

14 April 2021

First Graphene Presentation at Emerging Growth Conference

First Graphene Limited (ASX:FGR; "First Graphene" or "the Company") is pleased to provide a copy of the presentation to be delivered by the Company's Chairman, Warwick Grigor, during the webinar Emerging Growth Conference on 15 April, 2021 at 05:30 Sydney time.

The presentation is available on the Company's website via the link below:

https://firstgraphene.net/wp-content/uploads/2021/04/20210412-Presentation-V10_optimize.pdf

A link to the webinar recording will be posted to the Company's website after the presentation

ASX ANNOUNCEMENT



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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.

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Trading Symbol

Australia: FGR
FGROC

Frankfurt: FSE:M11

USA OTC: FGPHF

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

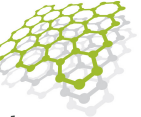


Delivering the Graphene Revolution

Driving Industrial Scale Adoption of Graphene

www.firstgraphene.net
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April 2021



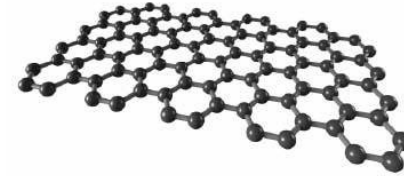
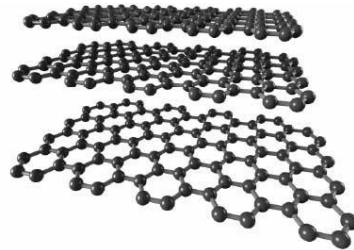
WHAT IS GRAPHENE?

Delivering the Graphene Revolution

- Graphene is an allotrope of carbon consisting of a single layer of atoms arranged in a two dimensional honeycomb lattice.
- Discovered, isolated and characterised in 2004 by two Russian Physicists at the University of Manchester, and who subsequently won the Nobel Prize in Physics in 2010.



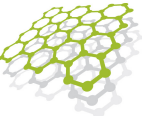
GRAPHITE



GRAPHENE



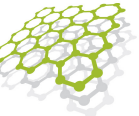
PureGRAPH®



WHAT'S SO GREAT ABOUT GRAPHENE?

Delivering the Graphene Revolution

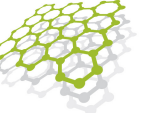




WHO IS FIRST GRAPHENE?

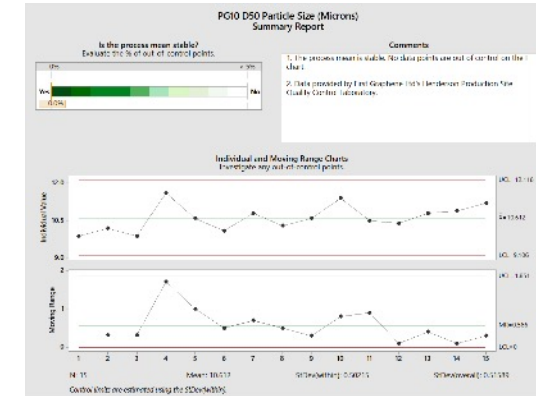
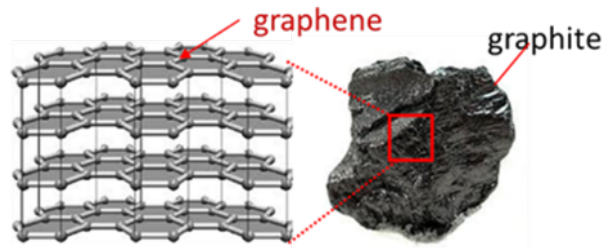
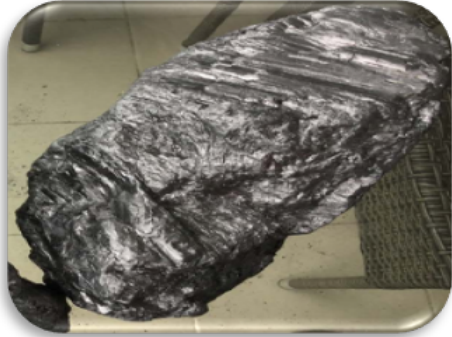
Delivering the Graphene Revolution

- **World leading graphene manufacturer** based in Perth, Western Australia.
- **Producer of high performing PureGRAPH® products** creating value in composites, elastomers, fire retardancy and construction materials.
- **Robust 100 tonne/year** modular manufacturing facility - built and operational today.
- **New substance registration** European (REACH) in place and Australian (AICIS) in place. USA Active membership of ISO standards committee for graphene registration. EPA registration in progress.
- **Publicly listed in Australia** (ASX:FGR) with a primary manufacturing base in Henderson, near Perth, WA.
- **Tier 1 partner** at the Graphene Engineering and Innovation Centre (GEIC), Manchester, UK.



