

Nano One Materials' Blondal on the joint development agreement with Saint-Gobain

"The agreement we have with Saint-Gobain is to jointly develop technology that will enhance, the thermal processing of cathode materials for lithium-ion batteries. Ideally we will develop this technology and have an offering, a thermal processing offering for cathode manufacturers. This will be in the lithium-ion battery market and obviously it will be with a multinational company that brings a great deal of credibility to the table." States Dan Blondal, CEO, Director and Founder of Nano One Materials Corp. (TSXV: NNO), in an interview with InvestorIntel Corp. CEO Tracy Weslosky.

Tracy Weslosky: Congratulations on your joint development agreement with Saint-Gobain. We are so excited for Nano One Materials. Can you tell us more about this deal please?

Dan Blondal: Yes. Saint-Gobain is a large multinational corporation. They have got a 350 year history and they have deep roots in materials and ceramics that are used in buildings, aerospace, energy. Nano One, as some of your listeners will know, is a technology company. We are focused on the production of cathode materials for lithium-ion batteries. What this deal is, is about where our business interests collide. We meet at the final stage of cathode production process. That is where cathode patterns undergo a high temperature process in a furnace. It is as simple as that. We are delighted to be collaborating with a company like Saint-Gobain. Obviously they are very large and they have a very big presence. It is a testament to Nano One, to our innovative technology and of course to our people and the know how that we bring to the table.

Tracy Weslosky: I could not agree with you more. How would you describe the benefits for Nano One with this collaboration? Can you tell us a little bit more about that?

Dan Blondal: The agreement we have with Saint-Gobain is to jointly develop technology that will enhance, the thermal processing of cathode materials for lithium-ion batteries. Ideally we will develop this technology and have an offering, a thermal processing offering for cathode manufacturers. This will be in the lithium-ion battery market and obviously it will be with a multinational company that brings a great deal of credibility to the table.

Tracy Weslosky: Perhaps you can talk a little bit more about how Nano One stands to benefit from this collaboration and joint development agreement.

Dan Blondal: We stand to benefit because we will be able to enhance our cathode materials. We will enhance our thermal processing offering so that is one stage of our process for making these materials. Obviously we believe we can improve the performance, we can bring cost efficiencies to the table and we bring a world-class partner to the table as well, as we start to roll our technology out in a commercial way.

Tracy Weslosky: You have had a lot of really substantial good news this last year Dan, you and your team at Nano One Materials. I noticed you also just put out an announcement for your 10th patent. Tell us a little bit more about that.

Dan Blondal: That is our 10th patent. We now have patents in the U.S. and in Canada and Japan, Korea and Taiwan as well. We also have 30 more patents that are currently pending in jurisdictions all over the world, but primarily in the battery important jurisdictions so that would also include China and Europe as well. We are very confident in our patent portfolio and its ability to position us in the marketplace and protect the technology that we have moving forward.

Tracy Weslosky: Of course, looking back on your news for the year Dan, is there anything else you would like to draw our viewers' attention to?...to access the complete interview, click [here](#)

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Demand for better batteries brings Nano One and Saint-Gobain together.

The globe is evolving with its movement towards everything green. Examples are the current 68% year on year growth in electric cars (2018 sales should exceed 2 million), or the rapid rise of lithium-ion battery energy storage for homes, businesses, and commercial scale power operators. All this needs batteries, and ideally better and cheaper batteries.

