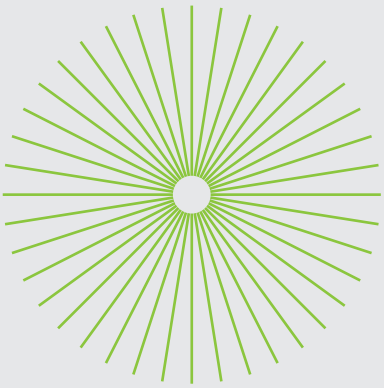
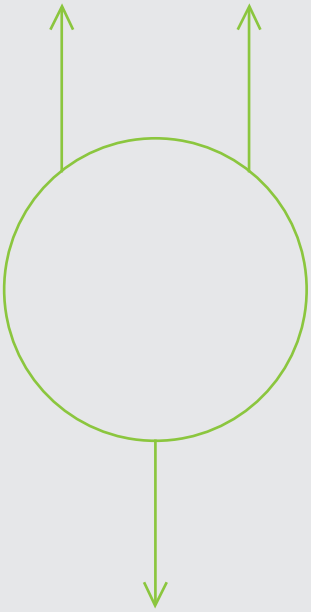
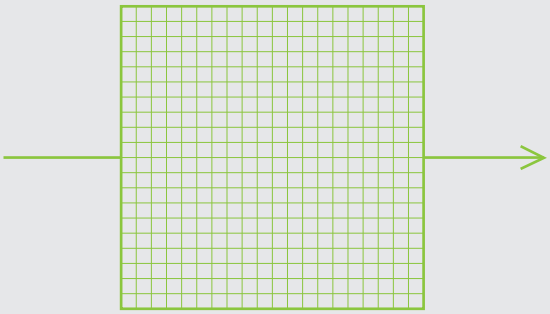
Environmental plant



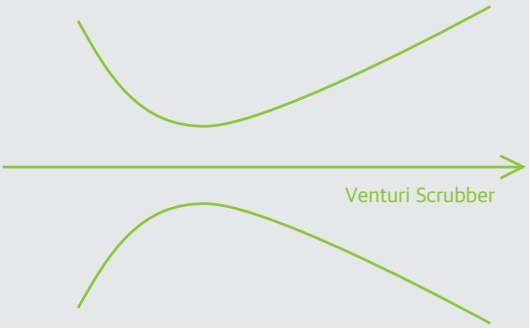
Electrostatic Precipitator



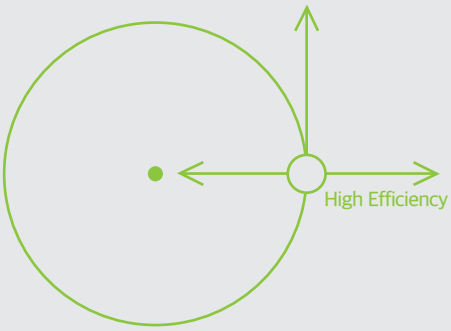
Dust Collector



Wire Mesh Filter



Venturi Scrubber



High Efficiency Cyclone

Mist Eliminator

Creating a better world with our technology

We make pride with our quality. We make possibility with our technology.

We make better world with our people. Based on our design, manufacturing, and service references,