CORE CAPABILITIES

Driving the Industrial Scale Adoption of Graphene



Vein graphite RMs

- Captive – ensures reliability
- No processing at mine
- In-house stock
- Low metals
- Large graphene plates

Electrochemical Exfoliation

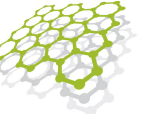
- High Yield
- Single Step
- Unique to FGR
- Scalable/Low Cost
- Low waste

Industrial Finishing

- Well established
- Controlled Quality
- Finishing Options
- Scalable/Low Cost
- Low Waste

Quality Assurance

- 6-sigma approach
- Industry leading measurement techniques
- ISO/TC229 aligned
- At-line testing
- C of A for each batch

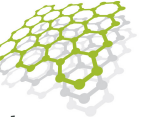


INTRODUCING PureGRAPH®

Delivering the Graphene Revolution

- **PureGRAPH®** is the highest performing graphene additive available at tonnage quantities.
- **PureGRAPH®** powders contain pristine, high aspect ratio platelets with typical thickness of 5-10 carbon layers.
- Lateral sizes are carefully controlled in the **PureGRAPH®** range at 5µm, 10µm and 20µm ensuring consistent and repeatable performance.
- **PureGRAPH®** is high purity carbon with <0.3% total metals and <1 ppm silicon contaminants.
- The **PureGRAPH®** advantage is that it is easily dispersed, delivering multiple benefits across a broad range of materials, such as Rubbers, Composites, Plastics, Coatings, Cement etc.

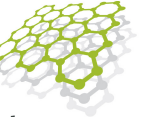




MAIN AREAS OF BUSINESS DEVELOPMENT

Delivering the Graphene Revolution

- **Continued Commercialisation of PureGRAPH® Range of Graphene Products:** Having achieved the milestones of commercial production capacity of high-quality graphene products, the overriding objective is to build the sales book through engagement with customers to educate them;
 - On the benefits that graphene can offer their application, and to
 - Design additive methodology to effectively use graphene in their product range
- **Research and Development of Alternative Energy Applications:** It is widely believed that the use of graphene will significantly improve the efficiency of a number of alternative energy applications such as solar power collection devices, advanced supercapacitor materials, alternatives to spheronised graphite in batteries and a new process for the manufacture of green hydrogen. First Graphene is actively developing these technologies in collaboration with leading universities



COMMERCIALIZATION LANDSCAPE - EXISTING

Sample of existing application development projects

Rubbers & Elastomers

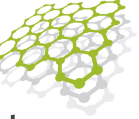
- Automotive – bushes/suspension components, tyres.
- Mining – wear liners, screens, conveyor belts, rollers.
- Construction – rubber insulation.
- Leisure – shoe soles, composite toe caps, neoprene wetsuits.

Cement & Construction

- Precast – paving, panels, pipes, beams etc.
- Ready Mix – miscellaneous.
- Specialty Coatings and Grouts – high water resistance and strength applications.
- Environmental – reduction in cement usage to drive lower CO2 emissions.

