INWOO ECO

ENERGY SAVING OZONE GENERATOR

About Us

Inwoo Eco is a water treatment environment company that started by establishing a technology research institute with the attitude of a second start-up through the division of personnel of Inwoo Corporation.

Through research and efforts on better future value than today, we will utilize our expertise in water treatment, and with our own technology, we will be able to achieve greater efficiency than foreign and other companies

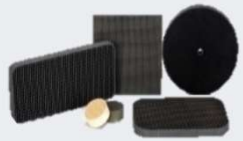
We developed ozone generators, ion exchange fiber&bead and ozone removal catalyst with price competitiveness and obtained patents and certification in recognition of their technology.

With the advanced technology, Inwoo Eco is stepping forward toward the future with Eco-Friendly products.

R&D Product

Ozone Generator

Ion exchange Fiber Bead



Ozone Removal Catalyst

Ozone Generator

Ozone Generator

Miniaturization

- Optimized miniaturization using patented ozone generation technology
- Easy installment/management, no administrators required

Durability

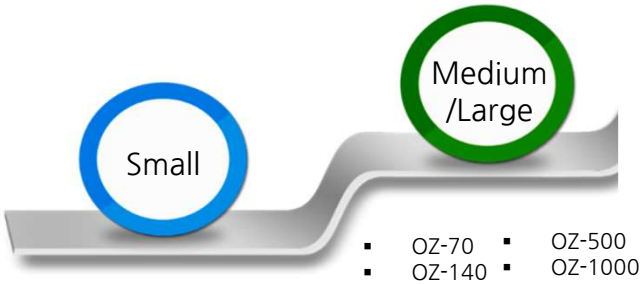
- Minimized power consumption compared to competitors
- Industrial purposes
- 1kg/hr power consumption about 11kW
- Accurate density output

Safety

- Safty measures for fire due to malfunction of device
- Ensuring Worker's Safety through on-site ozone sensor
- Built-in controller with secured sequence circuit

IOT(To apply)

- Remote controller to check operation status and for troubleshoot
- Immediate response in case of device error



- AZ-05
- AZ-10
- OZ-5
- OZ-10
- OZ-30

- OZ-70
- OZ-140
- OZ-200
- OZ-300

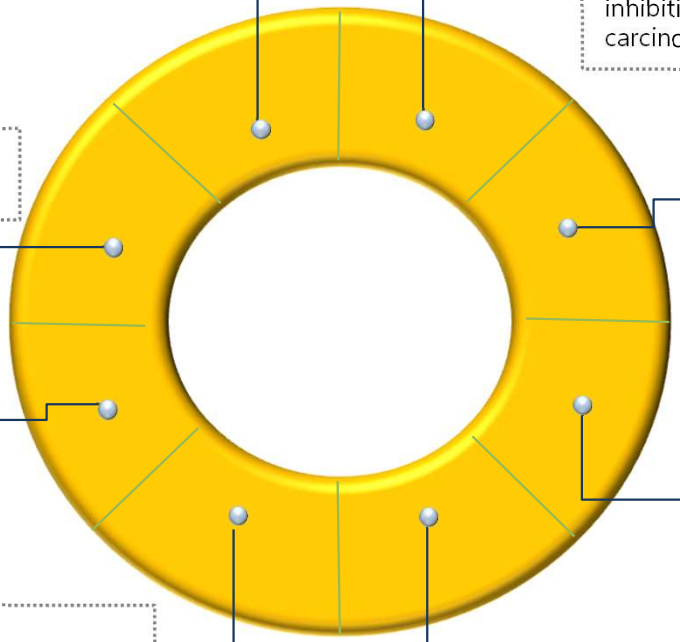
- OZ-500
- OZ-1000

Ozone Application

Technology coverage and application

Water treatment
Disinfection, **sterilization**, **removal of taste and odor**, decomposition of surfactant, removal of iron and manganese, improvement of coagulation sedimentation efficiency, removal of pesticides, inhibition of algae, inhibition generation of carcinogenic material (THM)

Manure and wastewater treatment
Disinfection, odor removal, BOD & COD removal



Wastewater Reclamation and reusing system
Disinfection, odor removal, BOD & COD removal, Decolor

Wastewater treatment
Removal of BOD & COD, Decolor, Decomposition of cyanophenyl and macromolecule

Application of industries
Pulp, bleaching of paper, medicine manufacture, P.E adhesion strength test, rubber aging test

Cooler tower
Legionella, various viruses, bacteria removal, water reduction, power cost reduction, etc

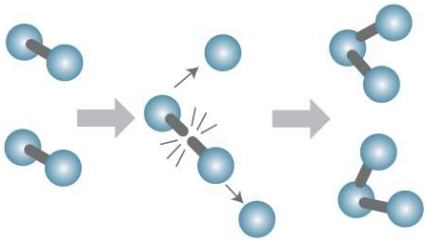
Other
Foods that are closely related to wet cultivation conditions such as flower pots, **vegetables**, and vegetable bean sprouts are fully sterilized by the supply of ozone water, which promotes growth and anti corruption due to abundant dissolved oxygen.

Swimming pool
Removal of water pollution, turbidity, chemical odor due to excessive use of chemicals, maintenance of clear and transparent water quality, complete sterilization, room air purification, water saving, etc.

