

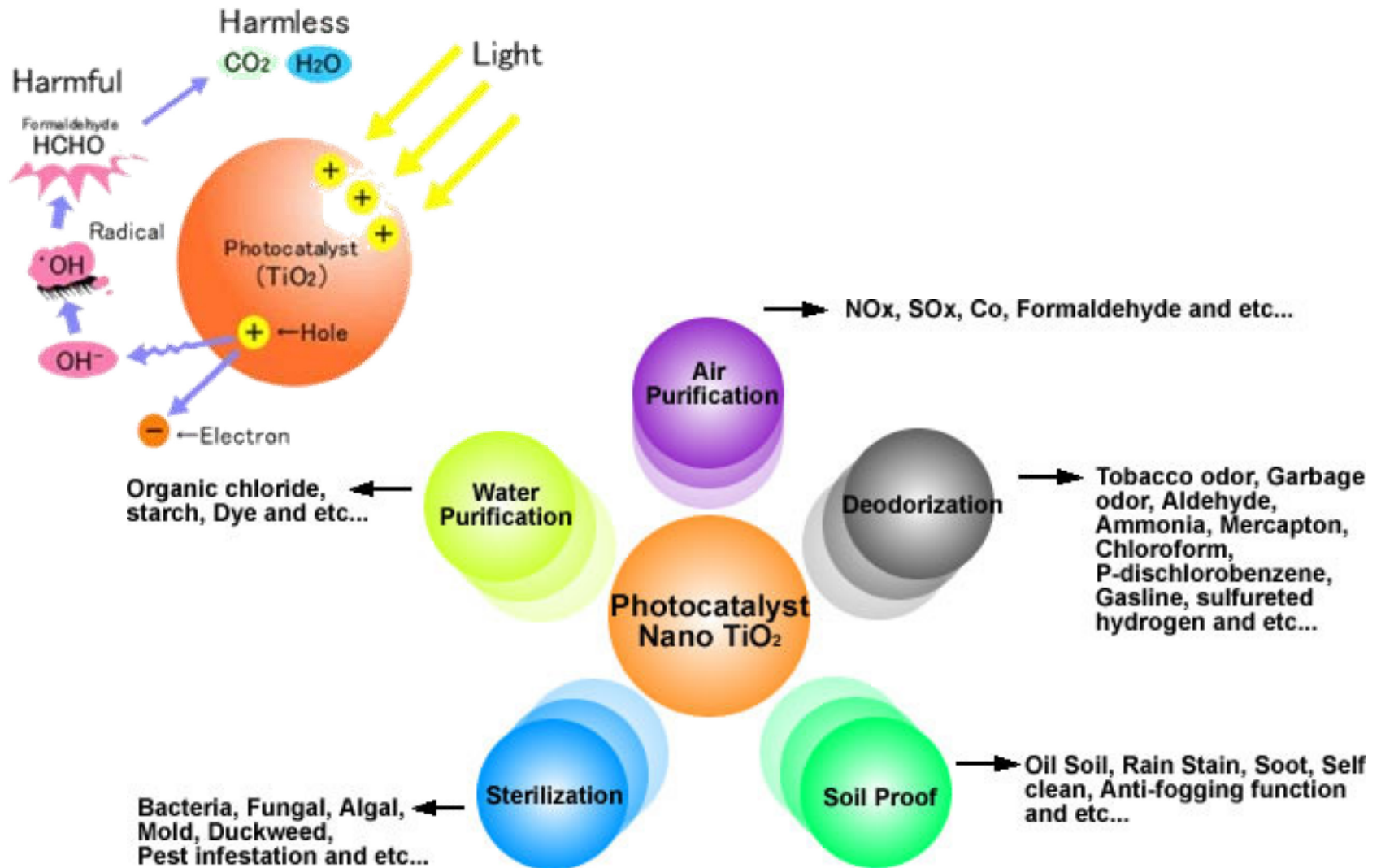
SM Anion/Nano TiO₂ Air Purifying Bulb



What is TiO₂

- Titanium dioxide (TiO₂) is a multifaceted compound. TiO₂ is also a potent photocatalyst that can break down almost any organic compound when exposed to sunlight, and a number of companies are seeking to capitalize on TiO₂'s reactivity by developing a wide range of environmentally beneficial products, including self-cleaning fabrics, auto body finishes, and ceramic tiles. Also in development is a paving stone that uses the catalytic properties of TiO₂ to remove nitrogen oxide from the air, breaking it down into more environmentally benign substances that can then be washed away by rainfall. Other experiments with TiO₂ involve removing the ripening hormone ethylene from areas where perishable fruits, vegetables, and cut flowers are stored; stripping organic pollutants such as trichloroethylene and methyl-tert-butyl ether from water; and degrading toxins produced by blue-green algae. Titanium dioxide is a well-known photocatalyst for water and air treatment as well as for catalytic production of gases. The general scheme for the photocatalytic destruction of organics begins with its excitation by suprabandgap photons, and continues through redox reactions where OH radicals, formed on the photocatalyst surface, play a major role.
- Titanium dioxide is non-toxic and therefore is used in cosmetic products (sunscreens, lipsticks, body powder, soap, pearl essence pigments, tooth pastes) and also in special pharmaceuticals. Titanium dioxide is even used in food stuffs, for instance in the wrapping of salami. Small amounts added to cigar tobacco are the cause of the white ash cigar smokers so cherish.

TiO₂ Catalytic Properties



Allergy & Sinusitis

Victims suffer *headaches, fatigue, trouble concentrating and irritation of skin and mucus membranes.*

Allergy is caused by an oversensitive immune system, which leads to a misdirected immune response. The immune system normally protects the body against harmful substances, such as bacteria and viruses.

Sinusitis occurs when there is infection, or inflammation due to allergies, in one or more of the sinuses. Acute sinusitis is often associated with upper respiratory infections, as inflammation of the nasal passages prevents drainage of fluid from the sinuses, which allows infection of the sinuses to occur.



