, H, O, O₃ and H₂O₂) and simultaneously creates high intensity UV radiation measuring between 60nm and 300nm. During the discharge of the pulse, an acoustic and hydrosonic shock wave travels through the reactor at 3 to 4 times Mach speed.



Features and Benefits

- 1) A high voltage pulsed discharge is induced directly in the effluent stream generating multiple oxidants and radicals such as OH, O, H, O₃, H₂O₂, etc.
- 2) Aggressive oxidant species are nonselective and oxidize all contaminants in the effluent.
- 3) A high intensity UV light released during the process is used for bacteria disinfection.
- 4) The high energy pulse generates a hydrosonic wave which creates acoustic cavitation. Bacteria colony clusters are then broken down because they have been exposed to oxidants and UV radiation.
- 5) Direct energy input into the water results in a high efficiency energy transfer as compared to conventional processes, thus reducing the overall operating cost per gallon.
- 6) Scale-causing minerals are precipitated and removed from the water, thus inhibiting scaling.
- 7) Without the use of biocides, the process results in effective biofouling control.

BBN Pure Hydrogen Plasma Nanobubble Water

Key Technology

BBN Drinking Water Nanobubble Hydrogen Technology

Step 1

질병 90%는 활성산소 원인 몸 속에 활성산소를 제거하는 것이 수소수
90% disease caused by active oxygen. Removing
active oxygen in the body is the Hydrogen Water

Hydrogen Water

100나노미터 이하의 나노버블 속에 수소를 가둬두고 장기간 동안 수소가 기화를 하지 않도록 함

Keep hydrogen in a nano-bubble so that hydrogen is not vaporized over a long period of time.

Dissolved Hydrogen : 1,600ppm

PH : 7.0~7.5 (Neutral Water)

Hardness : 50mg/L (Soft Water)

REGISTER



Step 2

나노버블(기포)안에 수소를 집어넣고 오랫동안 용존 하도록 함
Bring hydrogen into the nano bubble and let it
reside for a long time

나노버블(Nano Bubble)

2억개 이상/ml 나노버블 개체수의 생성

6개월 이상 물속에 용존하여 천천히 용해됨
Generation of 200 million or more/ml nanobubbles
Over 6 months stayed in the water and slowly
dissolved

유해물질이 없으며
물 크러스터가 작아 이온음료보다 흡수가 빠름

No harmful substances
The water cluster is smaller and absorbs faster
than ionic drinks
No Chemicals



01 BBN Plasma Nanobubble Hydrogen Water Technology Features

100% 살균 나노버블수는 우리 모든 생활에 사용 해야 합니다. 아파트, 가정, 호텔, 병원, 빌딩, 학교, 공장 등.. BBN AWP Plasma+ Nanobubble Point of Entry System 이 저렴하게 해결 합니다 .
나노버블 수소수는 나노버블에 수소를 주입하여 만든 기능수 입니다

English : http://www.bbnworld.net/nano/micronano_app.pdf

나노버블 수소수 제조의 핵심 기술은 박테리아 살균, 중금속, 비소등의 제거와 나노버블의 크기와 개체수의 양을 만드는 것입니다.

The key technology for hydrogen contained nano-bubble pure water is in the complete bacterial disinfection, elimination of heavy metals, arsenic, odor and the formation of nanobubble infused with 99.99% pure hydrogen

나노(Nano란) 10억분의 1을 나타내는 단위로
1나노는 머리카락의 10만분의 1크기입니다.

나노버블 수소 수는 수중에 생성되는 가포의 크기를 100나노미터 이하의 크기로 나노화시켜 그 기포 속에 수소를 주입하여 물속의 수소와 산소 용존율을 높이는 제조 방법입니다.

Nanometer is size of one Billionth (1/billion)

One nanometer is one-tenth the size of a hair.

Nano-bubbles Hydrogen water is a manufacturing method in which the size of the nano bubble containing hydrogen is the nano-sized to 100 nanometers or less, and technology of hydrogen injection into the air bubbles on site , thereby increasing the dissolved ratio of hydrogen and oxygen in the water



Other Company

Number of Nano Bubbles

3000/ml



BBN Nano-Bubble Water

Number of Nano Bubbles

200 Mil/ml

타사에서 판매되는 나노버블 제품에 비해 무려 나노버블 개체 수가 **78,000**배나 많은 월등한 개체 수를 생성할 수 있습니다.

Compared to the nano bubble products sold by other companies, the number of BBN nanobubbles can be as high as 78,000 times.

02 BBN Pure Hydrogen Nanobubble Water Technology Features

Not only domestic, Southeast Asia / India / China/Pakistan/Vietnam, etc. Most groundwater is contaminated with heavy metals and faces serious water problem

The Biggest Issues of Ground Water & River

지하수의 중금속 오염 문제
Groundwater
Heavy metal pollution problem

Historic Industrial
Waste Disposal

Soil

비소(Arsenic)
징크 (Zinc)
철(Iron)
망가네즈 (Manganese)
구리 (Copper) 등...

필터 여과방식은
세균과 박테리아, 중금속을 가두어 놓는 방식
**Filter filtration is the way of confining bacteria
and heavy metals in the filter**



BBN의 방식은
박테리아와 세균의 사멸, 모든 중금속 산화 침전 방식이다.
**BBN's method is Bacteria Sterilization, Oxidation
and Precipitations of all heavy metal**

특히, 정밀 여과장치를 통하여도 중금속을 제어 할 수 없다. 그래서 생수 공장들은 중금속이 오염되지 않은 높은 산에 깨끗한 원천 물을 찾는다
In particular, heavy metals can not be controlled through a microfiltration device. So bottled water plants try to find clean source of water in high mountains where the heavy metals are less polluted.

BBN AWP oxidize and precipitate heavy metals
This is the Key Technology only BBN can supply

BBN Water Treatment against Existed technology

Technology Comparison

Existing Water Treatment Method

Securing Clean source of water

Heavy Metal Elimination

Filtration by Active Carbon and Micron filter



Disinfection



자외선 살균
투여량 - 20-40mj/cm2
전통관 - 254mm
중금속과 환경 호르몬 제거 불가

Hydrogen / Oxygen Supply

Existing bottled water has no Hydrogen
Use bamboo charcoal Diffuser for Hydrogen infusion or Mixing hydrogen with water by Tumbler

경제성

Centralized System

High Investment for plant construction

Over 10 Million dollars

Heavy metals and environmental hormones can not be removed

BBN Treatment Method

..Any Water..
Ground water, River, Lake

Plasma & Nanobubble Treatment Method
No filtration without Chemicals



BBN Plasma
Oxidize Heavy metal and precipitation



BBN Nanobubble
Auto-coli and Bacteria Sterilization



Nanobubble and Hydrogen Generator

Nano-bubble Hydrogen Water good for health

Dispersed production system or Pointe of entry for community, aptment, building, hotel, hospital, school, small town, factory.. And bottling plant

Very Low Investment
1-2 Million dollars for 6000 BPH

BBN Pure Hydrogen Nanobubble Water

Effect Nano-Bubble Water



나노버블 수는 질병과 노화의 원인인 활성산소와 결합해 땀과 소변으로 배출한다.
Nano-bubble Hydrogen water combines with active oxygen, the cause of disease and aging in the body, and is released into sweat and urine

- A. 활성산소 제거(항산화작용) : Active oxygen removal (antioxidant activity)
- B. 당뇨병 개선 : Diabetes Improvement
- C. 아토피성 피부염 개선 : Atopic dermatitis improvement
- D. 운동능력향상 : Improve athletic ability
- E. 숙취 효과; Hangover effect
- F. 미용 분야(화장품, 안티에이징): Beauty field (cosmetics, anti-aging)
- G. 암 방사선치료 수소 수 효과로 항 염증 반응 : Good Effect on Cancer Radiation Therapy and Anti-inflammatory Response by Hydrogen

What is nano-bubble and it's effect ?

http://www.bbnworld.net/nano/micronano_app.pdf

What is micro-nano bubble in English :

http://www.bbnworld.net/nano/micro_nano.pdf

Korean : http://www.bbnworld.net/nano/nano_grn.pdf



Nanobubble Generator NanoMax-01

We find out and developed natural solution combining with nanobubble and plasma effect to treat waste water without chemicals in the existing facility on the basis of the commercialized systems and advanced technology. And Plasma reactor treat waste water containing heavy metal, dying color, waste oil and chemical waste from industrial complex.

Also It can treat underground water, river, stream and lake water for drinking water without chemicals

BBN Nanobubble generator infuse 99.9999% pure hydrogen or oxygen into water for the production of nanobubble hydrogen water.. 99,9999% Pure hydrogen and oxygen are produced from pure water by SPE-PEM Electrolyzer.

Nanobubble Japan <https://youtu.be/mvBiHcWT1B8>

What is Nanobubble Hydrogen Water USA ?

<https://www.nanobubbleusa.com/>

The 27 Health Benefits of Hydrogen Water:

<https://www.selfhacked.com/blog/hydrogen-water/>

Product Introduction

Nano Bubble Generator is a new generation of high efficiency and energy saving water treatment technology application. It has huge development potential, as the functional properties of bubble, bubble with anion, speed slow, ozone bubble explosion equivalent can have antiseptic effect, gradually become smaller bubbles... etc.) familiar, and mature technology and development, will continue to expand its use range, market growth will follow. Our nano bubble generator can replace the current domestic high-pressure decompression dissolved foaming of fine bubbles, and part of the aeration equipment.

Nana

Features

Hydrogen or Oxygen is infused into the water as nanobubble.

- *High density of micro nano bubble, non-clogging, easy to maintain.
- *Bubble size : 80 nm ~ 20µm , good gas-liquid dissolving effect.
- *Stable performance, high efficiency, low noise.
- *Wide range of application, such as : wastewater treatment, gas treatment aquaculture, aquaponics hydroponics, agricultural irrigation, bath etc.



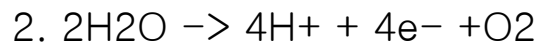
Dissolved Oxygen: ≥8.9mg/L
(Normal Air Source)

Oxygen & Hydrogen Generator by PEM Titanium Electrolyzer

BBN electrolysis cell is light , highly effective, energy-saving and of environmental protection , producing hydrogen and oxygen through the electrolysis of pure water (without adding alkali). That's PEM technology. The electrodes, as the core of cell , are highly active catalytic electrode with nearly zero distance between the electrodes , which is formed by integrating composite catalyst with and ion membrane with high electrolytic efficiency.