Ozone Generator

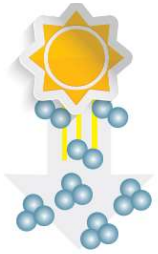
Technology coverage and application fields

Principle of ozone generation



Generate ozone from lightning

Ozone production from uv



Environmental standards for ozone(Air)

Country	Korea	Japan	USA
Organization	Environment Agency	Japan Society for Industrial Hygiene	OSHA
Thresholds (ppm)	0.06(8h)	0.06(8h)	0.1(8h)
	0.1(1h)	0.12(1h)	0.3(15~30min)

Effect of ozone concentration and exposure time

Concentration	Exposure time	Effect of Ozone on the body
0.02	5min	Sense smell
0.03 ~ 0.3	1h	Running record depression
0.05 ~ 0.1	30min	Anxiety
0.05 ~ 0.2	-	Nose and throat stimulation
0.05 ~ 0.6	1h	Increased frequency of seizures in asthmatic patients
0.1	30min	Headache, eye irritation
0.1	1h	Blindness Degradation of oxygen diffusion ability
0.1	2h	Increase pulmonary oxygen tension
0.1 이상	24h	Increased eye irritation
0.1 ~ 0.25	30min	Increase respiratory rate
0.2 ~ 0.8	-	eye irritation
0.3	-	Respiratory irritation Chest compression
0.3	5min	Increase breathing capacity

Securing technology through self develop

Board/transformer integrated type

Inverter board

Frequency, voltage setting

Voltage, frequency Setting and Conversion (Primary voltage)

Transformer

Inverter voltage → high voltage generation

High Voltage, frequency 2nd Conversion (Primary voltage)

Ozone generator tube

High voltage → Ozone generate

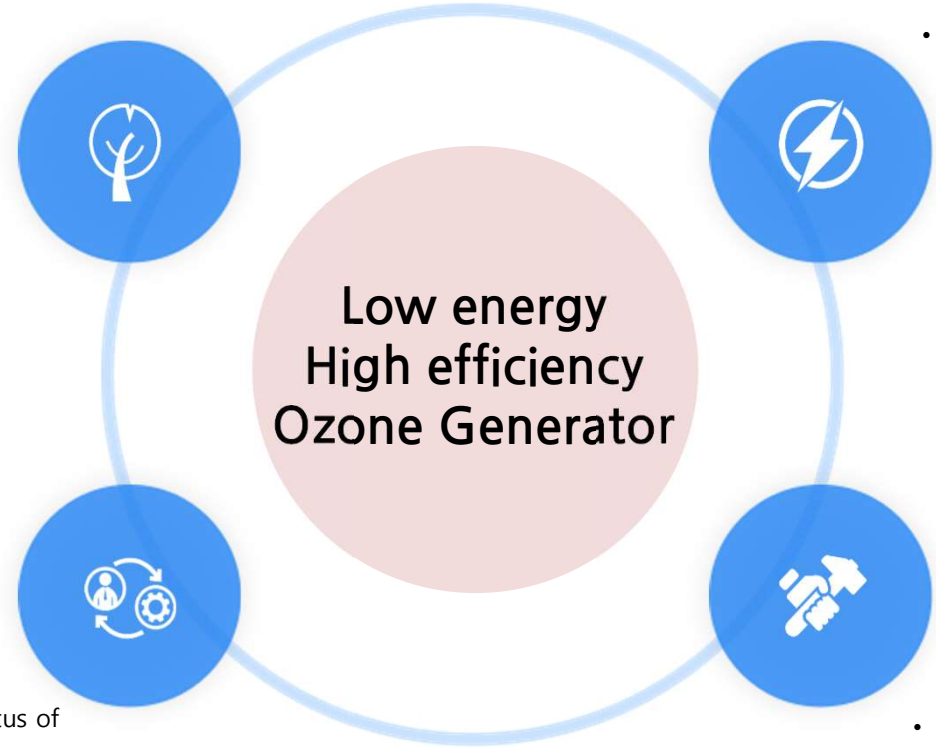
Ozone Generator

High Ozone Concentration with High efficiency

- 10~12% of oxygen to Ozone conversion rate
- High concentrated Ozone generator with low power consumption
- Improved product durability

Minimizing consumption power

- Minimizing consumption power compared to others
- Ideal product for Industrial uses
- 1kg/hr Ozone Generator consumes about 11kW



Simple operation

- Monitoring and controlling the operating status of Ozone generator via Remote control system
- Simple operation via safety sequence circuit

Flexible Installation

- Saving time via Flexible and fast installation
- Saving manpower via easy
- installation/management
- Actualizing miniaturization via optimizing ozone generator technology

Ensure safety through technology development

5 stage safety device

1

Door detection

Block high pressure area when the door is opened turn off auto-close when the door is closed

2

Heat detection

When the transformer is overheated, stops inflow and adjusts temperature

3

Coolant flow detection

Blocking inflow, when the cooling water flow rate is lowered (progress stage)

4

Overcurrent detection

When the overcurrent flows to the board, the input power instantly shuts down

5

Oxygen Pressure Detection

Ozone generator power shuts down when pressure is under the required pressure

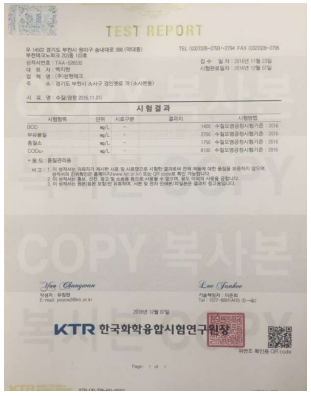
Inspecting the equipment and ensuring safety during operation

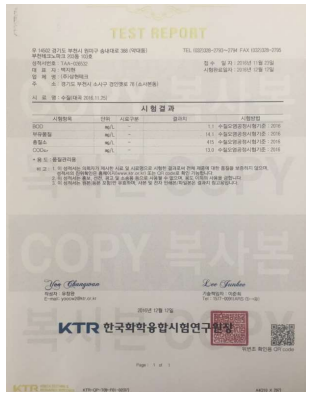
Preventing fire due to internal and external factors when operating the device itself

FIELD TEST

Livestock Excretion (Poultry) Treatment TEST

- ▶ Oxygen Conc. : 95%
- ▶ Oxygen flow rate : 5 l/m
- ▶ Ozone Conc. : 170 g/㎥
- ▶ Ozone generation : 50g±1g



