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First Antimicrobial Gorilla Glass Smartphone Introduced



The ZTE *Axon* is the first smartphone to employ Antibacterial Gorilla Glass. Click the photo to see how it works.

The *Axon* smartphone from China's Shenzhen-based company ZTE reportedly is the first smartphone to use Corning's silver-based Antimicrobial Gorilla Glass. The durable glass was first announced last year, (See [Corning Adds Silver to Gorilla Glass First EPA-Registered Antimicrobial Cover Glass](#), February, 2014, *Silver News*), and now is being used on a fully functioning smartphone.

Gorilla Glass is used because of its high-scratch resistance and hardness, which allows thin glass without fragility. More than 2 billion devices including smartphones, tablets and laptops from 33 major brands use the regular Gorilla Glass, according to Corning, and the glass can also be recycled. At the antimicrobial version's introduction at the 2014 Consumer Electronics Show (CES), James R. Steiner, Senior Vice President and General Manager of Corning Specialty Materials, said: "Corning's Antibacterial Gorilla Glass inhibits the growth of algae, mold, mildew, fungi and bacteria because of its built-in antimicrobial property, which is intrinsic to the glass and effective for the lifetime of a device. This innovation combines best-in-class antimicrobial function without compromising Gorilla Glass properties. Our specialty glass provides an excellent substrate for engineering antimicrobial and other functional attributes to help expand the capabilities of our Corning Gorilla Glass and address the needs of new markets."

The Antibacterial Gorilla Glass is also being used in Automated Teller Machine (ATM) screens. (See [Diebold, Corning Pioneer World's First Antimicrobial Touch Screen for Automated Teller Machines](#), February, 2015, *Silver News*.)

The Android-based phone sells for US\$450.

Silver Demand Upticks in First Half of 2015

Demand for silver jewelry and industrial applications increased through the first half of the year, according to GFMS Thomson Reuters (GFMS), the precious metals consultancy.

In the United States, imports of silver jewelry jumped 11 percent through the end of May. The United States is the largest importer of silver jewelry, measured in dollar terms, and this demand impacts silver trade across Asia. U.S. imports from Thailand were up 18.5 percent through the end of May while China showed an increase of 14 percent in the same period. GFMS estimates that silver jewelry will grow 5 percent worldwide in 2015.

Almost 60 percent of silver demand is tied to industrial use, and GFMS forecasts a 2 percent growth in industrial applications for silver this year.

In the renewable energy industry sector, the demand for silver by solar panel producers is expected to increase 8 percent to 65 million ounces this year. The rise reflects increased solar cell production and a higher number of installations. The increase is pegged to the U.S., which saw a 76 percent increase in solar installations in the first quarter of 2015 compared to the same period last year. China and India both have aggressive solar installation plans and are expected to help drive projected growth as well.

Silver demand from ethylene oxide producers is expected to increase to 8.6 million ounces in 2015, which would represent a 61 percent increase over 2014. Most of this increase will be driven by Chinese demand. Ethylene oxide is a vital building block chemical, critical in the production of plastics, solvents, detergents and a broad range of organic chemicals.

Electronics demand is forecast to increase modestly in 2015 — 0.4 percent. A decline in silver demand by computer and tablet producers, by an expected 4.5 percent drop in shipments this year, should be partially offset by a 3 percent increase in mobile phone shipments in 2015.

Additionally, the silver market is expected to be in a deficit of 57.7 million ounces in 2015 as supply contracts and physical demand grows. This would mark the third consecutive year that the market is in a physical deficit. When the market experiences an annual shortfall from mine supply, users must drawdown on above ground stocks, thereby tightening available supply.

On the investment side, retail investor demand for silver has been sturdy in the first half of 2015, in a challenging precious metals investment market. Through July 24, global silver ETF holdings increased by over 4.7 million ounces in 2015, suggesting that investors have a more positive longer-term view of the silver price.