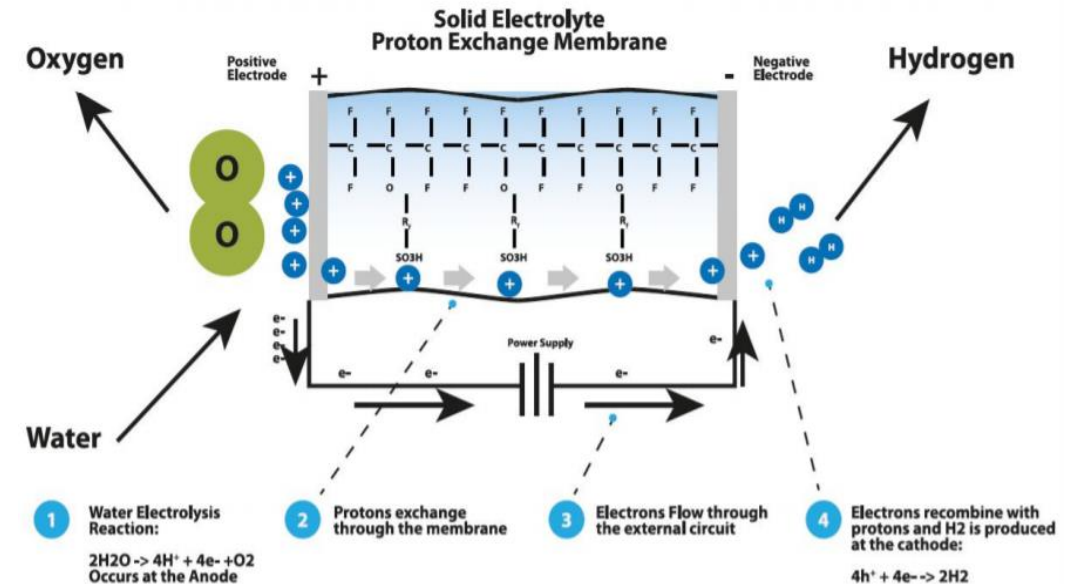
Working Principle

1. The proton exchange membrane (PEM), which only allows water and positive ions to cross between compartments. The membrane also serves as the electrolyte in the cell, eliminating the need for hazardous liquid electrolytes such as concentrated potassium hydroxide. PEM water electrolysis simply splits pure deionized water (H₂O) into its constituent parts, hydrogen (H₂) and oxygen (O₂), on either side of this membrane. When a DC voltage is applied to the Electrolyzer, water fed to the anode, or oxygen electrode, are oxidized to oxygen and protons, while electrons are released. The protons (H⁺ ions) pass through the PEM to the cathode, or hydrogen electrode, where they meet electrons from the other side of the circuit, and are reduced to hydrogen gas. The two reactions that occur in the cell are as follows:



4. Thus, the only possible components of the streams are hydrogen, oxygen and water moisture, as shown in the following Figure

PEM active rich hydrogen water generator makes combined hydrogen breathing with Oxvaen



Technical Parameters

1. hydrogen flow:

1000/1200/5000/17000/34000ml/min

2. oxygen flow:

150/250/500/600/2500/8500/17000ml/min

THE HEALTH BENEFITS OF HYDROGEN RICH WATER

ANTIOXIDANT : [Hydrogen exhibits beneficial effects on tissues in organ transplantation and in the treatment of cancers and skin diseases, among other uses. For example, during cancer radiotherapy ionizing radiation causes damage to normal tissues, especially lung, heart and other organs.](#)

DIABETES : [Supplementation of hydrogen-rich water improves lipid and glucose metabolism in patients with type 2 diabetes or impaired glucose tolerance.](#)

CANCER CELLS : [Hydrogen exhibits beneficial effects on tissues in organ transplantation and in the treatment of cancers and skin diseases, among other uses](#)

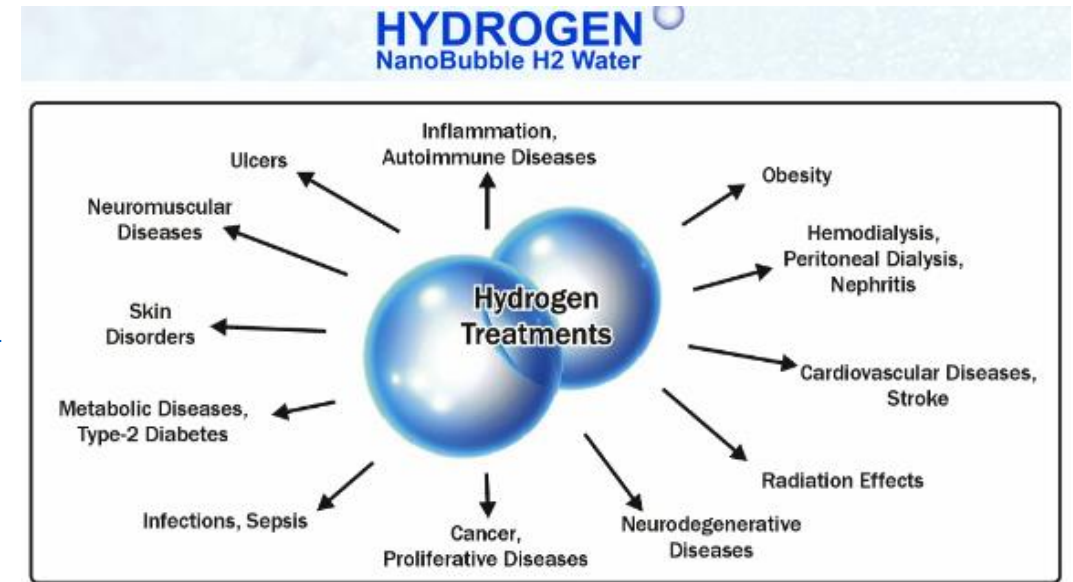
ANTI-AGING : [. This same publication examined the ability of H₂-enriched water to stimulate production of type-1 collagen in skin fibroblasts and keratinocytes after UVA-exposure. They found that type-1 collagen synthesis was increased over 2-fold after 3-5 days in the H₂-enriched Water samples compared to controls](#)

BRAIN INJURY : [An important cause of injury worldwide is body trauma, leading to disability or death. Hydrogen has been experimentally used as an adjuvant to treat injuries in various organs of the body, particularly in the brain, lungs, kidney, retina, and glands, such as liver and pancreas.](#)

ATHLETIC PERFORMANCE : [it has been said that hydrogen can function as antioxidant, so we investigated the effect of hydrogen-rich water \(HW\) on oxidative stress and muscle fatigue in response to acute exercise.](#)

HEART FAILURE : [Prevent Metabolic Syndrome. A disorder characterized by a constellation of symptoms \(including obesity, insulin resistance, high cholesterol and hypertension\), metabolic syndrome is associated with an increased risk for cardiovascular disease and type 2 diabetes.](#)

INFLAMMATION : [The cells that are repeatedly exposed to inflammatory mediators will have the genes that code for inflammatory response proteins switched on, and thus be in a constant state of inflammation. This leads to diseases and health conditions that are strongly linked to inflammation, including asthma and cardiovascular diseases. Some of the molecules in the body that can instigate a change in gene expression are: Nf-kB, TNFa, and reactive nitrogen species such as nitric oxide and peroxynitrite. Hydrogen attacks inflammation](#)



THE HEALTH BENEFITS OF HYDROGEN RICH WATER

항산화 물질 (Antioxidant) : 수소는 장기 이식시 조직 및 암 및 피부병 치료에 유리한 효과를 나타냅니다. 예를 들어, 암 방사선 치료 동안 이온화 방사선은 정상 조직, 특히 폐, 심장 및 다른 기관에 손상을 줍니다.

당뇨병 : 수소가 풍부한 물을 보충하면 제 2 형 당뇨병 또는 내당능 장애가있는 환자의 지질 및 포도당 대사가 개선됩니다.

암세포 : 수소는 장기 이식에서 조직에 유익한 효과를 나타냅니다. 암 및 피부 질환의 치료, 기타 용도

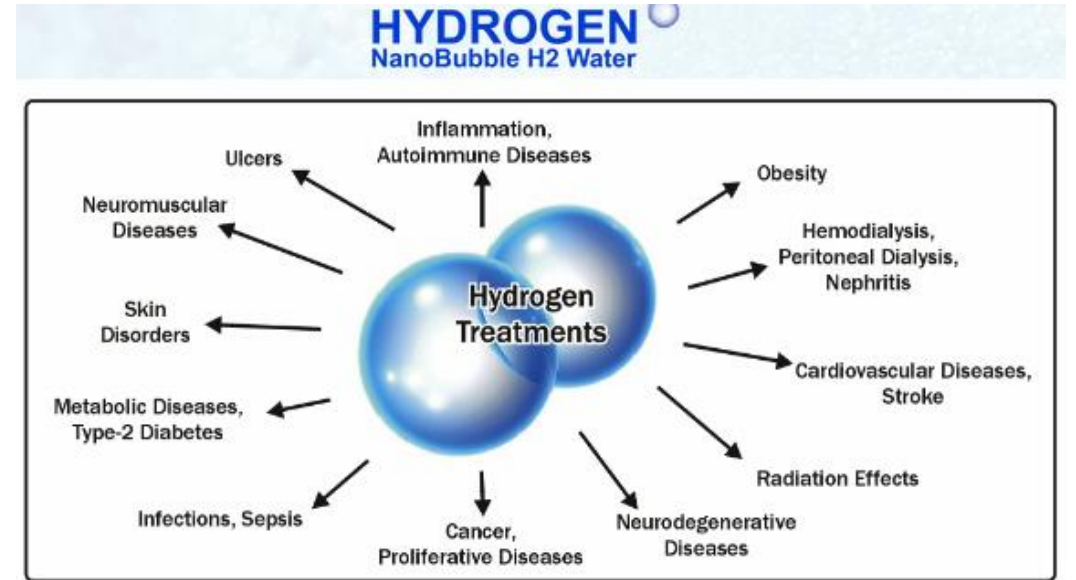
안티 에이징 : UVA 노출 후 피부 섬유 아세포 및 각화 세포에서 1 형 콜라겐 생성을 촉진하기 위해 H₂가 풍부한 물의 능력을 조사했습니다. 연구팀은 대조군에 비해 H₂가 풍부한 Water 시료에서 3-5 일 후에 type-1 콜라겐 합성이 2 배 이상 증가한다는 것을 발견했다

BRAIN INJURY : 전세계의 부상의 중요한 원인은 신체 외상으로, 장애 또는 사망. 수소는 몸, 특히 간, 췌장과 같은 뇌, 폐, 신장, 망막 및 땀샘에서 신체의 여러 장기의 손상을 치료하기 위한 보조제로 성공적으로 사용되었습니다.

운동 성능 : 수소는 항산화제로 작용할 수 있다고 알려져 있어 급성 운동에 대한 산화 스트레스와 근육 피로에 수소가 풍부한 물이 미치는 영향을 조사했습니다.

심부전 : 대사 증후군 예방. 증상의 집합 (비만, 인슐린 저항성, 고 콜레스테롤 및 고혈압 포함)을 특징으로 하는 장애, 대사 증후군은 심혈관 질환 및 2 형 당뇨병의 위험 증가와 관련이 있습니다.

INFLAMATION : 반복적으로 염증 매개체에 노출된 세포는 염증 반응 단백질을 코딩하는 유전자를 가지고있어 지속적인 염증 상태에있게됩니다. 이것은 천식 및 심혈관 질환을 포함하여 염증과 밀접한 관련이 있는 질병 및 건강 상태로 이어집니다. 신체에서 유전자 발현의 변화를 유도 할 수 있는 분자의 일부는 Nf-kB, TNFa 및 산화 질소 및 과산화 질소와 같은 반응성 질소 종입니다. 수소 공격 염증



27 Surprising Hydrogen Water Health Benefits

Hydrogen water contains hydrogen molecules that act as powerful antioxidants. These molecules help neutralize oxygen free radicals that contribute to disease development, inflammation, and aging. Read more to learn about the miraculous benefits of hydrogen water!

•[Introduction](#)

•[Hydrogen Water Snapshot](#)

- [Pros](#) [Cons](#)

•[The Health Benefits of Hydrogen Water](#)

- [1\) Hydrogen Water is an Antioxidant and Prevents Brain Damage](#)
- [2\) Hydrogen Water May Improve Mood Disorders](#)
- [3\) Hydrogen Water Suppresses Inflammation](#)
- [4\) Hydrogen Water Reduces Muscle Fatigue, Motor Deficits, and Muscle Degeneration](#)
- [5\) Hydrogen Water Prevents Metabolic Syndrome](#)
- [6\) Hydrogen Water May Help in Weight Loss](#)
- [7\) Hydrogen Water Enhances Mitochondrial Function](#)
- [8\) Hydrogen Water Treats Diabetes](#)
- [9\) Hydrogen Water May Treat Metabolic Acidosis](#)
- [10\) Hydrogen Water May Prevent Cancer](#)

BBN Pure Hydrogen Nanobubble Water

Effect

Hydrogen Water

- [11\) Hydrogen Water Reduces Side Effects of Cancer Treatments](#)
- [12\) Hydrogen Water Boosts Skin Health](#)
- [13\) Hydrogen Water Enhances Wound Healing](#)
- [14\) Hydrogen Water Limits Damage of Transplant Organs](#)
- [15\) Hydrogen Water Improves Bladder Dysfunctions](#)
- [16\) Hydrogen Water is Cardio-Protective](#)
- [17\) Hydrogen Water Protects the Eye](#)
- [18\) Hydrogen Water Prevents Hearing Loss](#)
- [19\) Hydrogen Water Combats Allergy](#)
- [20\) Hydrogen Water Ameliorates Kidney Disease](#)
- [21\) Hydrogen Water Protects the Liver](#)
- [22\) Hydrogen Water Promotes Gut Health](#)
- [23\) Hydrogen Water Protects the Lung](#)
- [24\) Hydrogen Water is Radioprotective](#)
- [25\) Hydrogen Water Relieves Pain](#)
- [26\) Hydrogen Water May Prolong Lifespan](#)
- [27\) Hydrogen Water is Antibacterial and May Promote Oral Health](#)

BBN Pure Hydrogen Nanobubble Water

Key Word

Hydrogen Contained Nanobubble Water

Key Word

최첨단 수처리 기술 융합
Fusion of advanced Water Treatment Technology

완벽한 살균력
Perfect Sterilization Power

물 클러스터 분해
Decomposition of Water Cluster

대용량 처리 가능
Mass Production by modular

화학 부산물 비 생성
No generation of Chemical by-products



일반 지하수 / 하천 물 사용
Ground water/River/Rain

물리적 살균 방식
Physical disinfection

중금속 제거 및 산화
Heavy metal oxidation and removal

풍부한 수소와 산소 용존량
Abundant Hydrogen Dissolved

건강을 테마로 한 기능성 음용수
Healthy Functional drinking Water



비비엔 나노버블 수소수는 .. 시장에 있는 수소수 와는 다릅니다.