Composites & Plastics

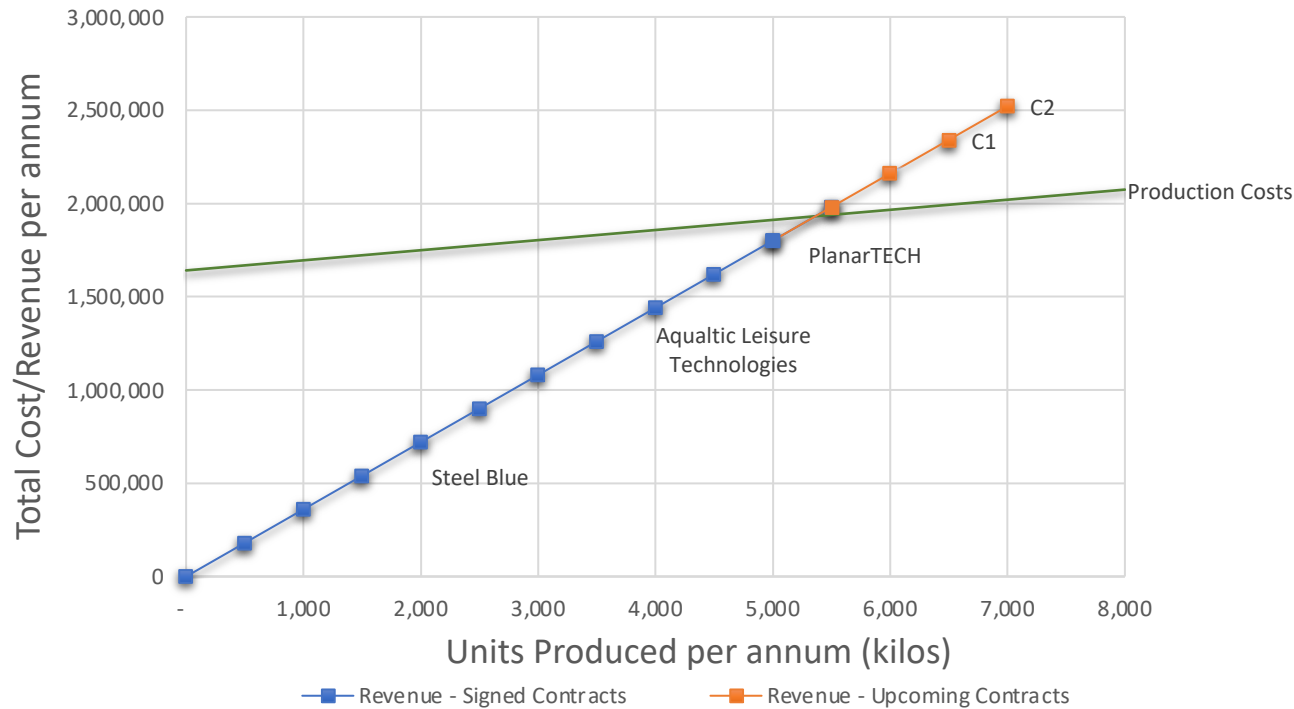
- Glass Reinforced Plastics – pools, tanks, boats, surf boards
- Thermal Control – phase shift thermal control trays
- General HDPE/LDPE Masterbatches for molded parts – stronger, lighter, conductive applications.
- Carbon Fibre – automotive wheels, panels



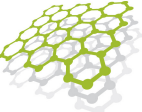
COMMERCIALIZATION PROGRESS: Existing Agreements

Progress towards breakeven point and positive cashflow from operations

Production Capacity Up to 10 tonnes



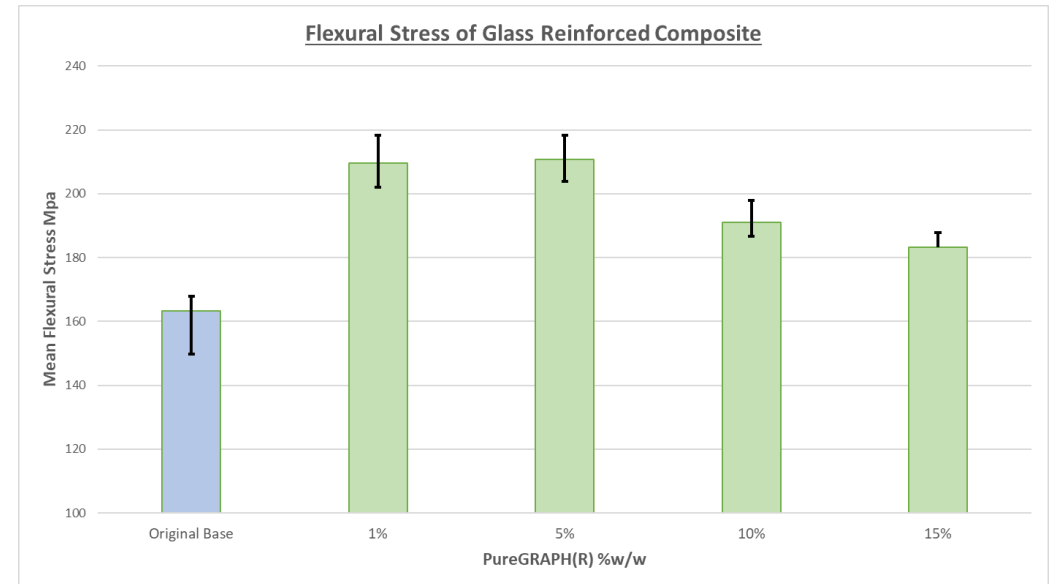
- Breakeven point at ~6,000kg per annum, with cost base of 10 tonnes.
- Current customers contracted to 5,000 kg per annum, to maintain exclusivity.
- PlanarTECH: have taken 200kg during 2020, Looking to increase PPE production during 2021.
- Steel Blue: Launching March 2021.
- Aquatic Leisure Technologies: Launching March 2021.
- Multiple customer evaluations underway, with two significant customers close to qualification and contracting.



