THE SILVERINSTITUTE

December 2011

Silver News

iShares To Bring Silver Miner ETF to Market

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iShares has filed to offer a silver miners Exchange Traded Fund

> "The new fund is in addition to the company's very popular iShares Silver Trust (NYSE Arca: SLV), an ETF that tracks the price of silver…"

iShares plans to bring to market five new exchange traded funds or ETFs focusing on commodities including the MSCI Silver Miners Fund iShares, which would invest in equity companies involved in silver mining. "As of November 1, 2011, the underlying index consisted of companies in the following five countries or regions: Canada, Hong Kong, Mexico, the United Kingdom and the United States," according to filings at the Securities and Exchange Commission.

MSCI Global Equity Indices are widely-tracked global equity benchmarks that serve as the basis for over 400 exchange traded funds throughout the world.

The new fund is in addition to the company's very popular iShares Silver Trust (NYSE Arca: SLV), an ETF that tracks the price of silver, which held over 314 million ounces of silver in the Trust as of December 15.

The company has not commented publicly about the new ETF apart from what was contained in the SEC filings. However, all of the new fund filings indicate that iShares is branching out into more closely-focused investments that offer investors exposure to an expanding array of commodities, including metals, agriculture and energy. The other new proposed ETFs are iShares MSCI Global Gold Miners Fund, iShares MSCI Global Select Miners and Producers Fund, iShares MSCI Global MSCI Global Energy Producers Fund and iShares MSCI Global Agriculture Producers Fund. The SEC filings did not include annual expense ratios or ticker symbols.

Silver Nanowires May Replace Expensive Alloys Used in LCDs and Solar Cells

Indium tin oxide is the alloy of choice for electrodes used in LCD screens but the metal has many drawbacks. Besides its high price, ITO is brittle, making its use in flexible displays and solar cells problematic. Also, ITO is expensive to manufacture because indium is rare.

Now, scientists at University of California Los Angeles (UCLA) may have found the ideal replacement: silver nanowires. Not only is silver relatively abundant, but nanowires are efficient to manufacture and their electrical characteristics rival or exceed those of ITO.

For years, researchers have considered silver nanowires as alternatives for ITO but they ran into a problem with the complicated processes necessary to fuse the nanowires while maintaining low electrical resistance and strong adhesion.

The answer was to fuse a mat of silver nanowires with metal-oxide nanoparticles and organic polymers. This not only maintained silver's high conductivity but also allowed the nanowires to be flexible and transparent. The procedure started with researchers spraying a solution of commercially available silver nanowires onto the surface. Next, they added a solution of titanium dioxide nanoparticles, producing a film which, as it dried, pulled the nanowires together for improved conductivity. To increase the wire's adhesion to the surface they coated the film with conductive polymers.

The end result is a nanowire mat that is ideal for flexible electrodes and is also transparent. This transparency not only makes the new material ideal for LCD screens but also for solar cells. The UCLA researchers have built solar cells using the nanowires and found that their performance compares favorably to solar cells made with indium tin oxide.

Germ-Free Covers For Your Smartphone and Tablet

With the warning of "Get Back, Germs," fuse foneGEAR of Rochester Hills, Michigan, offers a silver-based, transparent shield for iPads, iPhones and other electronics devices. The sheets, which come in exact sizes or in larger dimensions that you can trim with scissors, cost about $30 for one the size of an iPad.

Company officials say that the sheets are not only effective against bacteria, but are fingerprint resistant and enhance screen brightness. The anti-glare screens also eliminate static electricity.

fuse

European Group Producing, Testing Anti-Bacterial Textiles to Prevent Spreading Hospital Germs to Outside Environment

Silver Nanoparticles to be Featured

AMICROTEX, a project financed through the Regional Operational Programme of the European Regional Development Fund is designed to develop a range of antimicrobial textiles to help reduce the spread of germs from hospitals to the outside environment. Although anti-bacterial fabrics and materials have been shown to reduce the spread of infections within hospitals, no testing has been done on so-called nosocomial infections, which start in health care facilities and contaminate people outside the buildings.

Because no such products have ever been produced or tested, the end products would most likely end up being new designs. AMICROTEX is comprised of operators in the textile chain: yarn manufacturers (RadiciGroup), weavers (Tiba Tricot Srl, Tessitura Lazzati SpA, Leucadia SpA), garment manufacturers (Alsco Italia Srl), consulting companies (Ecoconsult Srl), scientific institutions and hospital centres (Fondazione Centro San Raffaele, Gruppo Ospedaliero San Donato Foundation).

One of Italy's largest manufacturing conglomerates, RadiciGroup, is offering antibacterial yarn through two companies in the Group's Fibers Business Area, Noyfil SpA (Italy) and Noyfil SA (Switzerland). *Starlight feel* is produced with a silicon dioxide matrix incorporated into the yarn during extrusion, and becomes part of the fabric when it is woven. Each silicon dioxide particle contains smaller silver metal nanoparticles located on the surface of the matrix and agglomerated in the entire silicon particle structure. Silver nanoparticles, present both on the surface as well as inside the matrix, ensure the uniform distribution of nanoparticles in the yarn and provide both immediate and long-term bacteriostatic activity, company officials say.

