

nEX[®]

AirGuard

Air & Surface Disinfection



Nex AirGuard World Innovation

Thai for Thai at Local Price

Air & Surface Disinfection

What is Nex AirGuard?

Nex AirGuard is a device that produces Hydroxyl Ions, both positively charged (H^+) and negatively charged (OH^-), and Hydroxyl Radicals (OH) by using MicroPlasma Bi-polar Ionization Technology. It is NEX's exclusive disinfection technology that effectively eliminates pathogens, viruses, bacteria, fungi, odor, smoke and pollutants in the air and on surfaces.



During the COVID-19 outbreak, not all the air purifiers in the market are capable of eliminating pathogens, viruses, bacteria and fungi. Thus, NEX AirGuard is the best option for you and your loved ones' healthy daily life.

NEX AirGuard is certified to eliminate 99.99% of pathogens by the laboratory of King Mongkut's University of Technology Thonburi (Bangmod Campus). (Please see attached document)

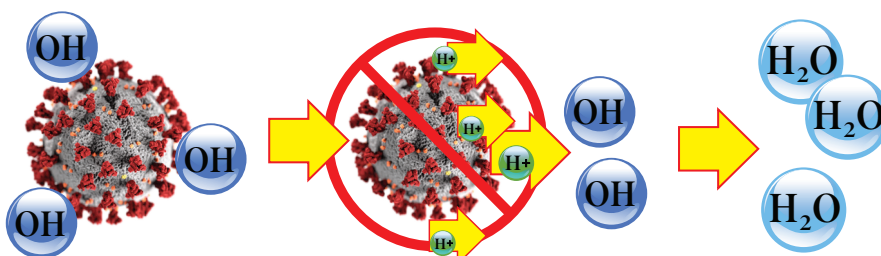
Nex AirGuard is designed for continuous usage (24/7) powered by as tiny as 2W of electricity; thus, it costs less than 0.20 THB per day.

NEX AirGuard can produce more than 15 million ions per cm which is suitable for indoor space such as accommodation, office, shop, classroom, hospital, hotel, etc.

Nex AirGuard is function under functions quietly so it is suitable for your bedroom, living room and classroom.

Nex AirGuard effectively disinfects and removes pollutants and unpleasant odor for an up to 30 square meter room. It is safe for humans and pets, unlike UVC Technology that produces hazardous ozone gas.