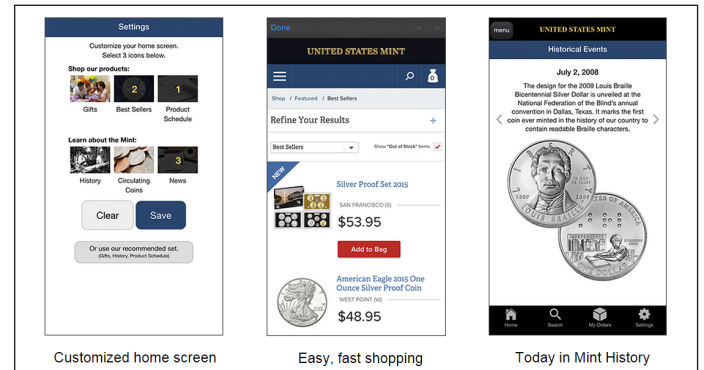
In the first half of the year, global bullion coin sales totaled 43.6 million ounces, 6 percent below levels seen in the same period a year ago. However, first half 2015 global sales were the fifth highest on record. The U.S. Mint, faced with a significant spike in investor interest, temporarily suspended sales of its silver bullion coins on July 7 after exhausting its inventory when investor demand in June surged 80 percent above the previous year's June coin sales. The Mint resumed bullion coin sales on July 27 on an allocated basis. Similarly, Australia's Perth Mint saw its silver coins sales spike in June due to a more attractive silver price, although sales overall are down 18 percent from the same period in 2014.

U.S. Mint Offers Free Mobile App for Coin Buying and Education

The United States Mint has released *MyUSMint*, a free mobile app that will allow users access to United States Mint products, including the ability to place and track orders as well as retrieve educational information.

Available on Google Play and the App Store, the app can be customized on a user's home screen based on interests that include shopping categories such as product schedules, gifts and best sellers, and education interests such as Mint history, lists of circulating coins and news.

Additional information about *MyUSMint*, is [available here](#).



The new *MyUSMint* app allows users easy access to Mint products and services.

Silver-Imbedded Dressing Helps Diabetic Wounds Heal Quicker

Silver-imbedded dressings have been used for years to help promote healing. Now, scientists at Egypt's Alexandria University are using dressings made from nanofibers composed of cellulose acetate that is spun with silver nanoparticles to help heal wounds in diabetics.

Diabetics have to be more diligent about treating wounds, even minor ones, than those without the disease. Diabetics often suffer nerve damage, also known as neuropathy, and don't know they have a wound because they can't feel pain in that area. It's common for them to have cuts on their feet and not know it. Also, diabetics are prone to having weakened immune systems, so even minor wounds can become infected.

In tests performed on diabetic mice with open wounds, the researchers found the silver-imbedded bandage killed bacteria as the structure and substance of the nanofibers absorbed fluids given off by the wounds while remaining permeable to air and moisture. The dressing also promoted the production of collagen that helps build normal skin strength and texture.

"It was found that wounds dressed with silver containing nanofibers showed marked increase in collagen production which improved the skin's mechanical properties," the authors wrote in a recent edition of the *International Journal of Nanoparticles*.

Nanosilver and Nanopaper Team Up to Produce Low-Cost Sensors

Nanotechnology has come to paper. Although the special paper is made from cellulose, like regular paper, the cellulose fibers are on a nanoscale, which gives it lower surface roughness and much higher transparency than traditional paper.

Several applications are being investigated for nanopaper, including their use as filters, wound dressings, sponges that soak up oil pollution, and now as a range of low-cost sensors, thanks to nanosilver particles imbedded in the paper.

“To date, bacterial nanopaper has been scarcely explored for optical (bio)sensing applications,” said Arben Merkoçi, ICREA Research Professor and director of the Nanobioelectronics & Biosensors Group at Institut Català de Nanociència i Nanotecnologia in Barcelona, Spain. “Hence, we sought to design, fabricate, and test simple, disposable and versatile sensing platforms based on this material,” he stated in the online journal *Nanowerk*.

Sensors shaped from nanopaper, and imbedded with silver nanoparticles, produce small electrical currents when hit by light. By ‘fine tuning’ the amount of silver nanoparticles, and adding different chemicals to the paper, the researchers could measure the electricity produced and delineate among various kinds of colors which might indicate types of bacteria, blood diseases and other medical anomalies usually detected by more expensive sensors.

Another advantage of the nanopaper sensors is that they can easily be produced in various shapes depending upon their application.

Researchers Eden Morales-Narváez and Hamed Golmohammadi noted: “We expect that these novel platforms will pave the way to new optical (bio)sensors or theranostic [diagnostic tests directly linked to the application of specific therapies] devices that are simple, transparent, flexible, disposable, lightweight, miniaturized and perhaps wearable.”

Silver Extends Milk’s Shelf Life

A São Carlos, Brazil, company has increased the shelf life of pasteurized milk from seven to 15 days, officials of the food company Agrindus say.

By incorporating silver-based microparticles into the plastic bottles, the metal’s bactericide properties kept the milk fresher longer.

