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## **sp3 Diamond Technologies Installs Advanced Diamond Deposition Tool at Heriot-Watt University**

*Diamond's ability to withstand sun-like temperatures could unlock the potential of clean nuclear energy*

**SANTA CLARA, Calif.—November 08, 2007—** Following a recent order for its advanced Model 650 hot filament CVD diamond deposition reactor, sp3 Diamond Technologies, Inc., a leading supplier of diamond film products, equipment and services, announced that it has completed installation of the tool at Heriot-Watt University in Edinburgh, Scotland.

The tool is being used as part of Heriot-Watt's research into developing technologies for withstanding the immense heat associated with nuclear fusion reactions. Heriot-Watt is seen as playing a vital role in the Euro International Thermonuclear Experimental Reactor (ITER) program, a €10 billion research project aimed at developing waste-free nuclear energy without contributing to global warming.

As part of that research, Heriot-Watt has proposed that diamond-coated substrates, due to diamond's unparalleled ability to withstand the level of heat generated by next generation fusion reactors, will be used to line the diverter wall of the reactor. Resistance to radiation and its ability to maintain chemical stability in the presence of hydrogen plasmas were also seen as fundamental characteristics of diamond as a material of choice.

“We believe we are entering an age when the unparalleled qualities of diamond are coming to the fore and we will see more and more applications adopting it as a material of choice,” stated Dwain Aidala, sp3’s President and COO. “The key to that adoption is the ability to offer large scale thin film diamond deposition and to be able to do that cost-effectively. The patented technology and key engineering in the Model 650 enables both and, as we see it, the reactor is a catalyst to larger scale adoption of CVD diamond in multiple market segments.”

sp3’s Model 650 enables cost-effective, large area deposition of high quality, polycrystalline diamond films with a thickness of between 200 nanometers and 50 microns, on a wide variety of substrate materials. The chemical vapor deposition technology is ideal for applications such as diamond on wafers in sizes up to 300mm, 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, as well as cutting tools.

For more information on Heriott Watt’s role in the development program please visit [http://www.hw.ac.uk/ppr/docs/diamond\\_power.pdf](http://www.hw.ac.uk/ppr/docs/diamond_power.pdf)

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### **About Heriot-Watt University**

Heriot-Watt is a university for business and industry at the forefront of research and teaching innovation. With campuses in Edinburgh, the Scottish Borders and Dubai, Heriot-Watt provides a top quality living and working environment. Our international focus creates a very cosmopolitan environment with more than a quarter of our on-campus students in Scotland coming from outside the UK. Heriot-Watt is one of the UK’s leading research institutions having been rated at the highest level by our national review body, the RAE, and we are recognised internationally as a centre for high calibre research. For more information on Heriot-Watt University, please visit [www.hw.ac.uk](http://www.hw.ac.uk)

### **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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