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Global Plasma Solutions

The Indoor Air Quality (IAQ) REVOLUTIONIZER

The Indoor Air Quality (IAQ) REVOLUTIONIZER



Who We Are

Our proven technology delivers clean indoor air that is safe and healthy – producing neither ozone nor other harmful by-products. All our Needlepoint Bipolar Ionization (NPBI) products are UL and CE approved. Through NPBI, our products purify the air by eliminating airborne particulates, odors & pathogens. The combined effect is higher indoor air quality levels for your facility and potential energy savings through outdoor air intake reduction. Delivering **P.O.P.E.** to the user:



PARTICLES
REDUCED



PATHOGENS
KILLED



ODORS
NEUTRALIZED



ENERGY
SAVED

Our NPBI Process

GPS' NPBI technology works to safely clean the air inside commercial and residential buildings. The patented technology uses an electronic charge to create a plasma field filled with a high concentration of + and - ions. As these ions travel with the air stream they attach to particles, pathogens and gases. The ions help to agglomerate fine sub-micron particles, making them filterable. The ions kill pathogens by robbing them of life-sustaining hydrogen. The ions breakdown harmful VOCs with an Electron Volt Potential under twelve (eV<12) into harmless compounds like O₂, CO₂, N₂, and H₂O. The ions produced travel within the air stream into the occupied spaces, cleaning the air everywhere the ions travel, even in spaces unseen.

3rd Party Testing Summary

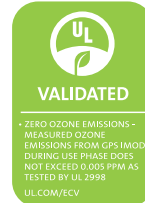
Pathogen	Time in Chamber	Kill Rate	Test Agency
Tuberculosis	60 minutes	69.09%	EMSL
SARS-COV-2	30 minutes	99.40%	IB
Norovirus	30 minutes	93.50%	ATS Labs
MRSA	30 minutes	96.24%	EMSL
Staphylococcus	30 minutes	96.24%	EMSL
Mold spores	24 hours	99.50%	GCA
E.coli	15 minutes	99.68%	EMSL
Legionella	30 minutes	99.71%	EMSL

54

PATENTS

27 GRANTED
27 PENDING

150K+ SATISFIED CUSTOMERS



INDEPENDENT 3RD PARTY TESTING



GPS FACT:
**GPS can be installed in
any system in any building.**

Call 1901 Inc. Today!
608.308.1901 or 608.273.9834
mthompson@1901inc.com

Engineering Air for a Cleaner World™

Remember “P.O.P.E.” – NPBI BENEFITS



Particle Reduction – Technology makes particles clump together and a lower efficiency filter can capture them from the air



Odor Control – Odors, volatile organic compounds and the like are oxidized to gases already prevalent in the air such as oxygen, nitrogen, water vapor or carbon dioxide, eliminating the odors



Pathogen Control – Independent testing by CDC Affiliate Labs confirms kill rates as high as 99.9% of various pathogens and mold spores. Keeps new cooling coils clean and cleans up old coils.



Energy Savings by Outside Air Reduction – By cleaning indoor air and recirculating it – Less Outside Air is required.

Less OA = Less Load on Cooling/Heating System – ASHRAE 62 & IMC Compliant

How to Prepare?

- Increase Filter Efficiency – may not be possible, but you can add a GPS device without adding pressure drop and increase existing filters by 4-5 MERV points
- Use Active Technology – GPS' NPBI is “active” technology that is always seeking out particles and pathogens in the space. Filters/HEPA and UVC are “Passive” devices, meaning they “wait” to react and do their work.
- Ventilate- but only if particles are controlled and if system can handle the higher outside air without creating other issues

INDEPENDENT LABORATORY TEST RESULTS

Pathogens



Reducing the Spread of Disease

GPS clears the air of particles faster

Particulate matter includes pollutants, dust, allergens, mold, bacteria – and viruses. GPS' technology constantly generates a high concentration of positively and negatively charged ions. These ions travel through the air continuously seeking out and attaching to particles. Larger by virtue of combination, these particles are removed from the air more rapidly.

GPS Inactivates Pathogens

When ions come into contact with pathogens, their microbicidal effects reduce the infectivity of the virus.

GPS is Safe

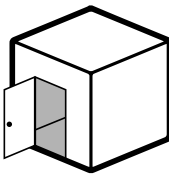
Our needlepoint bipolar ionization is OZONE free and safe to use across commercial, industrial and residential buildings. Traditional bipolar ionization systems produce harmful ozone as a byproduct.

Performance Validation*



SENSITIVITY TESTING

A petri dish containing a pathogen is placed underneath a laboratory hood, then monitored to assess the pathogen's reactivity to NPBI™ over time. This controlled environment allows for comparison across different types of pathogens.



SIMULATION TESTING

Counts of airborne pathogens are taken before and after aerosolizing them into a sealed, unoccupied laboratory environmental room installed with NPBI™ technology. The larger space more closely resembles a real-world environment.

*Global Plasma Solutions (GPS) uses multiple data points to formulate performance validation statements. GPS technology is used in a wide range of applications across diverse environmental conditions. Since locations will vary, clients should evaluate their individual application and environmental conditions when making an assessment regarding the technology's potential benefits.

