DAEHYUNENTEC

# Company introduction

# Enterprise status

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| **Corporate name** | DAEHYUNENTEC Co. Ltd. |
| **CEO** | KIM JOON KYU |
| **Date of establishment** | 2014.04 |
| **Capital amount** | 400 million won |
| **Number of employees** | 7 |
| **Main product** | Wearable air purifier mask |
| **Head office** | 1-714, 98, Gasan digital 2ro, Geumcheon gu, Seoul, Korea |
| **Home page** | www.airprom.co.kr |

Daehyunentec was established in 2014 and has been conducting various studies as a specialized environmental company. During the research, in 2015 the concept of a wearable air cleaning mask (AirproM) differentiated from existing masks was established, and development began in earnest after the patent was registered. AirproM inhales outside air through a fan motor. At this time outside air is purified through a HEPA filter and then flows into the mask. High-performance fan motors are required to infiltrate the air through a dense hepa filter, and we have tried to develop fan motors with this capability. Finally, after 5 years of research, we succeeded in developing a fan motor and completed mass production of AirproM in 2019. Starting with the sale of online malls in Korea 2020, it has entered the US and Japan through Amazon, and is preparing to export to more countries including Europe. We are ready to enter a wider overseas market and will gradually increase our market share.

DAEHYUNENTEC Co., Ltd. is an environmental company that provides comprehensive solutions for the environment.

# Company history



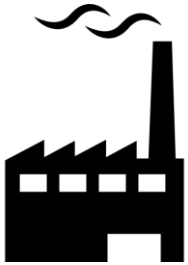
**2014**
- 04 **Establishment**
- 08 SMBA Business Start-up Growth Project
- 10 Ordering the Task of the National Agency for Technology and Standards
- 12 SMBA Industrial-Academic Cooperation Project Order

**2015**
- 06 Seoul National University Industry-Academic Cooperation Group Signs Technology Transfer Agreement
- 08 Orders for 'Yangpyeong-gun Integrated Water Treatment Plant Monitoring System'
- 10 **Patent application for `air-supplied mask'**
- 11 Certification of the R&D department

**2016**
- 02 Certification of Venture Businesses
- 04 Patent application for 'Initial Excellent Processing Device for Non-Point Pollution Sources'
- 05 SMBA Industrial-Academic Cooperation Project Order
- 06 **Patent registration for 'air-supplied mask'**

# Company history



**2017**

02 **Patent application for Wearable Air Purifier Mask**

06 Registered Design of Wearable Air Purifier Mask

09 Patent application for 'dust remover'
patent application for 'oxygen generator'

11 **Patent registration for wearable air purifier mask**

Patent application for 'Nano Foam Generator'

**2018**

05 Patent registration for 'Nano Foam Generator'

06 Patent registration for 'dust remover'
patent application for 'multi-purifier'

07 'Patent registration for 'oxygen generator'

11 Patent registration for 'multi-purifier'

**2019**

12 **Mass production of wearable air purifier masks**

# Company history

## 2020


02 Entered into domestic online shopping malls and started sales.

02 Domestic trademark application.

03 **Registration 0f KC radio certification**

03 **Copyright registration (detail page and video)**

04 Entered the US and Japan Amazon stores and started sales

04 Entered eBay and started sales

04 Entered Q10 Japan and started sales

06 **European CE certification registration.**

06 **North American FCC/IC certification registration.**

06 **Applied for trademark registration in the United States..**

07 **Registration of supplier conformity certificate.**

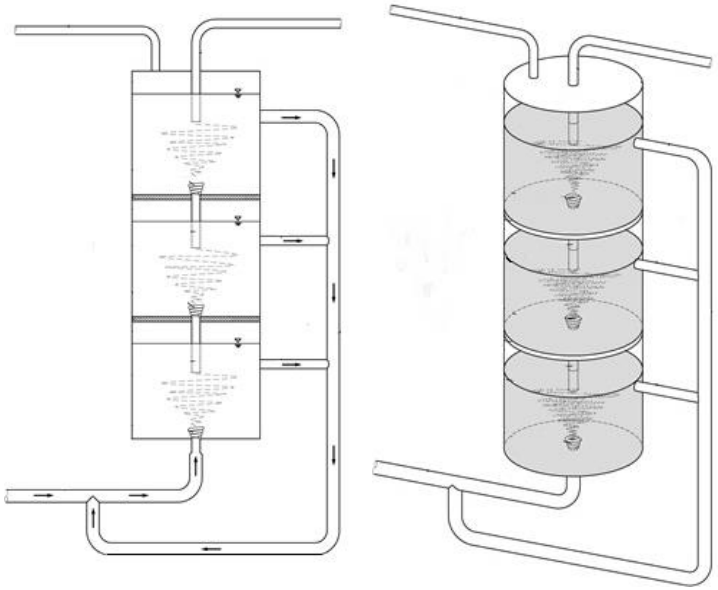
08 **Entered Shopi Singapore and started sales**

