

Press Release

July 14, 2009

## Electrically Conductive Diamond Joins Advanced Diamond Technologies' Family of UNCD<sup>®</sup> Diamond Products

Romeoville, IL—July 14, 2009—Advanced Diamond Technologies, Inc. (ADT) welcomes UNCD<sup>®</sup> Lightning<sup>™</sup>, electrically conductive diamond, to its family of award-winning diamond products. Although natural diamond is highly insulating, UNCD Lightning captures many of its best characteristics (e.g., exceptional hardness, low friction, and biocompatibility) while extending its properties to include electrical conductivity.

UNCD Lightning's electrical resistance is less than 0.1 ohm-cm which makes it suitable for many industrial, electronic, and biomedical applications. For example, UNCD Lightning can be deposited on silicon wafers up to 300 mm in diameter and processed using standard semiconductor manufacturing techniques for those interested in making micro-electrical mechanical systems (MEMS) out of diamond.

UNCD Lightning is available in ADT's NaDiaProbes<sup>®</sup> (all-diamond probes for atomic force microscopy [AFM]) and UNCD Wafers (semiconductor wafers coated with diamond). UNCD Lightning can be incorporated into any of ADT's products where electrical conductivity is desired in a material with superior friction and wear capabilities such as in rotating industrial equipment. "Electrical conductivity was our number one most requested feature, and we've delivered it," said Neil Kane, ADT's president.

In an example of UNCD Lightning's versatility, it is being used in a project sponsored by the Defense Threat Reduction Agency (DTRA) to develop diamond-based sensors for the real-time detection of water-based chemical and biological agents such as *E. coli*, *Listeria*, and *Salmonella*. "ADT is making it economically and technically feasible for people and soldiers to carry sensors to determine if water is safe to drink," said Dr. John Carlisle, ADT's chief technical officer.

"UNCD Lightning, because it is both smooth and conducting, can electrically transmit and communicate information with biological materials," said Carlisle. "Combining electrical and biomaterial properties with the capability to make diamond MEMS can enable new classes of devices such as those that detect blood glucose levels in real-time and identify neurotransmitters associated with hypertension to help lengthen life expectancy—just to name a few."

Products incorporating UNCD Lightning can be ordered directly from ADT or through its distributors at <http://www.thindiamond.com>. ADT will be showcasing these products at SEMICON West 2009, July 14-16, 2009 in San Francisco, CA. Please visit booth #6573 to learn more.

### **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, a runner-up for the *Wall Street Journal's* 2006 Technology Innovation Award, a recipient of a 2008 EuroAsia IC Award in the Materials Enabling category from *EuroAsia Semiconductor* magazine, and a 2008 R&D 100 Award winner for Mechanical Seals for Fluid Pumps. For more information about ADT, visit <http://www.thindiamond.com>.



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