SARS-CoV-2

Laboratory Name: Innovative Bioanalysis

Cap Lic No: 9501843

Date: 5/27/2020

Pathogen Tested: SARS-CoV-2

INNOVATIVE
BIOANALYSIS
creating solutions | getting results



SENSITIVITY TEST

Objective:

Aviation Clean Air commissioned testing on Global Plasma Solutions' GPS-DM48-AC model to assess its ability to neutralize SARS-CoV-2 in high-ion concentration specialty applications.

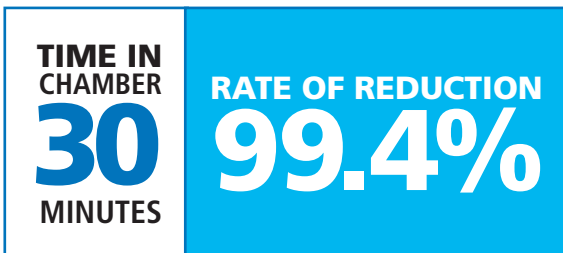
Methodology:

Single RE22 control chambers were set on a stainless steel table with pressure verification seals. The chambers had an internal working dimension of 16.5"W x 9"H x 12"D for a total cubic footage of 1.031. Under initial observation it was determined to seal the unit completely with no intake or exhaust port. Testing and control were conducted in an average ambient temperature of 72.6 degrees Fahrenheit.

A singular fan unit was set up at a 45-degree angle and affixed to the testing chamber. The initial control fan speed was measured at an average of 870 Ft/m. Under the original control section, the primary fan was set 10 inches away from ion production unit A and the average air flow speed past the ion producing nodes was 250Ft/m.

Experimental Results:

SARS-CoV-2 was exposed to needlepoint bipolar ionization for a period of 10, 15, and 30 minutes. Based on viral titrations it was determined that at 10 minutes 84.2% of the viral particles became inactive, at 15 minutes 92.6% of the viral particles became inactive, and at 30 minutes 99.4% of the viral particles became inactive.



Norovirus

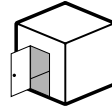
Laboratory Name: ATS Labs

Project No: A14991

Date: 5/28/2013

Pathogen Tested: Feline Calicivirus

ATS LABS
EXCELLENCE IN ANTIMICROBIAL TESTING



SIMULATION TEST

Objective:

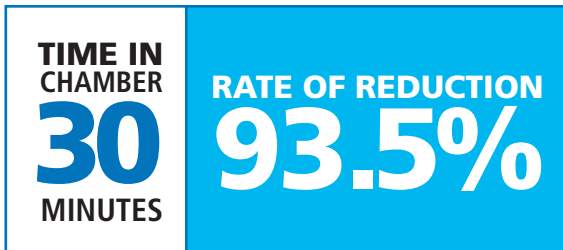
The testing was conducted on the GPS-2400-1 model for its ability to inactivate Feline Calicivirus bacteria in the air.

Methodology:

The middle support bracket was attached to the bar containing one GPS-2400-1 Cold Plasma Generator at each end of the bar. The generators were placed with the carbon fiber brushes pointing down, in the back of a hood with the hood sash closed. Minimum Essential Medium (MEM) was supplemented with 5% heat-inactivated fetal bovine serum, 100 units/mL penicillin, 10 ~g/mL gentamicin, and 2.5 ~g/mL amphotericin B.

Experimental Results:

A 93.5% average reduction in viral titer was demonstrated following a 30 minutes of exposure time, as compared to the average titer of the dried virus control. The average log reduction in viral titler was 1.19 log.



Human Coronavirus

Laboratory Name: ALG Labs

Project No: A29381

Date: 4/14/2020

Pathogen Tested: Human Coronavirus,
ATCC VR-740, Strain 229E



SENSITIVITY TEST

Objective:

Testing was conducted on GPS' technology to assess its ability to inactivate Human Coronavirus on a glass surface.

Methodology:

A glass carrier with the pathogen was placed 1" from the carbon fiber brushes of the GPS technology. The petri dish carriers were exposed to GPS' needlepoint bipolar ionization device for 1 minutes, 5 minutes, 15 minutes, 30 minutes and 60 minutes at room temperature and relative humidity. Following the exposure time, the carrier was removed and an aliquot of test medium was added to the petri dish.

Experimental Results:

A 90.0% average reduction in viral titer was demonstrated following a 60 minutes of exposure time, as compared to the average titer of the dried virus control. The reduction in viral titler was 1.00 log.



Legionella

Laboratory Name: EMSL Analytical, Inc.

EMSL No: 151508127

Date: 10/14/2015

Pathogen Tested: Legionella pneumophila



SENSITIVITY TEST

Objective:

Testing was conducted on the GPS-2400 model to assess its ability to inactivate bacteria on a solid surface.

Methodology:

Legionella pneumophila (L. pneumophila) was inoculated onto buffered charcoal yeast extract agar (BCYE) and incubated at 35°C for 48 hours. Colonies were harvested, suspended in phosphate buffer water, and vortexed for 1 minute to ensure homogenization. This suspension was then used to inoculate the test carriers.

Experimental Results:

The GPS-2400 system demonstrated the strongest efficacy after 30 minutes of exposure by inactivating 99.71% of the L. pneumophila bacteria.



Clostridium Difficile

Laboratory Name: EMSL Analytical, Inc.