COMPOSITES, PLASTICS & ADHESIVES

What benefit does Graphene add?

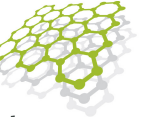
- Increased strength (> 30%)
- Light-weighting (> 30%)
- Increased water resistance
- Improved fire retardancy
- Simplified manufacture and overall reduced cost



Flexural stress/strength performance measured by ASTM D7264 three point bending.

Chopped glass fibre reinforced polyester-styrene resin with peroxide initiator.

PureGRAPH® additives mixed into resin prior to lay-up.



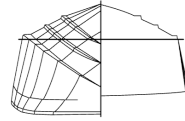
COMPOSITES, PLASTICS & ADHESIVES

Applications – Sports and Leisure, Marine, Aquaculture, Automotive, Aeronautics



Sales Client

PureGRAPH® GRP swimming pools providing increased mechanical properties, reduced water permeability and simplified production process.



Ascent Shipwrights



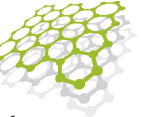
Sales Client

PureGRAPH® GRP boats providing increased flexural strength, modulus and water resistance.



Sales Client

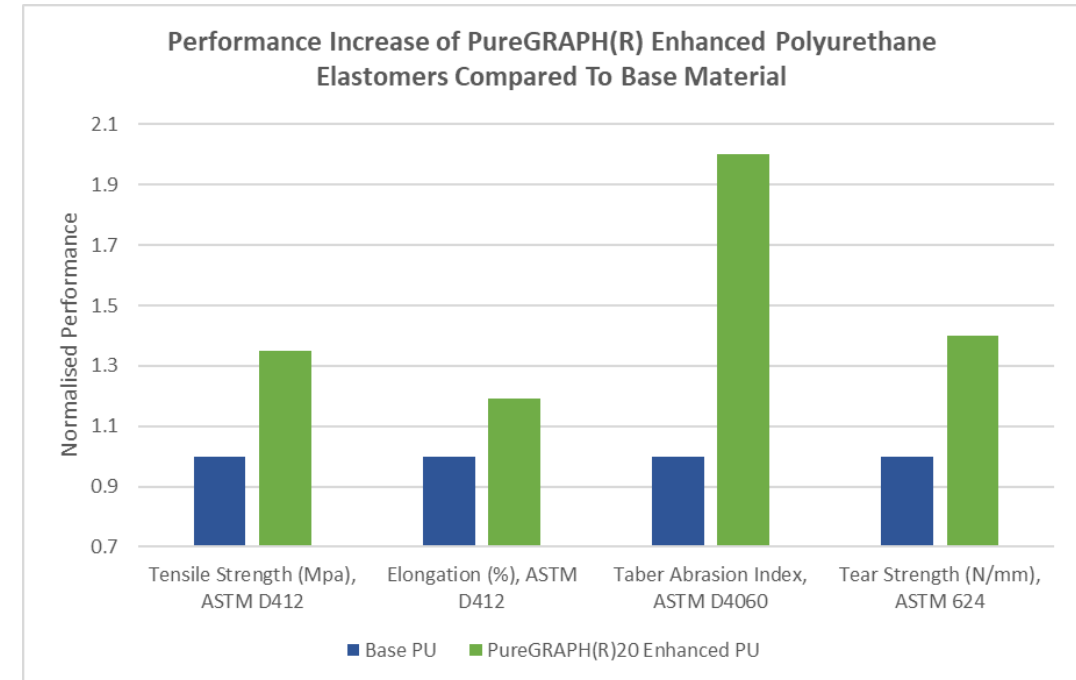
PureGRAPH® enhanced HDPE oyster pots providing increased yield strength and abrasion resistance.



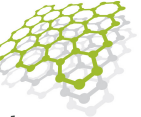
RUBBERS & ELASTOMERS

What benefit does Graphene add?

- Easily dispersed
- Increased tensile strength
- Increased tear strength
- Increased abrasion resistance
- Increased fire-retardant properties



TDI based polyurethane thermoset with <1% PureGRAPH® additive show improvements in tensile strength, elongation, abrasion and tear strength (not shown)



RUBBERS & ELASTOMERS

Applications – Mineral Processing, Footwear, Sports and Leisure, Automotive



Sales Client



PureGRAPH® enhanced Scuff Cap, Outsole, Met Guard, Toe Cap and Midsole – Lighter, improved grip, improved abrasion resistance etc.