How Hydroxy Radical (OH) disinfect pathogens

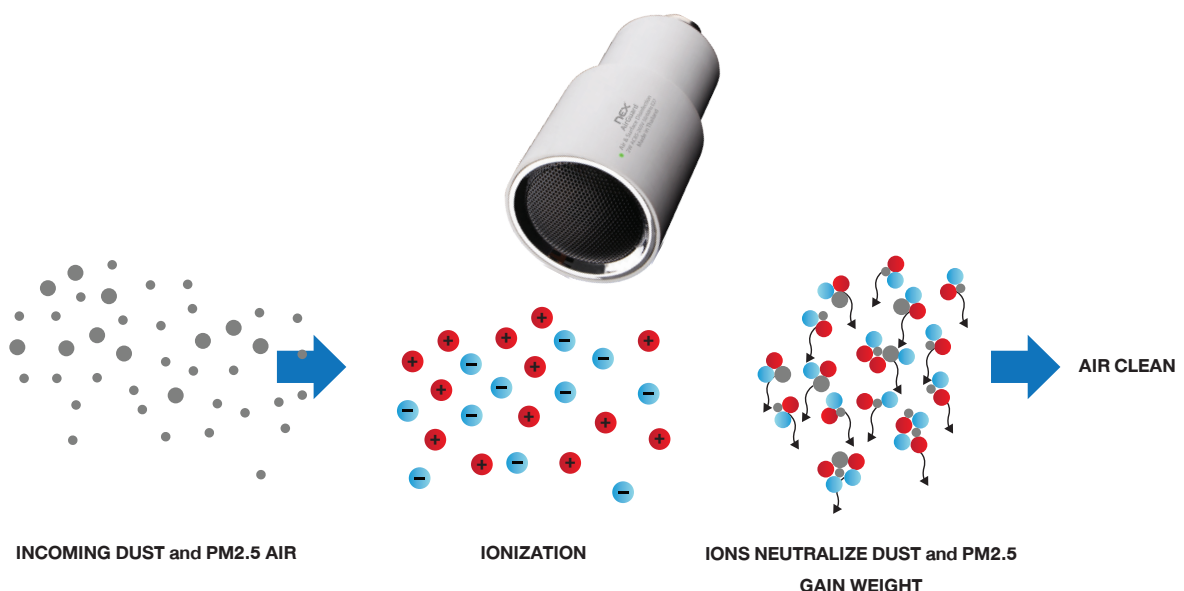


Air & Surface Disinfection

NEX AirGuard Features

Virus & Bacteria eliminated	It eliminates pathogens, viruses and bacteria which are harmful to humans and pets from the air and surfaces.
Fungi & Odors elimination	It eliminates fungi and unpleasant odors.
Air quality improvement	It improves air quality by eliminating VOCs and toxic pollutant particles, such as gases, vapor and smoke releasing from combustion, house paint odors, garbage, pets, toxic gases, fuel odor etc., those are harmful to humans and pets.
Uninterrupted operation	It can function continuously 24 hours 365 days (24/7)
UVC & Ozone free	It is free from UVC and Ozone that are hazardous to humans and pets' skin and respiratory system.
Indoor closed area only	The device is meant for indoor closed area usage only.
Coverage area	The device can cover a closed area of 30 m ³ .
Easy to use	It is user-friendly, just to equip it to the traditional T8 or E27 lamp base.
Noises	It functions quietly.
Power consumption	It is power efficient and energy saving. It is powered by less than 2 Watts, which is equivalent to the cost of less than 0.20 THB per day or about 6 THB per month for a non-stop usage 24/7.
Zero maintenance	There is no need of the maintenance. No filter or any input substances is required.
Warranty	1 year NEX warranty

How Hydroxyl Ions (H+) and (OH-) remove dust and PM 2.5



Air & Surface Disinfection

Bi-polar Ionization (BPI) is a technology that produce Hydroxyl Ions, both positively charged (H⁺) and negatively charged (OH⁻), and Hydroxyl Radicals (OH), which are proved to be effective disinfectants against pathogens, including viruses, bacteria and fungi, in the air and on surfaces.

The engineering team at NEX has developed Nex AirGuard to release these charged Hydroxyl Ions (H⁺ and OH⁻) and Hydroxy Radicals (OH) by NEX exclusive innovation - MicroPlasma Bi-Polar Ionization Technology. Resembled to the atmosphere in the Troposphere layer, which is the atmospheric layer that naturally cleans and protects the Earth environment, Nex AirGuard converts existing water vapor in the surrounding into charged Hydroxyl Ions and Hydroxyl Radicals. They can eliminate viruses, bacteria and fungi, as well as particulate matter 2.5 (PM 2.5), without releasing ozone that is hazardous to humans and pets.

Bi-Polar Ionization Technology

Based on the atomic technology founded by Albert Einstein, Bi-Polar Ionization Technology (BPI) splits water molecule in the air into Hydroxyl Ions, which is naturally charged, and Hydroxyl Radicals. They bind to hydrogen atoms and remove them from particles in the air and pathogens, such as viruses, bacteria and fungal spores. For example, when hydrogen is removed from spike protein in hemagglutinin protein capsid of the virus, which is the critical part that recognized and attached to proteins on human cells during the viral infection, the missing Hydrogen damages the molecular structure of the spike protein. As a result, the viruses are either destroyed or no longer infectious. Moreover, not only pathogens, viruses, bacteria and fungal spores, but also the harmful volatile organic compounds (VOCs), odor and other pollutants can also be eliminated in the same way.



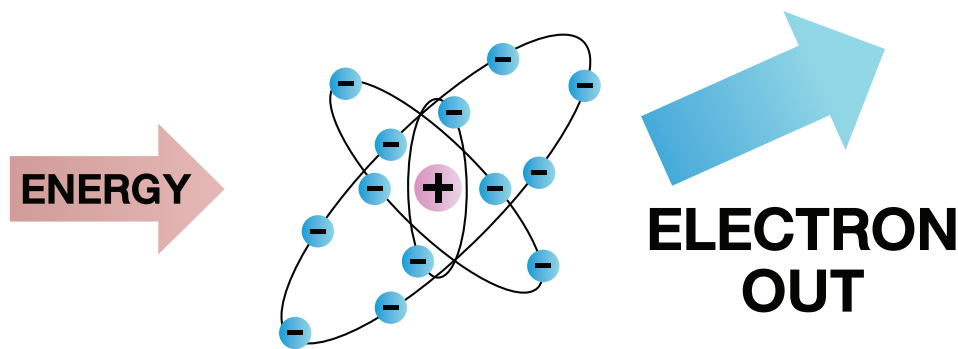
(Hydroxyl Radicals) (OH)

Hydroxyl Radicals (OH) are naturally occurred particles in the Troposphere layer. They are usually called “Atmosphere’s Detergent” as they can react with and break down many pollutants. They play an important role in removing greenhouse gases such as methane and ozone. In addition, they can eliminate viruses, bacteria, fungal spores, pollens, and allergens.

