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Plasma Technology



Company Introduction of JUNGROK Co., Ltd.

Representative : Lee Suyeon

Date of establishment : 30 August 2017

Main products : plasma module (air sterilizer), plasma jet (device for surface treatment other than FPCB patterning), 3D printing system

Headquarters : A-414, 79-10, Techno saneop-ro 55beon-gil, Nam-gu, Ulsan, Republic of Korea

Company Research Institute : A-3406, 97, Centum jungang-ro, Haeundae-gu, Busan, Republic of Korea

Factory 1 : B-301, 79-10, Techno saneop-ro 55beon-gil, Nam-gu, Ulsan, Republic of Korea

Website : www.jungrok.co.kr

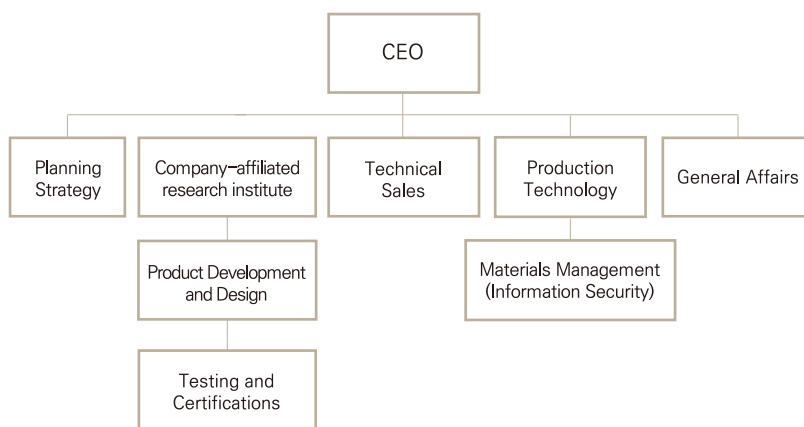


View of the Headquarters

HISTORY

- **2016** Apr. Established "GinKor"
- **2017** Jul. Established a company-affiliated research institute
 Sep. Converted Jungrok Co., Ltd. into a corporation
 Nov. Certified as a venture company
 Dec. Certified as one of K-Global 300 ICT promising companies
- **2018** Sep. Became a partner company of Korea Institute of Industrial Technology
 Nov. Obtained Productivity Management System certification from the Korea Productivity Center
 Dec. The Agency for Defense Development transferred the technology [Patterning plasma jet using conductive ink]
- **2019** Jun. Plasma jet patterning, plasma module R&D
 Dec. Plasma Air Cleaning Device and System PCT
- **2020** Mar. The Agency for Defense Development transferred the technology
 May. Certified as an Excellent technology evaluation company (air purifier)
- **2021** Feb. ISO 9001 Certification
 Mar. Achieved ISO 9001 certification
 May. Established a factory

ORGANIZATION

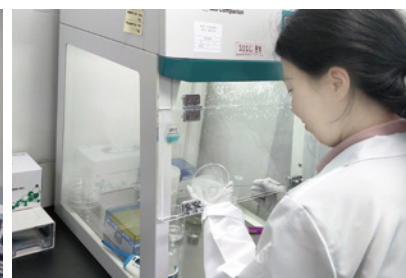


Company-affiliated research institute

Genetically modified organism lab



Prototype Production Room



Bio Lab

Plasma Technology

Our real world, the amazing world
where everything is possible, is full of possibilities.

Jungrok Co., Ltd. is in the middle of a road
that no one has gone.

Jungrok Co., Ltd. aims to enrich the lives of customers
by sterilising air beyond the role of existing air purifiers
through plasma modules.

Through ceaseless innovation and positive change,
we will make tomorrow's amazing possibilities a reality.



Introduction to Holding Technology

Plasma performance / plasma generation area maximisation through ADD technology transfer.

Possible to form a free plasma area, depending on the space and shape by the flexible electrode.

Plasma Technology

Plasma can be defined as a gas in an ionised state. When energy is applied to a gas, it separates into electrons and atomic nuclei, which is called an ionised state. More than 90% of the matter in the universe, such as the sun, lightning, and aurora, is made up of plasma.



