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Amtech Enters Into Manufacturing Agreement With DSG Technologies for Vertical Microwave System

Partnership Provides New Product Offering Into Leading Edge Thermal Processing Manufacturing

TEMPE, Ariz., May 8 /PRNewswire-FirstCall/ -- Amtech Systems, Inc. (Nasdaq: ASYS), a global supplier of production and automation systems and related supplies for the manufacture of semiconductors, solar cells and wafers, announced today that it has entered into a manufacturing agreement with DSG Technologies (DSG), a Silicon Valley, California-based company, to manufacture a vertical microwave system, combining Amtech's vertical furnace platform with DSG's Micro-Mode Microwave (M3) heating technology.

Amtech, through its Netherlands-based subsidiary, Tempres Systems, will manufacture the vertical microwave system utilizing Tempres' small-batch vertical furnace platform and DSG's Axiom (300) reactor (patent-pending) which utilizes the M3 microwave heating technology. This new product will be used for sub-50nm semiconductor device's curing processes: low-k dielectric, shallow-trench isolation, pre-metal dielectric, and polyimide.

The agreement calls for Amtech and DSG to enter into a separate sales and service agreement granting Amtech exclusive rights for all of Europe and its existing customers worldwide.

"We are very excited about our manufacturing partnership with DSG Technologies which is to serve leading edge semiconductor processing demands for existing and future leaders in the semiconductor industry," said J.S. Whang, President and Chief Executive Officer of Amtech.

"Amtech has a proven product with their small batch vertical furnace and a demonstrated track record in the thermal processing and thin-film deposition markets," said Jeff Kowalski, President and CEO of DSG Technologies, who served as the President of both ASML and Silicon Valley Group (SVG) thermal businesses. "Amtech perfectly qualifies for our unique business model and we are very pleased to have them as our partner."

The manufacturing agreement has an initial term of five years and provides for automatic one year renewals.

Technology Overview

According to DSG, in the semiconductor industry, resistance heaters (IR heating) are used as the heat source for curing of films on semiconductor wafers used in IC processing. Traditionally, curing of these films were done at high temperatures (> 750 degrees Celsius).

The introduction of new materials (e.g. NiSi) has driven the need for new technical requirements, which include: 400 degrees Celsius maximum temperature operation, ppb wafer ambient control, and most significant uniform temperature gradients across all wafers in the batch. DSG says its technology drastically improves thermal uniformity on the wafer (< 1 degC/wafer) not only during steady state but as well during transient temperature ramps.

"Until now, there has been no technical way to heat silicon wafers in a batch at fast ramp rates while minimizing the delta temperature gradient across the wafer," Mr. Kowalski continued. "DSG Technologies was founded to develop and deliver products that do just that. Although industrial applications have used microwave for decades, microwave heating of silicon hasn't been possible due to difficulties in power density control (hot spots), effective depth of penetration, and cost control. DSG believes it has resolved these issues by innovation."

As the industry approaches the sub-50nm technology era, DSG says that curing applications will require precise low temperature control. Uniform temperature control can be achieved because, unlike external heating, microwave heating is volumetric throughout the material. Microwave energy can also effectively couple with O-H bonds in the films, which dramatically reduces the moisture content, which is not possible with conventional heating. The system also reduces curing temperatures, lowers operational costs, improves film quality, and dramatically improves cycle time.

About Amtech Systems, Inc.

Amtech Systems, Inc. manufactures capital equipment, including silicon wafer handling automation, thermal semiconductor processing equipment and related consumables used in fabricating semiconductor devices and solar cells. Semiconductors, or semiconductor chips, are fabricated on silicon wafer substrates, sliced from ingots, and are part of the circuitry, or electronic components, of many products including computers, telecommunications devices, automotive products, consumer goods, and industrial automation and control systems. The Company's semiconductor handling, thermal processing and consumable products currently address the polishing of newly sliced silicon wafers and reclaimed test wafers and the oxidation and deposition steps used in the fabrication of semiconductors, MEMS and solar cells. www.amtechsystems.com

About DSG Technologies

DSG Technologies, is a developer of low temperature microwave heating and curing systems used in the fabrication of integrated circuits. The company offers leading edge solutions for advanced thermal processing and thin-film deposition utilizing its patent pending Micro-Mode Microwave (M3) heating technology.

DSG's innovative reactor (Axom300) is designed to address the semiconductor industry's demand for uniform low temperature processing. As the industry approaches the sub-50nm technology era, curing and annealing applications will require precise low temperature control. Uniform temperature control can be achieved because, unlike conventional heating which heats the material externally, microwave heating is volumetric throughout the material. The company was founded in 2005 and is headquartered in Morgan Hill, California. www.dsgtek.com

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