

WaterClean System Co., Ltd. Company Introduction

Product Name:

(World's first system capable of separating PFAS + Microplastics + Calcium Scale with 45–90x separation capacity)

“The world’s only Metal Multi-Layer Gravity Filtration Technology.”



1. Company Overview

2012: Began development of ion-based water treatment technology

2020: verified through certified performance evaluations

2022: re-verified by Korea Water Resources Corporation

2025: Successful application of pipe-direct metal multi-layer gravity filtration system
(45–90x purification capacity) — “unique structural approach”

2025: Successful physical extraction and removal of microplastics from municipal tap water
— “first known”

(Holds multiple domestic and international patents)

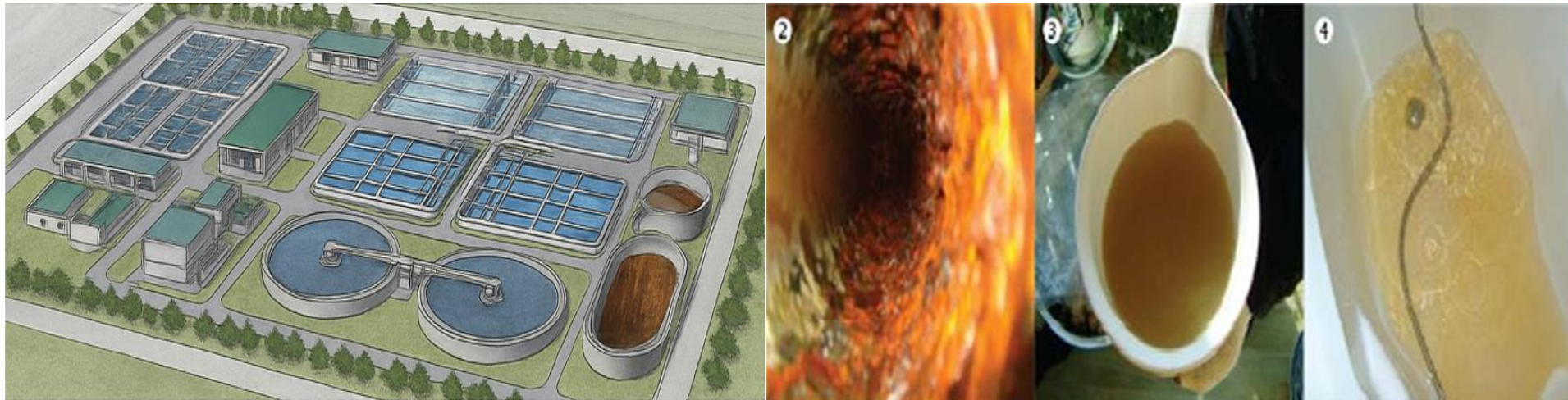


2. PFAS Regulation

- The United States is undergoing major disruption in the water purification industry due to PFAS regulations (2024–2026).
 - Europe and Japan will enforce full PFAS bans starting in 2026.
 - Korea still lacks finalized PFAS standards for drinking water
(related legislative proposal by Assemblywoman Han Jeong-ae).
1. PFAS consists of fluorine–carbon (fluorocarbon) chain structures and can be considered functionally similar to molecular-scale plastic contaminants
Existing water purification technologies show very low removal efficiency.
 2. PFAS continuously leaches from paper cups, PTFE-coated frying pans, food packaging, and other daily products,
and shows high persistence in the human body and the environment, making it a core target of global regulation.
 3. Existing PP filters, activated carbon, membrane, and RO technologies struggle to achieve consistent PFAS removal
due to PFAS properties such as hydrophobicity, chemical resistance, and variable molecular weights.
 4. Metal multi-layer purification technology simultaneously utilizes
particle separation + surface interaction + physical aggregation mechanisms
to separate and extract PFAS, microplastics, and calcium scale from real water samples.
 5. It achieves **45–90 times higher separation efficiency per unit area**
and separates PFAS and microplastics into **visually identifiable particulate forms**.
 6. Applicable to small, medium, and large-scale plants,
and can be immediately introduced by integrating in parallel with or as a pre-treatment to existing purification systems.
 7. In markets such as the U.S., EU, and Asia where PFAS regulation is intensifying,
metal multi-layer purification technology is the **world's first and only visible PFAS extraction-based water purification solution**.
- The metal multi-layer gravity filtration system processes **45–90 times more contaminant particles** than conventional purification methods
and simultaneously separates **PFAS + Microplastics + Calcium Scale** in a single process.

3. Problem Recognition

- Large amounts of microplastics have been detected in Korean tap water.
Microplastics smaller than 50 μm affect brain development (including dementia), immunity, and the endocrine system.
- In groundwater, bacteria, calcium scale, and contaminants have been detected.
Bacteria cause diseases, while calcium scale and contaminants contribute to kidney and cardiovascular disorders.
- In the U.S. and Europe, high levels of calcium scale are detected,
while China and Southeast Asian developing countries show heavy contamination with pollutants (including PFAS) and calcium scale.
- Even when upstream water treatment facilities operate properly,
current water systems are structurally flawed, leaving household tap water unsafe.
As a result, corrosion-derived microplastic contamination is occurring globally on a large scale.