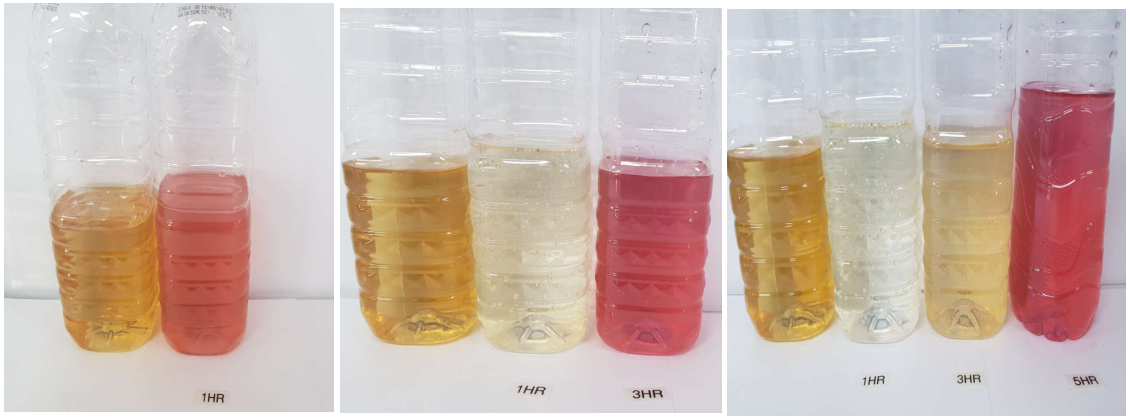


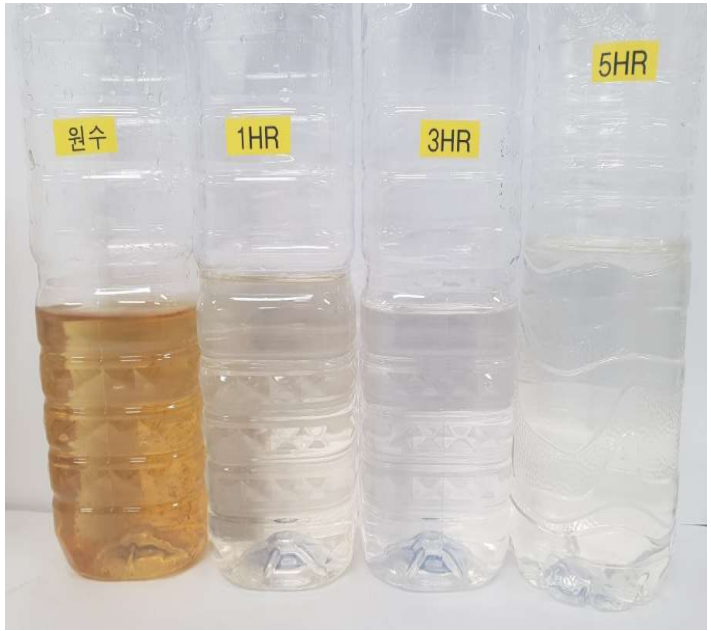
Test	Before	After
BOD	1400	1.1
Suspended solid	2700	14.1
Total nitrogen	1750	145
CODcr	6100	13.0

FIELD TEST

Liquid Manure Water Quality Improvement TEST

- ▶ Oxygen Conc. : 95%
- ▶ Oxygen flow rate : 7 l/m
- ▶ Ozone Conc. : 171 g/㎥
- ▶ Ozone generation : 70g±1g