EMSL No: 371208933

Date: 6/26/2011

Pathogen Tested: Clostridium difficile ATCC 70057



SENSITIVITY TEST

Objective:

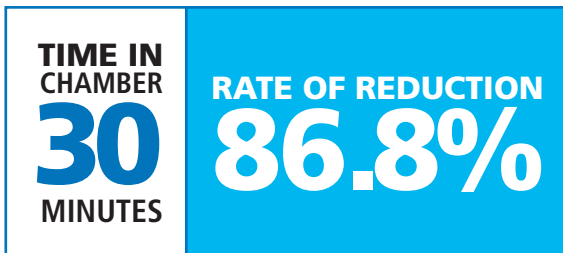
Objective: Testing was conducted on the GPS-iBAR-36 model to evaluate its effectiveness in disinfecting solid surfaces contaminated with C. Difficile.

Methodology:

The GPS-iBAR-36, needlepoint bipolar ionization system, was first set up facing down with 5 cm of clearance from the surface. The test carriers in their respective Petri-dishes were then placed under the GPS-iBAR-36 and the system was turned on. The control was not exposing to the ionizer and instead placed directly into 10 mL of PBS. Serial dilutions were then created for each carrier by taking 1mL out and placing it into the 9 mL of PBS. For each dilution 100µL was plated onto a TSAB plate. The inoculated plates were then incubated in anaerobic conditions at 37°C for 48 – 72 h. The colonies were counted and recorded.

Experimental Results:

In conclusion, the GPS-iBAR-36 demonstrated the ability to disinfect C. difficile on a solid surface with an observed percent reduction of 86.87% in 30 minutes.



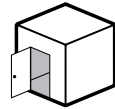
Tuberculosis

Laboratory Name: EMSL Analytical, Inc.

EMSL No: 371106420

Date: 7/15/2011

Pathogen Tested: Mycobacterium terrae ATCC 15755



SIMULATION TEST

Objective:

Testing was conducted on the GPS-iBAR-36 model to determine its ability to inactivate the bacteria in the air.

Methodology:

M. terrae first was inoculated on Tryptic Soy agar + 5% sheep blood (TSAB) and incubated at 35°C for 5 days under carbon dioxide conditions. A sterile inoculation loop was then used to collect colonies and place them into 5 mL of normal saline solution. Once testing was ready to begin, 60 psi of compressed air was pumped through the nebulizer, creating the release of 10.8 mL/h of aerosolized solution. This was run for 28 minutes, allowing for a total of 5 mL of solution being aerosolized into the test chamber.

Experimental Results:

After correcting for the natural rate of decay it was observed that there was a 0.38 log reduction after 30 minutes of exposure and a 0.51 log reduction after 60 minutes of exposure. In conclusion, the GPS-IBAR-36 was observed to reduce M. Terrae by 69.09%



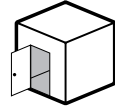
MRSA

Laboratory Name: EMSL Analytical, Inc.

EMSL No: 371106420

Date: 6/13/2011

Pathogen Tested: Methicillin Resistant Staphylococcus aureus (MRSA) ATCC 33591



SIMULATION TEST

Objective:

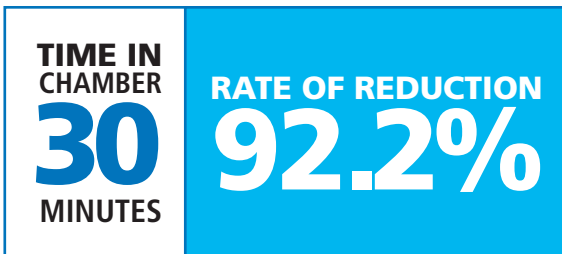
Testing was conducted on the GPS-iBAR-36 model to determine its ability to inactivate the bacteria in the air.

Methodology:

The nebulizer was connected to an air compressor with 1/4 inch plastic tubing and to the environmental test chamber through one of the testing openings created. The fan was turned on to create an air flow in the chamber but the ionizers were not turned on until after the initial sampling. Once testing was ready to begin, 60 psi of compressed air was pumped through the nebulizer creating the release of 10.8 mL/h of aerosolized solution. This was run for 28 minutes, allowing for a total of 5 mL of solution to be aerosolized into the test chamber.

Experimental Results:

In conclusion, the GPS-IBAR-36 demonstrated the ability to disinfect MRSA from the air with a 96.24% reduction after 30 minutes of exposure.



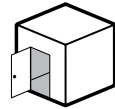
E. Coli

Laboratory Name: EMSL Analytical, Inc.

EMSL No: 371106420

Date: 7/21/2011

Pathogen Tested: Escherichia coli ATCC 8739



SIMULATION TEST

Objective:

Testing was conducted on the GPS-iBAR-36 model to determine its ability to inactivate the bacteria in the air.

Methodology:

The nebulizer was connected to an air compressor with 1/4 inch plastic tubing and to the environmental test chamber through one of the testing openings created. The fan was turned on to create an air flow in the chamber but the ionizers were not turned on until after the initial sampling. Once testing was ready to begin, 60 psi of compressed air was pumped through the nebulizer creating the release of 10.8 mL/h of aerosolized solution. This was run for 28 minutes allowing for a total of 5 mL of solution to be aerosolized into the test chamber.

