



**XINHUAXIA**

## **COMPANY & PRODUCT INTRODUCTION**



**SERVICE / SPEED / SUPERIORITY**



**XINHUAXIA**

### **XINHUAXIA ENGINEERING PRIVATE LIMITED**

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**XINHUAXIA ENGINEERING PRIVATE LIMITED**

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## INTRODUCTION COMPANY PROFILE

### INTRODUCTION

#### ► Construction

- Company name: Shaanxi XinhuaXia Construction Co., Ltd.
- Date of establishment: May 14, 2015
- Registered capital: RMB 80 million
- Main business :  
General contracting, electromechanical installation, clean room (Engineering Design, Civil Engineering, Equipment, Electric Power Engineering, UHP Pipeline Engineering)



#### ► Equipment Manufacture

- Company name:  
Shanghai XINHUAXIA Semiconductor Equipment Co., Ltd.
- Date of establishment: Jan 23, 2018
- Registered capital: RMB 50 million
- Main business :  
Central Chemical Supply System, Scrubber, Gas Cabinet, Cleaner and other equipment manufacturing



### LICENSE & CERTIFICATES

- General contracting of Mechanical and Electrical engineering construction Level 2
- General contracting of Construction Works Level 3
- General contracting of Petrochemical engineering construction level 3
- Steel Structure engineering professional contracting level 3
- Pressure Piping installation GC2
- Electronic and Intelligent engineering professional contracting Level 2



# INTRODUCTION

## DEVELOPMENT MILESTONES

**2015**  
May

Shaanxi Xihuaxia Construction Co., Ltd. was established

**2017**  
May

Wuxi Branch was established

**August**  
Environmental safety quality certification

**2019**  
May

- Petroleum, Electronics, Construction Engineering, Steel Structure Engineering Professional Contracting Qualification
- XINHUAXIA ENGINEERING PRIVATE LIMITED Was established

**2022**  
March

Hefei Branch was established

**2016**  
March

Safety production license

**May**

Construction enterprise qualification certificate

**2018**  
January

- General contracting of mechanical and electrical engineering construction Level II
- Shanghai XINHUAXIA Semiconductor Equipment Co., Ltd.

**June**

Capital increase to: RMB 80,000,000

**July**

Pressure piping is installed with GC2 certification

**2020**  
June

Shanghai Branch was established

# BUSINESS FIELDS

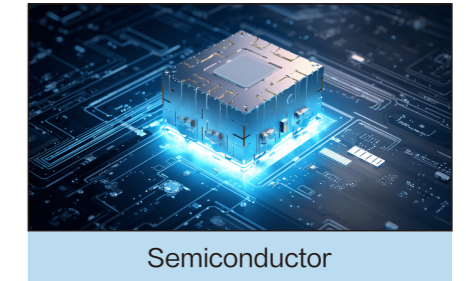
## CONSTRUCTION



Chemical Plant



Industrial Plant



Semiconductor



Solar Green Energy



Display



Bio & Pharmaceutical Industry

# BUSINESS FIELDS

## SEMICONDUCTOR

### System Design

Providing services related to process equipment, cleaning systems, and central chemical supply systems in the semiconductor, display, and solar industries, including design, manufacturing, installation, commissioning, equipment sales, and post-sales customer support (CS).

- Gas Equipment
- CCSS Equipment
- Cleaning Equipment

### Equipment Manufacturing

Xihuaxia possesses proprietary core technologies and competitive strengths, and through continuous innovation and improvement, it is growing into the most competitive and specialized semiconductor equipment company.

