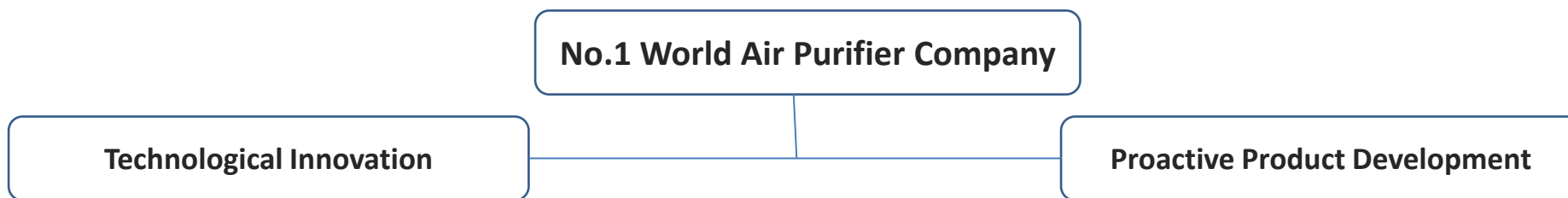




Introduction of TECHNOLOGY & APPLICATION



HY&TECH Vision



SPI VIRUS ZERO[®] Technology is

1. H&Y 's **SPI VIRUSZERO** technology is a **"New Paradigm Technology"** required by changes in air purification targets.
2. Certified by leading institutions around the world and applied to **Various Spaces and Industrial Fields**.
3. By applying the characteristics of technology, it can be **implemented to all environment where humans breathe, not only indoors but also outdoors. proving itself as a "Urban Air Purification Solution"**
4. Through convergence with Sensor and AI technology, we can protect the healthy life of future cities such as Smart City. The world's **Only Technology that can implement an "AI Based Air Control Platform"**

Technological requirements according to target change

New life-threatening air purification targets – viruses, bacteria and ultrafine dust control – require a new paradigm of air purification technology

Time for a market paradigm change through new technology

Market Change According To Purification Target

New target of air purification
(PM2.5 ultrafine dust and biological factors)

Public facility and outdoor air
purification markets

Limitation of filter types of air
purifiers
→ Time for a new technological
approach and alternatives



Technological Requirements According to Market Change

Capacity Extendibility



Technology that allows capacity
scaling up
according to space flexibility

Operational economic feasibility



Installation, maintenance, and
repair costs
**Economically efficient
technology**

Harmless to humans



Chemical-free
No secondary contamination
from by-product
**Technology application that is
harmless to the human body**



Differentiated Characteristics of SPI VIRUSZERO Technology



01 Injection Type Air Purifying Device (No Filter)



02 Difference in Purifying Substances produced
(HOO-, H), Reactive Electromagnetic Radiation



03 Applicable to all situations and products
with lightening, sliming, shortening and compact technology



04 Securing safety in enclosed spaces
with technology of flat electrode development



05 Modularization technology and ozone control technology
implements large-capacity air purification devices

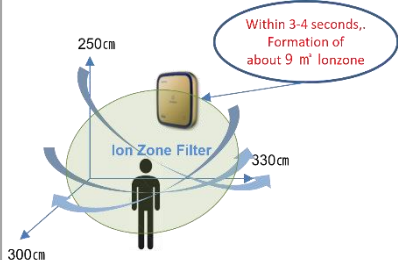
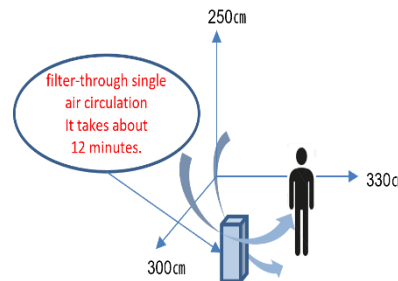


06 No Chemical, ZERO Emission of Environmental Pollutants

Differentiated Characteristics of SPI VIRUSZERO Technology (Comparison with Conventional Technology)

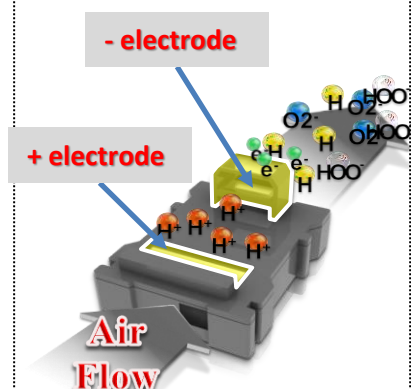
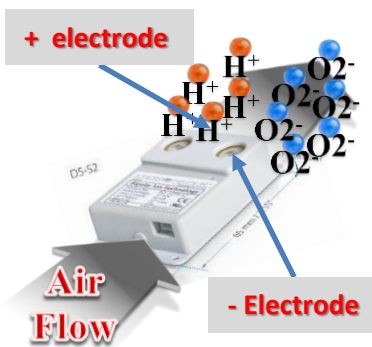
Unlike conventional passive filter-type air purifiers, new concept super cleaning technology that emits SPI ions directly into the air it can be implemented to all environment where humans breathe, not only indoors but also outdoors