08 **Registration of domestic trademark.**

09 **Registration of FDA**

# Development of high-efficiency advanced oxidation water treatment system to remove new harmful substances.

**advanced oxidation water treatment system.**



**Installation and commissioning of advanced oxidation water treatment system.**

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|---|---|
| **Development contents** | ▪ Development of a high-efficiency water treatment system to remove low-concentration trace pollutants contaminated with ng/L pollutants.<br>▪ Injecting raw water, ozone and hydrogen peroxide into a three-stage reaction tank through a sliding injector.<br>▪ By forming vortices and turbulence in the reaction tank, the contact between ozone and raw water is increased, reducing treatment costs and maximizing treatment efficiency. |

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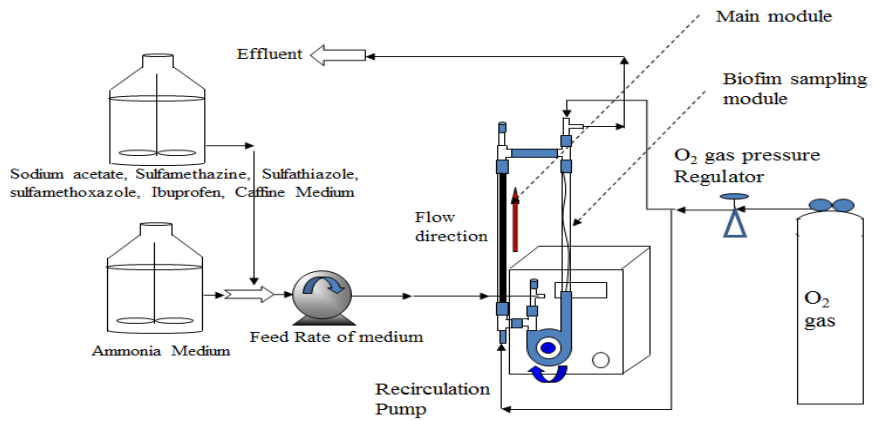
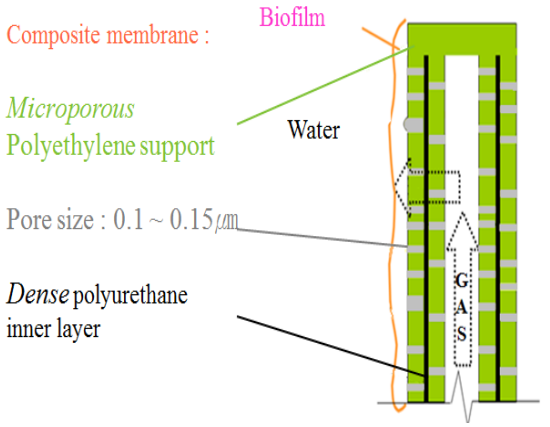
# Development of a new water treatment device for removing trace pollutants using Oxygen-based MBfR.