4. Core Technology

Type-3 Water Purification Technology

(Permanent Direct-Current Water Purification System / Metal Multi-Layer Gravity Filtration System)

Structure: Metal Multi-Layer Porous Structure

Method: Physical separation + ion flow stabilization

Key Features

- No consumables (washable and reusable)
- Proven lifespan (over 600 tons of treated water)
- Scalable and miniaturizable (applicable to residential, industrial, and facility pipelines)

Removal Targets

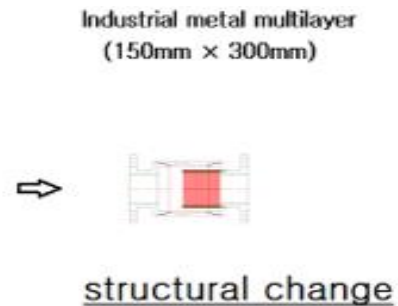
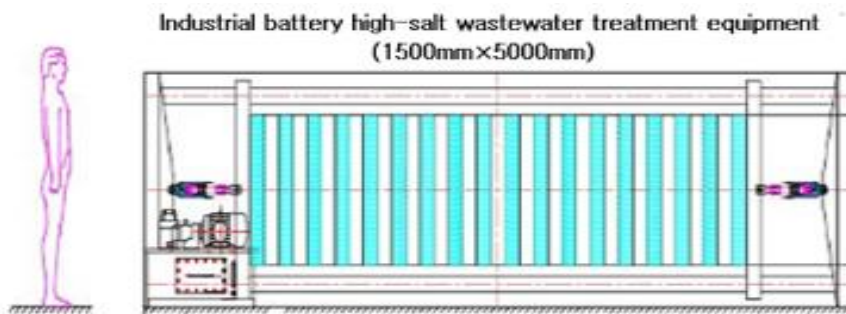
- Microplastics (physically extracted and photographically verified)
- Calcium scale, rust, bacteria
- PFAS and complex contaminants

This technology does **not** rely on conventional membrane filtration.
Instead, contaminants are **separated and accumulated by the structure itself**.



5. Technological Differentiation

- World's first metal multi-layer gravity-based purification structure
- Simultaneous removal of PFAS, microplastics, and calcium scale in a single process
- 45–90 times higher contaminant separation capacity compared to conventional purification systems
- No consumable filters (washable and reusable structure)
- Capable of physical extraction and visual verification of contaminants
- Structurally applicable to main water pipelines and high-flow infrastructure
- Overcomes capacity, peak flow rate, and size limitations of conventional membrane and filter-based systems



6. WaterClean System Overview

The WaterClean System is adaptable to **all pipe standards and on-site conditions**.

WaterClean solutions are classified into **residential products** connected to household piping and **industrial systems** applied to advanced and specialized industrial facilities.

1) Residential Products

WaterClean residential products can be customized according to **country-specific and site-specific pipe standards**. Product specifications may be adjusted accordingly, and **pricing may vary depending on pipe size and installation conditions**.

2) Industrial Systems for Advanced and Specialized Facilities

For advanced industrial and specialized manufacturing facilities, **accurate assessment of on-site conditions is required**.

Accordingly, system delivery follows a structured process that includes:

- Site visits
- On-site inspections
- Technical meetings

Based on these steps, the appropriate system is **designed, prepared, and supplied**.

Installation of the WaterClean System can **reduce the costs associated with maintenance, repair, and management of conventional water treatment systems by approximately 50–90%**, while maintaining or improving overall treatment performance.

영구직류정수

20,000,000원

1,500,000원



주피앤아이휴먼코

리아

125,000,000원

21m/h



주식회사 코라아
이피디

73,300,000원
50m/h. 황형



블루그린링크 주
식회사

105,600,000원
20m/h



주식회사 지온

비정오염저감용

136,100,000원
90m/h.



7. Application Fields

- Municipal water supply and domestic water
- Industrial process water
(secondary batteries, semiconductors, cosmetics, food & beverage)
- Agriculture, livestock, and poultry facilities
- Overseas regions with high calcium scale and high water hardness
- PFAS regulation compliance and response facilities



8. Demonstration and Technology Track Record

- Verified removal of microplastics, bacteria, rust, and calcium scale from tap water



2025.04.30.
60L



2025.05.02.
20L



2025.05.03.
20L



- Verified bacterial and impurity removal performance in groundwater

KOTITI 시험연구원 인류의 안전을 추구하고 미래기술을 선도하는 글로벌 비즈니스 파트너
Global Business Partner for Human Safety and Future Technology

KOTITI 시험연구원 경기도 과천시 과천대로7나길 48(갈매동) 전화:02-3451-7452~3팩스:02-3451-7464 www.kotiti-global.com

접수번호: 제 82253002100429-001 호 수 신: 경기도 용인시 기흥구 강남서로 20 (구갈동)
발 신: KOTITI 시험연구원 장남대학교교정조산학관 108호
발신일자: 2025-04-01 주식회사 폴텍스
제 목: 수질검사성적서 담당자 귀하
16977

※ 지하수용 시험용 제30조 및 농업 시험용 제40조에 따라 수질검사 결과를 통보합니다. 단, 지하수용 시험용 제30조에 따라 염소이온의 기준을 적용하지 않을 수 있습니다.