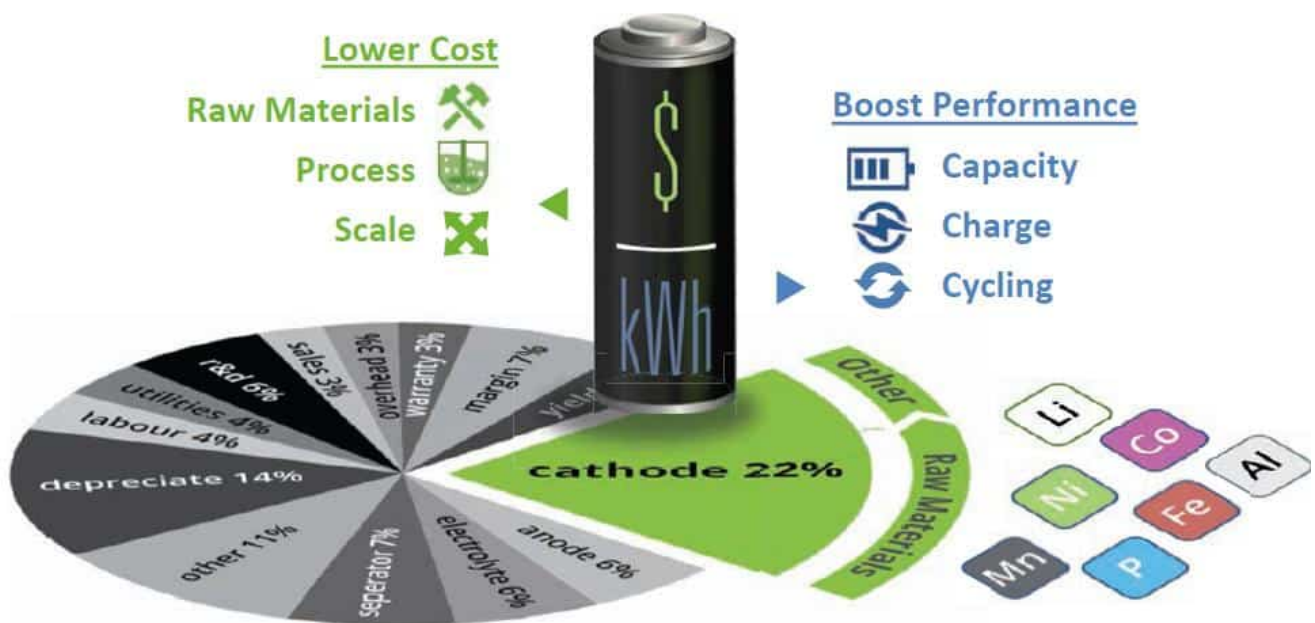
Nano One Materials Corp. (TSXV: NN0) has a patented cost reducing technology of nano-structured cathode materials, which they believe can address global demand for better and cheaper batteries. Cathode materials are found in the lithium ion batteries that power consumer electronics, electric vehicles, and energy storage.

Joint Development Agreement with Saint-Gobain

On December 18, 2018, Nano One CEO Dan Blondal, announced that the company has entered into a Joint Development Agreement with Saint-Gobain. The goal of the collaboration is to enhance the high temperature processing of Nano One's lithium ion

battery materials. This agreement adds to Nano One's other current efforts and strategic interests in the lithium ion battery supply chain. This marks the first time Nano One has disclosed a strategic agreement and a huge one at that. Terms remain confidential but are obviously moving in the right direction for Nano One.

Process Technology for Lithium-ion Battery Cathodes



Saint-Gobain

Saint-Gobain is a multi-billion Euro French multinational corporation, founded in 1665, and produces a wide variety of construction and high-performance materials for applications in automotive, aerospace, health and energy. Saint-Gobain has more than 179,000 employees, operates in 67 countries, and had €40.8 billion in sales in 2017.

Nano One should benefit from aligning with a billion dollar peer

This means Nano One potentially stands to benefit from many aspects that Saint-Gobain offer such as: Intellectual property (especially high temperature chemical processing), connections in the lithium ion battery supply chain, and perhaps at some

point financial backing to help scale up towards bigger lithium-ion battery (or at least cathode) production facilities. Saint-Gobain has also said they will join Nano One's cathode pilot plant project as a consortium member.

The development agreement confirms Nano One is heading in the right direction to disrupt the market

Some of the more promising cathode materials being developed by others are using processes with 50 to 100 steps with production cycles of 4 to 7 days. Nano One's technology can use lower grade raw materials and complete a production cycle in less than a day. Nano One's technology could reduce costs by up to 50% delivering robustly structured cathode materials that last 2-3 times longer, store more energy, and deliver more power. For electric vehicles this could translate into fewer battery cells, creating less weight. For consumer electronics this could mean greater storage, faster charging, or more power. Clearly billion dollar Saint-Gobain think Nano One is heading in the right direction.



Christmas at Nano One

Nano One really is a company to keep an eye on, as any process that can make products cheaper and more efficient has a huge place in any consumer market. Finally, there is some irony that the Nano One agreement with “Saint” Gobain occurs just a few days before Santa Claus arrives.

Nano One Materials Corp. is headquartered in Burnaby, Canada; and has a market cap of C\$ 86.5 m.

Outperforming global benchmarks in reducing the cost of lithium batteries.

Lithium ion batteries have two electrodes, the anode and the cathode, that transmit lithium ions through an electrolyte. Cathode powders have great potential to change battery performance and also account for a quarter of the cost of a typical battery cell. For batteries the challenge will be reducing the cost of raw materials and processing, while boosting capacity, charge and cycling.