“We already knew that using antimicrobial silver in rigid or flexible plastic food packaging improves conservation and extends shelf life,” said Nanox CEO Luiz Pagotto Simões. Nanox develops, produces and markets solutions for the nanotechnology industry. “We tested it in the polyethylene used to bottle grade A fresh milk in Brazil. The result was that we more than doubled the product’s shelf life solely by adding the material to the packaging, without mixing any additives into the milk.”

In addition to Agrindus, the material is also being tested by two other dairies that distribute fresh milk in plastic bottles in São Paulo and Minas Gerais and by dairies in the Brazilian southern region that sell fresh milk in flexible plastic packaging, he said.

Nanox plans to market the product in Europe and the United States, where more fresh milk is consumed than in Brazil.

Most milk consumed in Brazil is ultra-high temperature (UHT), or “long life” milk, which is sterilized at temperatures ranging from 130°C to 150°C for two to four seconds to kill most of the bacterial spores. Unopened UHT milk has a shelf life of up to four months at room temperature. However, whole milk, known as grade A in Brazil, is pasteurized at much lower temperatures and requires refrigeration. “Doubling the shelf life of whole milk translates into significant benefits in terms of logistics, storage, quality and food safety,” Simões said.

In addition to milk containers, Nanox silver-based microparticles are also used in plastic utensils, plastic food wraps, toilet seats, paints, ceramics and medical instruments. Their largest markets are rug and carpet markers, refrigerators, drinking fountains and air conditioners.

Royal Canadian Mint Offers the Universe

The Canadian Mint has produced a ‘glow in the dark,’ one-ounce, fine silver coin that combines color and glow paint along with a specially selected borosilicate fine art colored glass that also glows in the dark.

The Universe Coin shows a silver dust swirl together with a variety of borosilicate colored glass pieces to re-create an image of the universe. Each coin has its own unique swirl and each one is captured in a globule of borosilicate glass that has been handcrafted and applied to the coin. The coin captures the faint glow of the galaxy. Total mintage is 8,500.

The coin is the first of a 3-coin series celebrating Canada’s officially recognized dark sky reserve, a region of Mont-Mégantic in Quebec that controls and limits artificial light to offer an enhanced view of the night sky.

The 20-Canadian dollar, 99.99 percent pure silver coin costs CAD149.95 and comes in a Royal Canadian Mint-branded maroon clamshell with a black beauty box. For more information go [here](#).



Silver Institute's Silver Promotion Service Expands Program To Include Gemstones

[The Silver Promotion Service \(SPS\)](#) will expand its Savor Silver program to include a new merchandise classification — *Silver Style Partners* — which features silver jewelry that incorporates gemstones and other metals.

“The addition of the *Silver Style Partners* designation is in response to both popular demand within the industry and the opportunity to further increase the demand for silver jewelry,” SPS Director Michael Barlerin said. “When Savor Silver was introduced, our focus was on designers and brands whose jewelry both manifested a high design aesthetic and were obviously silver jewelry from a visual perspective. The intent of the new category is to enable the SPS to include jewelry made with silver and including gemstones and other metals. A number of silver jewelry companies have approached the SPS in the past regarding participation in the program but were excluded because of our ‘visual criteria.’”

Currently silver jewelry companies selected to participate in Savor Silver are designated as Designers of Distinction or SilverMark Partners.

The SPS plans to initiate outreach to this category of manufactures in the coming weeks with the goal of incorporating the new brands into Savor Silver in September.

“The SPS also plans to announce the addition of new participants in both the current Designers of Distinction and SilverMark Partners categories,” Barlerin concluded. “This will be done in conjunction with the introduction of an enhanced participant agreement.”

Silver Solution Helps Produce Brighter X-Ray Beams

Engineers seeking a way to produce brighter X-ray beams are using bacteria grown in a silver solution. Brighter beams can significantly improve resolution in medical imaging, helping doctors diagnose diseases more effectively.

Traditional X-rays are produced by firing electrons at a metal target which then emits the X-ray beam. In this new method from Indian engineers, lasers are used to turn particles into plasma which then emit X-rays. However, because the laser light only does this with very tiny particles — particles the size of the laser wavelength — engineers were baffled until they realized that they could use bacteria particles.

One bacteria type that is about the same one micron size as the laser beam is E-coli which was grown in a silver solution. (The silver particles are not in ionic form so they do not kill the bacteria.) The bacteria were then irradiated with a laser and produced an X-ray emitting plasma that was about 100 times brighter than traditional X-Ray beams.