Sales Client



PureGRAPH® enhanced ArmourGRAPH™ reclaimer bucket liners installed at Pilbara WA. Six times improved abrasion resistance compared to standard PU liner.



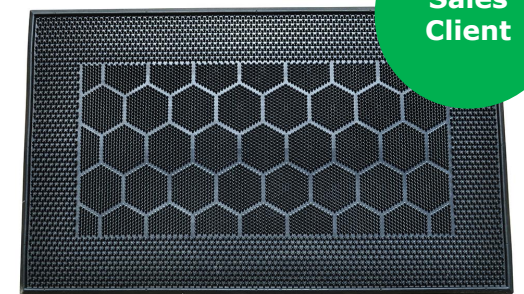
App. Validation



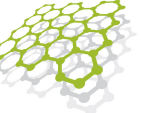
PureGRAPH® enhanced rubber top coat conveyor belts for bulk material handling applications. Increased cut/tear properties, reduced abrasion loss and increased fire retardance.



Sales Client



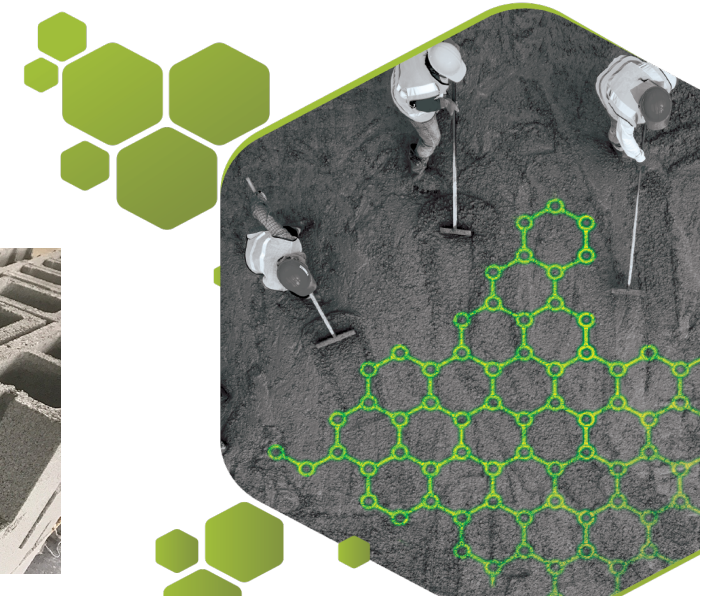
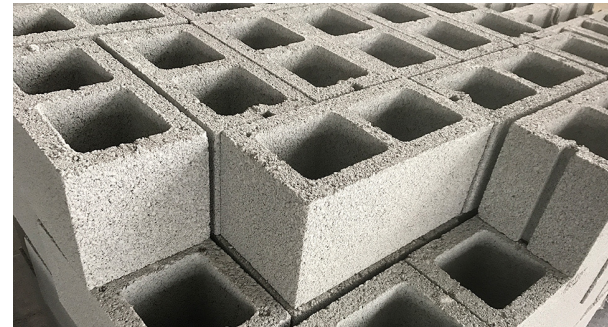
PureGRAPH® enhanced recycled rubber tyre mats. Graphene provides increased strength and modulus to the mat structure.



CEMENT AND CONCRETE

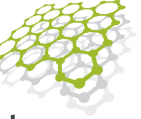
What benefit does Graphene add?

- After water, concrete is the most widely used material in the world.
- The use of cement-based concrete contributes ca. 8% of global CO₂ emissions¹.
- Stronger and lighter concrete structure.
 - +34% in compressive strength²
 - +27% in tensile strength²
- Potential reduction in carbon footprint.
- Reduced water and ion permeability, leading to reduced micro-cracking, thermal expansion, re-bar corrosion, thus improved lifespan.



1. <https://www.chathamhouse.org/about/structure/eeer-department/innovation-low-carbon-cement-and-concrete>

2. With 0.02% w/w PureGRAPH®



CEMENT AND CONCRETE

Applications – Structural, Water Treatment, Green Concrete, Prefabricated

App.
Validation



PureGRAPH® enhanced concrete for water treatment applications. PureGRAPH® provides reduced water permeability

App.
Validation



PureGRAPH® enhanced green concrete applications. Portland cement is being substituted with green options such as geopolymers to reduce the carbon footprint. PureGRAPH® provides increased mechanical properties.

App.
Validation



PureGRAPH® enhanced concrete for prefabricated applications. PureGRAPH® increases mechanical properties, reducing the amount of cement required.