MicroPlasma Bi-Polar Ionization

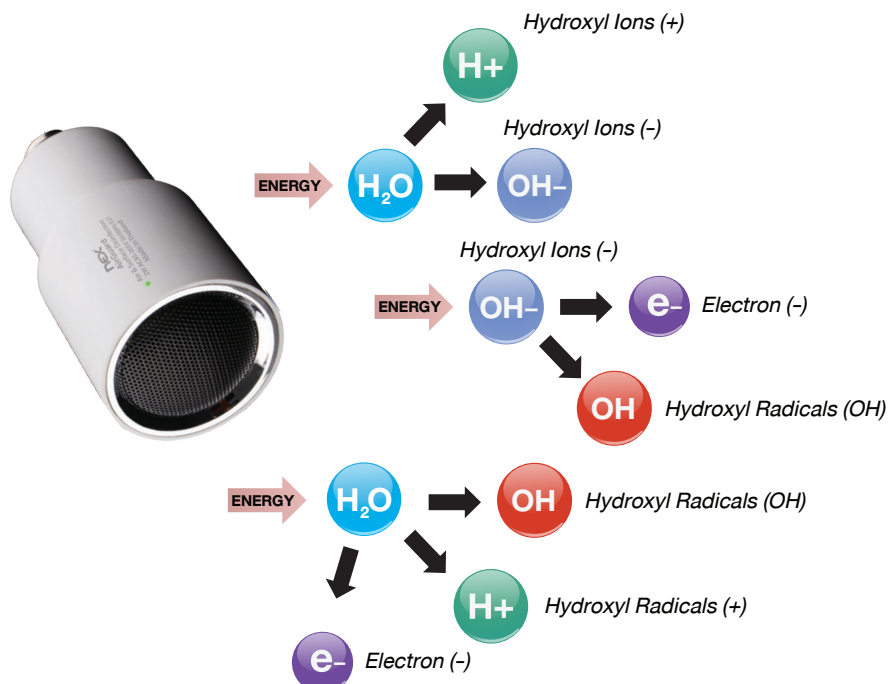
MicroPlasma Bi-Polar Ionization Technology is NEX’s exclusive technology to produce Hydroxyl Ions, with positively charge (H+) and negatively charge (OH-), and Hydroxyl Radicals (OH) from water vapor in the air to eliminate the pathogens and pollutants in the air and on surfaces.

Bi-Polar Ionization (BPI) Process :



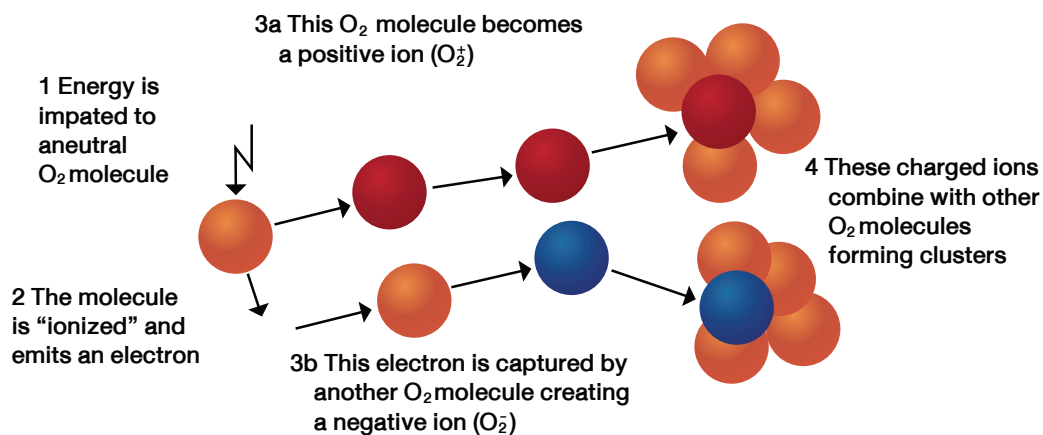
MicroPlasma Bi-Polar Ionization

How Hydroxyl Ions, both positively charged (H+) and negatively charge (OH-), and Hydroxyl Radicals (OH) are produced from water vapor.

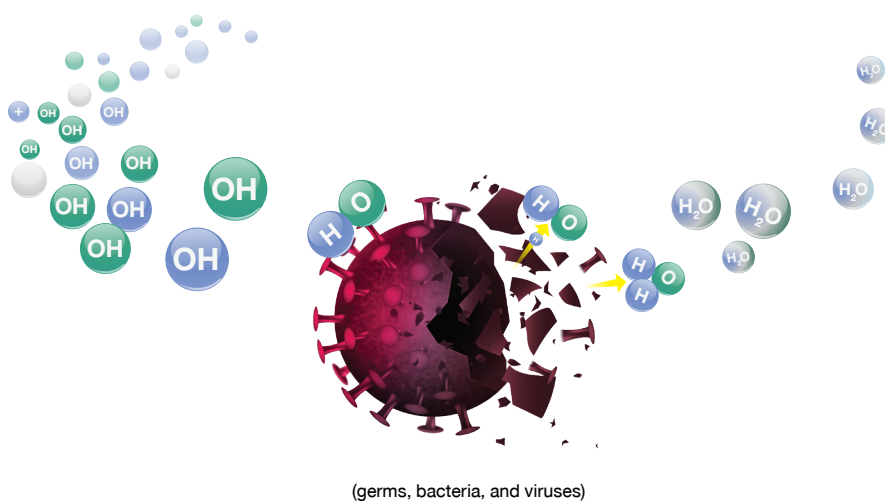


Bi-Polar Ionization (BPI)

