

# 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.

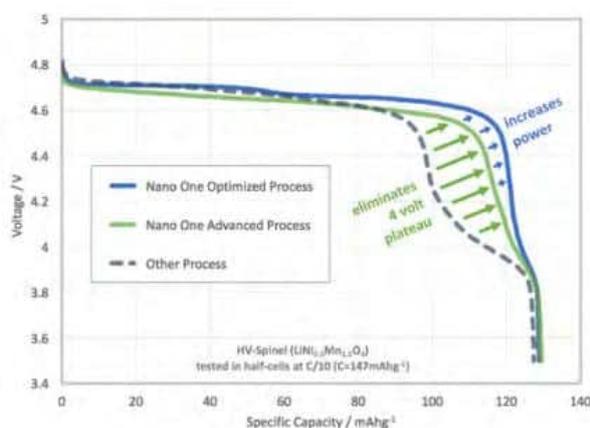
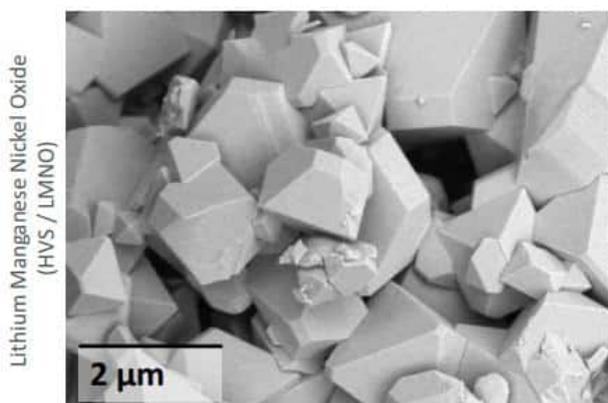


Nano One patent process

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.