Breakthrough in Battery Longevity with Nano One's Cobalt Free High Voltage Materials

written by Raj Shah | October 13, 2020

October 13, 2020 (Source) – Dr. Stephen Campbell, CTO of Nano One Materials **(TSXV: NNO) (OTC Pink: NNOMF) (FSE: LBMB)** (Nano One), announced that Nano One has developed a breakthrough in longevity for a cobalt free high voltage battery that has been successfully demonstrated at automotive rates of charge and discharge for over 900 cycles. This demonstration battery uses a low cost, cobalt-free Lithium Nickel Manganese (LNM) cathode active material made with Nano One's proprietary one-pot process.

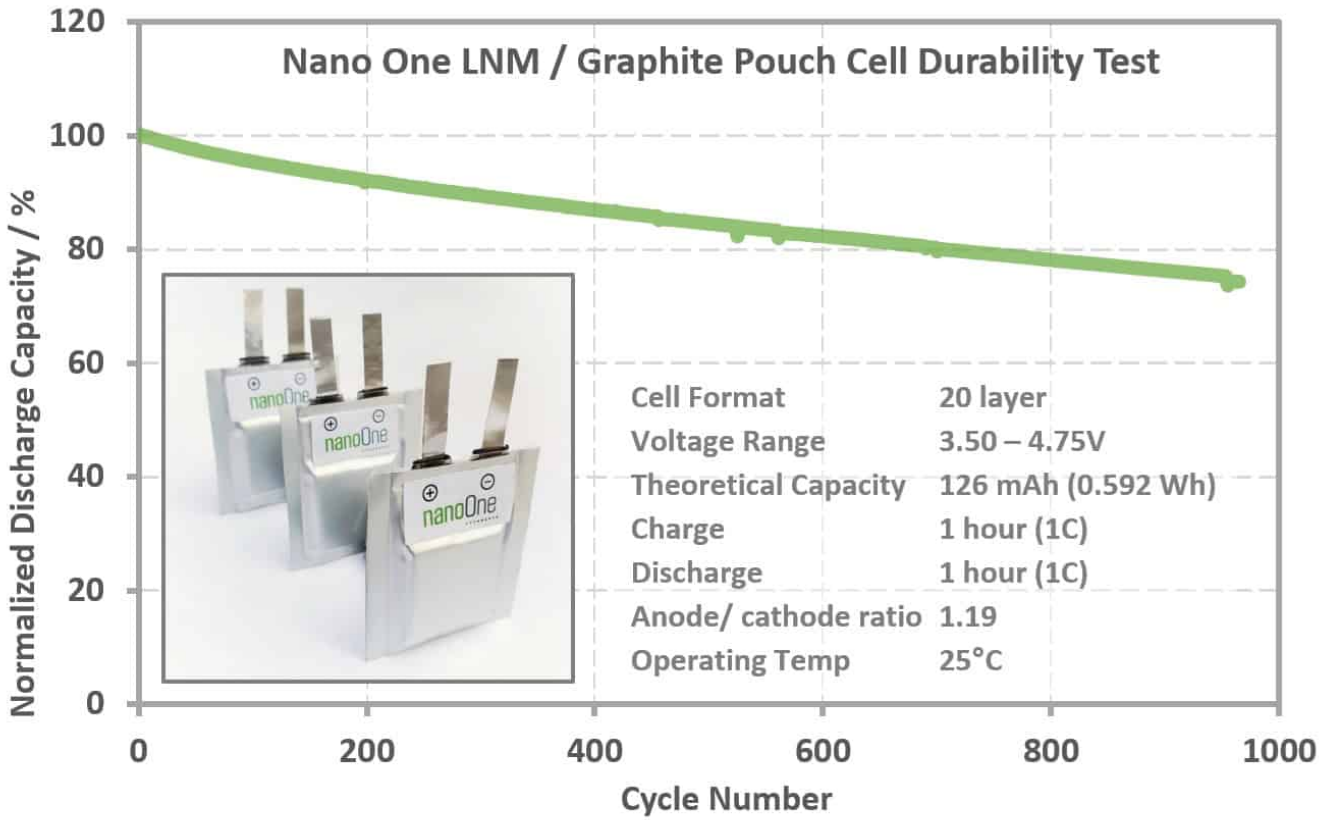

Figure showing Nano One's patented LNM cathode ($LiNi_{0.25}Mn_{0.75}O_4$) tested with a graphite anode and conventional electrolyte in a 20 layer 126mAh pouch cell, demonstrating a breakthrough in longevity for a cobalt free high voltage battery.

“Our high voltage battery resolves excessive gassing and anode contamination issues that are associated with this configuration when operating at both ambient and elevated temperatures,” said Dr. Campbell. “We are able to avoid rapid capacity fade and premature failure and have successfully demonstrated a high voltage lithium ion battery cell with significant cycle life – this is an exceptional outcome. The enabling technology is Nano One’s patented LNM cathode material operating up to 4.7 volts and made using our patented One Pot process. The LNM voltage is 25% higher than commercial lithium ion batteries, improving efficiency, thermal management and power.”

Nano One’s LNM cathode was tested at 25°C in a conventional electrolyte with a graphite anode in a 20-layer 126mAh (0.592 Wh) pouch cell. Ongoing tests are equally encouraging for

elevated temperatures. LNM is also known as high voltage spinel (HVS) and is a strong candidate for next generation, solid state batteries where its dimensional stability provides a stable interface with solid electrolytes. Currently, several independent evaluations are underway on Nano One LNM material within the automotive supply chain where the Nano One technology may impart greater and much needed stability.

“Nano One continues to develop processes that make novel cathode materials for the lithium-ion battery future,” said Dr. Campbell. “We look forward to bringing materials to market for a wide range of applications through various partnerships.”

Nano One Materials Corp.

Dan Blondal, CEO

For information with respect to Nano One or the contents of this news release, please contact John Lando (President) at (604) 420-2041 or visit the website at **www.nanoone.ca**.

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 partnered with global leaders in the lithium ion battery supply chain to advance its lithium iron phosphate (LFP), lithium nickel manganese cobalt oxide (NMC) and lithium nickel manganese oxide (LNM) 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), the Automotive Supplier Innovation Program (ASIP) a program of Innovation, Science and Economic Development Canada (ISED), and the Province of British Columbia through the Ministry of Energy, Mines and Petroleum Resources. 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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