



SmartWater Plus: The Future of Sustainable Water Purification

# kHan Water Systems

Dec. 12. 2024



YHS

# Overview of YHS's kHan Product



## ❑ Collaboration Between Yeha Global & Hwa Sung

- ✓ A **partnership** built on shared expertise in water purification technology.
- ✓ Combining **Yeha Global's** innovative product development with **Hwa Sung's** precision manufacturing and quality control.
- ✓ Delivering reliable, high-performance **water solutions** tailored to **global needs**.

## ❑ Core Philosophy

- ✓ **Innovation:** Pioneering advanced filtration systems like Cyclone Technology and multi-stage purification.
- ✓ **Sustainability:** Designed to operate with minimal energy consumption and water waste.
- ✓ **User Accessibility:** Easy installation and maintenance with modular components.

# Core Technologies



## ❑ Cyclone Filtration Technology

- ✓ **Permanent Pre-Filtration:** Removes large impurities such as sand, rust, and sediment using centrifugal force.
- ✓ **Durability:** A maintenance-free, permanent filter design that prolongs the lifespan of subsequent filtration stages.

## ❑ Advanced Multi-Stage Filtration

- ✓ **Carbon Filter:** Effectively eliminates chlorine, odors, and organic compounds for improved water taste and safety.
- ✓ **Sadi Filter:** Removes fine particles, heavy metals, and microorganisms, ensuring pure and potable water.
- ✓ **Enhanced pH Balance:** Delivers slightly alkaline water (pH 7.9) to support hydration and overall health.

## ❑ Eco-Friendly Operation

- ✓ **Save Electricity, Water-Saving Design, Environmentally Conscious Materials**

# Photocatalytic Technology

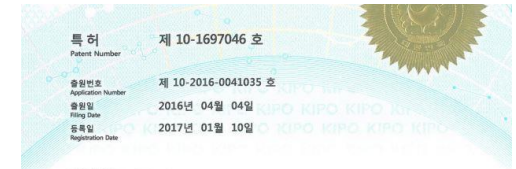


## □ What is Photocatalytic Technology?

- ✓ Utilizes light (UV or visible spectrum) to activate a catalyst (commonly titanium dioxide,  $\text{TiO}_2$ ).
- ✓ Produces reactive oxygen species (ROS) like hydroxyl radicals ( $\text{OH}\cdot$ ) and superoxide ions ( $\text{O}_2^-$ ).
- ✓ Breaks down pollutants, organic matter, and harmful pathogens into harmless components (e.g.,  $\text{CO}_2$  and  $\text{H}_2\text{O}$ ).

## □ Water Purification:

- ✓ Removes bacteria, viruses, and organic contaminants.
- ✓ Breaks down pharmaceutical residues and industrial chemicals.



발명의 명칭 Title of the Invention  
광촉매 살균정수기

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위의 발명은 「특허법」에 따라 특허등록원부에 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.



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특허청장  
COMMISSIONER  
KOREAN INTELLECTUAL PROPERTY OFFICE

최동규



# Bubble Tip Technology



## □ What is Bubble Tip Technology?

- ✓ A patented innovation designed to optimize water aeration and purification.
- ✓ Incorporates advanced oxygen-dissolving features, ensuring higher dissolved oxygen (DO) levels in water.
- ✓ Combines precision engineering and eco-friendly materials for long-lasting performance.



