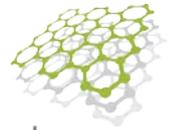


## ASX Announcement

31 July 2018



**first graphene**

The world's leading graphene company

# June Quarterly Activities Review

## *Significant Progress in the Quarter*

Advanced materials company, First Graphene Limited (FGR) is pleased to provide a review of the Company's development for the quarter ended 30 June 2018.

### Highlights

- FGR joined the world-leading Graphene Engineering & Innovation Centre (GEIC) at the University of Manchester, UK, to accelerate graphene technology development and the commercial adoption of FGR products
- Executed MoU with SupremeSAT (Private) Limited seeking to commercialise graphene in SupremeSAT's Miniature Satellite Assembly Project
- Executed MoU with Engage Marine for development of graphene based products in the maritime industry
- Executed MoU with newGen Group to develop graphene-enhanced polyurethane liners for use for use in the mining equipment
- Launched 2D Fluidics Pty Ltd with Flinders University to commercialise the Vortex Fluidic Device (VFD)
- Placement of \$2m to a Sydney based family office

### Graphene Engineering Innovation Centre (GEIC)

On 21 June the Company announced it had joined GEIC as a Tier 1 partner. This represented a major step forward for FGR and was a strong affirmation of the Company's leadership in the graphene sector. As a Tier 1 partner at GEIC, FGR will have its own laboratories and dedicated programmes in collaboration with the world leading academic team at the University of Manchester. FGR will have access to the core capabilities and industrial scale equipment of the centre and a seat on the Technical Advisory Board which guides the strategic direction of the centre. The GEIC will have leading edge equipment and facilities and is expected to be fully equipped and commissioned by year end 2018. FGR has commenced recruitment of suitably qualified personnel for the GEIC.

### First Graphene Limited

ACN 007 870 760

ABN 50 007 870 760

### Registered Office

Suite 3

9 Hampden Road  
Nedlands WA 6009

Tel: +61 1300 660 448

Fax: +61 1300 855 044

### Directors

Warwick Grigor  
Craig McGuckin  
Peter R Youd

### Joint Company Secretaries

Peter R Youd  
Nerida Schmidt

E: [info@firstgraphene.com.au](mailto:info@firstgraphene.com.au)

W: [firstgraphene.com.au](http://firstgraphene.com.au)

### ASX Code

FGR

FGROC

The GEIC will focus on industry-led application development in partnership with world leading academics, accelerating the commercial pace of graphene and 2D materials in Manchester and globally.

The first phase of the £60m Graphene Engineering Innovation Centre (GEIC) was handed over in May 2018, comprising an international research and technology facility. Works are well underway to fit out the laboratories ahead of the centre opening later this year.

Together, the National Graphene Institute (NGI) and GEIC will provide an unrivalled critical mass of graphene expertise. The two facilities reinforce Manchester's position as the leading global knowledge base in graphene research and commercialisation.

Funding for the £60m facility has been provided by the Higher Education Funding Council for England's UK Research Partnership Investment Fund (£15m), Masdar, the Abu Dhabi-based renewable energy company owned by Mubadala (£30m) and three other UK and European government bodies.



Dr Andy Goodwin, James Baker (CEO Graphene@Manchester), Warwick Grigor and Craig McGuckin at the GEIC

### GEIC Advisory Panel

The Graphene Engineering Innovation Centre Industry Advisory Panel has been set up to guide the early stage planning for The University of Manchester's second graphene facility.

A broad range of industrial partners are supporting the design and implementation of the GEIC and its business model.

The Advisory Panel Partners include multinationals such as Airbus, BAE Systems, BP, GKN Aerospace, GSK, Jaguar Land Rover and Siemens, to name but a few.

### **Henry Royce Institute for Advanced Materials**

This new Institute will have its research centre in Manchester and has received total government funding of £235m

The Sir Henry Royce Institute for Advanced Materials will be a world-leading centre for advanced materials research and commercialisation. The Institute will allow the UK to grow its world-leading research and innovation base in the advanced materials, science and technology, which underpins all industrial sectors. The Centre will encompass nine key areas of materials research, including graphene.

Aims of the Sir Henry Royce Institute of Materials Research and Innovation

- Accelerate safely and with confidence the use of advanced materials in existing and emerging industrial sectors within the UK.
- Underpin and provide growth to the entire UK manufacturing base and reduce the time to market from invention to application for new materials, with significant knock-on impact for the national economy.
- Invent and innovate new materials in various sectors covering fabricating, testing, analysing and demonstration, under different operating environments, and provide the 'missing link' in the development of materials within the UK.

### **SupremeSAT (Private) Limited**

The project with SupremeSAT requires the development of graphene enhanced componentry for SupremeSAT's Miniature Satellite Assembly Project. This represents a promising new field of opportunity for the deployment of graphene which seeks to utilise the qualities of strength, heat resistance and radiation shielding.

SupremeSAT is working on the Project with EnduroSAT (Private) Ltd of Bulgaria. Two leading universities in the USA will be joining this project shortly.

