

---

ASX Announcement 7 April 2021

## BASS CONTINUES ADVANCED MATERIALS STRATEGY WITH AGREEMENT TO DEVELOP SPECIALTY CARBON COMPOSITE TECHNOLOGY

Bass Metals Limited (ASX:BSM) (the **Company** or Bass) is pleased to announce it has reached an agreement with leading advanced material researcher Swinburne University of Technology (Swinburne) for the development of Specialty Carbon Composites using Bass' concentrates for the manufacture of various advanced materials using both Expandable Graphite and Graphene.

### HIGHLIGHTS

---

- Bass and Swinburne have signed a Master Research and Development Agreement (the Agreement) to develop advanced materials using both Expandable Graphite and Graphene from Bass' premium concentrates.
- The key objective of the first collaboration is to create a patentable, environmentally friendly, advanced fireproof paneling product from purified Expandable Graphite and Graphene, with a focus on mechanical strength and fire retardation.
- Bass is uniquely placed to service the rapidly growing advanced materials sector having a demonstrated record of commercial production of clean, large flake concentrates; the two main constituent properties of Expandable Graphite and Graphene.
- The first project under the Agreement has commenced, with Swinburne having received its first batch of graphite concentrates from the Company's operations in Madagascar, to commence purification optimization and Expandable Graphite and Graphene manufacturing.
- Bass remains in discussions with several groups and has a Memorandum of Understanding (MOU) in place with leading US graphite technology company Urbix Resources LLC (Urbix) regarding potential off-take arrangements, based on recently received outstanding test results relating to the purity of its concentrates<sup>1</sup>.

---

<sup>1</sup> 'Update - Advanced Materials' released to the ASX 17 Nov 2020.

## ADVANCED MATERIALS STRATEGY

---

Bass sits in a unique position to create significant value for shareholders by pursuing the considerable opportunities the emerging advanced materials sector offers. Bass' concentrates are highly suitable for all applications, across all market segments, having sold its graphite concentrates globally.

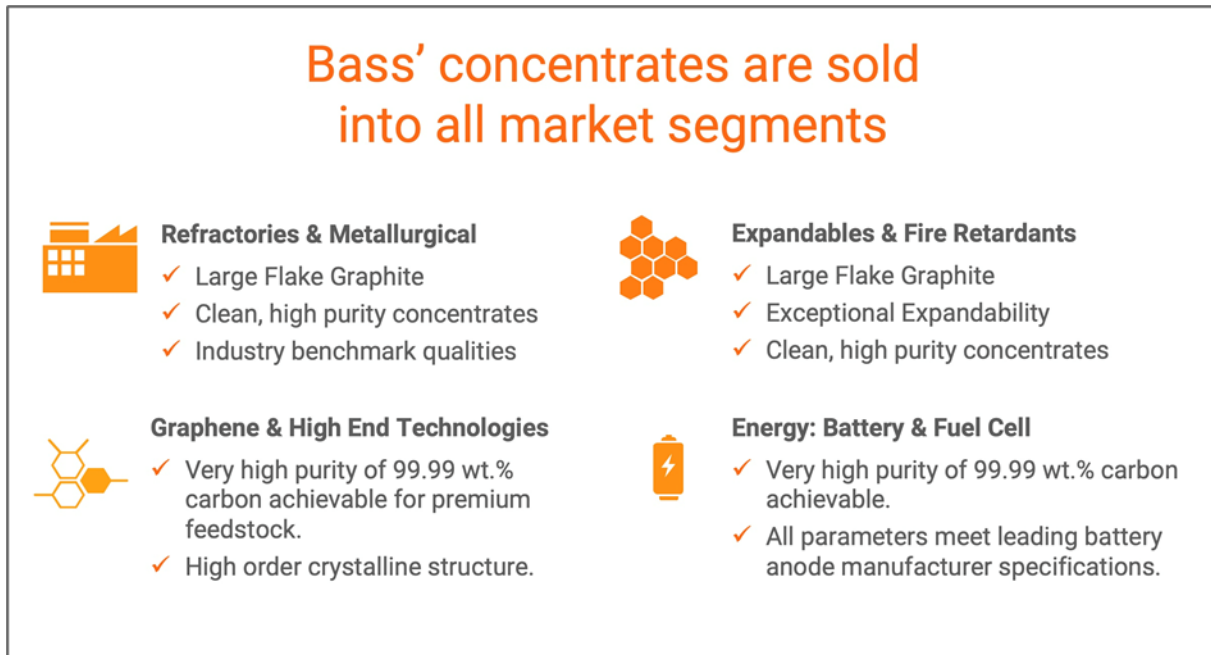


Figure 1: Graphmada's unique product suitable for all market segments.