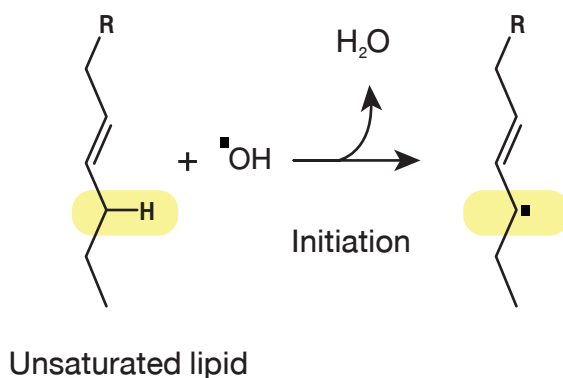
Bi-Polar Ionization (BPI) is invented by Albert Einstein to mimic the natural process that splits molecules of the airborne particles. The process uses external energy to destroy the bond between electron and nucleus and free the electron.



Hydroxyl Radicals (OH) surround particles in the air, including viruses, bacteria, fungi, dust particles and pollutants, and remove hydrogen from those particles to denature their molecular structures.



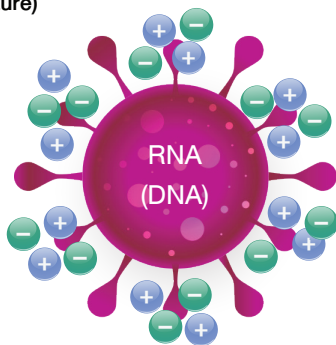
The removed hydrogen then combines with Hydroxyl Radicals (OH) and becomes H₂O, i.e. water vapor. The chemical change modifies or destroys the particles.



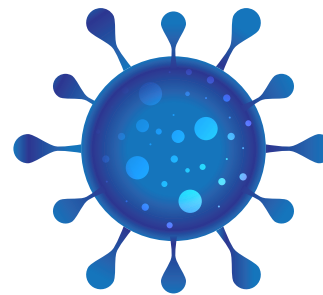
Virus

Viruses have nucleic acid, either DNA or RNA, as their genetic material. The nucleic acid is surrounded by protein called capsid. Hydroxyl Radicals (OH) surround the virus, remove hydrogen atom from the spike protein on the capsid and fuse with the hydrogen to become water vapor, H₂O, in the air. This process disrupts the molecular structure of the viruses, and eventually the viruses cannot invade the cell and are destroyed.

Envelopes, spikes, and so on
(Viruses differ in structure)



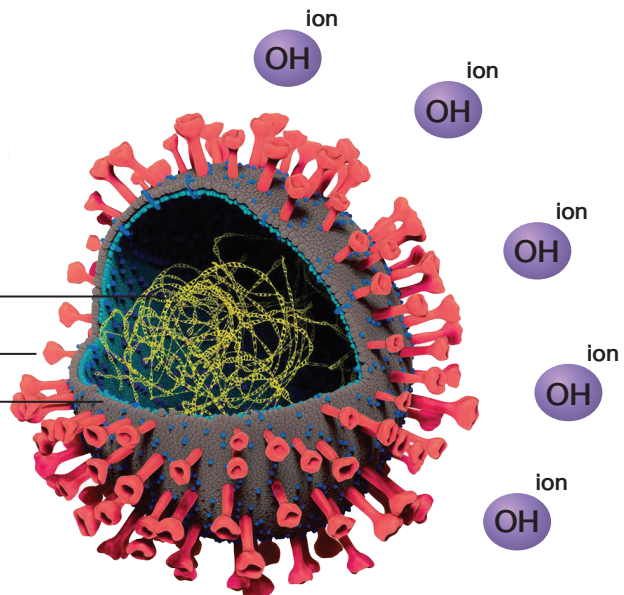
OH destroy the molecules of the surface proteins of the influenza virul.



