

Zentek Announces Preliminary Battery Results and University of Toronto Receives NSERC Mission Alliance Grant to Optimize Graphite for Battery Anode Use

written by Raj Shah | August 8, 2024

August 8, 2024 ([Source](#)) – **Zentek Ltd.** (“Zentek” or the “Company”) (Nasdaq:ZTEK)(TSX-V:ZEN), an intellectual property technology development and commercialization company is pleased to announce preliminary battery results and the commencement of a three-year, \$441,000 project in collaboration with Professors Mohini Sain and Ning Yan from the University of Toronto (“U of T”). Funding for the project is provided by a Natural Sciences and Engineering Research Council of Canada (“NSERC”) Mission Alliance Grant. Prof. Sain is the Endowed Ford Motor Canada Chair in Sustainable Materials and Prof. Yan is the Tier 1 Canada Research Chair in Sustainable Bioproducts.

Highlights

- Three-year \$441,000 funding to optimize graphite for anode material.
- Promising preliminary results have already been achieved from this research with pouch cell batteries featuring engineered Albany graphite by U of T with a minimum 17% increase in capacity over batteries using commercial grade anode material.

- The project complements the \$1.6M Mitacs research project with the same group, announced on October 28, 2022, aimed at inventing multifunctional materials for automotive batteries including anode, cathode, separator and electrolyte chemistries.

Graphite is one of the six minerals identified by the Canadian government as a priority on its list of critical minerals, with electric vehicle batteries requiring up to 125 kg of graphite per vehicle. Unlike most critical minerals, graphite's value varies widely based on use cases, which require different purity, crystallinity, shape and flake size thresholds.

With significant investment in the North American battery supply chain and growing demand for finished anode material, the company is exploring both graphite production from its Albany Deposit and graphite processing to produce battery-ready anode material.^{[1](#)} The U of T project will play a significant role in this strategy.

The project with Profs. Sain and Yan will characterize and optimize the Albany Graphite by exploring various pathways to purify, increase capacity, enhance cycle life, and engineer the graphite to meet or exceed commercial standards for anode material in the EV market.

The U of T team brings experience from producing battery technology for the Ford Powertrain Engineering Research and Development Centre ("PERDC") and has recently expanded battery production capabilities at U of T to accomplish all critical processes and tests.

The U of T team has already successfully increased the capacity of an engineered graphite anode material through a simple modification step, resulting in pouch cell batteries with

initial results showing a 17% increased capacity over pouch cell batteries using commercial-grade anode materials. These results are preliminary and will be verified through further testing or at an independent third-party facility. Improvements have also been achieved in other performance metrics which will be announced in subsequent updates.

Greg Fenton, Zentek CEO commented, "We are very pleased to see our collaboration expand with Profs. Sain and Yan, who are some of Canada's leading experts in carbon technology. We are confident that their experience and innovation will be instrumental in achieving our goal of developing premium anode materials which can be translated to graphite from the Albany deposit resulting in a finished product that outperforms commercial anodes in energy capacity, cycle life, and charging rate. The potential of our Albany Graphite continues to grow. We have received positive feedback from government and industry regarding our ability to upgrade Albany Graphite to achieve five nines purity. Integrating that purity with the graphite engineering work from Prof. Sain's team will lead to greater value as we pursue the value-add processing component of the anode supply chain to create a vertically integrated anode solution."

About Zentek Ltd.

Zentek is an ISO 13485:2016 certified intellectual property technology company focused on the research, development and commercialization of novel products seeking to give the company's commercial partners a competitive advantage by making their products better, safer, and greener.

Zentek's patented technology platform ZenGUARD™, is demonstrated to have 99-per-cent anti-microbial activity and to significantly increase the bacterial and viral filtration efficiency of both

surgical masks and HVAC (heating, ventilation, and air conditioning) systems. Zentek's ZenGUARD™ production facility is located in Guelph, Ontario. Zentek's patent pending ZenARMOR™ technology platform is focused on corrosion protection applications.

Zentek has a global exclusive license to the Aptamer-based platform technology developed by McMaster University which is being jointly developed Zentek and McMaster for both the diagnostic and therapeutic markets.

For further information:

investorrelations@zentek.com

Ryan Shacklock

Tel: (306) 270-9610

Email: rshacklock@zentek.com

To find out more about Zentek, please visit our website at www.Zentek.com. A copy of this news release and all material documents in respect of the Company may be obtained on Zentek's SEDAR profile at <http://www.sedar.com/>.

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