Experimental Results:

In conclusion, the GPS-IBAR-36 demonstrated the ability to disinfect E. coli from the air with a 99.54% reduction after 30 minutes of exposure and a 99.23% reduction after 60 minutes of exposure.

Furthermore, these results demonstrate that the needlepoint bipolar ionization system tested does not require direct line of sight to produce inactivation rates comparable to those of ultraviolet light. The needlepoint bipolar ionization system's inactivation rates are indicative of those in the entire space.



Independent Laboratory Testing Results Summary



PATHOGEN	TIME IN CHAMBER	RATE OF REDUCTION	TESTING LAB
SARS-CoV-2	30 MINUTES	99.4%	INNOVATIVE BIOANALYSIS <small>creating solutions getting results</small>
Norovirus*	30 MINUTES	93.5%	ATS LABS <small>EXCELLENCE IN ANTIMICROBIAL TESTING</small>
Human Coronavirus**	60 MINUTES	90.0%	ALG <small>ANALYTICAL LAB GROUP</small>
Legionella	30 MINUTES	99.7%	EMSL
Clostridium Difficile	30 MINUTES	86.8%	EMSL
Tuberculosis	60 MINUTES	69.0%	EMSL
MRSA	30 MINUTES	96.2%	EMSL
Staphylococcus	30 MINUTES	96.2%	EMSL
E. Coli	15 MINUTES	99.6%	EMSL

* Surrogate for Norovirus, actual strain tested was Feline Calicivirus, ATCC VR-782, Strain F-9

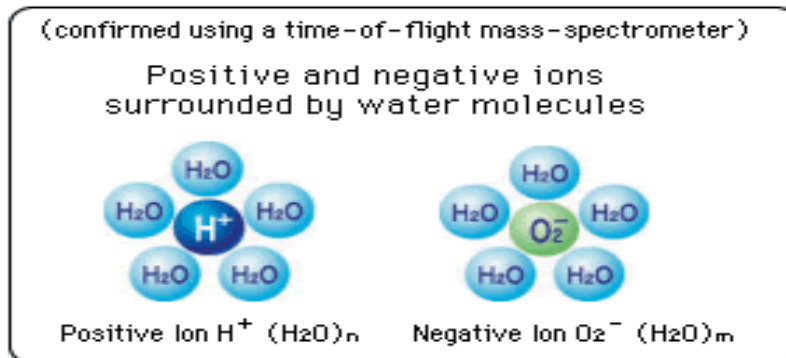
** Surrogate for Human Coronavirus SARS-CoV-2, actual strain tested was Human Coronavirus 229E

Global Plasma Solutions

What does Plasma Kill?

Global Plasma Solutions' bi-polar ionization generator creates cold plasma discharge that consists of positive ions (H^+) and negative ions (O_2^-) from water vapor in the air. These ions have the property of clustering around microparticles and gases, and thus, they surround harmful substances such as airborne mold, virus, bacteria, volatile organic compounds and allergens. At that point, a chemical reaction occurs on the cell membrane surface and they are transformed into OH radicals, a powerfully active but unstable material, which robs the harmful substance of a hydrogen atom (H). As a result, they are inactivated by severing the protein on the cell membrane, opening holes. The OH radicals instantly bond with the removed hydrogen (H), forming water vapor (H_2O), and return to the air.

- 1) The GPS generator creates bi-polar ionization (cold plasma), replicating the same positive and negative ions found abundantly nature, for example, in woods and forests. Ions are found in the highest concentrations where the ocean meets the shore and high elevation in the mountains. GPS' plasma process will artificially create the ions found in these desirable locations and supply them into the building, enhancing the indoor air quality. The ions turn into OH radicals only on the surface of harmful substances to inactivate them, so they are completely harmless to the human body and pets.
- 2) GPS plasma will effectively eliminate bacteria, virus, mold and volatile organic compounds by working directly on the air contained in the entire zone and duct.
- 3) The plasma process consumes a miniscule amount of electricity, less than a 5 watt light bulb, in most applications.



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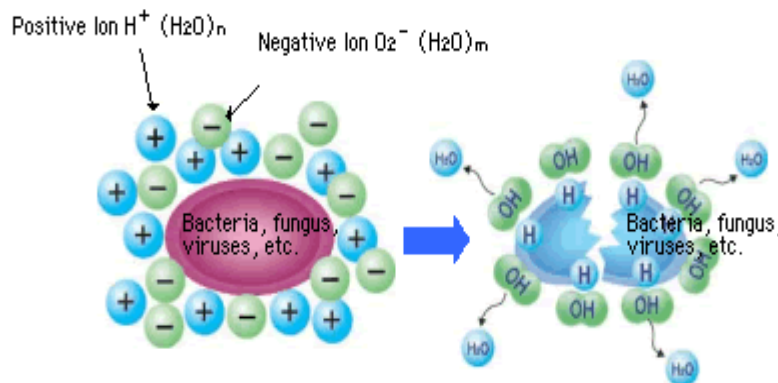
Various Pathogens that Plasma Kills

