

Q&A with Dan Blondal, CEO and Founder of Nano One Materials Corp. providing Manufacturing of High Performance Nanomaterials for Batteries used in Electric Vehicles, Energy Storage, Consumer Electronics and Next Generation Batteries



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- Dan Blondal

CEOCFO: Mr. Blondal, what is the vision behind Nano One Materials?

Mr. Blondal: Nano One is changing the way the world makes nanomaterials. Our immediate focus is on developing patented processing technology for the low-cost production of high performance battery materials. These would be for use in batteries that power electric vehicles, energy storage, consumer electronics and next generation batteries. The processing technology addresses fundamental supply chain constraints. It enables a wider range of raw materials to be used in lithium ion batteries and it can be configured to work with a wide range of different nanostructured materials. It has the flexibility to shift with emerging and future battery market trends and a wide range of other growth opportunities.

CEOCFO: In layman's terms, what is the technology?

Mr. Blondal: Think of it as a manufacturing process or a chemical assembly line. We take raw materials, like lithium, nickel, manganese, reduce them to their atomic components in solution and re-assemble them into useful composite structures. In the case of battery materials, lithium ions are shuttled in and out of spaces between atoms during charge and discharge, so the assembly of the underlying structure is critical to durability, power, energy, safety and cost.

CEOCFO: How is this done today? What will this replace or enhance?

Mr. Blondal: The way it is done today is that the key components are milled and ground together into a fine mixture of powders, and then they are heated to eight or nine hundred degrees in a furnace. Heating loosens atoms and they form the desired structures, but heating can take days, with grinding to help mix the products and it requires highly refined and high purity feedstock. Our process mixes the atoms up front in a chemical reaction. We still need to fire it in a furnace but time in the furnace goes from days to hours when the atoms are “pre-mixed” like ours. We are working in a water based chemical process, that also enables lower cost sources of lithium carbonate, a wider range of impurities and enhances the structures for improved performance.

CEOCFO: Have similar approaches been tried?

Mr. Blondal: There are many approaches to making these materials, but ours is unique and patented. We are focused on the cost of input materials, equipment and operation while making materials that meet or exceed the performance

characteristics of those used in batteries today. We believe we can overcome limitations in existing processes and enable a new generation materials.

CEOCFO: *Where are you in development, commercialization and industry awareness?*

Mr. Blondal: We have taken the technology from laboratory to demonstration pilot scale. Our pilot plant has been in operation for the last few months. That has enabled us to de-risk the scale up of the technology and we can demonstrate sub commercial scale volumes. We can make larger quantities of material for testing in larger scale battery prototypes. It is also informing us on how to design, build and package a full-scale facility. We are reaching out to companies in the space, which would be the cathode producers, the battery producers and the mining companies. Our near-term goal is to build relationships, agreements, partnerships and collaborations that can take Nano One's business to the next stage.

CEOCFO: *Do people in the industry understand what you are doing?*

Mr. Blondal: Yes, the industry understands our approach. Demonstrating scalability is a major milestone because it proves that the technology is commercially viable. The pilot has opened doors for us with many players in the space and we already have proposals in the works with strategic interests.

CEOCFO: *What is your funding situation like today?*

Mr. Blondal: We just closed \$4 million in private placements on the TSX venture exchange, adding to \$10 million already raised and an additional \$4.6M in non-dilutive non-repayable funds from the Canadian Government. This gives us a couple more years of runway, and enables us to accelerate critical activities and leverage additional government support.

CEOCFO: *What has changed in your approach as you have been developing your products or product concept? What have you learned so far that was different than the original idea?*

Mr. Blondal: We have learned a considerable amount on the scientific and engineering fronts as we moved from concept to laboratory to pilot. Along the way, we have developed processing technology and chemistry that improves the efficiency of the process but remains flexible enough to make all types of cathode materials. We recently announced efficiency improvements at the core of the process that boosts productivity from 10 kilograms up to 1400 kilograms. Batteries and the underlying chemistry are advancing rapidly and Nano One is well positioned with a flexible technology platform to evolve with shifting battery technology trends and disrupt the lithium battery supply chain.

CEOCFO: *Are you working with partners in some of your trial areas or are you working strictly on your own? Where do partnerships with potential users come in?*

Mr. Blondal: Partnerships are vital to what we are doing. Our core strength is process innovations and chemistry development. We are partnered with an engineering company that brings a wealth of scale up know-how. We are also in discussions with other major industrial players on the battery and the production front. They bring production and supply chain expertise to the table as well as system integration. We believe that an ecosystem of partnerships is the best path to success.

CEOCFO: *Is there any doubt that lithium will continue to be what is used in batteries? Are there any competitors to lithium on the landscape?*

Mr. Blondal: Lithium ion batteries are here to stay. They have a 25-year head start on other technologies which must overcome formidable cost, performance and supply chain barriers in order to compete. There are many alternative battery technologies out there and a few of them may play roles as niche applications. It will take a very big jump in performance and cost to unseat lithium ion batteries. There are also many different types of lithium ion batteries and each of them is evolving for different applications, be it power, energy, phones, cars or storage. Nothing comes close yet to this in terms of versatility and scalability. Lithium ion batteries will be around for decades.

CEOCFO: *What do you understand from your history in high growth technology as an engineer from your various roles at a number of companies that will help you as you are bringing the product to market?*

Mr. Blondal: We have learned to evolve with market trends and that staying flexible is key in a rapidly evolving market like lithium ion batteries. We have learned that it takes partnerships and collaborations to address complex supply chain issues especially related to electric vehicles and consumer goods. Doing it on your own can require tremendous amounts of capital generation, whereas partnerships can leverage each party's strengths and facilitate rapid commercialization.

CEOCFO: *Why pay attention Nano One Materials from a business and an investor perspective?*

Mr. Blondal: We believe the battery space is still in its nascent years. There are applications in phones and laptops and we are in the early days of electric vehicles. The vehicle market will work out the kinks, while a much larger market

emerges for grid storage and industrial applications. Manufacturing technology will play a key role as supply chains evolve and more applications emerge. For now, Nano One is focused on materials for next gen batteries used in grid storage and electric vehicles, but we believe we can establish our manufacturing platform for a much wider range of industrial materials.

CEO CFO: *Final thoughts?*

Batteries, energy storage markets and materials are still in their early days and we look forward to playing a role in advancing these technologies. Thank you.