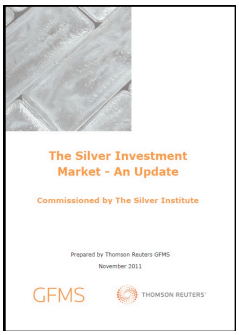
So far, the AMICROTEX project has produced the first few meters of antibacterial fabric, which have been tested for antibacterial efficacy at two laboratories and proved effective against bacteria. The fabrics are now undergoing repeated laundering and bleaching as required for medical garments. In another test, hospital coats are also being made for testing in a healthcare facility.

Silver Investment to Hit Record High in 2011: Silver Institute Report

World silver investment will reach a record high of $10 billion in 2011, representing a 66 percent increase over the $6 billion posted in 2010, according to *The Silver Investment Market – An Update*, a report issued on November 10 by The Silver Institute. The report, prepared by Thomson Reuters GFMS, also noted:

- Silver investment has become a key area of the global silver supply/demand balance;
- Since the beginning of 2008, global silver-related Exchange Traded Fund (ETF) holdings have grown by 364 million ounces to 577 million ounces on October 31, 2011; and
- In 2011, a new peak of 41 million coins is forecast for the US Mint's American Eagle silver bullion coin sales, eclipsing last year's record of 34 million coins. Globally, bullion coin sales are on target to post another record high.

The Silver Investment Market – An Update is free for download here.



Russian Firm Introduces Antibacterial Inks

Silver-imbedded papers have been around for a while, but a Russian company has introduced silver-imbedded ink to go with that paper. Sun Innovations ink can be printed on any kind of paper (non-silver types, too) to help prevent the spread of microbes, company officials say. The ink also can be used on wallpaper and wall panels. (See the August edition of Silver News for a story on silver inks designed for electronic circuits *Rollerball Pen With Silver Ink Builds Circuits "On-The-Fly."*)

"There are a lot of options of how to apply our invention," says the founder of Sun Innovations, Vladislav Mirchev. ""For instance, it can be used for decorating the walls in public places. We believe that it can be used to lessen the chance of catching the common cold, or you could print an image on the surface of a notebook to protect the user from accumulated bacteria."

New Design Could Lead to More Efficient Solar Cells

Solar cells are not as efficient as engineers would like, partly because these thin wafers don't convert all the wavelengths of light emitted by the sun into electricity. Now, researchers at Northwestern University hope to change that by building a solar cell that absorbs a wider range of wavelengths, thus making them more efficient and cost effective.

Because many materials tend to absorb light rather than reflect it, the research team increased the solar cell's absorption by building an ultrathin 'super absorber' composed of an alternating metal/insulator/metal stack with a trapezoid-shaped grate of silver nanofilm on top. "The solar spectrum is not like a laser – it's very broadband, starting with ultraviolet and going up to near-infrared," said Koray Aydin, assistant professor of electrical engineering and computer science, and lead author of the study which appeared in the November issue of the journal *Nature Communications*. "To capture this light most efficiently, a solar cell needs to have a broadband response. This design allows us to achieve that."

Aydin notes that the uniquely-shaped grate caused light to spend more time inside the material giving it more time to absorb different lightwaves. The shape also allows the material to collect light from different angles, which is useful when dealing with a sun that moves throughout the day. Aydin adds that the research is not directly applicable to solar cell technology yet because the metals used in the prototype cannot convert light to electricity, but the shape could be replicated in semiconducting materials used in solar cell production. If applied to semiconducting materials, the technology could lead to thinner, lower-cost and more efficient solar cells, he said.

Royal Canadian Mint Considering Silver Exchange-Traded Receipt

Following the success in November of its $600-million initial public offering for gold exchange-traded receipts, which targeted retail investors, the Royal Canadian Mint is considering a similar product based on silver.

In an interview with *The Globe and Mail*, the Mint's Chief Executive Officer Ian Bennett said: "A lot of people during the road show [for the gold ETR] expressed an interest in silver. That is something that the fertile minds of our bankers and the people at the Mint are going to be looking at."

The gold ETR, which **r**epresents ownership in physical gold bullion, is listed on the Toronto Stock Exchange but is not registered for sale by US brokers. Bennett noted that one stumbling block of a silver ETR is that it takes a lot more room to store the product compared to gold.

Indian Vending Machine Sells Silver, Gold and Diamonds

Gitanjali Group, one of the world's largest integrated manufacturers of branded jewelry, has installed what company officials say is the first cash machine to dispense silver and gold coins as well diamonds. Vending machines offering precious metals bars have been available for several years, but these ATMs have added diamonds to the mix in hopes of meeting India's on-the-go demand for jewels and precious metals.