1.물속에 중금속, 페놀, 비소, **TDS**, 박테리아 등 **Plasma** 로 산화 침전 제거합니다

2.계속해서 나노버블 제너레이터는 **PEM** 공법으로 생산한 **99.99%**의 산소/수소를 나노버블에 주입 가두어 나노버블 수소수를 만듭니다

3. 미세먼지, 배기가스, 매연 등 대기오염과 도시쓰레기, 가축 분뇨, 생활하수, 공장 폐수로 빗물 지하수 강물이 오염되었으며 중금속 비소 페놀, 세균 박테리아 와 함께 살균 제거 해야음료수 원수로 사용 할 수 있습니다. 특히 동남아 중국 인도는 비소로 수억명이 암에 노출되어 있습니다

4.중금속 비소 페놀 살균을 위해 화공 약품을 사용하면 2차 독성 물질을 만 들수 있으며 다시 중화 제독을 를 해야합니다 .

5. . 대형 생수 업체들은 오염되지 않은 한라산 지리산, 백두산등 고산 지하수를 확보하기 위해 노력 하고 있으며 그러나 빗물에 녹아드는 중금속 및 비소는 고산 지역을 가리지 않고 뿌림으로 고산 지하수라도 검사하여 별도로 제거해야 합니다

6. 시중에 판매되고 있는 나노버블 수소수는 중금속 비소 등의 살균 제거도 못하며 수소를 디퓨저를 통과시켜 주입함으로 대량생산이 어려워 생산가가 높습니다 그리고 순수한 수소발생 장치가 명확하지 않으며 음료수용 수소는 듀폰의 **PEM** 멤브레인을 사용 해야 합니다

7.텀블러 수소발생 장치의**95%**가 문제가 있다고 미국에서 조사 됐습니다 . 아래 비데오 참고 : **Hydrogen water..why dangerous ? : <https://youtu.be/xd84wnIUWCA>**

8. 텀블러 수소수 발생장치는 나노 버블처럼 순수 수소를 발생 나노버블안에 가두는것이 아니라 탄산수를 만들때 물에 압력을 가하면서 녹이는 경우와 장시간 믹스 함으로서 수소를 녹이는 것입니다. 이경우 수소수가 공기에 노출 되면 탄산수의 김이 빠지는 것처럼 수소가 증발해 버립니다

9. 텀블러의 또다른 심각한 문제는 염소로 살균 처리된 상수도 물을 사용 하는경우 발생할수 있는 차아 염소산 (염소 표백제 구성 요소).입니다. 살균 성능은 좋지만 차아 염소산 화학 부산물은 산성 화학 부산물이며 농도에 따라 중대한 독성이 있습니다 . 염소는 독성 물질이며 독특한 소독 냄새가 있습니다. 소독의 부산물 **Total Trihalomethane (THMS)**는 발암 물질입니다

BBN nano bubbles Hydrogen Water treated by Plasma is completely different from the others.

: ..

1. Removes oxidized materials by Plasma such as heavy metals, phenol, arsenic,TDS, bacteria in water

2. The nano bubble generator infuses 99.99% hydrogen from PEM process into nano-bubble

3. Source water from rainwater, groundwater, river and reservoir will be disinfected and heavy metals, arsenic phenol, chemicals will be removed.

4. The chemical agent treatment for the disinfection of bacteria, removal of heavy metal, arsenic, phenol can produce secondary toxic substances and need neutralization should be made again

5.. A Big bottled water companies are securing alpine groundwater from uncontaminated high mountain such as Mt. Jirisan Mt Hala and Mt. Paektu but cannot avoid rain contaminated by air pollution and contamination. heavy metals under ground must be removed by plasma

6. Nano-bubbles hydrogenated water sold on the market is produced by means of a diffuser and The production cost is high because it is difficult to mass-produce. and and the tumbler hydrogen water generator 95% could have problem. Please see the Video : Hydrogen water.. why dangerous? : <https://youtu.be/xd84wnIUWCA>

7. Tumbler Hydrogen generator can infuse hydrogen in the water like Carbon water but does not contain pure hydrogen long time... The hydrogen will be evaporated like 7-up gas water when exposed on the air. as if the carbonated water is out of steam

8. Another serious problem with tumblers is the use of chlorine-treated tap water. Although the sterilization performance is good Hypochlorous acid chemical by-products are acidic chemical by-products and have significant toxicity depending on the concentration.

9. Chlorine is toxic and has a unique odor of disinfection. Total Trihalomethane, a byproduct of disinfection (THMS) is a carcinogen

10. Sterilization using hypochlorous acid (chlorine bleach component) produced by electrolysis of water. Sterilization performance is good, but hypochlorous acid, which is an acidic chemical by-product and has serious toxicity depending on concentration.

Chlorine is a toxic substance and has a unique disinfectant odor. as a by-product of disinfection, Total Trihalomethane (THMS), which is a carcinogen,

BBN Pure Hydrogen Nanobubble Water

COMPARISON

	Sales Price	Technology	Plant Cost	Economic
BBN Nanobubble Hydrogen Water 500ml/bottle	2000Won~ 3,000Won	Ground Water BBN Plasma Sterilization and heavy metal removal BBN Nano Bubble Generation Hydrogen Infusion Tech ※ 여과 장치는 기본	Turnkey Plant for 6,000BPH/h, 500ml US\$1 Mil~3 Mil subject to Factory, CE,GMP, Clean Room	Very high Profit Ex-work: 1000W Sales Price: 2000W For 50% Profit of Business partners Low Plant Cost Low Operation Cost
Existing Nano bubble Hydrogen Water	3,000 won ~ 4,000won	Needs Clean Source Water Filtration System Nanobubble generator ※ No Heavy Metal Removal	No mass production plant for nanobubble hydrogen water by bamboo charcoal diffuser with Hydrogen generator or Tumbler	High investment for mass production and Should be high Sales price
General Bottled Water	500won ~ 1,500won	Need Clean Source Water UV sterilization and Filtration by RO, ETC. ※ No Heavy Metal Removal	By big Company Over U\$10 Million For Turkey Plant (부지매입/ 건축비 포함)	Very High Competition Low Profit .

BBN Water Treatment

ECONOMICS

**BBN Pure Hydrogen
Nanobubble Water**

6000bph, 500ml

500,000 US \$

Turnkey Plant Cost

2,500,000 US \$

Land, factory, Warehouse, License,
Construction ISO, Clean Room,
GMP, HACCP

**BBN Pure Hydrogen
Nanobubble Water**

Sales Revenue

43,200,000 US \$

Ex-Work Price : 1.0\$/B 300 days

86,400,000 US \$

Sales Price : 2.0U\$/B 300 Days

Return of
Investment

1~2 Month

$\$3 \text{ Mil} / 43.2 \text{ Mil} \times 12 \text{ month} = 0.6 \text{ Month}$

500ml
Ex. Work

1.0 US \$

Our price is 1.0\$ x 6000 BPH x 24
Hours x 300Days = \$43,200,000

**Sales Price is U\$2.0 x 6000x 24
X300 = U\$86,400,000. .**

**\$86,400,000 - \$43,200,000 =
Profit of Business Partners.**

01

Ground Water
No cost

02

Dispersed Production for bottling, community,
building, hotel and factory

03

BBN's core technology is to eliminate all heavy metals and completely
sterilize Escherichia coli and bacteria to ensure high water stability

04

BBN's nano bubble technology produces nanobubble water
containing hydrogen, which removes active oxygen from the body..

05

Very low Investment and the sales price can be adjusted
down as much as general bottled water.

06

BBN Pure Hydrogen Nanobubble Water is very High cost-to-benefit ratio

Cost Analysis

Sales Price of Hydrogen contained water:

Korea : 3000 Won – 5,000 Won (\$3-\$5) : [G-market Price List](#) [Interpark Price List](#). 장동건 수소수 : <http://few6199.cafe24.com>
USA : 3000 Won - 5,000 Won (\$3-\$5) : [Amazon Hydrogen Price List](#)
Japan : 3500 Won -5000 Won (\$3 -\$5) : [Rakuten Global Price List](#)

수소수의 시중 판매가는 3000원에서 5000원이며 비비엔 나노버블 수소수 판매가를 국가에 따라 1000원, 2000원, 3000원으로 하였습니다
비비엔 한국 판매가가 2000원 (3000)원인 경우 투자 파트너가 구매자로(Prosumer) 본인이 사용하거나 판매하면 50%(1000 (1500원)가 수익 입니다
투자 파트너는 비즈니스 파트너를 확보하여 평생 수익이 보장되는 사업을 하는 것 입니다 .

The selling price of water in the market is 3000won(\$3.0) to 5000won(\$5.0) The sales price of BBN Hydrogen Water is 1,000w(\$1.0) , 2000W(\$2.0), or 3000 won(\$3.0) depending on the country.
If Korea sales price is \$2.0 (\$3.0), 50% (\$1.0/\$1.5) is the profit when the investment partner uses as a buyer (Prosumer) or sells to the others.
An investment partner runs his own business that ensures a lifetime profit by securing a business partner.

비즈니스 파트너는 판매를 하면 파트너 수익(1000원) 의 50%(500원)가 수익이며 투자파트너는 30%(300원)이 수익 입니다.
파트너는 병원, 학교, 호텔, 식당, 양노원 등. 고객을 유치하면 많은 수익을 계속적으로 확보 할 수 있습니다
비즈니스 모델 CCMC-PEN Platform은 모든 참여자(창업자)가 평생 사업 과 계속 수익이 증가되는 사업을 하도록 디자인 한 것 입니다 .

