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## **sp3 Launches Lower Priced Diamond Deposition Development System**

*Allows Universities to Develop Processes Incorporating Diamond-on-Substrate*

SANTA CLARA, Calif. — November 15, 2005 — sp3 Diamond Technologies, Inc., a leading supplier of diamond film products, equipment and services, today introduced its sp3 Model 250 Hot Filament CVD Reactor. The Model 250 is designed for deposition of high-quality diamond films on various substrates in research organizations. A low cost platform, the Model 250 allows an educational R&D facility to utilize its own process control systems to develop wide area CVD diamond coatings.

The Model 250 can be used to apply highly uniform diamond films over a span of 200mm within the 250mm by 250mm deposition area, and allows users to maximize the benefits of the product's hot filament chamber and filament array design in conjunction with their own process control schemes. Depositions can include films with grain size ranging from microcrystalline diamond to nanocrystalline diamond.

Based on the company's Model 600 HF CVD System, the Model 250 allows researchers to take advantage of the wide deposition area and uniform process of sp3's proven reactor technology at a fraction of the cost of the Model 600 production system. Expected R&D uses for the Model 250 include process development for MEMS, SAW devices, heat spreaders, wear coatings, electrodes and cutting tools.

“sp3 has more than a decade's worth of diamond CVD experience built into the Model 250 reactor,” explained Dwain Aidala, president and COO of sp3 Diamond Technologies, Inc. “While our technology was initially developed for cutting tools and other mechanical uses, the use of diamond is rapidly expanding into a wide array of electronic applications based on diamond-on-substrate deposition. The Model 250 enables cost effective process development to implement this important technology.”

The Model 250 comes with a 15kW DC power supply, safety interlocks, a water-cooled process chamber, a two-dimensional filament array with a patented tension control mechanism, and a planar deposition fixture. It is designed to integrate easily with laboratory supplied gas, vacuum, and control subsystems for user developed process recipes.

For information on pricing and delivery times, please contact Seki Technotron, sp3's worldwide CVD reactor distributor. In **North America and Europe**, please [email](#) or call 408 496 4121. In **Japan and the rest of Asia**, please [email](#) or call 81 3 3820 1712.

### **About Diamond Deposition**

Chemical vapor deposition (CVD) technology enables growth of thin diamond coatings on a wide variety of substrate materials. Use of sp3's advanced hot-filament (HF) technology allows deposition of high-quality, polycrystalline diamond films from submicron to 50 microns thick over large areas. With the Model 250, total cost of ownership is minimized through low capital acquisition costs, fast deposition cycle turnaround, large deposition area, low electrical power consumption, and safe, reliable operation. The Model 250 can address expanded applications such as:

- semiconductor wafers in sizes up to 200mm
- wear coatings
- substrates for thermal management
- amorphous silicon deposition for solar cells and other products
- electrodes for water treatment and electrochemistry
- passivation layers for semiconductor chucks

## **About sp3 Diamond Technologies, Inc.**

Diamond is hard, durable, stiff, thermally conductive and electrically insulating. These are just some of the many qualities that diamond offers making it ideal for a wide variety of applications, from cutting tools to advanced semiconductor manufacturing. sp3 Diamond Technologies makes CVD (chemical vapor deposition) diamond for a broad range of applications where current materials have reached their limit. Our ability to make and deposit diamond is a direct result of our proprietary chemical vapor deposition diamond reactor technology and our coating services capability. It is this technology that allows us to deposit uniform thin-film diamond and do it cost-effectively. Consistent and cost-effective manufacture of CVD diamond is in turn broadening the material's appeal throughout multiple industries where diamond could be considered the material of choice.

Based in Santa Clara, California, USA, the company provides diamond products for advanced thermal applications, diamond coating and material services, hot filament CVD reactors, and deposition consulting services. sp3 Diamond Technologies is a subsidiary of sp3 Inc., a full service provider of products and services relating to thin-film and freestanding diamond deposition and other diamond materials. For more information about the company and its products and services please visit [www.sp3inc.com](http://www.sp3inc.com).

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