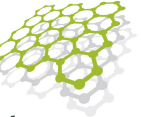
App.
Validation



PureGRAPH® enhanced concrete for structural applications. Increasing compressive and tensile strength

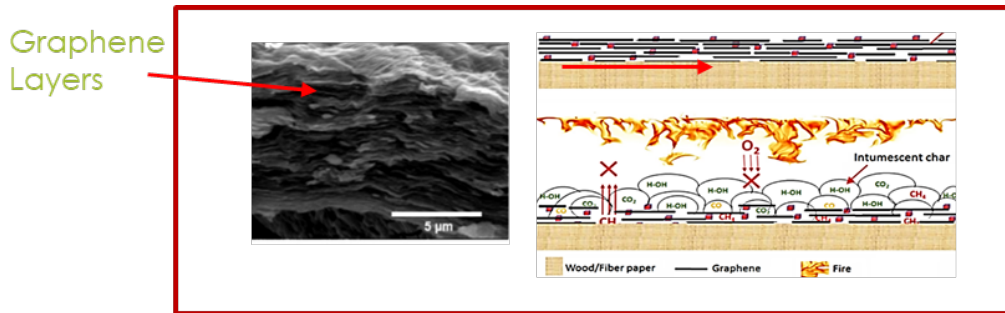
FIRE RETARDANCY

FireStop™ Paint/Coating



first graphene
The world's leading graphene company

- Self-extinguishing, barrier to flammable volatiles.
- Global patent.
- Non-toxic vs existing Fire Retardancy solutions.
- Under development in rubbers, plastics and composites, currently seeking partner to develop product line.



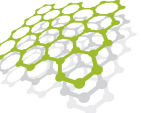
Graphene coating solution provides: 6-fold: fire protection

University of Adelaide research indicates formation of gas barrier – reducing release of flammable, volatile organics as charring begins.



FireStop™ timber coating

UL94=V0 and LOI = >40 on balsa.



HIGH PURITY GRAPHITE FOR BATTERIES – R&D Project

Renewable energy materials from oil feedstock

- **Patented process** funded by the U.K. Government to convert petroleum feedstock (oil fraction) to high purity Graphite/Graphene suitable for Li-Ion Anodes.
- Process creates **Green Hydrogen** by-product; with no CO₂ generation (No combustion or burn off required).
- Resultant **Graphite** is high purity and optimized for a Li-Ion anode manufacture.
- Resultant **Graphene** can be used in composite anodes and cathodes for next generation Li-ion batteries.
- **Entry opportunity** for oil suppliers to participate in battery technology

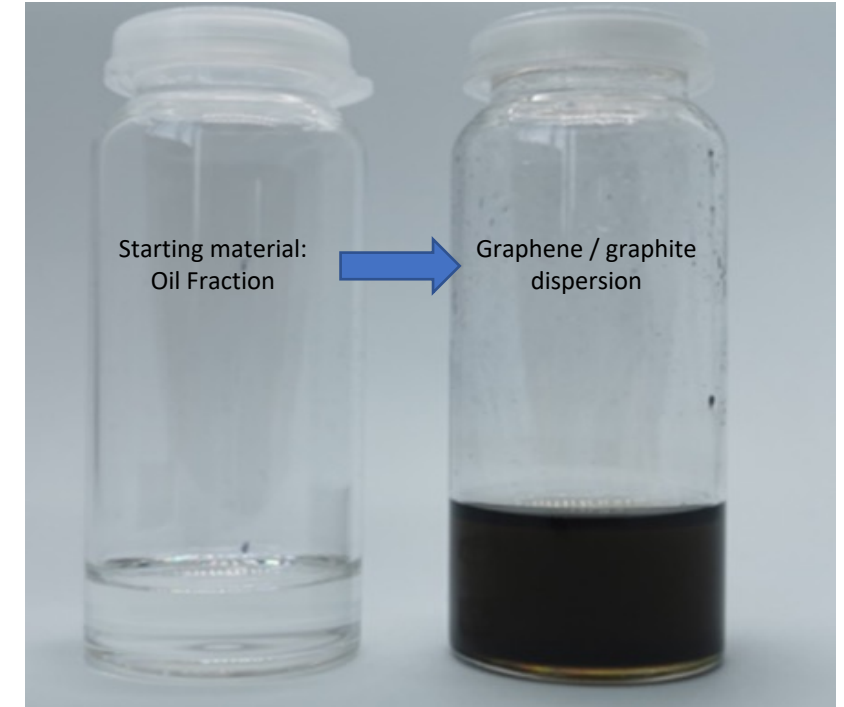
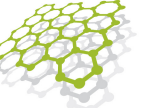


Fig 1: One-step conversion of oil fraction to graphite for Li-ion battery anodes.