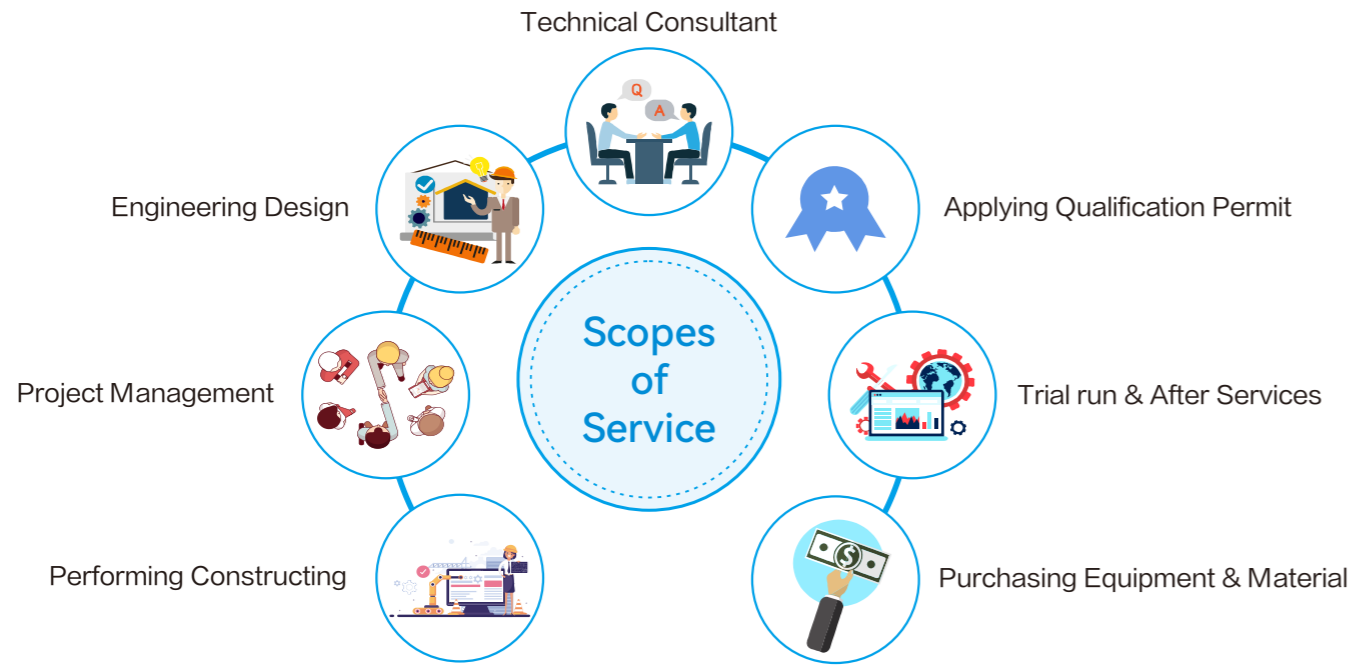
- Semi /Display Panel
- Green Energy (Solar/LED)
- Other Industrial Equipment

### Environmental Equipment

Actively responding to global environmental protection policies, we continuously invest in the research and development of environmental equipment and make ongoing contributions to societal progress through our expertise and specialized technologies.

- Scrubber and other waste treatment equipment

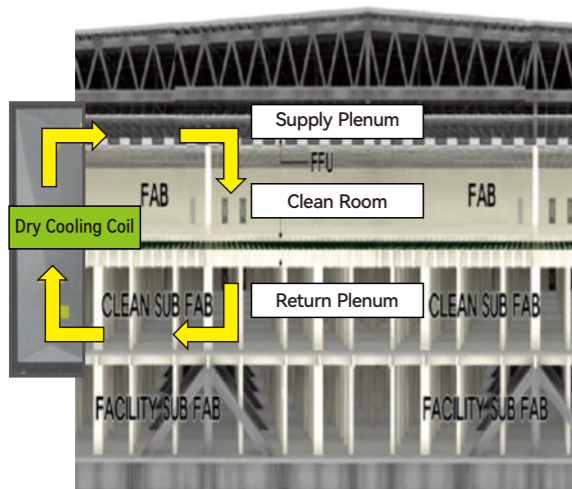
# SCOPES OF SERVICE



# SCOPES OF SERVICE

## CONSTRUCTION SERVICE - CLEAN ROOM & HOOK-UP

### CLEANROOM CONDITION



- ① Cleanliness:
  - Process, Working, Service Area: 0.1 $\mu$ m, Clean Class Below 1~1,000
- ② Temperature Conditions: 23 $^{\circ}$ C  $\pm$  0.5 $^{\circ}$ C
- ③ Humidity Conditions: 45%  $\pm$  5%
- ④ Noise Conditions: Below 65dB
- ⑤ Vibrational Conditions:
  - General Zone: Amplitude 1.0 $\mu$ m, Acceleration Below 1.0gal
  - Photo Zone: Amplitude 0.2 $\mu$ m, Acceleration Below 0.4gal