시 료 명	생물용수(음용46개항)	의뢰근거	지하수용	신고번호
의뢰인	주식회사 폴텍스	검사목적	참고용	접수채수일
채수장소	경기도 화성시 팔탄면 은천로165번길 21-9 (덕우리)	원수경수	원수	2025-03-24
채수방법	지함시료	채취자소속		시료채취자

2. 시험-검사 결과

가. 검사결과 종합

판 정	부적합
기준초과항목	질산성질소

나. 항목별 검사결과

NO	검사항목	기 준	검사결과	NO	검사항목	기 준	검사결과
1	일반세균	100 CFU/mL이하	44	24	벤젠	0.01 mg/L이하	불검출
2	총대장균군	불검출/100mL	불검출	25	물류엔	0.7 mg/L이하	불검출
3	분원상대장균군	불검출/100mL	불검출	26	에틸렌렌	0.3 mg/L이하	불검출
4	납	0.01 mg/L이하	불검출	27	크실렌	0.5 mg/L이하	불검출
5	불소	1.5 mg/L이하	불검출	28	1,1-디클로로에틸렌	0.03 mg/L이하	불검출
6	비소	0.01 mg/L이하	불검출	29	사염화탄소	0.002 mg/L이하	불검출
7	셀레늄	0.01 mg/L이하	불검출	30	1,2-디클로로-3,4-디플루오로벤젠	0.003 mg/L이하	불검출
8	수은	0.001 mg/L이하	불검출	31	1,4-다이옥산	0.05 mg/L이하	불검출
9	시안	0.01 mg/L이하	불검출	32	광도	1,000 mg/L이하	33
10	크롬	0.05 mg/L이하	불검출	33	과망간산칼륨소비량	10 mg/L이하	1.2
11	암모니아성질소	0.5 mg/L이하	불검출	34	냄새	없음	없음
12	질산성질소	10 mg/L이하	10.6	35	맛	없음	없음
13	카드뮴	0.005 mg/L이하	불검출	36	중	1 mg/L이하	불검출
14	붕소	1.0 mg/L이하	0.02	37	색도	5 도이하	불검출
15	페놀류	0.005 mg/L이하	불검출	38	세제(음이온계면활성제)	0.5 mg/L이하	불검출
16	다이아지논	0.02 mg/L이하	불검출	39	수소이온농도	5.8 ~ 8.5	7.3
17	파라타론	0.06 mg/L이하	불검출	40	아연	3 mg/L이하	0.305
18	페니트로탄	0.04 mg/L이하	불검출	41	염소이온	250 mg/L이하	26.6
19	카바릴	0.07 mg/L이하	불검출	42	철	0.3 mg/L이하	불검출
20	1,1,1-트리클로로에탄	0.1 mg/L이하	불검출	43	망간	0.3 mg/L이하	불검출
21	테트라클로로에틸렌	0.01 mg/L이하	불검출	44	탁도	1 NTU이하	0.53
22	트리클로로에틸렌	0.03 mg/L이하	불검출	45	황산이온	200 mg/L이하	?
23	디클로로메탄	0.02 mg/L이하	불검출	46	알루미늄	0.2 mg/L이하	불검출

• 본 성적서는 검사 목적 이외의 용도로 사용할 수 없으며, 검사결과에 접수된 시료에 한한 결과입니다.

기술책임자: 김동수 2025-04-01 발급번호: 2110484588 KOTITI Testing & Research Institute 1/1

KOTITI 시험연구원 인류의 안전을 추구하고 미래기술을 선도하는 글로벌 비즈니스 파트너
Global Business Partner for Human Safety and Future Technology

KOTITI 시험연구원 경기도 과천시 과천대로7나길 48(갈매동) 전화:02-3451-7452~3팩스:02-3451-7464 www.kotiti-global.com

접수번호: 제 82253002100453-001 호 수 신: 경기도 용인시 기흥구 강남서로 20 (구갈동)
발 신: KOTITI 시험연구원 장남대학교교정조산학관 108호
발신일자: 2025-04-03 주식회사 폴텍스
제 목: 수질검사성적서 담당자 귀하
16977

※ 지하수용 시험용 제30조 및 농업 시험용 제40조에 따라 수질검사 결과를 통보합니다. 단, 지하수용 시험용 제30조에 따라 염소이온의 기준을 적용하지 않을 수 있습니다.

시 료 명	생물용수(음용46개항)	의뢰근거	지하수용	신고번호
의뢰인	주식회사 폴텍스	검사목적	참고용	접수채수일
채수장소	경기도 화성시 팔탄면 은천로165번길 21-9 (덕우리) (과천역)	원수경수	원수	2025-03-26
채수방법	지함시료	채취자소속		시료채취자