Target Substance	Species	Testing & Verification Organization	Date of Announcement
Fungi	Cladosporium (black mold, mildew)	Ishikawa Health Service Association	September 2000
		Universitätsklinikums Lübeck University Clinic (Germany) (proliferation control effect)	February 2002
		CT&T (Professor Gerhard Artmann, Aachen University of Applied Sciences)	November 2004
	Penicillium, Aspergillus	Universitätsklinikums Lübeck University Clinic (Germany) (proliferation control effect)	February 2002
	Aspergillus, Penicillium (two species), Stachybotrys, Alternaria, Mucorales	CT&T (Professor Gerhard Artmann, Aachen University of Applied Sciences)	November 2004
Bacteria	Coliform bacteria (E. coli)	Ishikawa Health Service Association	September 2000
	<i>E. coli</i> , <i>Staphylococcus aureus</i> , <i>Candida</i>	Shanghai Municipal Center for Disease Control and Prevention, China	October 2001
	Bacillus subtilis	Kitasato Research Center of Environmental Sciences	September 2002
		CT&T (Professor Gerhard Artmann, Aachen University of Applied Sciences)	November 2004
	MRSA (methicillin-resistant <i>Staphylococcus aureus</i>)	Kitasato Research Center of Environmental Sciences	September 2002
		Kitasato Institute Medical Center Hospital	February 2004
	Pseudomonas, Enterococcus, Staphylococcus	Universitätsklinikums Lübeck University Clinic (Germany)	February 2002
	Enterococcus, Staphylococcus, Sarcina, Micrococcus	CT&T (Professor Gerhard Artmann, Aachen University of Applied Sciences)	November 2004

Allergens	Mite allergen (dust from dead mite bodies and feces), pollen	Graduate School of Advanced Sciences of Matter, Hiroshima University	September 2003
	Airborne allergens	Asthma Society of Canada	April 2004
Viruses	H1N1 influenza virus (Swine Flu)	Kitasato Research Center of Environmental Sciences	September 2002
		Seoul University, Korea	September 2003
		Shanghai Municipal Center for Disease Control and Prevention, China	December 2003
		Kitasato Institute Medical Center Hospital	February 2004
	H5N1 avian influenza virus	Retroscreen Virology, Ltd, London, U.K.	May 2005
	Coxsackie virus (summer colds)	Kitasato Research Center of Environmental Sciences	September 2002
	Polio virus	Kitasato Research Center of Environmental Sciences	September 2002
	Corona virus	Kitasato Institute Medical Center Hospital	July 2004

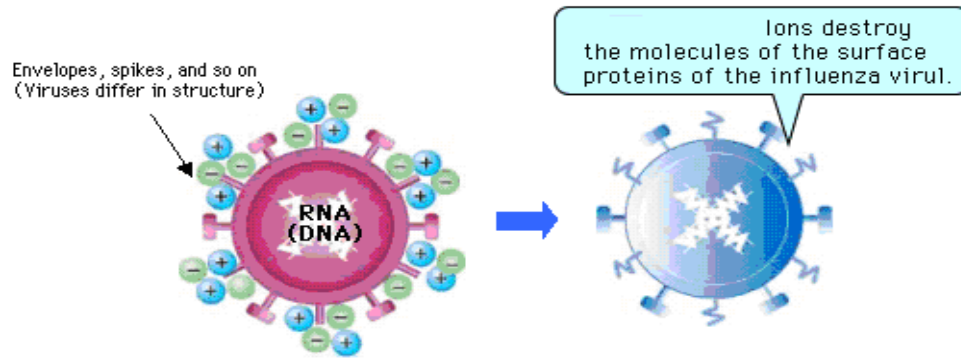
Mechanism of Plasma for Inactivating Airborne Fungi

The positive (H^+) and negative (O_2^-) ions cluster together on the surface of airborne fungi, causing a chemical reaction that results in the creation of highly reactive OH groups called hydroxyl radicals ($\bullet OH$). The hydroxyl radical will take a hydrogen molecule from the cell wall of an airborne fungi particle. This process inhibits mold infestation as well as controls musty and household odors (caused in large part by mold fungi) as they occur.



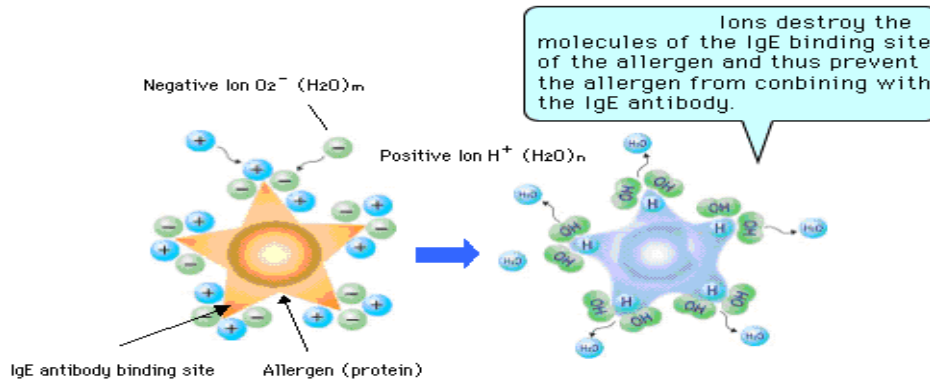
Mechanism of Plasma for Inactivating Airborne Virus

The positive (H^+) and negative (O_2^-) ions surround the hemagglutinin (surface proteins that form on organisms and trigger infections) and change into highly reactive OH groups called hydroxyl radicals ($\bullet OH$). These groups take a hydrogen molecule from the hemagglutinin and change it into water (H_2O). The ions destroy the virus surface structure, for example its envelopes and spikes, on a molecular level. As a result, the virus cannot infect even if it enters the body.



