

Imagine Shoes that Are Forever Odor-Free! First Low-Cost Noble-Metal Nanoparticles in Organic Solvents

September 29 2004

*Cost Breakthrough plus Polymer Manufacturing Compatibility
Enables Vast Array of Antimicrobial Products, from Sneakers to
Mascara*

NanoHorizons, Inc. today announced the availability of a **low-cost line of concentrated, polymer-compatible gold and silver [nanoparticles in research and pilot production volumes](#)**. With prices for small quantities ranging from \$100 to \$400 per liter, NanoHorizons' noble-metal nanoparticles' unique combination of exceptionally low cost and polymer manufacturing process compatibility will enable manufacturers to create a vast array of plastic consumer and industrial products with built-in antimicrobial properties. Examples of potential products include plastic storage containers, food packaging materials, plastic gloves, and clothing such as odor-free, microbial-free shoes, socks, and hats.

From Odorless Shoes to Extended Shelf Life for Perishable Products

“Our manufacturing process advantages enable us to price our nanoparticles aggressively - 90% below the lowest competitive price we could find - and offer them in a choice of solvents, making them easily adaptable to current manufacturing processes,” said Robert Burlinson, CEO and President of NanoHorizons. “This means that all sorts of manufacturers can easily and inexpensively incorporate the attractive

properties of noble metals into their products. Imagine shoes or socks that are odor-resistant, mascara that resists transmitting infections, and food packaging materials that increase food storage life on the shelf or in the home.”

Silver: An Antimicrobial Since Antiquity

Silver’s antimicrobial properties have been known for centuries. In ancient Greece and Rome, silver containers were used for perishable liquids because they retarded the growth of food-spoiling organisms. Western medicine has been using eye-drops containing silver to prevent infections in newborn babies’ eyes for more than a century. More recently, silver has been introduced into socks to prevent foot infections for soldiers deployed in jungles.

“While silver has been used since antiquity for its antimicrobial properties, these are the first commercially available noble metal nanoparticles engineered for use in plastic-based products, making them economically viable for innumerable products and applications,” said Dr. Stephen Fonash, NanoHorizons’ Chairman. “These particles are terminated with specific surface chemistries and delivered in organic solvents, making them compatible with polymer processing. This breakthrough brings together three critical components: noble-metal nanoparticles, volume commercial availability at breakthrough costs, and compatibility with polymer processing.

Pricing

NanoHorizons’ silver and gold nanoparticles are available immediately at prices ranging from \$100/liter (non-functionalized, in water) to \$400/liter (Carboxylic acid or Amine functionalized in water, Methanol or Ethanol).

NanoHorizons Gold nanoparticles are 10-30 nanometers(nm) in size;

silver nanoparticles are offered in two particle sizes: 10-30nm and 49-90nm. Available surface terminations include Amine, Carboxylic Acid, or Methyl and are delivered in a choice of two organic solvents: methanol and ethanol. They are also available in water.

Citation: Imagine Shoes that Are Forever Odor-Free! First Low-Cost Noble-Metal Nanoparticles in Organic Solvents (2004, September 29) retrieved 25 April 2024 from <https://phys.org/news/2004-09-odor-free-low-cost-noble-metal-nanoparticles-solvents.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.