SUPERCAPACITORS & FUEL CELLS – R&D Project

Supercapacitor materials for higher power energy sources

- **Patented process** to develop superior supercapacitor materials (metal oxide structures) to meet the evolving renewable energy demands i.e., electric vehicles and diversified power delivery/recovery.
- **Metal oxide structures** significantly increase the surface area of the Graphene platelets, resulting in higher capacitance for;
 - **Supercapacitors:** Pseudo-capacitor materials for high power density and high energy density devices.
 - **Fuel Cells:** Demonstrated potential for the same material to be used in hydrogen fuel cells by driving an oxygen reduction reaction.

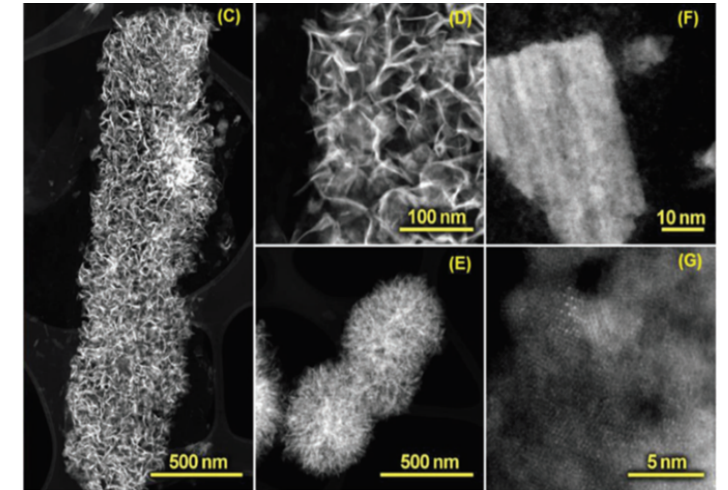
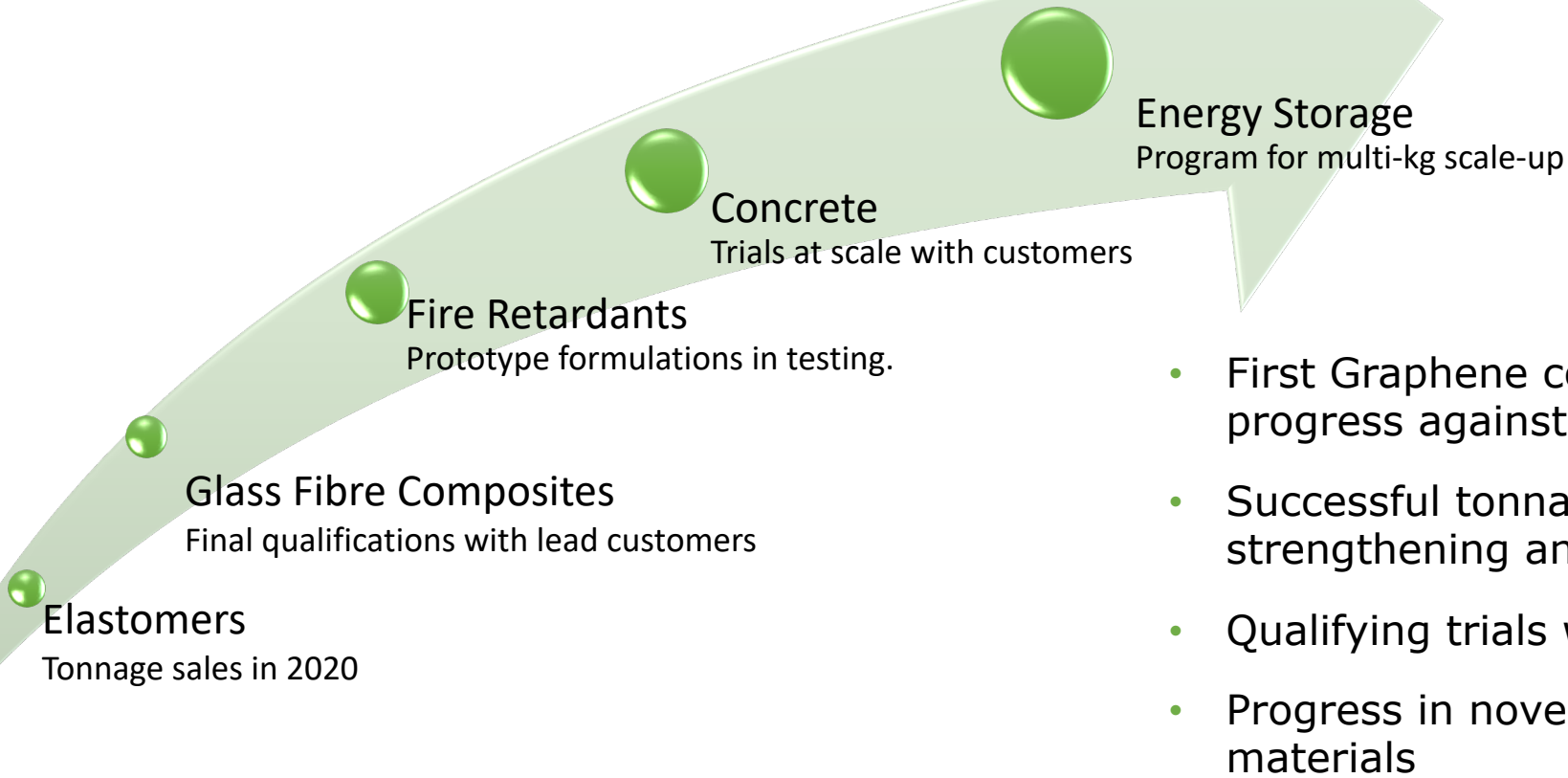
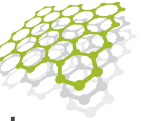