## □ 2. Key Features

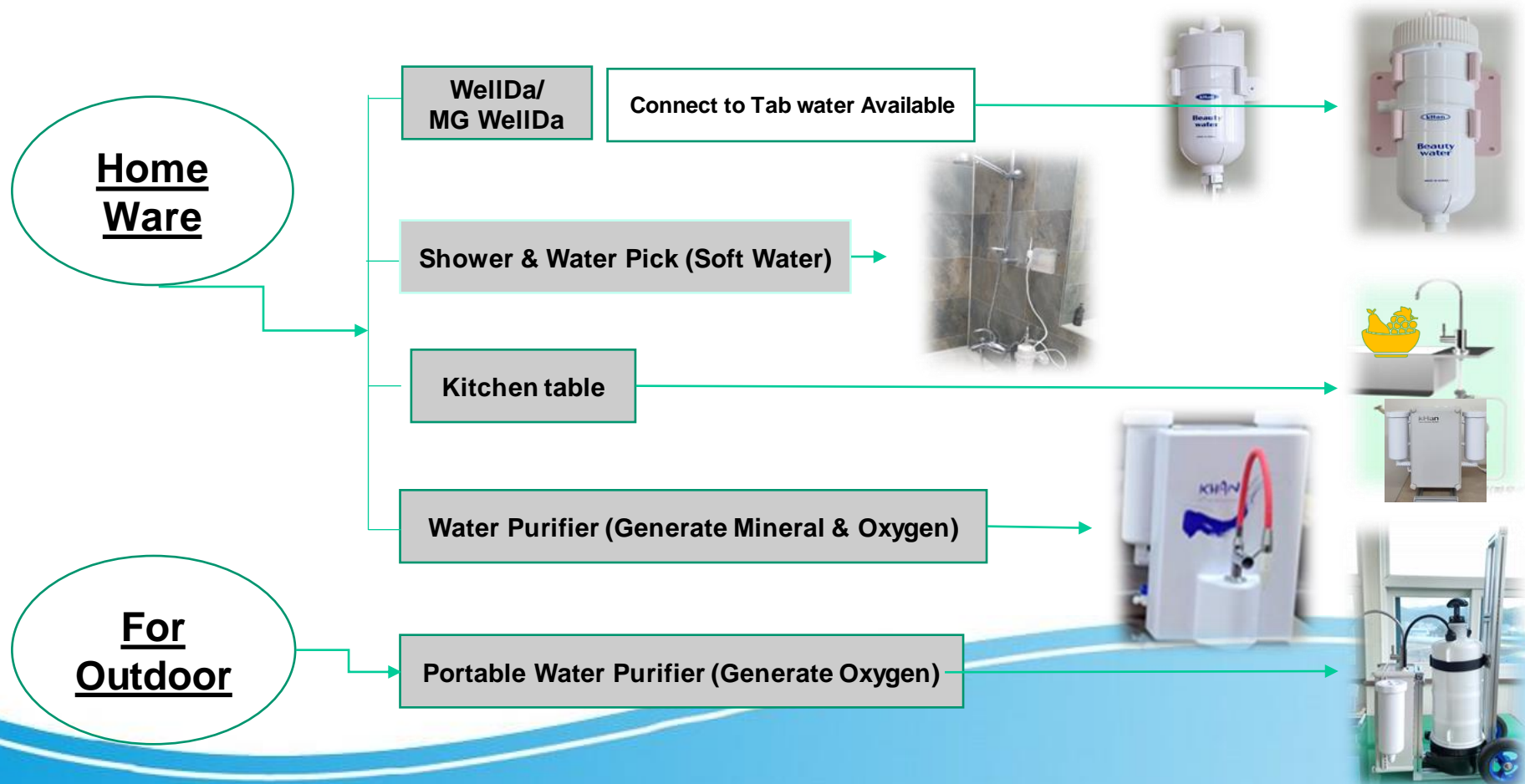
- ✓ **Enhanced Oxygen Dissolution:** Increases dissolved oxygen levels up to 11.2 ppm, significantly improving water quality.
- ✓ **Energy Efficiency:** Operates without electricity or with minimal energy consumption.
- ✓ **Durable Design:** Long-lasting construction suitable for various water systems.
- ✓ **Wide Application:** Usable in agriculture, aquaculture, and household water systems.



# YHS's 5 Product Lines



Innovative water purification solutions for **home** and **outdoor** use, including tap-connected WellDa, kitchen purifiers, soft water shower systems, and portable oxygen-enriched water purifiers.



# Competitive 5-Products Characteristics



## ❑ **All 5 Models are,**

- ✓ Chlorine Separation & Decalcification.
- ✓ Removal Heavy Metal & Foreign Substances.
- ✓ Eco-friendly Products Considering the Global Environment: No Electricity Required, Carbon Composite Filter can be Used 7-10 Times Longer than Existing

## ❑ **Water Purifier & Outdoor, Portable Water Purifier**

- ✓ Indoor Water Purifier : Generate Oxygen & Mineral Water Available
- ✓ Large Amount of Dissolved Oxygen Water.
- ✓ 2 of 3 Filters can be Used Semi-permanently.
- ✓ Capacity of Portable Water Purifier : 5 or 10 Liter Available.

# MG WellDa: Version 2 - Advanced Water Purification



## ❑ **Enhanced Design with Filter & Magnet:**

- ✓ The advanced MG WellDa system includes added functionality for superior water purification through an integrated filter and magnetic technology.

## ❑ **Water Quality Improvements:**

- ✓ Chlorine-free and limestone-free water.
- ✓ Maintains an optimal pH of 7.95 for healthier water consumption.

## ❑ **Versatile Application:**

- ✓ Ideal for household usage, including showers.
- ✓ Ensures enhanced purification with a Carbon Composite Filter, which removes impurities effectively.



## ❑ **Efficient Filtration System:**

- ✓ Equipped with three powerful magnets for hexagonal water supply.
- ✓ Extended filter lifespan (7–10 times longer than conventional filters).



# WellDa System: Revolutionizing Water Purification



## ❑ **No Electricity or Filter Needed:**

- ✓ The WellDa System connects directly to a faucet and delivers clean water by effectively separating foreign substances, heavy metals, chlorines, and hard water contaminants—all without requiring electricity or a purifying filter.



## ❑ **Innovative Air Pocket Structure (Point 4):**

- ✓ This unique feature traps and isolates impurities, directing them to the bottom of the system for easy discharge.

## ❑ **User-Friendly Maintenance (Point 5):**

- ✓ The discharge valve is designed to be opened once a month for 30 seconds (or based on daily usage). This allows for the easy removal of heavy metals and foreign substances, ensuring consistent performance and clean water.

