

Atomic Layer Deposition Market, Size, Share, Growth, Evaluation, 2021-2028 | DataM Intelligence

The Global Atomic Layer Deposition Market is expected to grow at a CAGR of 38.5% during the forecasting period (2021-2028).



Alameda, California Nov 3, 2021 ([Issuewire.com](https://www.issuewire.com)) - Market Overview

Atomic layer deposition is a technique performed in the vapor phase, which is used to deposit thin films onto a substrate. The majority of the ALD reactions are performed using two chemicals called

precursors. Numerous chemicals are made to react with the surface material during a reaction, and all the steps are performed that create a thin film.

ALD is in greater demand for products such as data storage devices and small electronic components and displays, where the film thickness is imperative. Owing to such a wide application range, ALD becomes a popular tool for developing nano-coatings, thin films, and fabricating semiconductor devices. Apart from this, ALD applications include deposition of the gate oxide, microelectronics, deposition transition-metal nitrides, metal films, etc.

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Market Dynamics

The global atomic layer deposition market is driven by the massive demand for the product in semiconductor & power converting systems. ALD is gaining popularity in biomedical applications for creating flexible sensing devices. Also, ALD is increasingly being used in lithium batteries as it can store a large amount of energy in a compact size.

Massive demand for the product in semiconductor & power converting systems

The ALD market is driven by increasing electronic industries and semiconductor solutions in various global parts. ALD plays a vital role in the fabrication of microelectronics due to its excellent ability to produce accurate thickness and uniform surface coupled with a high quality of film production using various materials.

ALD is a potential technique used to deposit high k-memory capacitor dielectrics, high k-gate oxides, ferroelectric, and metals for electrodes and interconnects. The demand for semiconductors is expected to accelerate by increasing the demand of the automotive industry's growing demand for electronic components in the automotive industry and directly boosting the ALD market.

Apart from these, several products such as MOSFET gate stack, DRAM capacitors, magnetic recording heads, nonvolatile ferroelectric memories, and others use ALD as the primary technique. For instance, in 2017, Forge Nano announced its assembly exclusive intellectual property right to produce safer and longer Li-ion battery products. The company used its breakthrough high throughput ALD coating technology.

Segment Analysis:

By Type

- Precursor Type
- Material Type
- Film Type
- Others

By Product

- Aluminum Oxide
- Plasma Enhanced
- Catalytic

- Metal
- Others

By Application

- Solar Panels
- Semiconductor
- Flat Panel Display
- Magnetics Heads
- Fuel Cell
- Medical Equipment
- Research and Development Facility

By Region

- North America
- Europe
- South America
- Asia Pacific
- The Middle East and Africa

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Competitive Landscape

The atomic layer deposition market is highly fragmented with the presence of limited global companies. Some of the key players contributing to the market's growth include Lam Research Corporation, Applied Materials Inc, ASM International NV, KLA Corporation, Tokyo Electron, Hitachi Kokusai Electric Inc, Novellus Systems Inc, Oxford Instruments plc, Cambridge NanoTech Inc, Sigma-Aldrich and among others.

The major players adopt several growth strategies such as product launches, acquisitions, and collaborations, contributing to the atomic layer deposition market's global growth. However, the players in this market follow product launch as the key growth strategy. For instance, in 2018, Picosun announced the PicoMedical solution for the healthcare sector, and with this new launch, completely is planning to target the healthcare market.

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