

Nano One is About to Change the Lithium Space

Since we [last covered](#) the developments over at [Nano One Materials Corp.](#) (TSXV: NNO) (“Nano One”) the company has completed construction on its pilot plant, and results have far exceeded expectation. For those that don’t yet know, Nano One is about to change the lithium space completely with the patented ability to chemically manufacture cathode materials for lithium-ion batteries that last more than twice as long as products currently on the market and at considerably lower cost.

[The pilot results](#) announced on 26th June reveal that lithium ion cathode materials that meet Nano One’s processing and battery capacity targets has been demonstrated at a scale of 100-times that of laboratory production. Proof-of-concept is now in the bag, and we can look forward to a rapid advance from these modern pioneers.

Hype surrounding electric vehicles has driven lithium prices up by three times what they were only 15 years ago, and the market is currently expressing a great need for lithium hydroxide supply (the form required for current cathode technologies), leading juniors all over the world to scramble to produce the value-added material.

Nano One have sidestepped the commotion with their chemical assembly process which makes it perfectly feasible to create a stronger and more powerful cathode from lithium carbonate. Similar methods are used in research, and in industries in which only small volumes are required, but, generally, these are too costly, complex and impractical for the high-volume production required for batteries.

The vast majority of today’s industry uses a mechanical

technique to process raw materials into fine powders over many stages, sometimes in the presence of aggressive chemicals, high heat and pressure. For batteries, this impacts the structural integrity of the material, which in turn severely reduces the quality of the end product.

Nano One's technology differs from existing methods because it enables the quick assembly of inexpensive raw materials at mild temperatures under atmospheric pressures using simple and scalable equipment. The fact that the process removes the need for cobalt is not only a significant cost-saver, but will send a sizeable ripple through the tech-metals market. The ramifications of this technology are far reaching to say the least, and I'm expecting the company to be disrupting a number of sectors in the coming years.

And really, this is just the beginning; high-volume nanoscale production is a sort of holy grail of modern technological development. The company's primary test phase product may be battery-focused, but this will simply provide them with the launchpad they need to develop the process to suit a myriad of industries; something the company assures us they could achieve with relative ease.

Nanostructuring can improve a material's properties, such as electrical and thermal conductivity, optical behavior, dielectrics, heat resistance, stiffness, strength and resistance to wear. Everyday applications include the strengthening of implants and concrete, 3D-printing, drug delivery, weatherproofing, coatings, UV protection and energy storage. These applications are currently severely limited by the costs of production, and every single one represents a viable opportunity for Nano One to move into.

Much confidence has been expressed in the project so far in the form of state support, the most recent payments totaling around C\$4m. The cathode market is currently worth around \$3bn and is projected to grow to over \$10bn by 2025. Clearly, Nano

One have a serious future ahead of them, but even over the next few years the company should realise solid returns from their work on the global problem of a better battery, especially now that scalability has been demonstrated.