# WellDa (T-Cyclone) Performance Test

## Overview:

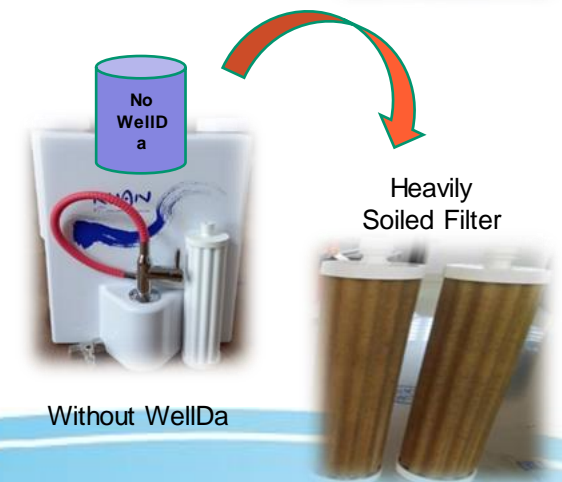
- ✓ Conducted in Ningxia, China, supervised by the city deputy director.
- ✓ Duration: 2 weeks (14 days).
- ✓ Purpose: Evaluate water purification efficiency with and without WellDa.

## Test Methodology:

- ✓ Direct connection to tap water.
- ✓ Install WellDa in the water purifier with a filter at the rear.
- ✓ Compare with a filter-only setup (without WellDa).

## Key Findings:

- ✓ No electricity or filter required for WellDa.
- ✓ Effectively separates heavy metals, foreign substances, hard water, and chlorine.
- ✓ Extends filter life by 5-10 times, reducing waste and improving efficiency.



# Oxygen Care Mineral Water Purifier

## ❑ Multiple advanced components

- ✓ WellDa Installed: Enhances water filtration efficiency without electricity.
- ✓ Chlorine Separating Filter: Effectively removes chlorine for healthier water.
- ✓ Elvan Stone Treated Mineral Filter: Adds essential minerals to enhance water quality.
- ✓ Oxygen Dissolving Bubble Tip: Boosts dissolved oxygen levels by over 30% for soft and oxygen-rich water.

## ❑ Key Features:

- ✓ Combines shungite filter and elvan stone to deliver a high concentration of minerals.
- ✓ Promotes a healthy lifestyle by providing soft water rich in oxygen.

## ❑ Environmental Impact:

- ✓ Zero CO2 emissions due to non-electric operation.
- ✓ Contributes to global environmental sustainability by reducing carbon footprint.



# Oxygen Care Mineral Water Purifier: Video Clip

## ❑ Usage Benefits:

- ✓ Soft, mineralized water improves health and supports a better quality of life.
- ✓ Ideal for eco-conscious users seeking advanced and sustainable water solutions.



# Portable Water Purifier

## ▣ Applications

- ✓ Designed for field operations, outdoor activities, and disaster response scenarios.
- ✓ Provides a sustainable and efficient water purification solution for challenging environments.

## ▣ Core Component

- ✓ Manual Air Pressure Generating Lever
- ✓ WellDa System & Disinfectant Chlorine Tablets
- ✓ Chlorine Separating Carbon Filter & Non-Woven Mineral Filter
- ✓ 10 or 5 Liter Water Storage Bottle
- ✓ Oxygen Care Bubble Tip
- ✓ Dregs Outlet (One-touch valve, Pollutant discharge valve)



## Portable Water Purifier: Video Clip

A portable, manual water purifier using WellDa technology and oxygen-enhancing bubble tips, ensuring safe, clean water anywhere efficiently.



## ❑ **Cost Savings through Affordable and Long-Lasting Filters**

- ✓ YHS technologies offer significant economic benefits through affordable, long-lasting filters that reduce recurring costs for households, businesses, and public facilities. With minimal maintenance and non-electric systems, users enjoy lower operational expenses, making clean water accessible to diverse communities.

## ❑ **Health Benefits through Safe and Balanced Drinking Water**

- ✓ Health benefits are equally profound, as YHS systems provide pH-balanced water (7.95) free from contaminants like chlorine and heavy metals, reducing waterborne diseases and improving quality of life.

## ❑ **Contribution to UN Sustainable Development Goals (SDGs)**

- ✓ Aligned with UN SDGs, YHS supports good health (SDG 3), clean water access (SDG 6), and climate action (SDG 13) through energy-efficient, sustainable designs that promote responsible consumption (SDG 12)

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# Conclusion: The Future of Clean Water with YHS



## ❑ **Innovative Solutions:**

- ✓ YHS integrates advanced technologies like Cyclone Filtration , Advanced Multi-Stage Filtration, Photocatalysis, Bubble tips, and redefining clean water accessibility.

## ❑ **Economic and Environmental Impact:**

- ✓ Affordable, energy-efficient solutions ensure cost savings while minimizing environmental impact, contributing to sustainable development.

## ❑ **Global Collaboration:**

- ✓ Through partnerships with organizations is expanding its reach to support diverse sectors including agriculture, aquaculture, and urban water management.

## ❑ **Commitment to SDGs:**

- ✓ YHS remains dedicated to addressing global challenges, including health, water security, and climate action, aligning with the UN Sustainable Development Goals.