Bass' success in rebuilding, recommissioning and subsequent successful production delivered a great deal of intellectual property to the Company. Through the design and commissioning process Bass arrived at a process configuration that resulted in all graphite concentrates being sold without penalty or rejection over its 20-month production period (Stage 1).

The two overarching aims of Stage 1 at Graphmada were the production of clean saleable concentrates and subsequent successful sale of those concentrates in global markets.

Over the 20 months of production, the Company produced an average of 43% large to super jumbo flake concentrates. Bass qualified its concentrates for sale into all major markets and ultimately sold concentrates into the USA, Europe, China, Japan, India, and Korea.



Figure 2: Stage 1 large flake graphite concentrates

As previously announced to ASX, Bass has tabled several exploration and development updates as part of its strategy for developing large scale mining and processing at Graphmada (Stage 2).

To date, Bass has also announced material efficiency gains in the design for Stage 2 production, including the use of environmentally friendly hydroelectric power<sup>2</sup>, which has the potential to deliver a substantial reduction in operating costs, and a greatly improved screening and packaging process<sup>3</sup>.

In addition to these material advancements, Bass has continued its downstream development from its substantial intellectual property and metallurgical data acquired from actual production. This includes advanced materials testing with global entities such as Urbix LLC and Dorfner Anzaplan as per previous ASX announcements:

- Tests confirm Concentrates as Industry Benchmark (23 May 2017)
- Test confirm Industry Leading Expandability for Graphmada (24 May 2017)
- Excellent Lithium-ion battery feedstock test results (29 May 2017)

---

<sup>2</sup> 'Clean, low cost energy for Graphmada' released to the ASX 26 Nov 2020.

<sup>3</sup> 'Efficiencies Identified for Expansion of Production' released to the ASX 4 Dec 2020.

- Bass signs MOU with leading US Graphite Technology Co (30 Sep 2019)
- Bass advances Strategic discussions with Urbix (26 Nov 2019)
- Bass extends alliance discussions with Urbix Resources (27 Mar 2020)
- Bass signs MOU with Swinburne University (27 Apr 2020)
- Update - Advanced Materials (17 Nov 2020)

As another substantial milestone in its advanced materials strategy, Bass is pleased to have reached an agreement with Swinburne to develop advanced fireproof paneling products and continue the process of capitalizing on the substantial achievements of Stage 1 for all stakeholders.

## MASTER RESEARCH AND DEVELOPMENT AGREEMENT

---

Bass aims to establish itself as a leading vertically integrated specialty carbons and advanced materials business and has made considerable progress towards this objective with the foundation of the Company's 100% owned Graphmada Graphite Mining Complex in Madagascar.

Large flake graphite (graphite >180 microns), such as that produced from Graphmada, is a very soft carbon mineral found in only a few locations globally. Namely, Madagascar and Brazil, where it has been historically extracted, processed and refined for use in high-end applications. It displays both metallic and non-metallic properties. The metallic properties incorporate heat and electrical conductivity. The non-metallic properties incorporate idleness, high heat obstruction, and lubricity.

Natural Graphite is increasingly sought after as the world rapidly advances the pursuit of a green economy. In addition to traditional applications such as refractories and crucibles, the graphite market is growing at a rapid rate due to the uptake of green economy materials manufacturing such as batteries, semi-conductors, advanced composites, and nuclear applications. A common precursor to using graphite in these high-end applications is the purification and production of high purity large flake concentrates.