Ion Generation Module

- Air purification fine dust collection
- Corona discharge principle
- Improved VOC removal ability



Specifications

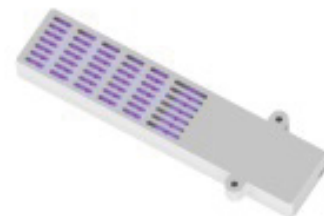
Dimension	30X55, 35X46mm(customized production)
Input power source	5V, 12V, 27V
Performance	removal of harmful substances, fine dust collection
Use	Small air purification products, such as for vehicles and portables Plasma module

Plasma Module

- Virus sterilisation (new virus such as coronavirus)
- DBD discharge principle
- Removal of harmful substances in the air (VOC, virus, etc.), sterilisation

Specifications

Dimension	35x46mm, 35x70mm (customized production)
Input power source	5V, 12V
Performance	VOC removal, pathogen and virus (HCoV) sterilization
Use	homes, public institutions, hospitals, restaurants, buses, trains, subways, etc.



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Low-energy, high-efficiency plasma air steriliser
created by the technology of Jungrok Co., Ltd.

By applying flexible plasma fabric technology, it removes
more than 99.99% of harmful substances including viruses,
bacteria and coronavirus in a short time.





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Product that combines the plasma module developed by Jungrok Co., Ltd. with the flexible plasma technology of the Agency for Defense Development developed for decontamination of CBR attacks or biochemical attacks.

Developed to optimise the air polluted by coronavirus, etc. in spaces such as schools, offices, hospitals, and restaurants in a short time.

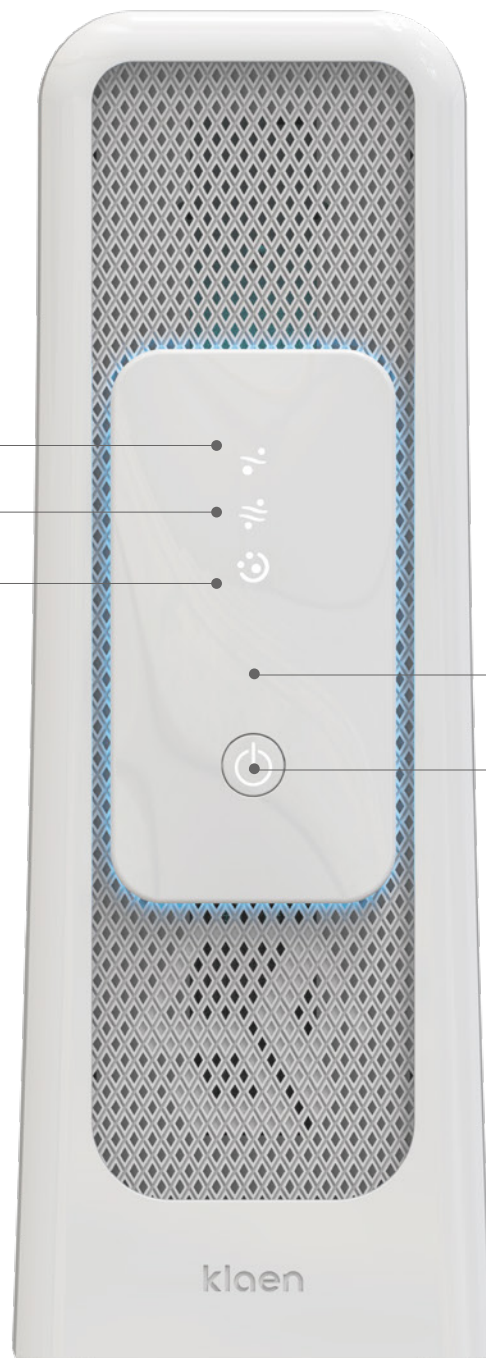
Place of Use



Homes, Offices **Step 1**

Hospitals, Hotels, Restaurants **Step 2**

Where Containment is Required **Step 3**



IR Receiver

ON/OFF

* Ozone is generated during Disinfection mode, so be sure to use it in a place where no one is present.

* Buzzer sound (with mute function) in Disinfection mode



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PLACE OF USE | OFFICE



Product Specifications

Plasma module-based air steriliser Klaen

Product name	Klaen
Model name	JR-G2PV2C
Manufacturer	Jungrok Co., Ltd.
Product size	W184mm X D138mm X H512mm
Color	WHITE
Rated voltage	100-240V ~ 50/60Hz 0.6A
Dedicated area	49.59m ²
Product & accessories	Air Steriliser, Power Adaptor, Remote Control



Plasma module + Air steriliser based on decontamination technology of the Agency for Defense Development

- Application of Flexible Plasma technology that allows free space and form.
- Sterilisation and deodorisation function using low-temperature, atmospheric pressure plasma.
- Applicable to various spaces.