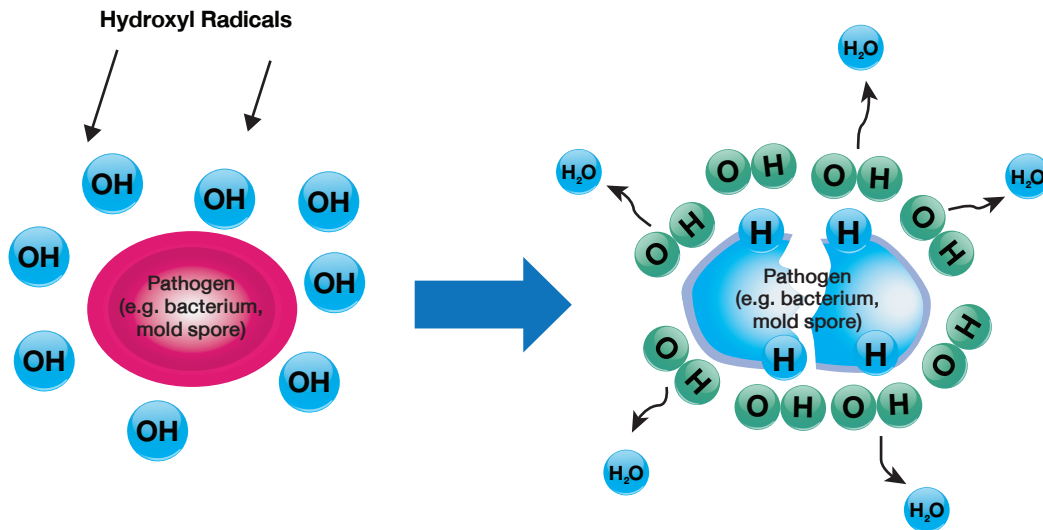
Anatomy of a virus

The covid-19 virus has several features we may be able to target with drugs to break it down and stop it entering cells

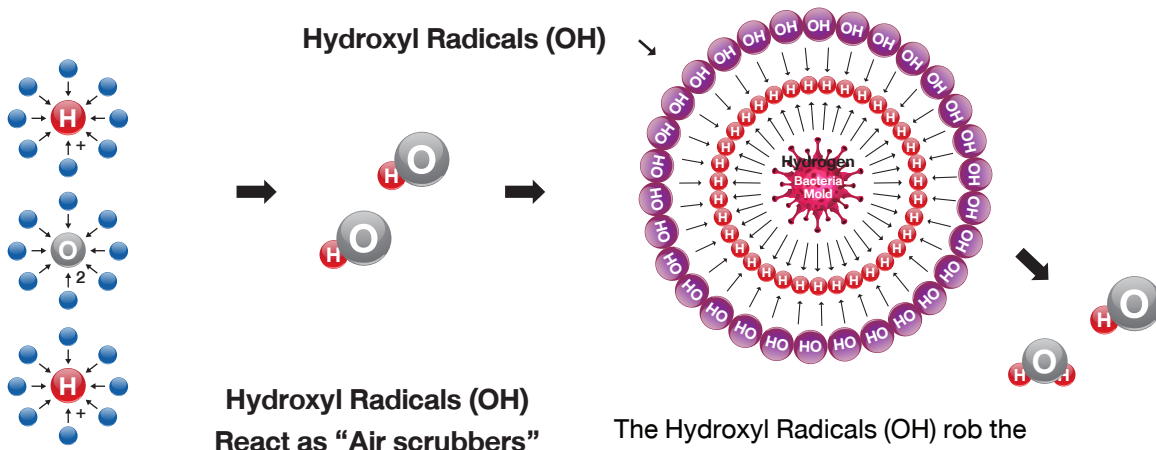
- RNA enclosed in protein
- Spike protein
- Lipid membranes



Bacteria



Hydroxyl Radicals (OH) surround bacteria and remove hydrogen from the cell wall to break down the bacterial cell and eventually destroy them.

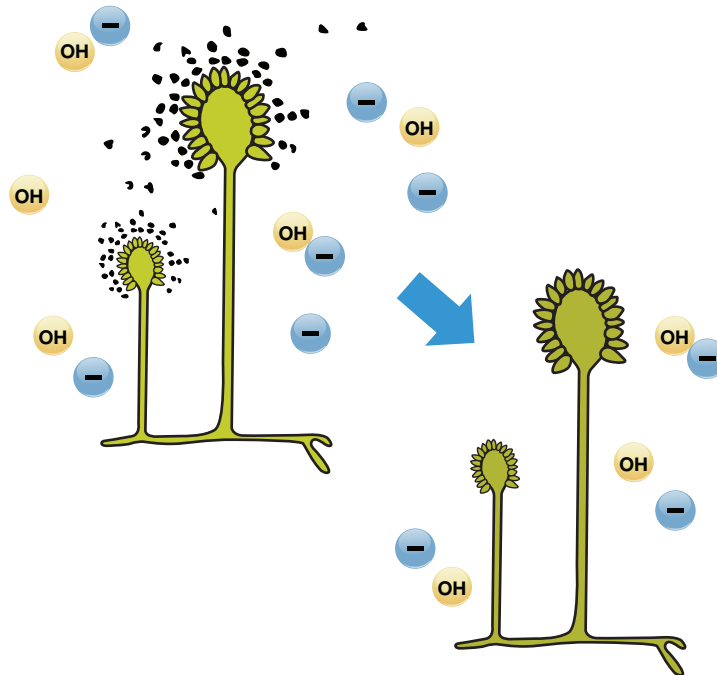


**Hydroxyl Radicals (OH)
React as "Air scrubbers"**

The Hydroxyl Radicals (OH) rob the pathogen of the hydrogen necessary for them to survive, making them inactive. Creating water vapor (H₂O) in the process.

