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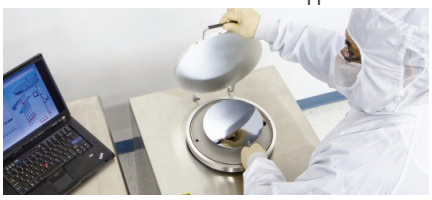
High-Tech Distribution and Consulting

merconics is a competent and experienced partner for the distribution of advanced capital equipment and process materials for the European semiconductor, photovoltaic industry, printed elctronics and related markets. The systems of our principals can be used in a variety of segments of the above-mentioned markets, such as advanced chip or solar components manufacturing and respective R&D activities. We focus our efforts on providing solutions that enable our customers to meet today´s challenging technology and manufacturing requirements.

>focus< today on Cambridge NanoTech

Cambridge NanoTech a Cambridge, Massachussets based company develops and manufactures equipment for Atomic Layer Deposition (ALD) of ultra thin films for semiconductor and related applications.



Founded in 2003 by Dr. Jill S. Becker, Cambridge NanoTech grew directly out of one of the foremost ALD research groups in the world; the Gordon Lab at Harvard University.
As the established market leader of Atomic Layer Deposition (ALD) solutions, Cambridge NanoTech has over 300 ALD systems installed in research and manufacturing settings worldwide. Cambridge NanoTech ALD systems are the platform of choice for flexible research and high performance production. With unparalleled support, Cambridge NanoTech experts collaborate with customers to apply thin film techniques to unique coating challenges, acting as a catalyst for new applications worldwide.

Atomic Layer Deposition Background
Atomic Layer Deposition (ALD) offers precise control of depositions down to the atomic scale. It is used to deposit thin films with special properties. The principle of ALD is based on sequential pulsing of two chemical precursor vapors, which form about one atomic layer during each sequence. This generates pinhole free coatings that are extremely uniform in thickness, even deep inside pores, trenches, and cavities. A wide variety of thin films can be deposited using gas, liquid, or solid precursors. Applications include semi & nanoelectronics, optical, MEMS, wear resistant applications, nanostructures, chemical, and others.

Savannah™
The Savannah™ ALD series ist a compact, inexpensive ALD system for flexible R&D work. It´s ease-of-use enables scientist worldwide to develop new ALD processes for advanced applications.

Fig. 1 Cambridge NanoTech Savannah ALD system

Savannah ALD systems are recognized for superior film quality. Such precise control is the result of meticulous design and experience that can only come from knowledgable ALD experts.
Savannah systems provide digital control of your thin films which grow one layer at a time and can be controlled to accurate thicknesses.
Two deposition modes allow precise control of your films from the nano scale to the micro scale. Our unique Exposure Mode™, combined with our proprietary precursor delivery system and precise temperature control, enables conformal film growth on ultra-high aspect ratio features (greater than 2000:1).
Our Continuous Mode enables the rapid growth of perfectly dense, uniform, and conformal films. Individually precise control of precursor line temperature gives the flexibility to use solid, liquid, or gaseous precursors.

The **Fiji™** series is a modular, high-vacuum ALD system accommodates a wide range of deposition modes using a flexible system architecture and multiple configurations of precursors and plasma gases. The result is a next-generation ALD platform capable of performing thermal and plasma-enhanced deposition.thermal and plasma-enhanced deposition.

Phoenix™
The Phoenix™ ALD system launched in 2008 is a batch ALD system for Gen 2.5 substrates, engineered for high throughput and maximum uptime in any fabrication environment, from pilot production to industrial-grade manufacturing.

In 2009 the **Tahiti™** a high volume production ALD system for large area deposition was developed. Stacked ALD process chambers for concurrent processing of two independent Gen 4.5 substrates for optimized throughput with capability to Gen 5 substrates and beyond. 4,000 hours Mean Time Between Failures (MTBF) for maximum uptime and the lowest consumption of precursors provide low cost of ownership.

Currently, Cambridge NanoTech is looking forward to releasing new ALD products such as FAST ALD and roll-to-roll systems.
Cambridge NanoTech is also offering Deposition-Services: Coatings for a variety of materials; usual thickness of ALD coatings is below 1 µm.

Please contact merconics to learn more about the unique features of the Cambridge NanoTech product lines.

Partners deliver success

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