Comparison with suction type air purifier

Category	SPI VIRUSZERO (Injection Type)	Air Purifier(Suction Type)
Technology	Reactive Ion by Plasma [ion emission Injection type]	Filter (HEPA, Carbon etc.) [air suction filtering type]
Purifying Speed		
Use	Removal of fine particles such as virus, bacteria, fungus, pet allergen, micro dust, cigarette smoke, etc. (effective for particles sized 0.01~10μm)	House Dust, odor removal (Effective for particles over 0.3~10μm)
Maintenance	None	Needed from filter replacement
Secondary Pollutant	None	Created as filter function decreases
Environmental Friendly	None	Waste from old filter

Comparison of differentiation from conventional ion generators

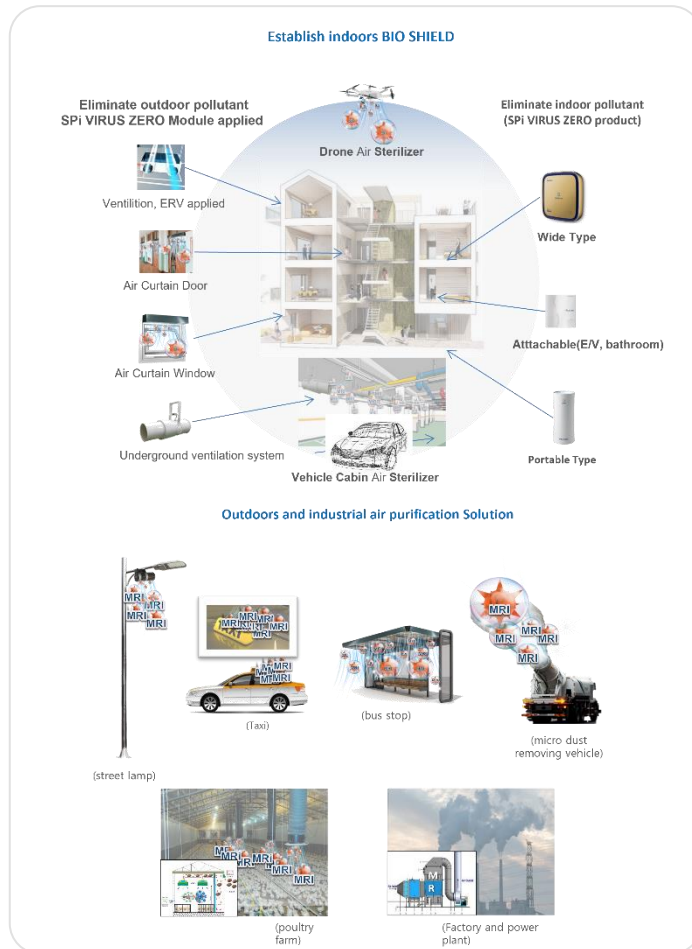
Adoption of reactive electromagnetic radiation produces hydroperoxin radical (HOO-) and active hydrogen (H), which cannot be generated in conventional ion generating devices, for effective eradication as well as neutralization of active oxygen

Distinction	VIRUSZERO	Conventional ion device	Remarks
Air Flow	Through + & - electrode	Between + & - electrode	
productive substance	HOO-, H	O2-, H+	
reaction	Mixed reactive form	non-responsive type	
ION Producing Mechanism			oxidative power HOO- > O3 > O2-

VIRUSZERO technology can be applied in all environment, providing comprehensive air purifying solution

By overcoming the limitation of filter type air purification system, establishes BIO SHIELD that covers both indoors and outdoors