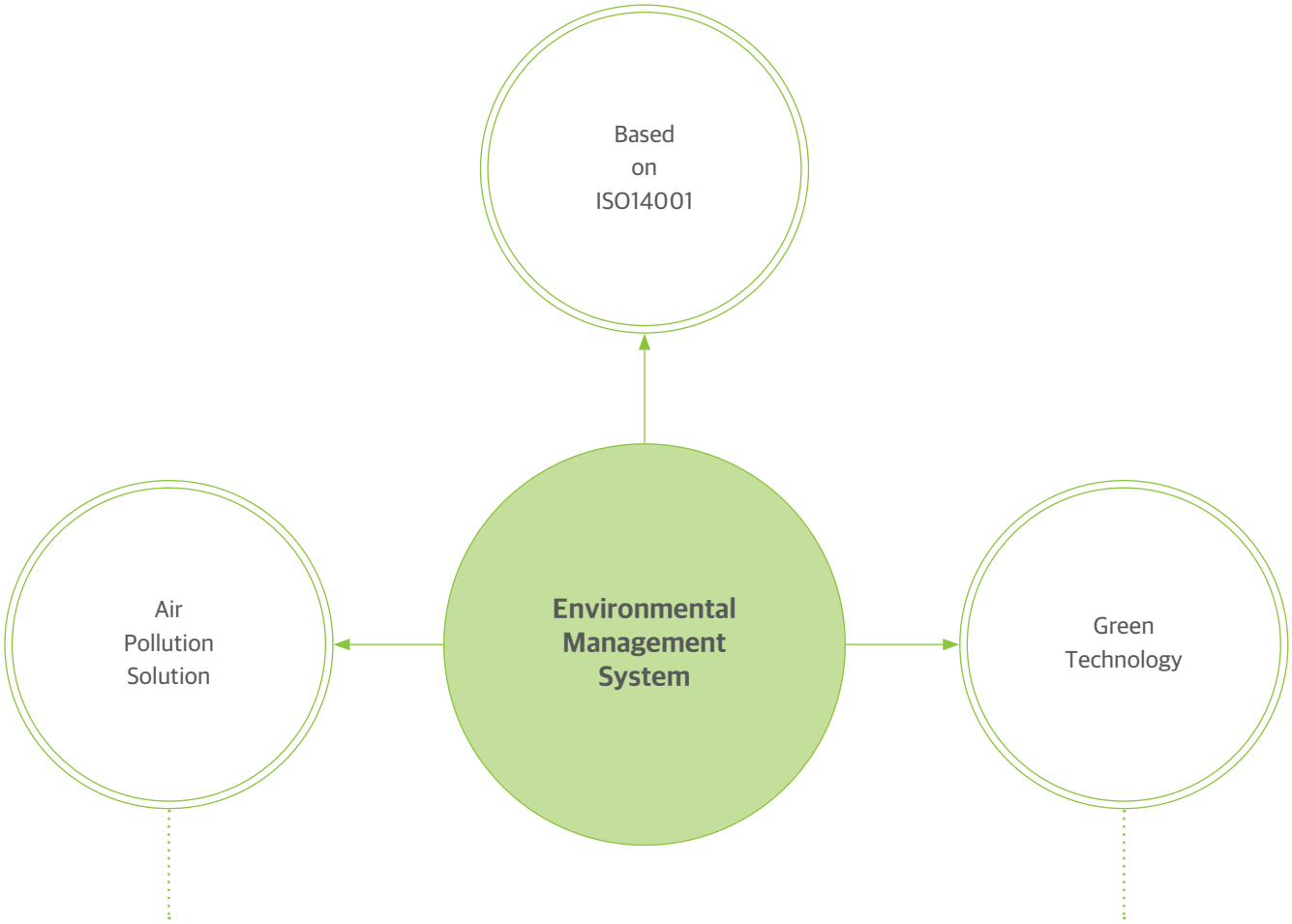
we are leading the Pollutant Control and Material Handling filed.

Table of Contents

Pollutant Control

Not an option but a must

Air pollution has become a global issue beyond a local issue. The fine dust that has invaded not only industrial sites but also living areas threatens our daily lives and the future of children. Pollutant Control becomes a must-have system in all fields of industry for earth, us, and our next generation. Conep, as a leader of environmental company of Korea, will be the best partner for your meaningful choice.