Mechanism of Plasma for Deactivating Airborne Allergens

The positive (H^+) and negative (O_2^-) ions surround the airborne allergen and change into highly reactive hydroxyl radicals ($\bullet OH$). The hydroxyls then deactivate the molecules of the IgE antibody binding site of the allergen. No allergic symptoms occur even if allergens enter the body.



GPS' plasma is a technology with many benefits. Plasma can kill many airborne pathogens, not just at the source of the plasma, but also in the zone where the heated or cooled air is being supplied. Ultraviolet light cannot kill pathogens outside of the blue light produced by the ultraviolet light tube, so the killing of ultraviolet light is limited to the effectiveness of the ventilation system to get the pathogen back to the air handler for control.

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Control of Gases and Odors with Plasma

While plasma is very effective at pathogen killing, it is also effective at controlling gases, odors and volatile organic compounds (VOC's). Just as the plasma surrounds pathogens and deactivates them, the plasma also surrounds gas molecules. As the gas molecules are attacked by the plasma, the molecular bond of the gas molecule is broken down, just as glue is broken down by contact with paint thinner, and the gas reverts back to its natural state. What the gas molecule starts out will depend on what it breaks down to. Using ammonia (NH₃) as an example, ammonia breaks down to oxygen, nitrogen and water vapor when subjected to a plasma field of sufficient strength. Ammonia is an odorous chemical produced by occupants as well as cigarette smoke and some building materials.

When installed in a central HVAC system, zone odors are controlled such as ammonia, formaldehyde, cooking odors, bathroom odors, musty & mildew odors as well as other odors produced by the occupants and building furnishings and processes. The gases produced by the building materials are broken down to harmless gases already prevalent in the earth's atmosphere such as oxygen, nitrogen, water vapor or carbon dioxide. Contact Global Plasma Solutions to learn more today!

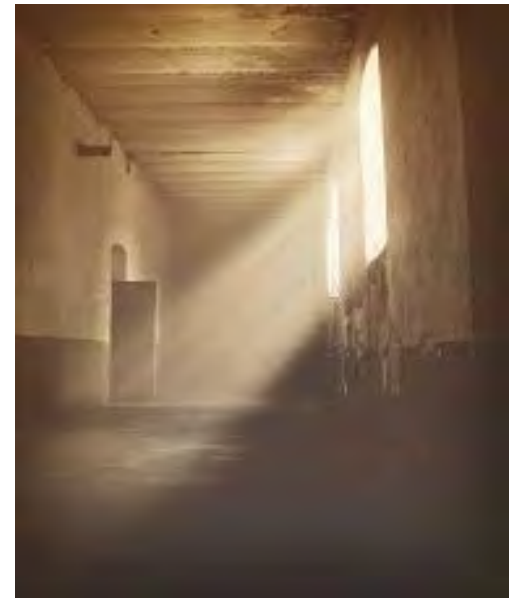


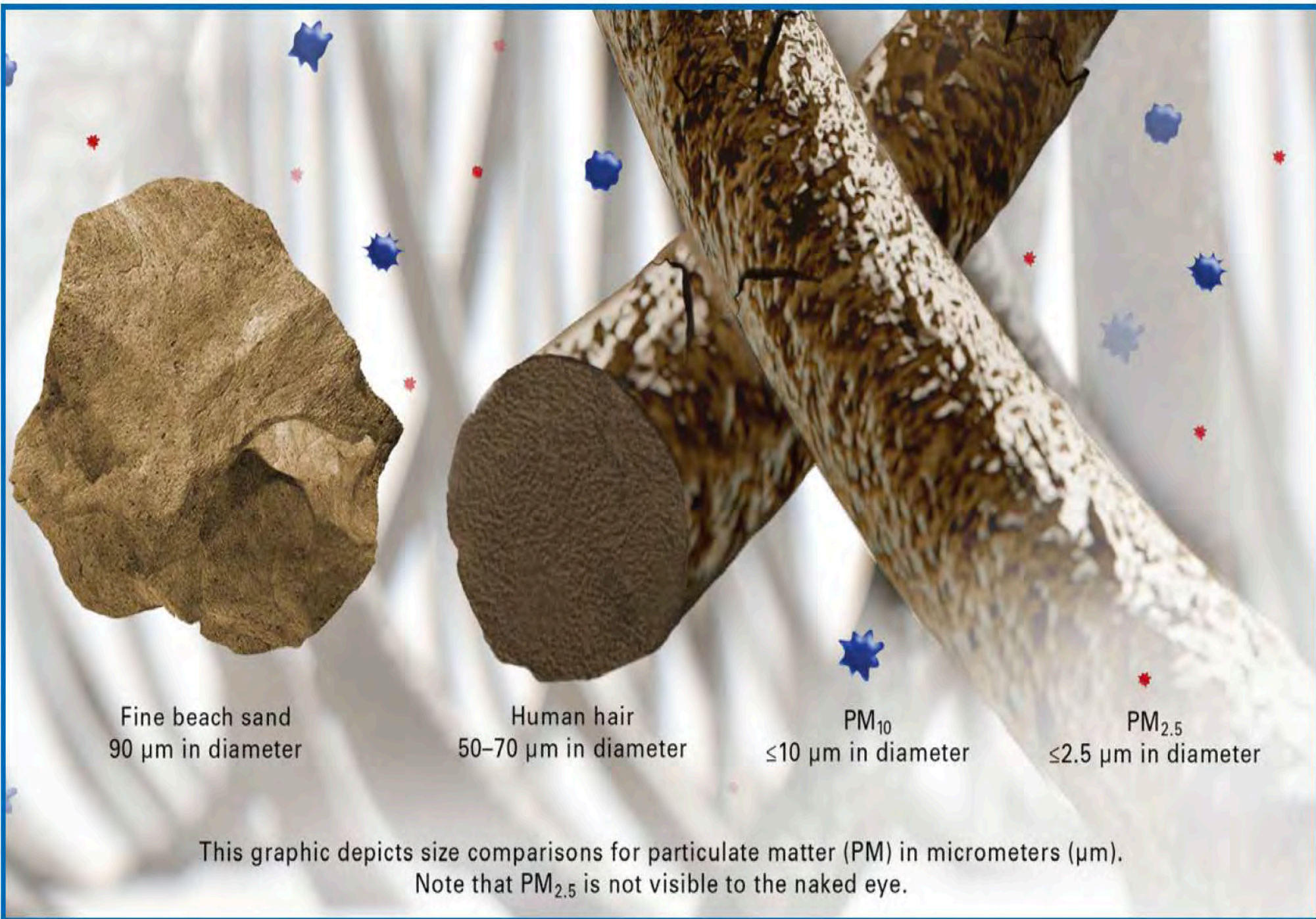
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HOW PARTICLES ARE CREATED