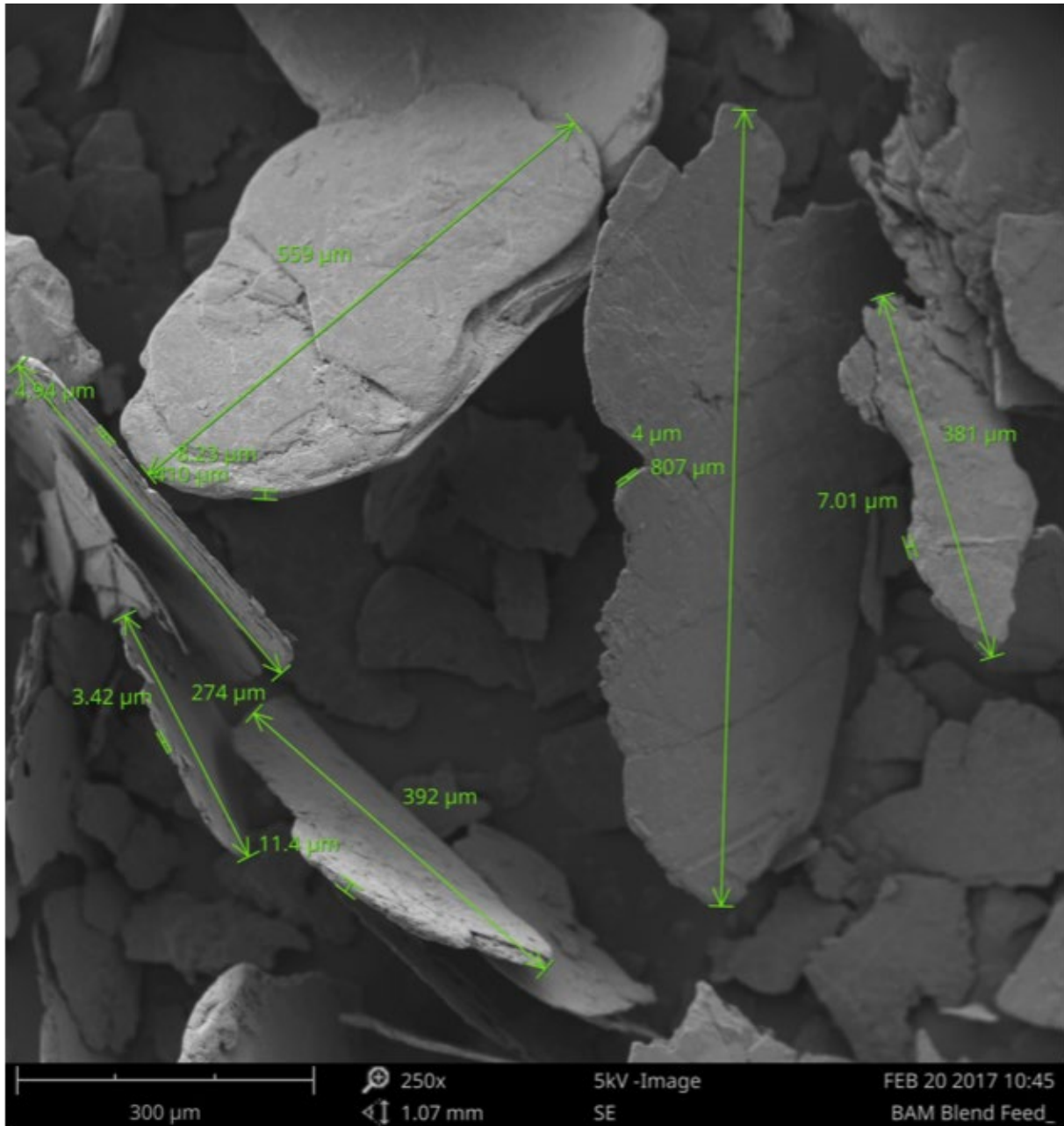


Figure 3: Graphmada large flake graphite under magnification.

The Company intends to invest in further research and development activities with a focus on these high growth markets and more specifically the production of purified Expandable Graphite and Graphene for Specialty Carbon Composites.

Bass intends to:

- optimize the production of large flake graphite concentrates and their purification, to provide the highest quality feedstock for the production of Expandable Graphite and Graphene precursors.

- pursue scientific research and development of sustainable methods to produce Expandable Graphite and Graphene including the discovery of new intercalation agents, expansion agents, and production methodologies.
- researching and developing new generation, sustainable, fire-resistant specialty carbon composites that utilize Expandable Graphite and Graphene.
- certifying and patenting successful prototypes.

The purification of graphite and production of Expandable Graphite and Graphene has been a long-stated goal of the Company. Through its various collaborations, the Company's premium large flake concentrates have been proven as a viable feedstock for this technology. While continuing to pursue purification via its strong collaboration with Urbix Resources, Bass intends to supplement this relationship by undertaking additional research to develop an upgraded feedstock for Expandable Graphite and Graphene manufacture.

## PROJECT OBJECTIVES

---

Bass is aiming to develop a method for the production of Specialty Carbon Composites for the innovative manufacture of fireproof paneling and associated products. The dominant purpose of which is to assume a significant share of the global fire-retardant market through providing a substitute to Aluminum Composite Panels (ACP's).