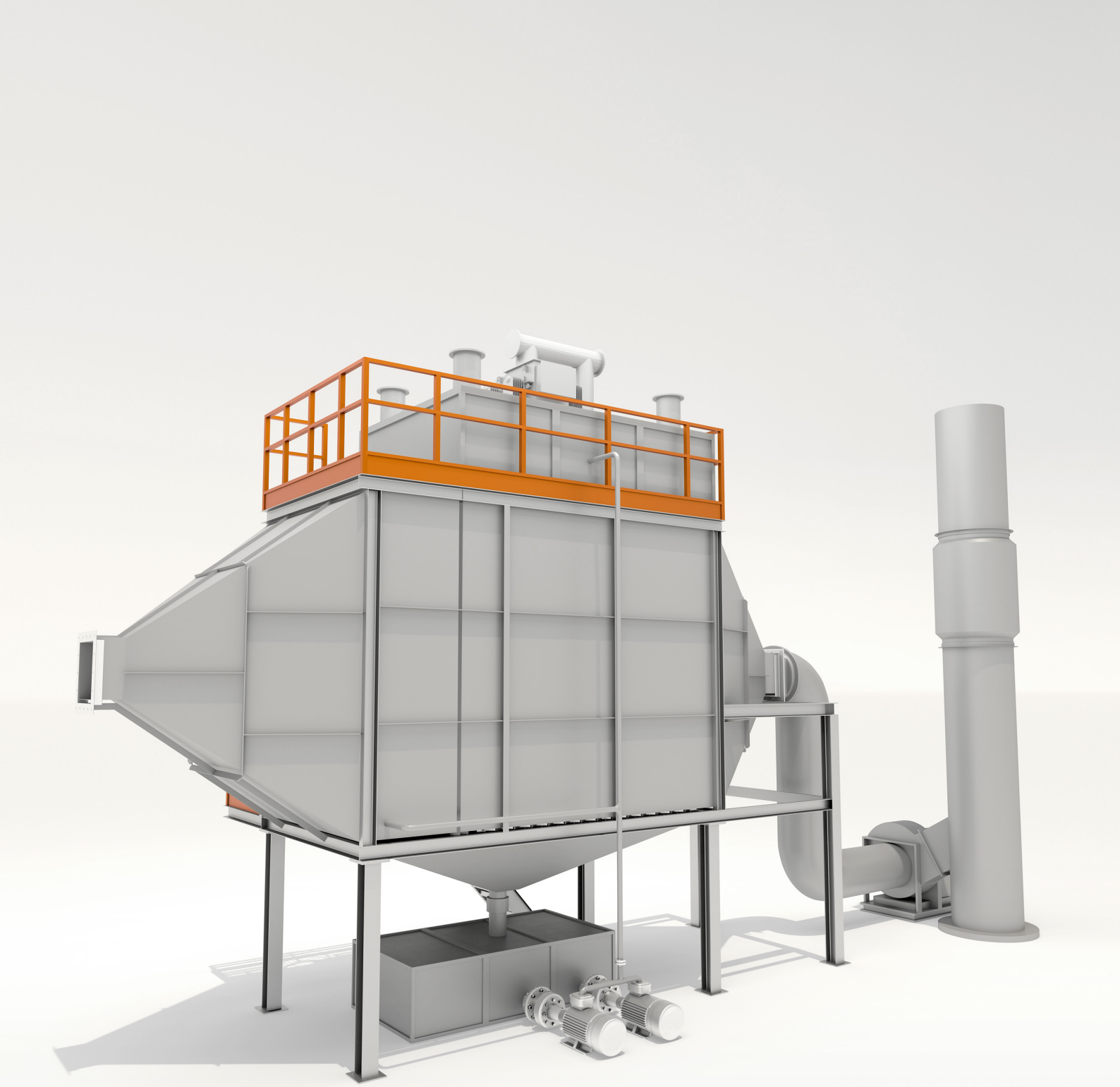


* Fine-dust reduction technology
* Pollutant gas emission reduction technology
* Odor reduction Technology
* Catalyst material utilization technology

* Greenhouse gas reduction technology,
* Energy use efficiency technology
* Clean production technology
* Clean energy technology
* Resource circulation and eco-friendly technology

Wet Electrostatic Precipitator

Compact but Efficient!



The principal of the Wet Electrostatic Precipitators

Wet electrostatic precipitator (WESP) uses electrostatic forces to remove particulate. It is used to remove sub-micron particulate, aerosols, or fumes in the gas streams.

The use of electrostatic forces minimizes energy costs compared to Venturi scrubbers or Bag Filters, which require a lot of energy to overcome resistance to gas flow.

Particle collection occurs in a collector section which consists of an array of grounded collecting plates and high-voltage electric discharge electrodes. This high voltage charges the particles, creating a high voltage field. This occurs a corona discharge of electrons from high intensify ionizing spikes on the electrodes.

This phenomenon is concentrated in the area between the discharge electrode and the collecting plate. As the electric charges move from the discharge electrode to the collecting plate, some of the electric charges are attached to particles in the gas stream, causing the particles to become electrically charged.

Once the particles are charged, they move across the gas stream by the high voltage field, and are deposited on the grounded collecting plate before being removed.

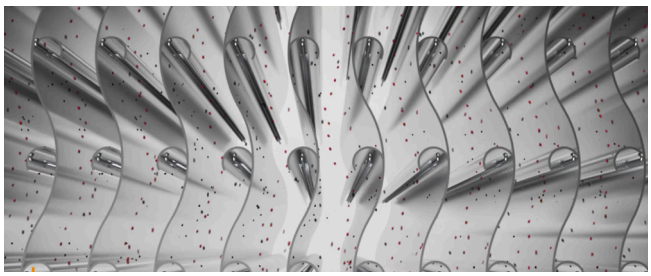
Our Patented WESP

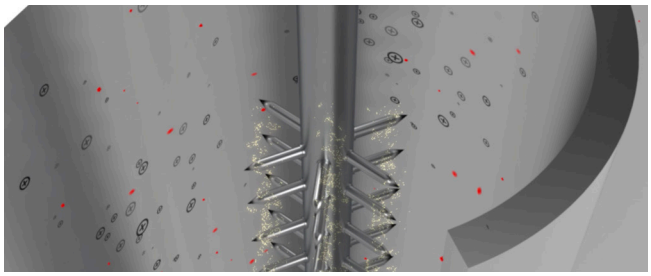
Conep's patented collecting plate with curved and pockets has a centrifugal force and pocket blocking function, so it can achieve high collection efficiency without re-scattering of particles even at fast gas velocity, making it compact and economical.

