



For Immediate Release:

ISTN receives NIH Nanotechnology Grant for the development of an Immobilized Enzyme Technology

York, PA (May, 23 2006) - ISTN announced today the award of a \$173,000 Phase I Small Business Innovation Research (SBIR) grant from the National Institutes of Health (NIH) to develop a "Nanopore Enhanced Enzyme Device (NEED™)". The grant is part of NIH's Bioengineering Nanotechnology Initiative, a special SBIR program for "nanotechnologies useful to biomedicine." This award will support the development of a nanocomposite device that will enable immobilized enzymes to aid in the production and separation of various chemical compounds. The initial studies will be aimed at producing chiral specific drug intermediates targeted toward the pharmaceutical industry.

Clinical studies have clearly demonstrated the superior value of chiral drugs. An overwhelming majority of clinical results have shown that only one enantiomer of a drug provides the desired activity while the counterparts are inactive or, even toxic. Among the world's current top ten selling drugs (such as Lipitor, Zocor, etc.), nine active ingredients are chiral. At present, over half of the chiral products are made by traditional methods (pool and separation), one third are produced by chemocatalysis, and only about 15% are derived from biocatalysis. However, the trend is changing in favor of biocatalysis due to the tremendous progresses in biomedicines, including high throughput screening, modern molecular biology techniques such as directed evolution as well as surges in the fields of genomics and bioinformatics.

In addition to the pharmaceutical industry ISTN has identified a number of other large markets that would benefit from development of this novel chemical synthesis method. The nearly \$50 billion LCD market is expected to be one of the largest consumers of fine chemicals in the years ahead and a technology to more efficiently produce many of these compounds could see a large commercial reward. In addition, enzymatic synthesis and separation is expected to play a large role in the food and beverage industries as traditional production methods are replaced.

ISTN received its award, which could be worth an additional \$1.2 million over three years if selected for Phase II funding. This award is the company's second such award in the past 2 years following the receipt of a 2004 NIH grant for the development of a silica-chitosan nanocomposite for the treatment of peptic ulcers.

About ISTN:

Founded in 1997, ISTN is an advanced technology company specializing in the development of nanotechnology-enabled products based on over 10 years of R&D in nanocomposite materials. These products rely on the control of material composition, form and structure at the nanometer scale to deliver superior cost-effectiveness and performance. ISTN has offices in Philadelphia, PA and York, PA.

Contact:

Brendan Dillon
Business Development Manager, ISTN
Phone: (215) 966-6074
Email: bdillon@istninc.com

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