ACP's are a form of external building cladding using two thin skins of aluminum panels bonded to a non-aluminum core. These polyethylene-cored aluminum sandwich panels were developed over 50 years ago. These panels can give an aging edifice a vibrant luster and help with insulation. But sandwiched inside them, between two thin sheets of aluminum is a layer of polyethylene. Polyethylene, the most common plastic, is used in grocery bags, water bottles, children's toys, and tubing around fiber optic cable.

Polyethylene is mainly made from petroleum or natural gas. It's flammable, but not combustible, which means it can't catch fire on its own, however if it does, it can burn very rapidly.

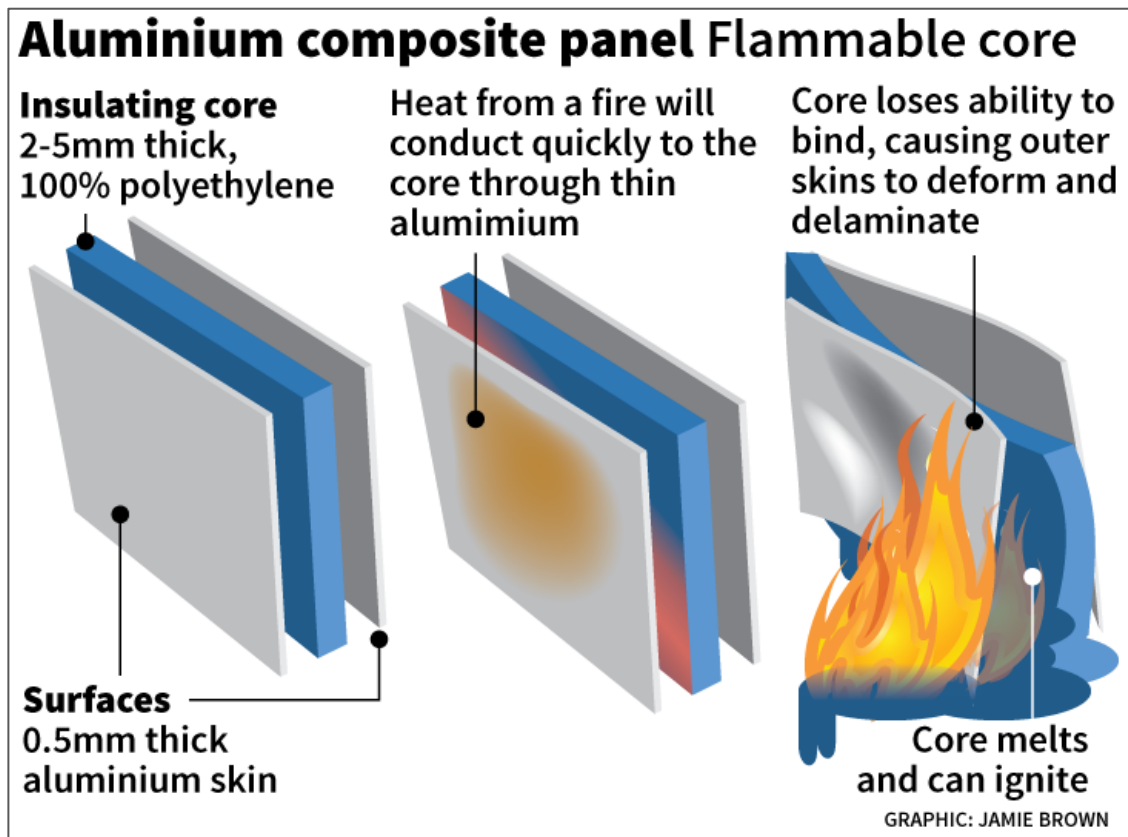


Figure 4: Aluminum composite panel and its highly flammable core.

The Grenfell Tower tragedy in London highlighted the use of external cladding on buildings utilizing these types of products. The fire, which occurred on 14 June 2017, quickly spread up the sides of the building via the external cladding that had only recently been added as part of a refurbishment.

Similar fires to the Grenfell Tower tragedy linked to flammable external building cladding include:

- 2019 Neo200 (AUS)
- 2017 Marina Torch (UAE)
- 2017 Grenfell (UK)
- 2016 NeoSoho Jakarta (IND)
- 2015 'Address Downtown' (UAE)
- 2015 Sharjah City Tower (UAE)
- 2015 Marina Torch (UAE)
- 2014 La Crosse (AUS)
- 2013 Grozny Towers (RUS)
- 2012 Tamweer Tower (UAE)
- 2012 Al Tayer Tower (UAE)
- 2012 TECOM Tower, (UAE)
- 2012 Mermoz Tower, (FRA)
- 2009 Beijing TC Centre (PRC)
- 2008 Abraaj Al Bait (KSA)

Polyethylene-based panels are now subject to various limitations in their use, with Europe, the Middle East, China, and Australia legislatively banning cladding

with >30% polyethylene, along with bans of bromide and carcinogenic fire-retardant additives.

