

Zenyatta announces that Lakehead University Scientists have Successfully Produced Functionalized Graphene Oxide

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...from Albany Graphite for Environmental Sensing Applications

THUNDER BAY, March 01, 2017 - [Zenyatta Ventures Ltd.](#) ("Zenyatta" or "Company") (TSX VENTURE: ZEN) (OTCQX: ZENYF) is pleased to announce that a team of scientists under the direction of Dr. Aicheng Chen at Lakehead University ('Lakehead') in Thunder Bay, Ontario, Canada, has made significant advancements related to sensing application development with the first graphene oxide (GO) invention produced from the Company's high-purity Albany graphite. Dr. Chen and his team have developed a novel one-pot synthesis of fluorine functionalized graphene oxide (F-GO) which can be used in many energy, environmental and electrochemical sensing applications. The produced F-GO has been tested for the simultaneous detection of various toxic metal ions (e.g. mercury, lead, cadmium and copper) and a substantial improvement in the electrochemical sensing performance was achieved in comparison with GO. A patent has been filed by Dr. Chen for this invention and a paper describing the process in more detail was recently published in the latest volume of *Electrochemistry Communications* ([link](#)).

A one-pot synthesis may significantly shorten the number of steps required to produce F-GO. As the world deals with increased pollution and threats to human health due to the increase of various toxic metal ions entering the environment from the expanding industrial and agricultural sectors, there is a need to develop high-performance sensors that can detect and monitor these pollutants. Electrochemical methods are considered to be sensitive, highly reliable and convenient.

Dr. Chen commented, "We found Zenyatta's high-purity Albany graphite to be an ideal material for the production of graphene oxide and subsequent application development. Interestingly, it appears that the distinct particle size and morphology of Albany graphite are important factors in the ease of production of high-quality graphene and GO. These properties are likely the result of the deposit's unique geological genesis first identified by Lakehead's geology professor Dr. Andrew Conly in 2012."

In 2015, Dr. Aicheng Chen, Professor of Chemistry and Canada Research Chair in Materials and Environmental Chemistry at Lakehead, was awarded a Natural Science and Engineering Research Council of Canada ('NSERC') Collaborative Research and Development ('CRD') grant. The two primary focuses of this NSERC CRD project are the characterization of Zenyatta's graphite and the development of new materials for practical applications derived from it. Since the award of the grant, Dr. Chen and his research group have made significant advances in the development of new materials from Albany high-purity graphite. Dr. Chen's team has also supplied small samples of GO to selected third parties for testing as a component of advanced anode material for the lithium ion batteries and as a reinforcement additive for high strength composites, in applications where light weight and high strength are critical for success.

In addition to its incorporation into advanced batteries, graphite and its derivatives (like graphene and GO) have been employed in the development of various sensors and electronic devices. Recent investigations of graphene derived from graphite have demonstrated significantly improved electrochemical performance in these systems due to its unique electronic properties, enhanced surface area, novel mechanical and thermal properties, and chemical stabilities, when compared to the parent graphite. These qualities are vital for emerging high-tech or cleantech applications.

Dr. Bharat Chahar, VP of Market Development for Zenyatta, stated, "The Company is excited with the significant progress that Dr. Chen and his research team have made at Lakehead in their application development which has resulted in their first product-related patent application. The Company is convinced of the importance of graphene and GO materials and is confident that the amount invested globally on R&D by corporations, governments and academics will result in eventual large-scale commercialization. Zenyatta continues to play a very active role in R&D related to graphene research by providing consistent high-purity Albany graphite test samples to collaborative research facilities globally."

Zenyatta is developing its unique Albany graphite deposit in Ontario, Canada. The Company's highly crystalline 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 deposit.

Dr. Bharat Chahar, P.E., VP Market Development for Zenyatta, is a Qualified Person for the purposes of National Instrument 43-101 and has reviewed, prepared and supervised the preparation of the technical information in this news release. To find out more on [Zenyatta Ventures Ltd.](http://www.zenyatta.ca), please visit the website www.zenyatta.ca or contact the Company at info@zenyatta.ca or Tel. 807-346-1660.

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