Eliminates bacteria Virus allergens certified by A.D.D (Agency for defense Development) in R.O.Korea

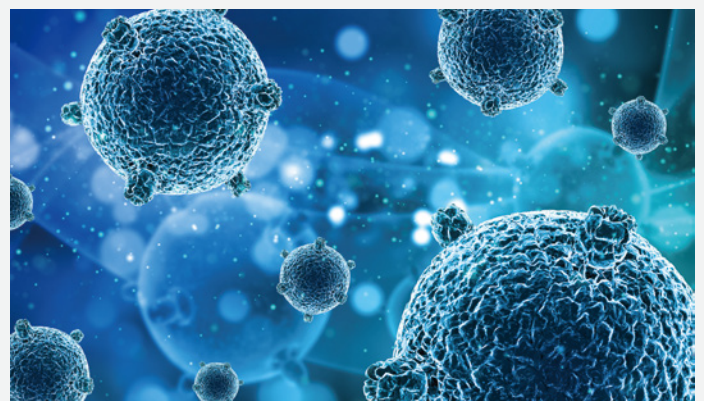
What's JR Plasma Technology?



Plasma, a safe and powerful fourth state of matter, sterilises all viruses and bacteria.

Complete removal of viruses and bacteria

- 99.999% sterilisation of harmful bacteria
- Escherichia coli – causes diarrhea, cystitis, pyelitis, peritonitis, and sepsis
- Staphylococcus aureus – causes food poisoning, otitis media, suppuration, and cystitis



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PLACE OF USE | LIVING ROOM





Klaen Air Sterilizer

Klaen creates a clearer and cleaner environment by decomposing and removing pollutants in the air through plasma, adding a sterilisation function to the role of an existing air purifier.



Complete eradication of
bacterial viruses



OH radical generation



Allergy removal



Environment friendly
sterilisation technology

TYPICAL APPLICATIONS

- *Pet Shop*
- *Private Cars*
- *Home*
- *Spas & Sallons*
- *Schools & Colleges*
- *Office*
- *Hotel*
- *Hospitals & Clinics*

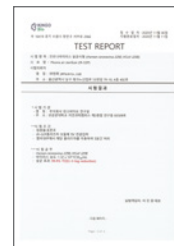


TEST REPORT



💡 **Escherichia coli, pseudomonas aeruginosa, super bacteria 99.99% sterilisation**

💡 **99.9% kill of coronavirus**



※ This report was provided by KTR (Korea Testing and Research Institute)

※ This report is a report using H.CO.V.

💡 **Registered genetically modified organism research facility**

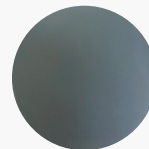
Independent testing of all microorganisms in pathogen biosafety class 1 and class 2 risk groups is possible.



