

ASX ANNOUNCEMENT



08 July 2021

Lithium Australia subsidiary VSPC dispatches high-performance cathode material to customers

HIGHLIGHTS

- **Second-generation lithium manganese ferro phosphate ('LMFP') cathode powder produced by Lithium Australia subsidiary VSPC has met industry performance and physical property specifications.**
- **Battery and electric vehicle producers worldwide, among them BYD, VW and Tesla, are transitioning to the use of lithium ferro phosphate ('LFP') cathode material in lithium-ion batteries.**
- **Lithium-ion batteries of both the LFP and LMFP type are cheaper and safer than those containing nickel and cobalt, and LMFP has up to 25% improvement in energy density over LFP.**
- **VSPC's LFMP cathode material is available to both established battery manufacturers and other potential customers for testing, on schedule with previously released plans.**

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Comment from Lithium Australia managing director Adrian Griffin

"Lithium Australia has not only demonstrated its unprecedented ability to produce high-performance LMFP (the next generation of energy-storage material) but has done so on schedule. Potential customers can now access this advanced material for testing in commercial format lithium-ion cells. Meanwhile, Lithium Australia continues to evaluate commercial production opportunities in the most rapidly expanding battery markets globally, with a view to shortening supply chains and reducing the carbon footprint of battery production."

Background

VSPC Ltd ('VSPC') is a wholly owned subsidiary of Lithium Australia NL (ASX: LIT, 'the Company').

A developer of advanced cathode powders for lithium-ion batteries ('LIBs'), VSPC has conducted extensive research in order to develop LMFP, a high-capacity LIB cathode powder containing no nickel or cobalt. LMFP is a lower-cost and safer cathode material for applications requiring higher-energy density batteries, including electric vehicles ('EVs') and large-scale stationary energy storage.

Both LFP- and LMFP-type LIBs are cheaper, safer and longer lasting than their NCA (lithium nickel cobalt aluminium) and NMC (lithium nickel manganese cobalt) battery counterparts. Indeed, it is the superior performance criteria of LFP and LMFP that have led to the market shift away from nickel-based LIB formulations, with market-leading battery and EV producer BYD phasing out nickel/cobalt-based batteries altogether in preference to LFP. Tesla too is transitioning to LFP for its Megapack grid-scale battery energy storage systems and low-range EVs, and VW's entry-level EVs will also be LFP powered.

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LMFP provides all the advantages of LFP plus greater energy density, which in EV terms equates not just to greater safety and longer life but also greater range.

VSPC technology for second-generation LMFP

VSPC produced its second-generation LMFP material using its recently developed and patented RC (reduced cost) process, as well as a cost-effective reagent regime ([see ASX release dated 13 May 2021](#)). The work was carried out at VSPC's Brisbane, Queensland based pilot plant, which houses a fully equipped laboratory.



VSPC's pilot plant in Brisbane, Queensland (above) and in-house laboratory (below).

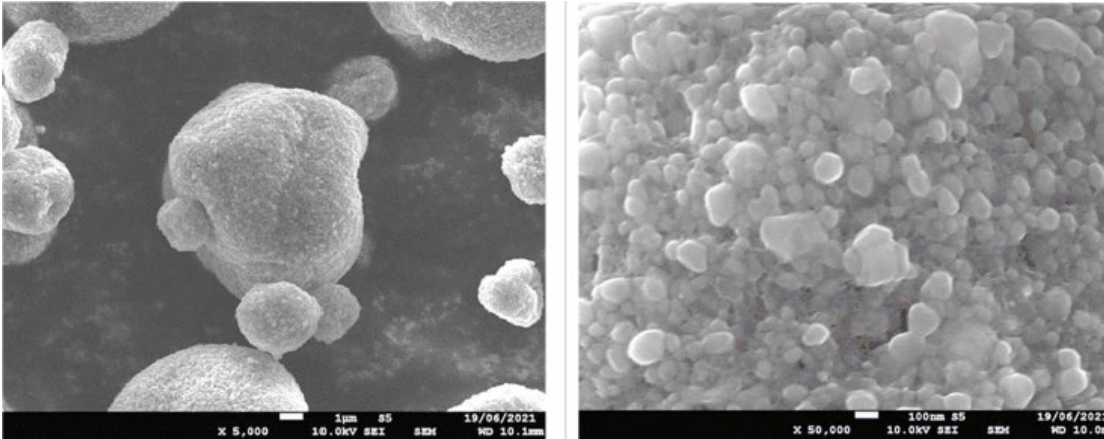


VSPC can tailor the composition, and hence performance criteria, of LMFP according to specific customer requirements.