Business partners registered through Investment Partner earn 50% (\$0.5) of his partner profit (\$1.0) and 30% (\$0.3) is allocated to the investment partners.
Partners can sell Hydrogen Water to the hospitals, schools, hotels, restaurants, and nurseries in qty. And partners can earn a lot of revenue
Business Model of CCMC-PEN Platform is designed for all participants (entrepreneurs) to engage in lifetime business increasing profit continuously

생산 플랜트는 시간당 6000병 과 3000병 생산 라인이 준비 되어 있으며 500ML, 시간당 6000병 생산 라인의 투자비는 장비 시스템 5억 이며 대지 공장 건설 ISO, HACCP, GMP 크린룸 창고 물류 설비 구축 에 25억,, 모두 약 30억이 소요 됩니다 .
그러나 기존 보틀링 공장 또는 경영이 어려운 기존 생수 공장에 OEM 생산을 하면 장비시스템 설치 비용 5억이면 됩니다. 현재 대부분의 생수 공장은 렌탈 정수기 사용 및 치열한 경쟁으로 경영이 어려우며 비비엔 투자 파트너로 영입 OEM 생산을 할수 있습니다 .
생산 라인은 3-5개월 이면 설치 완료 할수 있고 생산 라인의 사양과 기술은 아래와 같습니다

The production plant is prepared for the production of 500ML, 6000 bottles and 3000 bottles per hour. 6000 BPH and 3000BPH production line need investment of US\$500,000 and US\$300,000 for turnkey equipment installation. The land , factory, construction , with ISO, HACCP, GMP, Clean room needs \$2.5 Million for 6000 BPH and \$1.5 million for 3000BPH. However, when we use the existing bottling plant on OEM basis, no need investment for building and factory and bottling. Currently, many of bottled water factories are suffered from intense competition and rental of water purifiers and easy to find partners. The turnkey plant can be completed in 3-5 months, and the specifications and technology of the production line are as follows

500ML, 3000 BPH, 50T/day: <http://www.bbnworld.net/water/3000bph.pdf>
500ML, 6000 BPH, 100T/day: www.bbnworld.net/water/nanohydro_en.pdf

판매가를 2000원/\$2 (3000원/3\$) 인 경우 손익 계산을 하겠습니다 (Profit Calculation based on sales price of \$2.0 and \$3.0)
6000BPH x \$2.0 (\$3.0) x 24H x 300D/Y = U\$86,400,000 (\$129,600,000) Total Sales Revenue by Partners
6000BPH X \$1.0 (\$1.5) x 24H x 300D/Y =U\$43,200,000 (\$ 64,800,000) Total Sales Revenue by BBN
6000 BPH x \$0.3 x 24H x 300 D/Y = U\$12,960,000. Net Production Cost + OPEX by BBN

BBN Profit per year US\$30,240,000 (\$ 51,840,000)

Partner’s Profit per Year : US\$43,200,000 or (US\$64,800,000)

We need investment for the construction of plant and operation of company up to 10 Million dollars
투자는 크라우드 펀드, 투자자, 엔젤, 투자회사, 개인 등, 1000만원(US\$10,000)을 1 구좌로 투자한 경우 투자 파트너 입니다 .
비즈니스 파트너는 투자 파트너의 추천으로 가입할 수 있으며 입회비는 10만원 (\$100.-) 입니다 . 파트너와 그 가족 지인이 고객이며 많은 사람이 참여 해야 수익이 증대 됩니다 .
특히 건강을 생각하는 실버세대, 퇴직 실직자들에게 초기부터 수익을 보장하는 창업을 할수 있습니다

CCMC-PEN Business Model for B2C and B2B

Cooperative, Collaboration Mutual Compensation Partnership Enterprise Network

클라우드 투자파트너와 비즈니스 회원이 모여 마케팅 세일즈를 진행하고 수익을 상호 보상하도록 기업이 연결되는 플랫폼이 자동 구축되는 창업 솔루션 조합식 협업 상호 보상 파트너쉽 기업 네트워크 (CCMC-PEN) 입니다

CCMC-PEN is a combination of investment Partners and business Patners to establish a global business platform through mutual collaboration and 50:50 share of profit between members for mutual compensation to provide a lifetime never failing business with ever increasing profit.

CCMC-PEN is open platform for business start-up by old and young man and woman.- composed of who can invest US10,000 as investment business partner and business man who can pay U\$100 as a business member through business partner.

There are many items and technology to be launched on this platform and we select Water Treatment Plant and their products of Blue Gold Quantum Drinking Water contained pure hydrogen.

“ In 2005, already one -third of the world's population was suffering from water shortages, in 2025 about 2.7 billion people will face fresh water shortages and 20% of the world's population will suffer water shortages. Therefore, “Water” has come to be called Blue Gold, as like “Oil” which is rare and various utilization called Black Gold.

Because 'Water' is a problem that is directly related to human survival. By 2025, when the water shortage becomes serious, the global water market will grow at an average annual rate of 4.9%, reaching about 1,000 trillion, and currently, the water industry is already about 700 trillion won, twice the size of the semiconductor market.

BBN Pure Hydrogen Nanobubble Water

Standard Product Line

Hydrogen Contained Nanobubble Low Price Drinking Water

- Drinking Water for general Clients/Low price (일반 서민을 대상으로 음용수 / 저가형)
- Mart/Convenient Store/ Super Mrket/ Shopping Mall/ 편의점 / 슈퍼마켓 / 쇼핑몰 중심 판매



Nanobubble Hydrogen
Water
500ml Pet Type



Nanobubble Hydrogen
Water
2L Pet Type



Nanobubble Hydrogen
Water
18.9L Pet Type

BBN Pure Hydrogen Nanobubble Water

Luxury Product Line

Nanobubble Hydrogen(Oxygen) Water Premium Drinking Water

- Premium Marketing Policies for Upper Class
- Platform Membership Marketing Operations - Block chain
- Pouches and cans have a long holding period of hydrogen.



Nanobubble Hydrogen
Water
250ml Pouch



Premium Nanobubble
Hydrogen Water
500ml Pouch



Nanobubble Hydrogen
Contained Water
300ml Can



Nanobubble Hydrogen
Contained Water
500ml Can

BBN Pure Hydrogen Nanobubble Water

Functional Health Product Line

기능성 건강음료 생산

Nano-bubbles Fusion of water and health ingredients
Functional health beverage production

- 체내에서 흡수력이 빠른 효과 Quick absorption effect in the body
- 고급병원과 백화점 (면역 증진 / 항암 효과 / 피부미용/안티에이징)
Advanced hospitals and department stores (immunity enhancement / anti-cancer effect / anti-aging)



Nanobubble Hydrogen
+ Red Ginseng
250ml Pouch



Nanobubble Hydrogen
+ Chaga Mushroom
300ml Can



Nanobubble Hydrogen
+ Cold Brew Coffee
500ml Can

BBN B2B Dispersed Nanobubble Water Plant

Apart Complex, Home, Hotel and Hospital, Building, School, Factory, Resort Place and Island
No More Centralized Tap Water ..



식수의 자립화
Self-sufficiency of drinking water

중앙집중식 급수체계에서 탈피
Escape from Centralized
Water Supply System

BBN Water Treatment
The Best Strength is

.....
Removal of
Heavy Metal
Arsenic, odor
Turnkey Contract
for Point of Entry

**From
Any Water**

Primary Platform for
Distributed Smart City construction

아파트, 학교, 호텔 병원, 빌딩,
섬, 유원지, 동남아시아 중동, 인도, 중국

Apartment, Building, School, Hospital,
Hotel, Restaurant,
Housing Complex, Island, and
Overseas suffered from lack of water

Plasma Fusion with Nanobubble and
Hydrogen/Oxygen
Drinking Water Plant,

50T/day: <http://www.bbnworld.net/water/3000bph.pdf>
100T/day: www.bbnworld.net/water/nanohydro_en.pdf

**We start talking with Pakistan,
Vietnam, China, India, Bangladesh
Indonesia, Kuwait, USA, where
They are suffered from Heavy metal,
Arsenic, Dioxin, High TDS,**

BBN Pure Hydrogen Nanobubble Water

Terms and Conditions for
JV Partner



JV with Local
Bottled Water Comp
(Joint Venture)

50 : 50



US \$500,000

Including royalty
& License. CIF

제품생산을 위한 전기 인프라 구축
판매 및 유통망 구축



Plant Price 50% by JV Par
Land , Factory, Markting
construction by Partner

Factory: Height 4M / Area 500-
600m²



Plant Price 50% By BBN
Business Model, Supervision
Of factory construction R&D.

JV Partners Working Process



JV Partner Sign Contract

USD 250,000 by T/T

JV Company Establish

JV Partner
Company

Securing Factory

BBN

**Production Plant
Preparation**



**Installation
Training**

Start Production

Warranty 3 years



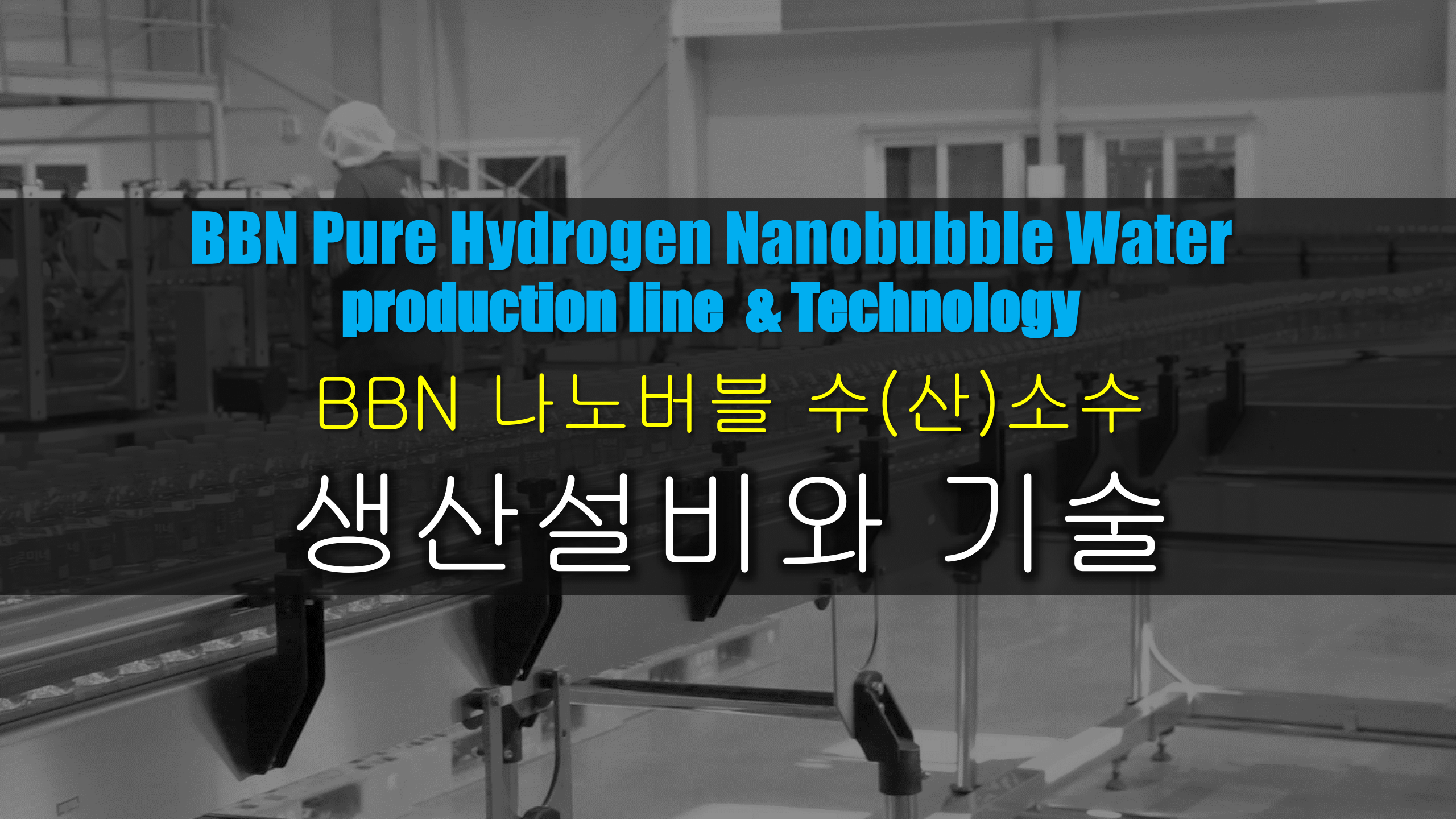
Plant Construction : 3~5 Months
회사설립 후 7일 이내 용기 디자인
화사 설립 후 10일 이내 Caps 공급

Serice Engineer
Operator Training

Dispatch Installation Engineer
JV Company : Air ticket, Loadging
Medical Service

Basic Infrastructure

- Space for pure/mineral water filling production line in workshop: **About 500 square meters with height 4 meters. Adjustable according to the factory.**
- Electricity network: **380V/60Hz** (Adjustable according to JV partner's local voltage standard)
- Wire/cables: wires/cables from customer's general control cabinet to the main control cabinet for pure/mineral water filling production line; all electrical cable from the main control cabinet to each machine



BBN Pure Hydrogen Nanobubble Water production line & Technology

BBN 나노버블 수(산)소수
생산설비와 기술

BBN

Pure Hydrogen Nanobubble Water Production line

장비 구성과 핵심 기술

BBN 핵심 장비와 기술

BBN Water Treatment by Plasma
BBN Nanobubble Generator
PEM Hydrogen Generator

외주제작장비 (일반장비)

BBN PE bottle Blowing Machine
Filling,
labeling
dating
shrinkable or wooden box packing

BBN Pure Hydrogen Nanobubble Water

핵심기술공정

4T/h Portable Water Treatment System :



Capacity : **4** T/h

시간당 순수 음용수를 생산한다,




시간당 500ml 기준으로
6,000병의 순수 음용수를 생산한다.