## Development of water treatment device using Oxygen-based MBfR.



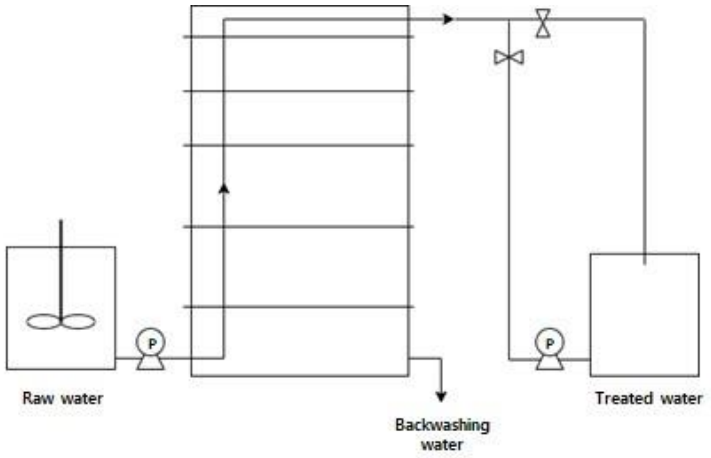

## The concept of MBfR



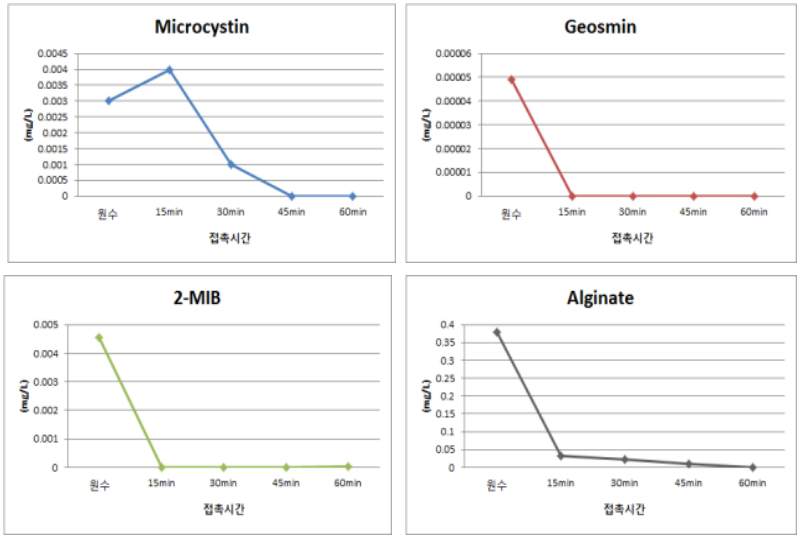

| Development contents | |
|---|---|
| | ▪ Development of Oxygen-based MBfR water treatment system to remove trace pollutants in water with a low concentration of ng/L<br>▪ Water treatment technology using MBfR is expected to become a next-generation water treatment facility that can reduce pollutants in the water environment. |

# Development of a device for removing algae by-products using iron oxide coated filter media.

## Algae by-product removal device treatment process chart.




## Algae by-product treatment performance verification results.




**Development contents**

- Development of an algae by-product removal device that can be installed at the front end of a water purification plant to minimize algal by-products during sewage and water treatment.
- Performance verification by performing experiments on removing representative algae by-products such as Microcystin, Geosmin, 2-MIB, and Algainate.

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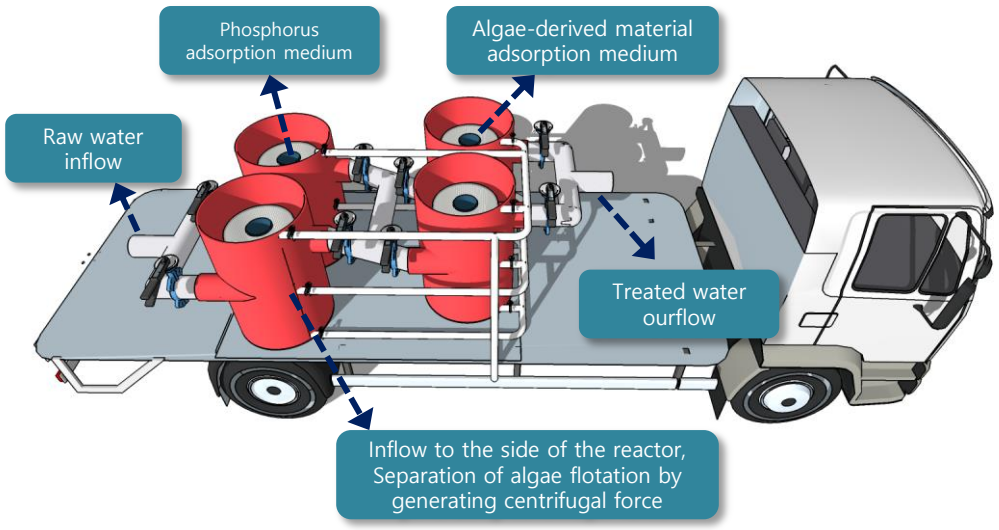
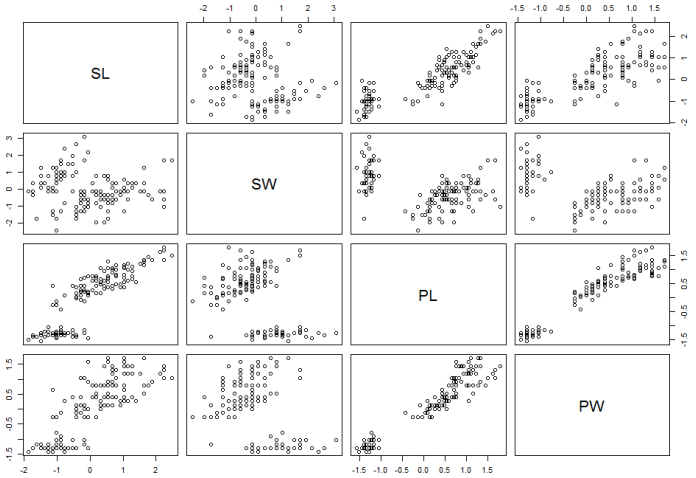
# Development of portable green algae treatment device and green algae generation prediction modeling technique.