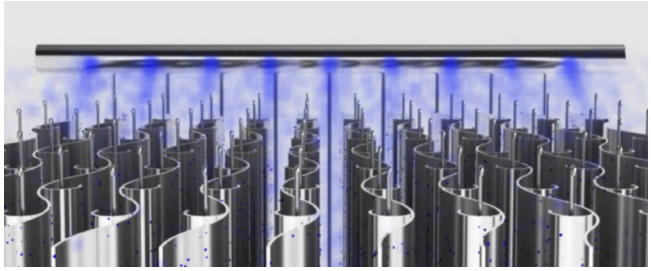
In order to maximize the benefits of WESP, Conep installs patented pre-treatment device, a combination of functions of Venturi Scrubber and Mist Eliminator, on the front of WESP.

Sufficient cleaning water is supplied to the pretreatment device to remove particles from the gas stream. In case of unremoved particles, waster is attached to the surface of them to optimize the electrical properties inside the WESP, increasing the removal efficiency.

Water droplets entering the WESP with particles are also removed from the collecting plate using an electric charge and run down. At this time, the collected particles are allowed to flow down with the water and be discharged to the outside so that the WESP can be cleaned continuously during operation so that high removal efficiency is maintained at all times.







Applications

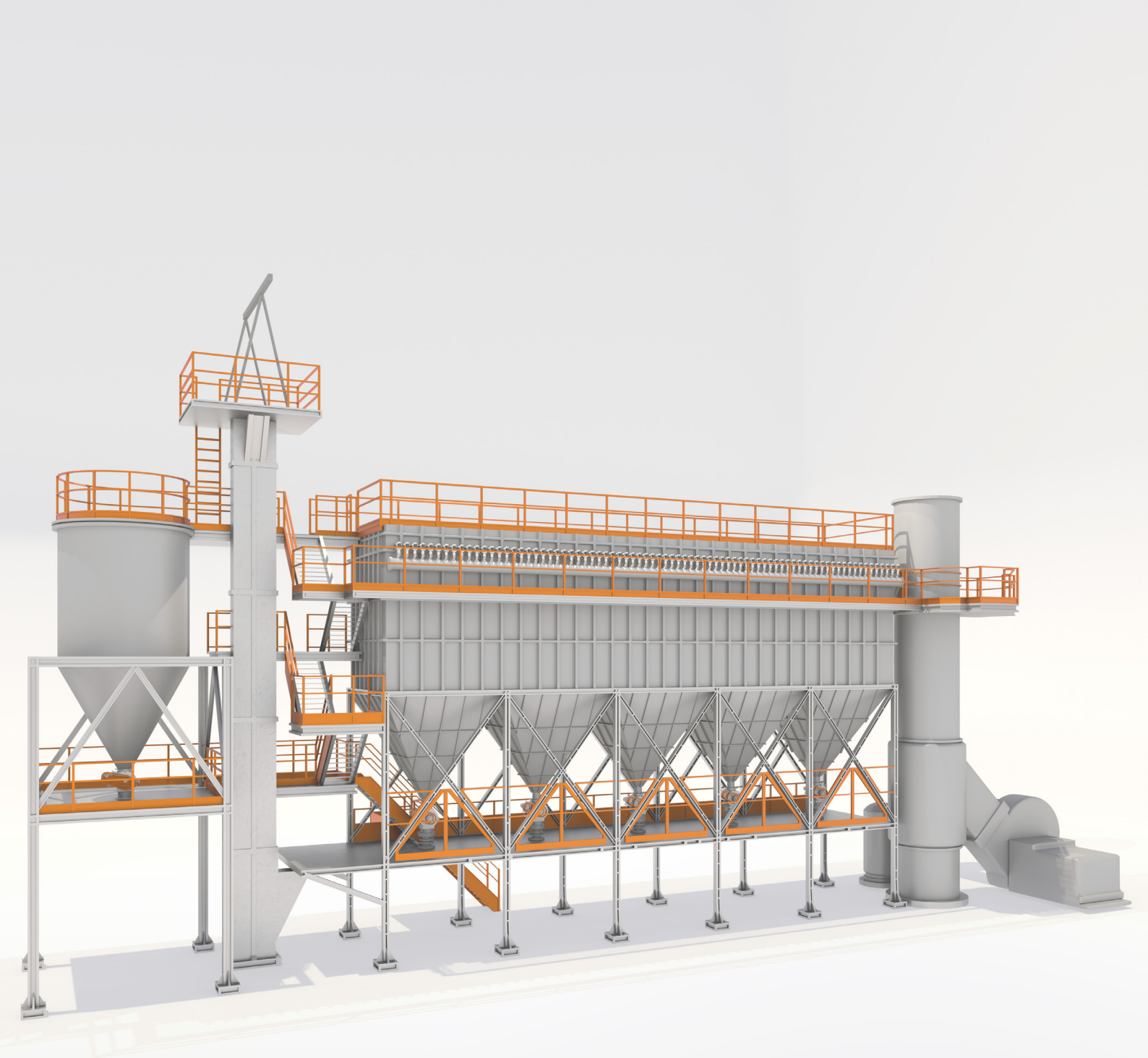
- ✓ Petrochemical industry
- ✓ Steel mill, melting furnace
- ✓ Boiler, incinerator
- ✓ Removal of gasoline salts (SO3 Mist, Oil Mist, etc.)
- ✓ Dyeing, synthetic resin manufacturing process

