

ASX & MEDIA ANNOUNCEMENT

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Lamboo's Geumam high-purity flake graphite successfully trialled in a Lithium ion battery

Highlights:

- Lamboo's Geumam (South Korea) flake graphite was successfully independently tested in a lithium ion battery cell by Very Small Particle Company Limited (VSPC), a leading Australian lithium ion battery R&D specialist laboratory.
- Conductivity and performance tests undertaken by VSPC over the past nine months demonstrated the Geumam product's equivalence to synthetic graphite material.
- VSPC concluded that the results suggest a commercially attractive negative electrode product could be developed from the Geumam natural flake graphite.
- Further validation will be carried out, including trials in new generation fuel cells and super capacitors.

Lamboo Resources Limited (**ASX: LMB**) is pleased to announce that highpurity flake graphite concentrate from Geumam has been successfully trialled in a lithium ion battery cell by a leading independent laboratory.

Lamboo's focus is upon high-end and technological applications of its highpurity and high-grade natural flake graphite material, including use in lithium ion batteries, super capacitors, pebble bed technology applications and graphene.

Specific markets to be targeted for future Geumam flake graphite product will include local users in South Korea along with technology companies in Japan, Europe and North America.

Lamboo Resources CEO, Richard Trevillion said that the Company was very pleased with the independent validation of the applicability of its Geumam natural flake graphite in a lithium ion battery.

"The most exciting aspect of the trial was the fact that our basic Geumam natural flake graphite demonstrated near preliminary equivalence with standard materials used today, in terms of conductivity, stability and performance." . . developing high purity flake for new technologies





Figure 1. Geumam flake graphite concentrate sample shown with lithium ion battery components.

Potential Substitute for Synthetic Graphite

Mr Trevillion noted that high-quality synthetic graphite currently the main anode material for lithium ion batteries, sells for a large multiple of the benchmark price for standard natural flake graphite.

"Based on VSPC's analysis, we are hopeful that Lamboo could produce a high-quality natural flake graphite product as a cost-effective substitute for synthetic graphite for use in the burgeoning lithium ion battery market and other high-end applications."

Further validation work will be conducted, including trials to measure the performance of Geumam and eventually, McIntosh natural flake graphite in new generation fuel cells and super capacitors.

Independent Trial

The independent analysis was carried out over a period of nine months by Very Small Particle Company Limited (VSPC), a leading lithium ion battery R&D specialist laboratory.

Established in 1999, VSPC has invested heavily in world-class lithium-ion battery electrochemical testing facilities, resulting in the best-equipped laboratory in this field in Australia. These facilities, coupled with its internationally recognised researchers in the field have been a critical component of VSPC's quality control system and its product development capabilities.

Natural flake graphite concentrate from Geumam was analysed for its physicochemical properties and suitability for use as an anode material in a lithium-ion secondary electrochemical cell.

Evaluation of the electrochemical performance of the flake graphite as an anode material was undertaken by cycling electrodes in coin and pouch cell configurations vs. lithium foil counter electrodes.



Trial Results

From the testing undertaken, VSPC reported that the efficiency and stability of the pressed 'Natural Flake Graphite' from the Geumam deposit demonstrated good stability.

VSPC concluded that the initial electrochemical results suggest that a commercially attractive negative electrode powder could be developed from the Geuman natural flake graphite.

Background on the Geumam Project

The Geumam graphite project is located 67km southwest of Seoul on the western coastal peninsula of South Korea. Geumam is situated about 4km north of Dangjin City (population 137,000, (Figure 2).

Geumam was an historical graphite mining operation from 1985-1992. As previously announced (27 February 2014, *Significant Flake Graphite Assay Results from Geumam Project*), the Geumam project has potentially significant areas of flake graphite mapped in outcrop at areas A, B, C, D, E, and G (Figure 2).

A small mining operation and flotation processing plant was established at Geumam in 1986, consisting of a run-of-mine stockpile, conveyor, feed hopper, ball mill, two flotation cells (Rougher and cleaner cells), and a regrind ball mill. The plant was capable of producing 6tpd fine flake graphite flotation concentrate (>85% Cg), which it sold to export markets in Japan and Europe.

The mill was subsequently upgraded with an alkaline-leach plant to produce high-grade fine flake graphite concentrate (93-97% Cg) in July 1987 (KMPC, 1988), which it sold to domestic markets for micronizing into superfine graphite powders. The mine ceased operations in about 1992.

The project is located in a rural setting surrounded by world class infrastructure, including the major Ports of Dangjin and Pyeongtaek, the largest cluster of domestic steel mills (Hyundai Steel, Dongbu Steel, and Dongkuk Steel), the Dangjin power station (2,400MW capacity) and numerous other industries, including pharmaceuticals and refractories.

Dangjin City and surrounding Chungnam Province lie within the designated "Yellow Sea Free Economic Zone", a business-orientated region that is actively seeking and attracting investors and industries, including foreign-owned enterprises. A potential graphite mineral processing plant would be ideally suited to, and is compatible with, the industries planned and designated for the Seongmum or Hapdeok Industrial Complexes, currently under industrial estate development.

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Figure 2. Geumam Graphite Project – Location and Major Infrastructure.

Geumam Project Tenure

Lamboo Resources Limited subsidiary Won Kwang Mines Inc holds five (5) granted Mining Rights over Geumam (Registered No's 80077/Dangjin 55-3; 80014/Dangjin 65-1, 78355/Dangjin 65-2, 200268/Dangjin 54-2 & 200269/Dangjin 55-4).

These granted Mining Rights cover a total area of 403ha. Additional applications for 2 Mining Rights (numbers Dangjin 54-4 & 55-1) are currently being processed by the Central Mining Registry office of MOTIE. The tenements for the Geuman project are indicated on Figure 3.

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Figure 3. Geumam graphite project Tenure Map. The granted Mining Rights with respect to the mapped graphite schist beds and prospect Areas A, B, C, D, E, F and G are indicated. Applications for Mining Rights are indicated by the dark red dashed line.

Richard Trevillion Managing Director