

Press Release

February 11, 2009

Advanced Diamond Technologies Enters Agreement with Jarvik Heart to Supply Diamond Coatings Engineered to Eliminate Blood Clotting in Heart Pumps

Romeoville, IL—February 11, 2009—Advanced Diamond Technologies, Inc. (ADT) announces it has entered an exclusive agreement with Jarvik Heart, Inc. (JHI) to supply diamond coatings engineered for the blood contacting surfaces of Jarvik heart pumps presently under development. ADT and JHI will collaborate to develop improved blood contacting surfaces using ADT's form of diamond, known as UNCD[®], which is both thin and exceptionally smooth, to inhibit the formation of blood clots inside the device and to reduce the need for blood thinning medications which would increase the success rate of heart pumps.

Modern rotary heart assist devices augment an ailing heart's ability to pump blood. In a relatively small percentage of patients with heart pumps, blood clots may form on the titanium or ceramic components such as rotors and bearings. If this occurs, it can reduce the ability of the device to pump enough blood, or if blood clots break free they may go to the brain and cause a stroke. Although this problem occurs less commonly than with earlier generations of heart assist devices, it is a risk with every model in use today.

"Presently, blood thinning drugs are used with all types of electric rotary blood pumps. If the UNCD coating successfully eliminates the formation of blood clots without the need for anticoagulation, this would solve one of the remaining barriers to the widespread use of heart assist devices in tens of thousands of patients dying of heart failure. I believe using ADT's UNCD on the blood contacting surfaces of the Jarvik 2000 heart pump is the most promising technology to eliminate the need for blood thinning drugs," said Robert Jarvik, MD, president and CEO of JHI, and inventor of the Jarvik 2000 heart, which has sustained a patient for 7½ years, longer than any other artificial heart device in the world.

"We are thrilled to be working with Dr. Jarvik, a pioneer of medical device technology to save the lives of patients struggling with heart failure. For ADT, this initiative opens up previously untapped commercial applications for UNCD including artificial heart valves, cardiac stents, and other metal and ceramic components of intravascular prostheses that we are just beginning to explore," said ADT's president Neil Kane.

According to the American Heart Association, 5.3 million American adults, 11 million worldwide, are currently living with heart failure with 660,000 new cases diagnosed each year. 300,000 Americans die from heart disease each year and its annual economic toll is \$35 billion. The market for heart pumps is estimated to be \$580 million a year by 2015 with a compound annual growth rate of 16.6 percent according to *Medtech Insight*, November 2008.

"Our processes to make UNCD for industrial equipment were immediately applicable and transferable to heart pumps. This collaboration with JHI creates an entirely new opportunity for us. The chance to apply our UNCD technology to a medical device with as much societal importance and impact as a heart pump is exceptionally gratifying and continues to fulfil our founding vision of diamond being used as an engineering material," said ADT's chief technical officer Dr. John Carlisle.

The logo for Advanced Diamond Technologies, Inc. features a stylized white diamond shape on a dark green background, with the company name in white capital letters to its right.

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Under a contract from the National Institutes of Health, JHI is currently developing heart pumps as small as a AAA battery for infants and children. Because the flow channels are so tiny the risk of blood clotting is even higher than with adult pumps. The use of UNCD coatings has been successfully initiated in this research and is expected to contribute to saving the lives of many children in the years to come.

About Advanced Diamond Technologies

ADT is the world leader in developing and applying diamond film for industrial, electronic, and medical applications. ADT is a World Economic Forum 2007 Technology Pioneer, was runner-up for the *Wall Street Journal's* 2006 Technology Innovation Award, and received a 2008 EuroAsia IC Award in the Materials Enabling category from *EuroAsia Semiconductor* magazine. For more information about ADT, visit <http://www.thindiamond.com>.

About Jarvik Heart

JHI is a private company that develops miniaturized heart assist devices for the treatment of severe heart failure. For more information about JHI, visit <http://www.jarvikheart.com>.

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