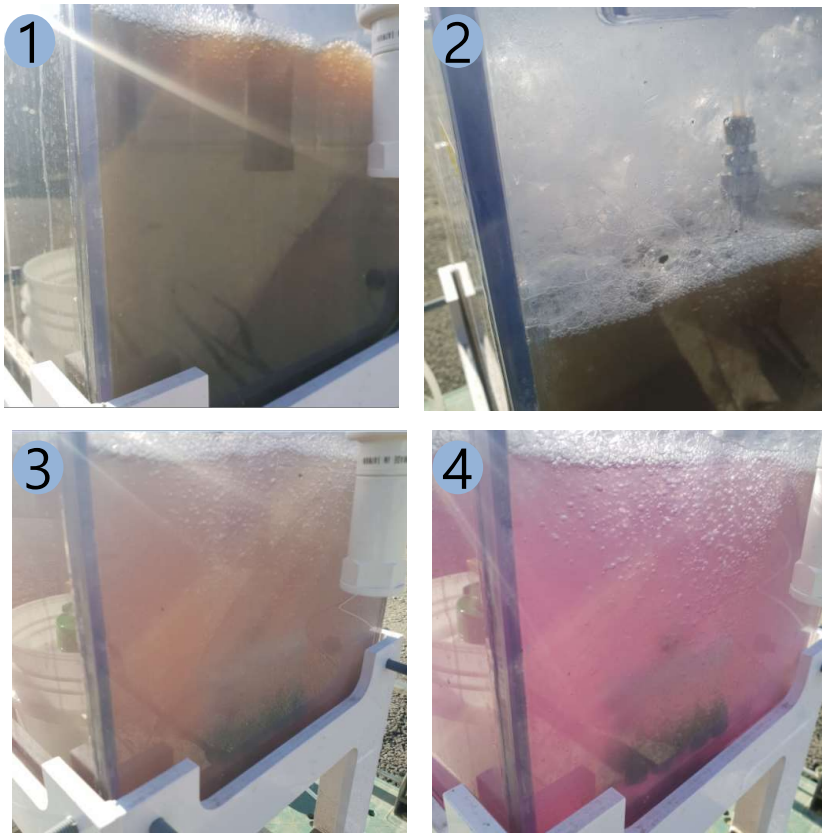




FIELD TEST

Liquid Manure Water Quality Improvement TEST

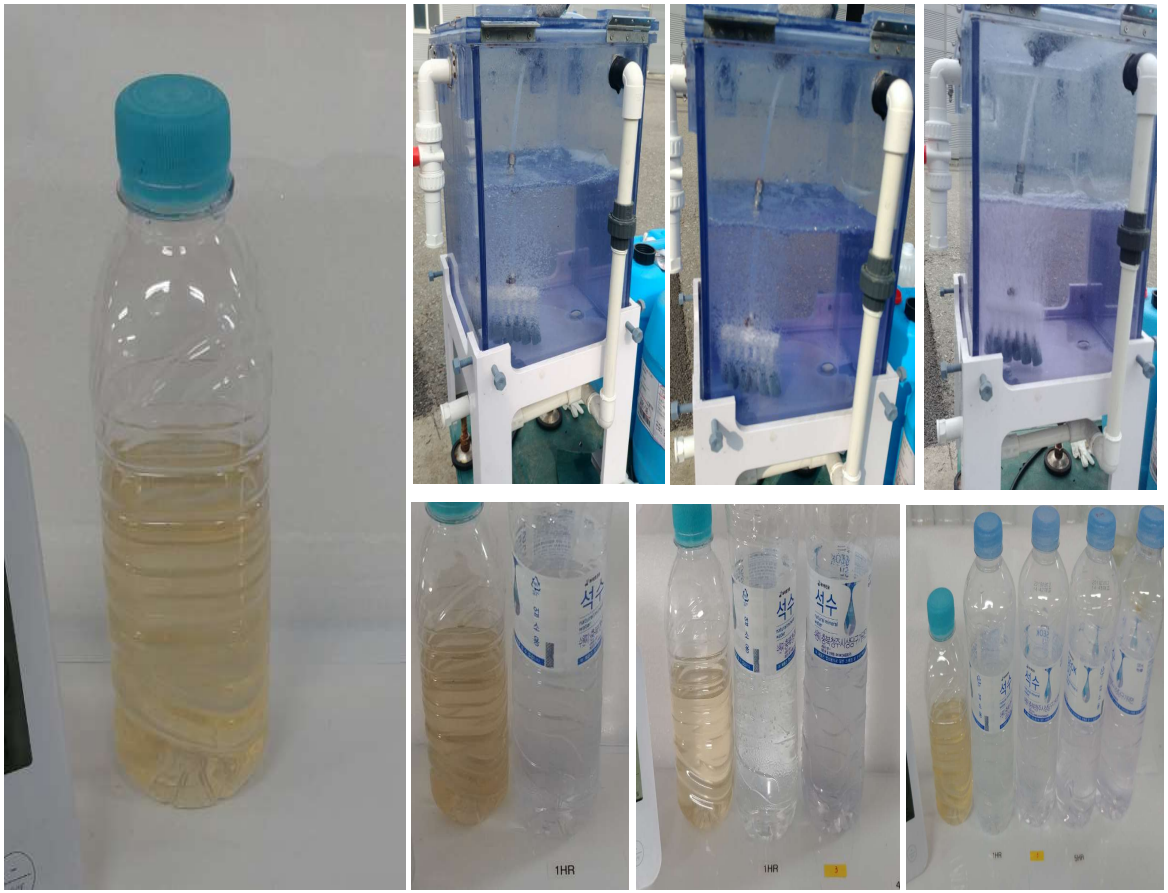
- ▶ Oxygen Conc. : 95%
- ▶ Oxygen flow rate : 7 l/m
- ▶ Ozone Conc. : 171 g/㎥
- ▶ Ozone generation : 70g±1g



FIELD TEST

Wastewater septic tank Water Quality Improvement TEST

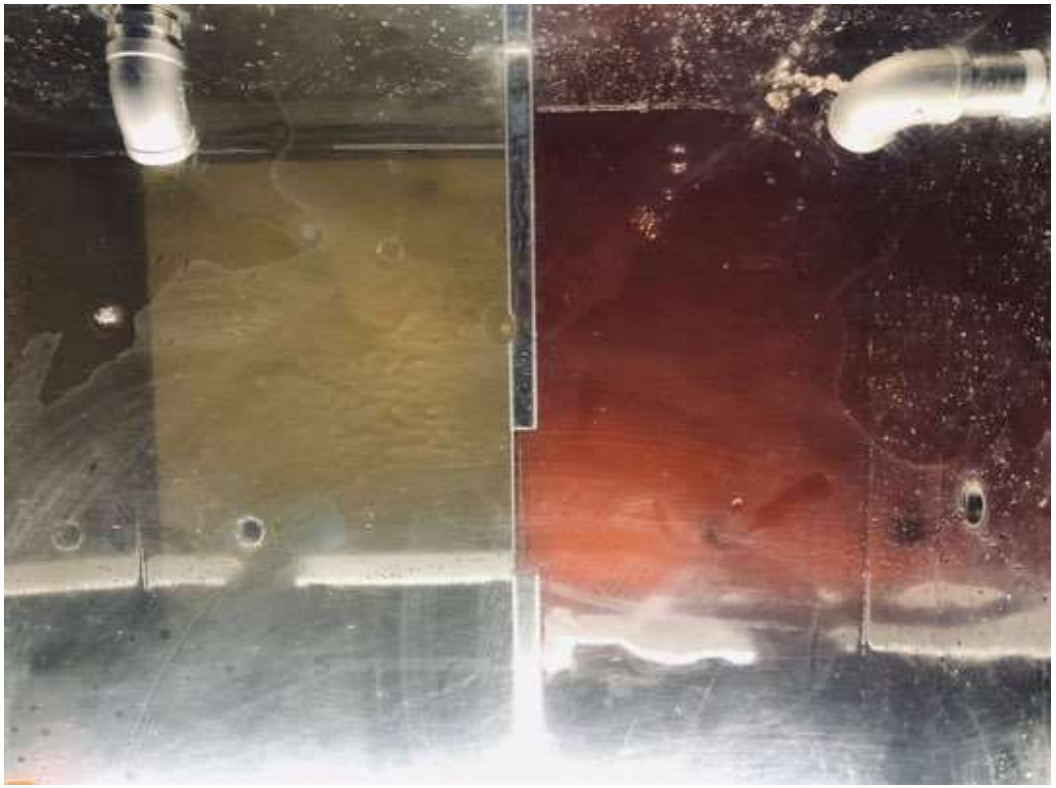
- ▶ Oxygen Conc. : 95%
- ▶ Oxygen flow rate : 7 l/m
- ▶ Ozone Conc. : 171 g/㎥
- ▶ Ozone generation : 70g±1g



