

Nano One's Dan Blondal on making longer-lasting, longer-range battery materials for electric vehicles

“Cathode manufacturing is about taking sources of lithium, nickel, manganese, cobalt, iron, phosphorous and combining them into a mixed metal oxide. Basically it is a ceramic powder. Each of the little kernels of powder is a composite crystal structured material that has layers lithium, nickel, manganese, and cobalt that allows you to charge and discharge... What we do differently at Nano One is we have developed a way to make these materials. We have not changed the formulation of the material but we have changed how we make the underlying crystals. It is the formation of those crystals and the raw materials that we choose to put in which help reduce the cost. The number of steps we use is far less than the number of steps the industry uses... We add everything together, coatings included. We eliminate a bunch of steps as a manufacturing advantage. The crystal structures that come out of our process are highly purified crystal structures that are less susceptible to cracking and degradation mechanism when you assemble them into a battery and when you charge and discharge the battery. We are shooting to improve the longevity and durability of those materials. By doing that, we are enabling electric vehicle manufacturers and battery producers to make a longer-lasting and longer-range battery for electric vehicles.” States Dan Blondal, CEO, Director and Founder of Nano One Materials Corp. (TSXV: NNO), in an interview with InvestorIntel's Jack Lifton.

Dan went on to provide an update on Nano One's joint

development work with Pulead Technology. He said that Nano One and Pulead are working together to design a next-generation manufacturing facility for the production of lithium iron phosphate (LFP) cathode materials. Lithium iron phosphate batteries have a very strong future because they are the safest, longest-lasting and security of supply is high.

To access the complete interview, [click here](#)

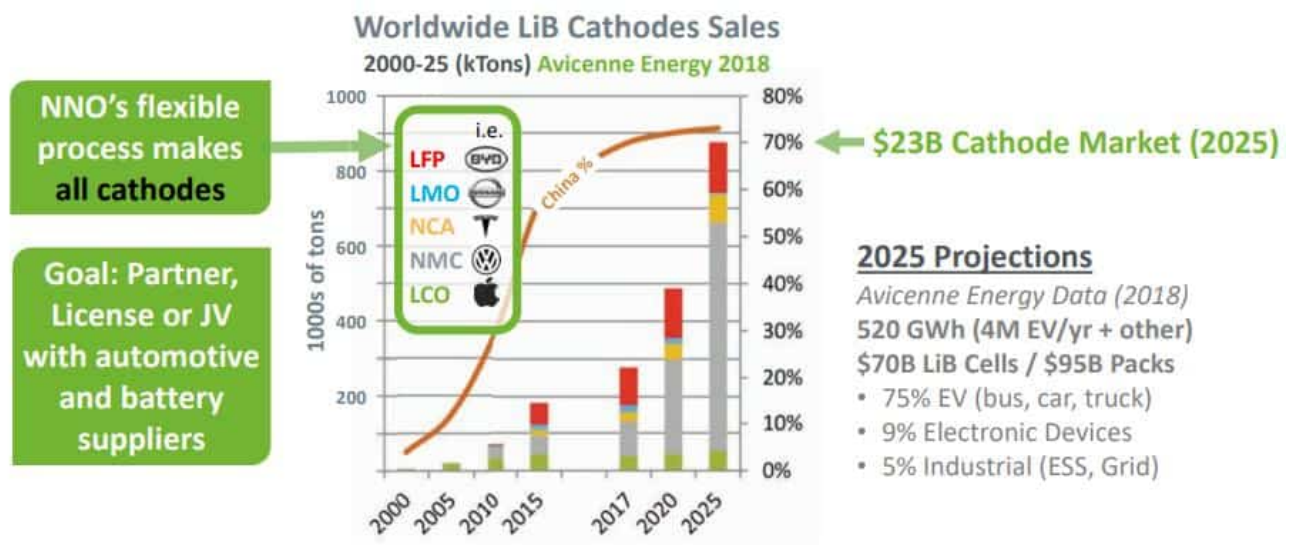
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Nano One and Pulead's LFP battery partnership offers the power to change the electric vehicle market.

Lithium Iron Phosphate (LFP) cathode for Li-ion batteries is very popular with heavier and lower range electric vehicles, especially in China. Although it is less energy dense than Nickel Manganese Cobalt (NMC) it is more durable and cheaper (no cobalt). This is making it popular in China with e-buses, e-trucks, energy storage, power tools and shorter-range electric cars. BYD Co. leads the world in e-buses so they like LFP cathodes for many of their vehicles.

The cathode market is forecast to be a USD\$23 billion market by 2025

Nano One Cathode Market Opportunity



Nano One Materials Corp. (TSXV: NNO) is a Canadian technology company with a scalable industrial process for producing low cost high performance battery materials. The Company will be concentrating on LFP cathode in the near term using its proprietary low cost cathode making processes.

Nano One has recently entered into joint development agreements with two large companies.

Nano One agreement with Saint Gobain

The Saint Gobain deal announced last December brings credibility as they are a major global ceramic materials company. This collaboration with a €40.8 billion ceramics giant like Saint-Gobain is a smart move by Nano One.