6000 BPH

(RO after water testing) → Pure water tank



BBN Pure Hydrogen Nanobubble Water

보틀링/포장 공정

6000BPH / 500ml Filling and Packing System

Auto bottle
blowing system

자동 보틀
블로잉

air conveyor

에어
컨베이어

washing filling
capping machine
lamp checker

세척/필링/
캡핑

ink-jet printer

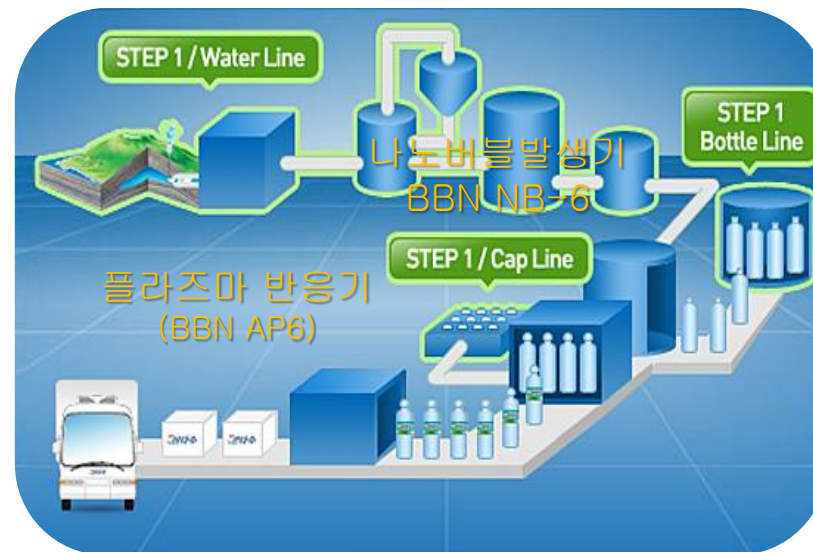
프린팅

labeling
machine

라벨링

packing
machine

포장



PART A

Water Treatment System

생산량 **4** T/H



시간당
500mL/6,000병 생산

No.	상품명	모델	수량	비고
1	부스터 펌프 Booster pump	CHL4-60	1	◇ 펌프 ◇ 유량 : 6m³/h ◇ 방출 : 31m ◇ 모터 파워 : 1.1kw
2	쿼츠 샌드 필터 Quartz Sand Filter	JDL-6	1	◇ 용량 : 6T/H ◇ 제질 : SUS304 ◇ 두께 : 2.5mm / 치수 : Φ600*2200mm
3	플라즈마 리액터 BBN Plasma Reactor	AP6	1	◇ 용량 : 4T/H ◇ 화학물질 불필요 / Chlorine-Oxide 불필요 ◇ 치수 : : Φ600*2200mm
4	마크론 필터 Micron filter	JML-6	1	◇ 용량 : 6T/H ◇ 재질 : : SUS304 ◇ 두께 : : 2mm / 치수 : Φ220*1000mm
5	나노버블제너레이터 Nano Bubble Generator (PEM Hydrogen Generator)	BBN-002	1	◇ Air : 2000L/H (Hydrogen) ◇ Effected Waterbody 300CBM/day ◇ 치수 : 680*550*800mm
6	퓨어워터탱크 Pure water tank	CG-5000B	1	◇ 용량 : 5m³ ◇ 재질 : : SUS304 ◇ 두께 : 3mm / 차수 : Φ1800*2600mm
4T/H water treatment price				

Booster Pump

Model:CHL4-60



- 재 질 : 펌프 몸체 스테인레스 스틸 SUS304
- 작업 조건 :
 - 두껍고 깨끗하며 불연성이고 폭발성이 없으며 고체 입자를 포함하지 않는 액체임
 - 모터는 완전히 밀폐되어 있으며 2 등급 에어쿨링 표준 공기 송풍기



액체 온도	: 상온 : -15 °C °C ~ + 70 °C °C
고온	: + 70°C ~ +120
표고	: 최고 : 1000m
유량	: 6m ³ / H
유동 길이	: 31m
전력	: 1.1KW
보호 등급	: IP55
절연 등급	: F
전압	: 380V 50HZ
속도	: 2900r / min
펌프 입구 입경	: 내경 ø50mm

Quarts Sand Filter

Model : JDL-6



모래 여과 필터

주로 플랑크톤, 이끼, 현탁액, 콜로이드 등을 제거하는 데 사용



재질	: SUS304 스테인레스
높이	: 2200mm,
직경	: 600mm
구성 요소	: 물 분배기, 물 수집, 압력 게이지, 필터
재료, 밸브	
명세	: $\phi 2.5\text{mm}$, $\phi 1\text{mm}$, $\phi 0.5\text{mm}$, $\phi 0.2\text{mm}$ 큰 것은 아래쪽으로, 작은 것은 위쪽을 향
하계	
여과 양	: $6\text{m}^3 / \text{h}$

필터는 역삼투압 세척 시스템이 장착되어 있으며
사용자는 각 필터와 펌프를 연결하고 상대 밸브를 열어야 한다.

BBN Plasma Reactor

Model : BBN AP6



993% 살균과 중금속을 제거하는

최첨단의 “플라즈마”수처리 기술

- Clear Water Plasma는 PLC (Programmable Logic Controlled) 고전압 에너지 펄스가 직접 전달되는 기술임
- 통제된 빈도로 오염된 물로 이 에너지 펄스는 여러 산화제 (OH, H, O, O₃ 및 H₂O₂와 같은)를 생성함과 동시에 60nm와 300nm 사이의 고밀도 자외선을 생성.
- 펄스의 방출 동안, 음향 및 수소성 충격파는 마하 속도의 3 내지 4 배의 속도로 반응기를 통해 이동

- A. A high voltage pulsed discharge is induced directly in the effluent stream generating multiple oxidants and radicals such as OH, O, H, O₃, H₂O₂, etc.
- B. Aggressive oxidant species are nonselective and oxidize all contaminants in the effluent.
- C. A high intensity UV light released during the process is used for bacteria disinfection.
- D. The high energy pulse generates a hydrosonic wave which creates acoustic cavitation. Bacteria colony clusters are then broken down
- E. Direct energy input into the water results in a high efficiency energy transfer, thus reducing the overall operating cost per gallon.
- F. Scale-causing minerals are precipitated and removed
- G. Without biocides, the process results in effective biofouling control.

Plasma Reactor

BBN Solution

물에서 다중 산화제를 생성하기 위해 전기를 사용함

BBN Plasma Reactor
uses electricity to generate multi-oxidants in the water



No Chemicals

No Ozone

No Chlorine di-oxide

No Ultrasound

No UV light



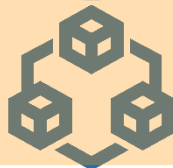
안전성
Safety



저비용
Low Cost



효율성
Effectiveness



모듈화/유연성
Modular and Flexible



좁은 면적
Small Footprint



저렴한 유지관리
Low Maintenance



다양한 응용분야
Broad Utility

BBN Plasma Reactor

제/품/특/징

기술	CWP 하이퍼 산화 공정 CWP' Hyper Oxidation Process	모든 유입수가 반응기를 통해 처리되므로 유속에 제한이 없습니다.	유속
모바일/현장 어플리케이션	가능 / Yes	가능 / Yes	자동화 소규모 인력
산화제 공정	혼합 금속 코팅과 전해질의 카테일을 사용하여 H2O2, O3, 표백제 등을 생성한다. 소금물을 주입 할 필요가 없다	예. 철분을 포함한 중금속 산화	중금속 산화
박테리아 살균	Yes / 99.99% 살균 화학물질 바이오시즈 무사용	매우 낮음 / Low	운영비
스케일 방지	Yes. Divalent Cations are precipitated on the cathode surface. The treated effluent does not scale.	가능 / Yes	H2S 제거
		이 공정은 박테리아 살균, 스케 일 유발 미네랄 침전 및 중금속 산화에 대한 TDS 제한없이 100 % 역류를 처리 할 수 있다.	Flowback 및 생성된 처리수 및 재활용



Micron Filter
Model: JML-6

높이 : 1000mm x 지름 : 220mm
 재질 : SUS304 스테인레스 스틸
 매체 : 폴리 프로필렌 필름 40 피트 5
 피스
 필터 정밀도 : 5 μ m
 용도 : 불순물 제거



RO Systems

- A. 유리 섬유 필름
- B. 역 삼투압 고압 펌프 1 세트
- C. 모든 종류의 용량 지시계, 압력 표시기, 전기 마그네틱 밸브, 밸런스 장치 및 파이프 밸브 시스템
- D. 온라인 압력 자동 자기 보호 장치
- E. 온라인 전자 지시계 (안정 보상) / 시스템 안전 보호 및 경보 시스템

RO 시스템은 본 수처리 시스템 필요하지 않지만 수질 검사 후 설치
 저렴한 가격 특징

BBN Nanobubble Generator

Model : NanoMax-06

Product Introduction

Nano Bubble Generator is a new generation of high efficiency and energy saving water treatment technology application. It has huge development potential, as the functional properties of bubble, bubble with anion, speed slow, ozone bubble explosion equivalent can have antiseptic effect, gradually become smaller bubbles... etc.) familiar, and mature technology and development, will continue to expand its use range, market growth will follow. Our nano bubble generator can replace the current domestic high-pressure decompression dissolved foaming of fine bubbles, and part of the aeration equipment.



Dissolved Oxygen: $\geq 8.9 \text{ mg/L}$
(Normal Air Source)

Features

- *High density of micro nano bubble, non-clogging, easy to maintain.
- *Bubble size : $80 \text{ nm} \sim 20 \mu\text{m}$, good gas-liquid dissolving effect.
- *Stable performance, high efficiency, low noise.
- *Wide range of application, such as : wastewater treatment, gas treatment aquaculture, aquaponics hydroponics, agricultural irrigation, bath etc.

나노버블 및 플라즈마 효과를 융합한 친환경 솔루션 개발

01

지하수, 하천 물을
화학 처리없이 식수(음용수) 처리
나노버블 수소수 생성

02

플라즈마 반응기는 중금속, 염색, 폐유 및 화학
폐기물 등의 오폐수 처리
비소, 납, 수은 등 중금속 산화

나노버블이란

<https://youtu.be/V6B2rsnvTZ8>

다양한 응용분야 : 의료 ... 암 치료에 좋은 효과

<https://youtu.be/mvBiHcWT1B8>

Nanobubble H₂ Hydrogen Water :