FIELD TEST

Underground Water Manganese Ozone Treatment TEST

- ▶ Oxygen Conc. : 95%
- ▶ Oxygen flow rate : 7 l/m
- ▶ Ozone Conc. : 171 g/㎥
- ▶ Ozone generation : 40g±1g



FIELD TEST

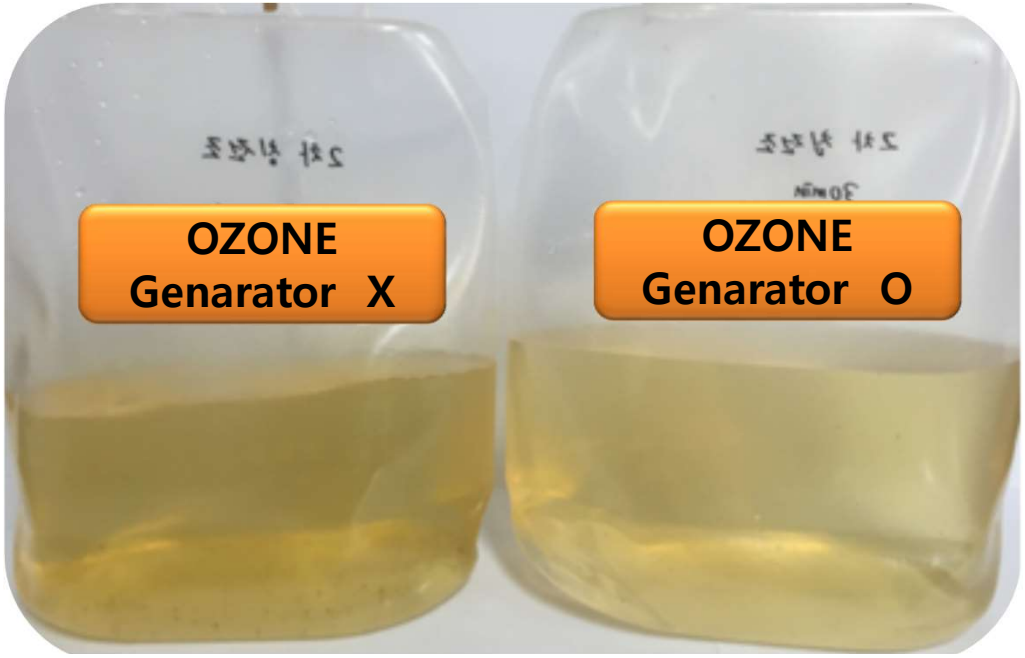
Pigsty Lab TEST (OZ-70 Air source lab test)

- ▶ Oxygen Conc. : 95%
- ▶ Oxygen flow rate : 7 l/m
- ▶ Ozone Conc. : 170 g/㎥
- ▶ Ozone generation : 70g±1g

- Settling tank test

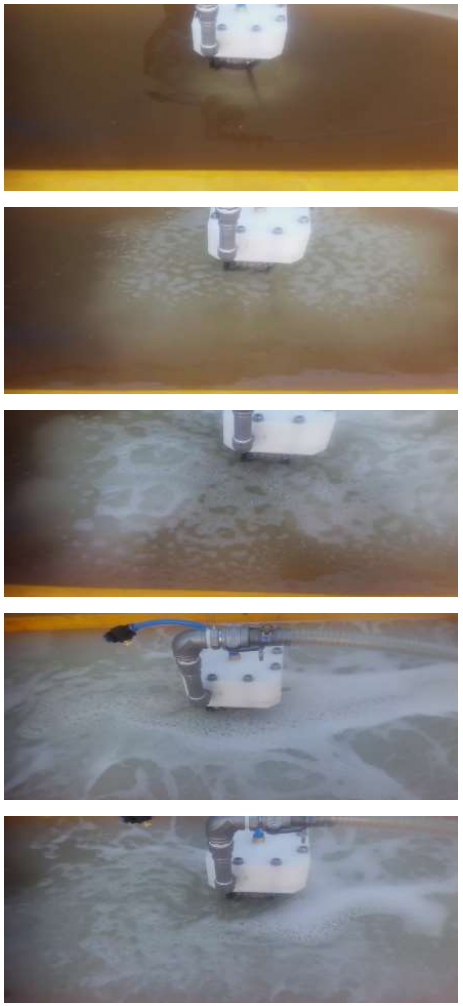
1st tank

2nd tank



FIELD TEST

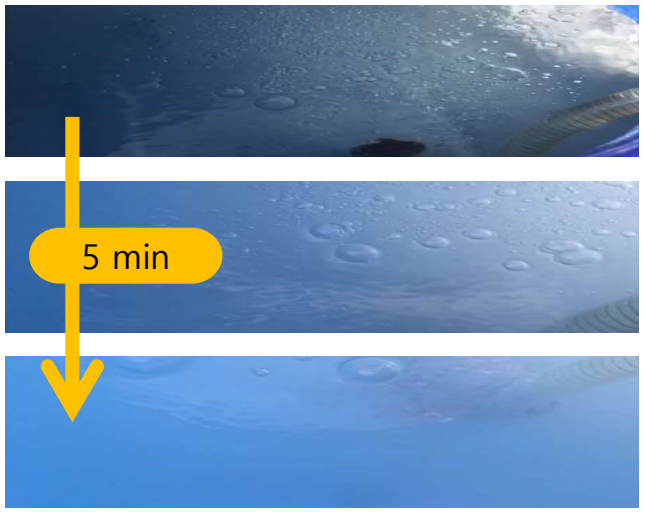
Development Of Ozone Dissolver

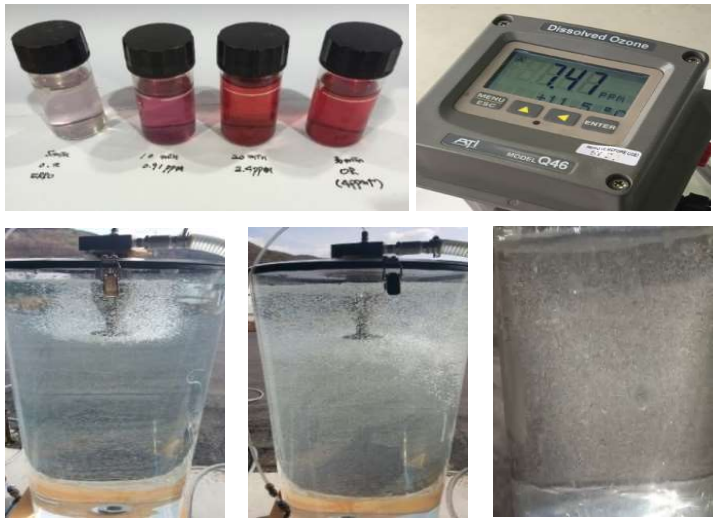


TEST 1

TEST 2

Ozone Dissolving Equipment





Ozone Dissolving Device Development

Time for arrival of discharge pipe :
The start to end of whole process takes around 45 minutes (when measuring water tank, 10ppm)