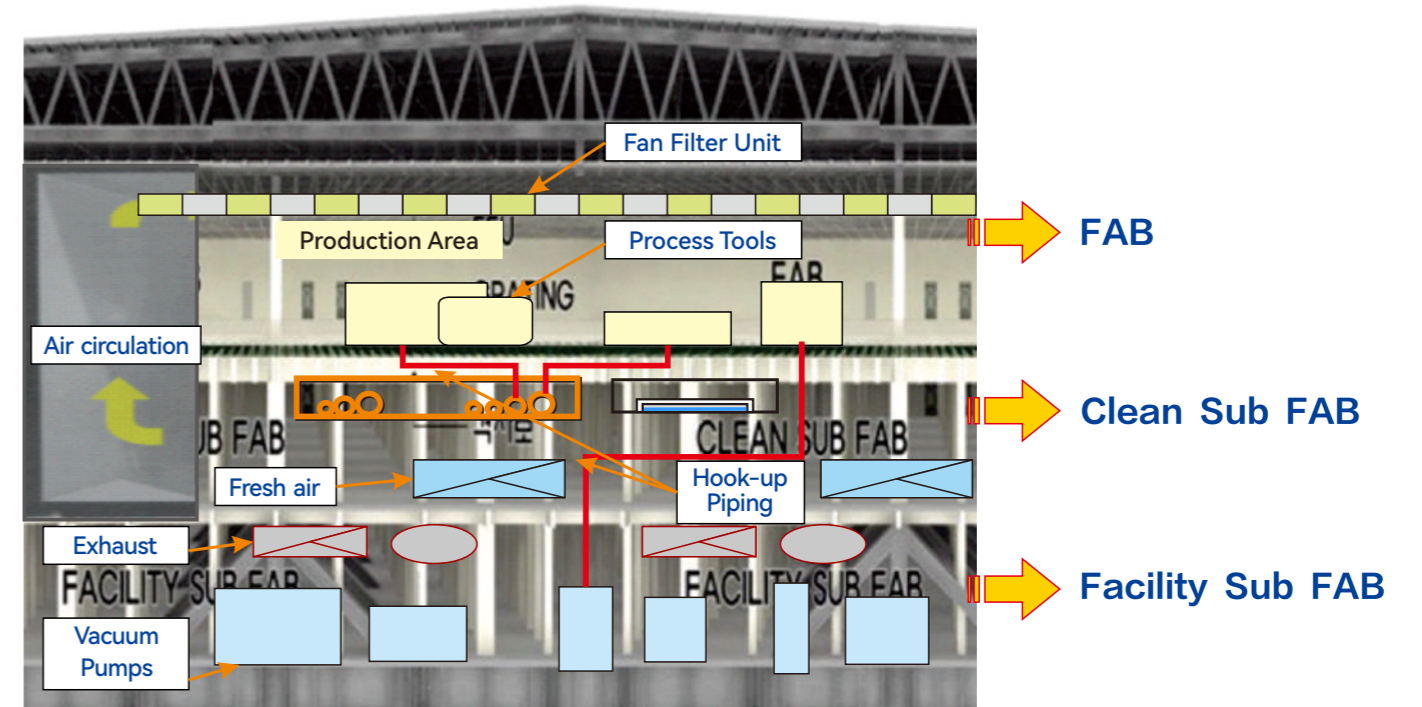
※ 1 gal = 1 cm/sec<sup>2</sup>

※ The cleanroom structure has evolved from a two-layer structure of 300mm fab (~2003) to FAB+Sub Fab, but from another 300mm fab (2004) to with the increase of device density, Sub FAB is divided into two layers based on the degree of particle generation and maintenance, and converted into a three-layer structure of FAB+Clean Sub FAB+Facility Sub FAB.

