

Nano One's New Cathode Materials Aim to Make Batteries Safer and Longer Lasting

written by Igor Makarov | August 21, 2019



August 21, 2019 ([Source](#)) – Dr. Stephen Campbell, Chief Technology Officer at Nano One™ Materials Corp. (TSXV: NNO) (OTC Pink: NNOMF) (FSE: LBMB) is pleased to provide an update on Nano One's latest lithium

nickel manganese cobalt (NMC) innovations and how they are aimed at making high energy lithium ion batteries safer and more durable.

Dr. Campbell explains, *"Nano One's latest innovations provide added durability and safety to NMC cathodes by protecting them from the stresses of repeated charging and from undesirable side-reactions. We are able to form protective coatings on individual particles and this is clearly differentiated from others who are developing coatings on larger clusters of particles. The stresses of repeated charging cause large coated clusters to break apart, leaving individual particles on the inside exposed to side reactions. By protecting the individual particle, Nano One is engineering new materials for increased durability and safety. Our technology is particularly relevant to high energy nickel-rich NMC batteries because it provides added protection."*

The automotive battery industry is actively pursuing higher

nickel content in lithium ion batteries, because it can boost energy density and thereby extend vehicle range while reducing the cobalt content and its inherent supply chain risk. However, this comes with increased risk to stability, durability and safety. By protecting each nanoparticle rather than larger clusters, Nano One's technology is aimed at mitigating these risks.

Nano One's latest process innovations make NMC materials with a protective coating in fewer steps and form individual nanoparticles that are designed to resist cracking and withstand the rigors of repeated charging. Nano One is able to control the formation of its patented NMC materials using innovative manufacturing technologies, which are themselves protected by patents in the US, Canada, Taiwan, China, Japan and Korea.

These innovations and advantages are explained in a short animation posted on Nano One's website at <https://nanoone.ca/nanoonenmcanimationaug2019/>.

Dr. Campbell said, "These are novel materials and coatings that have the potential to enable stable, low cost, fast charging and energy dense cathodes ideal for electric vehicles and other high energy density applications. These innovations differentiate Nano One and add considerable value to the development activities we now have underway with our automotive and battery materials partners."

Nano One Materials Corp.

Dan Blondal, CEO

About Nano One

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 enables lower cost feedstocks, simplifies production and advances performance for a wide range of cathode materials. Nano One has built a demonstration pilot plant and is partnering with global leaders in the lithium ion battery supply chain, including Pulead, Volkswagen and Saint-Gobain to advance its lithium iron phosphate battery (LFP), lithium nickel manganese cobalt (NMC) and lithium manganese nickel (LMN) cathode technologies for large growth opportunities in e-mobility and renewable energy storage applications.

Nano One's pilot and partnership activities are 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). Nano One also receives financial support from the National Research Council of Canada Industrial Research Assistance Program (NRC-IRAP). Nano One's mission is to establish its patented technology as a leading platform for the global production of a new generation of battery materials. www.nanoone.ca

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