- A person sitting or stopped generates about 100,000 particles per cubic ft.
- Sitting down or standing up generates about 2,500,000 particles cubic ft.
- Walking generates about 10,000,000 particles per cubic ft.
- Horseplay generates about 30,000,000 particles per cubic ft.
- Grinding, sweeping, welding adds billions of particles per cubic ft.
- Two surfaces rubbing generate billions of particles per cubic ft.

There are over 18 Million particles in 1 cubic ft of air





MERV 8 + Ionization = > MERV 13



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Date:	23-Oct-17
Report No.	17-618
MODIFIED CADR CHAMBER TEST	
TEST REPORT SUMMARY	
Chamber Smoke Concentration Decay Test	
MERV 13 vs. MERV 8 w/GPS Device	

Test Results

- 1 It was determined that the 1" MERV 13 Panel filter reduced particle count from 2,730,958 to 808 particles in a timeframe of 34 minutes.
- 2 It was determined that the 1" MERV 8 Panel filter with GPS Technology reduced particle count from 3,645,943 to 745 particles in a timeframe of 16 hours.
- 3 It was determined that the 1" MERV 8 Panel filter with GPS Technology reduced particle count from 2,753,181 to 745 particles in a timeframe of 15 hours - 40 minutes in comparison to the MERV 13 at 34 minutes.

Quantitative Results

MERV 13 Filter

Elapsed Time, Min.	Microns								# total Particles	#/cm3 Concentration
	0.30	0.40	0.55	0.70	1.00	1.30	1.60	2.20		
4	1805492	738537	144867	40941	865	153	96	3	2730958	2730
34	636	101	25	23	8	5	2	5	808	0.81

MERV 8 Filter with Ion Technology

Elapsed Time, Min.	Microns								# total Particles	#/cm3 Concentration
	0.30	0.40	0.55	0.70	1.00	1.30	1.60	2.20		
5	1958081	1222632	332433	129698	2610	341	136	6	3645943	3645
19	1876059	736434	117644	22892	116	11	20	5	2753181	2753
16 hours	619	90	12	17	2	1	2	2	745	0.74

Ion technology can reduce particles, control odors & kill pathogens.

The Problem - A large Midwest medical device manufacturer contacted GPS due to a new chemical being introduced into the manufacturing process that was creating odor issues for the employees working in those rooms and adjoining spaces that shared the same air handling system. Upon reviewing the molecular structure of the chemical, it was determined that GPS' cold plasma technology could control the odor effectively.

The Solution - A GPS-iBar system was installed on the air entering side of the cooling coil in the air handler conditioning the clean rooms.

The Results – After installation of the GPS-iBar system, the odors were eliminated in less than 24 hours. The GPS-iBar system also provided a pleasant surprise to the owner when the annual clean room certification occurred. The clean room certification company found the total particle counts to be 89.7% less than any other time prior to the GPS-iBar installation, which includes over 10 years of prior testing with similar, consistent results.