The Role of TiO_2 on Allergy & Sinusitis

Destroys micro-organisms. TiO_2 is scientifically proven to destroy a large variety of contaminants, including disease-causing viruses, bacteria and fungi (including mold). TiO_2 light air purification has been used for years by the medical field (including hospitals) to sanitize rooms and equipment, in order to prevent the spread of illness and disease.

Dust Mites



Dust Mite on the prowl (greatly enlarged)

What are Dust Mites?

Dust mites are microscopic creatures that belong to the family of eight-legged creatures called arachnids. This family also includes spiders, chiggers and ticks. Dust mites prefer warm, moist surroundings such as the inside of a mattress, pillow or fabric cushion on your sofa. They feed on dander (human and animal skin flakes), so they thrive in places where there are people and animals.

How does TiO_2 deactivate dust mites allergens?

Der-f and/or Der-p dust mite allergens are deactivated by an amount of one or more of the following deactivates:

- i. cedarwood oil,
- ii. hexadecyltrimethylammonium chloride,
- iii. aluminium chlorohydrate,
- iv. 1propoxy-propanol-2,
- v. polyquaternium-10,
- vi. silica gel,
- vii. propylene glycol alginate,
- viii. ammonium sulphate,
- ix. hinokitiol,
- x. L-ascorbic acid,
- xi. immobilised tannic acid,
- xii. chlorohexidine,
- xiii. maleic anhydride,
- xiv. hinoki oil,
- xv. a composite of AgCl and TiO_2**
- xvi. diazolidinyl urea
- xvii. isopropyl-m-cresol
- xviii. a compound of formula (I)
- xix. the compound of formula (II)
- xx. a polymeric dialdehyde containing two
- xxi. or more of a recurring unit of formula (III), where $n = 2$ to 200
- xxii. urea
- xxiii. cyclodextrin, xxiii) hydrogenated hop oil,
- xxiv. polyvinylpyrrolidone,
- xxv. Nmethylpyrrolidone,
- xxvi. the sodium salt of anthraquinone,
- xxvii. potassium thioglycolate, and
- xxviii. glutaraldehyde.

Deactivates (i) to (xx) are effective against allergens derived from both species. Deactivates (xxi) to (xxvi) are effective against only Der-f allergens. Deactivates (xxvii) and (xxviii) are effective against only Der-p allergens. Aerosol compositions comprise said deactivates, a propellant and optional solvents.

