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Green Environment & Energy

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■ Large-sized WET-EP System

- Equipment that treats fine dust and harmful white smoke using wet electric precipitation using corona discharge
- Secondary pollutant removal and prevention of civil complaints
- Eco-friendly technology business
- Business expansion in related application areas
- Removal efficiency verification completed
- Secured power supply design technology
- Secured fine spray technology

■ Small and Medium-sized WET-EP System

- Load problems in old buildings arose as existing white smoke removal systems were installed on the roof with a large capacity (300 to 1,200CMM)
- Designed as a small white smoke removal system to be installed inside (FAB), not on the roof of the buildings



■ Plasma Scrubber

- Equipment that processes toxic gas generated in the semiconductor production process inside the FAB (primary scrubber or P.O.U. (Point of Unit))
- Secured Own technological capabilities using plasma
- Easy installation and system implementation through miniaturization and standardization

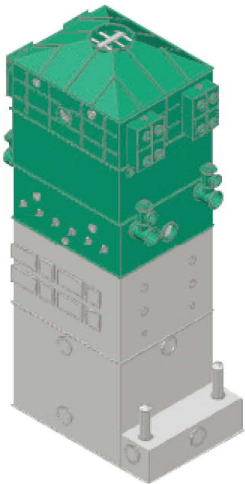
■ Nano Powder Manufacturing System

- Equipment that produces metal (nickel) nano powder using high-temperature plasma
- Used as a powder for MLCC electrodes
- Nickel powder production Equipment used in the MLCC (Multi-Layer Ceramic Capacitor) process
- System verification completed through the development of proprietary plasma technology



Usage

Fine particles and harmful white smoke removal device with harmful gas removal performance results that are greater than 3 times better than conventional scrubbers by aggregating fine particles that are difficult to collect with water droplets of strong dielectric properties, using the electrostatic dielectric method on harmful exhaust gas emitted after manufacturing semiconductors in general industrial facilities



■ Core Technology

- Harmful white smoke removal efficiency
- Secured power supply design technology
- Secured fine spray technology
- Secondary pollutant removal and prevention of civil complaints
- Eco-friendly technology company image enhancing

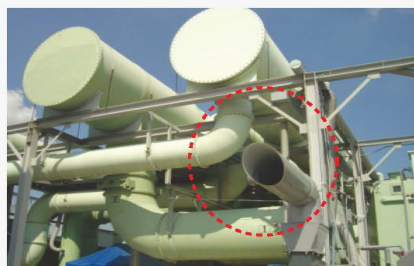
■ Features

- Efficiency verified for dust and harmful white smoke through 15 years of product delivery – electrically stable design and perfect high voltage control
- Easy maintenance and repair · Self-cleaning system applied
- Customized design and manufacture according to the on-site situation

Before Operation



After Operation



The Efficiency of Approximately 96% or Higher

Outline

Unlike the large-sized WET-EP installed on the roof, this equipment is installed inside the FAB and can be swapped out without affecting the main process through the installation of the back-up line during P.M. and maintenance, improving production and preventing air pollution.

Features

- Designed to be installed inside semiconductor factories as a small WET-EP system of 5 to 300CMM
- Problems of installing the existing, large-sized ones on the roofs of semiconductor factories (lack of space, installation difficulty due to equipment load, and pipe clogging inside the FAB) are solved by installation inside (FAB)
- Minimized size (2M*2M*2M) implemented (5CMM based)

Applied Areas

- Able to be installed in domestic and overseas semiconductor and LCD buildings (FAB)
- DEMO facilities planned for an Austrian semiconductor company.

Processing Capacity	500CMM *Available by specification (300 to 15,00CMM)
Equipment Size	2,000 x 2,000 x 2,000 (H)mm
Power Consumption	15 kW.hr
Superficial Velocity (Design Velocity)	1.0m/s
Pressure Loss	30mmAq or less
Discharge Method	Corona discharge (Pin discharge)
Heater	Cartridge Type(3kw/4ea)
Purge blower	30 CMM×170 mmAq, 2.2kW
Precipitation Transformer Rectifier	40KV/100mA
TR Control panel	Built-in
PLC Control panel	Built-in
MCC Panel	Built-in
Precipitation Unit Weight	2t



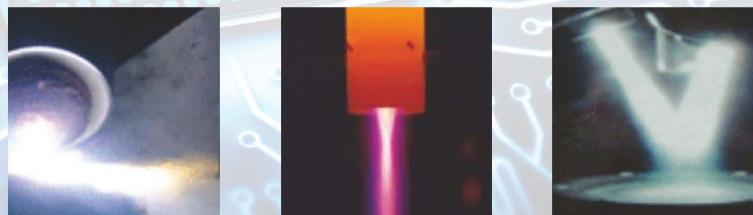
The equipment that processes harmful gas generated through the semiconductor production process inside the FAB before being discharged as exhaust (for explosive, toxic, and corrosive gas treatment purpose).