Total Particle Counts

Date	Before	After
6/17/2013	2015	
6/25/2014		208*

Total Particle Count Reduction 89.7%

*GPS-iBar installed & activated 6 months prior to "After" testing





Global Plasma Solutions®


Engineering Air for a Cleaner World™

Charlie Waddell – Founder & CTO

How to Make your HVAC System Pandemic Ready using Needlepoint Bipolar Ionization

Member ASHRAE SSPC 62.1, TC 2.3, ICC, USGBC
Formerly Secretary of TC 8.12

Installation Base

- Over 1,000 K-12 Schools with OA reduced to 5 CFM Per Person or LESS
 - Many Healthcare Applications including hospitals, outpatient centers and MOBs
 - Sports Arenas
 - Hospitality
 - Over 150,000 installations Worldwide
- 

Hospitals



- ✓ NY Presbyterian, NYC
- ✓ Children's Hospital, Boston
- ✓ University of Miami Medical Center
- ✓ Tulane Medical, New Orleans
- ✓ Methodist Hospital, Houston, TX
- ✓ Anderson Medical Center, Houston, TX
- ✓ Baylor College of Medicine, Houston, TX
- ✓ Winn Army Hospital, Ft. Stewart, GA
- ✓ Duke Medical, Raleigh, NC
- ✓ Banner Healthcare, Phoenix, AZ
- ✓ Al Dupont Hospital, Wilmington, DE
- ✓ Abbott NW Heart Hospital, Minn, MN
- ✓ Women's Hospital Greensboro, NC
- ✓ Cleveland Clinic, Cleveland Ohio & Weston, FL

Healthcare Applications Include:

- Odor Control – NPBI can be used as a Substitute for Carbon
- Coil Cleaning – NPBI can be used as a Substitute for UVC
- Pathogen Control – NPBI can be used to kill* pathogens in the air and on surfaces
- Particle Reduction – NPBI will decrease particles in the space due to agglomeration
- Static Control – NPBI will reduce static electricity in the space
- Face Mask Efficiency – Increased space ion levels increases face mask efficiency

*Deactivates virus

The Whitehouse

GPS®



Higher Education



SMU



HARVARD
UNIVERSITY



THE UNIVERSITY of
TULSA



Yale University

Virginia
Tech
1872



CLEMSON
UNIVERSITY



Tulane
University

Aviation



GPS is the only ionization company to pass DO-160 for mounting products on airplanes, in this technology category. DO-160 tests for shock, vibration, EMF, line noise, extreme cold and high pressure.

Aviation Unit



View Inside Duct



Ground Based Aircraft Cleaning

ION DISTRIBUTION UNIT



BiPolar Ionization

- ✓ Kills Surface Pathogens.
- ✓ Destroys Airborne Pathogens.
- ✓ Sterilizes Mold and Bacteria.
- ✓ Removes Odors.
- ✓ Increases Air Quality.
- ✓ Reduces Static Electricity.
- ✓ Reduces Dust, Pollen and Smoke.
- ✓ Neutralizes Common Industrial Gases.
- ✓ Does Not Produce Ozone.

Part Number **ACA4800GU-1**



Google Chicago & San Jose



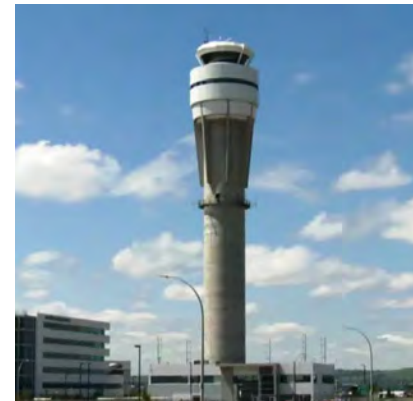
*GPS' Ion Bars
Throughout
Facility*



Airports

GPS®

Phoenix Skyharbor



YYC Control Tower



MILITARY CUSTOMERS

- ▶ **Special Air Missions Joint Base Andrews**
- ▶ Ramstein Air Force Base
- ▶ 435th Contingency Response Group
- ▶ Hickam Air Force Base
- ▶ Fleet Logistics Support Squadron JBA
- ▶ 909th AMU
- ▶ USAF 113 WG
- ▶ 932 MXG
- ▶ NORAD
- ▶ US Navy
- ▶ AIRSTA Washington
- ▶ 673 CONS/PKC
- ▶ NAS JRB Fort Worth
- ▶ 86 MXG/AMXS/CCR
- ▶ 718 AMXS/MXAW/909th AMU
- ▶ USAF 113 WG
- ▶ Fleet Logistics Support Squadron 57 (VR-57)
- ▶ Fleet Logistics Support Squadron 51 (VR-51)
- ▶ Fleet Logistics Support Squadron VR-56 Supply
- ▶ M1 Support Services
- ▶ US Government - 89th Airlift Wing
- ▶ US Marines
- ▶ US Air Force
- ▶ US Army
- ▶ March ARB
- ▶ 374th AMXS/MXABS Yokota AB, Japan
- ▶ 718 AMXS/909th AMU KC-135 Kadena Air Base, Japan
- ▶ 15th Operations Group
- ▶ Joint Base Pearl Harbor-Hickam
- ▶ Camp Lemonnier, Republic of Djibouti
- ▶ JBPHH
- ▶ 154 Civil Engineer Squadron
- ▶ 774 EAS/AFE NCOIC
- ▶ 718 AMXS / 909 AMU
- ▶ 435th Security Forces Squadron
- ▶ Eielson Air Force Base



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- Gulfstream Aerospace
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- United States Air Force
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- United States Navy
- United States Army