# SCOPES OF SERVICE

## CONSTRUCTION SERVICE - CLEAN ROOM & HOOK-UP

### MAIN FAB (FAB+CSF+FSF)



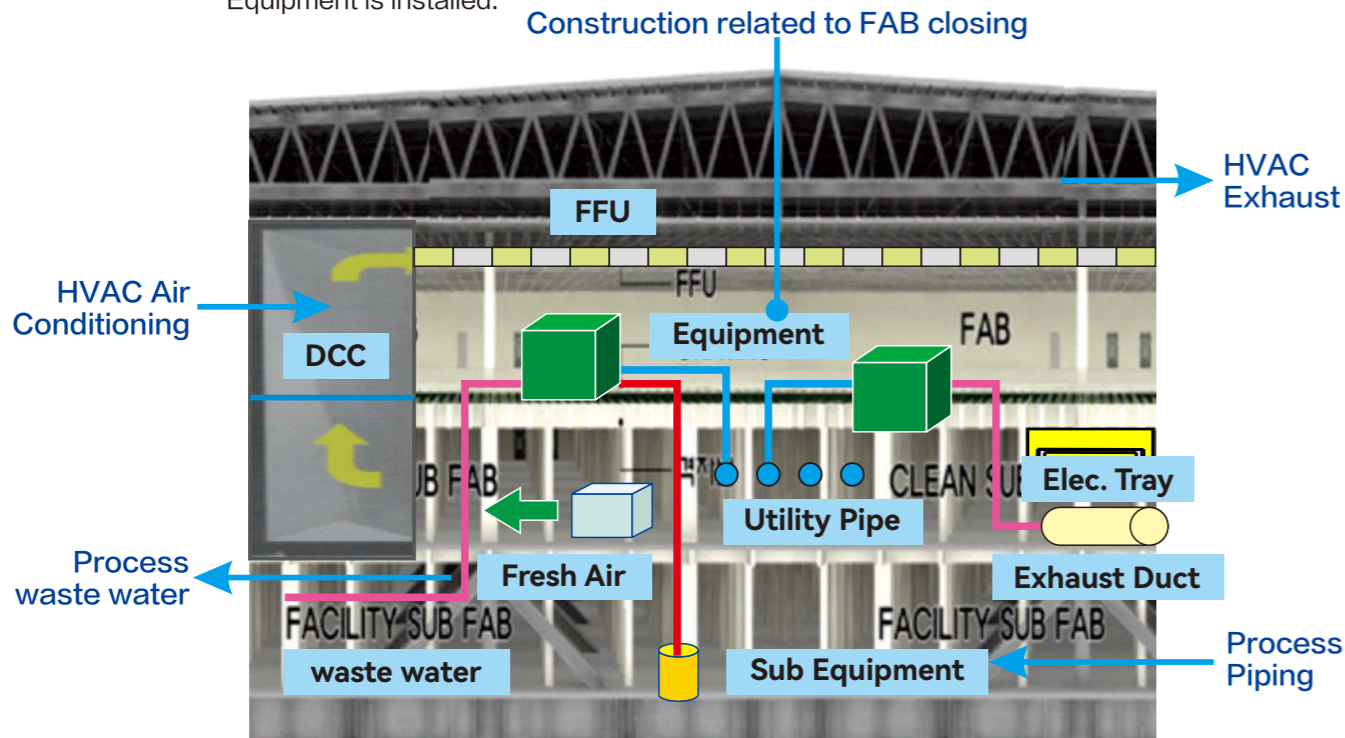
Division	Function	Management point during construction
FAB	<p>&lt;Equipment - Clean Room&gt;</p> <ul style="list-style-type: none"> <li>• Production equipment for each process, such as wafer processing, is located</li> <li>• The core space of the clean room</li> </ul>	<ul style="list-style-type: none"> <li>• Satisfy clean room conditions (cleanness, non-vibration, temperature/humidity)</li> <li>• System Ceiling and A/F Baseline Matching</li> <li>• S/C, A/F Level Management</li> </ul>
Clean Sub FAB	<p>&lt;Equipment Facilities-Clean Room&gt;</p> <ul style="list-style-type: none"> <li>• Facility to supply utility to production equipment is located</li> </ul>	<ul style="list-style-type: none"> <li>• Prevention of leakage of ducts and various pipes</li> <li>• Paint adhesion (preventing fall)</li> <li>• Measures to prevent inflow of pollutants during PCW construction</li> <li>• Gas Construction Particle Management</li> </ul>
Facility Sub FAB	<p>&lt;Equipment Processing Facility - General&gt;</p> <ul style="list-style-type: none"> <li>• Utility supply and exhaust treatment facilities are located in FAB and CSF</li> </ul>	<ul style="list-style-type: none"> <li>• Utility Piping Leak</li> <li>• Acid/Alkali FRP Duct joint</li> <li>• Wastewater PE pipe joint fusion time</li> <li>• Minimize Busduct measurement error and manage bolt tightening (CSF same)</li> <li>• Floor Roof Concrete Crack Prevention</li> </ul>

