ASX Announcement
By eLodgement
19 October 2022

Scanning Electron Microscopy shows desirable high-quality spheroidised graphite from Collie pilot plant

HIGHLIGHTS

- Scanning Electron Microscopy (SEM) shows high quality spheroidised product from International Graphite's advanced Collie pilot plant
- This is a key step in International Graphite's capability and plans to produce Battery Anode Materials (BAM) for the growing Lithium-ion battery market
- International Graphite is optimising its Collie pilot plant to provide process design data and operating experience for its future proposed BAM operations
- The pilot facility is one of the first operations of its size to produce micronised and spheroidised material for battery anodes in Australia

International Graphite Limited (ASX:IG6) has achieved promising initial results and product specifications for the first product samples produced at its recently-commissioned pilot-scale micronising and spheroidising plant at Collie, in Western Australia.

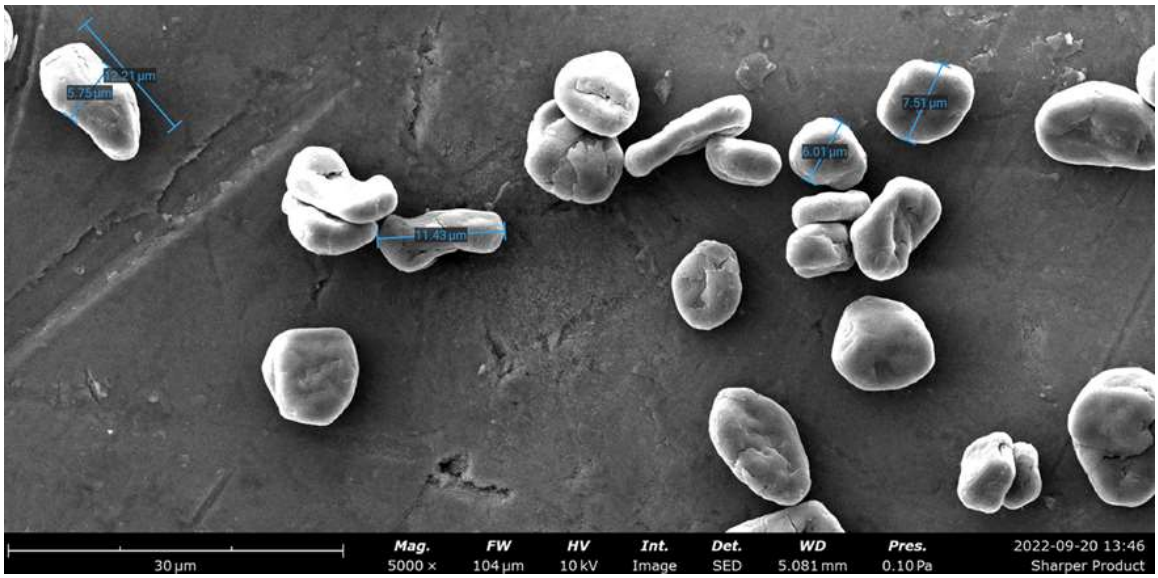
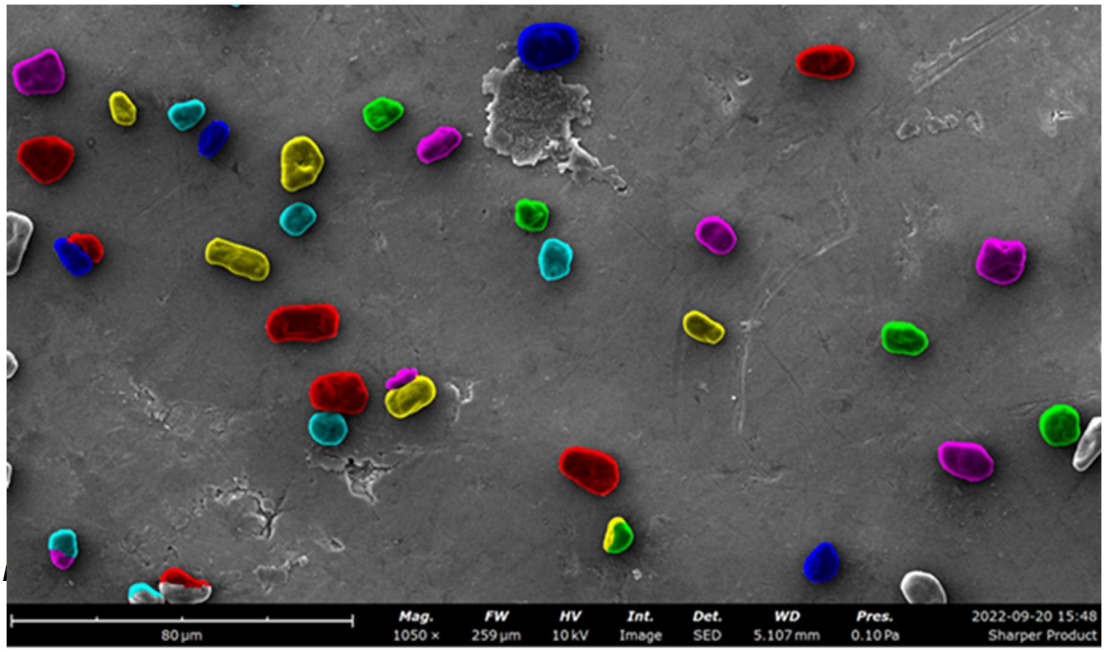