Extracted from : <http://patents.ic.gc.ca/cipo/cpd/en/patent/2304639/summary.htm>¹

Introducing SM Anion/Nano TiO₂ Air Purifying Bulb



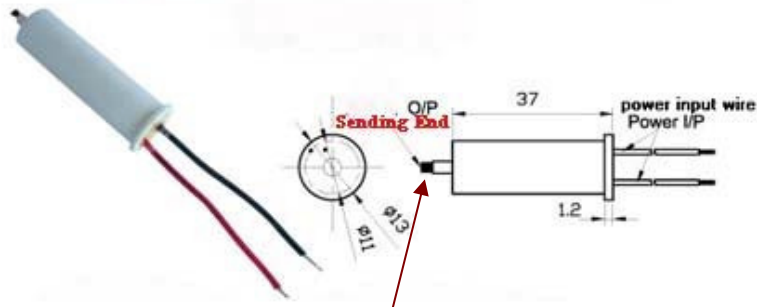
- With the functions of illumination and air purifying, the anion energy-saving lamp could change your home and office into the air environment of the forest. The bad quality of indoor air is a big problem to the environmental protection in the world. People work and live indoor for over 80% of time in one day. The circulation of fresh air is greatly confined by limited indoor space. Now the chemical air cleaner is often used, but its big volume and necessary frequent operation has caused many inconveniences to people. So we designed and produced the anion air-purifying energy-saving lamp with characters of small volume and easy to use.

Specifications

Model	SM Anion/Nano TiO₂ Air Purifying Bulb		
Negative Ions	> 800,000 ions/cm³		
Color Temperature	2700 warm	and	4100 cool
Light Output (Lumens)	1350	and	1680
Total Length	15 cm		
Anti-bacteria rate	≥ 90%		
Average Lifespan	10,000 operational hrs		
Coverage area	70 sq ft		
Power supply	220 – 240V, 50/60Hz (≤ 25W)		
Fitting	E27 Medium Base		

Specifications – Anion Generator

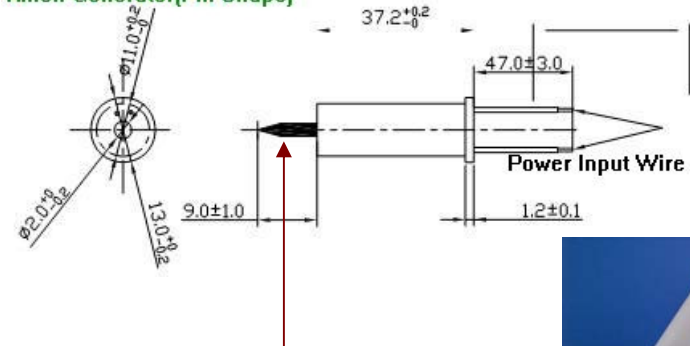
Anion generator



Carbon Brush Type-conventional

Key Specification for Anion generator	
Size	Φ 11x37mm
Input Voltage	AC100-127V/220-240V 50\60Hz (optional)
Input Current	<1.5mA
Power	<1W
Output Voltage	-3KV~ -6KV
Frequency	1.5K±0.5K Hz
Density of Anion	2~5 X 10 ⁶ pcs/cm ³
Remainder O3	<0.02ppm

Anion Generator(Pin Shape)

