

Demonstration Video of FireStop™ Effectiveness

Advanced materials company, First Graphene Limited ("FGR" or "the Company") (ASX: FGR) is pleased to provide an update on its development of the FireStop™ fire retardant material.

Development of the FireStop™ material is being conducted in conjunction with the University of Adelaide as part of the Company's participation as a Tier 1 participant in the ARC Research Hub for Graphene Enabled Industry Transformation.

Demonstration Video

The following link to the video shows the dramatic effectiveness of FireStop™ when applied to simple wooden structures. Whereas the untreated structure on the left is totally consumed by fire, the structure treated with the FireStop™ retardant doesn't even catch fire after five minutes of trying. Given that fires generally start at specific ignition points, the ability of a graphene-based retardant to stop the ignition is a key feature of the product. The FireStop™ was applied in three coats, was applied by brush and was less than 500 µm thickness.

The relevant characteristic of graphene that this demonstration highlights is the very high thermal conductivity i.e. the ability to disburse heat away from the source. FGR is highly encouraged by the results of this simple demonstration, which augers well for subsequent, more advanced and scientifically controlled demonstrations that are being undertaken.

<https://youtu.be/im12BJT4-8c>

Next Steps

The University of Adelaide has now received a UL-94¹ system for use in its workshop. It is also installing an LOI instrument for the generation of scientific data. These instruments will enable an acceleration of the test work being conducted to optimise the FireStop™ product and application methodology.

Further tests will be conducted to increase the viscosity of the product while maintaining the fire-retardant performance. This work will be the precursor to submitting FireStop™ to FGR's own testing to the relevant fire standards and to CSIRO for independent testing in Q1 2018. In the meantime, the Company is entering negotiations with potential industry partners for the commercialisation of FireStop™.

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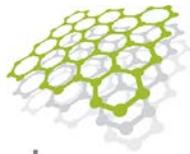
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ASX Symbol

FGR

¹ UL 94, the *Standard for Safety of Flammability of Plastic Materials for Parts in Devices and Appliances* testing, is a plastics flammability standard released by Underwriters Laboratories of the United States. The standard determines the material's tendency to either extinguish or spread the flame once the specimen has been ignited. UL-94 is now harmonized with IEC 60707, 60695-11-10 and 60695-11-20 and ISO 9772 and 9773.



first graphene

Australia's leading graphene company

ASX Announcement

15 December 2017

About First Graphene Ltd (ASX: FGR)

First Graphene produces high quality graphene from high grade Sri Lankan vein graphite.

First Graphene seeks to develop graphene production methods and acquire graphene related intellectual property which can provide further revenue related opportunities.

About Graphene

Graphene, the well-publicised and now famous two-dimensional carbon allotrope, is as versatile a material as any other 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) crystalline materials 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.

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