Time taken to drop to 5~6ppm after stopping the action from the water tank of 10ppm (discharge tube 16ppm) :
Around 1 hour after stopping whole action

Arrival time to 10ppm water tank after restarting from 5ppm water tank :
Around 20 mins after the whole action starts

Confirming 10ppm discharge tube	Confirming 12ppm discharge tube	Confirming 15ppm discharge tube	Confirming 16ppm (water tank 10ppm)
			

Confirming 10ppm water tank	Confirming 9.7ppm water tank	Confirming 6.6ppm water tank	Confirming 5.31ppm water tank
			

Confirming 5ppm water tank	After 1 minute of starting whole action	Discharge tube 10ppm	Discharge tube 16ppm (water tank 10ppm)
			

Ozone Generator System

Ozone Generator System

Bubble Generator

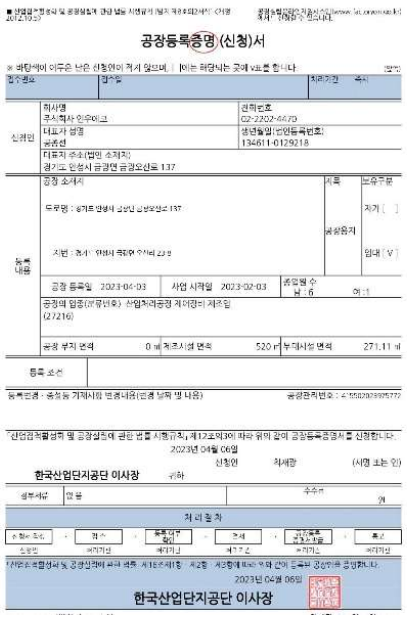
Ozone Disintegrator

Certificate

Company holding Certificates

사 업 자 등 록 증
(법인사업자)
등록번호 : 625-86-02742

2023 년 02 월 20 일
평 택 세 무 서 장



공장등록증명(신청)서

한국산업단지공단 이사장 귀하

2023년 04월 06일
한국산업단지공단 이사장

발급번호 : 0010-2023-304569

중소기업 확인서
[소기업(소상공인)]

기 업 명 : 주식회사 인우에코
사업자등록번호 : 625-86-02742 법인등록번호 : 134611-0129218
대표사명 : 공종선
주 소 : 경기 안성시 금광면 금광오산로 137 1층
유효기간 : 2023-02-10 ~ 2024-03-31
용 도 : 공공기관 입찰 이의 응모

위 기업은 「중소기업기본법」 제2조 및 「소상공인기본법」 제2조에 의한 소기업(소상공인)임을 확인합니다.

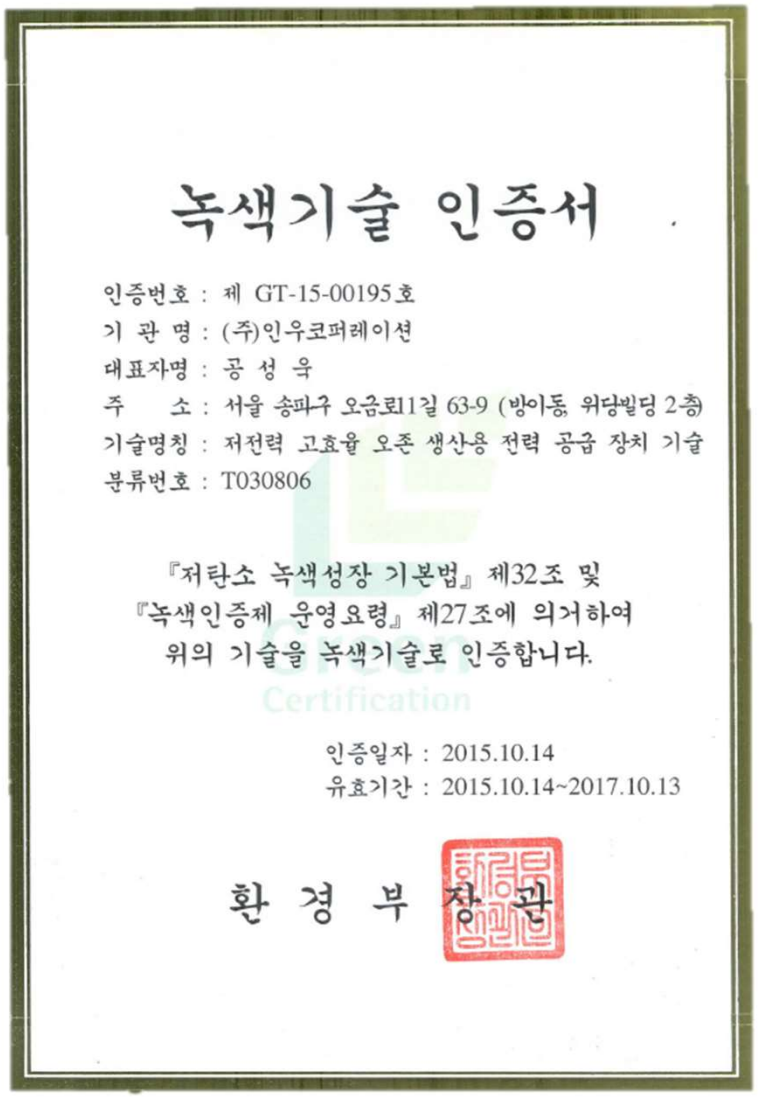
2023년 04월 21일

중소벤처기업부장관

Patents

Patent classification	Intellectual property rights
Registration	Ozone Generator by air cooling system
Registration	Hydroxy Generation Device
Registration	A high-speed compost fermentation device equipped with a function of removing dust and odors generated during composting of livestock manure and sterilizing pathogenic bacteria
Registration	Microbubble generator
Registration	Apparatus and method for highly processing organic waste and waste liquid home
Registration	Discharge tube for double ozone generation

