

5<sup>th</sup> October 2021

## Acquisition of green hydrogen cavitation patents

### HIGHLIGHTS

- **First Graphene acquires patents to hydrocarbon conversion technology from Kainos Innovation**
- **One-step hydrodynamic cavitation process converts petroleum feedstock to battery grade graphite, graphene and green hydrogen**
- **Sets pathway to provide oil and gas sector with diversified green energy options to help meet demand of growing EV market**
- **Patents recently granted by the US Patent Office**

First Graphene Limited (ASX:FGR; "First Graphene" or "the Company") is pleased to announce its successful acquisition of patents from UK-based research and development partner Kainos Innovation Limited (Kainos).

The part cash, part stock acquisition includes an initial cash payment of £25,000 and a share allotment of 200,000 shares with a voluntary trading escrow for 12 months, and finally a milestone cash payment of £25,000 linked to the completion of Patent grants.

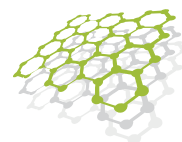
The development comes after First Graphene successfully partnered with Kainos in late 2020, to secure a UK Government Sustainable Innovation Fund grant to progress a pathway from hydrocarbons to green hydrogen and battery grade materials. The acquired patents consist of two patent families filed in multiple global regions. Patents have already been fully granted by the US Patent Office for both families.

Research conducted by the Company in their laboratories at the Graphene Engineering and Innovation Centre in Manchester (GEIC) successfully demonstrated Hydrodynamic Cavitation Technology can efficiently produce graphite materials and green hydrogen in a single step process. In a recent white paper, the Company detailed how the technology produces hydrogen in an exothermic process which is thermodynamically favourable versus any known competitive route. The technology can be used at oil refineries where feedstocks and petroleum engineering capabilities are readily available, and products can be captured for downstream use.

As well as generating green hydrogen, which can be used as clean energy to feed back into refining, the researchers found high quality graphene and graphite is produced.

Demand for battery grade graphite materials – made from natural and synthetic graphite – are on the rise for their use in battery anodes and coated cathodes.

According to market research published by MarketsandMarkets, lithium-ion battery anode markets will be worth US\$21 billion by 2026 growing at CAGR of 19.9%, driven primarily by rising demand for battery and plug-in hybrid electric vehicles.



# ASX ANNOUNCEMENT

first graphene

The world's leading graphene company

The largest market for lithium-ion battery anode is anticipated to be Asia Pacific, where demand is growing strongly due to increased industrial application of lithium-ion batteries along with innovation and technology advances in anode materials.

First Graphene Managing Director and CEO Michael Bell said the Company's acquisition sent a signal to the global oil and gas sector that material technology can help diversify energy sources.

*"The technology we have developed and are now ready to commercialise has been proven through applied research to return a number of benefits and opportunities, particularly to the oil and gas sector. We see this technology as a potential win for petroleum companies looking towards energy transition, including alternative forms of energy to power their own operations."*

*"Additionally, as EV popularity in the automotive segment grows, there will be a spike in the need for graphite materials associated with battery production."*

*"As a market maker, First Graphene is now in a strong position to pursue joint venture arrangements to produce graphite battery anodes or battery grade materials for downstream use, aligned with our Energy Storage market segment."*

## Investors

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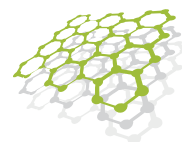
## About First Graphene Ltd (ASX: FGR)

*First Graphene Ltd. is the leading supplier of high-performing, 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, elastomers, 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 is 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

**PureGRAPH®** graphene powders and **PureGRAPH® AQUA** pastes with lateral platelet sizes of 50µm, 20µm, 10µm and 5µm, as well as **PureGRAPH® MB-LDPE 20-30** and **PureGRAPH® MB-LDPE EVA** masterbatches for thermoplastics, are available in tonnage volumes. The products are high performing additives, characterised by their high quality and ease of use.



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## ASX ANNOUNCEMENT

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### **Trading Symbols**

**Australia:** FGR

**Frankfurt:** FSE:M11

**USA OTCQB:** FGPHF

*With authority of the board, this announcement has been authorised for release by Aditya Asthana, Chief Financial Officer and Company Secretary.*

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