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First Graphite 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 Chris Banasik

Company Secretary Peter R. Youd

Email: info@firstgraphite.com.au

Website: www.firstgraphite.com.au

ASX Symbol FGR, FGROA, FGROB

Flinders University Update

Initial Results of Graphene testing At Flinders

First Graphite (ASX: FGR) is pleased to provide an update on initial test work undertaken by Flinders University on FGR graphite.

Highlights

- Few Layer Graphene successfully produced using Turbo Thin Film (TTF) technology.
- Graphene Nano structures / scrolls produced.
- FGR graphene process, VFD and TTF are all one step saleable processes that complement each other

Graphene update

FGR is pleased to provide an update on the initial test work carried out under the MOU with Flinders University for the use of the Vortex Fluidic Device (VFD) and Turbo Thin Film (TTF) processing technology.

The initial results from the Turbo Thin Film device used FGR graphite in water and successfully produced few layer graphene as well as nano-sized needle structures (scrolls) which may be similar in structure to carbon nanotubes.

While these are only preliminary results the TTF device is showing great promise to produce high quality, few layer graphene from FGR graphite feedstock and also create nanoparticles which can be beneficial in certain processes.

FGR is working closely with Flinders and expects further results from the VFD in the near future. The expected advantages of the VFD technology in conjunction with the FGR's exfoliation process are;

- All processes use green technology for the production of high quality graphene, therefore defects in nanomaterial's are removed without altering them chemically or physically.
- All methods are a single step process, low cost and can offer premium high purity products at lower prices.

All processes are scalable and will complement each other to produce nanomaterial with precise control over physical properties including length and chirality.

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FGR provided feedstock



Graphene platelets from TTF process



Nano sized needle structures (scrolls)

Managing Director, Mr Craig McGuckin said "*The initial results from the thin film technology are very encouraging and all though in the early stages of development we believe the Turbo Thin Film and Vortex Fluidic Device will enhance our main graphene production capability that has been successfully commissioned to customise graphene products to meet client's requirements.*"

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About First Graphite Ltd (ASX: FGR)

First Graphite is aiming to develop an underground mining operation to extract high-grade, crystalline vein graphite, which is unique to Sri Lanka. The Company holds exclusive rights to exploration licenses covering approximately 39,500 hectares in area, with historical workings located within nearly all license grids.

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, mean 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 are able to be charged very quickly, yet also be able to store a large amount of electricity.

Nature of vein graphite

Sri Lankan graphite deposition model is best described from the 'bottom up': tension fractures formed in the metamorphic sediments, caused by the folding of the sediments, creating 'conduits' for the hydrothermal deposition of high quality vein graphite. Historically, mining of these veins has found the veins generally increase in thickness and grade quality with increasing depth. Graphite veins generally dip steeply at –70° to near vertical, enabling 'narrow vein' extraction mining techniques similar to those used on narrow vein, high grade gold deposits. The method commonly used is an overhead retreat stoping technique where the high grade vein graphite is mined and hauled to surface without contamination. The graphite selvages, in contact with the surrounding waste, is hauled to surface and stockpiled for upgrading. The balance of the waste is used to fill the floor of the stope.

Due to the nature of the vein graphite, it is anticipated vein widths of ~25cm, using narrow vein mining techniques can be economically extracted from underground operations.

For further information: Craig McGuckin Managing Director First Graphite Ltd Peter R. Youd Executive Director First Graphite Ltd www.firstgraphite.com.au