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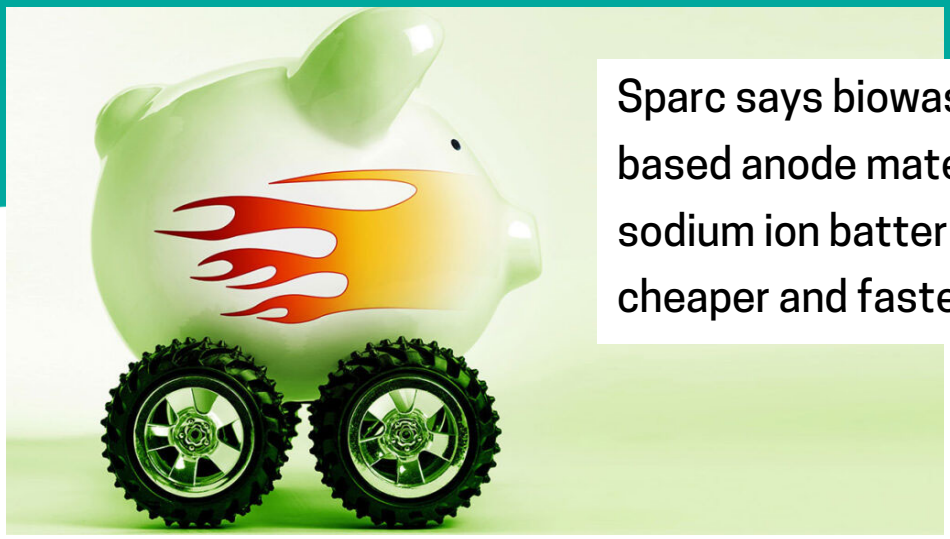

Sparc says biowaste-based anode material for sodium ion batteries is cheaper and faster

Conventional hard carbon anode production is very energy intensive. Pic via Getty Images.

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Sparc Technologies says its project with the Queensland University of Technology (QUT) targeting development of sustainably sourced hard carbon anode material for sodium ion batteries (SIBs) is progressing well, with 'exceptional' initial results so far.

Multiple trials have produced hard carbon anodes averaging ~45% higher reversible capacities compared to commercial hard carbon anode materials.

Whilst further optimisation, testing and process development work is required, reversible capacities for a batch of materials under the same testing conditions exceeded 535mAh/g and averaged 477mAh/g across five separate trials.

Hard carbon processing technology is currently a very energy consuming process, which combined with using a fossil fuel derived feedstock, has a significant environmental footprint.

This new processing tech is faster and less energy intensive, and a high performing, low cost, sustainably sourced anode material for SIBs "will meet a need for what is a growing alternative battery technology", the company says.

Market potential in industrial scale storage

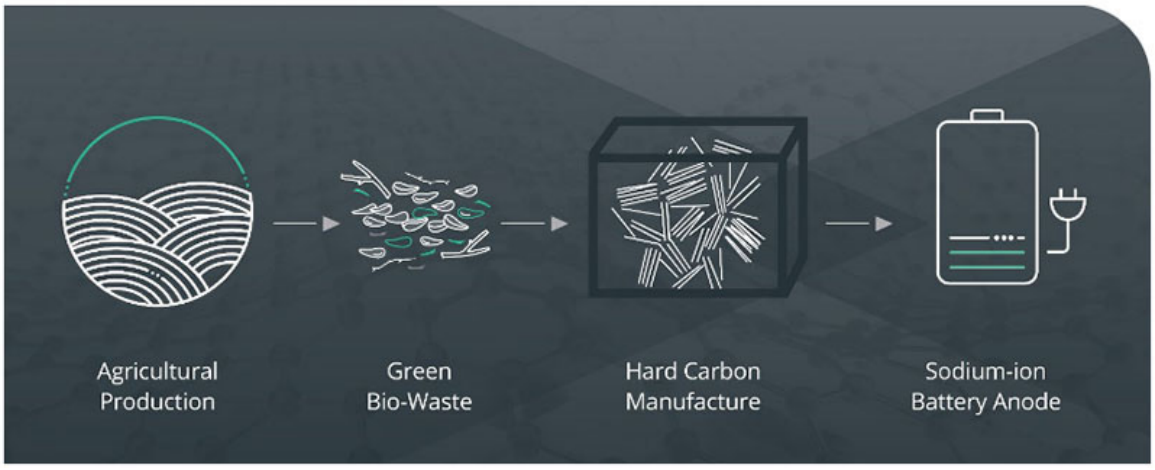
Sparc believes that sodium ion batteries have strong market potential, particularly in industrial and grid scale storage.

“Sparc is very encouraged by the positive results from its research program with QUT into the development of sustainable hard carbon anode materials for sodium ion batteries,” Sparc Technologies (ASX:SPN) executive chairman Stephen Hunt said.

“The combination of green bio-waste feedstock and faster, less energy intensive processing with a very high-capacity anode material offers attractive potential for further research and development.”

Sparc has ~6 months to run on the research program with QUT, and future work will focus on testing cycling stabilities up to 500 cycles, trialling methods to improve initial coulombic efficiencies and fabrication and testing of full cells.

The company is planning to further explore the magnitude of energy and cost savings achievable through using the proposed processing route over existing hard carbon materials via life cycle analysis and economic modelling over the coming months.



Hard carbon production using low cost sustainably sourced green bio-waste process schematic. Pic: Supplied (SPN)

Battery producers pursuing SIB commercialisation

SIBs are a very prospective alternative battery chemistry to lithium ion, particularly suited to energy storage markets, with advantages including the lower cost and greater availability of raw materials, safety and ease of transport and greater operating temperature range.

The benefits particularly around the cost and supply and cost of raw materials have seen growing activity by energy developers, original equipment manufacturers (OEMs) and venture capital investors in SIBs.

It's no wonder then, that there's rapidly building momentum in the sodium ion batteries industry with several global players commencing commercialisation activities in 2023 – including CATL, BYD, Reliance / Faradion and HiNa Battery.

Hunt said the continued progress of sodium ion batteries towards commercialisation as evidenced by recent activities of major global battery producers is very exciting for the company.

"Sparc is well positioned as one of the only ASX listed companies actively targeting sodium ion batteries," he said.

This article was developed in collaboration with Sparc Technologies, a Stockhead advertiser at the time of publishing.

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