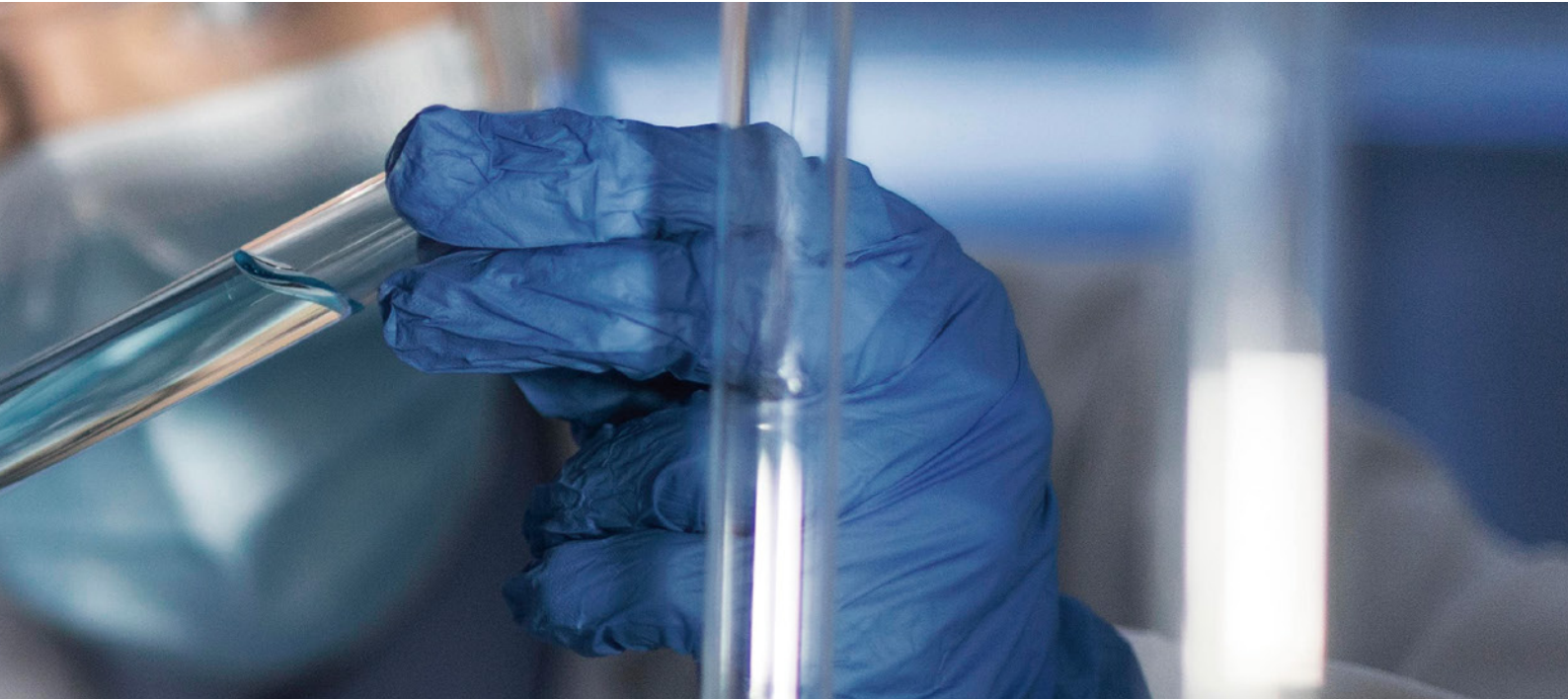
Escherichia coli, pseudomonas aeruginosa, super bacteria, bacillus pneumoniae, bacillus subtilis, etc. 99.99% killed



Before plasma treatment



After plasma treatment



Certifications / Intellectual property rights

A total of 19 intellectual property rights

- 9 registered patents
- 2 applied patents
- 3 registered trademarks
- 1 applied trademark
- 4 registered designs

Plasma air purifier and system

- Plasma air purifier and system patent registration



PCT plasma air purifier and system

- PCT international application



Plasma air purifier

- Plasma air purifier patent application notice



Air purifier patent application

- Air purifier patent application notice



Ozone steriliser

- Ozone steriliser patent application notice



Technology evaluation excellent company certification in 2020 and 2021

- Technology evaluation excellent company certification in 2020 and 2021 (NICE-Plasma air purifier manufacturing)



PLACE OF USE

The air sterilizer Klaen has no space restrictions, so it can be used in places where there are many people, such as companies, government offices, schools, homes, restaurants, cars, and pet shops.



Plasma module based air steriliser “Klaen mini”

Product name	Portable Plasma Air Steriliser
Manufacturer	Jungrok Co., Ltd.
Product size	W60mm x D60mm x H132mm
Color	BLACK, WHITE
Rated voltage	DC 5 V, 1 A or less
Product & accessories	air sterilizer, USB cable

- Free flexible plasma depending on space and shape
- Portable for personal use, vehicle use, etc., no space restrictions
- DBD discharge plasma



Plasma module-based air steriliser for pets “Anicoco”



Product name	Plasma air steriliser for pets
Product size	145mm x 29mm x 181mm
Rated voltage	DC 5 V, 1 A or less
Color	BLACK, WHITE
Product & accessories	Air steriliser, 3M tape type bracket, USB cable

- Pet odour removal
- Remote control and real-time air quality check through application linkage
- DBD + coronavirus discharge plasma

IoT frame-type air purifier “Puricanvas”



Product name	IoT frame-type air purifier
Product size	Customizing
Rated voltage	AC 220V / 110V
Color	BLACK, WHITE
Place of use	Office, Home, Commercial

- Real-time public information can be checked through cloud connection
- Set location through application, check current local air quality, upload consumer photos and video wallpapers
- Security CCTV possible through connection with external cameras
- DBD + coronavirus discharge plasma

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