2. 시험-검사 결과

가. 검사결과 종합

판 정	부적합
기준초과항목	질산성질소

나. 항목별 검사결과

NO	검사항목	기 준	검사결과	NO	검사항목	기 준	검사결과
1	일반세균	100 CFU/mL이하	0	24	벤젠	0.01 mg/L이하	불검출
2	총대장균군	불검출/100mL	불검출	25	물류엔	0.7 mg/L이하	불검출
3	분원상대장균군	불검출/100mL	불검출	26	에틸렌렌	0.3 mg/L이하	불검출
4	납	0.01 mg/L이하	불검출	27	크실렌	0.5 mg/L이하	불검출
5	불소	1.5 mg/L이하	불검출	28	1,1-디클로로에틸렌	0.03 mg/L이하	불검출
6	비소	0.01 mg/L이하	불검출	29	사염화탄소	0.002 mg/L이하	불검출
7	셀레늄	0.01 mg/L이하	불검출	30	1,2-디클로로-3,4-디플루오로벤젠	0.003 mg/L이하	불검출
8	수은	0.001 mg/L이하	불검출	31	1,4-다이옥산	0.05 mg/L이하	불검출
9	시안	0.01 mg/L이하	불검출	32	광도	1,000 mg/L이하	32
10	크롬	0.05 mg/L이하	불검출	33	과망간산칼륨소비량	10 mg/L이하	1.1
11	암모니아성질소	0.5 mg/L이하	불검출	34	냄새	없음	없음
12	질산성질소	10 mg/L이하	10.8	35	맛	없음	없음
13	카드뮴	0.005 mg/L이하	불검출	36	중	1 mg/L이하	불검출
14	붕소	1.0 mg/L이하	0.02	37	색도	5 도이하	불검출
15	페놀류	0.005 mg/L이하	불검출	38	세제(음이온계면활성제)	0.5 mg/L이하	불검출
16	다이아지논	0.02 mg/L이하	불검출	39	수소이온농도	5.8 ~ 8.5	7.2
17	파라타론	0.06 mg/L이하	불검출	40	아연	3 mg/L이하	0.145
18	페니트로탄	0.04 mg/L이하	불검출	41	염소이온	250 mg/L이하	25.3
19	카바릴	0.07 mg/L이하	불검출	42	철	0.3 mg/L이하	불검출
20	1,1,1-트리클로로에탄	0.1 mg/L이하	불검출	43	망간	0.3 mg/L이하	불검출
21	테트라클로로에틸렌	0.01 mg/L이하	불검출	44	탁도	1 NTU이하	0.29
22	트리클로로에틸렌	0.03 mg/L이하	불검출	45	황산이온	200 mg/L이하	2
23	디클로로메탄	0.02 mg/L이하	불검출	46	알루미늄	0.2 mg/L이하	불검출

• 본 성적서는 검사 목적 이외의 용도로 사용할 수 없으며, 검사결과에 접수된 시료에 한한 결과입니다.

기술책임자: 김동수 2025-04-02 발급번호: 1452862353 KOTITI Testing & Research Institute 1/1

8. Demonstration and Technology Track Record(U.S. patent applications filed)

6) 미국출원NO18/507,088(이온 활성지속 기능이 구비된 이온 부식억제기)

INVS-142

ION SCALE BUSTER WITH FUNCTION THAT ACTIVATES IONS

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the priority of Korean Patent Application No. 10-2022-0126271 filed on October 4, 2022, in the Korean Intellectual Property Office, the disclosure of which is incorporated herein by reference.

BACKGROUND

10 Field

[0001] The present disclosure relates to an ion scale buster installed in a tap water supply pipe to suppress corrosion of the pipe, and more particularly, to an ion scale buster with a function that activates ions, the ion scale buster being installed in a pipe, in which tap water flows, and configured to suppress and eliminate corrosion and scale by discharging zinc ions and electrons into the flowing water, induce atomization of water and inorganic molecules, promote activation of ions and electrons contained in water to suppress and eliminate rust and scale, and allow the effects of ions and electrons to continue over a longer distance.

Attorney Reference: INVS-141

ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS Jincheon KIM; Myungkuon SON; Jaemin RYU; and Sungsoo LEE of Republic of Korea; hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to

AGITATOR THAT CIRCULATES MATERIALS

[X] said application being attached hereto;
[] said application having been filed in the United States Patent and Trademark Office on _____,
as Application Serial No. _____, and was amended on _____ (if applicable);
[] the specification of which was filed under the Patent Cooperation Treaty on _____,
Serial No. _____, the United States of America being designated.

AND WHEREAS WATER CLEAN SYSTEM CO., LTD., of Gyeonggi-do, Republic of Korea, an entity organized and existing under the laws of Republic of Korea; hereinafter referred to as the assignee or applicant, is desirous of acquiring the entire right, title and interest in and to said application, including any and all divisions and continuations thereof, and in and to said invention and any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof;

NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other good and valuable consideration paid by said assignee to said assignor, the receipt of which is hereby acknowledged, said assignor hereby assigns, sells and transfers to said assignee, and said assignee's successors and assigns, the full and exclusive right, title and interest in and to said application, including any and all divisions and continuations thereof, and in and to said invention and any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof; said assignor, including any and all divisions and continuations thereof, and the said invention and any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof, with all the rights, powers, privileges and advantages in anywise arising from or appertaining thereto, for and during the term or terms of any and all such patents when granted, including any and all renewals, reissues and prolongations thereof, for the use and benefit of said assignee, and said assignee's successors and assigns, in as ample and beneficial a manner as the said assignor might or could have held and enjoyed the same, if this assignment had not been made.

AND said assignor hereby agrees to perform, upon the request of said assignee, or said assignee's successors or assigns, any and all acts relating to the obtaining or to the asserting of said patents, including any and all renewals, reissues and prolongations thereof.

AND said assignor authorizes and requests the Commissioner of Patents and Trademarks to issue Letters Patent on said application, and on any and all divisions and continuations thereof, to said assignee, and said assignee's successors and assigns, in accordance herewith.

As an above-named inventor, I hereby declare that the above-identified application was made or authorized to be made by me, and that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Address all correspondence and telephone calls to You & IP, LLC, 15433 Smithaven Pl, Centreville, VA 20120, Telephone: (424) 512-2030, Customer No. 187981.

