

Zenyatta – Sussex University Enhances Rubber Composites using Albany Graphene

[Zenyatta Ventures Ltd. {TSX.V: ZEN}](#) announced successful initial test results from research carried out by Dr. Alan Dalton at the University of Sussex, UK. using graphene converted from the Company's high-purity Albany graphite.

Sussex University tested the use of Zenyatta graphene in rubber composite and emulsion applications.



University of Sussex Successfully Enhances Performance of Rubber Composites using Zenyatta Graphene Derived from Albany Graphite

THUNDER BAY, ON. – [Zenyatta Ventures Ltd. {TSX.V: ZEN}](#) is pleased to announce successful initial test results from research carried out by Dr. Alan Dalton at the University of Sussex, UK ("Sussex") using graphene converted from the Company's high-purity graphite.

Sussex tested the use of Zenyatta graphene in rubber composite and emulsion applications.

Rubber Composite Applications

Sussex easily exfoliated Zenyatta graphite via sonication to produce graphene which was then homogenously dispersed into a rubber composite. *A several fold improvement in the electrical and thermal properties of the rubber composite along with*

increased strength and elasticity was realized by adding as little as 0.5% Zenyatta graphene.

Sussex researchers have turned to nano-materials like graphene to develop high performance rubber composite sensors. The resulting material demonstrated impressive performance as sensors which can detect motions as subtle as those associated with breathing and pulse.

Dr. Alan Dalton, Professor of Experimental Physics at Sussex noted, *“The exfoliation of Zenyatta graphite was very clean with the production of mostly monolayer and bilayer graphene.”* Dr. Dalton further stated, *“Our initial results using Zenyatta graphene in rubber composites show exceptional motion sensitivity to mechanical stress which is critical for sensor applications. We will be investigating the use of these composites in several other applications in conjunction with the appropriate industrial partners.”*

Rubber composites with multiple properties have potential sensor applications in wearable sports clothing and medical devices as health monitors.

Dr. Bharat Chahar, VP Market Development for Zenyatta noted, *“This further confirms the distinct and desirable properties of Albany graphite for conversion to graphene which was previously recognized by scientists in Israel, Japan and Canada”.* Dr. Chahar added that *“We continue to find that the unique properties of our graphite enable easier production of consistently high quality and easily dispersible graphene which is opening doors for new and important applications,*

especially composites. Zenyatta recently achieved similar successful results using our graphene in concrete composites with Dr. Oren Regev at Ben-Gurion University.”

The Company continues to provide high-purity graphite samples to potential end-users to allow them to assess the consistent quality of our material in their current graphene product developments.

Emulsion Applications

Scientists at Sussex have also developed techniques to produce solid-stabilized water-in-oil suspensions known as emulsions. Exfoliated graphite or graphene can be used as the stabilizing solid for these emulsions. These emulsions can then be used in new applications where the control of electrical and thermal properties is critical for performance. Examples of such applications include inkjet printing, thin wires, stress sensors and supercapacitors.

Sussex has developed a method to produce the graphene directly in the emulsion, but the homogeneity and yield of the Zenyatta produced graphene determined the success and usefulness of the suspension. In the past, the low yields and lack of homogenous graphene from other sources resulted in insufficient concentration of graphene and required further processing with a centrifuge. Recent results with Zenyatta's Albany graphite demonstrated superior homogenous graphene production with high yields thus allowing production of conductive liquid suspensions directly. These emulsions show excellent conductivity controls at graphene concentrations of approximately 1% or less.

Sussex is a world-leading research university near Brighton, United Kingdom. The high quality research-led university delivers internationally recognized, high-quality research. Zenyatta and Sussex are now working to scale-up testing while developing plans to prove out the viability of applications.

Zenyatta Ventures Ltd. is developing the Albany Graphite Deposit situated in northeastern Ontario, Canada. The deposit is a unique type of igneous-hosted, fluid-derived graphite mineralization contained in two large breccia pipes. The Company is seeking end users for their graphite and graphene and is working with several collaborative partners including the development of a graphene enhanced concrete.