Your Conep Advantages

- ✓ Fast-pass flow rate of over 2.0 m/sec
- ✓ Maintaining high dust collection efficiency by continuous cleaning
- ✓ High efficiency without ash scattering
- ✓ Minimized maintenance by fixing the upper and lower discharge parts
- ✓ Compact design and low investment cost

Bag Filter & Vent Filter

From basic to advanced technology



Faithful to the basics

Bag Filter is the most widely and reliably used equipment that separates and removes particulate pollutants from exhaust gas because of its higher collection efficiency of over 99%. When the gas passes through fabric filters, particles are collected and separated from the gas through the mechanism such as diffusion, inertial impaction, and interception.

The particulate pollutants are removed by using the pulse jet, which instantaneously dispenses compressed air using the diaphragm valve, and then discharged by the air lock-type rotary valve or conveyor installed in the bottom of hopper.

Large particles are filtered through the fabric, forming a layer called a dust cake. It acts as a fine filter between the pores of the fibrous tissue, and enables the filtering of fine particles below 1.0㎛. For this reason, it is actually common to make a dust layer coating agent before normal operation to increase dust collection efficiency.

Our Advantages

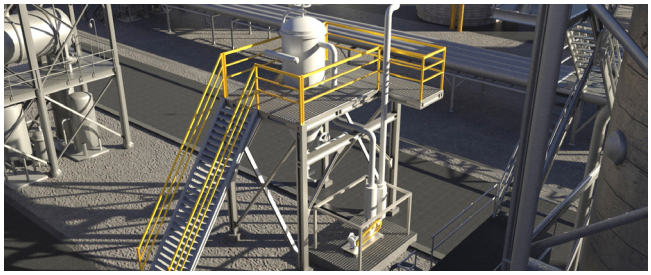
Conep can supply both on-line system and off-line system. On-line System allows continuous operation and filter cleaning simultaneously. Off-line system allows cleaning and maintenance in each section. Also we can provide optimum technologies for various processes including dust collecting, vacuum cleaning, and recovering high-cost materials.

In particular, we have rich experiences in chemical process, which requires high technologies.

Hybrid Technology

We can offer integrated system, which combines Cyclone's centrifugal separation function with Bag Filter, to increase collection efficiency and filter lifespan. This combined system does not require separate
pre-treatment equipment.

By adding a gas treatment reagent or powdery activated carbon to the front of the bag filter, we can provide hybrid dust collection technology capable of simultaneously treating gaseous and particulate matters.



Applications

- ✓ Cement, iron-making process
- ✓ Chemical plant raw material recovery process
- ✓ Incinerator, boiler combustion gas treatment
- ✓ Melting furnace dust collector
- ✓ Wood processing process

Your Conep Advantages

- ✓ Remove high concentration of dust
- ✓ Rich experience in high pressure process
- ✓ Applicable to not only dust collection but also raw material recovery process
- ✓ Hybrid technology

High Efficiency Cyclone

The simplest, and The most economist

The simplest method to collect dust

The production processes of fine powder and material emit a great deal of dust or other impurities into the air. Therefore, filtering the air is important to keep the work environment clean, protect workers and improve productivity. In this case, Cyclone Separator is highly recommendable.

Cyclone is a separator equipment that uses the principle of inertia and vortex to remove particulate matter from flue gases without filtration equipment. When dirty flue gas is continuously fed into a body, Cyclones form a spiral vortex inside. The lighter and less dense components of gas have less inertia, easily travelling up.

On the contrary, since larger components of particulate matter have more inertia and have difficulty following the high-speed spiral motion of the gas and the vortex, the particles hit the inside walls of the body and drop down into a collection hopper. Cyclones are shaped like an upside-down cone to promote the collection of these particles at the bottom of the body.

