Nano One Performs Well in Solid State Battery Tests at the University of Michigan

Nano One Materials Corp. (TSXV: NNO) reported this week that its technology performed well in solid-state battery testing with the University of Michigan (UM).

UM's battery laboratories are exploring various aspects of battery components, designs, interfaces, and assembly of solid-state electrochemical batteries.

Nano One focuses on its patented process for the production of cathode materials used in lithium-ion batteries and is collaborating with the UM on the development of innovative solid-state battery technology.

Richard Laine, Ph.D., Professor of Materials Science and Engineering at the UM commented, "Initial results from our evaluations show that Nano One's HVS materials perform well with our innovative agricultural waste derived electrolytes and we look forward to advancing our collaboration to demonstrate a viable solid-state battery configuration."

Cathode Key for Power and Reducing Costs

The cathode determines the battery's capacity and voltage, and can comprise 20% or more of the costs of a lithium-ion battery. Nano One has developed technology for the low-cost production of high-performance lithium-ion battery cathode materials used in electric vehicles, energy storage devices, and consumer electronics.

Nano One has programs underway with multiple academic research groups, automotive equipment manufacturers, and battery manufacturers to test its lithium-nickel-manganese-cobalt-

oxide (NMC) and high voltage spinel (HVS), also known as lithium-nickel-manganese-oxide (LNMO), cathodes in different solid-state battery systems.

LNMO cathodes have garnered industry attention by providing a low-cost, fast charging, and cobalt-free solution, key in cost-effective, large-scale commercial applications.

In December 2020, Nano One announced that it entered into a cathode evaluation agreement with an undisclosed, American-based, car manufacturer. This agreement is in addition to the deals announced with Volkswagen, Pulead, Saint Gobain, and an undisclosed Asian cathode producer.

Nano One's proprietary "One Pot" furnace process creates a coated single crystal powder that protects the cathode from side reactions while allowing the transfer of lithium ions between electrolyte and cathode.

In addition, the "One Pot" process offers the flexibility to use either lithium carbonate or lithium hydroxide as the reaction with the other metal inputs is indifferent to the type of lithium input and produces a finished cathode powder when thermally processed in a furnace.

It is also an environmentally friendly process using limited water and produces no waste stream as it eliminates intermediate steps and by-products in the process.

The Basics of Battery Technology

Reduced to its basics, a lithium-ion battery consists of 4 components: (1) a Cathode, the source of the lithium ions, (2) an Anode, the storage area of released lithium ions, (3) the Electrolyte, the medium which helps the ions flow, and (4) the Separator that prevents contact between the Cathode and the Anode.

The chemical reaction creates a voltage potential between the

cathode and the anode. The voltage is the electrical force from the power source, the higher the voltage, the more power it can send to the load, such as a motor.

A solid-state battery uses solid electrodes and a solid electrolyte, instead of liquid or gel electrolytes, found in conventional lithium-ion or lithium polymer batteries. As a solid-state battery can handle more charging and discharging cycles before degradation, it promises a longer lifetime.

In November 2020, Nano One reported that its HVS cathode when paired with a conventional electrolyte and a graphite anode achieved over 500 fast charge and discharge cycles at 45°C and also reached 1000 fast charge and discharge cycles at 25°C. These durability test results confirmed that its technology is stable at elevated operating temperatures required for automotive, power tools, and energy storage applications.

Cashed Up to Reach Commercialization

Recently, Nano One announced it received $4.46 million from the exercise of stock options and warrants since its last financial update dated October 1, 2020, and brings the company's cash balance to approximately C$28 million, including $14.37 million the company raised in October 2020.