Nano One Materials Corp. (TSXV: NNO) is a Canadian technology company with a scalable industrial process for producing low cost high performance battery materials. Some of the more promising cathode materials being developed in labs are using processes with 50 to 100 steps and production cycles of 4 to 7 days. Nano One's technology can use lower grade raw materials and complete a production cycle in less than a day using a three stage process with up to 75% fewer steps. Nano One believes that cost-effective production of nano-structured cathode materials can address pent-up global demand for better batteries by reducing costs by up to 50% (\$/kWh); delivering robustly structured cathode materials that last 2-3 times longer, store more energy, and deliver more power. For electric vehicles this could translate into fewer battery cells, less weight, less cost, extended range, longer lifetime, or better warranties. For consumer electronics this could mean greater storage, faster charging or more power.

On September 20, 2018, Dan Blondal, CEO of Nano One announced that their Lithium Iron Phosphate (LFP) cathode material, and the cost of making it, are outperforming global benchmarks and could be a disruptive force in the lithium/iron battery space.

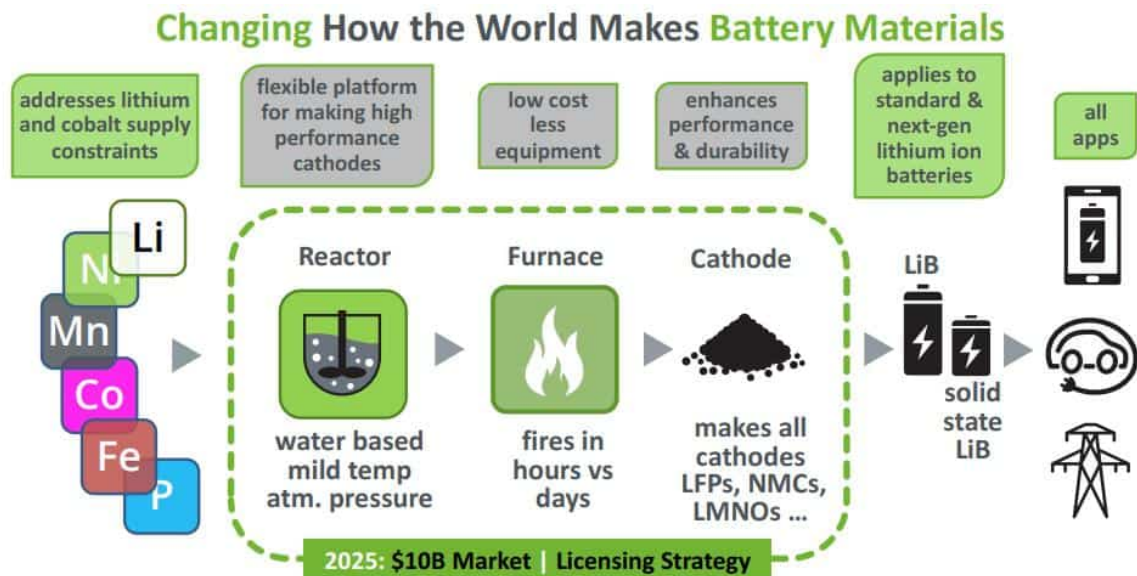
CEO Blondal stated: *“Major cathode producers have begun evaluating our LFP and initial results are consistent with the excellent battery performance we’ve been measuring in our lab. The preliminary economic modeling is also very compelling with LFP production costs conservatively estimated at 10 to 30% below industry standards.”*

By 2025 the global LFP market size is projected to be 130,000 tonnes and worth about \$1.5 billion. To address this opportunity Nano One has developed a proprietary process, using lithium carbonate, which enables lower cost sources of iron and phosphate than those used presently by other LFP producers. Economic modeling of this innovative process delivers capital and operating projections well below current industry costs. This leads to a sizable revenue opportunity that Nano One is evaluating with commercial interests in the lithium ion battery and cathode material space.

LFP is the cobalt-free, high durability, low cost, and safest cathode material of choice for lithium ion batteries. It is used in e-buses, e-bikes, power tools and grid storage systems for renewable energy. As costs come down, LFP may also replace lead acid batteries, further increasing demand.

Nano One Chairman, Paul Matysek added: *“There is a compelling business case with our LFP technology, it is ripe for partnership on full scale production, and this adds to other opportunities Nano One is pursuing to jointly develop solid state batteries and low-cobalt chemistry.”*

Nano One envisions a world where the remarkable properties of nano-materials are no longer impeded by raw material and production costs. The Company’s vision is to establish its patented technology as a leading platform for the global production of a new generation of nano-structured composite materials.



The world is heading into a new evolution in all things electric powered by batteries. E-cars, e-bikes, e-buses e-trains maybe one day even e-planes. Nano One has the technology to lower size and cost of the most important part of this evolution, the battery. One to watch.