Researcher Manchikanti Krishnamurthy from the Tata Institute of Fundamental Research in Mumbai, India, said that he will experiment using bacteria with different shapes to see which offer the best results. Some bacteria, like those with flagellum (appendages that protrude from a cell body used mainly for locomotion) might be too dangerous to use because of their instability. He noted: “Some of these funny-shaped bacteria are not going to be very safe, so we are planning to set up a new experiment where we can scan the size and the shape of the bacteria.”

Upcoming Events

The Silver Institute to Host Silver Industrial Conference

A roster of notable industry leaders will address delegates at the Silver Industrial Conference on October 28-29 in Washington, D.C. The event will focus on the metal's ever-growing role in the industrial world, with a particular emphasis on future commercial and industrial developments of silver, as well as the changing demands of the silver marketplace.

The Conference will provide attendees with key insights into important sectors of silver demand. The confirmed speakers and topics are:

- The Silver Market Today – Where is it Headed? – **David Jollie, Strategic Analyst, Mitsui Global Precious Metals**
- Financing Silver Industrial Demand – **Harriet Hunnable, Global Head of Precious Metals, CME Group**
- Outlook for Ethylene Oxide Demand – **Jeremy Pafford, Managing Editor, Americas, ICIS Chemical Business Magazine**
- Silver as an Antimicrobial: Evolving Regulatory Issues – **Erin Tesch, Vice President, Technology Sciences Group Inc.**
- Silver and Electronics – Potential for Expansion in the Contact Market – **Matt Watson, Business Development Executive, Tanaka Kikinoku International (America)**
- Why Silver is Incorporated into Modern Fashion Trends – **Joel Primus, President, Naked Inc.**
- Silver's Expanding Role in Solar Energy Power – **(TBA)**
- Silver and Wearable Technology – The New Frontier – **(TBA)**

The Conference will also feature a panel discussion on the theme: “The Way Forward for Industrial Demand — Identifying New Opportunities.”

Confirmed panelists include:

- **David Holmes, Senior Vice President, Heraeus Metals New York**
- **Mitch Krebs, President and CEO, Coeur Mining**
- **Grant Angwin, Executive Vice President, Asahi Refining USA**
- **Steve Scacalossi, Director, Head of Sales, Global Metals, TD Securities**

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Participants at the Conference will include executives and experts from across the silver supply, fabrication, and end-use sectors.

The Silver Industrial Conference will be held at the University Club, in downtown Washington, D.C. The schedule includes an opening reception on the evening of October 28 followed by the Conference program on October 29.

Silver Industrial Conference attendees are offered discounted room rates of US\$235 + taxes/night at The University Club of Washington D.C. Please contact the Club's main number which is (+1) 202-862-8800 for room reservations and mention that you belong to the "**The Silver Institute**" group for discounted room rates.

To register for the Conference, please click below:

[Silver Industrial Conference Registration Page](#)

Registration Open for 14th China International Silver Conference

Registration is open for the 14th China International Silver Conference (CISC), which will be held in Shanghai, China, from September 16-18, 2015. The CISC is the most prominent global international silver conference and offers attendees an opportunity to network with key Chinese and international silver market participants, according to the conference hosts.

The CISC will be held at the Hilton DoubleTree Hotel, a five-star hotel located in the heart of Shanghai.

Presentations will include:

- Current View of the Global Silver Market
- The Status of China's Silver Industry During the 13th Five-Year Plan
- Silver Scrap: The Forgotten Fundamental
- China's Growing Opportunities for Silver Investment
- Outlook for Silver Industrial Uses
- China's Silver Jewelry and Silverware Industry
- Two-Year China Economic Forecast
- The Foundation and Status of the Shanghai Free Trade Zone
- The Evolution of Silver and Global Trade
- World Silver Mining Resources and Future Mine Supply
- Silver Processing in China
- The LBMA Silver Price and Silver Bar Certification

Conference participants will include manufacturers, refiners, leading silver mining companies, investors, silver traders and futures brokers, government officials, silver industry organizations, and the media. Last year's conference drew over 400 delegates from across the silver supply chain.

The CISC is hosted by the China General Chamber of Commerce, the China Chamber of Commerce of Metals, Minerals & Chemicals Importers & Exporters, the China Nonferrous Metals Industry Association, the Gems & Jewelry Trade Association of China, and the Silver Institute. The Conference is being organized by the Shanghai White Platinum and Silver Exchange.

A welcome dinner will take place on September 16th, and the speakers' program will cover a full day on the 17th and a half-day on the 18th.

Registration is now underway, and more information on the conference can be found at the conference [web site](#):

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