> "The first vending machine was installed in Mumbai with 75 more planned for around the country over the next three years…"

Gitanjali Group chief Sanjeev Agarwal told reporters at a press conference: "This machine is a first of its kind anywhere in the world and will further revolutionize the processes by which precious metals and jewelry is bought… It has a particular significance in India where usually such items are purchased as tokens to observe traditions on auspicious days."

The first vending machine was installed in Mumbai with 75 more planned for around the country over the next three years, according to Agarwal. The 7-foot high machines will offer nearly 40 products. The Mumbai machine sells products that range from a 20 gram silver coin to a 10 gram gold coin to a diamond-studded pendant. Prices are updated daily. During its first day of operation, the Mumbai machine handled 28 transactions.

US EPA Grants Conditional Registration of Silver-Based Antimicrobial Pesticide

HeiQ Product Will be Incorporated Into Textiles

The US Environmental Protection Agency (EPA) on December 1, 2011, announced that it granted a four-year conditional registration to Zurich-based HeiQ Materials AG for a pesticide product containing nanosilver. The product, *HeiQ AGS-20*, is a silver-based antimicrobial pesticide containing nanosilver and nanosized silica that will be incorporated into textiles to suppress the growth of bacteria, according to the EPA.

The treated textiles can be manufactured into indoor use articles such as sheets, blankets, towels, napkins, outerwear, sportswear, sleepwear, undergarments, socks and hosiery, and outdoor use articles such as sailcloth, tarps, tents and awnings.

This is an important achievement spearheaded over the last three years by the Silver Nanotechnology Working Group whose members include the Silver Institute, HeiQ Materials AG, Servicios Administrativos Peñoles S.A. de C.V., NanoSurface Technologies, and NanoHorizons Inc.

In its Decision Document, the EPA notes that the basis for conditional registration is that:

1. *HeiQ AGS-20* contains an active ingredient, silver nanoparticles, which is not an active ingredient in any currently registered pesticide (i.e. it's a 'new' active ingredient);
2. Use of *HeiQ AGS-20* will not cause unreasonable adverse effects on the environment during the period when newly-required data are being developed;
3. Insufficient time has elapsed for HeiQ to generate and submit the newly-required data; and
4. Use of *HeiQ AGS-20* is in the public interest.

Although the registration is conditional based on the completion of data requirements, HeiQ's CEO, Carlo Centonze, has indicated that the company will comply with all requirements and continue to produce and communicate its findings to the EPA and other regulators.

HeiQ AGS-20 is a silver-based antimicrobial pesticide containing nanosilver and nanosized silica that will be incorporated into textiles to suppress the growth of bacteria.

Silver Lets Glove Wearers Work Their Touch Screens

Calling themselves "everyday knit gloves reinvented for a touch screen world," Agloves use silver imbedded in the fingertips allowing users to operate their tablets, smartphones or any other devices that have touch screens.

Unlike regular gloves, which act as an insulator, the silver in Agloves makes use of the body's 'conducting' ability to make touch screen operation possible. Even though the gloves are snugly fit to allow dexterity, they are also warm because they trap infrared radiation generated by the body. For extra cold weather, company officials suggest wearing two pairs of gloves for greater thickness without sacrificing conductivity.

The gloves' materials are durable, composed of continuous filament nylon and spun polyester, and the silver does not wear or wash off. They come in three styles: Agloves for about US$18, and *Sport* and *Bamboo*, each about US$24.

AGLOVES

These silver-fingertipped gloves allow you use touchscreens while keeping your hands warm.

Industry News

Frequently-Handled Switches Get Silver Protection

Arcolectric has introduced a range of antimicrobial switches in partnership with UK-based BioCote, a provider of silver-based antimicrobial technology, to keep heavily-touched switches bacteria free. The new line of switches comes in many types, including standard and miniature rocker switches, push button switches and double-pole splash-resistant switches. They are manufactured with BioCote's silver ion technology during the molding process to produce the antimicrobial electronic components.

Integrating BioCote at the point of manufacture provides built-in antimicrobial protection for the life span of the component part, reducing microbes including bacteria, mold and fungi by up to 99.9 percent, according to company officials. "Arcolectric's switches are already used for a wide variety of 'high traffic' consumer and industrial devices," said Stuart Hutchings, marketing manager. "Our partnership with BioCote ensures the surfaces of Arcolectric switches will help prevent the spread of microbes… We anticipate a strong reaction from our customers to these significant enhancements to our best selling ranges." Arcolectric is based in Thousand Palms, California, and is a subsidiary of UK–based Elektron Technology PLC.

BioCote has carried out a number of environmental trials in hospitals, food processing facilities and care homes to scientifically prove BioCote-protected products are as effective in the field as in laboratory testing. They consistently reduce levels of microbial contamination in the environment by over 95 percent, say company officials.

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