<https://www.nanobubbleusa.com/>

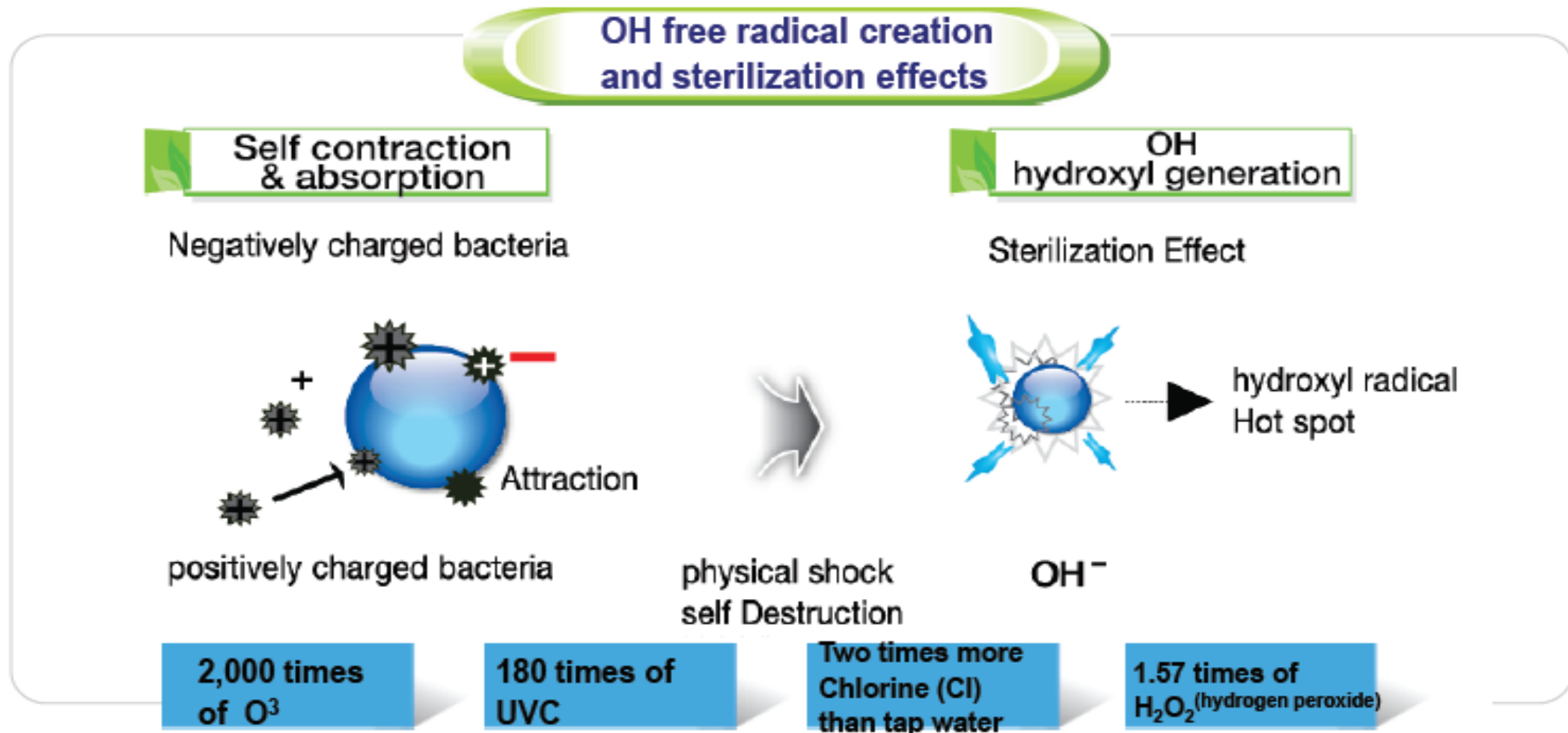
나노버블 워터

<https://blog.naver.com/0101hng>

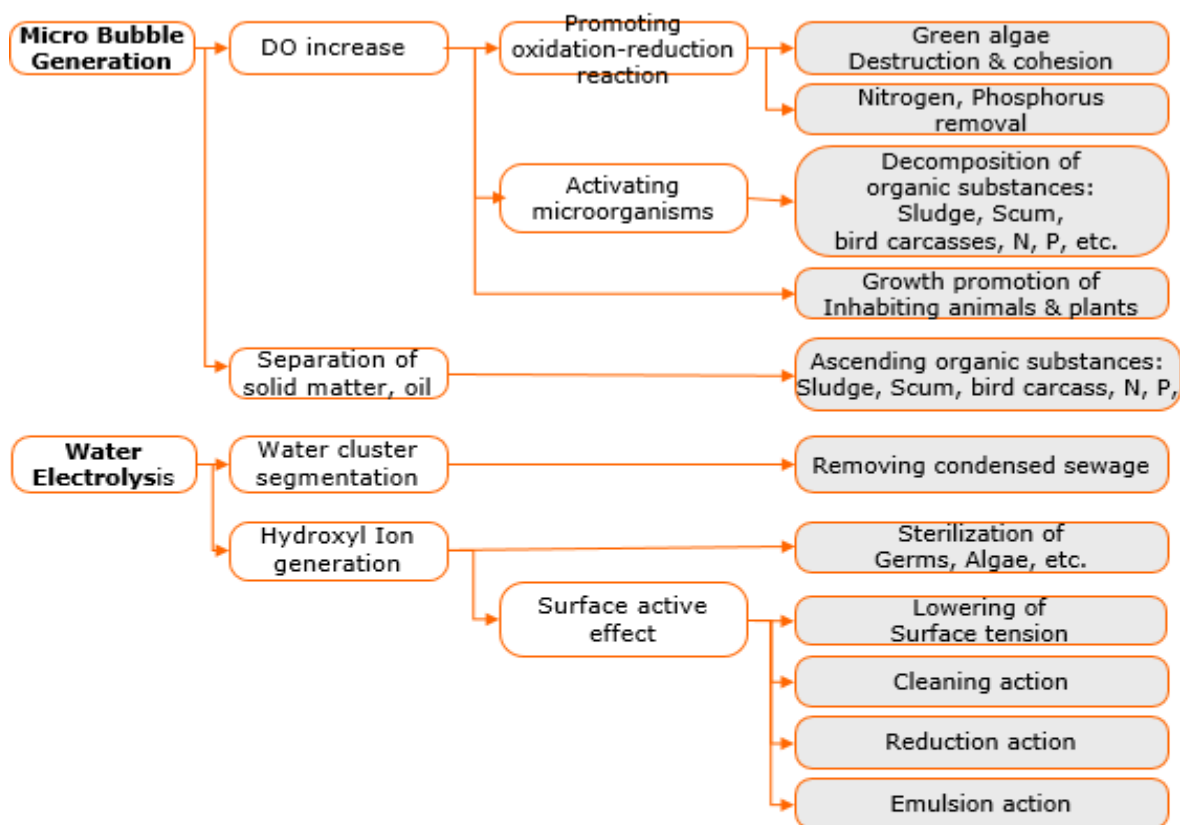
Definition of Nano Bubble

Effects of OH free radical

OH hydroxyl is the strongest natural oxidizer being created when O₂ line is operating. It has a nano-second of very short half-life, high reactivity to organic compounds harmful to the human body, and washing and sterilization power utterly harmless.



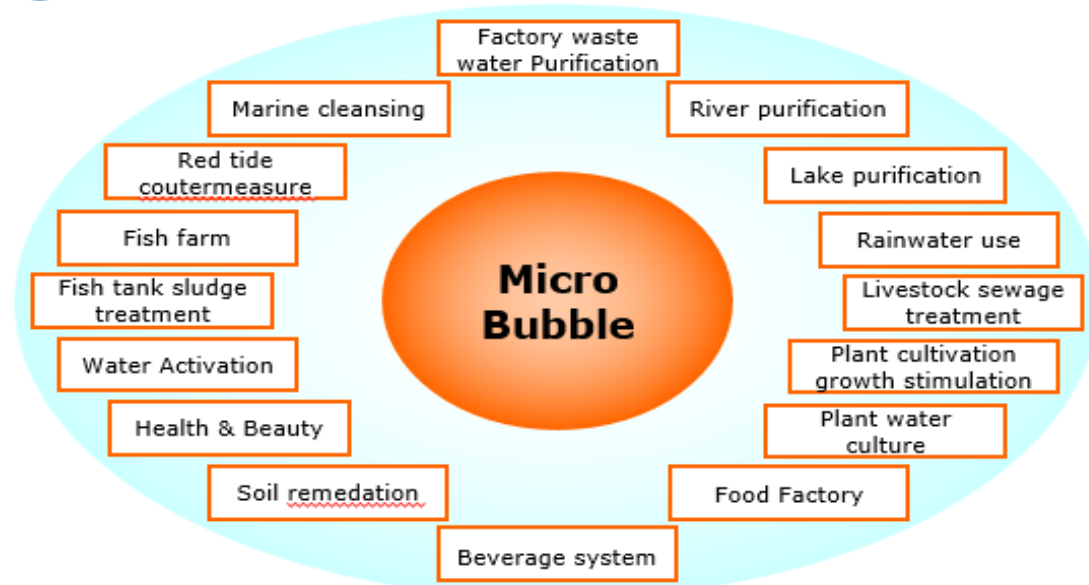
Effects



Features

- Environmental protection** → Enabling the processes without either deteriorating water quality or destroying environments of the water body
- None of additional chemicals** → Unnecessary to add chemicals for the processes of neutralizations, coagulations, etc.
- Cost Effective** → Consuming installation & operation costs and spaces far less than those of conventional systems using precipitation, filtration, etc.
- Emulsion effect** → Available to minimize the input of chemicals, through the way of spraying by the emulsion of chemicals with micro bubbles.
- Adaptability** → available to use the system either in closed lake or in large open water bodies such as rivers

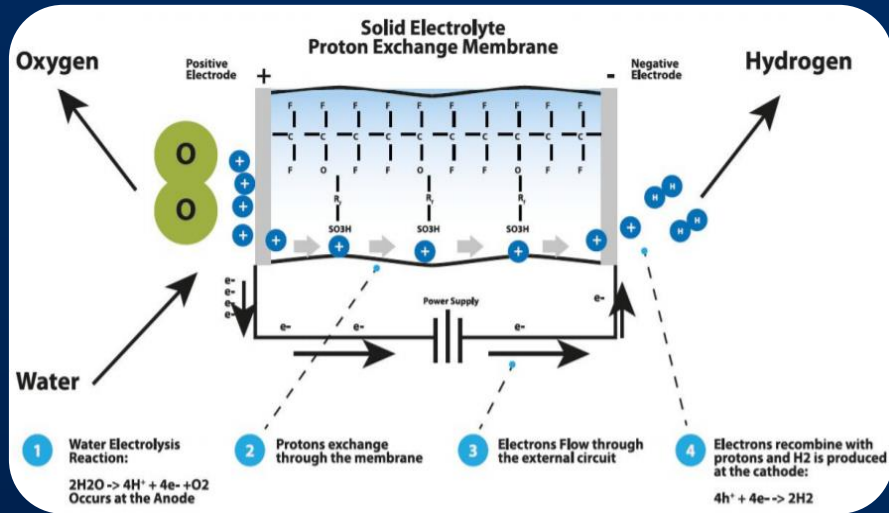
Applications of Micro bubbles



Benefits

Lake, River, Dam, Bay	Water quality improvement, Sludge removal, Odor removal, Algae decomposition & prevention, Eutrophication prevention, Sterilization T-N • T-P • SS • BOD • COD • PH • DO • ORP Improvement
Agriculture	Plant growth improvement, eutrophic materials decomposition, microbial activation, Improving resistances to diseases & coldness, Sugar contents increase, Soil improvement, Sterilization, Soil moisture improvement
Livestock	Livestock growth promotion, Disease -resistance improvement, Meat quality & milk quantity improvements, Promoting sewage treatment, Odor removal
Beverage	Easier mixing of materials, Hydrogen & Oxygen dissolving, Alkaline-ionized water
Source water, Pool	Residual chlorine removal, <u>Trihalomethane</u> (THM) removal, Sterilization (E.coli)
Food & Industrial drainage	Raw material cleansing, Sterilization intermediate processing, Reducing organic chemicals, Decomposition and decoloration of dyes and bleaching solution, Solutions for volatile organic compounds (VOC), Preventing soil contamination
Aquaculture	Removing food scraps, Skin diseases improvement, Activating plankton production, solution for red tide
Waste treatment plant	Removing odor, Improving COD-BOD, Removing hazardous substances
Beauty & Cleansing	Non-detergent washing, Skin improvement, Disinfection cleansing, <u>Atopy</u> improvement, Anion effect

BBN Oxygen & Hydrogen Generator PEM Titanium Electrolyzer



Technical Parameters

hydrogen flow:

1000/1200/5000/17000/34000 ml/min

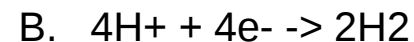
oxygen flow:

150/250/500/600/2500/8500/17000 ml/min

BBN electrolysis cell is light, highly effective, energy-saving and of environmental protection, producing hydrogen and oxygen through the electrolysis of pure water (without adding alkali). That's PEM technology. The electrodes, as the core of cell, are highly active catalytic electrode with nearly zero distance between the electrodes, which is formed by integrating composite catalyst with ion membrane with high electrolytic efficiency.