Fungal Spores

Hydroxyl Radicals (OH) surround fungi and denature proteins on the fungal cell membrane by removing hydrogen; thus, killing the fungi.

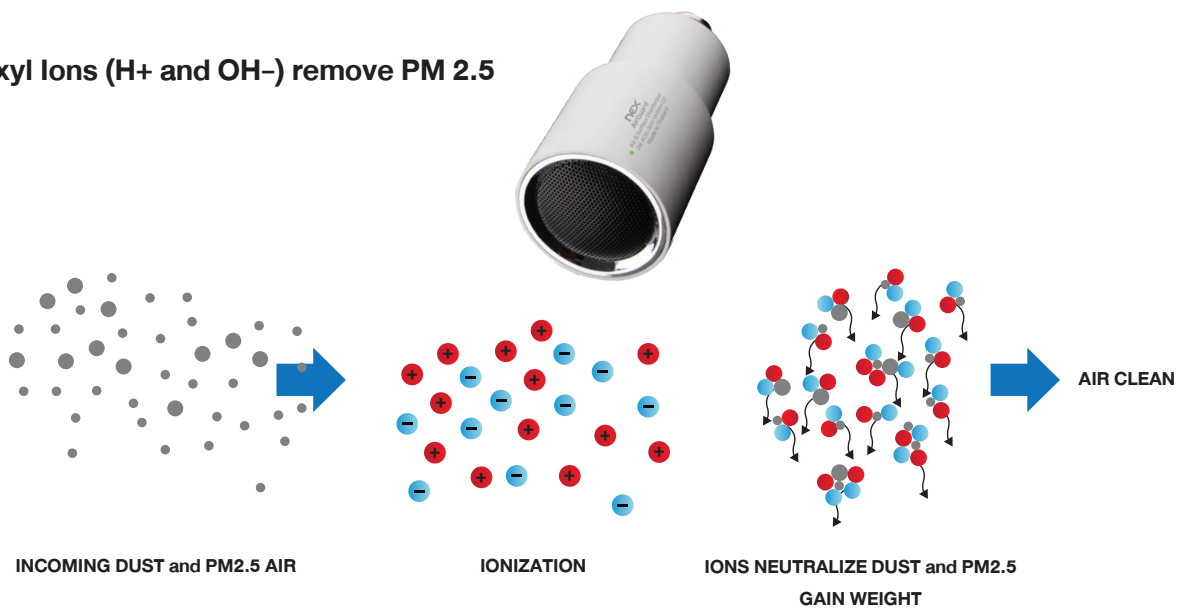


OH wrap around mold and cut/decomposes proteins in the cell membrane on the surface of mold.

Dust & PM 2.5

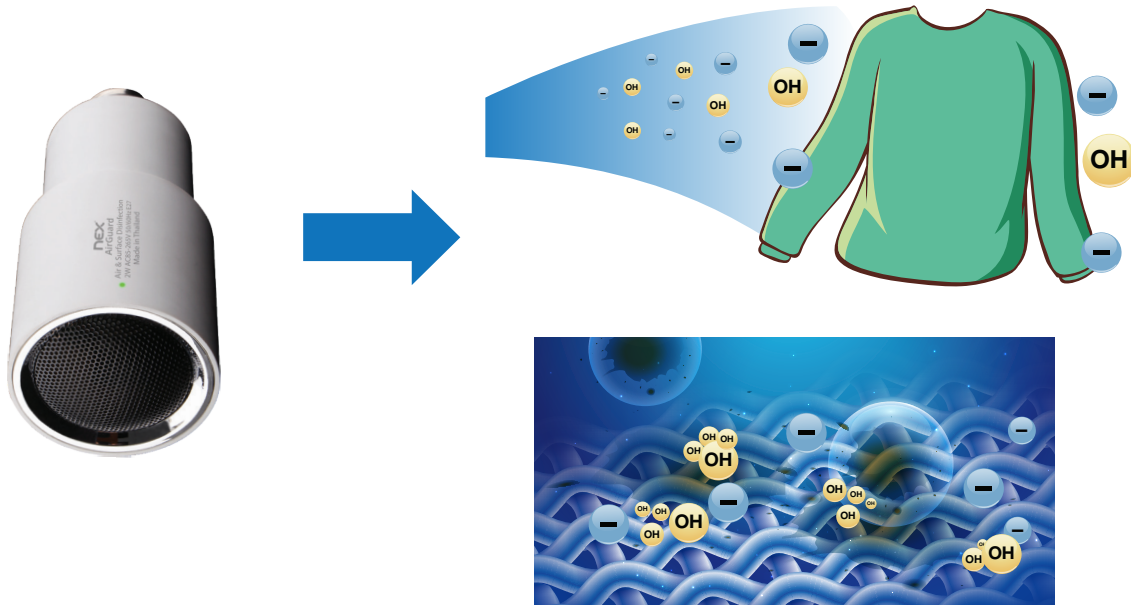
Positively charged ions (H+) and negatively charged ions (OH-) surround the floating dust particles and form larger clusters that fall to the ground.

