FOR RELEASE
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EXCEPTIONAL GRAPHITE RESULTS FOR LITHIUM-ION BATTERY USE

- **Nachu graphite concentrate for lithium-ion battery anodes produces superior performance to synthetic graphite without any chemical or thermal purification**
- **97.1% first cycle efficiency is a 42% improvement over synthetic graphite**
- **Surface Area (BET) of 4.09 m^2/g with Tap Density at 0.87 g/cc**
- **Purity upgraded to 99.8%TGC without any chemical or thermal purification**
- **Substantial cost advantages compared to synthetic graphite**
- **Magnis uniquely placed to meet the future demands of sustainable industries at a competitive cost with minimal environmental impact due to purity and high performance of anode graphite**
- **Discussions with potential processing partners and end users in North America, Europe and Asia are progressing well**

Magnis Resources Limited (ASX:MNS) is pleased to announce the following significant test results from initial qualification work on the suitability of graphite sourced from its 100% owned Nachu Graphite Project in Tanzania as anode material for lithium-ion batteries.

The qualification work reported in this announcement was undertaken principally in North American laboratories and used Nachu graphite concentrate as feedstock for lithium-ion battery anode production.

A first cycle efficiency rate of 97.1% was achieved equating to a loss of only 2.9% and is an improvement of 42% over synthetic graphite. A Surface Area (BET) of 4.09 m^2/gt and Tap Density of 0.87 g/cc combined with the first cycle efficiency demonstrate the exceptional qualities of Nachu graphite.

Micronised coated Nachu graphite upgraded to 99.8%TGC without any chemical or thermal purification was used to achieve the above results. The results confirm that

graphite from the Nachu project has the potential for high end energy and power applications like lithium-ion batteries used in the electric vehicle market.

Magnis CEO Dr Frank Houllis commented: "These landmark results are exciting and very unique. To achieve superior results to synthetic graphite without any chemical treatment is quite remarkable. Our product may well have the lowest costs in the industry with the lowest carbon footprint."

"Due to the exceptional purity and crystalline properties of Nachu's large flakes, our concentrate is uniquely placed to meet the demands of sustainable industries for superior product performance at reduced cost and lower environmental impact. A number of potential end users and processors are collaborating with Magnis to develop a total anode graphite supply chain solution for battery makers."

Micronisation

As part of the battery testing program, -300 micron graphite concentrate was sent for micronisation to a laboratory in Germany. The thickness of the individual large flakes of Magnis' graphite contributed to a high yield requiring a ratio of less than 1.4:1 of concentrate feedstock to product, which contrasts with a ratio of up to 3:1 when starting with industry standard fine graphite (<150μ).

A direct consequence of the higher yield is a decrease in milling energy of 15% to 40% compared to current industry practice.

Coin Cell Performance

Coin cell testing was conducted in Binghamton University (Part of the State University of New York), where Professor Dr Michael Stanley Whittingham is a director and a key figure in the development of lithium-ion batteries. Testing was aimed at identifying the most cost effective process for the production of anode materials used in lithium-ion batteries. Due to the high purity of Nachu concentrate and the absence of deleterious impurities, no processing of the graphite with chemicals was required. It is important to note that a high performance battery anode can be generated from poor quality graphite feedstock using high cost processing to generate 'synthetic graphite'. In this test work, it was the contrasting case in that the objective was to demonstrate how a high quality natural flake graphite feedstock can be processed in fewer, more cost effective and more sustainable processes, thus eliminating the need for the costly synthetic process.

CR2032 coin cell testing of coated spherical graphite yielded the following results in Table 1.

Coin Cell Performance Result

Table 1 – Coin Cell battery test result

First Charge Capacity (mAh/g)	Irreversible Capacity Loss (%)	First Discharge Capacity (mAh/g)	Charge Capacity After 8 Cycles (mAh/g)
364	2.9	374	356

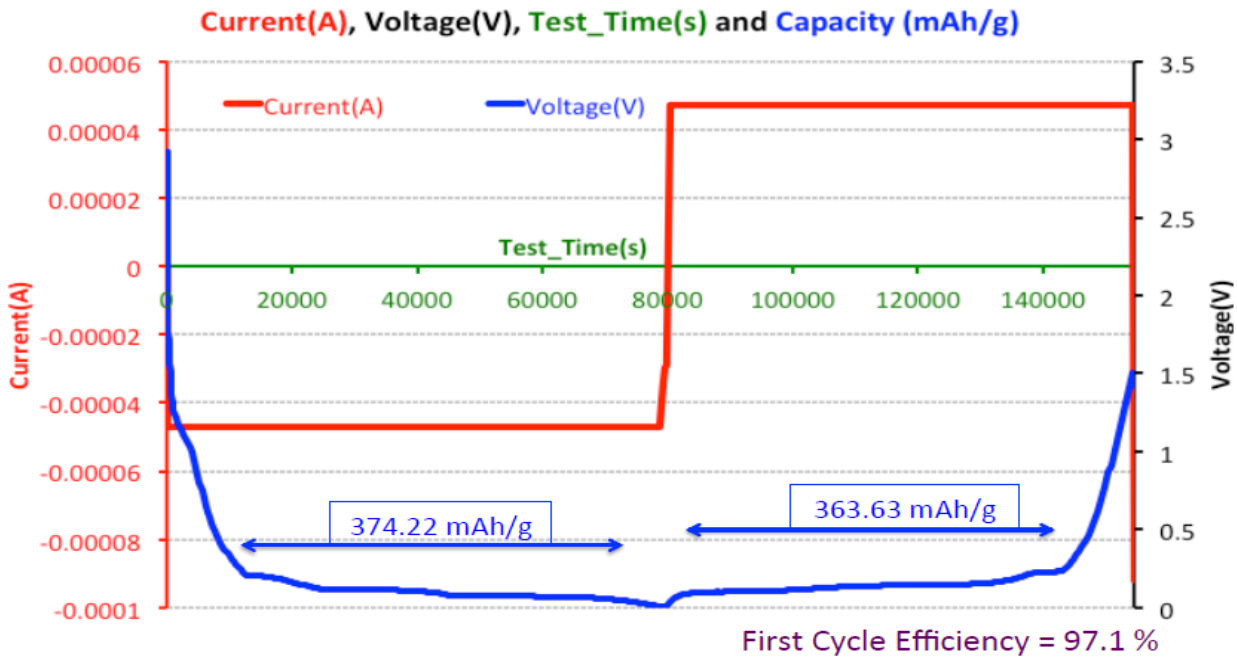

Figure 1 – Li-ion Coin Cell analysis – Micronised coated graphite

Supply Chain Development

The qualification work for lithium-ion battery performance has involved the collaboration of a number of potential partners in the supply chain for Nachu graphite. This collaboration is aimed at creating future, mutually beneficial relationships to offer a total supply chain solution from concentrate to battery ready anode material. The importance of this work is that most battery producers assemble batteries from drop in components and it is the exception rather than the rule for battery producers to purchase graphite concentrate feedstock.

End User Discussions

Discussions progress with end users mainly in North America, Europe and Asia. Today's results will greatly assist in advancing these discussions.

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