Nothing standard about Standard Lithium leading the wave of lithium producers in the USA

Lithium is the lightest metal and the lightest solid element. Lithium and its compounds have several industrial applications; most notably in lithium-ion batteries used for consumer electronic devices, electric vehicles and energy storage. It is also interesting to note lithium has proven to be useful as a mood-stabilizing drug in the treatment of bipolar disorder in humans. Two types of lithium deposits

dominate. One is hard rock for which ready to go capacity to produce battery grade lithium can take up to three years. The other is brine evaporation, which can take up to seven years. Demand for battery-grade lithium compounds is expected to skyrocket in the next few decades in tandem with soaring demand for electric cars as governments and individual consumers try to reduce their carbon footprint.

Standard Lithium Ltd. (TSXV: SLL | OTCQX: STLHF) is focused on unlocking the value of existing large-scale US based lithium brine resources. The Company believes new lithium production can be brought on stream rapidly by minimizing project risks at selection, resource, political and geographic, regulatory and the permitting stage; and by leveraging advances in lithium extraction technologies and processes.



Standard Lithium's brine project in California

Southern Arkansas lithium projects

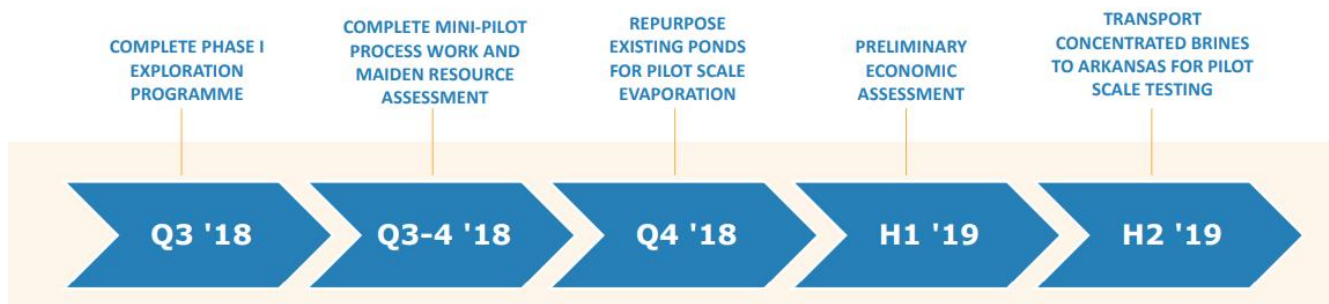
Standard Lithium is commencing due diligence and resource

evaluation on 30,000+ acres of brine leases located in the Smackover Formation in southern Arkansas. The Company recently reported four brine samples recovered from two existing wells in the project area showed lithium concentrations ranging between 347–461 mg/L lithium, with an average of 450 mg/L lithium in one of the wells, and 350 mg/L in the other. The Smackover deposit may be one of the lithium industry's most promising regions to develop, given the potential resource size and existing large-scale production infrastructure (including active large-scale brine extraction, processing, and brine re-injection facilities).

Robert Mintak, CEO of Standard Lithium, stated: "The recent sampling results confirm our development strategy of acquiring assets with substantial data and existing infrastructure, as we were able to complete this work program at minimal cost to the company and shareholders. With our key agreements and partnerships in place, a maiden resource report and a demonstration plant on the horizon, we believe the Company's southern Arkansas projects are set to play a leading role in the next wave of lithium producers."

Bristol Dry Lake Lithium Project – California

The Company is also focused on the immediate exploration and development of their 45,000 acre Bristol Dry Lake Lithium Project located in the Mojave region of San Bernardino County, California. Standard Lithium's partnership with two permitted brine operators provides it with immediate access to raw brine. Owing to extremely high evaporation rates in the project area, it is possible to concentrate brine from initial lithium concentrations of 146 mg/L to an average concentration of 686 mg/L in approximately 6 weeks. A Preliminary Economic Assessment on the project is expected in the first half of 2019.



Bristol Dry Lake project timeline

Momentum is building, and is expected to keep building in the electric vehicle and energy storage industries. Factor in the impending deployment of 5G enabled radio access networks and 5G ready devices, the world's demand for lithium could skyrocket. Standard Lithium's US based lithium projects could be in a key position when their projects come online to take advantage in these potentially massive industries. Prior to that there are several near term catalysts. It seems like there's nothing standard about Standard Lithium.

Standard Lithium explores, produces and develops lithium as well as offers services such as geological studies, drilling, and project management services. Headquartered in Vancouver Canada, Standard Lithium has a market cap of C\$ 103 m.