SPi VIRUSZERO' Application Concept



Product and Application Case of SPi VIRUSZERO

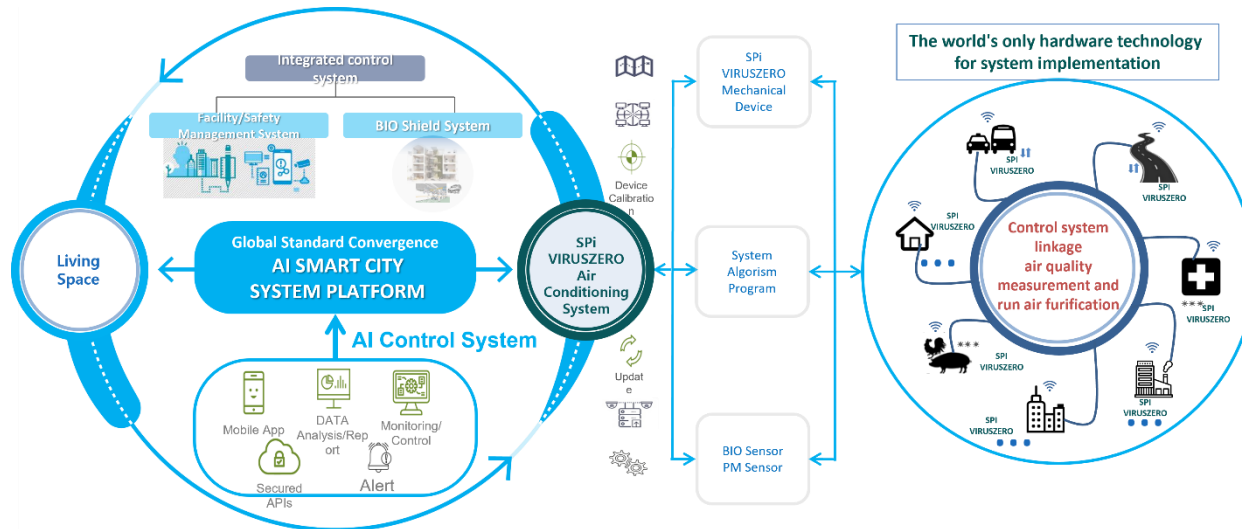
Product			Industrial Fields	
Image	Usage	Application case	Catagory	Application Case
	Consumer Wall Mounting Type	Participate at Dobonggu' Smart City Project Government (Seoul, Daegu etc) facilities National Daycare Center, Silver Town	Smart City	Participate in Seoul Smart City, convergence with BIO Sensor Techonology
	Consumer Portable Type	Personal Use, Portable AKM, HDS	Agricultural & Livestock Industry	Implementation of TEST BED in Pigsty (Cost-Benefit Approach)
	Automobile Bus Truck	Proposal to KAKAO Mobility New Car Dealership (US) SK Rent Car	Food & Cooling Chain Industry	CJ CheilJedang Fermentation Factory Air-related Utility is under discussion.
	ERV	Knowledge Industrial Center Building in Uiwang Smart City	Rail Industry (Subway & Underground Parking Lot)	Apply to Korail
	ACU (HVAC)	HVAC Module Kit passed the TEST and installed on Air Conditioning Unit of Hyundai Kia Motors' Headquarter Building in Yangjae-dong	Clean City Air Project	Scheduled to be promoted
	Flexible Duct Diffuser	Hospital, Restaurant 등		

Satisfying the desire for a healthy life is an essential element for building a Smart City

The 4th industrial revolution, which depends on the reorganization of the global economy, is in fierce competition to preoccupy the market

Smart City Application Case of SPi VIRUSZERO

SPi VIRUSZERO technology solves the absence of hardware that can respond to the rapid increase in environmental pollution and infectious diseases caused by urbanization. Interlocking with the control system, measuring air quality and performing air purification through SPi VIRUSZERO and sensors installed in all facilities in the city



Smart City Application Case – Dobong-gu, Seoul

Application Product



Air Sterilizer
Model No : SP-KRV10



Bio Particle Counter
Model No : Ariaever

Example of System Operation



1. Major Management and Technical Personnel

Position	Name	Career	Remark
CEO	Choi H H	Dusan Co., Ltd. Executive Director Solco Biomedical Co., Ltd. Vice President Samsung Electronics SPI Solution Provider	Management
CTO	Park R E	Former Lead Researcher at Samsung Electronics	Technology Management
COO	Choi W J	PT Salda Pratama Vice President Samsung Electronics SPI Solution Provider	Planning Production

2. Patents and Certificate of Company

Patent 1. : No. 10-1818947 - Air Purification Ion Generator for fine dust removal

2. : No. 10-1843489 - Air Purification Ion Generator to remove airborne fine dust
and harmful microorganisms)

Registered at EPA USA as a Air Sterilizer Manufacturer Reg. No : Est. Number: 99665-KOR-1

Registered at California Air Resource Board : EO No: G-11-072, 6/23/2011

ETL Certification : No. 5019574 , February 02, 2021 .

KC certification : R-R-HnY-SP-PA4, MSIP-REM-HnY-SP-KRV10



3. History of Company

2022.

Participate in Smart City Expansion Project of Dobong-gu
Implementation of Test Bed in Livestock and Food Industries
Install HVAC Module Kit at Hyundai Motors' Headquarter Building
Develop Module Kit for Diffuser Use
Develop HVAC Module Kit for Building ACU
Develop Device Kit for ERV
Participate in the Smart City Pilot Project in Dobong-gu, Seoul
Installation of SPi VIRUSZERO at Buk-gu, Daegu (1st to 6th)
BIO Sensor Technology Partnership

2021.

SPI VIRUS ZERO Trademark registered in Korea and USA
Development and export of Automobile Module Kit Ver.2
Registered as a Air Sterilizer in CARB of USA
H&Y TECH registered as a Air Sterilizer Manufacturer in US EPA
ETL Certification
KC Certification (Model No. SP-PA4)