How Hydroxyl Ions (H+ and OH-) remove PM 2.5



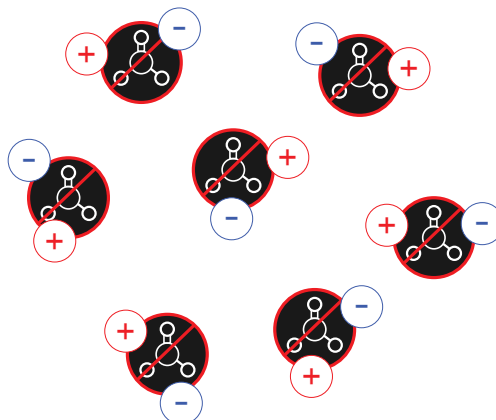
Odour and Volatile Organic Compounds (VOCs)

Almost all odor is caused by bacteria. Hydroxyl Radicals (OH) remove hydrogen from bacterial cell wall and kill them. The odor will fade away once the bacteria are eliminated.



Volatile Organic Compounds (VOC)

Hydroxyl ions oxidize volatile substances and pollutants to break their chemical bonds and change their molecular structure, converting them to those natural molecules, which are safe for humans and pets.



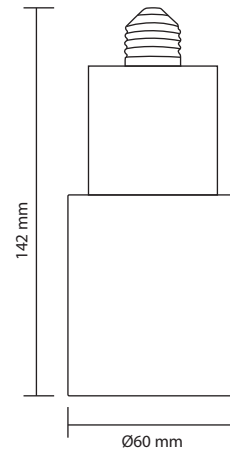
OH cause a chemical reaction with VOCs breaking down their molecular structure

NEX[®] AirGuard AG-01

Air & Surface Disinfection



Dimension








Specification

Product Name	NEX AirGuard
Model	AG-01
Rated Power	2W
Lamp Base	E27
Dimensions	L142x Ø60 mm
Ions	15 million/cc.
Weight	125 g.
Input Voltage	AC85-265V
Frequency	50/60Hz
Noise	Low
Operating Place	Closed Area
Operating Temp.	0 °C to 45 °C
Operating Humidity (%RH)	40-80%
Coverage Area	30 sq.m.
Warranty	1 Year

NEX Inno Tech Co.,Ltd.

410/17-23,410/58-62 2Floor, Ratchadaphisek Rd.,
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ติดต่อสอบถาม

NEX[®] AirGuard AG-01T8

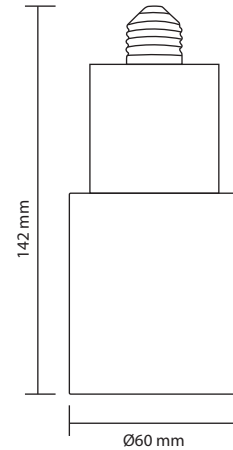
Air & Surface Disinfection

Specification

AirGuard

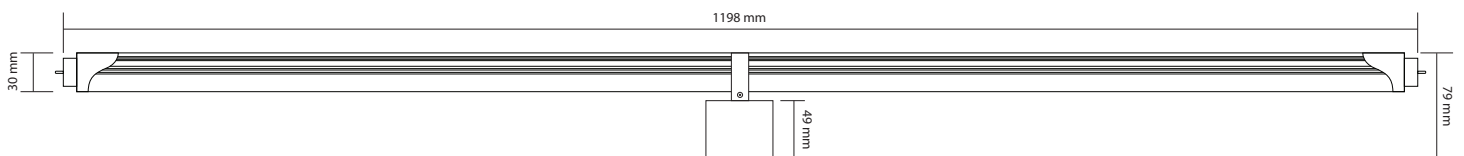
Product Name	NEX AirGuard
Model	AG-01T8
Rated Power	2W
Lamp Base	E27
Dimensions	L142x Ø60 mm
Ions	15 million/cc.
Weight	125 g.
Input Voltage	AC85-265V 50/60Hz
Noise Level	Low
Operating Place	Closed Area
Operating Temp	0 °C to 45 °C
Operating Humidity (%RH)	40-80%
Coverage Area	30 sq.m.
Warranty	1 Year

Dimension



LED Light	T8 Tube	Operating Temp.	0 °C to 45 °C
Rated Power	18W	Input Voltage	AC85-265V
Luminous Flux	≥2100 Lumen	Frequency	50/60Hz
Color Temp	6500K	Input Type	Double-end
Beam Angle	160 Deg.	Power Factor	>0.98
IP Protection	IP20	Total Harmonic (THDi)	<5%
Replacement	T8 36W Fluorescent tube	Surge Protection	>3kV
Lamp Base	G13	Light Flicker	Flicker free
Dimensions	W79 x L1198 mm	Warranty	3 Year
Net Weight	338 g.		