Don Bubar on the business of lithium today

"The lithium business it is all about finding where to position yourself in the marketplace with the type of resource you have. Ours is a different one with different mineralogy than many of the resources that are being looked at now to

serve the battery industry. As you recall, historically we looked at it primarily as an opportunity to produce an industrial mineral product for specialty glass and ceramic products. That is still a pretty big market out there. That is an opportunity for us to serve especially now that lithium is becoming more scarce for the glassmakers out there now that the battery industry has come along with a huge appetite gobbling up a lot of the available supply.” States Don Bubar, President, CEO and Director of Avalon Advanced Materials Inc. (TSX: AVL | OTCQX: AVLNF), in an interview with InvestorIntel Corp. CEO Tracy Weslosky.

Tracy Weslosky: Don you have just put out your East Kemptville Tin Site PEA results. That is a former producer and is an advanced stage project. Can you tell us what these PEA results meant for us as investors?

Don Bubar: Basically Tracy they are confirming that it is an economic proposition for us. While it is small-scale the whole approach has been to do something innovative there in terms of how we can approach this brownfield site with a model for addressing the long-term environmental liability there, remediating that, fully rehabilitating the site while extracting value out of the waste materials that were left behind on the site. We needed to show that that could be done economically. Effectively the PEA results confirm that. Will not make a lot of money, but it will be a really good interesting new model for how one can apply innovative thinking and new technologies to these brownfield sites that tend to be treated as perpetual liabilities as opportunities for entrepreneurs to extract value out of these sites.

Tracy Weslosky: Okay, well, that sounds very exciting to me. The industry has always acknowledged you for being a leader in sustainability and this type of forward thinking. You also have an advanced stage project in Kenora, Ontario, lithium. Can you tell us how that project is proceeding?

Don Bubar: That is coming along slowly. As you know, with the lithium business it is all about finding where to position yourself in the marketplace with the type of resource you have. Ours is a different one with different mineralogy than many of the resources that are being looked at now to serve the battery industry. As you recall, historically we looked at it primarily as an opportunity to produce an industrial mineral product for specialty glass and ceramic products. That is still a pretty big market out there. That is an opportunity for us to serve especially now that lithium is becoming more scarce for the glassmakers out there now that the battery industry has come along with a huge appetite gobbling up a lot of the available supply. The resource is ideally suited to that with this high purity lithium mineral petalite. We are now looking at that as, sort of, near-term development opportunity, get into production, produce the industrial mineral product, which is much lower capex than trying to make the battery material, establish an operating profitable business. Then build on that by expanding, as you see, the opportunities to further serve some of the growing markets going forward. We think that is a much more conservative and less risky way to get started in the lithium business and position yourself with a stage development model and open to different possibilities on how to serve the markets...to access the complete interview, [click here](#)

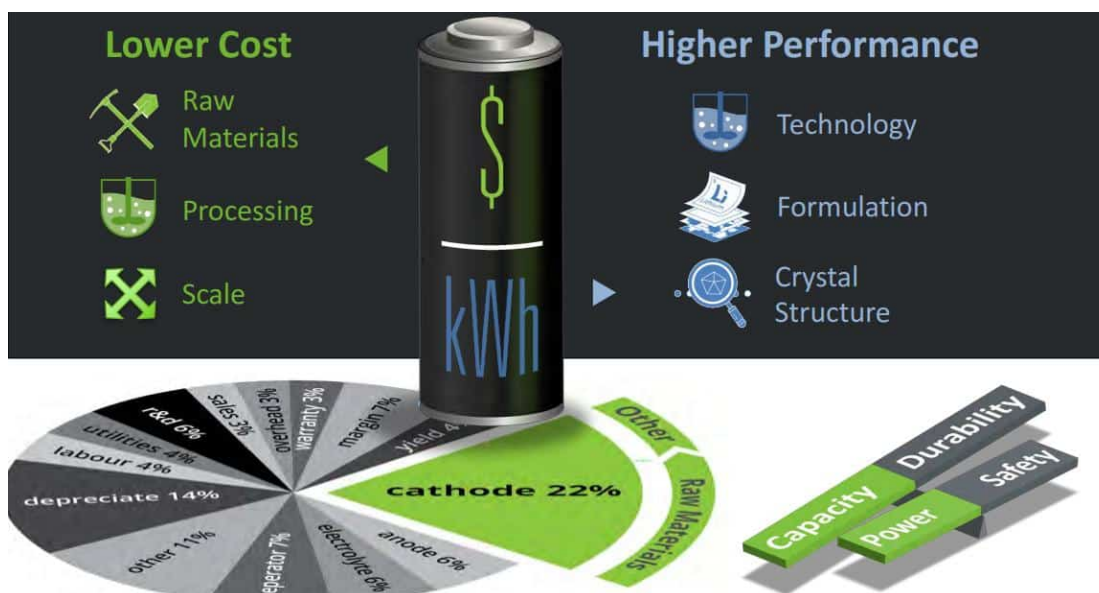
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Nano One Materials patented

technology reducing costs in lithium ion batteries

Nano One Materials Corp. (TSXV: NNO) is a Vancouver-based technology company that is developing a patented technology for the low-cost production of high performance battery materials used in electric vehicles, energy storage, consumer electronics and next generation batteries. The processing technology addresses fundamental supply chain constraints by enabling wider raw material specifications for use in lithium ion batteries.