Figure 1: *Spheroidised graphite particles under the electron microscope*



Figures 1 and 2 show the shape and size of the spheroidised product particles produced by the pilot plant. These photographs confirm the size of the spheroids and show the well-shaped 'potato' particles produced by the pilot plant. These characteristics are highly desirable in a spheroidised product for battery anode production.

The pilot plant firstly micronises the graphite concentrate from a size of around 100 microns to a size of around 10 microns.

- Figure 3 shows the size distribution of feed to the micronising mill.
- Figure 4 shows the size distribution of micronised product that is fed to the spheroidising mill.
- Figure 5 shows the size distribution of the spheroidised product.

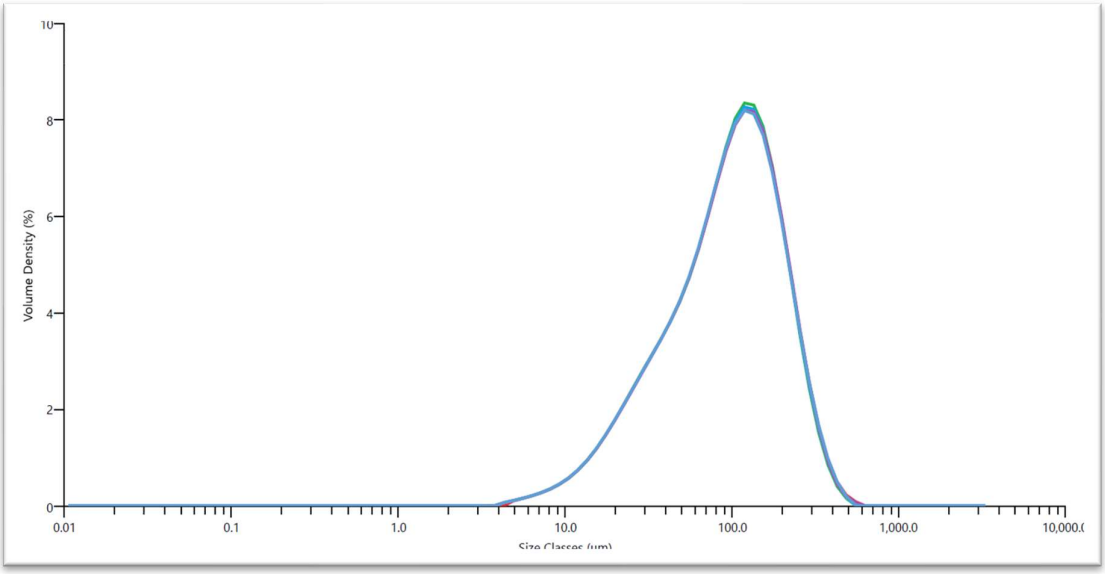


Figure 3: *Size distribution of the graphite concentrate feed to the micronising mill*