ASSIGNOR (SOLE OR FIRST INVENTOR):

Signature: _____
Legal Name: Jincheon KIM
Date: 2023. 11. 29



위의 발명은 「특허법」에 따라 특허원부에 등록되었음을 증명합니다.
This is to certify that, in accordance with the Patent Act, a patent for the invention has been registered at the Korean Intellectual Property Office.



8. Demonstration and Technology Track Record(Korean patents registered)

관인생략

출원번호통지서

출원일자 2024.12.30
특기사항 심사청구(유) 공개신청(무)
출원번호 10-2024-0199527 (접수번호 1-1-2024-1453926-11)
(DAS접근코드FCB6)
출원인성명 김진천(4-1998-604573-3)
대리인성명 특허법인인벤스크(9-2016-100001-1)
발명자성명 김진천
발명의명칭 이온 부식 억제기

특허청장

<< 안내 >>

1. 귀하의 출원은 위와 같이 정상적으로 접수되었으며, 이후의 심사 진행상황은 출원번호를 이용하여 특허로
홈페이지(www.patent.go.kr)에서 확인하실 수 있습니다.
2. 출원에 따른 수수료는 접수일로부터 다음날까지 동봉된 납입영수증에 성명, 납부자번호 등을 기재하여 가
까운 은행 또는 우체국에 납부하여야 합니다.
※ 납부자번호 : 0131(기관코드) + 접수번호
3. 귀하의 주소, 연락처 등의 변경사항이 있을 경우, 즉시 [특허고객번호 정보변경(경정), 정정신고서]를 제출하
여야 출원 이후의 각종 통지서를 정상적으로 받을 수 있습니다.
4. 기타 심사 절차(제도)에 관한 사항은 특허청 홈페이지를 참고하시거나 특허고객상담센터(☎ 1544-8080)에
문의하여 주시기 바랍니다.
※ 심사제도 안내 : <https://www.wipo.go.kr>-지식재산제도

9) 출원NO-10-2024-0139281(막힘현상이 방지된 다층 면상형 필터장치)

출원번호통지서

출원일자 2024.10.14
특기사항 심사청구(유) 공개신청(무)
출원번호 10-2024-0139281 (접수번호 1-1-2024-1111194-64)
(DAS접근코드E83F)
출원인성명 김진천(4-1998-604573-3)
대리인성명 특허법인인벤스크(9-2016-100001-1)
발명자성명 김진천
발명의명칭 막힘현상이 방지된 다층 면상형 필터장치

특허청장

<< 안내 >>

1. 귀하의 출원은 위와 같이 정상적으로 접수되었으며, 이후의 심사 진행상황은 출원번호를 이용하여 특허로
홈페이지(www.patent.go.kr)에서 확인하실 수 있습니다.
2. 출원에 따른 수수료는 접수일로부터 다음날까지 동봉된 납입영수증에 성명, 납부자번호 등을 기재하여 가
까운 은행 또는 우체국에 납부하여야 합니다.
※ 납부자번호 : 0131(기관코드) + 접수번호
3. 귀하의 주소, 연락처 등의 변경사항이 있을 경우, 즉시 [특허고객번호 정보변경(경정), 정정신고서]를 제출하
여야 출원 이후의 각종 통지서를 정상적으로 받을 수 있습니다.
4. 기타 심사 절차(제도)에 관한 사항은 특허청 홈페이지를 참고하시거나 특허고객상담센터(☎ 1544-8080)에
문의하여 주시기 바랍니다.
※ 심사제도 안내 : <https://www.wipo.go.kr>-지식재산제도



8. Demonstration and Technology Track Record

평가일	신청번호	신청자(대상)	평가기관	평가결과				
2024.01.08	RQ202401050017	부산은행 (워터크린시스템)	NICE	T-5(우수)				
2025.01.08				T-5(우수)				
최근 평가내역 <table><tr><th>평가일</th><th>평가등급</th></tr><tr><td>2024.01.08</td><td>T-5</td></tr></table> T-5 우수기업 인증서 신청하기					평가일	평가등급	2024.01.08	T-5
평가일	평가등급							
2024.01.08	T-5							
NICE NICE평가정보 TCB 알림톡 도착 [NICE평가정보] 기술평가인증 안내 부산은행 귀사에 대한 기술평가가 완료되었습니다. 평가결과에 대한 홍보 및 인증이 필요한 경우 귀사의 기술력에 대해 인증서, 인증패, 현판 및 트로피를 활용하시기 바랍니다. ■ 업체명: (주)워터크린시스템 ■ 기술등급: T5(우수) ■ 기술명: 상수도 배관 부식억제기 제조 기술 ■ 신청방법 biz.nicetcb.co.kr → 회원가입/로그인 → 신청(인증서) → 상품 선택 → 정보 입력 → 결제 상세내용은 홈페이지 또는 고객센터 문의바랍니다. ■ 고객센터: 02-3771-1003 ■ 홈페이지: https://biz.nicetcb.co.kr/ds/DS02M02GE00nice 오후 5:20								

Corporate Valuation Summary

(Based on NICE TCB Technology Evaluation, Korea)

1. Company Information

Company Name:WCS WaterClean System Co., Ltd.