Cyclones as a "Pre-Cleaner"

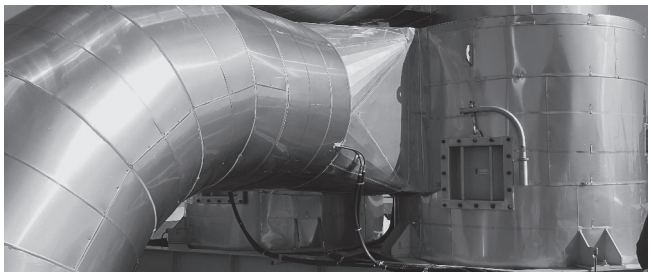
According to this principle, the separation efficiency of fine particles with a density of 1,000 times or more compared to gas is expected to increase. But it is not true because dust particles causes turbulence that weakens inertia and vortex flow.

Therefore, cyclones are mainly used as a pre-treatment equipment which controls and removes particulates larger than 10 micrometers before the flue gases reach the microfiltration stage. Simple structure, easy installation and maintenance makes Cyclones the most economical among all particulate control devices.

Our Advantages

By trial and error, we have successfully minimized pressure drop and increased efficiency by removing the turbulent flow that interrupts the gas and vortex as much as possible.

In addition, we can design and supply Cyclones as a high-value-added equipment for recovering expensive material, beyond the simple purpose of removing pollutants.



Applications

- ✓ Pre-treatment facility
- ✓ Grain mill and feed mill
- ✓ Wood processing plant
- ✓ Boiler dust collection facility
- ✓ Steel making process
- ✓ Chemical plant raw material recovery
- ✓ Cement production plant and smelting plant

Your Conep Advantages

- ✓ High efficiency Cyclone
- ✓ Solve internal turbulence by Vortex Breaking in the discharge part
- ✓ Wide experience in various processes

Wet Scrubber

Absorption of pollutants using scrubbing liquid!

Absorb Pollutant Using Water Spray

Wet scrubber is an equipment that removes particulate matter or gas contaminants from the gas flow by using liquid. Water is generally used as scrubbing liquid to remove pollutants, but other chemicals can also be added. These chemicals are chosen to react with certain pollutants in the gas flow. This reaction transforms pollutants into harmless substances.

Wet scrubbers can be categorized by the manner in which the gas and scrubbing liquid are brought into contact. There are 3 typical types, which are Spray Tower, Venturi Scrubber, and Packed Tower Scrubber. Spray Tower Scrubber simply sprays scrubbing liquid into gas. Venturi scrubber is designed to spray liquid while gas is flowing at high speed to increase contact between gas and liquid. And Packed Tower Scrubber is filled with media to provide good gas-to-liquid contact.

All these are designed to increase the frequency of interaction between gas and scrubbing liquid. In general, the higher the removal efficiency, the higher the pressure drop in the process.

Our Advantages

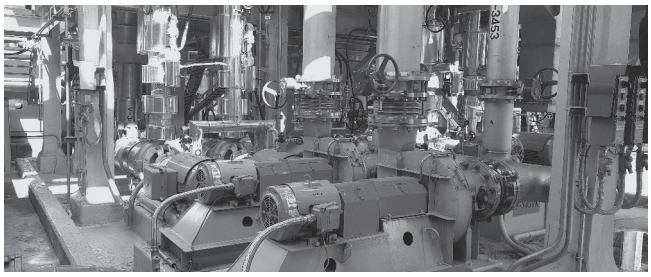
The industrial fields are increasingly reluctant to use conventional Venturi Scrubber due to problems such as pressure drop, clogging, and abrasion.

But Conep, based on many years of experiences, design and offer efficient Venturi Scrubber by solving mechanical disadvantage of conventional types. Plus we offer a wide range of customization options including Impingement Scrubber well suited for applications in facilities.

Specialized Technologies for Any Process

As for Packed Tower Scrubber(packed bed scrubber), we can provide specialized advanced technology for any process based on our performances in petrochemical processes into which high concentration gases are flowed.

Especially our patented Rotary Brush type scrubber is equipped with brush-type media to maximize the surface area on which gas and scrubbing liquid interact each other. And as the brush rotates itself, it does not see any problems including clogging or sticking by contaminants. And it can bring higher removal efficiency with lower pressure drop, unlike the conventional types of Wet Scrubber.