## Configuration diagram of mobile green algae removal system.




## Development of a modeling technique for predicting green algae occurrence.




| Development contents | |
|---|---|
| | ▪ As a pre/post-treatment technology for the green algae phenomenon that is becoming more and more serious due to global warming, we have developed a green algae generation prediction modeling technology and a mobile green algae treatment system.<br>▪ It is possible to reduce the damage of green algae in rivers and lake waters nationwide by developing a system for treating green algae. |

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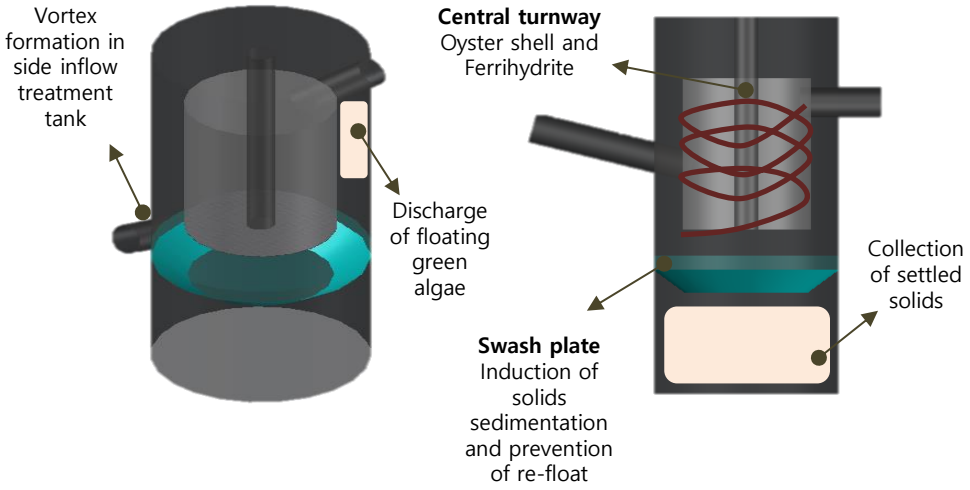
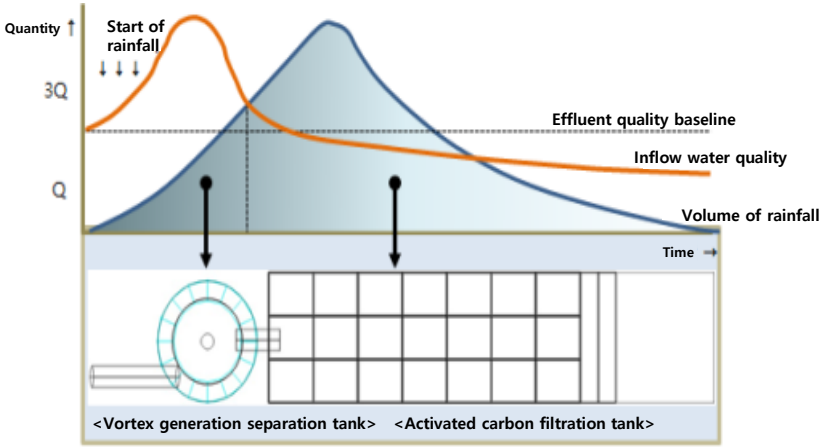
# Development of high-efficiency vortex type initial rainwater treatment system.