Other potential markets for graphite include Li-ion batteries, fuel cells and powder metallurgy. The outlook for the global graphite market is very promising with demand growing rapidly from new applications. It is now considered one of the more strategic elements by many leading industrial nations, particularly for its growing importance in high technology manufacturing and in the emerging “green” industries such as electric vehicle components.

The Albany graphite deposit is situated 30 km north of the Trans-Canada Highway, power line and natural gas pipeline near the communities of Constance Lake First Nation and Hearst. A rail line is located 70 km away with an all-weather road approximately 10 km from the graphite deposit. The world trend is to develop products for technological applications that need extraordinary performance using ultra-high purity graphite powder at an affordable cost. Albany graphite can be upgraded with very good crystallinity without the use of aggressive acids (hydrofluoric) or high temperature thermal

treatment therefore having an environmental advantage over other types of upgraded high-purity graphite material.

Mr. Aubrey Eveleigh, P.Geo., Zenyatta's President and CEO, is the "Qualified Person" for the purposes of National Instrument 43-101 and has reviewed, prepared and supervised the preparation of the technical information contained in this news release.

For further information please visit the Company's website at www.zenyatta.ca

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CAUTIONARY STATEMENT: This analysis does not represent a statistically large sample size. Furthermore, these positive results do not mean that Zenyatta can extract and process Albany graphite for graphite applications on an economic basis. Without a formal independent feasibility study, there is no assurance that the operation will be economic. The Company has completed a July 9, 2015 Preliminary Economic Assessment which indicates an open pit mine life of 22 years (excludes underground resource which is open at depth) producing 30,000 tonnes purified graphite per annum (see Zenyatta press release of 1 June 2015). The PEA is preliminary in nature, it includes inferred mineral resources that are

considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized. Neither TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release. This news release may contain forward looking information and Zenyatta cautions readers that forward looking information is based on certain assumptions and risk factors that could cause actual results to differ materially from the expectations of Zenyatta included in this news release. This news release includes certain "forward-looking statements", which often, but not always, can be identified by the use of words such as "potential", "believes", "anticipates", "expects", "estimates", "may", "could", "would", "will", or "plan". These statements are based on information currently available to Zenyatta and Zenyatta provides no assurance that actual results will meet management's expectations. Forward-looking statements include estimates and statements with respect to Zenyatta's future plans, objectives or goals, to the effect that Zenyatta or management expects a stated condition or result to occur, including the expected timing for release of a pre-feasibility study, the expected uses for graphite in the future, and the future uses of the graphite from Zenyatta's Albany deposit. Since forward-looking statements are based on assumptions and address future events and conditions, by their very nature they involve inherent risks and uncertainties. Actual results relating to, among other things, results of metallurgical processing, ongoing exploration, project development, reclamation and capital costs of Zenyatta's mineral properties, and Zenyatta's financial condition and prospects, could differ materially from those currently anticipated in such statements for many reasons such as, but are not limited to: failure to convert estimated mineral resources to reserves; the preliminary nature of metallurgical test

results; the inability to identify target markets and satisfy the product criteria for such markets; the inability to complete a prefeasibility study; the inability to enter into offtake agreements with qualified purchasers; delays in obtaining or failures to obtain required governmental, environmental or other project approvals; political risks; uncertainties relating to the availability and costs of financing needed in the future; changes in equity markets, inflation, changes in exchange rates; fluctuations in commodity prices; delays in the development of projects; capital and operating costs varying significantly from estimates and the other risks involved in the mineral exploration and development industry; and those risks set out in Zenyatta's public documents filed on SEDAR. This list is not exhaustive of the factors that may affect any of Zenyatta's forward-looking statements. These and other factors should be considered carefully and readers should not place undue reliance on Zenyatta's forward-looking statements. Although Zenyatta believes that the assumptions and factors used in preparing the forward-looking information in this news release are reasonable, undue reliance should not be placed on such information, which only applies as of the date of this news release, and no assurance can be given that such events will occur in the disclosed time frames or at all. Zenyatta disclaims any intention or obligation to update or revise any forward-looking information, whether as a result of new information, future events or otherwise, other than as required by law.

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