



Siemens instrumental in advancing new MVD technology

Defining the progressive edge

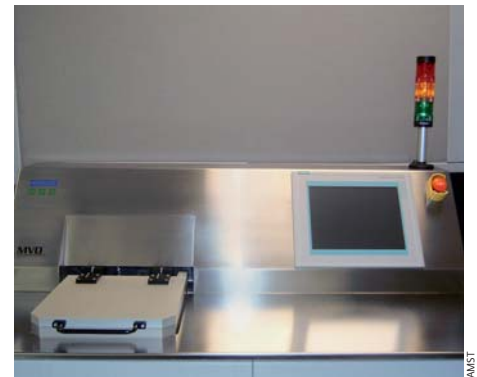
Applied MicroStructures Inc. (AMST) was formed in January 2003 based on extensive experience in the semiconductor equipment industries. In November 2005, the Delaware-based company received one of the first annual Nano 50 Awards. This is a distinguished honor, since the award recognizes the Top 50 technologies, products, and innovators that have significantly impacted, or are expected to significantly impact the field of nanotechnology.

The winners of this award are considered the “best of the best” innovative people and designs that will move nanotechnology to key mainstream market. AMST’s contribution was its excellence in developing Molecular Vapor Deposition (MVD) technology. MVD is an enhanced vapor deposition process that incorporates plasma surface cleaning and newly advanced vapor delivery. One of AMST’s products, called MVD-100, is able to create single and multi-layer coatings using a low temperature sequential deposition process. This allows for improved film durability and surface coverage over a wide variety of substrates, including glass, plastics, polymers, metals and semiconductor devices. The MVD-100 was designed for automated processing in manufacturing with high throughput and process scalability. This results in high productivity and reduced costs for nano-scale device manufacturing.

In the past, PLCs did not meet AMST’s demand for recipe remote upload/download, local data storage, data portability, hardware and software expandability, software modularity and re-usability. Furthermore, existing graphical user interfaces did not meet AMST’s technical demands for remote recipe configuration via Ethernet, recipe storage, and external compact flash port access.

Highly scalable and automated

AMST’s new MVD-100 tool design is based on a highly scalable and automated environment. AMST chose to use the Simatic S7-315-2DP programmable logic controller, since it met all of its technical needs and its modular design requirements. The frontend of AMST’s MVD-100 is powered by Simatic WinCC flexible engineering software, while the high performance and expandability of the Simatic MP 370 was exactly what AMST was looking for as an HMI.



The MVD-100 is able to create single and multi-layer coatings using a low temperature sequential deposition process

“The decisive reason for a new PLC and HMI solution was the reliability of Simatic S7-300 and the flexible WinCC platform. We wanted MVD to be modularly expandable, and Siemens had the engineered solutions and the wide range of products that coincided with our company’s growth,” explains Richard Yi, co-founder and vice president of operations at Applied MicroStructures Inc.

AMST’s business is expected to grow as MVD applications gain ever-increasing traction in the marketplace. Simple, fast, modular and flexible – that is the new crop of next generation MVD tools emerging on the market. Siemens and its Simatic S7, Profibus, ProfiNet and WinCC technology are helping to enable this trend. ■

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