



first graphene

The world's leading graphene company

ASX Announcement

30 April 2019

March Quarterly Activities Review

Graphene Developments Continue Apace

HIGHLIGHTS

- Growing commercial enquiries for PureGRAPH™ products in Europe and Australia.
- Achieved REACH registration for its PureGRAPH™ graphene products in Europe and the United Kingdom
- Submitted application to The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) for registration of PureGRAPH™ graphene products for sale in Australia
- Initiated new programme for the Vortex Fluidic Device (VFD) process technology to run at the University of Manchester
- Received a Research and Development refund totalling \$680,658.
- Post quarter end completed placement, raising \$3.5m

Overview

The March quarter saw First Graphene continue to make substantial progress in its objective of commercialising the PureGRAPH™ range of graphene products. The addition of PureGRAPH™ has been proven to provide a range of improved performance characteristics in a number of products.

Commercial Development

In January First Graphene and Steel Blue announced they have begun jointly working on incorporating graphene into existing and new materials of Steel Blue footwear to enhance performance and provide wearers with the latest in advanced materials benefits in safety foot wear.

In the oil and gas industries the toe cap is made of a composite to eliminate spark potential from steel caps. The addition of graphene to the composite toe cap may enhance the strength characteristics of the toe cap and provide further user benefits.

Enhancement of other boot components with the introduction of PureGRAPH™ will follow initial trials.

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ASX Code

FGR
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The Company's employment of a Marketing Manager in the United Kingdom has quickly paid dividends, with a high level of customer contact and several MOU's and product development trials being commenced. This has also proven the value of the Company having a presence as a Tier 1 participant at the Graphene Engineering Innovation Centre.

The Company has continued to build its brand and extend its customer base. During the quarter Dr Andy Goodwin presented at *Graphene Automotive 2019* in Detroit. In early April Neil Armstrong was a presenter at *Composites Australia Conference* in Sydney. These exhibits have resulted in a number of potential commercial leads which are being pursued.

In the next quarter, FGR will continue to reach out to its target markets and will have a presence at *Graphene and 2D materials – IDTechEx* (Germany, April), *Evolving Concrete* (UK, June) and *Composites – Automotive Showcase* (UK, June).

Warwick Grigor and Dr Andy Goodwin have also been invited to participate in the American Graphene Summit in Washington, DC (May) which includes a Capitol Hill meeting with leading industrialists, government institutes and defence contractors.

Regulatory Submissions

During the March quarter the Company achieved REACH registration for its PureGRAPH™ graphene products in Europe and the United Kingdom. This registration enables immediate sale of up to 10 tonnes/year of graphene products. Work to extend this to 100 tonnes/year is underway.

FGR also made application to The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) in Australia for registration of its PureGRAPH™ graphene range of products.

Most developed economies have introduced specific regulatory requirements for the introduction of new nano-materials (definitions vary between jurisdictions, but a nano-material is typically a substance with one dimension of <100nm). As a consequence of these new requirements, it is necessary for all producers, or potential producers, of graphene to complete formal registration of graphene as a new substance, prior to import or manufacture.

For NICNAS registration, FGR worked closely with its consultants to submit comprehensive application. This involved providing items such as chemical characterisation, toxicology and environmental information, all of which required considerable research. An advantage of having been a first mover in this registration process is that other graphene producers, or potential producers, cannot take advantage of this registration without referral to FGR.

To the best of the Company's knowledge FGR is the first graphene entity in Australia to make application to NICNAS for the registration of graphene as a new nano-material.

VFD Development

A new programme for the Vortex Fluidic Device (VFD) process technology to run at the University of Manchester was initiated during the quarter. During the programme, a device has been located within the laboratories of First Graphene Ltd at the Graphene Engineering & Innovation Centre (GEIC), University of Manchester.

Professor Colin Raston from the Flinders University College of Science and Engineering initiated the programme with a seminar at the University on 28 February 2019, followed by a series of meetings with experts based at the University. Dr Kasturi Vimalanathan the leading researcher in the VFD has commissioned the VFD process in the GEIC laboratories. Dr Vimalanathan will also co-ordinate evaluations of the VFD approach with researchers across the University departments.

In particular the initial focus of Dr Vimalanathan will be to characterise and evaluate the performance of the Green Graphene Oxide (gGo™) developed by 2D Fluidics using the VFD. The programme is expected to accelerate the understanding of gGo™ produced in various real world applications.

The VFD is a unique process technology developed by Professor Raston which is capable of delivering highly controlled chemistry by vortex mediated processing. Of particular interest to the graphene and 2D materials industry is the use of VFD for sustainable manufacture of graphene oxide and the controlled exfoliation of non-carbon 2D materials for electronic and catalyst applications.

Working with the capabilities at the GEIC, 2D Fluidics Pty Ltd and First Graphene Ltd researchers will lead the characterisation of the produced 2D materials and develop scale-up plans for these novel processes.

Corporate

In March FGR received a Research and Development refund totalling \$680,658. The refund results from the Company's research and development activities during the financial year 2017/18.

Immediately after the quarter end FGR announced it had received firm commitments for a placement to eligible institutional and sophisticated investors of approximately 23.3 million shares at an issue price of \$0.15 to raise \$3.5 million. The issue of Shares was within the Company's capacity under Listing Rule 7.1 and did not require shareholder approval.



Dr Andy Goodwin (Left) and Neil Armstrong (Centre) at Composites Australia Conference, Sydney NSW

About First Graphene Ltd (ASX: FGR)

First Graphene Ltd. are the leading supplier of high-performing, bulk graphene products. The company has a robust manufacturing platform based upon captive supply of high-purity raw materials and an established 100 tonne/year graphene production capacity. Commercial applications are now being progressed in composites, fire retardancy, construction and energy storage.

First Graphene Ltd. is publicly listed in Australia (ASX:FGR) and has a primary manufacturing base in Henderson, near Perth, WA. The company was recently incorporated in the UK as First Graphene (UK) Ltd. and is a Tier 1 partner at the Graphene Engineering and Innovation Centre (GEIC), Manchester, UK.

PureGRAPH™ Range of Products

The PureGRAPH™ range of products were released by FGR in September 2018, in conjunction with a detailed Product Information Sheet.

PureGRAPH™ graphene powders are available with lateral platelet sizes of 20µm, 10µm and 5µm. The products are characterised by their low defect level and high aspect ratio.

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