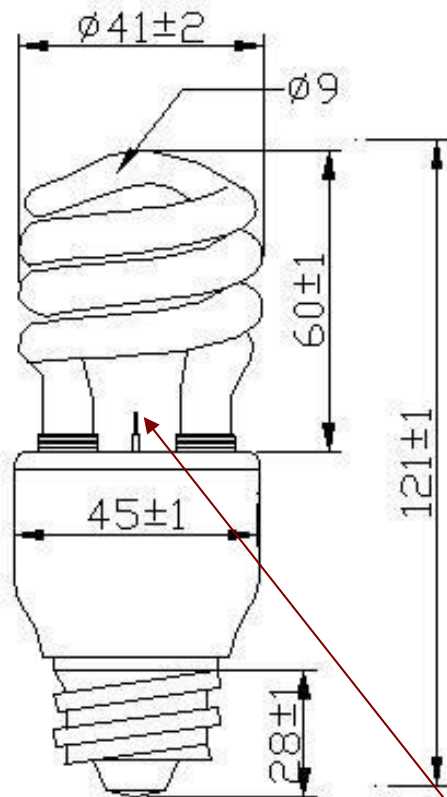


Pin Type-German Technology

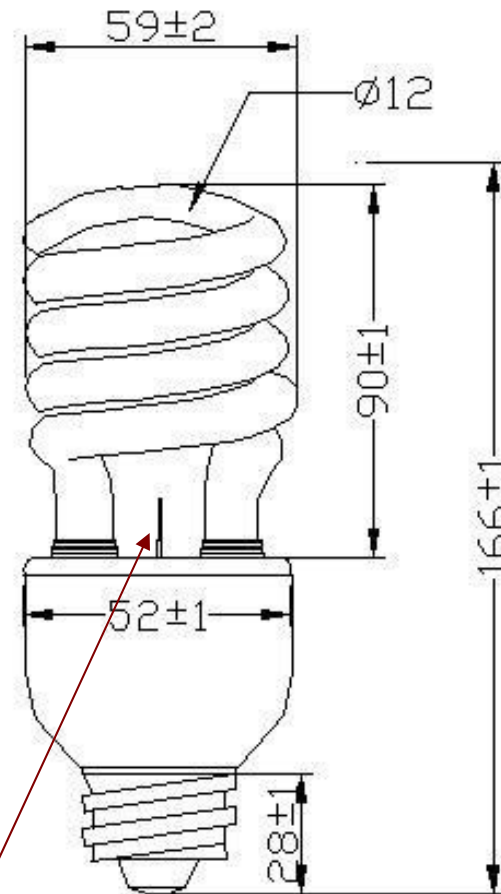
Key Specification for Anion generator	
Size	Φ 11x30mm
Input Voltage	AC100-127V/220-240V 50\60Hz (optional)
Input Current	<1.5mA
Power	<1W
Output Voltage	-3KV~ -6KV
Frequency	1.5K±0.5K Hz
Density of Anion	2~5 X 10 ⁶ pcs/cm ³
Remainder O3	<0.02ppm

Dimension

11 W



25 W



Pin Type Anion Generator - German Technology

Comparison

Condition	Content (number of anion) (Cubic Centimeter)	Relativity
After long-time of air conditioner used	0-25	Cause air-conditioner disease
The urban airproof housing area	40-50	Easy to cause headache and insomnia
The street afforestation area	100-200	Easy to cause various disease
The urban park area	1,000-2,000	Maintain the basic demand of health
Outdoors/open field	5,000-50,000	Strengthen the immunity of the human body and antibacterial ability
High mountain /seashore	50,000-100,000	Disinfect, reduce the disease to infect
Forest, Waterfall Area	100,000-500,000	Have strong resistance to disease
Each SM Anion/TiO₂ Air-purifying bulbs	≥800,000	Brings fresh air to you

TiO₂ Smoke Test

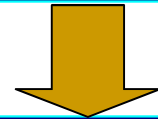


To view the video, click on the image above and follow the instructions given.

SM Nano TiO₂ Bulb

Brand 'X'

