

News Release

February 14, 2006

Plastics that fight bacteria, socks that stay fresh forever and electronics so small they are printed by the billions. Nanotech firm expands production capacity and research labs.

Silver has been used for centuries to reduce bacteria growth and is one of the key components in electronics. But today, a new company is using nanotechnology to make a “better silver”.

PChem Associates’ CEO, Dr. Greg Jablonski, explained that “Silver has a long history as an antimicrobial that is being “rediscovered”. Increasingly silver is being used in plastics for food storage, medical catheters, air filters, drug manufacture, household appliances and other areas sensitive to bacteria growth. PChem’s silver nanoparticles are prepared by a very cost competitive manufacturing process and the unique surface area of our silver nanoparticles make our products very attractive to plastic and textile manufacturers looking for less expensive alternatives to traditional silver formulations. Our textile manufacturing partners have noted that they expect over 35% of the textiles that they will ship to the European Union will be silver treated by 2010. Our partners are examining our products for use in large scale manufacturing to produce more cost effective antimicrobial plastics. We expect that our silver nanoparticles will play a significant role in the markets for new plastics and innovative textiles.”

The Silver Institute recently estimated that “The current level of silver used as a biocide in appliances is about 50,000 troy ounces world wide, and future use is estimated to be in the millions of troy ounces if trends continue, especially in Asia where growth has been on a rapid upswing.” In addition over \$2.5 billion of silver is used annually for industrial applications. Dr. Jablonski noted “With the price of silver on the rise and hitting a five year high, the demand for silver nanoparticles will increase dramatically as manufacturers begin to more fully appreciate the cost effectiveness that silver nanoparticles bring to their products. The greater surface area of a nanoparticle means that often less material is required to achieve the same level of performance. With silver approaching \$10.00 an ounce, any reduction in the amount of silver required can lead to substantial savings for a high volume manufacturer.”

PChem’s silver nanoparticles are also used in electronics. The high speed printing of electronic circuitry has been underway for a number of years. It is now approaching a launch point where the printing equipment, conductive inks and manufacturing processes are aligning to produce a tipping point for the wide scale use of these new techniques to create new products and produce existing products more effectively. PChem recently introduced a flexography printing ink containing silver nanoparticles that operate at significantly lower temperatures. PChem is working to extend the use of its silver nanoparticles into an offset ink that can print 10 micron lines and spacing. Lines with that fine a resolution are critical to the next evolution of printed electronics, the printing of a complete device including the chip all in one continuous process.

Dr. Jablonski stated “In order to meet projected demand, PChem has expanded to a new location in Pennsylvania that will enable us to produce up to 5,000 kilograms of nanoparticles annually. Research labs are part of our new facility and will allow us to expand the development of our silver nanoparticles into new applications in plastics and printed electronics. This new production facility is ideally located to capitalize on the export facilities in the Philadelphia area for our Korean and European clients along with a strong base of US customers. It also enables us to tap into a highly skilled and experienced labor force familiar with the manufacture of high tech products and sophisticated chemical processing.

For additional information on silver nanoparticle applications, contact Jack Kerins or visit www.nanopchem.com

About PChem Associates

PChem Associates, located in Bensalem PA USA, has developed a unique nanoparticle technology for printed electronics and antimicrobial plastics and textiles. PChem’s technology delivers superior conductivity at a lower cost, with shorter processing times at lower temperatures. The unique silver nanopowder has a clear and distinct advantage when compared to existing alternatives. The technology has broad application with its initial focus on Printed Electronics, Plastics and Textiles.

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