Applications

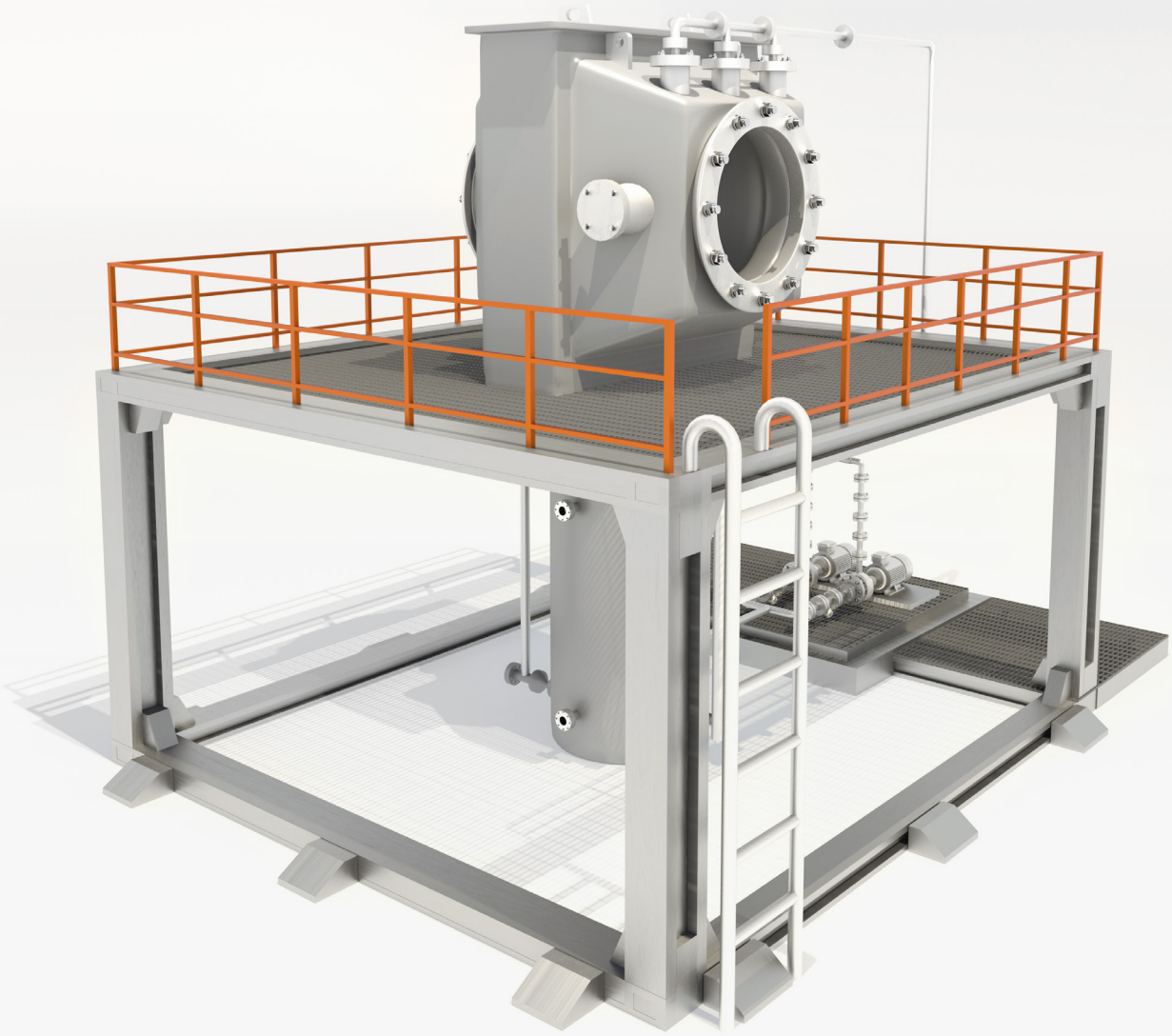
- ✓ Iron and metal industry
- ✓ Boilers, incinerators and melting furnaces
- ✓ Chemical Industry-Toxic Gas Removal (Acid-base neutralization)

Your Conep Advantages

- ✓ Supply various types according to the characteristics of the process
- ✓ Hazardous high-concentration gas treatment experience
- ✓ Our own patented technology

Mist Eliminator

The Best Choice for De-humidification



Removing Droplets with Impingement

Mist Eliminators separate and remove mist from a gas stream to recover valuable products, improve emissions, protect downstream equipment, and improve product purity. They can be divided into Wire Mesh Type, Fiber Bed Type, Baffle Type, etc. according to their operating principle and shape.

Wire-mesh mist eliminators consist of knitted mesh, which is a metal or plastic wire strand knitted into a mesh structure. This method is most commonly used due to its efficiency, modest pressure drop, and low capital and operating costs. The mist contacts large surface of the wire mesh, and droplets are separated from the gas stream and collected.

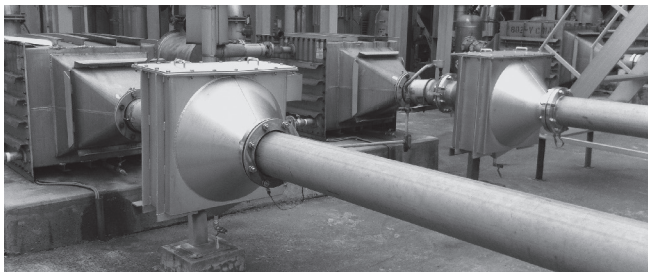
Fiber bed mist eliminators, also known as candle filter, are cylindrical with columns of fibrous material made of glass, plastic, ceramic, loose metal fibers, or roped metal. They remove droplets by forcing filter media and process gas stream to contact (impingement) when gas stream passes through filter media. Fiber-beds Mist Eliminators are used to remove fine particles from gas stream, include submicron and particles between 1 and 3 microns, but have the disadvantage of large pressure drop.