# SCOPES OF SERVICE

## CONSTRUCTION SERVICE - HVAC, UTILITY

### ► Construction related to FAB closing

- System ceiling : Installation of FFU and Structures to Supply Clean Air in Clean Room.
- Access floor : Under Structure Installation Construction for Floor Configuration in which Manufacturing Equipment is installed.



### ► HVAC Air Conditioning

- Air conditioning and temperature and humidity control in the room.
- A/C Outdoor unit: Supply fresh air indoors to meet indoor temperature and humidity / cleanliness standards.
- DCC: Equipment for Heat Load Control of Indoor Production Equipment by Dry Cooling Coil Construction.

※HVAC: Heating, Ventilating, Air Conditioning.

### ► Process waste water

Piping work that transfers various chemicals generated from the production line from the production equipment to the treatment plant.

### ► HVAC Exhaust

Gas treatment facilities and duct work generated in production processes such as heat/general, acid/alkali, and organic exhaust.

### ► Process Piping

- Supply the utility required for production.
- Gas : Facilities and plumbing to refine and supply PA, HPA, GN<sub>2</sub>, H<sub>2</sub>, O<sub>2</sub>, Ar, He, PN<sub>2</sub>, AIR, IA.
- PCW : Cooling facilities and piping works for the purpose of removing heat from production equipment.
- PV : Inhalation facilities and plumbing works used for wafer fixation/movement.

※PCW: Process Cooling Water.

※PV: Process Vacuum.

# SCOPES OF SERVICE

## CONSTRUCTION SERVICE - ELECTRIC

### ► High-Tech Electrical Engineering

- High-quality (voltage stabilization, uninterruptible, etc.) power facility construction to provide stable power to semiconductor production line.