Nano One agreement with Pulead Technology Industry

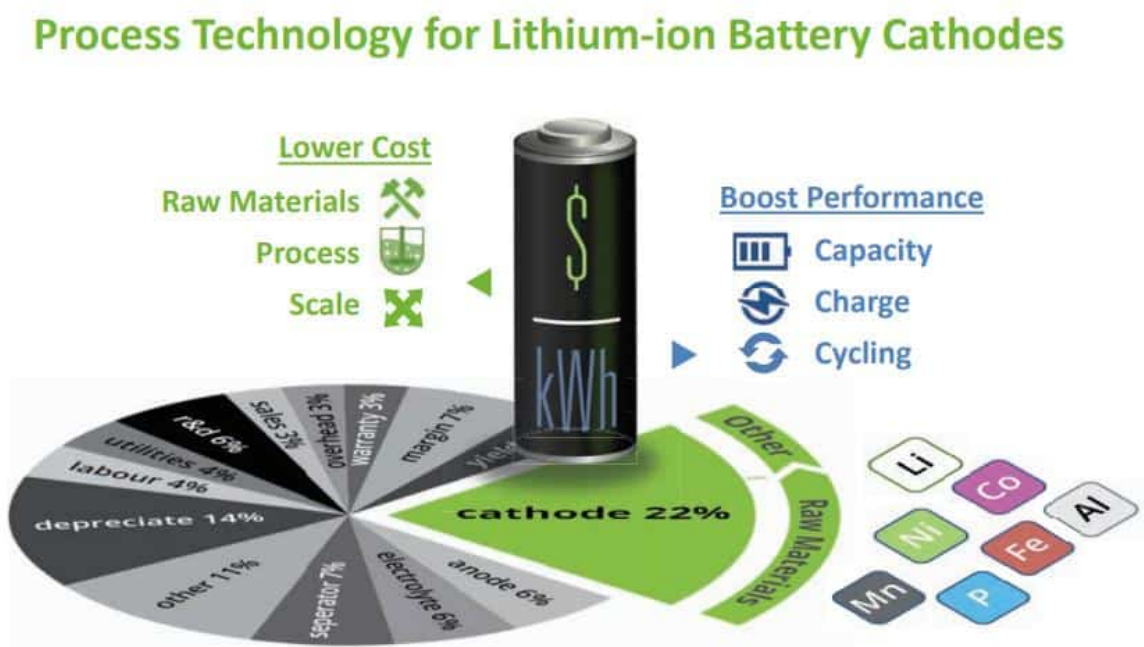
The second deal is with Pulead Technology Industry and has Nano One excited. This partnership was announced on January 25, 2019. The objective of this joint development effort is to identify a viable supply chain and design a low cost LFP plant using Nano One's proprietary processes. Pulead is one of the most trusted and established cathode manufacturers in China.

In fact, they supply LCO cathode materials to Amperex Technology Limited (ATL) who make batteries for Apple and are expanding their capacity to capture a greater portion of the LFP growth opportunity.

CEO of Nano One Materials Corp., Mr. Dan Blondal stated: "After two months, our teams are working well together and developments at the lab and pilot scale are moving along at a good pace. We have identified viable raw materials, are refining our processes, and are evaluating resulting materials against target specifications. Performance targets and economic modelling remain on track as we optimize Nano One's innovative process for the commercial production of LFP."

If Pulead and Nano One are successful in jointly developing Nano One's process into Pulead's production lines, then Nano One will likely see a royalty deal struck that will bring millions to Nano One's bottom line. That's the exciting part.

Nano One's proprietary process technology



The LFP market is a tremendous opportunity for Nano One

LFP will represent a tremendous market opportunity for Nano One with market demand anticipated to double to over 200,000

tonnes/yr in 2025. China has even said that 61% of passenger vehicles and 94% of buses will use LFP batteries. LFP is having a terrific resurgence due to its low cost, safety and stability, beating all other cathode materials in that area. Another reason companies are choosing LFP is that it contains no cobalt. While cobalt may be needed for long range luxury EVs and portable consumer electronics, it isn't needed in LFP battery applications such as buses, grid storage and entry level 200 km EVs, where safety, longevity and cost are more important than range.

Amazon announced they want to bring clean energy to their delivery fleet. Last mile and short-range delivery trucks are also likely to be LFP powered as that is the most cost effective and the safest material. Also in China LFP batteries are almost at cost parity with lead-acid batteries, still one of the largest battery markets. With growing pressure in China and elsewhere to ban lead-acid for its environmental hazards, LFP could see a big boost from low speed EVs (80 km/hr).

While Nano One continues to work with Pulead on LFP for today's e-buses and e-trucks, the company continues to innovate and address other battery chemistry challenges. Nano One has over 18 companies in its business development and evaluation pipeline, including the 2 already discussed. With such a large and growing pipeline, the company is expected to announce more partnerships later this year, and get investors very excited.

Dan Blondal on Nano One's

collaboration agreement with Pulead Technology

Recently during PDAC 2019, Dan Blondal, CEO, Director and Founder of Nano One Materials Corp. (TSXV: NNO), shared updates on Nano One's collaboration agreement with Pulead Technology with InvestorIntel's Tracy Weslosky.

Dan Said: "We put a joint development agreement with Pulead in mid-January. They are a very prominent cathode producer in China supplying the lithium iron phosphate market and supplying the lithium cobalt oxide market as well. That's the materials that go into your iPhones. Very exciting company to be working with. Pulead is the world's largest producer of lithium iron phosphate. That's the material that goes into electric buses, lower range electric vehicles..."

Nano One Materials Corp. has developed patented technology for the low-cost production of high performance lithium ion battery cathode materials used in electric vehicles, energy storage and consumer electronics. The processing technology addresses fundamental supply chain constraints by enabling wider raw materials specifications for use in lithium ion batteries. The process can be configured for the full range of cathode materials and has the flexibility to shift with emerging and future battery market trends.

Nano One has built a pilot plant to demonstrate high volume production and to optimize its technology across a range of materials. The pilot plant is being funded with the assistance and support of the Government of Canada through Sustainable Development Technology Canada (SDTC) and the Automotive Supplier Innovation Program (ASIP) a program of Innovation, Science and Economic Development Canada (ISED).

To access the complete interview, [click here](#)

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