Funded with the assistance and support of the Government of Canada, Nano One has built a pilot plant to demonstrate high volume production. NORAM Engineering and Constructors Ltd. and its subsidiary BC Research Inc. are providing support for Nano One's Demonstration Pilot Facility.

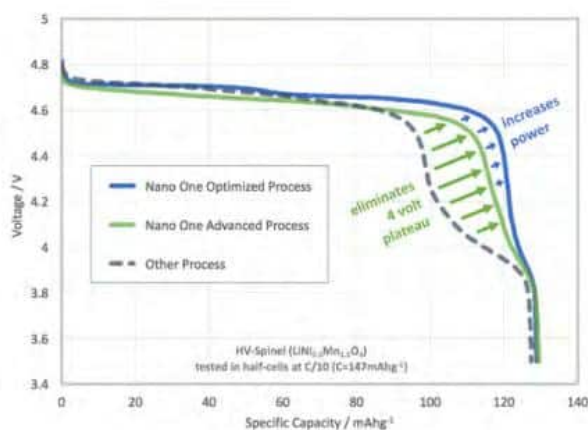
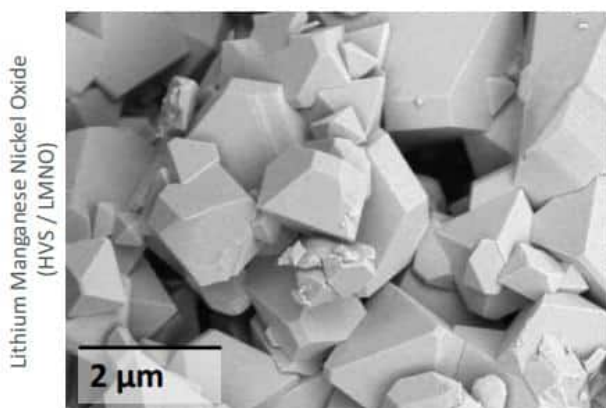


Nano One patent process

In April 2018 Dr. Stephen Campbell, Principal Scientist at Nano One, announced that the Company has developed a coating technology that stabilizes cathodes for use in advanced lithium ion batteries and has applied for patent protection

related to this coating technique. Dr. Campbell explained: “The innovation applies a coating to particles of cathode material without adding steps to our process, and this reduces degradation and resistance between the cathode and the electrolyte in lithium ion batteries. We are encouraged by the preliminary results of our findings as this could help solve long-standing degradation mechanisms, enable energy dense battery designs, and increase the number of times that a battery can be recharged over its lifetime.”

Cobalt Free High Voltage Spinel ideal for solid state batteries



Cobalt free high voltage spinel

A stable ion conducting coating on the surface of Nano One's High Voltage Spinel (HVS) could solve inter-facial problems for both liquid and solid ceramic electrolytes. HVS has attracted attention in the lithium battery supply chain. The material contains no cobalt and therefore has no cobalt supply constraints, and could therefore reduce supply risk. HVS also has high rate capability, which means that it can be charged and discharged rapidly without losing capacity.

In May 2018 a second of two patents was issued to Nano One. Dr. Campbell said: “This patent extends Nano One's intellectual property protection in Asia, where battery and materials markets are growing at a tremendous pace. We are

executing successfully on our patenting strategy and putting protections in place to work with strategic groups in the region.” In the last year, Nano One has also grown its patent portfolio from 3 to 9, adding Korea to Japan, and Canada to its other patents in the US and Taiwan. Nano One is pursuing over 30 new patents.

In other recent news Nano One provided a progress update. Dan Blondal, CEO stated: “Over the last six months, Nano One has signed about ten NDA’s and five materials transfer agreements with tier 1 automotive OEMs and their suppliers, and we have at least a half dozen more in progress. We have met construction and optimization milestones set forth with the Government of Canada for our Demonstration Pilot Project and are now working towards a final set of milestones for third party validation of our cathode materials. Materials testing is proceeding on a number of fronts with a focus on our innovative cobalt-free high-voltage spinel and other novel materials.”

Nano One Materials Corp. has a market cap of C\$ 106.5m.