Fig 1: SEM images of the graphene scaffold with metal oxide structures for use in pseudo capacitors or electrocatalysts

Summary and Strategic Roadmap



- First Graphene continues to make excellent progress against our strategic roadmap.
- Successful tonnage sales in polymer strengthening and wear resistance.
- Qualifying trials with composites and concrete.
- Progress in novel supercapacitor and battery materials



FINANCIALS: Issued Capital and Share Price Chart

The lowest risk exposure to the graphene business

| | |
|---|----------------|
| Share price (5 March 2021) | A\$0.24 |
| Issued shares – fully paid | 535m |
| Listed options (25c) August 2021 | 101m |
| Unlisted options – (18c) – expiry February 2022 | 2.0m |
| Unlisted options (25c) – expiry November 2023 | 15.0m |
| 12-month price range (A\$) | 0.06c – 0.33c |
| Market capitalisation | ~A\$128 |
| Cash - 31 December 2020 | A\$4.9m |



One year share chart – Source ASX and Westpac

BOARD OF DIRECTORS

Experienced leadership

Warwick Grigor: Non-Executive Chairman

- Respected and experience mining analyst
- Graduate of the Australian National University, with degrees in law and economics
- Former Chairman of Cannacord Genuity Australia Ltd



Dr Andy Goodwin: Non-Executive Director

- Ph.D. scientist with extensive leadership experience in innovation and new business growth with speciality chemicals industry
- Global Science & Technology Manager – Solar, Dow Corning Corporation in USA



Michael Quinert: Non-Executive Director

- Founding partner of Quinert Rodda Lawyers
- Focus on capital raising and listing rule compliance
- Over 20 years experience with ASX-listed companies in the capacity as legal counsel and director, in the mining and technology sectors
- Non-Executive Chairman of West Wits Mining Ltd.



SENIOR EXECUTIVES

Experienced leadership

Michael Bell: Chief Executive Officer

- Business leader with 20 years' experience in high growth businesses across a multitude of industries
- Bachelor of Science - Physics, Management Science University of Canterbury Former Senior Vice President – ST Engineering Group Singapore



Paul Ladislaus: Chief Technology Officer

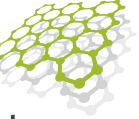
- Chartered Chemical Engineer with 20 years' experience in operational, design, project management and research and development roles in the Chemicals Industry
- Master's Degree in Chemical Engineering from the University of Cambridge



David Bennett: General Manager – Process Operations

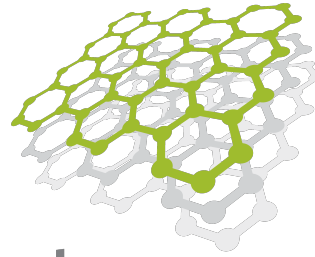
- Bachelor of Science, Flinders University, Adelaide, SA
- Senior management roles in Australian & USA based drilling fluid entities
- Strong skills in OH&S and operational oversight





Forward Looking Statements & Disclaimer

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first graphene

The world's leading graphene company

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& Manufacturing Plant**

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