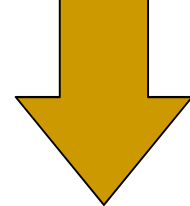
Smoke is pumped into the chambers



Light is turned on



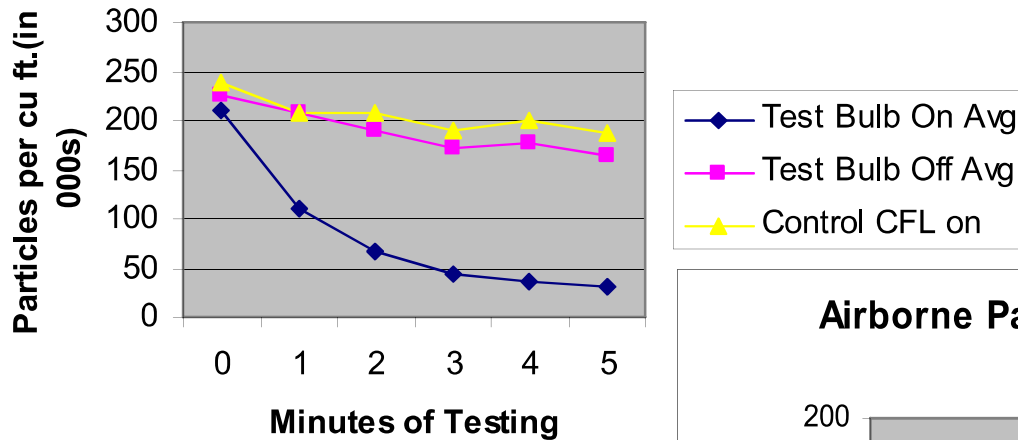
Time (~40sec)



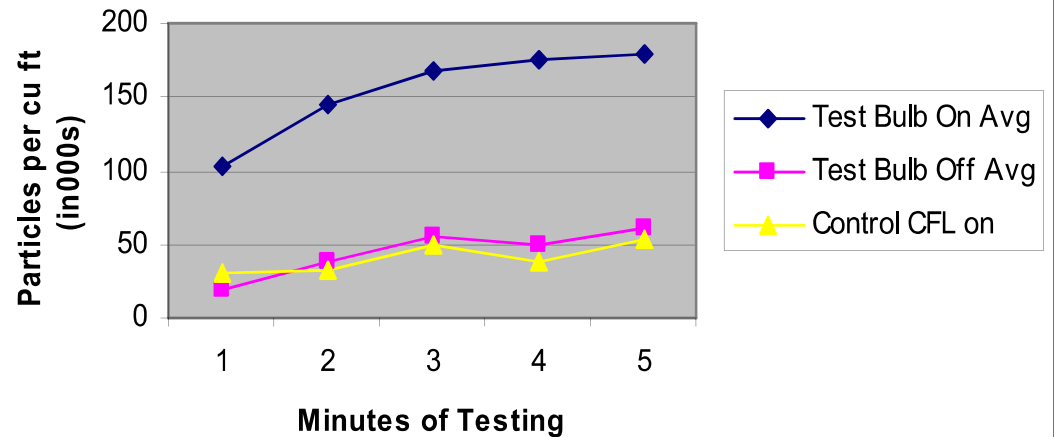
Smoke is cleared

Particle Scan Test

Airborne Particle Counts (in 000s)



