

ALD NanoSolutions, Inc. Earns the 2006 Frost & Sullivan Excellence in Technology Award for its Atomic Layer Deposition Techniques

Palo Alto, Calif. · March 23, 2006 · Frost & Sullivan's Atomic Layer Deposition (ALD) & surface technology market has recognized ALD NanoSolutions, Inc. with the 2006 Excellence in Technology Award for developing and commercializing path breaking atomic layer deposition (ALD) techniques. The two primary techniques that have been developed are Particle ALD (PALD) and Surface ALD (SALD) on various substrates, respectively.

ALD NanoSolutions is developing sophisticated ALD techniques that can be used in advanced materials, microelectronics, and on biomedical, defense and consumer products. The company has exclusive licensing rights for the intellectual property on ALD techniques and has patented its Particle ALD and Surface ALD techniques.

These techniques allow for the deposition of different materials to provide better, more uniform coatings. Frost & Sullivan Research Analyst Hari Prasad says, "Particle ALD and Surface ALD provide functionalities such as better wear resistance, corrosion resistance, scratch resistance, hardness, and adhesion."

However, successful large-scale production of conformal thin coatings or films on substrates has been a huge challenge for researchers. Conventional techniques such as chemical vapor deposition have been commercially employed to produce nanocoatings but these methods have several shortcomings such as agglomeration of nanoparticles on the substrate, non-uniform coatings, line of sight dependency, and wastage of valuable precursors.

ALD NanoSolutions pioneered the Particle ALD (PALD) technique to provide pinhole free, high purity, and inorganic nanocoatings on the surface of dry individual nanoparticles. To achieve this, the research team at ALD NanoSolutions efficiently synchronized the deposition rate and the aggregation characteristic known as dynamic aggregation and the self-limiting sequential surface reaction provided by the ALD technique.

The Particle ALD (PALD) technique is a scalable. The thickness of the coating produced through this technique is independent of the time, flux, or location in the fluidized bed reactor. Moreover, the coating is chemically bonded to the particulate substrate.

These techniques are used to coat various metals that have applications in areas such as drug delivery, magnetic resonance imaging materials, and fillers with improved properties, polymer/ceramic nanocomposites, improved lighting materials, low-energy high-sensitivity sensors, thermites, dental fillers, catalytic materials, and quantum dots.

The Surface ALD (SALD) technique enables the depositing of inorganic nanocoatings on either polymer particles or substrates, independent of the chemistry or shape of the polymer. The coating process is carried out at low temperatures.

ALD NanoSolutions has received funding from agencies such as the National Science Foundation (NSF), the U.S. Department of Energy (DOE) and the Air Force Office of Scientific Research (AFOSR).

ALD Nanosolutions has validated and demonstrated the success of the technique by

Each year, this Award is presented to a company that has pioneered the development and introduction of an innovative technology into the market; a technology that has either impacted or successful technology development that is expected to bring significant contributions to the industry in terms of overall technical excellence and its commitment toward technology innovation.

About ALD Nanosolutions, Inc.

ALD NanoSolutions, Inc. is focused on commercializing its nano-coating processes, called Particle-Coating. The company is a leading domain partners for the discovery and validation of innovative composite materials in selected industries. The company's proprietary technology is based on atomic layer deposition (ALD) coating chemistry methods developed for depositing ultra-thin films on particulate and polymeric surfaces. For more information, visit www.aldnanosolutions.com.

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