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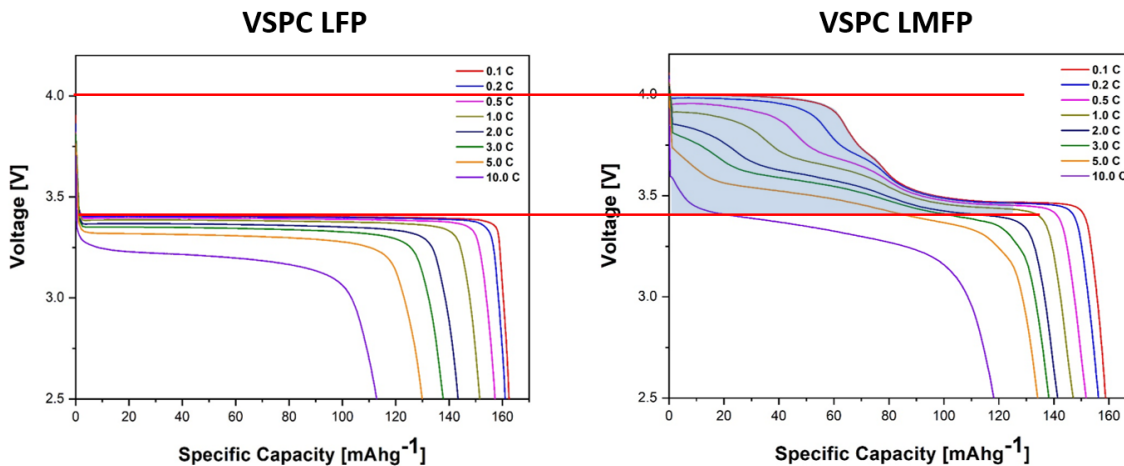


The scanning electron microscope (SEM) images below show both the primary and secondary particles in recently produced batches of LMFP.



[Source: VSPC's LFMP Certificate of Analysis (COA) 25/6/2021.]

The electrochemical properties of VSPC's LMFP product compared with its LFP are shown in profile in the figure below by C-rate (the charge-to-discharge rate over time), under industry standard/specific operating conditions.



The comparatively higher voltage delivery of LMFP improves the specific energy of the material (specific energy is represented by the area below the charge/discharge curves in the diagrams above.)

Product samples sent

Samples of VSPC's second-generation LMFP have been dispatched to established and potential customers for testing in commercial format LIBs.

More LMFP – in limited quantities – will be made available to battery manufacturers focused on the EV market, on the basis that the LMFP be used to produce safe, cost-effective alternatives to nickel-based EV battery packs.

VSPC's LMFP certificate of analysis is also available on request; those interested should contact adrian.griffin@lithium-au.com.



Authorised for release by the Board.

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Barry.Woodhouse@lithium-au.com**Forward-looking statements**

This announcement contains forward-looking statements. Forward-looking statements are subject to a variety of risks and uncertainties that it is beyond the Company's ability to control or predict and which could cause actual events or results to differ materially from those anticipated in such forward-looking statements.

About Lithium Australia

Lithium Australia aims to ensure an ethical and sustainable supply of energy metals to the battery industry (enhancing energy security in the process) by creating a circular battery economy. The recycling of old lithium-ion batteries to new is intrinsic to this plan. Having rationalised its portfolio of lithium projects/alliances, the Company continues with R&D on its proprietary extraction processes for the conversion of *all* lithium silicates (including mine waste), and of unused fines from spodumene concentration, to lithium chemicals. From those chemicals, Lithium Australia plans to produce advanced components for the battery industry globally, and for stationary energy storage systems within Australia. By uniting resources and innovation, the Company seeks to vertically integrate lithium extraction, refining and recycling.

About VSPC

VSPC is focused on developing and commercialising advanced cathode materials for use in LIBs from its Brisbane, Queensland-based pilot plant. VSPC has successfully demonstrated pilot-scale production of LFP and LMFP battery cathode materials, as well as others like lithium titanate (LTO), which is used in the anodes of high-performance batteries. VSPC is continuing product development while advancing towards commercial scale production. To that end, a prefeasibility study was completed earlier in 2021 (see [announcement dated 14 April 2021](#)) and definitive feasibility study scoping work is currently underway.

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