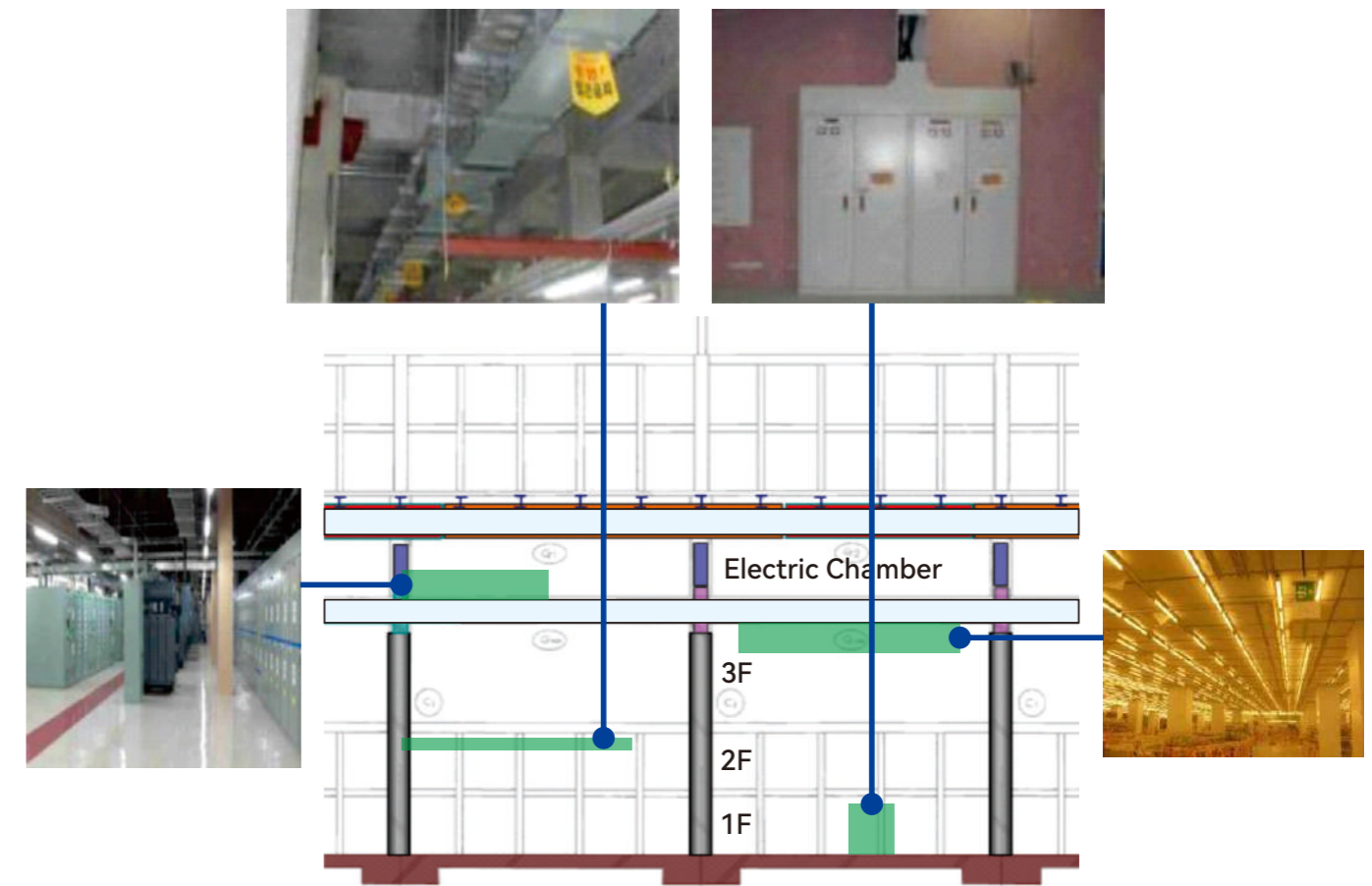
### ► Bus Duct (1,2F)

A system capable of transmitting more electrical energy than a cable in the same volume.

- Great systems for large-scale integration.

### ► Power Line (1,2F)

A system that stably supplies the necessary electrical energy from the electric room to the production equipment in the factory.



### ► Water Substation Facility (Electric Chamber)

Equipment for converting electric energy received from KEPCO into voltage suitable for production equipment in the factory.

### ► Mold Bar Light (3F)

Clean Lighthouse Application for Cleanroom.

# SCOPES OF SERVICE

## SEMICONDUCTOR SERVICE - EQUIPMENT

### PRECISION CHEMICAL SYSTEM

XINHUAXIA specializes in precision chemicals tailored for solar panel and semiconductor applications, manufacturing ultra-high-purity chemical solutions specifically designed to meet the rigorous requirements of these advanced industries.

