

Nano research creates new products to market

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Two new Arkansas start up companies have announced exclusive license agreements with UALR to bring to market patent-pending technology developed by the University's Nanotechnology Center Research to provide anti-counterfeiting solutions for manufacturers.

The technology will enable companies and governmental organizations to authenticate items with an invisible and unique code - one which is virtually impossible to replicate.

Provectus International LLC was founded last year in order to [patent](#) the technology developed by a team of scientists led by Dr. Alexandru S. Biris, chief scientist at UALR's Nanotechnology Center, and to construct working prototypes and prepare for large-scale production of the product, a "multi-level anti-counterfeit nanotaggant."

The second company, NanoIMG, was formed this year to develop commercial test sites and relationships with customers and recently entered into an exclusive marketing and distribution agreement with Provectus. Jim Karrh, Ph.D. and former chief marketing officer with Mountain Valley Springs Co., now leads the marketing efforts of NanoIMG as its chief marketing officer.

The patent-pending product itself is a taggant, or marker, embedded with a code. Taggants are commonly used today in the form of radio frequency [microchips](#), physical codes or chemical codes to identify and track individual items or groups of items. The technological advance

announced today is based upon multiple layers of [nanoparticles](#) which are undetectable to the eye, fully customizable and extremely complex in their structure.

Because counterfeiting is an acute problem across so many industries, a truly effective solution must be applicable through a variety of physical forms. The nanotaggants available through the Provectus/NanoIMG partnership can be incorporated and applied to a product or its packaging through ink, paint, dissolved polymers or a variety of other materials. The companies are testing applications onto metals and even the use of nanotechnology with DNA.

“This announcement demonstrates how we are able to bring together scientific and business expertise to drive market-ready innovation,” said Bernard Malone III, director of Technology Transfer of the UALR Office of Innovation and Commercialization. “The technology has been vetted by some of the world’s foremost experts in nanotechnology, while at the same time an experienced business team is ensuring the applications are viable.”

The product geared mainly towards supply chain logistic and distribution channels, offering wholesalers and retailers a diverse way to guarantee the authenticity of the products they receive from suppliers.

Counterfeit goods represent a direct cost of several hundred billion dollars each year to global businesses, plus significant risks to consumer safety and national security, the development teams are optimistic about the future applications of this technology.

The International Anti-Counterfeiting Coalition estimates the annual economic cost to be more than \$600 billion per year, making counterfeit products one of the most pressing issues affecting global businesses. Industries such as pharmaceuticals, industrial parts, apparel, cosmetics,

energy production, footwear, art and collectibles, consumer packaged goods and security documentation are particularly hard hit.

Direct costs include increased product failure rates, lost margins and incremental liability and insurance costs; less tangible yet still important costs include the loss of brand and corporate reputation, lower customer satisfaction, plus effects on consumer health and safety and even national security.

In the IT market, counterfeit gear accounts for an estimated 10 percent of the overall products market, putting many of the systems controlling functions such as air traffic, financial and telecommunications networks, military weaponry and intelligence gathering at significant risk.

NanoIMG can provide various types of meters for detecting nanotaggants at the point of assembly, sale or use. The company will also be able to maintain a secure database for the recognition “fingerprints” of each tagged item or lot.

“Our teams are excited about the opportunities available, on many fronts,” said Karrh. “These nanotaggants can help an enormous number of companies and organizations that are threatened every day by counterfeiting. We believe that our efforts will also lead to more research opportunities and high-value job creation here in central Arkansas.”

Provided by University of Arkansas at Little Rock

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