TECHNOFINE

Chemitronics Group

MEMS CORE

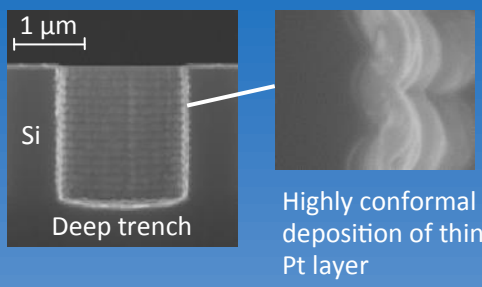
- **ALD system for research and development**
- **Capable of depositing both of multicomponent oxidation layers and a noble metal layer**
- **High uniformity coatings without pinhole for high aspect ratio 3D structures**

for Sublimable Precursor

- A dual purge system (steady purge and flush purge) enables sufficiently discharging precursors from gas supply lines.
- Transparent quartz glass bottles offer an opportunity to confirm the condition of precursors with visual observation.
- Precise temperature control prevent a adhesion of the precursor to the inside of the piping.

for Custmize

- Many ALD units corresponding to various vapor pressure of precursors and reactive gases are prepared.
- Freely attachable and detachable ALD units.
- A control program recognizes the constitution of ALD units and options automatically.



Highly conformal deposition of thin Pt layer

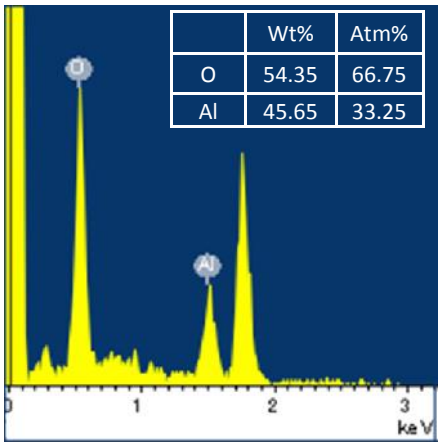
Atomic Layer Deposition System for Sublimable Precursor

TF-ALD Series

昇華原料対応原子層堆積装置

This system was developed based on the results of "Creation of Innovation Centers for Advanced Interdisciplinary Research Areas Program" in Tohoku University.

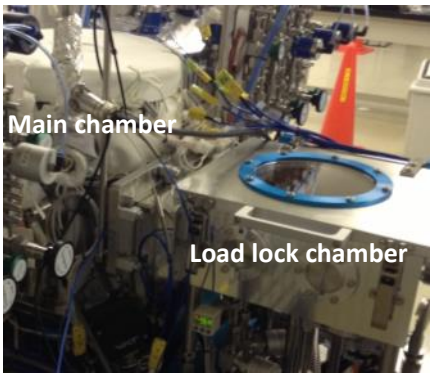
μSIC MicroSystemIntegrationCenter 先端融合



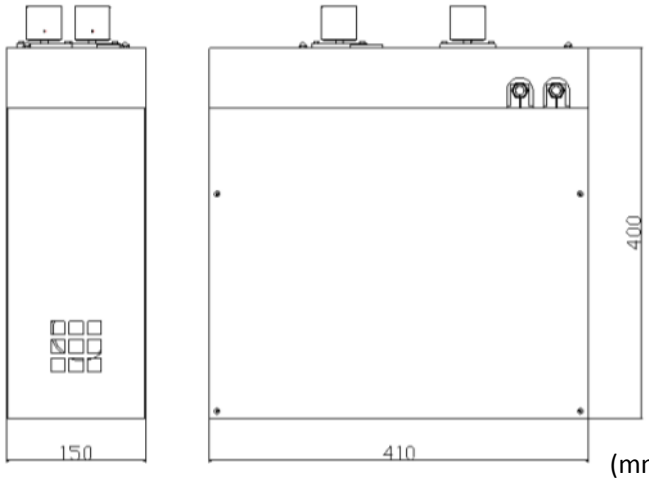
	Wt%	Atm%
O	54.35	66.75
Al	45.65	33.25

Analysis result of Al_2O_3 deposited by ALD

Glass bottle for precursors

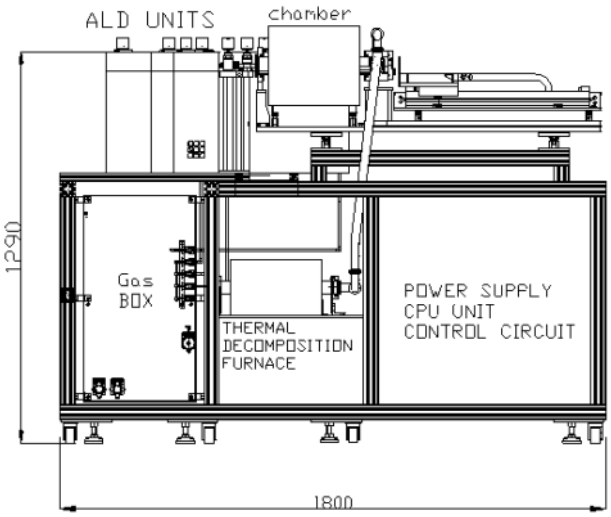


Deposition chamber for 6” wafer



(mm)

Dimensions of the ALD unit



(mm)

Dimensions of the ALD System for 2” wafer (Typical)

System Specifications	
Deposition Chamber type	Warm wall type or quarts glass tube type
Max substrate Size	ϕ100 mm, ϕ150 mm, ϕ200 mm (ϕ50 mm in quarts glass tube)
Deposition Modes	Flow mode, Exposure mode (W/ W/O steady purge)
Substrate Temperature	Warm wall type 300℃ Quarts glass tube type 380℃
Precursor	Up to 6 (Up to 20: option) RT～200℃(settable individually)
Reactive	Up to 3 (Up to 5: option) RT～200℃(settable individually)
Valves	RT～200℃(settable individually)
Carrier Gas	N_2 or Ar (Pressure control)
Purge Gas	Dual purge method Steady purge (MF control) Flush purge (Pressure control)
Vacuum Pump	Rotary pump
Options	TMP, Plasma assist, Load-lock chamber, glove box

Precursor unit, Reactive gas unit	
Type	Low vapor pressure, Middle vapor pressure, High vapor pressure. H2O/O2、Reactive gas unit (Pressure control, MF control)
Communication method	RS-485 (2 wire)
Controlled system	Temperature (Precursor bottle, valves, piping structures) Timing (Valve open/close, purge request, plasma assist, TMP)

* If you need, you can add precursor units and reactive gas units anytime.
* Only units are sold. Please contact us.

Utility	
Electric Power	100V MAX 60A 50/60 Hz (modifiable)
Carrier Gas	0.1～0.2 MPa
Compressed Air	0.6 ～0.8 MPa
Pump Exhaust Port	Less than -60 Pa

* For improvement purposes, specifications mentioned in this publication are subject to change without notice.

TECHNOFINE

For more information : info@technofine.jp
Technofine Co., Ltd.
Aza-monzen 21, Akiu-cho nagabukuro, Taihaku-ku Sendai-shi, Miyagi, 982-0243, Japan
TEL:022-399-2360 FAX:022-399-2380 www.technofine.jp
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