Dimension



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ติดต่อสอบถาม



ที่ ลว.14-09-64
ถึง บริษัท เน็กซ์ อินโนเทค จำกัด

วันที่ 2 พฤศจิกายน 2564

ห้องปฏิบัติการตรวจสอบและประเมินคุณภาพ
ภาควิชาจุลชีววิทยา คณะวิทยาศาสตร์ มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี ขอส่งรายงานการวิเคราะห์ทดสอบ
ซึ่งห้องปฏิบัติการฯ ได้รับเมื่อ 30 กันยายน 2564

รายงานการตรวจ วิเคราะห์ ทดสอบ

หมายเลขปฏิบัติการ 0010-65-2

ชื่อวัตถุตัวอย่างตามผู้ส่งเรียก Nex AirGuard

วันที่เริ่มทดสอบ 5 ตุลาคม 2564

ผลการทดลอง

Evaluation 1 : การทดสอบประสิทธิภาพการยับยั้งเชื้อจุลินทรีย์

Condition : ขนาดห้อง 194 m², ความชื้น 68 – 72 %rH, อุณหภูมิ 28 – 32 องศาเซลเซียส

เชื้อจุลินทรีย์ในการทดสอบ	ระยะเวลาทดสอบ (m)	จำนวนเชื้อจุลินทรีย์	จำนวนเชื้อจุลินทรีย์	
		ก่อนใช้งาน Air Guard (cfu/ml)	หลังใช้งาน Air Guard (5 นาที) (cfu/ml)	ประสิทธิภาพการยับยั้งเชื้อจุลินทรีย์ (%)
<i>Salmonella Typhimurium</i>	1.50	6.87×10^4	3.80×10^2	99.44%
	10.60		2.30×10^2	99.66%
<i>Bacillus cereus</i>	1.50	1.45×10^4	1.00×10^1	99.93%
	10.60		4.00×10^1	99.72%
<i>Staphylococcus aureus</i>	1.50	4.50×10^5	2.23×10^3	99.50%
	10.60		6.00×10^2	99.86%
<i>E.coli</i>	1.50	6.10×10^5	ไม่พบโคโลนี	>99.99%
	10.60		ไม่พบโคโลนี	>99.99%

ผลการทดลอง swab test ของตัวอย่าง Nex AirGuard

Evaluation 2 : การทดสอบประสิทธิภาพการยับยั้งเชื้อจุลินทรีย์ในอากาศ

ผลการทดลอง

Condition : ขนาดห้อง 194 m², ความชื้น 68 – 72 %rH, อุณหภูมิ 28 – 32 องศาเซลเซียส

เวลา	ระยะการทดสอบ (m)	จำนวนเชื้อรา ก่อนใช้ Air Guard	จำนวนเชื้อรา หลังใช้งาน Air Guard	
		รา	รา	ประสิทธิภาพการยับยั้งเชื้อในอากาศ(%)
8 ชั่วโมง	3.64	83	1	98.79%
	6.10	57	-	>99.99%
12 ชั่วโมง	3.64	94	-	>99.99%
	6.10	72	2	97.22%

ผลการทดลองเชื้อในอากาศของตัวอย่าง Nex AirGuard

สรุปผลการทดลอง

- เมื่อเปิดใช้งาน Nex AirGuard ผ่านไป 5 นาที สามารถลดปริมาณเชื้อจุลินทรีย์บนพื้นผิวได้มากกว่า 99% หรือในบางสภาวะสามารถลดปริมาณเชื้อจุลินทรีย์บนพื้นผิวได้มากกว่า 99.99%
- เมื่อเปิดใช้งาน Nex AirGuard ผ่านไป 8 ชั่วโมง สามารถลดปริมาณเชื้อราในอากาศโดยเฉลี่ยได้ 99.39% หรือในบางสภาวะสามารถลดเชื้อราในอากาศได้มากกว่า 99.99%

(ผู้ช่วยศาสตราจารย์ ดร.นุจริน จงรู่จา)

อาจารย์ประจำภาควิชาจุลชีววิทยาและนักวิจัยด้านจุลชีววิทยาประยุกต์

รายงานนี้ :

- รับรองเฉพาะวัตถุตัวอย่างที่ได้ตรวจ วิเคราะห์ ทดสอบเท่านั้น
- ไม่รับรองวัตถุหรือสินค้าที่ใช้รายงานนี้ในการโฆษณาหรืออ้างถึง เว้นแต่เป็นการอ้างถึงรายงานผลการทดสอบ โดยผู้เชี่ยวชาญหรือผู้ทดสอบสำหรับวัตถุตัวอย่างที่ได้ทดสอบในครั้งนี้นี้เท่านั้น