

# ALDS - 3000

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## Atomic Layer Deposition System



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

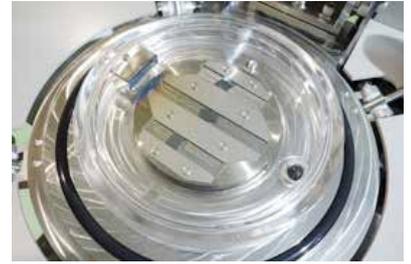
**Analytical Technologies Limited**

An ISO 9001 Certified Company

[www.analyticalgroup.net](http://www.analyticalgroup.net)

▶▶ **Reduced maintenance burden and internal volume made compact by a dual chamber structure (patent pending)**

The dual chamber structure has an outer hermetic chamber structure made from ATL3316 and a process area made from quartz. Since the process gas only comes in contact with the quartz chamber, excess deposits and sediments hardly occur on the ATL chamber side. In addition, since the quartz chamber can be taken out and reinserted very easily, maintenance tasks such as cleaning can be performed easily. This structure reduces the maintenance burden and downtime and contributes to the enhancement of R&D activities. Furthermore, it is possible to significantly reduce the volume inside the effective chamber, which leads to elimination of dead space and shortening of the completion time.



▶▶ **Realization of optimal temperature management by integrating our accumulated solutions for heating**



By integrating our heating solutions that have been cultivated over time, we have achieved optimum and safe temperature control ranging from material vaporization to exhaust.

**1) Multi-zone heating of precursor bottles**

We perform heat management by dividing the precursor bottle into multiple zones according to the vaporization characteristics of the precursor inside. This reduces the risk of thermal decomposition of the precursor, achieves particle-free processing without bubbling, and reduces the amount of residual gas.

**2) Optimal temperature control of supply and exhaust lines**

The supply and exhaust lines are equipped with our proprietary Easy Trace heaters, which achieve an improved temperature distribution and a compact, space-saving design. In addition, the heating control area is subdivided and optimized to prevent wasteful heating and deposits, and each control area has various monitoring functions that are independent of each other to prevent accidents caused by heaters.

**3) Heat stage using Hi-Watty (AIN heater)**

The heat stage for substrate heating is equipped with our Hi-Watty heaters, and the extremely fast heating performance reduces the preparation time until the process starts.

#### 4) Carrier gas and purge gas temperature control by WEX

We adopt the WEX (heat exchanger), our popular original product, in the purge and carrier lines, and the supply of heated gas prevents temperature drop and controls the temperature of the mixing gas. Our WEX has high clean performance and does not compromise the purity of the supplied gas or material.



#### ▶▶ Various customization and safety structure

There are no catalog models with fixed specifications among our deposition equipment. Starting from the base model, we work out the specifications together with the customer each time and offer products that will match the customer needs. Even for the safety specifications, we ensure the safety of our customers and the equipment through monitoring using various hard interlocks and soft interlocks.

As an example of customization, we will satisfy any kind of request, including cases where:

- You want to change the size of the apparatus.
- You want to avoid duplication where we already have installed equipment (less option).
- You want to strengthen the ancillary equipment (gas detector, ozonizer, N<sub>2</sub> purifier, etc.)
- You want to exchange signals with other devices and equipment (external interface).
- You want to satisfy original safety standards.
- You want to increase the number of film deposition species (adding a precursor).

Besides this, we will meet all your requests.

Equipped with our proprietary dual chamber structure, deflection nozzle, and heat stage mechanism, we realize high-quality film deposition and reduce maintenance burden. Moreover, by having various ancillary equipment that in the past had to be organized by the user as standard inclusions, we minimize the capital investment costs associated with equipment installation. We also have various other features to meet the diverse needs of users.

#### **Various demo machines are in operation!**

A demonstration machine is always kept in our Sagamihara Plant. Please contact our sales department for inquiries regarding this demo machine and intent to visit or for consultation on commissioning of deposition tasks.

#### **ALDS system supporting Thermo/ALDS now on sale!**

We are earnestly developing a ALDS deposition system for mass production. The first machine will be installed as a demonstration machine in our Sagamihara Plant. Please contact our sales department for inquiries regarding this equipment, visits and requests for test film deposition.