Green Technology Certificate



녹색기술 인증서

인증번호 : 제 GT-15-00195호
기 관 명 : (주)인우코퍼레이션
대표자명 : 공 성 욱
주 소 : 서울 송파구 오금로11길 63-9 (방이동, 위당빌딩 2층)
기술명칭 : 저전력 고효율 오존 생산용 전력 공급 장치 기술
분류번호 : T030806

『저탄소 녹색성장 기본법』 제32조 및
『녹색인증제 운영요령』 제27조에 의거하여
위의 기술을 녹색기술로 인증합니다.

인증일자 : 2015.10.14
유효기간 : 2015.10.14~2017.10.13

환 경 부 장 관

AZ-10

OZ-30

OZ-70

OZ-200

Reference

Reference

Application	Product	Region
Research Laboratory	5g Discharge Tube	Incheon
	AZ - 5	Jeungpyeong
	OZ - 5	Daejeon
Food Manufacturer research	AZ - 5	Seoul
Waste water treatment plant water recycling	OZ – 20	Pyeongtaek
Food Research Institute experiment	OZ – 80M	Bundang
Food factory waste water treatment	OZ -50_Air cooling system	USA
China waste water treatment company	OZ– 50_Air cooling system	China
Chemical factory water treatment	OZ -70	Incheon
	OZ-70-M11	
Reduction of odor in animal husbandry facilities	OZ – 30	Gyeongju, Anseong
	OZ – 50	
	OZ – 50	
	OZ – 50	
Plated Wastewater Water Reuse	OZ – 50, OZ – 70	Ansan
Water treatment plant water treatment	OZ – 70	Busan
Kimchi factory reclaimed water	OZ – 200	Boeun

Reference

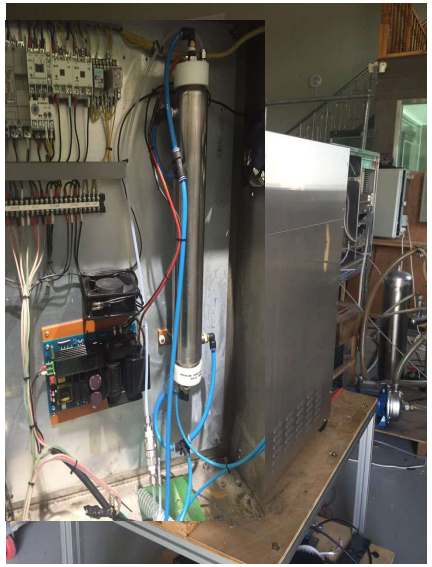
Application	Product	Region
Toilet no-discharge system	OZ-30, OZ-40	Jeju
Water soluble coolant recycling	AZ -10	Ansan, Asan
Water treatment for Seaweed processing	OZ – 30, 4EA	Seocheon
Application of special gas treatment scrubber	OZ-1000, 2EA	Yeosu
Pigment wastewater purification discharge	OZ – 70 1EA, OZ – 200 2EA	Namwon
Livestock facility wastewater treatment	OZ-200, OZ-500	Yesan, Hwasun
Electronic wastewater treatment	OZ-500	Ansan
Domestic sewage treatment	OZ-1000	Inje
Leachate site	OZ-600	
Water purification plant activated carbon recycling facility	OZ-1250	Daegu
Semiconductor wastewater treatment	OZ-1000 2EA	Yongin
Heavy water treatment	OZ-600	Jeju

Reference

▶ Treated water capacity: 500 L
▶ Oxygen Conc. : 95%
▶ Oxygen flow rate : 7 l/m
▶ Ozone Conc. : 34 g/㎥
▶ Amount of Ozone generated : 14 g±0.5g
▶ On-site experiment progressing

Degradable material treatment

▶ Treated water capacity: 5 ton
▶ Oxygen flow rate : 5 l/m
▶ Ozone Conc. : 100 g/㎥
▶ Amount of Ozone generated : 30 g±1 g
▶ On-site experiment progressing



Reference

Concrete durability test company

▶ Treated water capacity: 2 ton

▶ Oxygen flow rate : 4 l/m

▶ Ozone Conc. : 54 g/㎥

▶ Amount of Ozone generated : 13 g±0.7 g

Food Resarch Institute

▶ Treated water capacity: 500 L

▶ Oxygen flow rate : 3.5 l/m

▶ Ozone Conc. : 144 g/㎥

▶ Amount of Ozone generated : 30 g±2 g

Reference

Golf Course Hazard Water Treatment

▶ Oxygen flow rate : 7 lpm

▶ Amount of Ozone generated : 70 g±0.5 g

▶ Field test in Progress

Ozone Bubble Equipment Test

▶Refractory Substances treatment

▶ Oxygen flow rate : 7 lpm

▶ Amount of Ozone generated : 30 g±1 g

▶ Field test in Progress

Reference

Project

Kimchi factory water recycling

▶ Water treatment capacity : 20 ton/hr

▶ Ozone generator specification : Ozone generation - 200 g/hr,
Power - 2.4 kW (including oxygen generator)

Reference

Project

Plated wastewater water reuse

▶ Water treatment capacity : 10 ton/hr

▶ Ozone generator specification : Ozone generation - 70 g/hr,
Power - 1.5 kW (including oxygen generator)