CEO:Jincheon Kim

Head Office:Gyeonggi-do, Republic of Korea

Contact:+82-10-8201-3675 / ncwssystem@naver.com

Website:<https://sites.google.com/view/watercleansystem>

2. Evaluation Overview

Evaluation Agency:NICE TCB (NICE Technical Credit Bureau, Korea)

Evaluation Client:Busan Bank (Requesting Institution)

Evaluation Type:Technology Credit Evaluation

Technology Grade:T5 (Excellent)

Technology Field:Manufacturing technology for corrosion suppression devices in water supply pipelines

Evaluation Completion:2025

Certificate Reference:biz.nicetcb.co.kr

3. Key Technology Description

The evaluated technology, "Water Supply Pipeline Corrosion Suppression Device Manufacturing Technology",

is based on a proprietary Permanent Direct Current Water Purification system (ResoWave)

that applies metal resonance and ionic continuityto purify and protect the water network.

This innovation improves water quality, infrastructure longevity, and environmental efficiency.

and has demonstrated stable performance exceeding 600 tons cumulative capacity with no pressure lossand verified removal of microplastics, scale, and heavy metals.

4. Evaluation Result Interpretation

According to the NICE TCB standard scale:

T1~T2:Outstanding innovation and global competitiveness

T3~T4:High potential for commercialization

T5:Excellent technology with proven market feasibility and innovation readiness

Thus, WCS WaterClean System's technology is classified as "Excellent (T5)", indicating a strong foundation for commercialization, licensing, and global investment.

5. Summary of Value Implications

Technology Excellence:Recognized by an accredited Korean evaluation agency (NICE Group)

Commercial Feasibility:Proven via large-scale water infrastructure application (600-ton test)

Global Market Potential:Estimated total addressable market ≈ ₩1,300 trillion (household & industrial sectors)

ESG Impact:Plastic bottle reduction by 15~40%, CO₂ reduction in national water infrastructure

RWA Suitability:Meets criteria for "Technology-based Intellectual Property Asset" tokenization

6. Conclusion

This evaluation certifies that WCS WaterClean System possesses a verified and excellent-level technology

suitable for expansion into the global water purification and environmental ESG sectors.

The company's proprietary technology and patent applications represent a solid base

for RWA-backed international investment and IP asset tokenization.

Issued Reference:

NICE TCB, Korea - Technology Credit Evaluation

Result:Grade T5 (Excellent)

Website:<https://biz.nicetcb.co.kr>

Authorized by WCS WaterClean System Co., Ltd.

8. Demonstration and Technology Track Record

□ 제품시험 항목 시험결과

시험항목	단위	시험결과
상대부식성	%	74.3

□ 상대부식성 시험결과

1. 부식구분 표면적(A)

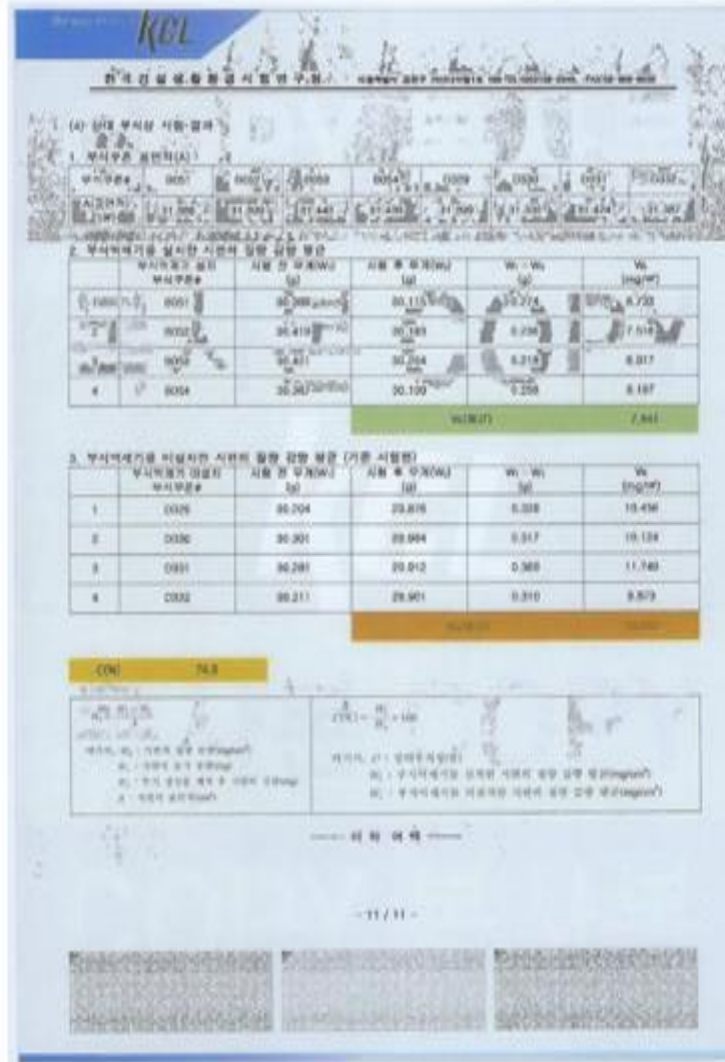
부식구분	B051	B052	B053	B054	D329	D330	D331	D332
A(표면적)(cm²)	31.366	31.339	31.443	31.439	31.399	31.332	31.424	31.367

2. 부식억제기를 설치한 시편의 질량 감량 평균(Wt 평균 = 7.841)

부식억제기 설치 부식구분	시험 전 무게(W1)(g)	시험 후 무게(W2)(g)	W1-W2(g)	WI(mg/cm²)
1 B051	30.389	30.115	0.274	8.733
2 B052	30.419	30.183	0.236	7.516
3 B053	30.421	30.204	0.216	6.917
4 B054	30.367	30.109	0.258	8.197