## Vortex type initial rainwater treatment system overview.




## Concept of initial rainwater treatment system




| Development contents | |
|---|---|
| | ▪ Developed a high-efficiency vortex-type initial rainwater treatment system to treat high-concentration initial rainwater that pollutes the river environment and ecosystem.<br>▪ By using the vortex type rainwater treatment facility in the front and the activated carbon filtration tank in the rear, it is possible to treat high-concentration initial rainwater generated on the road at low cost/high efficiency. |

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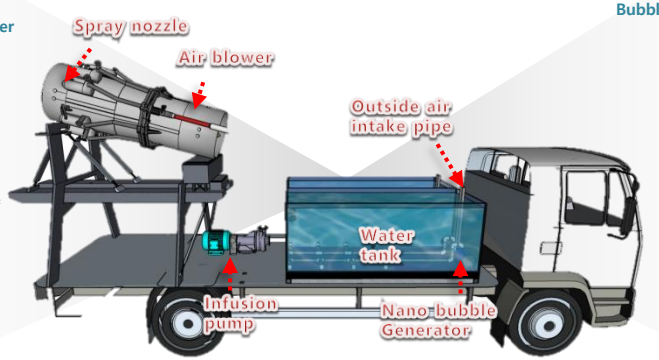
# Development of mobile scattering dust treatment equipment using 700nm sized air bubbles.

## 700nm fine bubble generator and blower.

Bubble generator installation in raw water tank

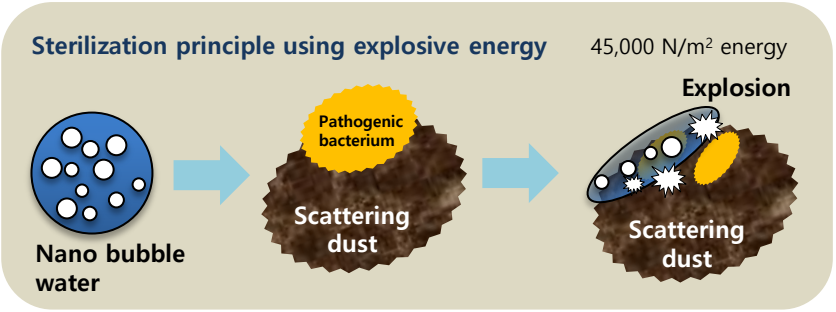
- Spraying 300 liters of water per minute with 50M or more of water mist
- The volume of water expands more than 1,700 times




Bubble generator installation in raw water tank

- 700~1000nm bubble generation
- Nano bubble explosion energy use

## Sterilization principle using explosive energy.

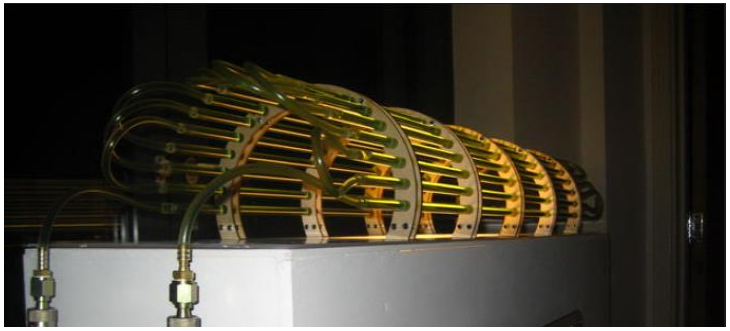



| Development contents | |
|---|---|
| | ▪ A device to quickly and accurately treat scattered dust generated at construction sites.<br>▪ Designed to be movable, it can be moved to any location to effectively remove dust.<br>▪ It is possible to remove harmful microorganisms attached to scattering dust by generating and spraying nano bubbles in the raw water being sprayed. |