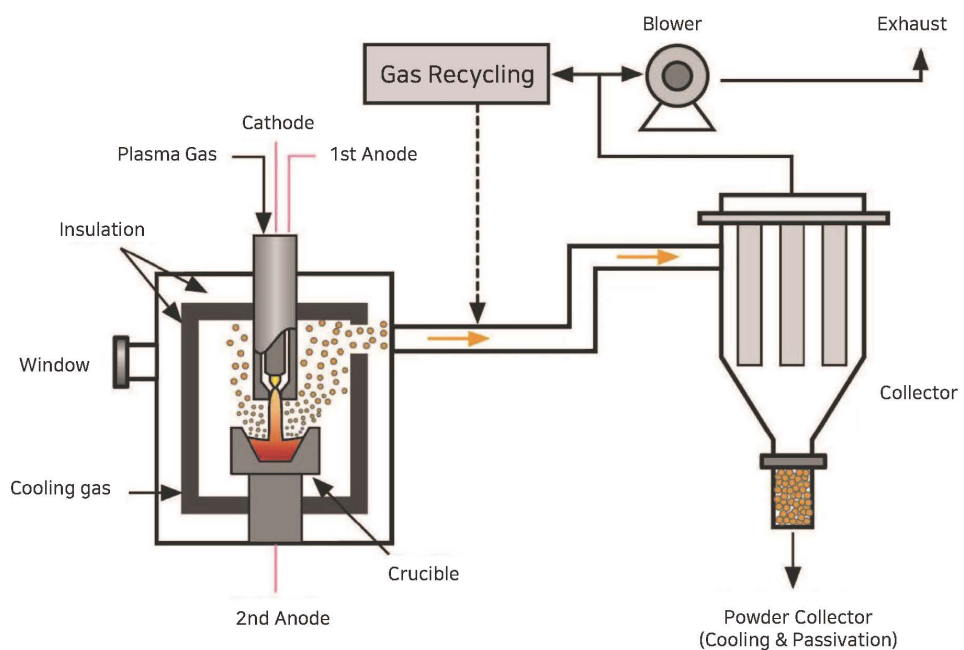


Production equipment using plasma technology that generates arcs in the torch to heat nickel (balls and crowns) to 3,000°C or higher to generate powder from melting nickel to be made into nano-sized powder using oxygen and nitrogen.

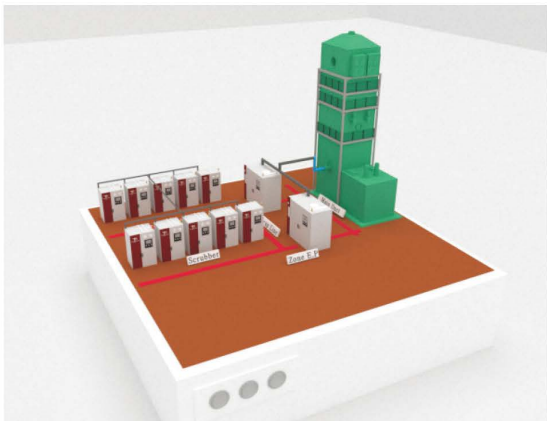
Plasma flame designed for powder production



