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MKS Introduces Dynamic Frequency Tuning Patented DFT Technology Offered in RF Plasma Generators

ANDOVER, Mass., April 17, 2014 (GLOBE NEWSWIRE) -- MKS Instruments, Inc. (Nasdaq:MKSI), a global provider of technologies that enable advanced processes and improve productivity, has introduced Dynamic Frequency Tuning (DFT) technology in RF plasma generators. DFT is a patented new capability which provides significant enhancement over conventional frequency tuning schemes which require more than 500 μ sec of course and fine steps to search for the minima in reflected power. With DFT, measurement of power distortion is used to quickly and accurately achieve matched power in less than 50 μ sec. DFT assures more power is delivered to the process and not mismatched or wasted. This is important because the plasma is stabilized faster making the process more controlled, consistent and repeatable.

DFT technology eliminates redundant sensing and control between the RF power supply and the impedance matching network, enabling the use of traditional control theory. This results in near instantaneous and more accurate power tuning, especially important during pulsed operation. DFT provides optimal tuning without the need to constantly adjust configuration parameters when a process change is made.

Used in semiconductor applications such as PECVD, PE-ALD and oxide and poly etch, DFT technology has proven invaluable for reduced plasma stabilization time resulting in more controlled, consistent and repeatable etch and deposition steps. DFT, in combination with MKS, ENI[®] Advanced RF pulsing, constitutes a key technology in the fabrication of 3D NAND, FinFET, DRAM and TSV devices. DFT and high frequency pulsing can prevent channel hole bowing and twisting during 3D NAND Flash fabrication. DFT and advanced pulsing are offered in RF plasma generator frequencies from 2MHz to 100MHz.

Note to editors: For more information on Dynamic Frequency Tuning, please go to the MKS web site: <http://www.mksinst.com>

About MKS:

MKS Instruments, Inc. is a global provider of instruments, subsystems and process control solutions that measure, control, power, monitor and analyze critical parameters of advanced manufacturing processes to improve process performance and productivity. Our products are derived from our core competencies in pressure measurement and control, materials delivery, gas composition analysis, control and information technology, power and reactive gas generation, and vacuum technology. Our primary served markets are manufacturers of capital equipment for semiconductor devices, and for other thin film applications including flat panel displays, solar cells, light emitting diodes, data storage media, and other advanced coatings. We also leverage our technology in other markets with advanced manufacturing applications including medical equipment, pharmaceutical manufacturing, energy generation, and environmental monitoring.

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