Bass, in aiming to develop an environmentally friendly substitute, seeks to not only substitute polyethylene but also improve the overall product characteristics such as mould and mildew resistance, acoustic absorption, and improved mechanical strength, while reducing the weight of the material.

In addition, the design of the panels ('cladding') is aimed to be aesthetically pleasing, easy to package, transport, and install; seeking to establish a competitive advantage, by incorporating a robust product design strategy with advanced materials research.

## TIM MCMANUS CEO

---

'Bass has long stated its ambition to progress its downstream development and today's announcement is a significant step forward for the Company in this regard. The technology under development and subject to this Agreement with Swinburne is world-leading in its approach and its ambition.

The Company will look to build upon the first project with further development of advanced material products and their uses in new technologies, such as high-end battery and electronic devices.

Importantly, the timing of this research and development complements the Company's growth in Mineral Resources and the encouraging progression of feasibility studies for large scale mining and processing of high-value graphite concentrates from Graphmada.

We look forward to updating our highly valued shareholders as these advanced materials projects progress.'

**For more information, please contact:**

Tim McManus  
Chief Executive Officer

Peter Wright  
Executive Director

Phone: (07) 3063 3233

Email: [InvestorRelations@bassmetals.com.au](mailto:InvestorRelations@bassmetals.com.au)

[www.bassmetals.com.au](http://www.bassmetals.com.au)

This announcement has been approved by the Company's Disclosure Committee for release.



## Disclaimer

This document has been prepared by Bass Metals Limited (the "Company"). It should not be considered as an invitation or offer to subscribe for or purchase any securities in the Company or as an inducement to make an invitation or offer with respect to those securities. No agreement to subscribe for securities in the Company will be entered into based on this document.

This document is provided on the basis that neither the Company nor its officers, shareholders, related bodies corporate, partners, affiliates, employees, representatives, and advisers make any representation or warranty (express or implied) as to the accuracy, reliability, relevance, or completeness of the material contained in the document and nothing contained in the document is or may be relied upon as a promise, representation or warranty, whether as to the past or the future. The Company hereby excludes all warranties that can be excluded by law.

## Forward-Looking Statements

This announcement contains certain forward-looking statements' within the meaning of the securities laws of applicable jurisdictions. Forward-looking statements can generally be identified by the use of forward-looking words such as 'may,' 'should,' 'expect,' 'anticipate,' 'estimate,' 'scheduled' or 'continue' or the negative version of them or comparable terminology.

Any forecasts or other forward-looking statements contained in this announcement are subject to known and unknown risks and uncertainties and may involve significant elements of subjective judgment and assumptions as to future events which may or may not be correct. There are usually differences between forecast and actual results because events and actual circumstances frequently do not occur as forecast and these differences may be material.

Bass Metals does not give any representation, assurance, or guarantee that the occurrence of the events expressed or implied in any forward-looking statements in this announcement will occur and you are cautioned not to place undue reliance on forward-looking statements. The information in this document does not take into account the objectives, financial situation, or particular needs of any person. Nothing contained in this document constitutes investment, legal, tax, or other advice.

## Important information

This announcement does not constitute an offer to sell, or a solicitation of an offer to buy, securities in the United States, or in any other jurisdiction in which such an offer would be illegal. The securities referred to in this document have not been and will not be registered under the United States Securities Act of 1933 (the 'US Securities Act'), or under the securities laws of any state or other jurisdiction of the United States and may not be offered or sold, directly or indirectly, within the United States, unless the securities have been registered under the US Securities Act or an exemption from the registration requirements of the US Securities Act is available.

This document may not be distributed or released in the United States.

## Competent Person Statement

The information in this document that relates to Exploration Results, Exploration Targets, and Mineral Resources is based on information compiled by Tim McManus, a Competent Person who is a member of the Australasian Institute of Mining and Metallurgy and a full-time employee of the Company.

Tim McManus has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources, and Ore Reserves.

Tim McManus consents to the inclusion of the information in this document in the form and context in which it appears.