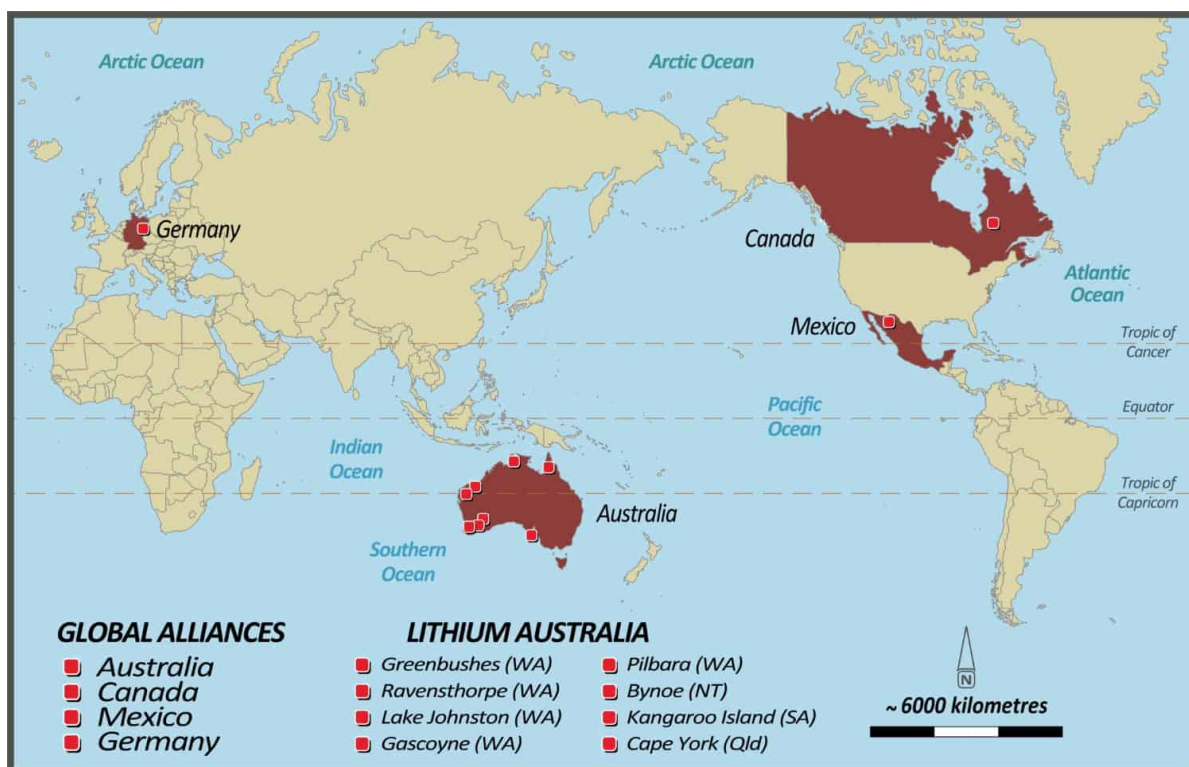
Nano One’s technology could reduce costs and increase energy density. For electric vehicles this could translate into the need for fewer battery cells, less weight, longer lifetime or better warranties. For consumer electronics, this could mean greater storage, faster charging or more power. Lower costs have always been the failure point of any technological advancement, with Nano Ones patented coating technique we could see significant price reduction in lithium ion batteries.

Lithium Australia closing the loop on the lithium production cycle

Lithium Australia NL (ASX: LIT) is an Australian lithium project generator and lithium extraction technology provider.