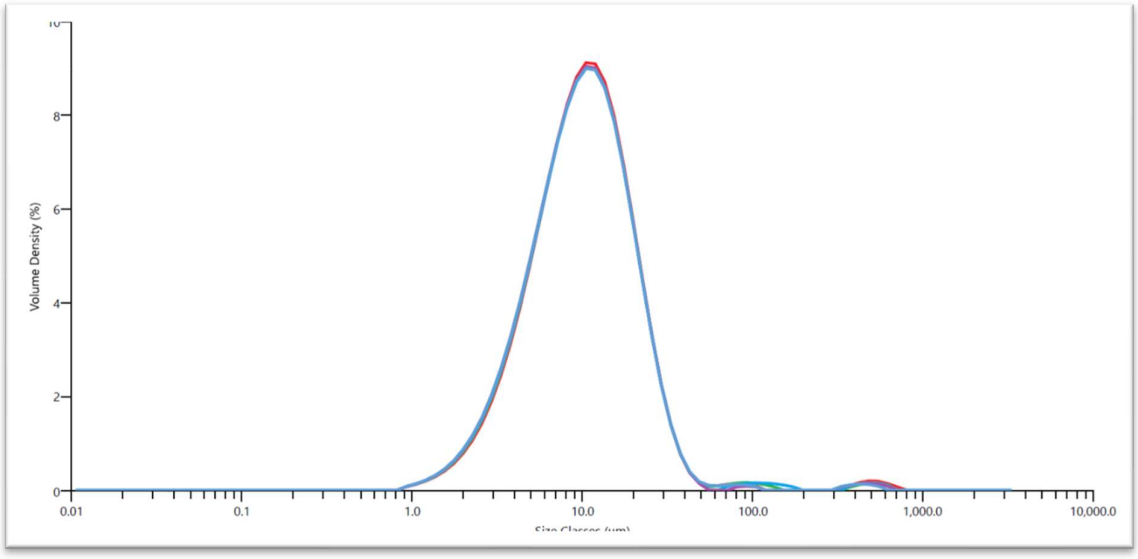


Figure 4: *Size distribution of the feed to the spheroidising mill*

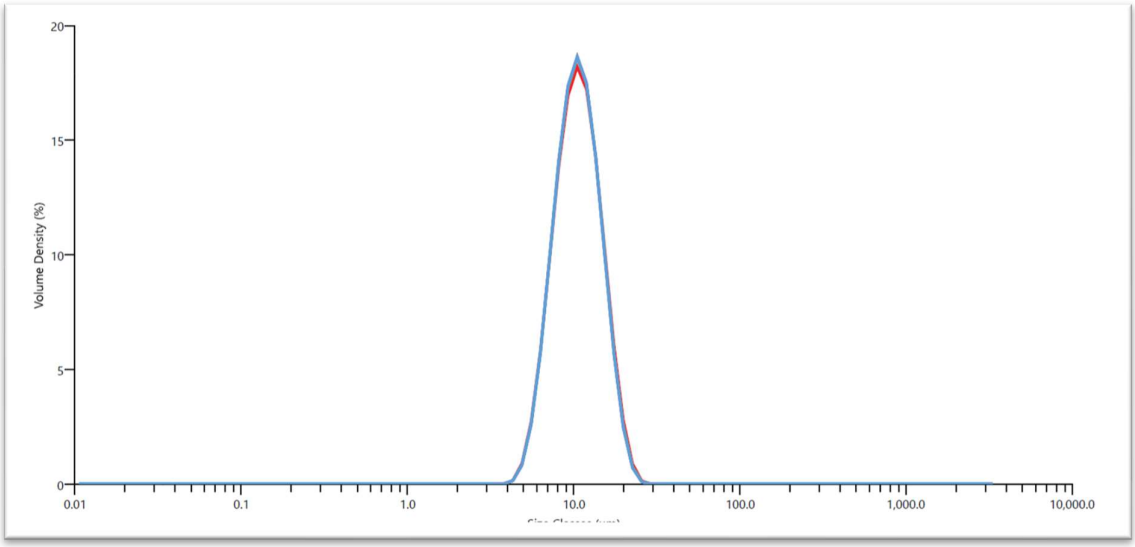


Figure 5: *Size distribution of the spheroidised product*

Figure 5 shows that the size distribution is very tight which is highly desirable in a spheroidised product for battery anode production.

Figure 6 shows sizing data for the spheroidised particles. This confirms the fine size and consistent size distribution of the product.