Working Principle

The proton exchange membrane (PEM), which only allows water and positive ions to cross between compartments. The membrane also serves as the electrolyte in the cell, eliminating the need for hazardous liquid electrolytes such as concentrated potassium hydroxide. PEM water electrolysis simply splits pure deionized water (H_2O) into its constituent parts, hydrogen (H_2) and oxygen (O_2), on either side of this membrane. When a DC voltage is applied to the Electrolyzer, water fed to the anode, or oxygen electrode, are oxidized to oxygen and protons, while electrons are released. The protons (H^+ ions) pass through the PEM to the cathode, or hydrogen electrode, where they meet electrons from the other side of the circuit, and are reduced to hydrogen gas. The two reactions that occur in the cell are as follows:



C. Thus, the only possible components of the streams are hydrogen, oxygen and water moisture, as shown in the following Figure

THE HEALTH BENEFITS OF HYDROGEN RICH WATER

ANTIOXIDANT :

Hydrogen exhibits beneficial effects on tissues in organ transplantation and in the treatment of cancers and skin diseases, among other uses. For example, during cancer radiotherapy ionizing radiation causes damage to normal tissues, especially lung, heart and other organs.

DIABETES :

Supplementation of hydrogen-rich water improves lipid and glucose metabolism in patients with type 2 diabetes or impaired glucose tolerance.

CANCER CELLS :

Hydrogen exhibits beneficial effects on tissues in organ transplantation and in the treatment of cancers and skin diseases, among other uses

ANTI-AGING : I

This same publication examined the ability of H₂-enriched water to stimulate production of type-1 collagen in skin fibroblasts and keratinocytes after UVA-exposure. They found that type-1 collagen synthesis was increased over 2-fold after 3-5 days in the H₂-enriched Water samples compared to controls

BRAIN INJURY :

An important cause of injury worldwide is body trauma, leading to disability or death. Hydrogen has been experimentally used as an adjuvant to treat injuries in various organs of the body, particularly in the brain, lungs, kidney, retina, and glands, such as liver and pancreas.

ATHLETIC PERFORMANCE :

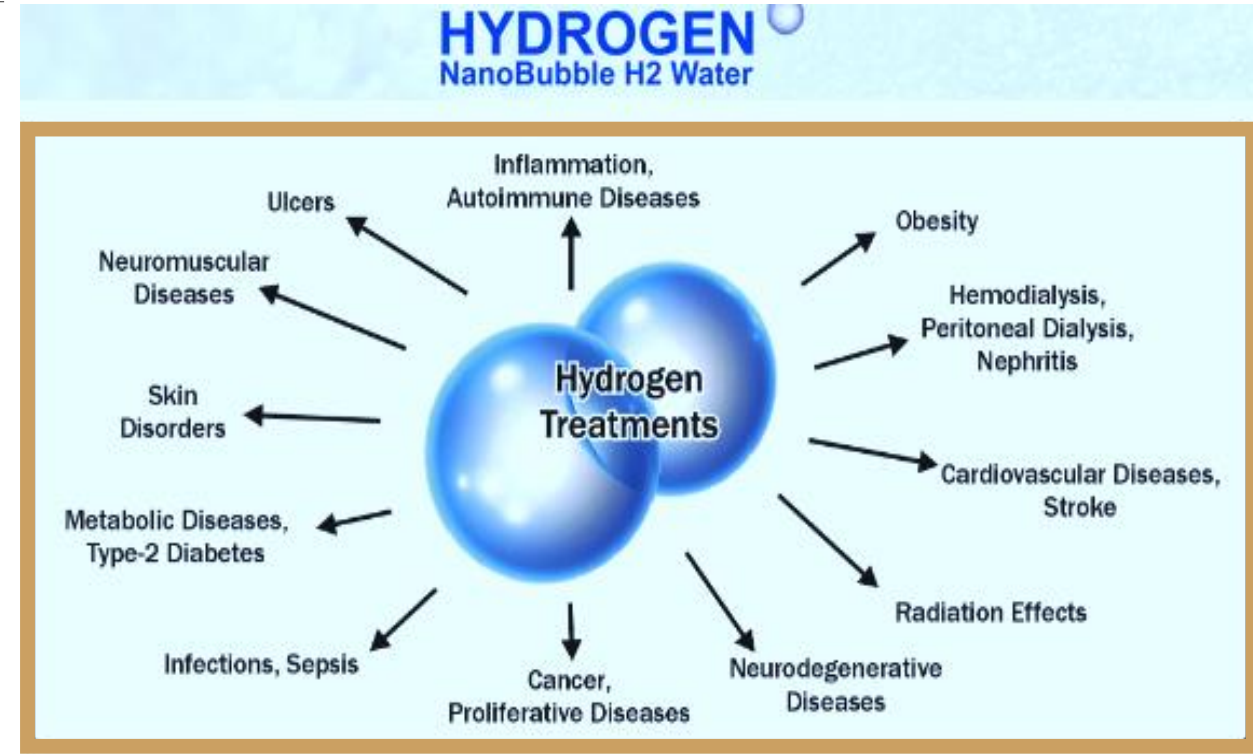
It has been said that hydrogen can function as antioxidant, so we investigated the effect of hydrogen-rich water (HW) on oxidative stress and muscle fatigue in response to acute exercise.

HEART FAILURE :

Prevent Metabolic Syndrome. A disorder characterized by a constellation of symptoms (including obesity, insulin resistance, high cholesterol and hypertension), metabolic syndrome is associated with an increased risk for cardiovascular disease and type 2 diabetes.

INFLAMMATION :

The cells that are repeatedly exposed to inflammatory mediators will have the genes that code for inflammatory response proteins switched on, and thus be in a constant state of inflammation. This leads to diseases and health conditions that are strongly linked to inflammation, including asthma and cardiovascular diseases. Some of the molecules in the body that can instigate a change in gene expression are: Nf-kB, TNF α , and reactive nitrogen species such as nitric oxide and peroxynitrite. Hydrogen attacks inflammation



PART B

Bottle Blowing Machine



No.	상품명	모델	수량	비고
1	PET blowing machine	OGB-6S	1	✧ 처리량 : 6000BPH ✧ 용기량 :0.1L-1.5L ✧ 6cavity with single servo motor
2	High pressure air compressor	3-34CSH-1830	1	✧ 용량: 4.8/30
3	Low pressure air compressor	CW-2.2/12	1	✧ 용량 : 4.8/30
4	High pressure air storage tank	1.0/30	1	✧ 용량 : 1.2/30
5	High pressure air cooling dryer+air filter	5.0/30	1	✧ 용량 : 5.0/30 ✧ 2개의 공기 필터
6	Water chiller	5HP	1	
7	Bottle mould	250ml	1	
6000BPH Bottle Blowing Machine				문의

Blowing Machine

Model:OGB-6S



Specifiction

ITEM			Unit	OGB-6S
PRODUCT		Theoretical output	Pcs/h	6500
		Max. Volume	L	1.5
		Max. height	mm	360
		Max. diameter	mm	105
MOULD		Number of cavities	/	6
		.mould plate dimension(LxH)	mm	840×360
		mould thickness	mm	198
		Mould opening stroke	mm	110
ELECTRICAL		Power		220-380V 50-60Hz
		Total power	KW	35
		Heating power	KW	32
AIR SYSTEM		Operation pressure	Mpa	0.8-1.0
		Action air consuming	M3/min	≥1.6
		Blowing pressure	Mpa	2.6-4.0
		Blowing air consuming	M3/min	≥4.8
MACHINE		Main body dimension(LxWxH)	M	4.5×1.9×2.0
		Main body weight	KG	3200
		Preform autoloader	M	2.1×1.9×2.4
		Preform automatic weight	KG	300

Air Compressor

Model :

CSH-1830

CW-2.0/10

2. 3-34CSH-1830 high pressure air compressor

型 号 (Model No)	: 3-34CSH-1830
排 气 量 (Air discharge)	: 4.8m ³ /min
工 作 压 力 (Pressure)	: 3.0Mpa
功 率 (Motor power)	: 3×18.5KW
储 气 罐 (Tank)	: 无 (No)
转 速 (Running speed)	: 730 r.p.m
重 量 (Weight)	: 2300KG
包 装 尺 寸 (Package)	: 4200×1200×2000 (mm)



3. CW-2.0/10 low pressure air compressor

型 号 (Model No)	: CW-2.0/10
排 气 量 (Air discharge)	: 2.0m ³ /min
工 作 压 力 (Pressure)	: 1.0Mpa
功 率 (Motor power)	: 15KW
储 气 罐 (Tank)	: 360L
转 速 (Running speed)	: 820 r.p.m
重 量 (Weight)	: 650KG
包 装 尺 寸 (Package)	: 2000×1000×1900 (mm)



3.cooling dryer

Cooling dryer	UNIT	5.0/30H
capacity	m ³ /min	5.0
Working pressure	Mpa	3.0
Inlet temperature	°C	80
power	HP	1.5
weight	KG	280
Overall dimension	L×W×Hmm	1100×650×1180



Air Filter

4.air filter

Air filter	unit	5.0/30
capacity	m ³ /min	5.0
Working pressure	Mpa	3.0
Inlet temperature	°C	80
power	HP	无
weight	KG	35
Overall dimension	L×W×Hmm	1050×550×550



Storage Tank

5.High pressure air storage tank

Air storage tank	Unit	1.0M ³ /3.0 Mpa
Capacity	M ³	1.0
Working pressure	Mpa	3.0
Overall dimension	L×W×H mm	1000×900×2300
Inner diameter	Mm	800
Weight	Kg	450



Air Cooled Water Chiller



6.Air cooled water chiller

Specification↴		↴ XC-05ACI↴
Parameter↴		
Model↴		
Cooling capacity↴	Kcal/h↴	12040↴
Compressor↴	All-closed vorticity↴	
Compressor power↴	Kw↴	4.4↴
Refrigerant↴	R22↴	
Chilled water pump power↴	Kw↴	0.75↴
Max flow rate of chilled water↴	L/min↴	115↴
Flow water inlet and outlet pipe↴	‘↴	1’↴
Cooling fan power↴	Kw↴	0.5↴
Inner dimension↴	mm↴	1100×700×1400↴
Water tank capacity↴	L↴	88↴
weight↴	Kg↴	240↴

Bottle Blowing Machine

NO.	Name	Photo	Qty
1	OGB-6S automatic blowing machine		1set
2	Preform conveyor		1set
Auxiliary Machine			
3	3-34CSH-1830 high pressure air compressor		1set
4	CW-2.0/10 Low pressure air compressor		1set
5	1.0/30 High pressure air storage tank		1set

6	50/30 air cooling dryer		1set
7	Air filter		2pcs
8	XC-05ACI Air cooled water chiller		1set
9	Bottle mould	250ml, 6cavity	1set
Total Price			

PART C

FILLING AND PACKING SYSTEM



NO	상품명	모델	수량	비고
1	Air conveyor		10m	
2	Washing filling and capping machine	CGF18-18-6	1	◇ 용량 : 6000BPH ◇ 세척헤드: 18 filling head18 capping head ◇ 재질 : : SUS304 ◇ 터치스크린: weinview ◇ Spray pump : lingxiao pump ◇ Photoelectric switch:autonics
3	conveyor	SS-1	10m	◇ 체인 재질 : : PA66 ◇ Chain plate material:SUS304
4	Lamp checker	DJ-1	1 pc.	
5	ink printer	PM-1	1 pc.	◇ 용량 : : 6000BPH ◇ 잉크젯 프린터
6	Auto label sleeve machine	OG-100	1 pc.	◇ 용량: : 6000BPH ◇ Electrics : schneider ◇ 터치스크린 : : WEINVIEW ◇ 치수: 2100*1100*2000mm ◇ Label sleeve system include: label sleeve machine, shrink tunnel, steam generator
7	Auto film pack shrink machine	DFR-150A	1 pc.	◇ 용량: 5-10 packages/min ◇ 전력 : : 16KW ◇ 에어실린더 : : AirTAC
Total Filling and packing system price				◇ PART C Total price

18-18-6 washing filling and capping 3-in-1 machine



1. Model: CGF18-18-6
2. Number of heads: 18 washing heads, 18 filling heads and 6 capping heads
3. Capacity: 6000B/H (500ml PET standard bottle)
4. Material: The material which contact directly with the liquid is the SUS304 (Food grade) made in china. The transmission mechanism and the gear are equipped with firing A4 carbon steel.
5. The 3-in-1 is mainly used to fill water.
6. Disposition : PLC: MITSUBISHI / Touch screen: WEINVIEW
7. Volume of PET bottle : 0.3L-1.5L
8. Diameter of bottle: 50-91mm
9. Height of bottle: 170-330mm
10. Cap diameter: plastic screw type cap
11. Filling temperature: Normal
12. Filling pressure: Normal
13. Filling precision: $\pm 2-3\%$
14. Pressure of washing: 0.2Mpa
15. Washing consuming water: 600kg/h
16. Air consumption: 0.4m³ /min
17. Power of main motor: 3.13KW
18. Dimension: 2450×1950×2200mm

Cap Loader



Model: SS-I

Material: Stainless steel SUS304

Length: 2m

Manner of bottle inputting: Bottle handling with air delivering.

