Nano One looks to be moving in the same direction as EV leader Tesla

written by InvestorNews | November 4, 2020

At Tesla Battery Day in September 2020 Tesla discussed how they plan to have a three prong approach to batteries – Lithium Iron Phosphate (LFP), **Nickel Manganese (NM or LMN)**, and high nickel (NCA or NMC). Today I look at the nickel manganese battery and a company that is moving in the same direction as Tesla. That company is Nano One Materials Corp. (TSXV: NNO) ("Nano One").

Tesla's planned mix of battery cathode types – Li Iron Phosphate (LFP), Nickel-Manganese (NM), high nickel (NCA) (NMC)

Source

Nano One specializes in improving battery cathodes. In particular the Company's focus is to make low cost, high performance, cathode powders used in lithium ion batteries.

In October 2020, Nano One announced that they have 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. The battery uses a low cost, cobalt-free **Lithium Nickel Manganese (LNM)** cathode active material made with Nano One's proprietary One-Pot process.

The problem with removing the cobalt can be that the battery becomes less stable or has a lower lifespan (less cycles). However in this case Nano One has managed to achieve 900 cycles, which is heading towards the 1,500 cycles that a Tesla Model 3

achieves using a more expensive nickel-cobalt-aluminum (NCA) battery. The other reason for removing cobalt is that the world supply of cobalt is limited and mostly comes from the Democratic Republic of the Congo – A country rampant with issues such as corruption, child labor and exploitation. Many analysts are forecasting severe cobalt supply shortages after 2023 just as the EV boom takes off. This explains why Tesla and Nano One are working towards a nickel-manganese battery with no cobalt.

Nano One's Chief Technology Officer Dr. Stephen Campbell explains:

"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 Coated Single Nanocrystal Cathode gives a performance advantage

Source

In June 2020, Nano One announced the development of a coated, **single crystal cathode** material for lithium ion batteries that is providing **up to 4 times improvement in longevity**. The technology is applicable to all of Nano One's cathode materials.

Perhaps not surprisingly, Nano One was able to raise an oversubscribed equity raising of approximately $14.37M at an offering price of $2.72 per Unit (one share and half a warrant).

The Company intends to use the net proceeds for research and development, capital equipment purchases and facility expansion, intellectual property acquisition, business development, working capital and general corporate purposes.

Nano One continues to have successful breakthroughs in improving lithium-ion battery cathodes, most importantly in all types of cathodes (iron based, nickel-manganese, and high nickel-cobalt). Combine this with their excellent established development partners Pulead (the global leader in LFP cathodes), Volkswagen (a leading OEM), and Saint-Gobain then it should not be surprising to see Nano One start to commercialize their patented technology in the near future.

The global cathode market is forecast to be a US$23 billion market by 2025 and includes a US$1 billion potential licensing opportunity which Nano One is targeting. Nano One's goal is to achieve ~$70M pa in revenues by 2025 at high profit margins.

Nano One's stock is up 118% over the past year so early investors are certainly being rewarded. With the EV boom set to accelerate due to Tesla's planned US$25,000 car by 2023, it should leave plenty of opportunity for Nano One to make their mark.