Test number	Sample	D10 (µm)	D50 (µm)	D90 (µm)
01	Spherical product	6.97	10.6	15.9
02	Spherical product	7.00	10.5	15.8
03	Spherical product	7.00	10.5	15.7
04	Spherical product	6.99	10.5	15.7
05	Spherical product	6.99	10.5	15.7
Mean		6.99	10.5	15.8
1 x Std Dev		0.139	0.024	0.089
1 x RSD (%)		0.200	0.229	0.565

Figure 6: *Sizing of spheroidised product*

*Executive Chairman Phil Hearse said, "**These results are outstanding for the first run from the Collie pilot plant and demonstrate the fastidious preparation and planning that has gone into the equipment installation and operation.***

"Our technical knowledge of downstream graphite processing is now being enhanced by hands-on operating experience with equipment that we expect to install in our future BAM facility.

"These outcomes are the beginning of downstream graphite anode technology being applied in the Australian battery industry. International Graphite will continue to grow its knowledge and experience in the production of battery anode materials as we head towards future commercial operations."

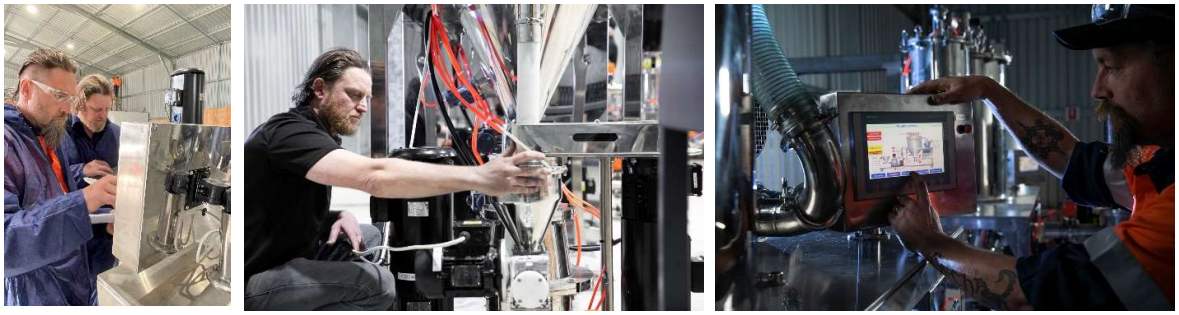


Figure 7: *Pilot micronising and spheroidising operations at the Collie facility*

The company has also taken delivery of a speciality high temperature furnace and will be investigating thermal purification as an alternative to traditional alkali or acid based purification methods. Micronised and spheroidised graphite is purified to >99.95% and then coated turning it into a smooth and highly conductive material suitable for Lithium-ion battery anodes.

In the future, International Graphite intends to establish a vertically integrated operation with the Collie downstream plant processing graphite concentrates produced at the Company's Springdale Graphite Project, near Hopetoun in Western Australia. The micronised and spheroidised graphite product will then be purified and is also expected to be coated to produce a finished product suitable for Lithium-ion battery anodes. Production of a coated BAM product in Australia for export to global anode manufacturers would capture the full value of the graphite resource.

This announcement has been authorised for release by the Board of Directors of International Graphite Limited.

Phil Hearse
Executive Chairman

For more information please contact:

Robert Hodby
CFO/Company Secretary
robert.hodby@internationalgraphite.com.au
+61 407 770 183

Marie Howarth
Media & Communication
marie.howarth@internationalgraphite.com.au
+61 412 111 962

About International Graphite

International Graphite is an emerging supplier of processed graphite products, including battery anode material, for the global electric vehicle and renewable energy markets.

The Company is developing a sovereign Australian 'mine to market' capability, with integrated operations wholly located in Western Australia.

International Graphite intends to build on Australia's reputation for technical excellence and outstanding ESG performance with future mining and graphite concentrate production from its 100% owned Springdale Graphite Project and commercial scale downstream processing at Collie. International Graphite is listed on the Australian Securities Exchange (ASX: IG6) and Tradegate and Frankfurt Stock Exchange (FWB: H99, WKN: A3DJY5) and is a member of the European Battery Alliance (EBA250) and European Raw Minerals Alliance (ERMA).