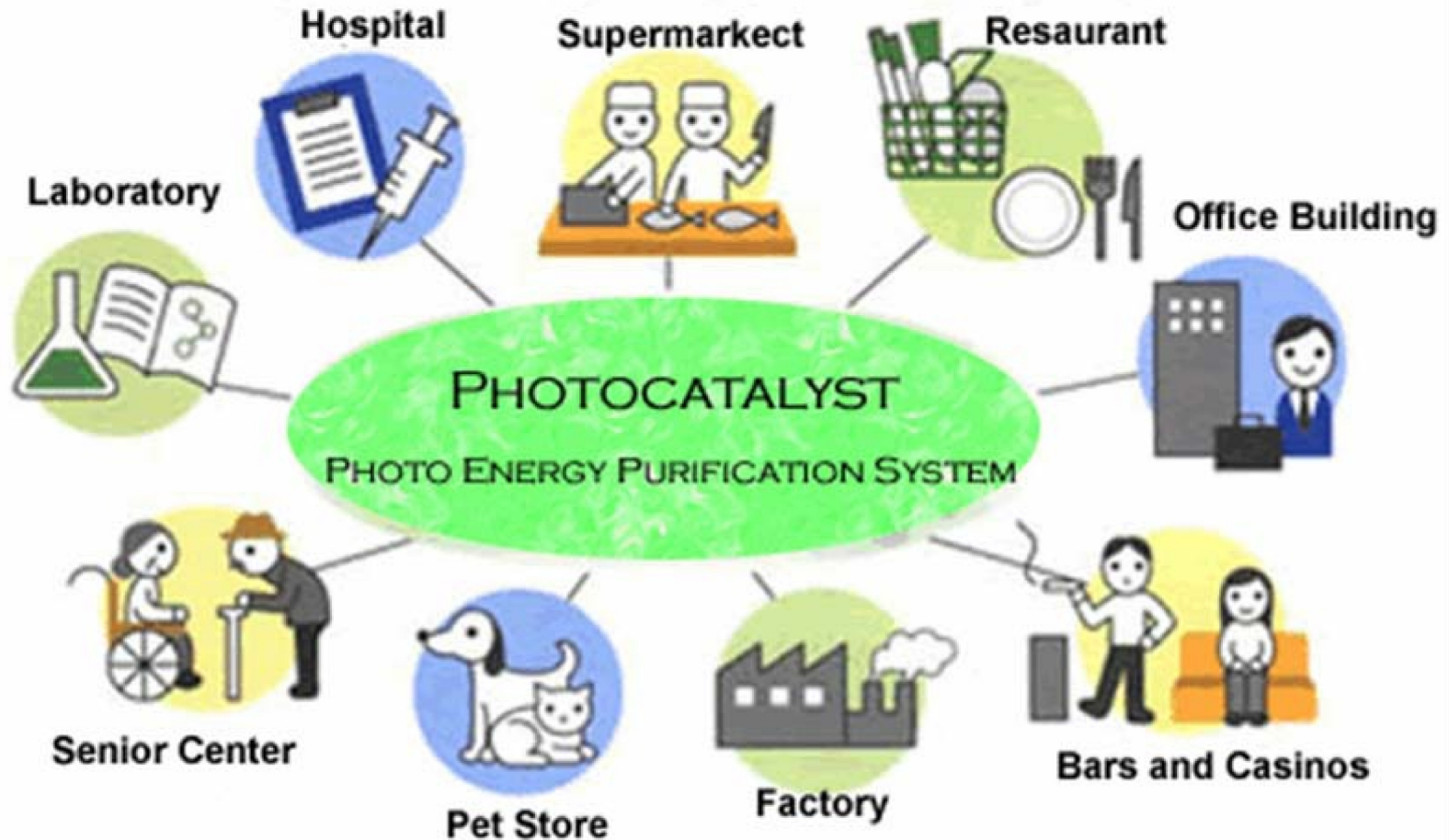
Airborne Particle Counts Reduction (in 000s)



Where the anion air-purifying energy-saving bulbs can be used?

- Residence: Bedroom, living room, kitchen, toilet, etc.
- Office: Office buildings, meeting rooms, smoking areas, etc.
- Restaurant and entertainment place: Restaurants, hotels, motels, clubs, bars, etc.
- Other places: Schools, libraries, hospitals, shopping complexes, supermarkets, cinemas, etc.
- Special warning: Please cautiously use this kind of lamps in gas stations, coal gas stations and other places in which high-grade fireproof standard is strictly required, as well as in places in which high humidity exists.

Where the anion air-purifying energy-saving bulbs can be used?



Advantages

- **Illumination:** Without frequent flash, the average life of 10,000 hours, more brightness and purer ray of 3 phosphor fluorescent metal coating powder.
- **Economic:** Save over 85% energy than usual incandescent lamp, one SM anion air-purifying energy-saving lamp of 25W is equal to one incandescent lamp of 100W.
- **Air-purifying:** Besides the illumination, the lamp creates large quantity of anion working in unison with our Nano TiO₂ technology to freshen the air.
- **Elimination of poison gases:** Eliminate various harmful germs and various poisonous volatilizing chemicals in the air (such as benzene, toluene, formaldehyde, ammonia, etc.)
- **Elimination of smell:** Eliminate various bad smells in the room.
- **Dispelling smoke:** Rapidly dispels smoke in the air.
- **TiO₂** – the latest in air purifying technology – works through photo catalysis by converting harmful organic pollutants into harmless CO₂ and H₂O and have the advantages of the followings:-
 - Anti-Bacteria
 - Anti-fungal
 - Deodorizing
 - Anti-mold
 - Self Cleansing