



## **DiFUSION Technologies Completes Successful Antimicrobial Implant Animal Trial**

*Test Results Validate Efficacy of DiFUSION's Proprietary CleanFUZE™ Technology*

**Austin, Texas – October 7, 2010** - DiFUSION Technologies is a medical device company focused on the development and commercialization of its proprietary CleanFUZE™ anti-microbial technology for orthopedic implants and its new Xiphos™ line of Posterior Interbody products for spinal surgery.

"Post-operative infections are a major problem today, and with the further proliferation of drug resistant bacteria, preventing the infections is even more important than it has been in the past. Having materials that actively fight against post-operative infections is an important step towards eliminating this devastating problem," said Dr. Nitin N. Bhatia, MD, Chief, Spine Service Co-Director, Combined Spine Program, Residency Program Director Dept. of Orthopedic Surgery, University of California, Irvine.

DiFUSION's recently completed third party animal tests showed that after introducing Methicillin Resistant Staphylococcus Aureus (MRSA), a common, aggressive, multi-drug resistant bacterium, to rabbits implanted with DiFUSION's proprietary CleanFUZE orthobiologic polymer, the animals showed little visible inflammation or infection. Microscopic analysis of the same samples showed CleanFUZE to be up to 99.99% effective in eradicating the active infection.

"This is the first time any potential biomaterial has shown, in an animal model, to significantly reduce the numbers of an infectious agent as well as the local tissue markers of actual infection," said Matthew Geck, MD, cofounder of DiFUSION. "This was done using a safe and tissue friendly, pharmacologic dosing of silver with our innovative and proprietary biomaterial that combines the structural properties of PEEK with the controlled elution of cationic silver. This biomaterial has the potential to be the base material for a whole range of spine and orthopedic implants."

According to a variety of large published studies, post-operative surgical site infections (SSIs) occur in up to 20% of patients costing the U.S. health care system billions of dollars annually. In fact, a single SSI can cost up to \$100,000 per incident and result in significant injury, disability or even death. Complicating the problem of SSIs is growth in the number of antibiotic resistant bacterial strains such as MRSA, which are associated with rising infection rates in hospitals. With few available treatment options hospitals, surgeons and payers have shifted their focus toward new methods of prevention as an essential tool to avoid SSIs.

“The results from the *in vivo* animal testing are very encouraging,” remarked Gary Ghiselli, MD, chairman of the DiFUSION scientific advisory board. “They represent a big step towards establishing the ability of CleanFUZE to reduce, and possibly eliminate, the incidence of post-operative surgical infections. This has obvious wide-reaching potential in spinal surgery and in orthopedics in general, to reduce complications and improve patient outcomes.”

DiFUSION’s polymer is a blend of a cationic matrix which carries pure silver, an effective broad spectrum antimicrobial, and a PEEK polymer which are combined through a proprietary process to create CleanFUZE. The resulting material can be used to create a variety of orthopedic devices that release silver ions into the surrounding tissue allowing for controlled, continual dosing over a four to six week timeframe, resulting in significantly increased efficacy.

“CleanFUZE orthobiologic PEEK is a self-sterilizing polymer which this study has shown to be up to 99.99% effective in eliminating post operative infection,” said John Kaelblein, President of DiFUSION. “CleanFUZE could have a real impact on patients and the healthcare system in general. These results represent a huge step toward bringing CleanFUZE to market.”

#### **About DiFUSION Technologies**

Founded in 2008 in Austin, Texas, DiFUSION Technologies, Inc. is a medical device company focused on reducing the rising incidence of surgical site infections in orthopedic and spine surgery through the development of a suite of patented antimicrobial orthobiologic polymeric implants. Initially focusing on the multi-billion dollar spinal implant market, the company has developed a technology with applicability across a variety of orthopedic segments using well characterized implants with benefits for the patient, surgeon, hospital and payer. For more information about DiFUSION Technologies, visit [www.DiFUSIONtech.com](http://www.DiFUSIONtech.com).

#### **DiFUSION Company Contact:**

Derrick Johns  
President and CEO  
Office: 512-284-3338  
[djohns@DiFUSIONtech.com](mailto:djohns@DiFUSIONtech.com)

#### **DiFUSION Media Contact:**

Patrick Cline, JH&A Advertising  
Office: 512-444-0716  
Cell: 512-431-7729  
[pcline@jhaadvertising.com](mailto:pcline@jhaadvertising.com)

## END ##