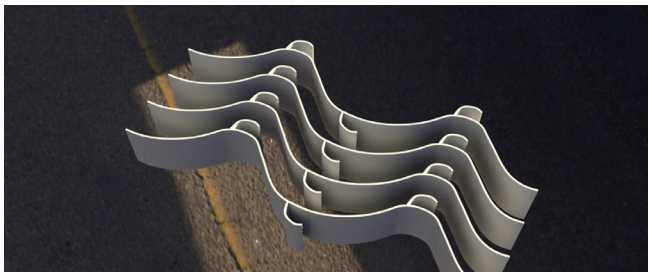
Baffle-type mist eliminators, also known as chevron or lamellar(vane), force the gas stream to change the direction quickly, resulting in the droplets contacting a surface and being collected. They use inertia and centrifugal force to speed up the velocity of gas flow, so the particles cannot follow it and are eliminated on the impingement surfaces. They have advantages for useful for both vertical and horizontal gas flows, and low pressure drop but are only effective for droplets larger than 3 micrometers in diameter.

Our Advantages

Conep have many experiences in handling oil mists, acidic, alkaline mists from various processes. We can design a system that enhances the advantages of not only single type but also complex type.

Furthermore, by applying functions of an electrostatic precipitator to the existing baffle type mist eliminators, we have developed and got patent hybrid type mist eliminators utilizing merits of each technologies. This type can remove fine particles less than 1 micrometers with a low pressure drop.





Applications

- ✓ Soluble Particulates
- ✓ Oil Mist
- ✓ Acid, Alkalic Mist
- ✓ Organic Vapors

Your Conep Advantages

- ✓ Design suitable for various processes such as single or combination
- ✓ Optimized design with a lot of experience
- ✓ Our own high-efficiency hybrid technology

Adsorption Tower

Adsorption of pollutants using micro pores!

Adsorption Mechanism

The Adsorption Tower is an equipment that removes harmful substances such as VOC, odors, heavy metals and dioxins in the process of removing air pollutants. It can also be applied to separate, purify or recover target substances using adsorbents in chemical processes.

For the higher efficiency of these adsorption processes, it is necessary to increase the reaction surface area as much as possible.

The adsorption process can be divided into two categories: chemical adsorption and physical adsorption. First, chemical adsorption results from the chemical bonding between the adsorbent and target substance.

Next, physical adsorption occurs when the target substance is attached to the surface of adsorbent by Van Der Waals Force (Bonding force between molecules) without chemical bonding. In this case, the bonding force of physical adsorption is weaker than that of chemical adsorption. So, it's easier to regenerate and recover the target substance.

Active carbon adsorption is mainly used to remove low concentrations of pollutants. The main ingredient of activated carbon is carbon, which has a large specific surface area and is manufactured using wood, sawdust, palm oil shell and activated coal, and is divided into Constructed Activated Carbon, Granular Activated Carbon, Powder Activated Carbon, etc.

Our Advantages

Based on experiences achieved from air pollution reduction and chemical processing facilities, we have gained expertise in adsorption target substances.

Therefore, we can choose the optimal adsorbent such as activated carbon, aluminum, zeolite, etc., according to the properties of target substance, allowing us to design the ideal system of adsorption tower.

Applications

- ✓ Petrochemical plant
- ✓ Organic solvent and odor generating facility
- ✓ Paper mill
- ✓ Paint booth
- ✓ Printing factory
- ✓ Incineration process

Your Conep Advantages

- ✓ Removal of organic gases and odors (ammonia nitrogen, surfactant)
- ✓ Use for purification of water-reactive compounds as a dry facility
- ✓ Recycling of activated carbon repeatedly (regenerated by heating or reduced pressure)
- ✓ Removal of volatile organic compounds
- ✓ Gas pH control

Hanwha Total Daesan Factory_Bag Filter

Posco Pohang Factory_ Bag Filter

Hanwha Solution Yeosu Factory_Scrubber

LG Chemical Daesan Factory_Bag Filter

Hanwha Solution Yeosu Factory_Activated Carbon Bed Vessel

Hanwha Solution Ulsan Factory_Scrubber.jpg

Hyundai E&C Saudi Arabia Maden Factory_Bag Filter

Hyundai Steel Dangjin Factory_Electrostatic Precipitator

LG Chemical Daesan Factory_Mist Eliminator

Hyosung Vietnam Vung tau Factory_Bag Filter

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