Power of motor: 0.75KW

Air Conveyor



CGF 18-18-6 is designed and manufactured based on the latest technology from Germany and Italy, for the demand of technical requirement of beverage production, as pure water and mineral water.

The filling mono-bloc works as follows:

Bottles are fed from conveyor chain into the filling machine mono-bloc via star wheel. Bottle clamp installed on the rotary wheel of the rinse will grip bottle mouth and make a 180° turn along a guide track to face the bottle mouth downward. In designated section of the rinse, rinsing water will jet out from special nozzles to flush bottle inside wall.

After rinsing and dripping, bottles gripped by bottle clamp will make another 180° turn along a guide track to resume bottle mouth facing up position. Clean bottles are discharged out of the rinse by a star wheel to feed the filler.

After entering the filler, bottles are retained by neck supporting carrier plates, which are actuated by bottle carrier mechanism to raise them to engage with filling valves. Filling valves are opened by bottle presence signals.

After finishing filling, valves are closed by valve closing mechanism to further stop venting to complete the filling process. Bottle carrier mechanism is lowered by a cam to disengage filled bottles with filling valves.

Then bottles are transferred into the capper by a neck handling star wheel. Anti-rotation blades on capping heads will seize the bottleneck to prevent it from rotation and hold it in a upright position. The twist-on capping head will make revolving and rotating movement along with the machine to finish the complete capping process of cap picking, placing, twisting, and disengaging under the control of a cam.

A discharge star wheel discharges finished bottles onto discharge conveyor belt to be conveyed out of the filling mono-bloc.

Main Features



01 Bottle in feed

- A. Bottle in feed by combination of in feed screw and in feed star wheel
- B. Equipped with bottle jam protection device

02 Rinser

- A. welded structure
- B. The machine applies unique overturning bottle clamp, which is an innovation of our company. This bottle clamp grips bottle at neck position, avoiding bottle mouth thread contamination caused by rubber gripper block of a traditional bottle clamp. Made of SS304 stainless steel, this bottle clamp is hygienic and durable.
- C. The high efficiency atomizing spray nozzle installed on bottle clamp incorporating technology from Spaying Systems Co. Ltd., is capable of cleaning any part of bottle inner wall, and also saves rinsing water.
- D. The rinse is driven by driving system positioned inside machine frame via gear transmission.

03 Transfer star wheel

- A. Made of stainless steel of superior quality.
- B. Equipped with bottle jam protection device

Filler



- A. The filler is designed and manufactured with application of Italy technology, providing hardware guarantee for securing product quality and reducing loss.
- B. Rotary wheel are fully made of stainless steel SS304.
- C. Filling valves are designed and manufactured with German technology, made of SS304, featuring high filling accuracy and high filling speed.
- D. Bottles are raised and lowered by cam controlled lifting cylinder. Valve opening mechanism is actuated by air cylinder.
- E. Hydraulic pump is float-ball controlled.
- F. The filler is driven by driving system positioned inside machine frame via gear transmission.

Capper



- A. The capper is most precise part in 3 in 1 filling machine, because the quality of machine is important to running credibility and product quality. The sealing machine in our company has strongpoint as follows:
- B. The cover track has the device to prevent the reversal cover from passing and pick out the reversal cover. Meanwhile the photoelectric switch can stop the machine automatically when there is no cover on the track, by which it can avoid bottle without cover effectively.
- C. It also has the bottle check-up switch. Together with cylinder on the joint of the cover track and cover lift, they can control the cover flow and stop it in case no bottle to reduce the quantity of cover.
- D. Highly effective acentric way for cap sorting to reduce the abrasion.
- E. It has the check-up device to control the cover lift.

Ink Jet Printer



Technical Specifications:

Dimensions: 600mm x 468mm x 300mm

Weight: 38kg

Length of print head tube: 3m

Power supply: ~220V±15%, Rated current: 2A

Ambient temperature: 5-40°C,

Relative humidity: 10-90% non-condensing

This printer has a built-in pump without an external air source. The printer's lower solvent consumption offers further savings from our great value ranges.

The printer's sealed stainless steel casing is compatible with various harsh industrial environments. And its LCD display together with its menu command can make operation much easier.

This printer can print up to three lines of fonts and be integrated into high-speed production lines. Its functions and performance have reached that of international standards of the same category.

Automatic ink viscosity measuring and control, fault alarm indicator and automatic hydraulic system flushing can combine to ensure the continuous stable operation of this system.

This printer is capable of creating a wide range of graphics, languages, numbers and characters. Users can select different high-quality and high-speed printing modes according to their own needs. The RS232 portal provides this printer with the access to a computer or network by means of Kenuohua software.

Features and Benefits:

- A. User-friendly large LCD display (240x64 dot)
- B. English, Chinese characters and numbers printing
- C. 26 messages (79 characters per message) database input/output
- D. Brand/logos/symbols creation
- E. Automatic ink viscosity measuring and control
- F. Fault auto-check indicator
- G. Automatic hydraulic system flushing
- H. Flexible date choices and real time clock
- I. Automatic synchronous serial number
- J. Solid and durable stainless steel casing

Inkjet Printing Features:

- A. Character matrix: 7x5, 7x7, 10x7, 12x12, 16x10, 16x16, 24x8
- B. Lines of printing: Up to 3 (7x5, 7x7)
- C. Printing speed: Up to 1076 characters/second (7x5 single line)
- D. Variable characters/languages/logos/fonts printing
- E. Timing and counting printing
- F. Reversal and inverse etc, four directional inkjet printing Automatic show of products counting, batch numbers, shift numbers
- G. Message delayed printing
- H. Bold: Up to 9 times
- I. Printing height: (7x5) single line. 2.5-5mm
- J. (16x16) single line. 5-10mm

Auto Label Sleeve Machine



Machine size : 2100L*1200W*2000H (mm)

Machine body material and weight : SUS304 , 700Kgs approximate (Main machine)

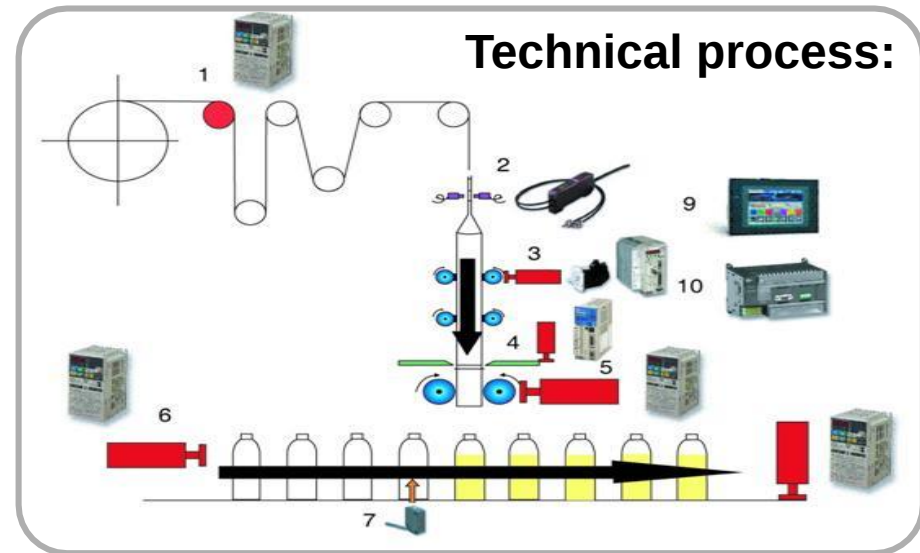
Applicable bottle diameter rang: $\Phi 28$ mm- $\Phi 125$ mm

Applicable bottle height : 30 mm -250 mm

- Label length : 28 mm ~120mm, Label edge transparent should more than 5mm
- Label thickness : 0.03 mm ~0.13 mm (PVC, PET, OPS, applicable)
- Paper pipe inner diameter: 5"~10", can be adjusted freely.
- Capacity : 100b/m (Round bottle, after filling, bottle outside should be dried, Label length within 100mm)
- Power specification: $\phi 3,380/220$ VAC
- Power consumption: 4.2KW
- Conveyor : Standard 2M (This machine not include conveyor connector, motor.)
- Producing efficiency : 100b/m, Label feeding round plate Micro computer control Auto sensor ; Change label quickly , Cut precisely.

PM-100 Model the capacity is smaller than the other model but it takes the same PLC, Fixing Module, Stepping motor, Touch screen as the higher speed machines.

Applicable bottle: All kinds such as round bottle, square bottle, flat bottle, curve bottle and so on



OG-2000

Shrink tunnel



Specification:

The new type shrink tunnel is based on different kind bottle and different shape bottle like round bottle, square bottle and flat bottle. This machine is easily operated and easily adjusted. The steam spurting is using seamless tube.

OG-1200

Steam generator



Specification:

- A. Input power specification : 3 380V
- B. Power consumption : 18KW
- C. Steam pressure : 0.25-0.4Mpa
- D. Steam capacity : 24Kg/h;
- E. Size : 600L×550W×1200H
- F. Weight : 196Kg

AUTOMATIC PE FILM PACKING MACHINE



**Bottle entering→ Auto
unscrambling bottle→
Pushing bottle→ Heat
sealing-Cool cutting
→Pressing PE→
Shrink→ Cooling.**

This machine applies air-stirring mechanism in pushing bottle and hot sealing-cool cutting. It uses flat silk pulse seal, the saw tooth knife cuts, the unique heat seal-cool cut mechanism, has guaranteed the packing agglutination, reliable, and artistic.

Automatic unscrambling bottle's appliance makes bottle changing more quickly and conveniently.

Delivering film mechanism and the tensiometer voluntarily adjusts.

PLC programmable procedure control system.

Double air blowers, guarantees the temperature balance in the shrink stove with PID temperature controller, that apparently saves energy.

It applies wing shape stainless steel heating system, which is durable for long time use.

The heatproof Bolivian filament special fluorine dragon transportation net belt is used in shrink part to ensure the steady of transportation and high strengthen wear proof.

This machine applies invert speed control net belt conveying mechanism.

The height of the conveyor shall be made towards client's demand, and usually adjusting scope is $800 \pm 30\text{mm}$

The direction of bottle entering can be adjusted according to client's demand.

01. Parameter

- A. Max package dimension : $L420 \times W278 \times H390\text{mm}$
- B. Min package dimension : $L210 \times W140 \times H100\text{mm}$
- C. Material of shrink film : PE、PVC
- D. Thickness of shrink film : $0.03\text{—}0.15\text{mm}$
- E. Thermal shrink temperature : it can be adjusted freely under 260°C .
- F. Max capacity per hour : 720 bags
- G. Total heating power : 18kw
- H. Actual power : 15kw/h
- I. Suitable voltage : 380/220V
- J. Working air pressure 0.6-0.8Mpa, air consumption capacity: $0.3\text{m}^3/\text{min}$.
- K. Gross weight : 1100KG

02 Basic disposition

- A. Touch screen, and PLC control system.
- B. AIRTAC air-stirring device.
- C. Stainless steel wing shape heating pipe, 12 pieces with 1.5kw per one.
- D. Sino-America Bolivian filament special fluorine dragon transportation net belt
- E. AUTONICS light electricity switch.
- F. Outside pack: Plastic film and wooden case.

Thank

**“BBN Pure Hydrogen Nanobubble Water”
will change the world !**

BBNWorld

BioClean & BlueEnergy Network

T : +82-2-6000-3979 M: +82-10-2979-6201 E: bbn@bbnworld.com

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