H3PO4 Production System	G3	Solar	PSG Removal, Etching
HF(49%) Production System	G3 / G5	Solar, Semiconductor	Texturing, Cleaning
Photo Resister Production System	G3 / G5	Solar, Semiconductor	Masking, Coating
Precursor Production System	G3 / G5	Solar, Semiconductor	Doping, Surface Treatment

XINHUAXIA HF (hydrofluoric acid) system is a high-purity HF supply system used for cleaning and texturing silicon wafers in the solar panel manufacturing process. It is designed to ensure the safe and efficient handling of hydrofluoric acid.

#### ► Features

- Use of high-purity electronic-grade HF ( $\geq 49\%$ )
- Special corrosion-resistant materials (Monel, PTFE, etc.)
- Automated flow control system
- Built-in safety sensors and alarm systems
- Remote monitoring capability

#### ► Applications

- PSG (Phosphosilicate Glass) Removal
- Silicon Wafer Surface Cleaning
- Etching Solution Composition for Texturing Process

#### ► Specification

- HF Concentration:  $\geq 49\%$
- Flow Rate: 0.5~5L/min (adjustable)
- Operating Temperature: 20~25°C
- Power Consumption: 3kW



# SCOPES OF SERVICE

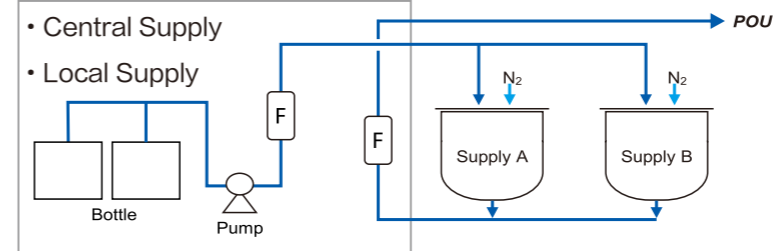
## SEMICONDUCTOR SERVICE - EQUIPMENT

### CCSS : CENTRAL CHEMICAL SUPPLY SYSTEM

#### ► Features

- Large-capacity design suitable for solar energy.
- Safety: Ensuring the safety of storage and supply methods.
- Various designs based on chemical usage requirements.
- Economic Efficiency: Improving management efficiency in the receipt, storage, and supply of chemicals.
- Stable Supply: Timely delivery, appropriate quantities, and point-to-point distribution.
- Central Control: Ensuring operational safety of equipment through centralized control.

#### ► Specification



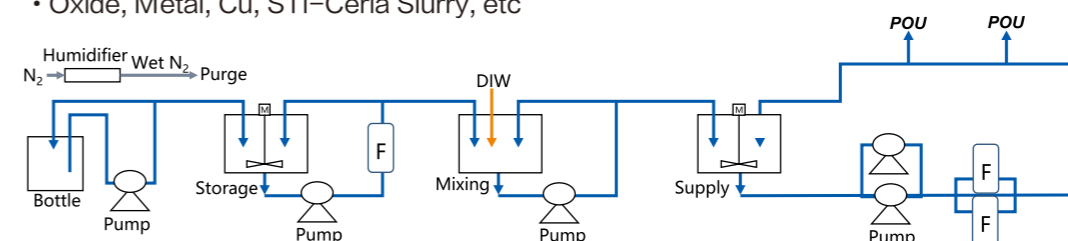
### SDS: SLURRY DISTRIBUTION SYSTEM

#### ► Features

- Reduced dead point, reduced agglomeration and Sedimentation -Circulation for all sections.
- When mixing, measure using load cell and improve mixing.
- Precision through precise measurement.
- Ensuring the stability of supply flow and pressure in Loop.
- Prevention of floor contamination by using the bottom shower when replacing the bottle (drum).