Nano Powder Manufacturing Process



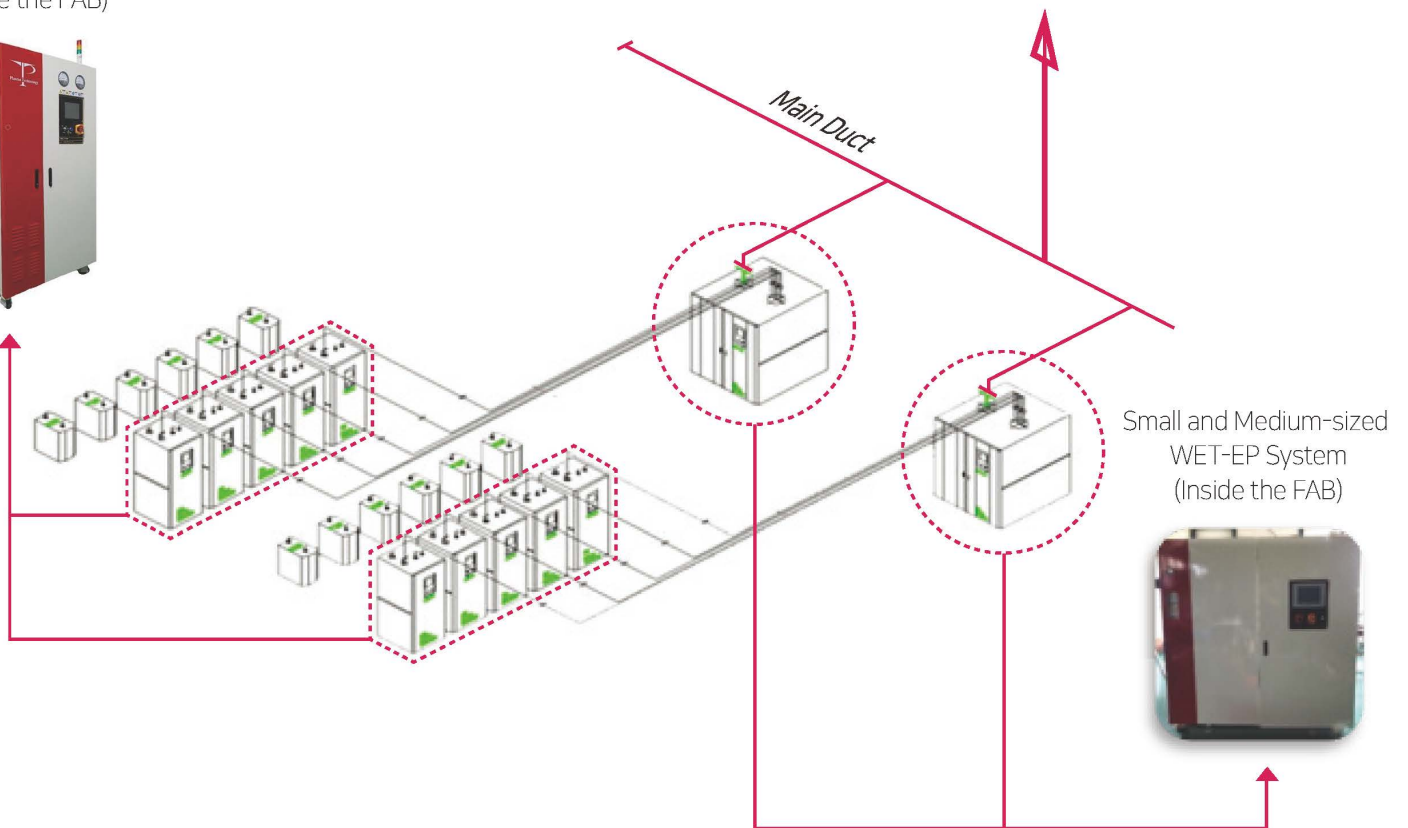
- Large quantity of fine particles are generated through the process of decomposing and treating gas generated in the semiconductor FAB process in the primary scrubber and treated in the small and medium-sized WET-EP system
- Equipment capacity is designed for 5 to 300CMM according to the number of primary scrubbers

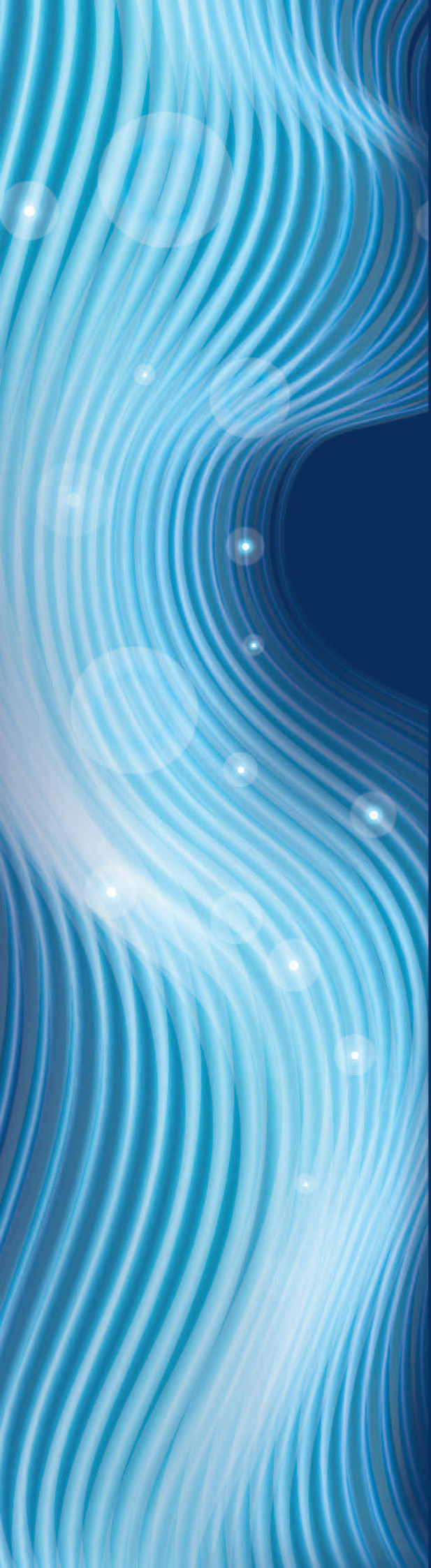


Primary Scrubber
(Inside the FAB)



Large-sized WET-EP System
(Roof Outside the FAB)





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