New Twist on 3D Printing: Print a Cell Phone

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VANCOUVER, British Columbia, April 29, 2014 (GLOBE NEWSWIRE) -- When silicon became the medium of choice for semiconductors in the 60's, the previous material, germanium, was left behind to the point where few today have ever heard of it. With the rise of graphene, silicon may eventually experience the same fate, relegated to a curiosity at some semiconductor museum.

Graphene was discovered in 2004. By 2014, there have been 10,000 patents filed. The magic of this form of pure carbon that can be derived from ultra-pure graphite is that it is 200 times stronger than steel, transparent, more conductive than silicon and flexible. One ounce of graphene could cover 28 football fields.

Usually, only the biggest companies have the R&D clout to participate in new developments. However, one small public company, Lomiko Metals (TSX-V:LMR) (OTCQX:LMRMF), has been able to leap ahead working with leading scientists at Graphene Labs of Long Island New York.

One example espoused by the American Chemical Society posited that advancements in graphene could eventually make cellphones as thin as a piece of paper and flexible enough to fold up and put it in a pocket. Further, this wundermineral could potentially be the key constituent in the current and future generations of flexible displays and virtually all manner of electronic device.

Some very big names are pouring money and R&D into graphene development. Samsung Electronics recently announced a breakthrough in the advance toward graphene commercialization by; "*synthesizing large-area graphene into a single crystal on a semiconductor, while maintaining its electric and mechanical properties. By developing a method for growing a single crystal graphene into a large area, the researchers claim they could displace the tech industry's reliance on silicon.*"

Along with Samsung, the European Nanomaster project, led by NetComposites in the UK, has 12 partners worldwide, including Timcal owned by Imerys, a Canadian name that graphite investors will know well. The global initiative has developed new grades of expanded graphite, which have been used to produce high-quality graphene.

TIMCAL Graphite & Carbon produces and markets a large variety of synthetic and natural graphite powders, conductive carbon blacks and water-based dispersions of consistent high quality.

Lomiko is the only company in this sector poised for exponential growth. The others are billion dollar companies. The Company is also developing a vertical business alignment from graphite to graphene, which includes a patent on the manufacturing process involving 3D printing with graphene. Using this new technology together with a new material, it will be able to print electronic devices – a process known as Additive Manufacturing. Further, the patent Lomiko participated in was filed *before* the bigger companies announced their involvement.

"Only certain types of graphite are appropriate for use in electronics. Our Quatre Milles discovery is near surface, high grade, and high carbon content crystalline flake graphite. We believe Lomiko is at the forefront of graphene development," stated A. Paul Gill, CEO of Lomiko Metals in an exclusive interview with Financial Press. "As well, our strategic alliance with Graphene Labs has produced Graphene 3D Lab which has filed a provisional patent application for the use of graphene-enhanced material, along with other materials, in the fast growing market of 3D Printing, also known as Additive Manufacturing within the industry."

Lomiko recently announced the Company's listing on the OTCQX market. And this on the heels of a successful $5.5 million financing concluded mid-March, 2014. This event gives Lomiko significant working capital and funds for exploration and business development.

Lomiko has virtually all its bases covered. Since development of graphene needs high purity, large flake graphite, it has the security of supply necessary to advance testing and eventual production with a particular focus on 3D printing.

Gill states: "3D printing a whistle or chess piece is already child's play. Lomiko looks to the day when the Company can print a fully functioning cell phone, watch or stereo system."

Adding graphene to polymers, which are conventionally used in 3D printing, enhances the properties of the polymer in many different ways; it improves the mechanical strength as well as its electrical and thermal conductivity. The method described in the provisional patent application allows consumers to use the polymer, infused with graphene, together with conventional polymers in the same printing process, thereby fabricating functional electronic devices.

Credit Suisse forecasts that global 3D printing market revenues will reach almost $12 billion by 2020; they came in just over $2 billion in 2012. That represents annual growth of 20-30%. The retail consumer/small business market shows the largest growth potential with 100%+ year over year growth in 2013.

While the applications in 3D printing are impressive, there are several multi-billion dollar industries that will benefit from this alliance including the medical appliance market, biotech and super capacitors. RFID, smart packaging, ITO replacement, sensors, logic and memory are also areas where graphene will likely see exceptional growth.

With a solid partnership for graphene development, a successful financing and US listing, Lomiko has moved to the next level and represents, not only a compelling graphite play, but with its commitment to graphene development and expanding applications, it has become a hi-tech play as well.

Lomiko shares trade at $0.07 with a market cap of $9 million.

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