3. 부식억제기를 미설치한 시편의 질량 감량 평균(기준 시험편)(Ws 평균 = 10.550)

부식억제기 설치 부식구분	시험 전 무게(W1)(g)	시험 후 무게(W2)(g)	W1-W2(g)	WI(mg/cm²)
1 D329	30.204	29.876	0.328	10.456
2 D330	30.301	29.984	0.317	10.124
3 D331	30.281	29.912	0.369	11.749
4 D332	30.211	29.901	0.310	9.873



붙임 4 테스트베드 기술성능확인서 발급기업 현황

NO.	기업명	과제명
1	㈜복주	SPEP패널 및 실리콘 패드를 사용한 라이닝 방수기술
2	㈜씨엠피텍	방출물 미소유형제(초음파유형제)
3	이에스피엔	가압식 먹어과식실의 액체배출수 처리를 통한수상분리장치
4	㈜에이비엔티 시스템	오버알 변동형 차세대 스마트 RTU
5	대한콘서트	레이더센서를 이용한 수위측정장치
6	㈜위터텍시스	LoRa 무선통신을 기반으로 한 수도계량기 스마트 미터링 구현
7	㈜에니 에이브레	에너지저장용 통신 시스템을 이용한 통신망 구축
8	㈜한구화학공업	사전예방 조류제거물질
9	㈜청호산업	사전예방 조류제거물질
10	㈜한익 바이오텍	사전예방 조류제거물질
11	㈜위터텍시스	이온식 살수도관 내부 부식억제기
12	㈜도엔텔	PV(Photovoltaic) 시스템 안전 보호를 위한 직류 아크 검출 및 차단기술
13	㈜하비스프리트	지능형 하천유량측정 장치
14	㈜태원스틸	망입장치 오버알 자동유입 시스템을 활용한 상수도관로 점검기술
15	㈜하이트로엔	영상 기반의 실시간 하천 자동유입검출기술
16	㈜서지텍	피뢰기 차질선전류 측정기
17	태성인더스트리(주)	습한 환경에서도 적용 가능한 내부식 코팅기술
18	㈜아이엔오디	막취측정 및 막취차감시스템
19	㈜시노텍스	산업(공업)용수 처리용 PVDF 침입여과(MF) 막 모듈 Pack
20	㈜이디테크놀로지	저압침투와 코팅피크를 이용한 수도관로 세척공법
21	㈜파트	음성인식 기반 스마트공립스를 활용한 장비점검
22	㈜더원테크와인텍	에너지 하베스팅 무선충전표시
23	㈜대오건설	노후관 개량공법을 상용화한 관사부의 기계화 시공
24	㈜달명제이테크	별트 및 수로의 위상을 감지하는 기술을 적용한 개장제어장치
25	㈜고스	RF 스킴(Shield)
26	㈜고스	GNSS 스위퍼(고정형 위성선로 스위퍼)
27	대한콘서트	레이더 수위계를 사용한 PC기반의 수위 모니터링 및 제어시스템
28	프라이머테크놀로지(주)	데이터 불로무 계속 기반의 Zero Trust 솔루션 Print Connect
29	㈜달명제이시스템	차세대기술을 활용한 환경분석을 통한 표준물질 국산화
30	㈜케이티엑스	원격 실시간 영상 모니터링 및 공유장치
31	㈜에스텍테크	수출과 인식 및 능동제어 수출과 방지설비

8. Demonstration and Technology Track Record



CERTIFICATE

WATER CLEAN SYSTEM CO., LTD.

Head office : Rm627, 230, Cheonghak-ro, Osan-si, Gyeonggi-do, Korea
Factory : 483-26, Anhyeon-ro, Hyeongok-myeon, Gyeongju-si, Gyeongsangbuk-do, Korea

This is to certify that the Quality Management System and the scope of the certification of the above mentioned company meets the requirement of

ISO 9001 : 2015 / KS Q ISO 9001 : 2015

For the following scope of registration (IAF: 18)

Design, Development and Manufacture of Corrosion Inhibitory Equipment for The inside of Waterworks, Water Treatment Equipment, Corrosion Inhibitory Equipment, Environmental Equipment and Heating System

Certificate Number: JK-19123

Date of Initial Approval: 04 February 2020
Re-issued Date: 22 June 2024
Expiry Date: 03 February 2026

Approved by
Sea Il Son, President

Page 1/1

This management system certificate applies to the operations of the address shown above and not transferable. It remains the property of International Industrial Certification Co., Ltd. (IIC) accredited by IAS a signatory of IAF MLA and is valid only if regulatory surveillance audit is conducted within the required time.



International Industrial Certification
Gayang Technotown No. 803-2,
217, Heojun-Ro, Gangseo-Gu, Seoul, Korea
Tel: +82 (0)2 6097 9001 • Fax: +82 (0)2 6097 9005
info@iicregistrar.com

www.iicregistrar.com



American Water Works
Association

Dedicated to the World's Most Important Resource

미국수도협회 회원증

#BWNCWZH
#03745435 2#
Mr. Jin Cheon Kim
Waterclean System CO., LTD
627ho, jeongwoo J class, Cheonghak-ro 230
Osan-Si 18118
Korea, Republic of

6666 West Quincy Avenue
Denver, CO 80235-3098 USA

T 303.794.7711
F 303.347.0804
800.926.7337
www.awwa.org



Membership Card

Waterclean System CO., LTD

Member #: 3745435
Type: SvcProvider: <\$1M Sales
Section: International Member

Expires: 01/31/2024

Dear Jin,

As a leader in the water sector, your organization faces greater challenges than ever before. It's never been more important for water and wastewater utilities, service providers and partner agencies to work together, and your AWWA membership helps make it possible.