Reference

Project

Tile Immunity Test system

▶ Facility capacity : 1.8 ton/hr

▶ Water treatment capacity : Solvent pump capacity : 1.6 ㎥/hr

▶ Ozone generator specification : Ozone generation – 34.4 g/hr

Oxygen flow rate - 3~10 l/min

Power - 0.15~0.3 kW

Reference

Project

Delivery of Anseong pigment

▶ Water treatment capacity : 40 ton

▶ Ozone generator specification : Ozone generation – 50 g/hr

Oxygen flow rate - 3~7 l/min

Power - 1.5 kW(Including Oxygen generator)

Reference

Project

Gyeongju pig farm delivery

▶ Facility capacity : 5 ton , 10 ton

▶ Water treatment capacity : 0.5 ton/hr

▶ Ozone generator specification : Ozone generation – 50~70 g/hr

Oxygen flow rate - 3~7 l/min

Power - 1.5 kW(Including Oxygen generator)

Reference

Project

Chemical plant water treatment

▶ Facility capacity : 100 ton

▶ Water treatment capacity : 10 ton/hr

▶ Ozone generator specification : Ozone generation – 70 g/hr*11EA

Oxygen flow rate - 3~7 l/min

Power – Each 1.5 kW(Including Oxygen generator)

Reference

Project

Wastewater treatment plant

▶ Water treatment capacity : 4 ton/hr

▶ Ozone generator specification : Ozone generation - 50 g/hr

Power - 1 kW(Including Oxygen generator)

Reference

Project

Busan marine

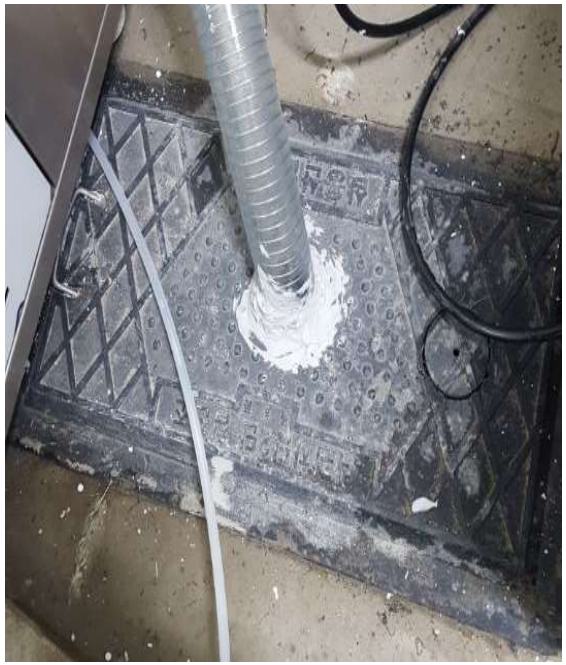
wastewater treatment plant

▶ Water treatment capacity : 1 ton/day

▶ Ozone generator specification : Ozone generation - 70 g/hr

Oxygen flow rate - 7 l/min

Power - 1.5 kW(Including Oxygen generator)



Reference

Project

A mainstream
water purification plant

▶ Water treatment capacity : 400 ton/day

▶ Ozone generator specification : Ozone generation - 70 g/hr
Power - 1.5 kW(Including Oxygen generator)

Reference

Project

Dyeing wastewater treatment

▶ Water treatment capacity : 2 ton/day

▶ Ozone generator specification : Ozone generation - 70 g/hr

Power - 1.5 kW(Including Oxygen generator)

Reference

Project

Reducing odor of
recycled resin factory (Geoje)

▶ Water treatment capacity : 5 ton/day

▶ Ozone generator specification : Ozone generation - 70 g/hr

Power - 1.5 kW(Including Oxygen generator)

Reference

Project

Water-soluble coolant recycling

▶ Water treatment capacity : 2 ton/day

▶ Ozone generator specification : Ozone generation – 10 g/hr
(air cooling system, dair source)
Power - 1.5 kW(Including Oxygen generator)

Reference

Project

Livestock Liquid Treatment

- ▶ Facility capacity : 20 ton
- ▶ Water treatment capacity : 1 ton/hr
- ▶ Ozone generator specification : Ozone generation - 70 g/hr
  Power - 1.5 kW(Including Oxygen generator)

Reference

Project

Halla mountain Toilets

Purification and reuse(2EA)

- ▶ Facility capacity : 40 ton
- ▶ Water treatment capacity : 10 ton/day
- ▶ Ozone generator specification : Ozone generation – 40 g/hr+30 g/hr

Reference

Project

Water treatment for seaweed processing

▶ Water treatment capacity : 1000 ton

▶ Ozone generator specification : Ozone generation – 40g/hr * 4EA

Reference

Project

Pig farm wastewater
purification treatment discharge system

▶ Facility capacity : 50 ton
▶ Water treatment capacity : 2 ton/hr
▶ Ozone generator specification :
Ozone generation – 70g/hr * 1EA, 200g/hr * 2EA



Reference

Project

Livestock
Wastewater treatment
(Hwasun)

▶ Water treatment capacity : 60 ton/day

▶ Ozone generator specification : Ozone generation - 500 g/hr

Reference

Project

Electronic
wastewater treatment

- ▶ Water treatment capacity : 80 ton/day
- ▶ Ozone generator specification : Ozone generation - 500 g/hr

Reference

Project

Chemical plant
special gas processing
(Yeosu)

▶ Ozone generator specification : Ozone generation - 1000 g/hr *2

Reference

Project

Domestic
sewage treatment

▶ Water treatment capacity : 400 ton/day

▶ Ozone generator specification : Ozone generation - 1000 g/hr

Reference

Project

Leachate site (Inje)

▶ Water treatment capacity : 80 ton/day

▶ Ozone generator specification : Ozone generation - 600 g/hr

Reference

Project

Semiconductor
wastewater treatment

▶ Water treatment capacity : 150 ton/day

▶ Ozone generator specification : Ozone generation - 1000 g/h*2

Reference

Project

Activated carbon recycling facility (Daegu Water Purification Plant)

▶ Water treatment capacity : 200 ton/day

▶ Ozone generator specification : Ozone generation - 1250 g/hr*1


eco