Li-Metal Produces Ultra-Thin Lithium on Polymer Anodes Using PVD Technology

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Li-Metal successfully produces second-generation anode products, further demonstrating the flexibility of its technology platform

Li-Metal's lithium on metal polymer anodes reduces the need for copper to enable lighter and more cost-effective batteries with improved energy density, a key enabler for electric aviation and eVTOL

Li-Metal has produced more than 8,200 metres of sample anode material year-to-date using roll-to-roll PVD technology, compared to 4,200 metres in 2022 at pilot plant in Rochester, New York

TORONTO, November 15, 2023 - Li-Metal Corp. (CSE:LIM)(OTCQB:LIMFF)(FSE:5ZO) ("Li-Metal" or the "Company"), a developer of lithium metal anode and lithium metal production technologies critical for next-generation batteries, today announced the successful production of its first batch of ultra-thin lithium on metalized polymer anodes, a second-generation lithium metal anode technology.

At Li-Metal's advanced anode pilot plant in Rochester, New York, the Company has demonstrated its ability to leverage its roll-to-roll physical vapour depiction (PVD) anode technology and PVD equipment to produce its second-generation products at pilot scale. Li-Metal's ultra-thin lithium on metalized polymer anodes are expected to reduce the need for copper in next-generation batteries anodes, resulting in improved costs by up to 25% and lighter weight batteries, while delivering improved gravimetric and volumetric energy densities. The capability to do this further demonstrates the flexibility of the Company's scalable PVD anode technology and ability to customize its product offering. Li-Metal's second-generation anode technology expands its ability to support current EV as well as prospective electric vertical take-off and landing (eVTOL) and aviation customers focused on developing next-generation batteries.

"Li-Metal is pleased to advance our second-generation anode products with the successful production of our Gen2 lithium on polymer and metalized polymer anode products using our roll-to-roll PVD technology," said Li-Metal's CEO, Srini Godavarthy. "We believe we are one of the only next-generation anode technology developers to successfully produce these lithium metal anode products using PVD technology, which marks another key technological process breakthrough for our company. Through the production of our second-generation products, the Li-Metal team has enhanced the productivity of our PVD machines, optimized raw material costs and established a pathway to cost-effective commercial-scale anode production. We look forward to leveraging our second-generation products to accelerate the adoption of cost-effective ultra-thin metal anodes into the e-mobility and eVTOL markets."

The ability to apply lithium using PVD onto polymers or metalized polymers has been complex and Li-Metal's accomplishment required significant process intensification, an important metric for PVD technologies, which further validates the advancement of its technology over the past several years. To achieve this milestone, the Li-Metal team also made significant improvements to its PVD technology and process, including web handling and cooling.

Currently, battery developers utilize lithium metal anodes that use 6-10 microns of copper foils, on average, which results in energy densities of less than 400 Wh/kg.[i] Next-generation battery developers, particularly those targeting the eVTOL and electric aviation markets, are seeking to produce batteries with more than 450 Wh/kg and energy density of more than 1000 Wh/kg.[ii] Li-Metal's second-generation anode products utilize metalized polymers with 0.5-1 microns of copper, which enables the lightweighting of anodes and is expected to enable next-generation battery developers achieve their targeted battery performance metrics.

Plans for Commercial Scale Capabilities

Li-Metal and Mustang Vacuum Systems Inc. ("MVS"), the Company's exclusive PVD machine building partner, plan to work together to produce the Company's second-generation products at commercial-scale. Li-Metal is also working with select customers to qualify its second-generation battery anode products and plans to begin sampling the material more broadly in 2024.

Li-Metal and MVS plan to jointly develop and operate the Company's first commercial-scale PVD machine at MVS' facility in Florida, which is expected to be commissioned by mid 2024. Li-Metal's first commercial-scale PVD machine aims to deliver between 1-2 million m^2 of anode for use by several of its next generation battery developers working to get their B and C samples qualified.

Anode Production Milestones

In 2023 to-date at its advanced anode pilot plant in Rochester, New York, Li-Metal has produced more than 8,200 metres of sample lithium metal anode material for internal R&D and for customers leveraging its PVD technology. This throughput reflects almost two times the Company's total volume of sample material produced in all of 2022, or 4,200 metres. In addition, Li-Metal has continued to execute with process performance and product quality by producing lithium metal anode products with lithium thickness between 3 and 20 micrometres. Li-Metal continues to expand its intellectual property portfolio with a total of 46 patent applications in process. In addition to the production of its first batch of second-generation anode products, Li-Metal continues to make ongoing improvements to its first-generation lithium metal on copper anode products.

ON BEHALF OF THE BOARD
Srini Godavarthy
Chief Executive Officer

About Li-Metal Corp.

Li-Metal is a Canadian-based vertically integrated battery materials company and innovator commercializing technologies to enable next-generation batteries for electric vehicles and other applications. We believe our patented lithium metal technology, next-generation battery anode technology and production methods are significantly more sustainable than existing solutions and offer lighter, more energy-dense and safer batteries. Li-Metal's battery materials support battery developers' ability to power more cost-effective electric vehicles that go farther and unlock the future of transportation. For more information, visit: www.li-metal.com.

Forward-Looking Information

This news release contains "forward-looking information" within the meaning of applicable securities laws relating to the Company. Any such forward-looking statements may be identified by words such as "expects", "anticipates", "believes", "projects", "plans" and similar expressions. Readers are cautioned not to place undue reliance on forward-looking statements. Statements about, among other things, the Company's strategic plans are forward-looking information. These statements should not be read as guarantees of future performance or results. Such statements involve known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements to be materially different from those implied by such statements. Although such statements are based on management's reasonable assumptions, there can be no assurance that the development of the business of the Company will be completed as described above. The Company assumes no responsibility to update or revise forward-looking information to reflect new events or circumstances unless required by applicable law.

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[i] Benchmark Mineral Intelligence: Solid-state and lithium metal batteries 2023 technology handbook (Q1 2023)

[ii] Performance Metrics Required of Next-Generation Batteries to Electrify Commercial Aircraft: https://pubs.acs.org/doi/10.1021/acsenergylett.9b02574

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