AWWA is dedicated to providing you and your staff with the resources needed to be successful on the job every day, and we encourage you to make the most of your organizational membership.

Although many tangible benefits are available to you through your membership, other members have told us that getting personally involved in AWWA is the most rewarding aspect of their membership. By sharing knowledge, members like you work collaboratively to:

- Solve water quality challenges
- Inspire confidence in consumers and public officials
- Develop innovative technologies
- Protect and keep water safe and clean throughout the world

The attached card reflects your organization's membership number. As the main contact for this membership, you will receive special communications and serve as facilitator of benefits and the membership renewal. Your personal membership card will be sent separately.

Thank you again for your membership, and for all you do to support our common mission. Together we are creating a better world through better water.

Sincerely,

David B. LaFrance
Chief Executive Officer

8. Demonstration and Technology Track Record (Business registration and factory registration certificates)



사 업 자 등 록 증

(법인사업자)

등록번호 : 134-86-91263

법인명 (단체명) : (주) 워터크린시스템

대표자 : 김진천

개업연월일 : 2012년 06월 25일 법인등록번호 : 131411-0279474

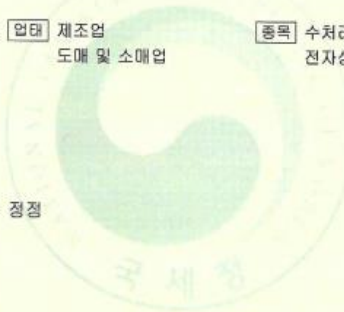
사업장소재지 : 경기도 오산시 청학로 230, 627호(수청동, 정우제이클래스)

본점소재지 : 경기도 오산시 청학로 230, 627호(수청동, 정우제이클래스)

사업의종류 : 업태 제조업 종목 수처리기계제작(부식억제기)

도매 및 소매업 전자상거래 소매 종가업

발급사유 : 정정



사업자 단위 과세 적용사업자 여부 : 여(√) 부() (적용일자: 2013년 07월 01일)

전자세금계산서 전용 전자우편주소 : pikco21c@hometax.go.kr

2024년 06월 19일

동 화 성 세 무 서 장







nts.go.kr 국세청

사업자단위과세 적용 종원사업장 명세

사업자등록번호 : 134-86-91263

① 일련 번호	② 상 호	③ 종원사업장 개설일	④ 대표자	⑤ 사업장 소재지	⑥ 사업의 종류	
					업태	종목
0001	(주)유테크림시스 법공점	2013/07/01	김진천	경상북도 경주시 동국면 안천로 483-25	제조업	수처리기계제작
- 이 하 여 백 -						

2024 년 06 월 19 일

동 화 성 세 무 서 장

국세청
National Tax Service

문서확인번호: 1718-5880-4135-4092

공장등록증명(신청서)

접수번호	2024052585464263001	접수일	2024.06.17	처리기간	즉시
------	---------------------	-----	------------	------	----

신청인	회사명	전화번호
	(주)워터크린시스템	055-338-8437
	대표자 성명	생년월일(법인등록번호)
	김진천	131411-0279474
	대표자 주소(법인 소재지)	
	경기도 오산시 청학로 230, 627 (수형동)	

등록 내용	공장 소재지	지목	보유구분
	경상북도 경주시 현곡면 안현로 483-26	공장용지	자가 [], 임대[O]
	공장 등록일	사업 시작일	종업원 수
	2024년 06월 17일		남 :0 여 :0
	공장의 업종(분류번호)		
	램, 밸브 및 유사장치 제조업 외 1종(29133, 29175)		
	공장 부지 면적(㎡)	제조시설 면적(㎡)	부대시설 면적(㎡)
	0.000	215.032	0.000

등록 조건	
-------	--

등록변경·중설등 기재사항 변경내용(변경 날짜 및 내용)	공장관리번호
	471302024130942

「산업집적활성화 및 공장설립에 관한 법률」 제16조제1항·제2항·제3항에 따라 위와 같이 등록된 공장임을 증명합니다.

2024년 06월 17일

한국산업단지공단이사

◆본 증명서는 인터넷으로 발급되었으며, www.gov.kr의 인터넷발급문서진위확인 메뉴를 통해 위·변조 여부를 확인할 수 있습니다.(발급일로부터 90일까지) 또한 문서하단의 바코드로도 진위확인(검부24 앱 또는 스캐너용 문서확인프로그램)을 하실 수 있습니다.

9. Target Applications and Markets

Primary target supply markets:

Municipal water supply, drinking water, domestic water, and industrial water.

• Secondary battery companies:

LG Chem, Samsung SDI, SK On, POSCO, Hanwha Q CELLS

• Agriculture, livestock, and food & beverage sectors:

Demand for removal of bacteria, microplastics, and contaminants

• Government and public institutions:

ESG-based transition targets for microplastic mitigation in water treatment

• Domestic municipal water systems:

Microplastics and contaminant removal

• Overseas municipal water systems:

Calcium scale, contaminants, and microplastics

“Technology that protects the inner self,
a commitment that protects the world – WaterClean System Co., Ltd.”