#### ► Device Type

- Oxide, Metal, Cu, STI-Ceria Slurry, etc



# SCOPES OF SERVICE

## SEMICONDUCTOR SERVICE - EQUIPMENT

### GAS SCRUBBER

Dry-Adsorbent	Heat-Wet	Burn-Wet	Caralyst-Wet	Plasma-Wet	Wet Type
					
50L/100L/200L	500slm, 1000slm, 3500sl, 4000slm	500slm	700slm, 2000sml, 3000sml	500slm	500slm, 1500slm
NH <sub>3</sub> , CL <sub>2</sub> , HCL, SiH <sub>4</sub> , BCL <sub>3</sub> etc.	ALD, CVD (PE, MO, HDP, SA etc.) DIFF, LCD	CVD, DIFF, PFCs Treatment	ALD, CVD (PE, MO, HDP, SA etc.) DIFF, LCD	CVD, Etch (Oxide, Poly), PFCs Treatment (CxFy>90%, SF <sub>6</sub> >95%)	Metal Etch / Epi Process

### GAS CABINET

#### ► Features

- Optimized design for solar manufacturing processes.
- Reduced gas consumption and operational cost savings.
- High purity and stable gas supply.
- Safety and Reliability in Design
- Tailored solution for the Solar Industry
- Fast an Easy maintenance system
- Eco-friendly design

#### ► Specification

- System configuration: 1 bottle to 4 bottle (Explosion-proof / Non-explosion-proof types)
- Supply modes: Full Auto type, Semi Auto type, Manual type.
- Control methods: PLC & Touch screen
- Supply capacity: up to 40 SLPM for containers of 49liters or letter
- Supply pressure: 0.1 Mpa to 0.9 Mpa.



# SCOPES OF SERVICE

## SEMICONDUCTOR SERVICE - EQUIPMENT

### LDS (LIQUID DELIVERY SYSTEM FOR SOLAR)



► N<sub>2</sub> Purge Concept(For Solar)  
Application: Corrosive precursor Material of all component is TEFLON PoCl<sub>3</sub>, BBR<sub>3</sub>...



► Solvent Purge Concept (Large Bulk For Solar Cell)  
Application: TMA, Zr, Hf

#### ► Features

- Automatic supply and pure capability
- Continuous chemical supply
- Solvent purge mechanism
- Apply low vapor pressure, High flash point precursor
- Apply trap to prevent chemical vacuum out
- Reduced the chemical cost through lower chemical during change out for empty canister
- Liquid spill, UV / IR, Hi-Temp, GAS / Smoke detector, N<sub>2</sub> Shower extinguishing – Safety device
- Apply heater for chemical supply line
- Large bulk applicable

#### ► Specification

- Dimension: 1370(W) x 1560(D) x 2172(H)
- Power: 208 VAC, 30A, 1Phase
- Supply line: 1/4" / 2 ~ 4Stick / Coaxial Option
- Controller: PLC: Omron / Touch M21, Preface
- Delivery concept:  
Bulk to Buffer Canister Refill  
Buffer to Process Canister Refill  
Process Canister to Main Tool Supply
- Change concept: Solvent Purge & PN<sub>2</sub> Cycle Purge
- Canister volume:  
Recycle Canister(~119L) Process Canister(12L)  
Buffer Canister(12L) Solvent Canister(2~38L)  
Waste Canister(2~38L)

### TUBE & TUBE FITTINGS



- High Purity Stainless Steel Pipe
- Ultra Clean, Clean EP, BA TUBE
- Maker: C&K
- Material: SS316L, SS304L – EP, BA
- Size : 1/8", 1/4", 3/8", 1/2", 3/4", 1"
- Application scope: Microelectronics, Semiconductor, Optical fiber, LED, TFT, Solar cell LED, Biological medicine field.



- COAX – EP/BA GRADES
- Ultra Clean, Clean Welding Joint
- Maker: C&K
- Material: 316SS,304SS,316LSS
- Size : 1/4" ~ 1"
- Application scope: Microelectronics, Semiconductor, Optical fiber, LED, TFT, Solar cell LED, Biological medicine field.

# ADVANTAGES OF XINHUAXIA

## WHY?

XINHUAXIA ENGINEERING PRIVATE LIMITED

Extensive experiences



Excellent technical staffs



Powerful networks



## COOPERATIVE PARTNER