# Development of outdoor rest area using microalgae.

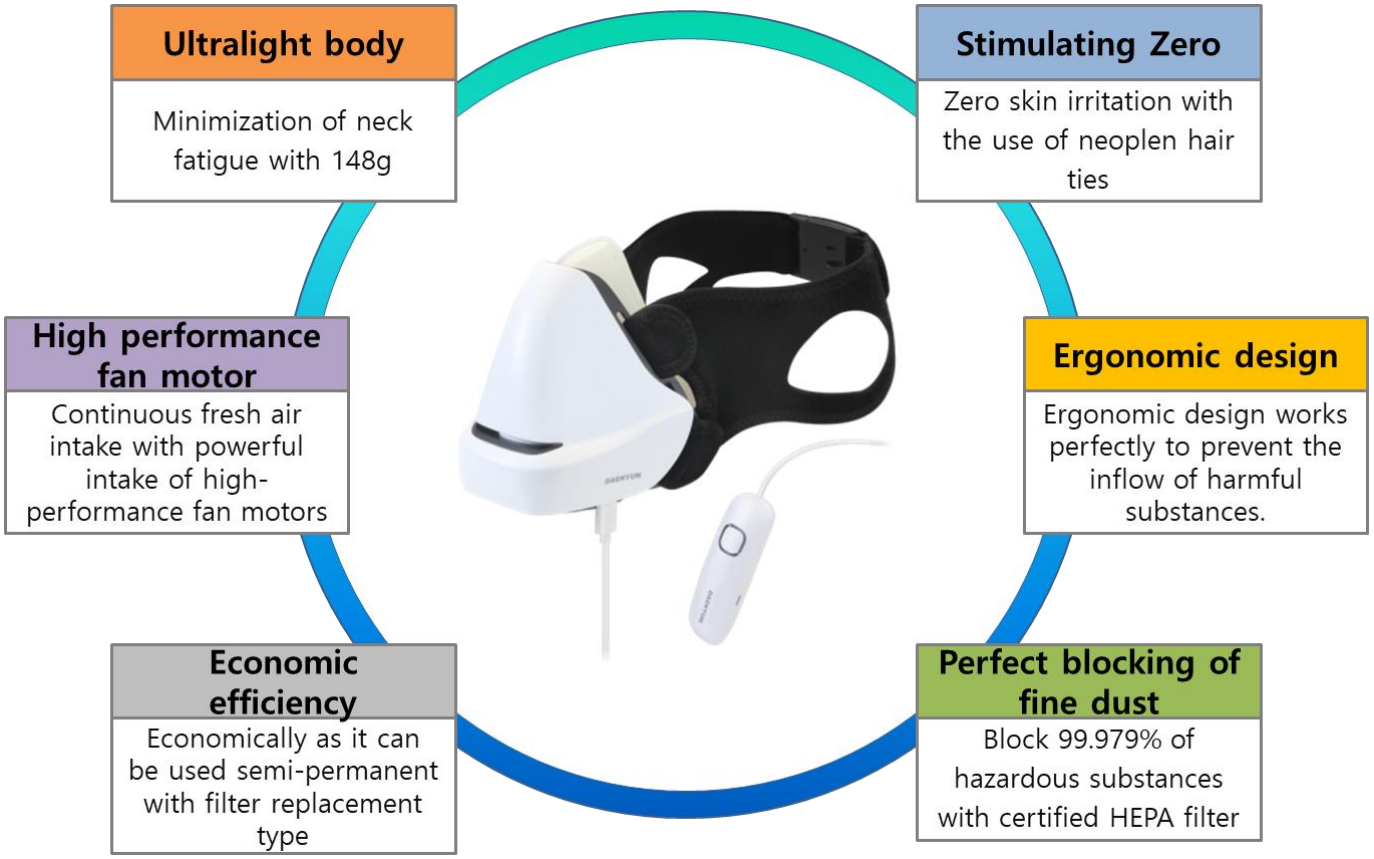
## Eco-friendly building


## Microalgae culture system and microbubble generator



| | |
|---|---|
| **Development contents** | ▪ It is possible to create a comfortable resting space by supplying it to the resting space by using the oxygen released when microalgae performs photosynthesis. In addition, it is an invention that helps reduce CO2 by using CO2 during photosynthesis.<br>▪ Nano bubble generator that supplies air can also be developed and applied to various fields. |

# Wearable air purifier mask development




| Development contents | ▪ **In the case of general yellow dust mask, it cannot completely block fine dust because it does not adhere perfectly. However, there is a disadvantage that breathing is uncomfortable when it is completely adhered to block fine dust.**<br>▪ **By developing a wearable air purifier that supplies air, it is possible to completely block fine dust and make breathing easier.** |
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# Thank you