## ►► Specification

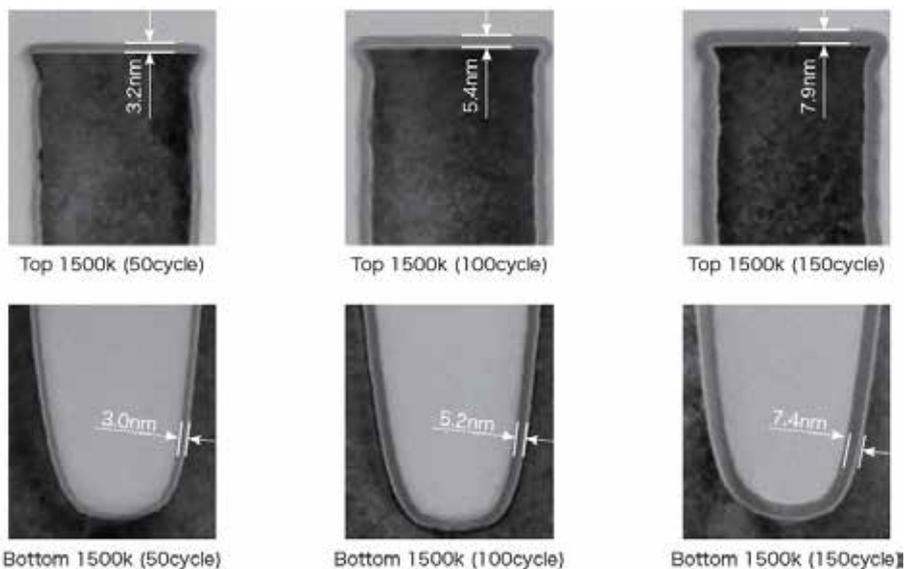


<b>Process</b>	Thermal Atomic Layer Deposition
<b>Chamber configuration</b>	Dual structure chamber
<b>Work size</b>	Max 2inch
<b>Deposition temperature</b>	Ma 400°C
<b>Deposition pressure</b>	1 Pa or more
<b>Film formation species</b>	Oxide film or nitride film of organic metal material • Oxide film and nitride film can not be used together in the same device.
<b>Process chamber</b>	ATL3316 original for 8inch (optional 6inch available)
<b>Film formation species</b>	Oxide film (can be used for nitride film by changing the specification)
<b>Substrate temperature</b>	Best 500°C
<b>Deposition pressure</b>	1 Pa or more Final pressure $8 \times 10^{-2}$ Pa
<b>Plasma output</b>	Up to 1 kW
<b>Plasma gas species</b>	Ar O <sub>2</sub> H <sub>2</sub>
<b>Precursor</b>	3 types available
<b>Installed equipment</b>	APC (independent exhaust of precursor and reducing agent) Ar purifier ALD monitor other

## ►► Example of film formation:

•Al<sub>2</sub>O<sub>3</sub> •TiO<sub>2</sub> •HfO<sub>2</sub> •ZrO<sub>2</sub> •TiN •AlN etc

## ►► Deposition sample image:



## HPLC Servicing, Validation, Trainings and Preventive Maintenance :

**HPLC Servicing** :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

**Trainings** :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

**AMC's/CMC** :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

**Validations** :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

**Instruments** :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



## About Analytical Technologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

## Our Products & Technologies



UV/VIS Spectro 2080+ Double Beam



Infra FTIR



Optima Gas Chromatograph 3007



Optima Gas Chromatograph 2979 Plus



Flash Chromatograph



Atomic Absorption Spectrophotometer



Liquid Partical Counter



Optical Emission Spectrophotometer



DSC/TGA



Semi Auto Bio Chemistry Analyzer



HEMA 2062 Hematology Analyzer



Micro Plate Reader/Washer



URINOVA 2800 Urine Analyzer



Total Organic Carbon 3800



Fully Automated CLIA



NOVA-2100 Chemistry Analyzer



PCR/Gradient PCR/ RTPCR



TOC Analyzer



Laser Particle Size Analyzer



Ion Chromatograph



Water purification system

## Regulatory compliances



## Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



# Analytical Foundation

1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at [Info@analyticalfoundation.org](mailto:Info@analyticalfoundation.org)

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

## Reach us @



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