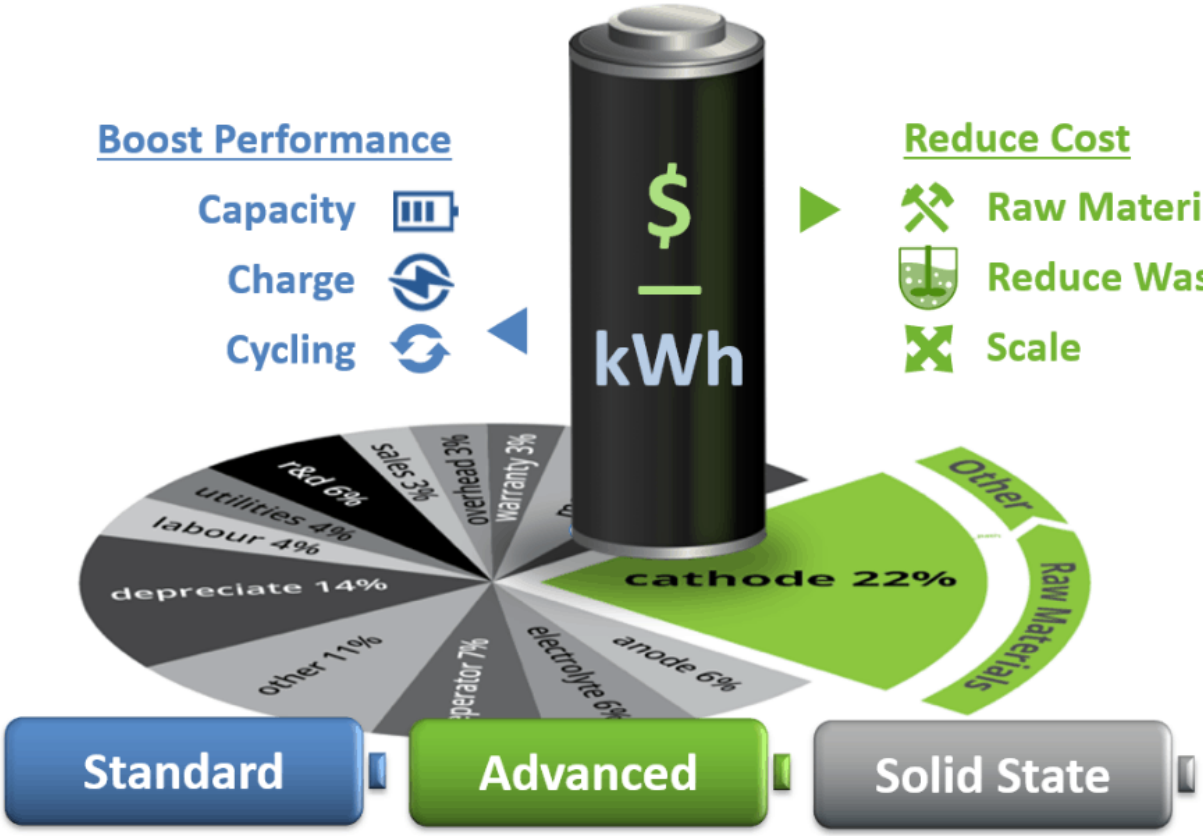
Final Thoughts

Nano One's technology is well-positioned to capitalize on the opportunities in the battery technology industry as economies shift to electrification efforts from solar, wind, and electric vehicles to reduce greenhouse gas emissions from fossil fuels.

This week, the Toronto Stock Exchange (TSX) Venture Exchange's named Nano One to its "2021 Venture 50", an annual ranking of the top-performing companies on the exchange. Companies are selected based on share price appreciation, trading volume, and market capitalization growth. Nano One's stock price is up

almost 300% in the past year.

Even with the recent stock price increase, there is plenty of market opportunity for the company. Nano One estimates the global cathode market could reach US$27 billion by 2026 and the company is focusing on potential licensing partners for its technology that should mitigate some of the risks.



SOURCE:

Tesla competitors currently sourcing lithium for their

power plants in Canada

Lithium supply is paramount to the future of clean energy. As long as demand for vehicle propulsion systems and portable electronic devices continues to increase, the world will continue to look for new sources of their component parts. International Lithium Corp. (TSXV: ILC) ("ILC") is superbly placed to meet this demand, having positioned itself with solid development partners and acquired high-quality grass roots projects at early stages of exploration, ILC aims to be the investor's choice and is currently battling the Canadian winter for that very title.

On 1st December 2016, ILC commenced a diamond drilling program at its Mavis Lake lithium pegmatite project in Ontario, and soon after shelved the drill until January. The retreat was ordered by a freak rain event that rendered the ground unsuitable for drilling and the team were forced to wait until the new year for the earth to freeze; the delay will result in the process being more efficient and overall environmental impact being reduced.

Thankfully, this is the Canadian mid-winter, and so an extreme cold warning is never far away.

ILC's rare metals pegmatite properties in Canada (the Mavis and Raleigh projects) and Ireland (Avalonia project) complement the company's lithium brine project in Argentina. The Avalonia project is under option to long-term strategic partner, the global lithium giant Ganfeng Lithium, and the Mavis project with strategic partner Pioneer Resources Limited. The Mavis and Raleigh projects together form the basis of the company's newly created Upper Canada Lithium Pool designated to focus on acquiring numerous prospects with previously reported high concentrations of lithium in close proximity to existing infrastructure.

I’m excited about Mavis et al. It seems like there are endless brine evaporation operations crawling towards production, and even though their Argentina brines are ILC’s main focus, there’s really nothing like smashing open a good pegmatite. The granite-like rock is formed as the final stage of magma crystallisation and is characterised by its very large crystals; it frequently contains sizeable precious stones and a variety of rare-earths from which ILC hopes to extract both the lithium and caesium that have been identified.

When rare-metal pegmatites solidify, the host rocks adjacent to the pegmatite may be enriched by the associated fluids, and what is known as a dispersion halo forms around the pegmatite body. Normally the extent of the rare-metal alteration halo is within a few meters of the pegmatite, but notably, the pegmatite belts at Mavis and Raleigh exhibit alteration halos in the order of tens of metres wide, representing some of the broadest and strongest host-rock lithium anomalies observed around the world.

A previous drill returned lithium concentrations as high as 3.08% in the Mavis Lake pegmatite, and we are hoping for further good news as the arctic temperatures at the site begin to subside this week, permitting work to continue. The budgeted exploration expenditures will be wholly funded by Pioneer as part of their earn-in on the project, and a $1 million budget has been allocated across both the Mavis and Raleigh projects.

Automakers with facilities in Ontario like GM, Ford, Toyota and Chrysler are all developing EV’s to compete with Tesla, and are currently sourcing lithium for their power plants. ILC’s focus on the area is no surprise then and with an established global lithium giant serving as advisor they are more likely to survive the winter than most.