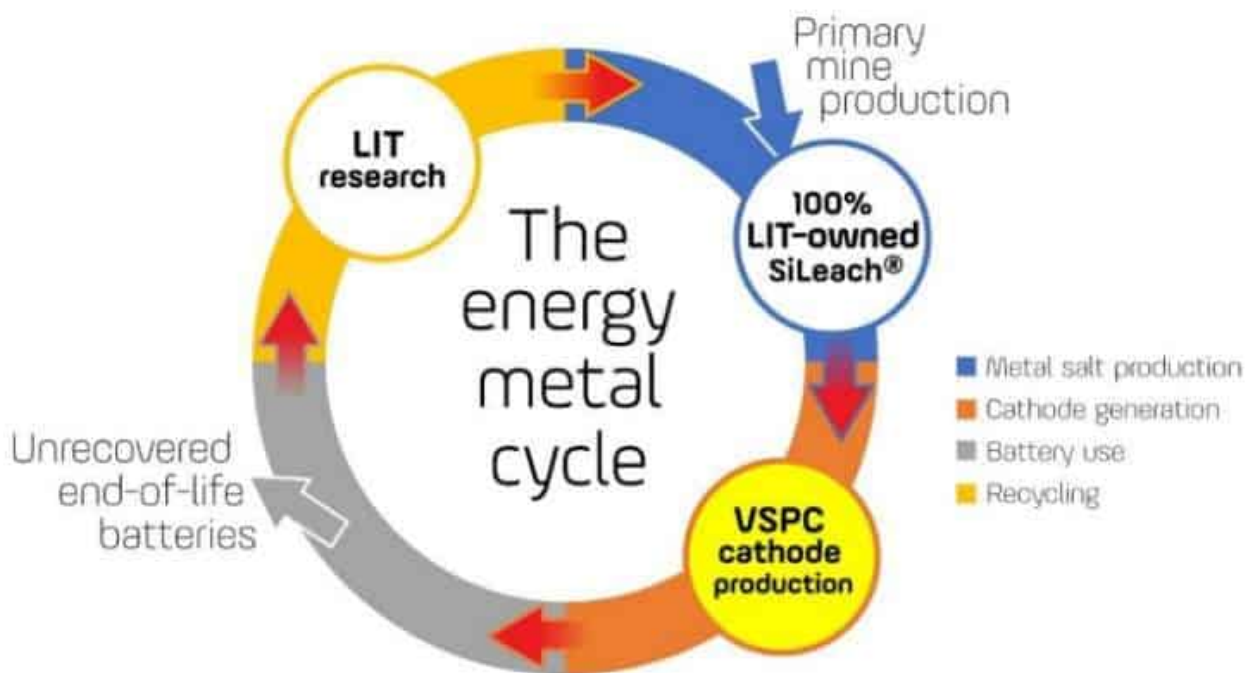
Western Australia is tipped to produce more than half of the world's lithium supply by the end of this year (2018), as new mines come online and the world's appetite for the materials used to make lithium ion batteries for electric vehicles grows.

Lithium Australia has projects and alliances in 4 countries including Australia, where they have projects in 3 states and the Northern Territory. The Company has established a regional footprint in Western Australia's rapidly emerging, world-class, lithium province in the Pilbara region.



Lithium Australia's worldwide projects

Lithium Australia's flagship technology is SiLeach®. It is a superior processing technology that doesn't need roasting (so less expensive processing) and is capable of extracting lithium from silicates. In the past those silicates were thrown away and still are, that's because there was inadequate technology to produce at a profit. Lithium Australia has solved this problem by developing the SiLeach® process.



The SiLeach®. process

The Company have a 50/50 agreement with Pilbara Minerals Limited (PLS) with the aim of producing lithium carbonate or lithium hydroxide from a SiLeach® processing plant fed by PLS's spodumene concentrate. SiLeach® is an unparalleled processing technology that efficiently digests and recovers all significant metal values from the minerals treated. This also enables the Company to take advantage of existing infrastructure that PLS already have in place such as gas, power, water, roads and permits. Managing Director Adrian Griffin stated: "We are all about closing a loop and making

sure a lot of these materials that otherwise wouldn't get processed, and when they do get processed, actually stay in their manufacturing cycle."

In recent weeks the company applied for two global patents relating to the production and recovery of lithium phosphate and lithium sulphate from lithium-bearing silicates. The enhancements will reduce capital and operating costs and improve product quality. Adrian Griffin added: "For us it is the silver bullet because potentially it reduces capital costs and operating costs, so that's quite significant".

In June 2018, Lithium Australia purchased the Sadisdorf Lithium/Tin Project in Saxony, Germany from Tin International AG. The inferred resource at Sadisdorf in Germany now stands at 25 million tonnes grading 0.45% lithium. Lithium Australia has found 'extensive' copper vein systems at their Eichigt project in Germany, discovering not only copper but lithium and cobalt within the vein. Recent samples have included grades of 1.5% cobalt, 0.5% copper, and 0.7% lithium. Lithium Australia's purchase of Sadisdorf further aligns it to the European EV industry.

Lithium Australia's subsidiary, VSPC (an acronym for the 'Very Small Particle Company'), can 'tailor' cost-effective cathode formulations for lithium-ion (Li-ion) batteries, and other complex metal oxides for use as catalysts in the automotive and minerals processing industries, and as components of solar photovoltaic and fuel-cell electrodes, electronic displays and many other applications. Market forecasts conservatively project that demand for the cathode materials in Li-ion batteries will exceed US\$10 billion by 2025.

Lithium Australia has a market cap of AU\$ 42.8m.

The Company has grown its resource base and developed a world-class processing technology called SiLeach®. The group is developing the capabilities to capitalize on all major sectors

of the lithium supply chain and in so doing closing the loop in the lithium production cycle. Lithium Australia has made substantial ground in the last 12 months in achieving its goal of developing an integrated lithium company. This is definitely a stock to watch.