The Project will test satellite interconnectivity and data exchange between satellites and a data relay within a constellation. Initially a duo of 1.5U Cube Satellites will be assembled at SupremeSAT's Satellite Assembling facility – Pallekele – Kandy, with hardware for the satellites, training and other variants of engineering support coming from EnduroSAT.

The partners will be collaborating with FGR to develop graphene enhanced components, for both strength and weight reduction, but all also heat and radiation shielding.

### **Engage Marine**

The MoU with Engage Marine is for the development of graphene enhanced coatings and ropes for the marine industry. The terms of the MOU cover collaboration on graphene as an additive to existing coatings or a new formulation; coatings with fire retardant and noise reduction properties for ship bulkhead doors and engine rooms that can be sprayed on; and graphene enhanced polypropylene ropes.

The Company and Engage Marine will work to commercialise the project outcomes with other global marine organisations.

## newGen Group

With newGen Group, FGR will look to develop graphene-enhanced polyurethane liners for use in mining equipment. newGen is a WA-based mining industry supplier, providing liners for the leading iron ore producers, including BHP, RIO and Fortescue

Equipment used in the mining industry is frequently modified with the installation of polyurethane liners to protect them from excessive abrasion, and these liners need to be replaced at regular intervals. The life of these liners is typically six months in, for example, the iron ore industry. It is believed the addition of graphene to the liners will significantly reduce the wear factor, thereby extending the lives of the liners and providing useful cost savings in materials and labour.

## 2D Fluidics Pty Ltd

In June the Company announced the launch of 2D Fluidics Pty Ltd to commercialise the Vortex Fluidics Device (VFD). 2D Fluidics Pty Ltd is owned 50% by FGR and 50% by Flinders University's newly named Flinders Institute for NanoScale Science and Technology.

The VFD enables new approaches to the production of a wide range of materials such as graphene, green graphene oxide and sliced carbon nanotubes, complementing its position as the leading graphene production company. 2D Fluidics will also look at other 2D materials, such as molybdenum disulphide and boron nitride and other novel carbon materials suitable for battery improvement.

2D Fluidics will use the VFD to prepare these materials for commercial sales, which will be used in the plastics industry for applications requiring new composite materials, the electronics industry for circuits, supercapacitors and batteries, and for research laboratories around the world. 2D Fluidics is also manufacturing the VFD, which is expected to become an in-demand state-of-the-art research and teaching tool for thousands of universities worldwide and should be a strong revenue source for the new company.

## Corporate

In late June the Company was pleased to advise it had received firm commitments for a placement of shares at \$0.18 raising \$2 million. The issue of the 11.1m shares and option securities was within the Company's capacity under Listing Rule 7.1 and did not require prior shareholder approval.

This was a limited private placement going to a Sydney based family office which approached FGR.

Managing Director, Craig McGuckin, stated: *"The Company's graphene projects have advanced substantially during this quarter. It had been an exciting quarter, with the participation at GEIC underling our position as the leading graphene company."*

**Significant June Quarter Announcements**

<b>Date</b>	<b>Subject Matter</b>
18 Apr 2018	Binding MoU with SupremeSAT for Provision of Graphene in Miniature Satellites
9 May 2018	Extending Graphene Applications into the Maritime Services Industry
22 June 2018	New Nano Science firm to produce 'clean' super-strength carbons
25 June 2018	Extending Graphene Applications into the Mining Services Industry
26 June 2018	First Graphene joins the University of Manchester as Founding Partner in World's leading Graphene Engineering & Innovation Centre
29 June 2018	Placement of Shares at Premium to Market

The above announcements can be viewed in full by accessing the company's website.

### **About First Graphene Ltd (ASX: FGR)**

First Graphene has established a commercial graphene production facility for the bulk scale manufacture of graphene at competitive prices. The Company continues to develop graphene related intellectual property from which it intends to generate licence and royalty payments.

The Company has collaboration arrangements with four universities and is at the cutting edge of graphene and 2D related material developments. Most recently First Graphene has become a Tier 1 participant in the Graphene Engineering and Innovation Centre (GEIC) of the University of Manchester. First Graphene is working with numerous industry partners for the commercialisation of graphene and is building a sales book with these industry partners.

### **About Graphene**

Graphene, the well-publicised and now famous two-dimensional carbon allotrope, is as versatile a material as any discovered on Earth. Its amazing properties as the lightest and strongest material, compared with its ability to conduct heat and electricity better than anything else, means it can be integrated into a huge number of applications. Initially this will mean graphene is used to help improve the performance and efficiency of current materials and substances, but in the future, it will also be developed in conjunction with other two-dimensional (2D) crystals to create some even more amazing compounds to suit an even wider range of applications.

One area of research which is being very highly studied is energy storage. Currently, scientists are working on enhancing the capabilities of lithium ion batteries (by incorporating graphene as an anode) to offer much higher storage capacities with much better longevity and charge rate. Also, graphene is being studied and developed to be used in the manufacture of supercapacitors which can be charged very quickly, yet also be able to store a large amount of electricity.

For further information, please contact

Craig McGuckin  
Managing Director  
First Graphene Limited  
+ 611300 660 448

Warwick Grigor  
Non-Executive Chairman  
First Graphene Limited  
+61 417 863187