# ICx Applies Coating Technology to Military Equipment

Wherever in the world American troops are posted as vanguards of peace and stability, their military vehicles and equipment may soon be sporting a new paint job from ICx Technologies.

As a result of a grant of $271,278 from the Pennsylvania NanoMaterials Commercialization Center, through funding provided by the state's Department of Community and Economic Development, ICx was able to demonstrate to the Defense Threat Reduction Agency (DTRA) that its core technology had feasible and practical, cost-effective applications for military uses.

The company was able to show that its nanostructured enzymes and proteins could be infused into polymer coatings, which would change color in the presence of certain contaminating chemical agents and which ultimately could save lives. As an added bonus feature, once soldiers observe the color-changing response to an agent contamination, the coating can be stripped off and sequestered, thereby minimizing further contact hazard while protecting the underlying equipment's surface.

"The Nano Center's award was instrumental in allowing us to develop a proof of concept for defense applications," said Dr. Keith LeJeune, general manager of ICx's multi-city ChemBio Group. "By focusing on developing a product for military uses, we were able to secure an important contract with the DTRA."

"But beyond the monetary impact," said LeJeune. "The Center was invaluable in helping us to meet the right industry people and establishing connections. As a result, we plan to pursue future collaborative opportunities and joint ventures in seeking additional funding avenues with key players within the region's nano community."

Another aspect of the Nano Center's impact is that LeJeune expects additional staff will be required at their Pittsburgh operations as result of the DTRA contract, although at this point it is uncertain exactly how many or in what capacities.

In 2005, ICx purchased Agentase, a Pittsburgh-based company founded in 1998 by LeJeune and Dr. Alan Russell, two of the nation's leading experts on enzyme-polymer hybrid materials.

The company possesses proprietary and patented technology in the synthesis and potential applications of enzyme containing polymers, and its expertise is developing applications and products that detect chemical and biological agents. Product development efforts to date fall within three broad categories: decontamination, detection (chemical and biological sensors) and medical applications.

With respect to the company's medical applications, ICx has developed a new method optimizing target proteins for longer half-life, reduced immunogenicity and improved efficacy. Other products include tissue adhesives, erodible polymers for specialized drug delivery and polymer-based wound care dressings that can incorporate enzymes and proteins in a delivery mechanism.

In the area of decontamination, ICx has successfully optimized the physical properties of enzyme containing polymers for extracting nerve agent chemical weapons, pesticides and industrial chemical toxins from surfaces and liquids. The core technology platform also easily adapts to colorimetric sensors for detection of trace levels of contamination of certain hazardous chemicals on surfaces, in liquid solutions and within gases.

ICx maintains 17 offices throughout the U.S. and one in Germany. The company employs 30 people at its Pittsburgh operations.